

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

FCC ID: 2ANMU-24138

Product: Smart Phone
Trade Mark: OUKITEL
Model No.: WP300
Family Model: WP300 S, WP300 Pro, WP300 Plus, WP300 Ultra, WP300 TITAN, WP300 GT, WP57, WP57 S, WP57 Pro, WP57 Plus, WP57 Ultra, WP57 TITAN, WP57 GT
Report No.: S24112505005006
Issue Date: Jan. 21, 2025

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

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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 .. : WP300

Trade Mark..... : OUKITEL

Family Model..... : WP300 S, WP300 Pro, WP300 Plus, WP300 Ultra, WP300 TITAN,
WP300 GT, WP57, WP57 S, WP57 Pro, WP57 Plus, WP57 Ultra,
WP57 TITAN, WP57 GT

Test Sample Number..... S241125050006

Standards..... : FCC CFR 47 Part 22H, Part 24E, Part 27, Part 90S

Test procedure : ANSI C63.26:2015
ANSI/TIA-603-E-2016

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

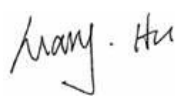
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Date of Test

Date (s) of performance of tests..... Nov. 25, 2024 ~ Jan. 21, 2025

Date of Issue Jan. 21, 2025

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

Prepared : 
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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	WP300
Family Model	WP300 S, WP300 Pro, WP300 Plus, WP300 Ultra, WP300 TITAN, WP300 GT, WP57, WP57 S, WP57 Pro, WP57 Plus, WP57 Ultra, WP57 TITAN, WP57 GT
Model Difference	All models are the same circuit and RF module, except for model names.
FCC ID:	2ANMU-24138
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
SIM Card:	SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for test.
Antenna:	FPC Antenna
Antenna gain:	Band 2: -0.3 dBi, Band 4: -0.65 dBi, Band 5: -3.02 dBi, Band 7: 1.04 dBi, Band 12: -3.27 dBi, Band 17: -3.27 dBi, Band25: -0.3 dBi, Band 26: -3.02 dBi, Band66: -0.65 dBi;
Adapter	Model: HJ-45WPD-US Input: 100-240V~50/60Hz 1.5A Output(PD): 5.0V---3.0A 15.0W or 9.0V---3.0A 27.0W or 12.0V---2.5A 30.0W or 15.0V---2.0A 30.0W or 20.0V---2.25A 45.0W MAX

	(PPS)5.0V-11.0V---4.0A 44.0W MAX (PPS)5.0V-20.0V---2.25A 45.0W MAX
Battery	DC 3.87V, 16000mAh, 61.92Wh
Power supply	DC 3.87V from battery or DC 5V/9V/12V/15V/20V from adapter
Extreme Vol. Limits:	DC 3.29V to DC 4.45V (Nominal DC 3.87V) (Note 1)
HW Version	M1702-MUB-V2
FW Version	N/A
SW Version	V04
** Note1: The High Voltage DC 4.45V and Low Voltage 3.29V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2ANMU-24138** 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.

No. 24 Xinfu East Road, Xiangshan Community, Xinqiao Street, Baoan District, Shenzhen, Guangdong, People's Republic of China.

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

FCC Registration No.:463705

IC Registration No.:9270A,

CNAS Registration No.:L5516

MEASUREMENT UNCERTAINTY

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

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

1.5 SPECIAL ACCESSORIES

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

1.6 WORST-CASE CONFIGURATION AND MODE

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

The device has LTE Bands of: Band 2/4/5/7/12/17/25/26/66

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.

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	WP300	FCC ID: 2ANMU-24138	EUT

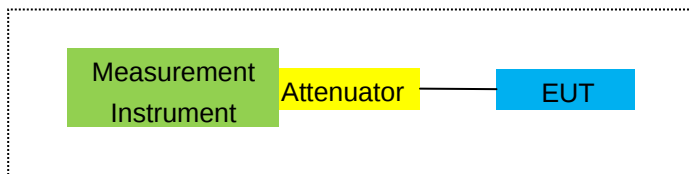
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

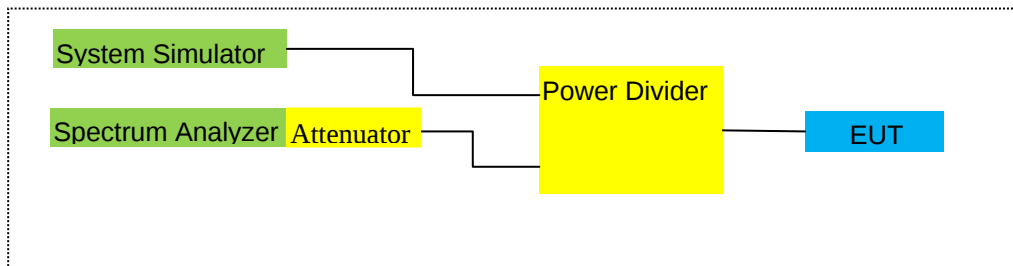
For Radiated Test Cases



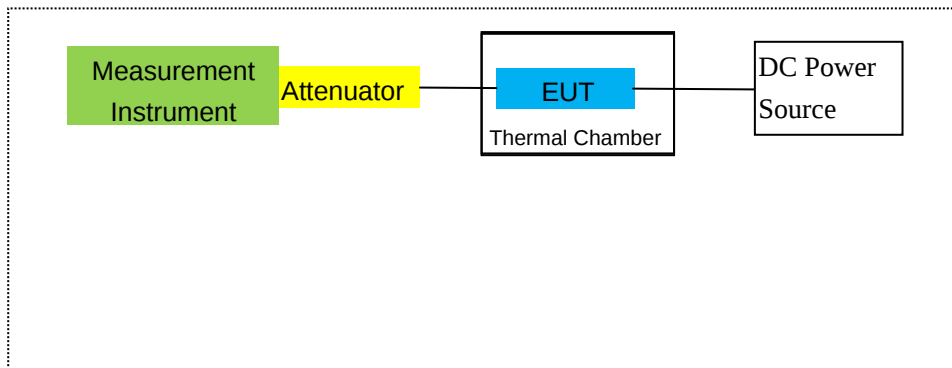
For Conducted Output Power



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	2024.04.25	2025.04.24	1 year
2	Test Receiver	R&S	ESPI	101318	2024.04.26	2025.04.25	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2024.05.12	2025.05.11	1 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	2024.04.26	2025.04.25	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2024.03.12	2025.03.11	1 year
9	Power Meter	R&S	NRVS	100696	2024.04.26	2025.04.25	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2024.04.26	2025.04.25	1 year
11	Test Cable	N/A	R-01	N/A	2022.06.17	2025.06.16	3 year
12	Test Cable	N/A	R-02	N/A	2022.06.17	2025.06.16	3 year
13	Test Cable	N/A	R-03	N/A	2022.06.17	2025.06.16	3 year
14	Test Receiver	R&S	ESCI	101160	2024.04.26	2025.04.25	1 year
15	LISN	R&S	ENV216	101313	2024.04.25	2025.04.24	1 year
16	LISN	EMCO	3816/2	00042990	2024.04.25	2025.04.24	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2024.03.12	2025.03.11	1 year
18	Passive Voltage Probe	R&S	ESH2-Z3	100196	2024.03.12	2025.03.11	1 year
19	Test Cable	N/A	C01	N/A	2023.05.06	2026.05.05	3 year
20	Test Cable	N/A	C02	N/A	2023.05.06	2026.05.05	3 year
21	Test Cable	N/A	C03	N/A	2023.05.06	2026.05.05	3 year
22	Spectrum Analyzer	agilent	e4440a	us44300399	2024.03.12	2025.03.11	1 year
23	test receiver	R&S	ESCI	a0304218	2024.03.12	2025.03.11	1 year
24	Communication Tester	R&S	CMU200	A0304247	2024.03.12	2025.03.11	1 year
25	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2024.03.12	2025.03.11	1 year

26	DC Power Source	N/A	PS-6005D	2017040292 3	2024.04.25	2027.04.24	3 year
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Note: Each piece of equipment is scheduled for calibration once a year except the Test Cable& DC Power Source which is scheduled for calibration every 3 years

Measurement Software

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

4. OUTPUT POWER

4.1 OUTPUT POWER MEASUREMENT

LTE Measurement Procedure:

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

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

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

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

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

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

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

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

Test data reference attachment.

5. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

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

MODES TESTED

☐

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

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, and §90.691

FCC: §22.359

LIMITS

FCC: §22.917, §24.238, §27.53

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

(m)(4) For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less 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;

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

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

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

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

TEST PROCEDURE

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

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency

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

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

MODES TESTED

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

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.

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						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dBi)	Max. EIRP	Max. EIRP Average (mW)	Polarization Of Max. ERP	
						Average (dBm)			
1.4MHz Band QPSK	6/0	1850.7	16.55	3.76	8.90	21.69	147.571	Horizontal	Pass
		1880	14.39	3.91	8.90	19.38	86.696	Horizontal	Pass
		1909.3	14.85	3.93	8.90	19.82	95.940	Horizontal	Pass
3.0MHz Band QPSK	15/0	1851.5	13.55	3.77	8.90	18.68	73.790	Horizontal	Pass
		1880	14.13	3.91	8.90	19.12	81.658	Horizontal	Pass
		1908.5	15.65	3.94	8.90	20.61	115.080	Horizontal	Pass
5.0MHz Band QPSK	25/0	1852.5	15.54	3.77	8.90	20.67	116.681	Horizontal	Pass
		1880	16.42	3.91	8.90	21.41	138.357	Horizontal	Pass
		1907.5	16.41	3.94	8.90	21.37	137.088	Horizontal	Pass
10.0MHz Band QPSK	50/0	1855	16.66	3.79	8.90	21.77	150.314	Horizontal	Pass
		1880	17.50	3.95	8.90	22.45	175.792	Horizontal	Pass
		1905	15.24	3.97	8.90	20.17	103.992	Horizontal	Pass
15.0MHz Band QPSK	75/0	1857.5	15.23	3.79	8.90	20.34	108.143	Horizontal	Pass
		1880	16.21	3.95	8.90	21.16	130.617	Horizontal	Pass
		1902.5	14.97	3.97	8.90	19.9	97.724	Horizontal	Pass
20.0MHz Band QPSK	100/0	1860	16.41	3.81	8.90	21.5	141.254	Horizontal	Pass
		1880	14.77	3.96	8.90	19.71	93.541	Horizontal	Pass
		1900	16.36	4.00	8.90	21.26	133.660	Horizontal	Pass
1.4MHz Band QPSK	6/0	1850.7	15.60	3.76	8.90	20.74	118.577	Vertical	Pass
		1880	14.35	3.91	8.90	19.34	85.901	Vertical	Pass
		1909.3	15.69	3.93	8.90	20.66	116.413	Vertical	Pass
3.0MHz Band QPSK	15/0	1851.5	15.53	3.77	8.90	20.66	116.413	Vertical	Pass
		1880	16.46	3.91	8.90	21.45	139.637	Vertical	Pass
		1908.5	14.84	3.94	8.90	19.8	95.499	Vertical	Pass
5.0MHz Band QPSK	25/0	1852.5	15.17	3.77	8.90	20.3	107.152	Vertical	Pass
		1880	14.55	3.91	8.90	19.54	89.950	Vertical	Pass
		1907.5	16.24	3.94	8.90	21.2	131.826	Vertical	Pass
10.0MHz Band QPSK	50/0	1855	14.39	3.79	8.90	19.5	89.125	Vertical	Pass
		1880	13.34	3.95	8.90	18.29	67.453	Vertical	Pass
		1905	14.09	3.97	8.90	19.02	79.799	Vertical	Pass
15.0MHz Band QPSK	75/0	1857.5	14.86	3.79	8.90	19.97	99.312	Vertical	Pass
		1880	15.51	3.95	8.90	20.46	111.173	Vertical	Pass
		1902.5	16.44	3.97	8.90	21.37	137.088	Vertical	Pass
20.0MHz Band QPSK	100/0	1860	17.47	3.81	8.90	22.56	180.302	Vertical	Pass
		1880	15.94	3.96	8.90	20.88	122.462	Vertical	Pass
		1900	15.28	4.00	8.90	20.18	104.232	Vertical	Pass

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dBi)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	6/0	1850.7	14.60	3.76	8.90	20.42	110.154	Horizontal	Pass
		1880	15.75	3.91	8.90	19.14	82.035	Horizontal	Pass
		1909.3	15.45	3.93	8.90	20.18	104.232	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	1851.5	15.29	3.77	8.90	18.33	68.077	Horizontal	Pass
		1880	14.95	3.91	8.90	20.14	103.276	Horizontal	Pass
		1908.5	14.55	3.94	8.90	18.58	72.111	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	1852.5	15.14	3.77	8.90	20.95	124.451	Horizontal	Pass
		1880	15.50	3.91	8.90	19.1	81.283	Horizontal	Pass
		1907.5	14.00	3.94	8.90	18.4	69.183	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	1855	15.35	3.79	8.90	20.12	102.802	Horizontal	Pass
		1880	14.05	3.95	8.90	19.65	92.257	Horizontal	Pass
		1905	15.36	3.97	8.90	20.21	104.954	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	1857.5	13.68	3.79	8.90	19.83	96.161	Horizontal	Pass
		1880	15.77	3.95	8.90	18.75	74.989	Horizontal	Pass
		1902.5	15.65	3.97	8.90	20.82	120.781	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	1860	13.84	3.81	8.90	18.39	69.024	Horizontal	Pass
		1880	16.17	3.96	8.90	19.35	86.099	Horizontal	Pass
		1900	14.55	4.00	8.90	18.16	65.464	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	1850.7	14.61	3.76	8.90	20.25	105.925	Vertical	Pass
		1880	15.84	3.91	8.90	18.44	69.823	Vertical	Pass
		1909.3	15.13	3.93	8.90	19.42	87.498	Vertical	Pass
3.0MHz Band 16 QAM	15/0	1851.5	13.77	3.77	8.90	18.7	74.131	Vertical	Pass
		1880	14.83	3.91	8.90	19.85	96.605	Vertical	Pass
		1908.5	14.56	3.94	8.90	18.9	77.625	Vertical	Pass
5.0MHz Band 16 QAM	25/0	1852.5	13.76	3.77	8.90	21.13	129.718	Vertical	Pass
		1880	15.05	3.91	8.90	21.04	127.057	Vertical	Pass
		1907.5	15.69	3.94	8.90	19.59	90.991	Vertical	Pass
10.0MHz Band 16 QAM	50/0	1855	13.98	3.79	8.90	20.25	105.925	Vertical	Pass
		1880	15.57	3.95	8.90	20	100.000	Vertical	Pass
		1905	15.12	3.97	8.90	19.88	97.275	Vertical	Pass
15.0MHz Band 16 QAM	75/0	1857.5	13.85	3.79	8.90	19.61	91.411	Vertical	Pass
		1880	14.87	3.95	8.90	20.94	124.165	Vertical	Pass
		1902.5	13.66	3.97	8.90	19.78	95.060	Vertical	Pass
20.0MHz Band 16 QAM	100/0	1860	14.29	3.81	8.90	21.31	135.207	Vertical	Pass
		1880	14.90	3.96	8.90	21.46	139.959	Vertical	Pass
		1900	13.78	4.00	8.90	19.47	88.512	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.3 LTE BAND 4

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dBi)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	1710.7	13.83	3.12	8.90	19.61	91.411	Horizontal	Pass
		1732.5	12.74	3.27	8.90	18.37	68.707	Horizontal	Pass
		1754.3	15.21	3.29	8.90	20.82	120.781	Horizontal	Pass
3.0MHz Band QPSK	15/0	1711.5	13.61	3.13	8.90	19.38	86.696	Horizontal	Pass
		1732.5	14.27	3.27	8.90	19.9	97.724	Horizontal	Pass
		1753.5	14.66	3.30	8.90	20.26	106.170	Horizontal	Pass
5.0MHz Band QPSK	25/0	1712.5	15.73	3.13	8.90	21.5	141.254	Horizontal	Pass
		1732.5	15.21	3.27	8.90	20.84	121.339	Horizontal	Pass
		1752.5	14.56	3.30	8.90	20.16	103.753	Horizontal	Pass
10.0MHz Band QPSK	50/0	1715	14.42	3.15	8.90	20.17	103.992	Horizontal	Pass
		1732.5	14.24	3.31	8.90	19.83	96.161	Horizontal	Pass
		1750	15.55	3.33	8.90	21.12	129.420	Horizontal	Pass
15.0MHz Band QPSK	75/0	1717.5	14.96	3.15	8.90	20.71	117.761	Horizontal	Pass
		1732.5	14.85	3.31	8.90	20.44	110.662	Horizontal	Pass
		1747.5	16.02	3.33	8.90	21.59	144.212	Horizontal	Pass
20.0MHz Band QPSK	100/0	1720	12.85	3.17	8.90	18.58	72.111	Horizontal	Pass
		1732.5	14.24	3.32	8.90	19.82	95.940	Horizontal	Pass
		1745	14.63	3.36	8.90	20.17	103.992	Horizontal	Pass
1.4MHz Band QPSK	6/0	1710.7	14.45	3.12	8.90	20.23	105.439	Vertical	Pass
		1732.5	14.87	3.27	8.90	20.5	112.202	Vertical	Pass
		1754.3	15.31	3.29	8.90	20.92	123.595	Vertical	Pass
3.0MHz Band QPSK	15/0	1711.5	14.97	3.13	8.90	20.74	118.577	Vertical	Pass
		1732.5	15.88	3.27	8.90	21.51	141.579	Vertical	Pass
		1753.5	15.70	3.30	8.90	21.3	134.896	Vertical	Pass
5.0MHz Band QPSK	25/0	1712.5	14.42	3.13	8.90	20.19	104.472	Vertical	Pass
		1732.5	14.93	3.27	8.90	20.56	113.763	Vertical	Pass
		1752.5	13.44	3.30	8.90	19.04	80.168	Vertical	Pass
10.0MHz Band QPSK	50/0	1715	12.33	3.15	8.90	18.08	64.269	Vertical	Pass
		1732.5	15.55	3.31	8.90	21.14	130.017	Vertical	Pass
		1750	14.38	3.33	8.90	19.95	98.855	Vertical	Pass
15.0MHz Band QPSK	75/0	1717.5	15.41	3.15	8.90	21.16	130.617	Vertical	Pass
		1732.5	15.63	3.31	8.90	21.22	132.434	Vertical	Pass
		1747.5	14.07	3.33	8.90	19.64	92.045	Vertical	Pass
20.0MHz Band QPSK	100/0	1720	16.06	3.17	8.90	21.79	151.008	Vertical	Pass
		1732.5	16.31	3.32	8.90	21.89	154.525	Vertical	Pass
		1745	13.84	3.36	8.90	19.38	86.696	Vertical	Pass

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dBi)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	6/0	1710.7	14.37	3.12	8.90	20.15	103.514	Horizontal	Pass
		1732.5	14.87	3.27	8.90	20.5	112.202	Horizontal	Pass
		1754.3	14.92	3.29	8.90	20.53	112.980	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	1711.5	13.51	3.13	8.90	19.28	84.723	Horizontal	Pass
		1732.5	14.81	3.27	8.90	20.44	110.662	Horizontal	Pass
		1753.5	15.79	3.30	8.90	21.39	137.721	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	1712.5	13.54	3.13	8.90	19.31	85.310	Horizontal	Pass
		1732.5	12.80	3.27	8.90	18.43	69.663	Horizontal	Pass
		1752.5	14.20	3.30	8.90	19.8	95.499	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	1715	15.10	3.15	8.90	20.85	121.619	Horizontal	Pass
		1732.5	13.21	3.31	8.90	18.8	75.858	Horizontal	Pass
		1750	12.73	3.33	8.90	18.3	67.608	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	1717.5	13.74	3.15	8.90	19.49	88.920	Horizontal	Pass
		1732.5	15.30	3.31	8.90	20.89	122.744	Horizontal	Pass
		1747.5	14.18	3.33	8.90	19.75	94.406	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	1720	13.53	3.17	8.90	19.26	84.333	Horizontal	Pass
		1732.5	14.82	3.32	8.90	20.4	109.648	Horizontal	Pass
		1745	15.39	3.36	8.90	20.93	123.880	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	1710.7	15.71	3.12	8.90	21.49	140.929	Vertical	Pass
		1732.5	14.23	3.27	8.90	19.86	96.828	Vertical	Pass
		1754.3	14.52	3.29	8.90	20.13	103.039	Vertical	Pass
3.0MHz Band 16 QAM	15/0	1711.5	14.21	3.13	8.90	19.98	99.541	Vertical	Pass
		1732.5	14.11	3.27	8.90	19.74	94.189	Vertical	Pass
		1753.5	15.01	3.30	8.90	20.61	115.080	Vertical	Pass
5.0MHz Band 16 QAM	25/0	1712.5	15.90	3.13	8.90	21.67	146.893	Vertical	Pass
		1732.5	15.06	3.27	8.90	20.69	117.220	Vertical	Pass
		1752.5	13.48	3.30	8.90	19.08	80.910	Vertical	Pass
10.0MHz Band 16 QAM	50/0	1715	13.35	3.15	8.90	19.1	81.283	Vertical	Pass
		1732.5	14.26	3.31	8.90	19.85	96.605	Vertical	Pass
		1750	16.07	3.33	8.90	21.64	145.881	Vertical	Pass
15.0MHz Band 16 QAM	75/0	1717.5	13.67	3.15	8.90	19.42	87.498	Vertical	Pass
		1732.5	13.63	3.31	8.90	19.22	83.560	Vertical	Pass
		1747.5	14.78	3.33	8.90	20.35	108.393	Vertical	Pass
20.0MHz Band 16 QAM	100/0	1720	14.91	3.17	8.90	20.64	115.878	Vertical	Pass
		1732.5	16.18	3.32	8.90	21.76	149.968	Vertical	Pass
		1745	14.78	3.36	8.90	20.32	107.647	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.4 LTE BAND 5

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	824.7	20.34	2.01	5.30	2.15	21.48	140.605	Horizontal	Pass
		836.5	21.15	2.01	5.30	2.15	22.29	169.434	Horizontal	Pass
		848.3	19.99	2.02	5.70	2.15	21.52	141.906	Horizontal	Pass
3.0MHz Band QPSK	15/0	825.5	21.45	2.01	5.30	2.15	22.59	181.552	Horizontal	Pass
		836.5	21.41	2.01	5.30	2.15	22.55	179.887	Horizontal	Pass
		847.5	20.57	2.02	5.70	2.15	22.1	162.181	Horizontal	Pass
5.0MHz Band QPSK	25/0	826.5	20.10	2.01	5.30	2.15	21.24	133.045	Horizontal	Pass
		836.5	21.17	2.01	5.30	2.15	22.31	170.216	Horizontal	Pass
		846.5	21.21	2.02	5.70	2.15	22.74	187.932	Horizontal	Pass
10.0MHz Band QPSK	50/0	829	20.32	2.01	5.30	2.15	21.46	139.959	Horizontal	Pass
		836.5	21.47	2.01	5.30	2.15	22.61	182.390	Horizontal	Pass
		844	19.92	2.02	5.70	2.15	21.45	139.637	Horizontal	Pass
1.4MHz Band QPSK	6/0	824.7	22.20	2.01	5.30	2.15	23.34	215.774	Vertical	Pass
		836.5	21.91	2.01	5.30	2.15	23.05	201.837	Vertical	Pass
		848.3	20.36	2.02	5.70	2.15	21.89	154.525	Vertical	Pass
3.0MHz Band QPSK	15/0	825.5	21.52	2.01	5.30	2.15	22.66	184.502	Vertical	Pass
		836.5	21.10	2.01	5.30	2.15	22.24	167.494	Vertical	Pass
		847.5	19.27	2.02	5.70	2.15	20.8	120.226	Vertical	Pass
5.0MHz Band QPSK	25/0	826.5	19.30	2.01	5.30	2.15	20.44	110.662	Vertical	Pass
		836.5	21.41	2.01	5.30	2.15	22.55	179.887	Vertical	Pass
		846.5	20.25	2.02	5.70	2.15	21.78	150.661	Vertical	Pass
10.0MHz Band QPSK	50/0	829	19.21	2.01	5.30	2.15	20.35	108.393	Vertical	Pass
		836.5	22.69	2.01	5.30	2.15	23.83	241.546	Vertical	Pass
		844	19.94	2.02	5.70	2.15	21.47	140.281	Vertical	Pass

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	6/0	824.7	20.18	2.01	5.30	2.15	21.32	135.519	Horizontal	Pass
		836.5	20.77	2.01	5.30	2.15	21.91	155.239	Horizontal	Pass
		848.3	19.65	2.02	5.70	2.15	21.18	131.220	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	825.5	20.18	2.01	5.30	2.15	21.32	135.519	Horizontal	Pass
		836.5	19.18	2.01	5.30	2.15	20.32	107.647	Horizontal	Pass
		847.5	19.82	2.02	5.70	2.15	21.35	136.458	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	826.5	20.22	2.01	5.30	2.15	21.36	136.773	Horizontal	Pass
		836.5	19.09	2.01	5.30	2.15	20.23	105.439	Horizontal	Pass
		846.5	19.75	2.02	5.70	2.15	21.28	134.276	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	829	19.22	2.01	5.30	2.15	20.36	108.643	Horizontal	Pass
		836.5	19.21	2.01	5.30	2.15	20.35	108.393	Horizontal	Pass
		844	19.34	2.02	5.70	2.15	20.87	122.180	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	824.7	20.95	2.01	5.30	2.15	22.09	161.808	Vertical	Pass
		836.5	20.50	2.01	5.30	2.15	21.64	145.881	Vertical	Pass
		848.3	20.10	2.02	5.70	2.15	21.63	145.546	Vertical	Pass
3.0MHz Band 16 QAM	15/0	825.5	18.48	2.01	5.30	2.15	19.62	91.622	Vertical	Pass
		836.5	20.03	2.01	5.30	2.15	21.17	130.918	Vertical	Pass
		847.5	18.82	2.02	5.70	2.15	20.35	108.393	Vertical	Pass
5.0MHz Band 16 QAM	25/0	826.5	19.68	2.01	5.30	2.15	20.82	120.781	Vertical	Pass
		836.5	17.61	2.01	5.30	2.15	18.75	74.989	Vertical	Pass
		846.5	19.76	2.02	5.70	2.15	21.29	134.586	Vertical	Pass
10.0MHz Band 16 QAM	50/0	829	18.92	2.01	5.30	2.15	20.06	101.391	Vertical	Pass
		836.5	21.55	2.01	5.30	2.15	22.69	185.780	Vertical	Pass
		844	21.12	2.02	5.70	2.15	22.65	184.077	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

ERP(dBm)=EIRP-2.15

8.5 LTE BAND 7

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dBi)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
						Average (dBm)			
5.0MHz Band QPSK	25/0	2502.5	17.74	4.54	9.00	22.2	165.959	Horizontal	Pass
		2535	17.71	4.69	9.00	22.02	159.221	Horizontal	Pass
		2567.5	15.14	4.71	9.00	19.43	87.700	Horizontal	Pass
10.0MHz Band QPSK	50/0	2505	15.37	4.55	9.00	19.82	95.940	Horizontal	Pass
		2535	17.52	4.69	9.00	21.83	152.405	Horizontal	Pass
		2565	17.73	4.72	9.00	22.01	158.855	Horizontal	Pass
15.0MHz Band QPSK	75/0	2507.5	18.61	4.55	9.00	23.06	202.302	Horizontal	Pass
		2535	17.93	4.69	9.00	22.24	167.494	Horizontal	Pass
		2562.5	17.52	4.72	9.00	21.8	151.356	Horizontal	Pass
20.0MHz Band QPSK	100/0	2510	15.62	4.57	9.00	20.05	101.158	Horizontal	Pass
		2535	18.20	4.73	9.00	22.47	176.604	Horizontal	Pass
		2560	16.96	4.75	9.00	21.21	132.130	Horizontal	Pass
5.0MHz Band QPSK	25/0	2502.5	16.85	4.54	9.00	21.31	135.207	Vertical	Pass
		2535	18.72	4.69	9.00	23.03	200.909	Vertical	Pass
		2567.5	18.44	4.71	9.00	22.73	187.499	Vertical	Pass
10.0MHz Band QPSK	50/0	2505	16.21	4.55	9.00	20.66	116.413	Vertical	Pass
		2535	18.88	4.69	9.00	23.19	208.449	Vertical	Pass
		2565	18.11	4.72	9.00	22.39	173.380	Vertical	Pass
15.0MHz Band QPSK	75/0	2507.5	17.61	4.55	9.00	22.06	160.694	Vertical	Pass
		2535	19.32	4.69	9.00	23.63	230.675	Vertical	Pass
		2562.5	17.54	4.72	9.00	21.82	152.055	Vertical	Pass
20.0MHz Band QPSK	100/0	2510	19.30	4.57	9.00	23.73	236.048	Vertical	Pass
		2535	18.82	4.73	9.00	23.09	203.704	Vertical	Pass
		2560	19.37	4.75	9.00	23.62	230.144	Vertical	Pass

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dBi)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	25/0	2502.5	16.26	4.54	9.00	20.72	118.032	Horizontal	Pass
		2535	17.23	4.69	9.00	21.54	142.561	Horizontal	Pass
		2567.5	17.13	4.71	9.00	21.42	138.676	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	2505	17.04	4.55	9.00	21.49	140.929	Horizontal	Pass
		2535	17.18	4.69	9.00	21.49	140.929	Horizontal	Pass
		2565	18.15	4.72	9.00	22.43	174.985	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	2507.5	17.87	4.55	9.00	22.32	170.608	Horizontal	Pass
		2535	18.27	4.69	9.00	22.58	181.134	Horizontal	Pass
		2562.5	16.57	4.72	9.00	20.85	121.619	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	2510	17.26	4.57	9.00	21.69	147.571	Horizontal	Pass
		2535	15.91	4.73	9.00	20.18	104.232	Horizontal	Pass
		2560	17.29	4.75	9.00	21.54	142.561	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	2502.5	17.72	4.54	9.00	22.18	165.196	Vertical	Pass
		2535	18.59	4.69	9.00	22.9	194.984	Vertical	Pass
		2567.5	18.37	4.71	9.00	22.66	184.502	Vertical	Pass
10.0MHz Band 16 QAM	50/0	2505	17.09	4.55	9.00	21.54	142.561	Vertical	Pass
		2535	19.00	4.69	9.00	23.31	214.289	Vertical	Pass
		2565	16.79	4.72	9.00	21.07	127.938	Vertical	Pass
15.0MHz Band 16 QAM	75/0	2507.5	17.92	4.55	9.00	22.37	172.584	Vertical	Pass
		2535	17.21	4.69	9.00	21.52	141.906	Vertical	Pass
		2562.5	15.88	4.72	9.00	20.16	103.753	Vertical	Pass
20.0MHz Band 16 QAM	100/0	2510	19.28	4.57	9.00	23.71	234.963	Vertical	Pass
		2535	17.42	4.73	9.00	21.69	147.571	Vertical	Pass
		2560	18.64	4.75	9.00	22.89	194.536	Vertical	Pass

Note:

SG Level= Signal generator output

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

8.6 LTE BAND 12

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	699.7	17.30	1.91	5.60	2.15	18.84	76.560	Horizontal	Pass
		707.5	19.13	1.91	5.70	2.15	20.77	119.399	Horizontal	Pass
		715.3	15.78	1.93	5.80	2.15	17.5	56.234	Horizontal	Pass
3.0MHz Band QPSK	15/0	700.5	16.96	1.91	5.60	2.15	18.5	70.795	Horizontal	Pass
		707.5	17.09	1.91	5.70	2.15	18.73	74.645	Horizontal	Pass
		714.5	17.78	1.93	5.80	2.15	19.5	89.125	Horizontal	Pass
5.0MHz Band QPSK	25/0	701.5	17.54	1.91	5.60	2.15	19.08	80.910	Horizontal	Pass
		707.5	17.90	1.91	5.70	2.15	19.54	89.950	Horizontal	Pass
		713.5	17.60	1.92	5.80	2.15	19.33	85.704	Horizontal	Pass
10.0MHz Band QPSK	50/0	704	17.74	1.91	5.60	2.15	19.28	84.723	Horizontal	Pass
		707.5	16.52	1.91	5.70	2.15	18.16	65.464	Horizontal	Pass
		711	15.57	1.92	5.80	2.15	17.3	53.703	Horizontal	Pass
1.4MHz Band QPSK	6/0	699.7	16.92	1.91	5.60	2.15	18.46	70.146	Vertical	Pass
		707.5	16.97	1.91	5.70	2.15	18.61	72.611	Vertical	Pass
		715.3	16.29	1.93	5.80	2.15	18.01	63.241	Vertical	Pass
3.0MHz Band QPSK	15/0	700.5	17.75	1.91	5.60	2.15	19.29	84.918	Vertical	Pass
		707.5	15.93	1.91	5.70	2.15	17.57	57.148	Vertical	Pass
		714.5	18.77	1.93	5.80	2.15	20.49	111.944	Vertical	Pass
5.0MHz Band QPSK	25/0	701.5	17.09	1.91	5.60	2.15	18.63	72.946	Vertical	Pass
		707.5	16.80	1.91	5.70	2.15	18.44	69.823	Vertical	Pass
		713.5	16.83	1.92	5.80	2.15	18.56	71.779	Vertical	Pass
10.0MHz Band QPSK	50/0	704	17.47	1.91	5.60	2.15	19.01	79.616	Vertical	Pass
		707.5	19.70	1.91	5.70	2.15	21.34	136.144	Vertical	Pass
		711	18.62	1.92	5.80	2.15	20.35	108.393	Vertical	Pass

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	6/0	699.7	20.15	1.91	5.60	2.15	21.69	147.571	Horizontal	Pass
		707.5	20.46	1.91	5.70	2.15	22.1	162.181	Horizontal	Pass
		715.3	20.22	1.93	5.80	2.15	21.94	156.315	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	700.5	21.14	1.91	5.60	2.15	22.68	185.353	Horizontal	Pass
		707.5	18.80	1.91	5.70	2.15	20.44	110.662	Horizontal	Pass
		714.5	19.32	1.93	5.80	2.15	21.04	127.057	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	701.5	19.23	1.91	5.60	2.15	20.77	119.399	Horizontal	Pass
		707.5	21.41	1.91	5.70	2.15	23.05	201.837	Horizontal	Pass
		713.5	21.10	1.92	5.80	2.15	22.83	191.867	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	704	20.63	1.91	5.60	2.15	22.17	164.816	Horizontal	Pass
		707.5	19.24	1.91	5.70	2.15	20.88	122.462	Horizontal	Pass
		711	20.86	1.92	5.80	2.15	22.59	181.552	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	699.7	18.58	1.91	5.60	2.15	20.12	102.802	Vertical	Pass
		707.5	20.83	1.91	5.70	2.15	22.47	176.604	Vertical	Pass
		715.3	20.28	1.93	5.80	2.15	22	158.489	Vertical	Pass
3.0MHz Band 16 QAM	15/0	700.5	21.46	1.91	5.60	2.15	23	199.526	Vertical	Pass
		707.5	20.58	1.91	5.70	2.15	22.22	166.725	Vertical	Pass
		714.5	21.54	1.93	5.80	2.15	23.26	211.836	Vertical	Pass
5.0MHz Band 16 QAM	25/0	701.5	20.24	1.91	5.60	2.15	21.78	150.661	Vertical	Pass
		707.5	21.38	1.91	5.70	2.15	23.02	200.447	Vertical	Pass
		713.5	19.30	1.92	5.80	2.15	21.03	126.765	Vertical	Pass
10.0MHz Band 16 QAM	50/0	704	20.94	1.91	5.60	2.15	22.48	177.011	Vertical	Pass
		707.5	21.73	1.91	5.70	2.15	23.37	217.270	Vertical	Pass
		711	20.50	1.92	5.80	2.15	22.23	167.109	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

ERP(dBm)=EIRP-2.15

8.7 LTE BAND 17

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dBi)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	25/0	706.5	15.96	1.91	5.60	2.15	17.5	56.234	Vertical	Pass
		710	17.55	1.91	5.70	2.15	19.19	82.985	Vertical	Pass
		713.5	18.19	1.92	5.80	2.15	19.92	98.175	Vertical	Pass
10.0MHz Band QPSK	50/0	709	15.65	1.91	5.60	2.15	17.19	52.360	Vertical	Pass
		710	17.34	1.91	5.70	2.15	18.98	79.068	Vertical	Pass
		711	15.01	1.92	5.80	2.15	16.74	47.206	Vertical	Pass
5.0MHz Band QPSK	25/0	706.5	16.00	1.91	5.60	2.15	17.54	56.754	Horizontal	Pass
		710	15.43	1.91	5.70	2.15	17.07	50.933	Horizontal	Pass
		713.5	16.53	1.92	5.80	2.15	18.26	66.988	Horizontal	Pass
10.0MHz Band QPSK	50/0	709	17.86	1.91	5.60	2.15	19.4	87.096	Horizontal	Pass
		710	18.74	1.91	5.70	2.15	20.38	109.144	Horizontal	Pass
		711	17.66	1.92	5.80	2.15	19.39	86.896	Horizontal	Pass

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dBi)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	25/0	706.5	16.81	1.91	5.6	2.15	21.22	132.434	Vertical	Pass
		710	16.39	1.91	5.7	2.15	20.62	115.345	Vertical	Pass
		713.5	17.43	1.92	5.8	2.15	21.23	132.739	Vertical	Pass
10.0MHz Band 16 QAM	50/0	709	15.91	1.91	5.6	2.15	20.9	123.027	Vertical	Pass
		710	15.84	1.91	5.7	2.15	21.57	143.549	Vertical	Pass
		711	15.59	1.92	5.8	2.15	21.44	139.316	Vertical	Pass
5.0MHz Band 16 QAM	25/0	706.5	17.52	1.91	5.6	2.15	21.22	132.434	Horizontal	Pass
		710	17.46	1.91	5.7	2.15	21.32	135.519	Horizontal	Pass
		713.5	16.25	1.92	5.8	2.15	20.95	124.451	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	709	17.30	1.91	5.6	2.15	21.34	136.144	Horizontal	Pass
		710	17.57	1.91	5.7	2.15	21.84	152.757	Horizontal	Pass
		711	16.65	1.92	5.8	2.15	22.04	159.956	Horizontal	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

8.6 LTE BAND 25

Radiated Power (EIRP) for Band 25									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	1850.7	15.92	3.12	8.90	21.70	147.911	Horizontal	Pass
		1882.5	15.99	3.27	8.90	21.62	145.211	Horizontal	Pass
		1914.3	15.37	3.29	8.90	20.98	125.314	Horizontal	Pass
3.0MHz Band QPSK	15/0	1851.5	16.27	3.13	8.90	22.04	159.956	Horizontal	Pass
		1882.5	16.50	3.27	8.90	22.13	163.305	Horizontal	Pass
		1913.5	15.32	3.30	8.90	20.92	123.595	Horizontal	Pass
5.0MHz Band QPSK	25/0	1852.5	15.01	3.13	8.90	20.78	119.674	Horizontal	Pass
		1882.5	14.90	3.27	8.90	20.53	112.980	Horizontal	Pass
		1912.5	15.46	3.30	8.90	21.06	127.644	Horizontal	Pass
10.0MHz Band QPSK	50/0	1855	15.61	3.15	8.90	21.36	136.773	Horizontal	Pass
		1882.5	16.78	3.31	8.90	22.37	172.584	Horizontal	Pass
		1910	15.47	3.33	8.90	21.04	127.057	Horizontal	Pass
15.0MHz Band QPSK	75/0	1857.5	16.15	3.15	8.90	21.90	154.882	Horizontal	Pass
		1882.5	15.82	3.31	8.90	21.41	138.357	Horizontal	Pass
		1907.5	16.46	3.33	8.90	22.03	159.588	Horizontal	Pass
20.0MHz Band QPSK	100/0	1860	14.19	3.17	8.90	19.92	98.175	Horizontal	Pass
		1882.5	16.71	3.32	8.90	22.29	169.434	Horizontal	Pass
		1905	15.44	3.36	8.90	20.98	125.314	Horizontal	Pass
1.4MHz Band QPSK	6/0	1850.7	16.92	3.12	8.90	22.70	186.209	Vertical	Pass
		1882.5	16.11	3.27	8.90	21.74	149.279	Vertical	Pass
		1914.3	14.62	3.29	8.90	20.23	105.439	Vertical	Pass
3.0MHz Band QPSK	15/0	1851.5	16.38	3.13	8.90	22.15	164.059	Vertical	Pass
		1882.5	15.89	3.27	8.90	21.52	141.906	Vertical	Pass
		1913.5	16.51	3.30	8.90	22.11	162.555	Vertical	Pass
5.0MHz Band QPSK	25/0	1852.5	16.51	3.13	8.90	22.28	169.044	Vertical	Pass
		1882.5	15.34	3.27	8.90	20.97	125.026	Vertical	Pass
		1912.5	16.00	3.30	8.90	21.60	144.544	Vertical	Pass
10.0MHz Band QPSK	50/0	1855	14.78	3.15	8.90	20.53	112.980	Vertical	Pass
		1882.5	16.53	3.31	8.90	22.12	162.930	Vertical	Pass
		1910	15.83	3.33	8.90	21.40	138.038	Vertical	Pass
15.0MHz Band QPSK	75/0	1857.5	15.19	3.15	8.90	20.94	124.165	Vertical	Pass
		1882.5	15.84	3.31	8.90	21.43	138.995	Vertical	Pass
		1907.5	15.19	3.33	8.90	20.76	119.124	Vertical	Pass
20.0MHz Band QPSK	100/0	1860	14.03	3.17	8.90	19.76	94.624	Vertical	Pass
		1882.5	17.18	3.32	8.90	22.76	188.799	Vertical	Pass
		1905	17.09	3.36	8.90	22.63	183.231	Vertical	Pass

Radiated Power (EIRP) for Band 25									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	6/0	1850.7	16.22	3.12	8.90	22.00	158.489	Horizontal	Pass
		1882.5	15.94	3.27	8.90	21.57	143.549	Horizontal	Pass
		1914.3	15.61	3.29	8.90	21.22	132.434	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	1851.5	16.20	3.13	8.90	21.97	157.398	Horizontal	Pass
		1882.5	15.75	3.27	8.90	21.38	137.404	Horizontal	Pass
		1913.5	16.78	3.30	8.90	22.38	172.982	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	1852.5	16.51	3.13	8.90	22.28	169.044	Horizontal	Pass
		1882.5	16.27	3.27	8.90	21.90	154.882	Horizontal	Pass
		1912.5	15.74	3.30	8.90	21.34	136.144	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	1855	16.07	3.15	8.90	21.82	152.055	Horizontal	Pass
		1882.5	16.12	3.31	8.90	21.71	148.252	Horizontal	Pass
		1910	15.82	3.33	8.90	21.39	137.721	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	1857.5	16.06	3.15	8.90	21.81	151.705	Horizontal	Pass
		1882.5	15.41	3.31	8.90	21.00	125.893	Horizontal	Pass
		1907.5	16.24	3.33	8.90	21.81	151.705	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	1860	16.42	3.17	8.90	22.15	164.059	Horizontal	Pass
		1882.5	16.43	3.32	8.90	22.01	158.855	Horizontal	Pass
		1905	15.71	3.36	8.90	21.25	133.352	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	1850.7	16.35	3.12	8.90	22.13	163.305	Vertical	Pass
		1882.5	16.19	3.27	8.90	21.82	152.055	Vertical	Pass
		1914.3	16.28	3.29	8.90	21.89	154.525	Vertical	Pass
3.0MHz Band 16 QAM	15/0	1851.5	15.63	3.13	8.90	21.40	138.038	Vertical	Pass
		1882.5	16.31	3.27	8.90	21.94	156.315	Vertical	Pass
		1913.5	16.37	3.30	8.90	21.97	157.398	Vertical	Pass
5.0MHz Band 16 QAM	25/0	1852.5	16.47	3.13	8.90	22.24	167.494	Vertical	Pass
		1882.5	15.69	3.27	8.90	21.32	135.519	Vertical	Pass
		1912.5	16.46	3.30	8.90	22.06	160.694	Vertical	Pass
10.0MHz Band 16 QAM	50/0	1855	15.89	3.15	8.90	21.64	145.881	Vertical	Pass
		1882.5	16.97	3.31	8.90	22.56	180.302	Vertical	Pass
		1910	16.68	3.33	8.90	22.25	167.880	Vertical	Pass
15.0MHz Band 16 QAM	75/0	1857.5	16.03	3.15	8.90	21.78	150.661	Vertical	Pass
		1882.5	17.08	3.31	8.90	22.67	184.927	Vertical	Pass
		1907.5	16.13	3.33	8.90	21.70	147.911	Vertical	Pass
20.0MHz Band 16 QAM	100/0	1860	17.12	3.17	8.90	22.85	192.752	Vertical	Pass
		1882.5	16.24	3.32	8.90	21.82	152.055	Vertical	Pass
		1905	15.99	3.36	8.90	21.53	142.233	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.8 LTE BAND 26 A

Radiated Power (ERP) for Band 26(814-824)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz BW QPSK	6/0	814.7	21.13	3.76	5.60	2.15	20.82	120.781	Horizontal	Pass
		819	21.28	3.91	5.70	2.15	20.92	123.595	Horizontal	Pass
		823.3	20.36	3.93	5.80	2.15	20.08	101.859	Horizontal	Pass
3.0MHz BW QPSK	15/0	815.5	21.06	3.77	5.60	2.15	20.74	118.577	Horizontal	Pass
		819	21.50	3.91	5.70	2.15	21.14	130.017	Horizontal	Pass
		822.5	20.41	3.94	5.80	2.15	20.12	102.802	Horizontal	Pass
5.0MHz BW QPSK	25/0	816.5	20.08	3.77	5.60	2.15	19.76	94.624	Horizontal	Pass
		819	20.40	3.91	5.70	2.15	20.04	100.925	Horizontal	Pass
		821.5	21.11	3.94	5.80	2.15	20.82	120.781	Horizontal	Pass
10.0MHz BW QPSK	50/0	819	21.13	3.91	5.70	2.15	20.77	119.399	Horizontal	Pass
1.4MHz BW QPSK	6/0	814.7	20.13	3.79	5.60	2.15	19.79	95.280	Vertical	Pass
		819	21.56	3.95	5.70	2.15	21.16	130.617	Vertical	Pass
		823.3	20.51	3.97	5.80	2.15	20.19	104.472	Vertical	Pass
3.0MHz BW QPSK	15/0	815.5	20.35	3.77	5.60	2.15	20.03	100.693	Vertical	Pass
		819	20.91	3.91	5.70	2.15	20.55	113.501	Vertical	Pass
		822.5	20.27	3.94	5.80	2.15	19.98	99.541	Vertical	Pass
5.0MHz BW QPSK	25/0	816.5	21.18	3.77	5.60	2.15	20.86	121.899	Vertical	Pass
		819	21.54	3.91	5.70	2.15	21.18	131.220	Vertical	Pass
		821.5	21.17	3.94	5.80	2.15	20.88	122.462	Vertical	Pass
10.0MHz BW QPSK	50/0	819	21.61	3.91	5.70	2.15	21.25	133.352	Vertical	Pass

Radiated Power (ERP) for Band 26(814-824)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz BW 16 QAM	6/0	814.7	22.87	3.76	5.60	2.15	22.56	180.302	Horizontal	Pass
		819	22.44	3.91	5.70	2.15	22.08	161.436	Horizontal	Pass
		823.3	23.11	3.93	5.80	2.15	22.83	191.867	Horizontal	Pass
3.0MHz BW 16 QAM	15/0	815.5	22.63	3.77	5.60	2.15	22.31	170.216	Horizontal	Pass
		819	22.33	3.91	5.70	2.15	21.97	157.398	Horizontal	Pass
		822.5	22.27	3.94	5.80	2.15	21.98	157.761	Horizontal	Pass
5.0MHz BW 16 QAM	25/0	816.5	22.11	3.77	5.60	2.15	21.79	151.008	Horizontal	Pass
		819	22.17	3.91	5.70	2.15	21.81	151.705	Horizontal	Pass
		821.5	23.31	3.94	5.80	2.15	23.02	200.447	Horizontal	Pass
10.0MHz BW 16 QAM	50/0	819	22.01	3.91	5.70	2.15	21.65	146.218	Horizontal	Pass
1.4MHz BW 16 QAM	6/0	814.7	22.57	3.79	5.60	2.15	22.23	167.109	Vertical	Pass
		819	23.67	3.95	5.70	2.15	23.27	212.324	Vertical	Pass
		823.3	21.54	3.97	5.80	2.15	21.22	132.434	Vertical	Pass
3.0MHz BW 16 QAM	15/0	815.5	23.47	3.77	5.60	2.15	23.15	206.538	Vertical	Pass
		819	22.15	3.91	5.70	2.15	21.79	151.008	Vertical	Pass
		822.5	21.93	3.94	5.80	2.15	21.64	145.881	Vertical	Pass
5.0MHz BW 16 QAM	25/0	816.5	22.54	3.77	5.60	2.15	22.22	166.725	Vertical	Pass
		819	21.82	3.91	5.70	2.15	21.46	139.959	Vertical	Pass
		821.5	21.66	3.94	5.80	2.15	21.37	137.088	Vertical	Pass
10.0MHz BW 16 QAM	50/0	819	23.67	3.91	5.70	2.15	23.31	214.289	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

ERP(dBm)=EIRP-2.15

8.9 LTE BAND 26 B

Radiated Power (ERP) for Band 26(824-849)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	824.7	21.36	2.01	5.30	2.15	22.5	177.828	Horizontal	Pass
		836.5	20.07	2.01	5.30	2.15	21.21	132.130	Horizontal	Pass
		848.3	20.51	2.02	5.70	2.15	22.04	159.956	Horizontal	Pass
3.0MHz Band QPSK	15/0	825.5	19.79	2.01	5.30	2.15	20.93	123.880	Horizontal	Pass
		836.5	20.60	2.01	5.30	2.15	21.74	149.279	Horizontal	Pass
		847.5	19.61	2.02	5.70	2.15	21.14	130.017	Horizontal	Pass
5.0MHz Band QPSK	25/0	826.5	19.20	2.01	5.30	2.15	20.34	108.143	Horizontal	Pass
		836.5	19.13	2.01	5.30	2.15	20.27	106.414	Horizontal	Pass
		846.5	20.33	2.02	5.70	2.15	21.86	153.462	Horizontal	Pass
10.0MHz Band QPSK	50/0	829	19.07	2.01	5.30	2.15	20.21	104.954	Horizontal	Pass
		836.5	19.24	2.01	5.30	2.15	20.38	109.144	Horizontal	Pass
		844	18.98	2.02	5.70	2.15	20.51	112.460	Horizontal	Pass
15.0MHz Band QPSK	75/0	831.5	20.93	2.01	5.30	2.15	22.07	161.065	Horizontal	Pass
		836.5	20.32	2.01	5.30	2.15	21.46	139.959	Horizontal	Pass
		841.5	19.93	2.02	5.70	2.15	21.46	139.959	Horizontal	Pass
1.4MHz Band QPSK	6/0	824.7	20.86	2.01	5.30	2.15	22	158.489	Vertical	Pass
		836.5	20.54	2.01	5.30	2.15	21.68	147.231	Vertical	Pass
		848.3	20.69	2.02	5.70	2.15	22.22	166.725	Vertical	Pass
3.0MHz Band QPSK	15/0	825.5	19.49	2.01	5.30	2.15	20.63	115.611	Vertical	Pass
		836.5	20.45	2.01	5.30	2.15	21.59	144.212	Vertical	Pass
		847.5	19.96	2.02	5.70	2.15	21.49	140.929	Vertical	Pass
5.0MHz Band QPSK	25/0	826.5	20.01	2.01	5.30	2.15	21.15	130.317	Vertical	Pass
		836.5	21.16	2.01	5.30	2.15	22.3	169.824	Vertical	Pass
		846.5	19.85	2.02	5.70	2.15	21.38	137.404	Vertical	Pass
10.0MHz Band QPSK	50/0	829	20.52	2.01	5.30	2.15	21.66	146.555	Vertical	Pass
		836.5	21.99	2.01	5.30	2.15	23.13	205.589	Vertical	Pass
		844	21.00	2.02	5.70	2.15	22.53	179.061	Vertical	Pass
15.0MHz Band QPSK	75/0	831.5	20.55	2.01	5.30	2.15	21.69	147.571	Vertical	Pass
		836.5	22.01	2.01	5.30	2.15	23.15	206.538	Vertical	Pass
		841.5	19.94	2.02	5.70	2.15	21.47	140.281	Vertical	Pass

Radiated Power (ERP) for Band 26(824-849)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	6/0	824.7	20.86	2.01	5.30	2.15	22	158.489	Horizontal	Pass
		836.5	19.65	2.01	5.30	2.15	20.79	119.950	Horizontal	Pass
		848.3	18.96	2.02	5.70	2.15	20.49	111.944	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	825.5	18.51	2.01	5.30	2.15	19.65	92.257	Horizontal	Pass
		836.5	20.24	2.01	5.30	2.15	21.38	137.404	Horizontal	Pass
		847.5	19.97	2.02	5.70	2.15	21.5	141.254	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	826.5	19.18	2.01	5.30	2.15	20.32	107.647	Horizontal	Pass
		836.5	19.29	2.01	5.30	2.15	20.43	110.408	Horizontal	Pass
		846.5	18.51	2.02	5.70	2.15	20.04	100.925	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	829	18.82	2.01	5.30	2.15	19.96	99.083	Horizontal	Pass
		836.5	20.81	2.01	5.30	2.15	21.95	156.675	Horizontal	Pass
		844	19.55	2.02	5.70	2.15	21.08	128.233	Horizontal	Pass
15.0MHz Band QPSK	75/0	831.5	19.51	2.01	5.30	2.15	20.65	116.145	Horizontal	Pass
		836.5	19.43	2.01	5.30	2.15	20.57	114.025	Horizontal	Pass
		841.5	19.68	2.02	5.70	2.15	21.21	132.130	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	824.7	19.58	2.01	5.30	2.15	20.72	118.032	Vertical	Pass
		836.5	20.43	2.01	5.30	2.15	21.57	143.549	Vertical	Pass
		848.3	19.96	2.02	5.70	2.15	21.49	140.929	Vertical	Pass
3.0MHz Band 16 QAM	15/0	825.5	18.67	2.01	5.30	2.15	19.81	95.719	Vertical	Pass
		836.5	18.84	2.01	5.30	2.15	19.98	99.541	Vertical	Pass
		847.5	19.24	2.02	5.70	2.15	20.77	119.399	Vertical	Pass
5.0MHz Band 16 QAM	25/0	826.5	20.08	2.01	5.30	2.15	21.22	132.434	Vertical	Pass
		836.5	19.15	2.01	5.30	2.15	20.29	106.905	Vertical	Pass
		846.5	20.97	2.02	5.70	2.15	22.5	177.828	Vertical	Pass
10.0MHz Band 16 QAM	50/0	829	21.57	2.01	5.30	2.15	22.71	186.638	Vertical	Pass
		836.5	20.80	2.01	5.30	2.15	21.94	156.315	Vertical	Pass
		844	18.95	2.02	5.70	2.15	20.48	111.686	Vertical	Pass
15.0MHz Band QPSK	75/0	831.5	19.96	2.01	5.30	2.15	21.1	128.825	Vertical	Pass
		836.5	20.27	2.01	5.30	2.15	21.41	138.357	Vertical	Pass
		841.5	21.93	2.02	5.70	2.15	23.46	221.820	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

ERP(dBm)=EIRP-2.15

8.10 LTE BAND 66

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	1710.7	15.09	3.12	8.90	20.28	106.660	Horizontal	Pass
		1745	13.86	3.27	8.90	18.78	75.509	Horizontal	Pass
		1779.3	16.28	3.29	8.90	21.8	151.356	Horizontal	Pass
3.0MHz Band QPSK	15/0	1711.5	14.20	3.13	8.90	19.36	86.298	Horizontal	Pass
		1745	14.87	3.27	8.90	20.73	118.304	Horizontal	Pass
		1778.5	15.56	3.30	8.90	19.52	89.536	Horizontal	Pass
5.0MHz Band QPSK	25/0	1712.5	16.05	3.13	8.90	21.14	130.017	Horizontal	Pass
		1745	16.21	3.27	8.90	21.58	143.880	Horizontal	Pass
		1777.5	14.87	3.30	8.90	19.31	85.310	Horizontal	Pass
10.0MHz Band QPSK	50/0	1715	15.19	3.15	8.90	20.88	122.462	Horizontal	Pass
		1745	15.29	3.31	8.90	20.6	114.815	Horizontal	Pass
		1775	16.10	3.33	8.90	20.99	125.603	Horizontal	Pass
15.0MHz Band QPSK	75/0	1717.5	15.36	3.15	8.90	20.74	118.577	Horizontal	Pass
		1745	15.89	3.31	8.90	21.12	129.420	Horizontal	Pass
		1772.5	16.64	3.33	8.90	21.95	156.675	Horizontal	Pass
20.0MHz Band QPSK	100/0	1720	13.97	3.17	8.90	20.1	102.329	Horizontal	Pass
		1745	15.42	3.32	8.90	21.02	126.474	Horizontal	Pass
		1770	15.22	3.36	8.90	21.1	128.825	Horizontal	Pass
1.4MHz Band QPSK	6/0	1710.7	15.71	3.12	8.90	20.3	107.152	Vertical	Pass
		1745	16.21	3.27	8.90	21.77	150.314	Vertical	Pass
		1779.3	15.56	3.29	8.90	21.1	128.825	Vertical	Pass
3.0MHz Band QPSK	15/0	1711.5	16.08	3.13	8.90	21.49	140.929	Vertical	Pass
		1745	16.14	3.27	8.90	21.89	154.525	Vertical	Pass
		1778.5	16.41	3.30	8.90	20.78	119.674	Vertical	Pass
5.0MHz Band QPSK	25/0	1712.5	15.17	3.13	8.90	20.73	118.304	Vertical	Pass
		1745	15.65	3.27	8.90	20.4	109.648	Vertical	Pass
		1777.5	14.24	3.30	8.90	19.41	87.297	Vertical	Pass
10.0MHz Band QPSK	50/0	1715	12.72	3.15	8.90	18.24	66.681	Vertical	Pass
		1745	16.63	3.31	8.90	21.45	139.637	Vertical	Pass
		1775	15.66	3.33	8.90	19.59	90.991	Vertical	Pass
15.0MHz Band QPSK	75/0	1717.5	16.69	3.15	8.90	21.87	153.815	Vertical	Pass
		1745	16.08	3.31	8.90	21.85	153.109	Vertical	Pass
		1772.5	15.30	3.33	8.90	20.85	121.619	Vertical	Pass
20.0MHz Band QPSK	100/0	1720	17.39	3.17	8.90	22.36	172.187	Vertical	Pass
		1745	17.54	3.32	8.90	21.71	148.252	Vertical	Pass
		1770	14.41	3.36	8.90	19.39	86.896	Vertical	Pass

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	6/0	1710.7	15.93	3.12	8.9	21.71	148.252	Horizontal	Pass
		1745	16.48	3.27	8.9	22.11	162.555	Horizontal	Pass
		1779.3	16.55	3.29	8.9	22.16	164.437	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	1711.5	16.08	3.13	8.9	21.85	153.109	Horizontal	Pass
		1745	15.77	3.27	8.9	21.4	138.038	Horizontal	Pass
		1778.5	16.45	3.3	8.9	22.05	160.325	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	1712.5	15.40	3.13	8.9	21.17	130.918	Horizontal	Pass
		1745	13.50	3.27	8.9	19.13	81.846	Horizontal	Pass
		1777.5	15.03	3.3	8.9	20.63	115.611	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	1715	15.93	3.15	8.9	21.68	147.231	Horizontal	Pass
		1745	14.63	3.31	8.9	20.22	105.196	Horizontal	Pass
		1775	14.34	3.33	8.9	19.91	97.949	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	1717.5	13.98	3.15	8.9	19.73	93.972	Horizontal	Pass
		1745	15.51	3.31	8.9	21.1	128.825	Horizontal	Pass
		1772.5	16.10	3.33	8.9	21.67	146.893	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	1720	15.86	3.17	8.9	21.59	144.212	Horizontal	Pass
		1745	15.57	3.32	8.9	21.15	130.317	Horizontal	Pass
		1770	15.38	3.36	8.9	20.92	123.595	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	1710.7	15.36	3.12	8.9	21.14	130.017	Vertical	Pass
		1745	15.92	3.27	8.9	21.55	142.889	Vertical	Pass
		1779.3	15.60	3.29	8.9	21.21	132.130	Vertical	Pass
3.0MHz Band 16 QAM	15/0	1711.5	15.01	3.13	8.9	20.78	119.674	Vertical	Pass
		1745	14.72	3.27	8.9	20.35	108.393	Vertical	Pass
		1778.5	15.96	3.3	8.9	21.56	143.219	Vertical	Pass
5.0MHz Band 16 QAM	25/0	1712.5	16.46	3.13	8.9	22.23	167.109	Vertical	Pass
		1745	16.29	3.27	8.9	21.92	155.597	Vertical	Pass
		1777.5	14.48	3.3	8.9	20.08	101.859	Vertical	Pass
10.0MHz Band 16 QAM	50/0	1715	13.94	3.15	8.9	19.69	93.111	Vertical	Pass
		1745	16.88	3.31	8.9	22.47	176.604	Vertical	Pass
		1775	16.42	3.33	8.9	21.99	158.125	Vertical	Pass
15.0MHz Band 16 QAM	75/0	1717.5	14.85	3.15	8.9	20.6	114.815	Vertical	Pass
		1745	16.04	3.31	8.9	21.63	145.546	Vertical	Pass
		1772.5	15.21	3.33	8.9	20.78	119.674	Vertical	Pass
20.0MHz Band 16 QAM	100/0	1720	16.84	3.17	8.9	22.57	180.717	Vertical	Pass
		1745	16.22	3.32	8.9	21.8	151.356	Vertical	Pass
		1770	16.50	3.36	8.9	22.04	159.956	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

9. SPURIOUS RADIATION EMISSION

RULE PART(S)

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

LIMIT

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

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

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

TEST PROCEDURE

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

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

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

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

- a. for base station and subscriber equipment, other than mobile subscriber equipment, the attenuation shall not be less than $43 + 10 \log_{10}(p)$, 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)

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	-47.14	4.04	33.51	-17.67	-13	-4.67	Horizontal
3701.4	-49.53	4.04	33.51	-20.06	-13	-7.06	Vertical
5552.1	-52.08	5.24	35.84	-21.48	-13	-8.48	Vertical
5552.1	-55.84	5.24	35.84	-25.24	-13	-12.24	Horizontal
Test Results for Mid Channel 1880MHz							
3760	-49.44	4.04	33.56	-19.92	-13	-6.92	Horizontal
3760	-52.42	4.04	33.56	-22.90	-13	-9.90	Vertical
5640	-56.48	5.24	35.91	-25.81	-13	-12.81	Vertical
5640	-54.49	5.24	35.91	-23.82	-13	-10.82	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-51.90	4.04	34.00	-21.94	-13	-8.94	Horizontal
3818.6	-47.73	4.04	34.00	-17.77	-13	-4.77	Vertical
5727.9	-51.15	5.24	36.04	-20.35	-13	-7.35	Vertical
5727.9	-52.42	5.24	36.04	-21.62	-13	-8.62	Horizontal

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

Test Results for Low Channel 1860MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3720	-54.73	4.07	33.54	-25.26	-13	-12.26	Horizontal
3720	-48.55	4.07	33.54	-19.08	-13	-6.08	Vertical
5580	-55.97	5.28	35.86	-25.39	-13	-12.39	Vertical
5580	-57.33	5.28	35.86	-26.75	-13	-13.75	Horizontal
Test Results for Mid Channel 1880MHz							
3760	-50.70	4.04	33.56	-21.18	-13	-8.18	Horizontal
3760	-54.11	4.04	33.56	-24.59	-13	-11.59	Vertical
5640	-54.05	5.24	35.91	-23.38	-13	-10.38	Vertical
5640	-51.43	5.24	35.91	-20.76	-13	-7.76	Horizontal
Test Results for High Channel 1900MHz							
3800	-53.98	4.04	34.00	-24.02	-13	-11.02	Horizontal
3800	-49.29	4.04	34.00	-19.33	-13	-6.33	Vertical
5700	-54.68	5.24	36.04	-23.88	-13	-10.88	Vertical
5700	-55.82	5.24	36.04	-25.02	-13	-12.02	Horizontal

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

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

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

9.2 LTE BAND 4

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

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-52.91	4.02	29.80	-27.13	-13	-14.13	Horizontal
3421.4	-49.37	4.02	29.80	-23.59	-13	-10.59	Vertical
5132.1	-49.13	5.24	35.84	-18.53	-13	-5.53	Vertical
5132.1	-53.20	5.24	35.84	-22.60	-13	-9.60	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465	-53.18	4.03	30.00	-27.21	-13	-14.21	Horizontal
3465	-48.16	4.03	30.00	-22.19	-13	-9.19	Vertical
5197.5	-51.94	5.25	35.86	-21.33	-13	-8.33	Vertical
5197.5	-54.43	5.25	35.86	-23.82	-13	-10.82	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-50.27	4.05	30.01	-24.31	-13	-11.31	Horizontal
3508.6	-49.04	4.05	30.01	-23.08	-13	-10.08	Vertical
5262.9	-50.73	5.26	35.86	-20.13	-13	-7.13	Vertical
5262.9	-56.83	5.26	35.86	-26.23	-13	-13.23	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440	-51.50	4.02	29.80	-25.72	-13	-12.72	Horizontal
3440	-52.12	4.02	29.80	-26.34	-13	-13.34	Vertical
5160	-55.12	5.24	35.84	-24.52	-13	-11.52	Vertical
5160	-57.32	5.24	35.84	-26.72	-13	-13.72	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465	-48.77	4.03	30.00	-22.80	-13	-9.80	Horizontal
3465	-51.19	4.03	30.00	-25.22	-13	-12.22	Vertical
5197.5	-50.55	5.25	35.86	-19.94	-13	-6.94	Vertical
5197.5	-55.01	5.25	35.86	-24.40	-13	-11.40	Horizontal
Test Results for High Channel 1745MHz							
2490	-48.80	2.91	27.68	-24.03	-13	-11.03	Horizontal
3490	-48.69	2.91	27.68	-23.92	-13	-10.92	Vertical
5235	-51.78	5.26	35.86	-21.18	-13	-8.18	Vertical
5235	-50.41	5.26	35.86	-19.81	-13	-6.81	Horizontal

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

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

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

9.3 LTE BAND 5

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

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1649.4	-52.22	2.78	27.50	-27.50	-13	-14.50	Horizontal
1649.4	-54.50	2.78	27.50	-29.78	-13	-16.78	Vertical
2474.1	-57.95	2.90	27.80	-33.05	-13	-20.05	Vertical
2474.1	-49.98	2.90	27.80	-25.08	-13	-12.08	Horizontal
Test Results For Mid Channel 836.5MHz							
1673	-51.03	2.78	27.48	-26.33	-13	-13.33	Horizontal
1673	-54.89	2.78	27.48	-30.19	-13	-17.19	Vertical
2509.5	-54.28	2.91	27.70	-29.49	-13	-16.49	Vertical
2509.5	-52.89	2.91	27.70	-28.10	-13	-15.10	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-48.75	2.78	27.43	-24.10	-13	-11.10	Horizontal
1696.6	-49.68	2.78	27.43	-25.03	-13	-12.03	Vertical
2544.9	-52.96	2.92	27.74	-28.14	-13	-15.14	Vertical
2544.9	-51.46	2.92	27.74	-26.64	-13	-13.64	Horizontal

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

Test Results for Low Channel 829MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1658	-50.91	2.78	27.50	-26.19	-13	-13.19	Horizontal
1658	-48.15	2.78	27.50	-23.43	-13	-10.43	Vertical
2487	-51.77	2.90	27.80	-26.87	-13	-13.87	Vertical
2487	-49.50	2.90	27.80	-24.60	-13	-11.60	Horizontal
Test Results for Mid Channel 836.5MHz							
1673	-51.22	2.78	27.48	-26.52	-13	-13.52	Horizontal
1673	-48.05	2.78	27.48	-23.35	-13	-10.35	Vertical
2509.5	-54.78	2.91	27.70	-29.99	-13	-16.99	Vertical
2509.5	-50.56	2.91	27.70	-25.77	-13	-12.77	Horizontal
Test Results for High Channel 844MHz							
1688	-49.24	2.78	27.43	-24.59	-13	-11.59	Horizontal
1688	-54.40	2.78	27.43	-29.75	-13	-16.75	Vertical
2532	-49.64	2.92	27.74	-24.82	-13	-11.82	Vertical
2532	-56.02	2.92	27.74	-31.20	-13	-18.20	Horizontal

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

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

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

9.4 LTE BAND 7

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

Test Results for Low Channel 2502.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5005	-58.35	5.23	35.81	-27.77	-25	-2.77	Horizontal
5005	-59.84	5.23	35.81	-29.26	-25	-4.26	Vertical
7507.5	-63.42	5.67	36.85	-32.24	-25	-7.24	Vertical
7507.5	-60.59	5.67	36.85	-29.41	-25	-4.41	Horizontal
Test Results for Mid Channel 2535MHz							
5070	-58.69	5.23	35.82	-28.10	-25	-3.10	Horizontal
5070	-59.24	5.23	35.82	-28.65	-25	-3.65	Vertical
7605	-62.46	5.67	36.85	-31.28	-25	-6.28	Vertical
7605	-59.47	5.67	36.85	-28.29	-25	-3.29	Horizontal
Test Results for High Channel 2567.5MHz							
5135	-57.36	5.24	35.83	-26.77	-25	-1.77	Horizontal
5135	-59.41	5.24	35.83	-28.82	-25	-3.82	Vertical
7702.5	-62.61	5.68	36.87	-31.42	-25	-6.42	Vertical
7702.5	-61.07	5.68	36.87	-29.88	-25	-4.88	Horizontal

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

Test Results for Low Channel 2510MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5020	-58.34	5.23	35.82	-27.75	-25	-2.75	Horizontal
5020	-57.38	5.23	35.82	-26.79	-25	-1.79	Vertical
7530	-59.18	5.67	36.86	-27.99	-25	-2.99	Vertical
7530	-62.65	5.67	36.86	-31.46	-25	-6.46	Horizontal
Test Results for Mid Channel 2535MHz							
5070	-61.14	5.23	35.82	-30.55	-25	-5.55	Horizontal
5070	-59.93	5.23	35.82	-29.34	-25	-4.34	Vertical
7605	-63.12	5.67	36.85	-31.94	-25	-6.94	Vertical
7605	-64.88	5.67	36.85	-33.70	-25	-8.70	Horizontal
Test Results for High Channel 2560MHz							
5120	-57.19	5.24	35.83	-26.60	-25	-1.60	Horizontal
5120	-59.58	5.24	35.83	-28.99	-25	-3.99	Vertical
7680	-60.72	5.70	36.88	-29.54	-25	-4.54	Vertical
7680	-59.54	5.70	36.88	-28.36	-25	-3.36	Horizontal

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

. Margin = Spurious Emission Level - Limit

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

9.5 LTE BAND 12

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

Test Results for Low Channel 699.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1399.4	-49.23	2.60	27.2	-24.63	-13	-11.63	Horizontal
1399.4	-47.33	2.60	27.2	-22.73	-13	-9.73	Vertical
2099.1	-55.32	2.85	27.54	-30.63	-13	-17.63	Vertical
2099.1	-51.91	2.85	27.54	-27.22	-13	-14.22	Horizontal
Test Results For Mid Channel 707.5MHz							
1415	-52.81	2.61	27.28	-28.14	-13	-15.14	Horizontal
1415	-49.97	2.61	27.28	-25.30	-13	-12.30	Vertical
2122.5	-53.34	2.87	27.59	-28.62	-13	-15.62	Vertical
2122.5	-52.64	2.87	27.59	-27.92	-13	-14.92	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-54.02	2.63	27.28	-29.37	-13	-16.37	Horizontal
1430.6	-48.22	2.63	27.28	-23.57	-13	-10.57	Vertical
2145.9	-49.65	2.88	27.60	-24.93	-13	-11.93	Vertical
2145.9	-57.08	2.88	27.60	-32.36	-13	-19.36	Horizontal

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

Test Results for Low Channel 704MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1408	-53.36	2.61	27.26	-28.71	-13	-15.71	Horizontal
1408	-50.81	2.61	27.26	-26.16	-13	-13.16	Vertical
2112	-56.66	2.87	27.58	-31.95	-13	-18.95	Vertical
2112	-53.21	2.87	27.58	-28.50	-13	-15.50	Horizontal
Test Results for Mid Channel 707.5MHz							
1415	-52.83	2.61	27.28	-28.16	-13	-15.16	Horizontal
1415	-48.36	2.61	27.28	-23.69	-13	-10.69	Vertical
2122.5	-56.41	2.87	27.59	-31.69	-13	-18.69	Vertical
2122.5	-54.96	2.87	27.59	-30.24	-13	-17.24	Horizontal
Test Results for High Channel 711MHz							
1422	-51.41	2.62	27.28	-26.75	-13	-13.75	Horizontal
1422	-53.05	2.62	27.28	-28.39	-13	-15.39	Vertical
2133	-52.06	2.87	27.60	-27.33	-13	-14.33	Vertical
2133	-50.15	2.87	27.60	-25.42	-13	-12.42	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)

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	-51.60	2.61	27.28	-26.93	-13	-13.93	Horizontal
1413	-54.93	2.61	27.28	-30.26	-13	-17.26	Vertical
2119.5	-55.65	2.87	27.59	-30.93	-13	-17.93	Vertical
2119.5	-50.46	2.87	27.59	-25.74	-13	-12.74	Horizontal
Test Results For Mid Channel 710MHz							
1420	-51.35	2.62	27.30	-26.67	-13	-13.67	Horizontal
1420	-54.90	2.62	27.30	-30.22	-13	-17.22	Vertical
2130	-51.56	2.87	27.62	-26.81	-13	-13.81	Vertical
2130	-51.25	2.87	27.62	-26.50	-13	-13.50	Horizontal
Test Results for High Channel 713.5MHz							
1427	-53.33	2.66	27.28	-28.71	-13	-15.71	Horizontal
1427	-53.50	2.66	27.28	-28.88	-13	-15.88	Vertical
2140.5	-55.98	2.88	27.60	-31.26	-13	-18.26	Vertical
2140.5	-51.99	2.88	27.60	-27.27	-13	-14.27	Horizontal

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

Test Results for Low Channel 709MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1418	-50.40	2.62	27.30	-25.72	-13	-12.72	Horizontal
1418	-49.68	2.62	27.30	-25.00	-13	-12.00	Vertical
2127	-49.34	2.87	27.62	-24.59	-13	-11.59	Vertical
2127	-54.53	2.87	27.62	-29.78	-13	-16.78	Horizontal
Test Results for Mid Channel 710MHz							
1420	-53.17	2.62	27.30	-28.49	-13	-15.49	Horizontal
1420	-49.33	2.62	27.30	-24.65	-13	-11.65	Vertical
2130	-55.81	2.87	27.62	-31.06	-13	-18.06	Vertical
2130	-56.03	2.87	27.62	-31.28	-13	-18.28	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)

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	-51.54	2.61	27.26	-26.89	-13	-13.89	Horizontal
3701.4	-53.36	2.61	27.26	-28.71	-13	-15.71	Vertical
5552.1	-50.87	2.87	27.58	-26.16	-13	-13.16	Vertical
5552.1	-56.94	2.87	27.58	-32.23	-13	-19.23	Horizontal
Test Results for Mid Channel 1882.5MHz							
3765	-52.80	2.63	27.28	-28.15	-13	-15.15	Horizontal
3765	-51.98	2.63	27.28	-27.33	-13	-14.33	Vertical
5647.5	-53.01	2.88	27.62	-28.27	-13	-15.27	Vertical
5647.5	-49.46	2.88	27.62	-24.72	-13	-11.72	Horizontal
Test Results for High Channel 1914.3MHz							
3828.6	-49.33	2.65	27.28	-24.70	-13	-11.70	Horizontal
3828.6	-52.65	2.65	27.28	-28.02	-13	-15.02	Vertical
5742.9	-51.24	2.88	27.70	-26.42	-13	-13.42	Vertical
5742.9	-50.71	2.88	27.70	-25.89	-13	-12.89	Horizontal

QPSK EIRP POWER FOR 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	-50.29	2.62	27.30	-25.61	-13	-12.61	Horizontal
3720	-51.10	2.62	27.30	-26.42	-13	-13.42	Vertical
5580	-57.73	2.87	27.62	-32.98	-13	-19.98	Vertical
5580	-49.06	2.87	27.62	-24.31	-13	-11.31	Horizontal
Test Results for Mid Channel 1882.5MHz							
3765	-54.61	2.64	27.33	-29.92	-13	-16.92	Horizontal
3765	-54.83	2.64	27.33	-30.14	-13	-17.14	Vertical
5647.5	-55.73	2.88	27.67	-30.94	-13	-17.94	Vertical
5647.5	-56.14	2.88	27.67	-31.35	-13	-18.35	Horizontal
Test Results for High Channel 1905MHz							
3810	-49.56	2.64	27.33	-24.87	-13	-11.87	Horizontal
3810	-47.97	2.64	27.33	-23.28	-13	-10.28	Vertical
5715	-55.88	2.88	27.67	-31.09	-13	-18.09	Vertical
5715	-52.03	2.88	27.67	-27.24	-13	-14.24	Horizontal

9.8 LTE BAND 26 A

QPSK EIRP POWER FOR LTE BAND 26A(814MHz~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	-50.96	2.78	27.5	-26.24	-13	-13.24	Horizontal
1629.4	-47.32	2.78	27.5	-22.60	-13	-9.60	Vertical
2444.1	-53.55	2.9	27.8	-28.65	-13	-15.65	Vertical
2444.1	-52.60	2.9	27.8	-27.70	-13	-14.70	Horizontal
Test Results for Mid Channel 819MHz							
1638	-50.50	2.8	27.48	-25.82	-13	-12.82	Horizontal
1638	-47.51	2.8	27.48	-22.83	-13	-9.83	Vertical
2457.5	-53.35	2.91	27.7	-28.56	-13	-15.56	Vertical
2457.5	-52.08	2.91	27.7	-27.29	-13	-14.29	Horizontal
Test Results for High Channel 823.3MHz							
1646.6	-50.35	2.82	27.43	-25.74	-13	-12.74	Horizontal
1646.6	-51.72	2.82	27.43	-27.11	-13	-14.11	Vertical
2469.9	-52.46	2.92	27.74	-27.64	-13	-14.64	Vertical
2469.9	-49.03	2.92	27.74	-24.21	-13	-11.21	Horizontal

QPSK EIRP POWER FOR LTE BAND 26A(814MHz~824MHz) (10MHZ BANDWIDTH)

Test Results for Mid Channel 819MHz							
1638	-51.40	2.82	27.43	-26.79	-13	-13.79	Horizontal
1638	-53.57	2.82	27.43	-28.96	-13	-15.96	Vertical
2457.5	-54.28	2.91	27.74	-29.45	-13	-16.45	Vertical
2457.5	-49.58	2.91	27.74	-24.75	-13	-11.75	Horizontal

9.9 LTE BAND 26 B

QPSK EIRP POWER FOR LTE BAND 26B(824MHz~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	-47.80	2.78	27.28	-23.30	-13	-10.30	Horizontal
1649.4	-50.32	2.78	27.28	-25.82	-13	-12.82	Vertical
2474.1	-52.60	2.9	27.59	-27.91	-13	-14.91	Vertical
2474.1	-49.99	2.9	27.59	-25.30	-13	-12.30	Horizontal
Test Results for Mid Channel 836.5MHz							
1673	-49.62	2.78	27.3	-25.10	-13	-12.10	Horizontal
1673	-52.15	2.78	27.3	-27.63	-13	-14.63	Vertical
2509.4	-50.73	2.91	27.62	-26.02	-13	-13.02	Vertical
2509.4	-55.00	2.91	27.62	-30.29	-13	-17.29	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-53.44	2.78	27.28	-28.94	-13	-15.94	Horizontal
1696.6	-53.41	2.78	27.28	-28.91	-13	-15.91	Vertical
2544.9	-57.06	2.92	27.6	-32.38	-13	-19.38	Vertical
2544.9	-54.93	2.92	27.6	-30.25	-13	-17.25	Horizontal

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

Test Results for Low Channel 831.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1663	-51.27	2.78	27.3	-26.75	-13	-13.75	Horizontal
1663	-47.63	2.78	27.3	-23.11	-13	-10.11	Vertical
2494.5	-51.88	2.9	27.62	-27.16	-13	-14.16	Vertical
2494.5	-53.27	2.9	27.62	-28.55	-13	-15.55	Horizontal
Test Results for Mid Channel 836.5MHz							
1673	-53.03	2.78	27.3	-28.51	-13	-15.51	Horizontal
1673	-54.39	2.78	27.3	-29.87	-13	-16.87	Vertical
2509.5	-53.70	2.91	27.62	-28.99	-13	-15.99	Vertical
2509.5	-55.82	2.91	27.62	-31.11	-13	-18.11	Horizontal
Test Results for High Channel 841.5MHz							
1683	-49.18	2.78	27.3	-24.66	-13	-11.66	Horizontal
1683	-51.34	2.78	27.3	-26.82	-13	-13.82	Vertical
2524.5	-57.12	2.92	27.62	-32.42	-13	-19.42	Vertical
2524.5	-50.03	2.92	27.62	-25.33	-13	-12.33	Horizontal

9.10 LTE BAND 66

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

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-53.19	2.61	27.28	-28.52	-13	-15.52	Horizontal
3421.4	-49.30	2.61	27.28	-24.63	-13	-11.63	Vertical
5132.1	-52.42	2.87	27.59	-27.70	-13	-14.70	Vertical
5132.1	-50.22	2.87	27.59	-25.50	-13	-12.50	Horizontal
Test Results for Mid Channel 1745MHz							
3490	-47.09	2.62	27.3	-22.41	-13	-9.41	Horizontal
3490	-53.42	2.62	27.3	-28.74	-13	-15.74	Vertical
5337.9	-54.80	2.87	27.62	-30.05	-13	-17.05	Vertical
5337.9	-57.85	2.87	27.62	-33.10	-13	-20.10	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-47.83	2.66	27.28	-23.21	-13	-10.21	Horizontal
3558.6	-54.51	2.66	27.28	-29.89	-13	-16.89	Vertical
5337.9	-54.85	2.88	27.6	-30.13	-13	-17.13	Vertical
5337.9	-49.15	2.88	27.6	-24.43	-13	-11.43	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440	-48.98	2.62	27.3	-24.30	-13	-11.30	Horizontal
3440	-52.66	2.62	27.3	-27.98	-13	-14.98	Vertical
5160	-55.08	2.87	27.62	-30.33	-13	-17.33	Vertical
5160	-55.92	2.87	27.62	-31.17	-13	-18.17	Horizontal
Test Results for Mid Channel 1745MHz							
3490	-49.89	2.62	27.3	-25.21	-13	-12.21	Horizontal
3490	-53.17	2.62	27.3	-28.49	-13	-15.49	Vertical
5337.9	-56.01	2.87	27.62	-31.26	-13	-18.26	Vertical
5337.9	-53.00	2.87	27.62	-28.25	-13	-15.25	Horizontal
Test Results for High Channel 1770MHz							
3540	-49.73	2.62	27.3	-25.05	-13	-12.05	Horizontal
3540	-53.08	2.62	27.3	-28.40	-13	-15.40	Vertical
5310	-55.72	2.87	27.62	-30.97	-13	-17.97	Vertical
5310	-49.71	2.87	27.62	-24.96	-13	-11.96	Horizontal

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

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

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

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

10. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54, §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 3.29V, Normal, DC 3.87V and High voltage, DC 4.45V.

Frequency Stability vs Temperature:

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

Frequency Stability vs Voltage:

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

MODES TESTED

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

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]
3.29	1880	9	0.004787	2.5
3.87	1880	6	0.003191	2.5
4.45	1880	15	0.007979	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	3	0.001596	2.5
Extreme (50C)	1880	0	0.000000	2.5
Extreme (40C)	1880	9	0.004787	2.5
Extreme (30C)	1880	5	0.002660	2.5
Extreme (10C)	1880	21	0.011170	2.5
Extreme (0C)	1880	12	0.006383	2.5
Extreme (-10C)	1880	16	0.008511	2.5
Extreme (-20C)	1880	14	0.007447	2.5
Extreme (-30C)	1880	6	0.003191	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1880	1	0.000532	2.5
3.87	1880	16	0.008511	2.5
4.45	1880	26	0.013830	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	11	0.005851	2.5
Extreme (50C)	1880	1	0.000532	2.5
Extreme (40C)	1880	18	0.009574	2.5
Extreme (30C)	1880	5	0.002660	2.5
Extreme (10C)	1880	4	0.002128	2.5
Extreme (0C)	1880	2	0.001064	2.5
Extreme (-10C)	1880	7	0.003723	2.5
Extreme (-20C)	1880	23	0.012234	2.5
Extreme (-30C)	1880	7	0.003723	2.5

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

10.2 LTE BAND 4

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1732.5	4	0.002309	2.5
3.87	1732.5	25	0.014430	2.5
4.45	1732.5	23	0.013276	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	10	0.005772	2.5
Extreme (50C)	1732.5	3	0.001732	2.5
Extreme (40C)	1732.5	8	0.004618	2.5
Extreme (30C)	1732.5	16	0.009235	2.5
Extreme (10C)	1732.5	13	0.007504	2.5
Extreme (0C)	1732.5	15	0.008658	2.5
Extreme (-10C)	1732.5	7	0.004040	2.5
Extreme (-20C)	1732.5	16	0.009235	2.5
Extreme (-30C)	1732.5	21	0.012121	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1732.5	3	0.001732	2.5
3.87	1732.5	19	0.010967	2.5
4.45	1732.5	15	0.008658	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	18	0.010390	2.5
Extreme (50C)	1732.5	17	0.009812	2.5
Extreme (40C)	1732.5	3	0.001732	2.5
Extreme (30C)	1732.5	17	0.009812	2.5
Extreme (10C)	1732.5	16	0.009235	2.5
Extreme (0C)	1732.5	20	0.011544	2.5
Extreme (-10C)	1732.5	20	0.011544	2.5
Extreme (-20C)	1732.5	9	0.005195	2.5
Extreme (-30C)	1732.5	25	0.014430	2.5

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

10.3 LTE BAND 5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	836.5	9	0.010759	2.5
3.87	836.5	16	0.019127	2.5
4.45	836.5	14	0.016736	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	25	0.029886	2.5
Extreme (50C)	836.5	14	0.016736	2.5
Extreme (40C)	836.5	19	0.022714	2.5
Extreme (30C)	836.5	3	0.003586	2.5
Extreme (10C)	836.5	21	0.025105	2.5
Extreme (0C)	836.5	24	0.028691	2.5
Extreme (-10C)	836.5	11	0.013150	2.5
Extreme (-20C)	836.5	4	0.004782	2.5
Extreme (-30C)	836.5	24	0.028691	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	836.5	1	0.001195	2.5
3.87	836.5	21	0.025105	2.5
4.45	836.5	10	0.011955	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	13	0.015541	2.5
Extreme (50C)	836.5	1	0.001195	2.5
Extreme (40C)	836.5	5	0.005977	2.5
Extreme (30C)	836.5	19	0.022714	2.5
Extreme (10C)	836.5	6	0.007173	2.5
Extreme (0C)	836.5	1	0.001195	2.5
Extreme (-10C)	836.5	2	0.002391	2.5
Extreme (-20C)	836.5	20	0.023909	2.5
Extreme (-30C)	836.5	2	0.002391	2.5

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

10.4 LTE BAND 7

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	2535	14	0.005523	2.5
3.87	2535	3	0.001183	2.5
4.45	2535	2	0.000789	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	26	0.010256	2.5
Extreme (50C)	2535	9	0.003550	2.5
Extreme (40C)	2535	19	0.007495	2.5
Extreme (30C)	2535	21	0.008284	2.5
Extreme (10C)	2535	3	0.001183	2.5
Extreme (0C)	2535	17	0.006706	2.5
Extreme (-10C)	2535	23	0.009073	2.5
Extreme (-20C)	2535	15	0.005917	2.5
Extreme (-30C)	2535	11	0.004339	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	2535	13	0.005128	2.5
3.87	2535	21	0.008284	2.5
4.45	2535	14	0.005523	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	23	0.009073	2.5
Extreme (50C)	2535	13	0.005128	2.5
Extreme (40C)	2535	11	0.004339	2.5
Extreme (30C)	2535	16	0.006312	2.5
Extreme (10C)	2535	8	0.003156	2.5
Extreme (0C)	2535	23	0.009073	2.5
Extreme (-10C)	2535	17	0.006706	2.5
Extreme (-20C)	2535	3	0.001183	2.5
Extreme (-30C)	2535	10	0.003945	2.5

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

10.5 LTE BAND 12

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	707.5	23	0.032509	2.5
3.87	707.5	14	0.019788	2.5
4.45	707.5	19	0.026855	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	20	0.028269	2.5
Extreme (50C)	707.5	4	0.005654	2.5
Extreme (40C)	707.5	12	0.016961	2.5
Extreme (30C)	707.5	17	0.024028	2.5
Extreme (10C)	707.5	24	0.033922	2.5
Extreme (0C)	707.5	5	0.007067	2.5
Extreme (-10C)	707.5	14	0.019788	2.5
Extreme (-20C)	707.5	16	0.022615	2.5
Extreme (-30C)	707.5	8	0.011307	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	707.5	22	0.031095	2.5
3.87	707.5	16	0.022615	2.5
4.45	707.5	4	0.005654	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	17	0.024028	2.5
Extreme (50C)	707.5	16	0.022615	2.5
Extreme (40C)	707.5	16	0.022615	2.5
Extreme (30C)	707.5	18	0.025442	2.5
Extreme (10C)	707.5	13	0.018375	2.5
Extreme (0C)	707.5	16	0.022615	2.5
Extreme (-10C)	707.5	14	0.019788	2.5
Extreme (-20C)	707.5	18	0.025442	2.5
Extreme (-30C)	707.5	19	0.026855	2.5

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

10.6 LTE BAND 17

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	710	10	0.014085	2.5
3.87	710	2	0.002817	2.5
4.45	710	3	0.004225	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710	9	0.012676	2.5
Extreme (50C)	710	16	0.022535	2.5
Extreme (40C)	710	22	0.030986	2.5
Extreme (30C)	710	9	0.012676	2.5
Extreme (10C)	710	6	0.008451	2.5
Extreme (0C)	710	25	0.035211	2.5
Extreme (-10C)	710	15	0.021127	2.5
Extreme (-20C)	710	3	0.004225	2.5
Extreme (-30C)	710	21	0.029577	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	710	13	0.018310	2.5
3.87	710	16	0.022535	2.5
4.45	710	6	0.008451	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710	15	0.021127	2.5
Extreme (50C)	710	16	0.022535	2.5
Extreme (40C)	710	1	0.001408	2.5
Extreme (30C)	710	9	0.012676	2.5
Extreme (10C)	710	3	0.004225	2.5
Extreme (0C)	710	22	0.030986	2.5
Extreme (-10C)	710	16	0.022535	2.5
Extreme (-20C)	710	7	0.009859	2.5
Extreme (-30C)	710	13	0.018310	2.5

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

10.7 LTE BAND 25

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1882.5	16	0.008499	2.5
3.87	1882.5	22	0.011687	2.5
4.45	1882.5	21	0.011155	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1882.5	2	0.001062	2.5
Extreme (50C)	1882.5	9	0.004781	2.5
Extreme (40C)	1882.5	3	0.001594	2.5
Extreme (30C)	1882.5	18	0.009562	2.5
Extreme (10C)	1882.5	18	0.009562	2.5
Extreme (0C)	1882.5	17	0.009031	2.5
Extreme (-10C)	1882.5	19	0.010093	2.5
Extreme (-20C)	1882.5	4	0.002125	2.5
Extreme (-30C)	1882.5	10	0.005312	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1882.5	26	0.013811	2.5
3.87	1882.5	2	0.001062	2.5
4.45	1882.5	16	0.008499	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1882.5	13	0.006906	2.5
Extreme (50C)	1882.5	10	0.005312	2.5
Extreme (40C)	1882.5	1	0.000531	2.5
Extreme (30C)	1882.5	18	0.009562	2.5
Extreme (10C)	1882.5	14	0.007437	2.5
Extreme (0C)	1882.5	20	0.010624	2.5
Extreme (-10C)	1882.5	4	0.002125	2.5
Extreme (-20C)	1882.5	19	0.010093	2.5

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

10.8 LTE BAND 26 A

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]
BAND 26 QPSK, (CH 26915 RB size 75 RB Offset 0 10MHz)				
3.29	819	2	0.002442	2.5
3.87	819	17	0.020757	2.5
4.45	819	8	0.009768	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26 QPSK, (CH 26915 RB size 75 RB Offset 0 10MHz)				
Normal (25C)	819	21	0.025641	2.5
Extreme (50C)	819	19	0.023199	2.5
Extreme (40C)	819	20	0.024420	2.5
Extreme (30C)	819	9	0.010989	2.5
Extreme (10C)	819	2	0.002442	2.5
Extreme (0C)	819	14	0.017094	2.5
Extreme (-10C)	819	14	0.017094	2.5
Extreme (-20C)	819	6	0.007326	2.5
Extreme (-30C)	819	4	0.004884	2.5

Band 26A 16QAM, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26 16QAM, (CH 26915 RB size 75 RB Offset 0 10MHz)				
3.29	819	12	0.014652	2.5
3.87	819	7	0.008547	2.5
4.45	819	12	0.014652	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26 16QAM, (CH 26915 RB size 75 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	819	2	0.002442	2.5
Extreme (50C)	819	9	0.010989	2.5
Extreme (40C)	819	11	0.013431	2.5
Extreme (30C)	819	22	0.026862	2.5
Extreme (10C)	819	13	0.015873	2.5
Extreme (0C)	819	22	0.026862	2.5
Extreme (-10C)	819	18	0.021978	2.5
Extreme (-20C)	819	11	0.013431	2.5
Extreme (-30C)	819	3	0.003663	2.5

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

10.9 LTE BAND 26 B

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]
BAND 26 QPSK, (CH 26740 RB size 75 RB Offset 0 10MHz)				
3.29	836.5	25	0.029886	2.5
3.87	836.5	16	0.019127	2.5
4.45	836.5	5	0.005977	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26 QPSK, (CH 26740 RB size 75 RB Offset 0 10MHz)				
Normal (25C)	836.5	12	0.014345	2.5
Extreme (50C)	836.5	14	0.016736	2.5
Extreme (40C)	836.5	10	0.011955	2.5
Extreme (30C)	836.5	16	0.019127	2.5
Extreme (10C)	836.5	17	0.020323	2.5
Extreme (0C)	836.5	18	0.021518	2.5
Extreme (-10C)	836.5	18	0.021518	2.5
Extreme (-20C)	836.5	24	0.028691	2.5
Extreme (-30C)	836.5	18	0.021518	2.5

Band 26A 16QAM, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26 16QAM, (CH 26740 RB size 75 RB Offset 0 10MHz)				
3.29	836.5	23	0.027496	2.5
3.87	836.5	25	0.029886	2.5
4.45	836.5	6	0.007173	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26 16QAM, (CH 26740 RB size 75 RB Offset 0 10MHz)				
Normal (25C)	836.5	9	0.010759	2.5
Extreme (50C)	836.5	6	0.007173	2.5
Extreme (40C)	836.5	11	0.013150	2.5
Extreme (30C)	836.5	5	0.005977	2.5
Extreme (10C)	836.5	26	0.031082	2.5
Extreme (0C)	836.5	2	0.002391	2.5
Extreme (-10C)	836.5	19	0.022714	2.5
Extreme (-20C)	836.5	19	0.011237	2.5
Extreme (-30C)	836.5	24	0.007292	2.5

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

10.10 LTE BAND 66

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 QPSK, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.29	1745	12	0.006877	2.5
3.87	1745	7	0.004011	2.5
4.45	1745	22	0.012607	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 QPSK, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1745	1	0.000573	2.5
Extreme (50C)	1745	12	0.006877	2.5
Extreme (40C)	1745	17	0.009742	2.5
Extreme (30C)	1745	8	0.004585	2.5
Extreme (10C)	1745	25	0.014327	2.5
Extreme (0C)	1745	14	0.008023	2.5
Extreme (-10C)	1745	11	0.006304	2.5
Extreme (-20C)	1745	26	0.014900	2.5
Extreme (-30C)	1745	9	0.005158	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 16QAM, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.29	1745	12	0.006877	2.5
3.87	1745	19	0.010888	2.5
4.45	1745	16	0.009169	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 16QAM, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1745	16	0.009169	2.5
Extreme (50C)	1745	17	0.009742	2.5
Extreme (40C)	1745	19	0.010888	2.5
Extreme (30C)	1745	6	0.003438	2.5
Extreme (10C)	1745	23	0.013181	2.5
Extreme (0C)	1745	12	0.006877	2.5
Extreme (-10C)	1745	16	0.009169	2.5
Extreme (-20C)	1745	0	0.000000	2.5
Extreme (-30C)	1745	19	0.010888	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.

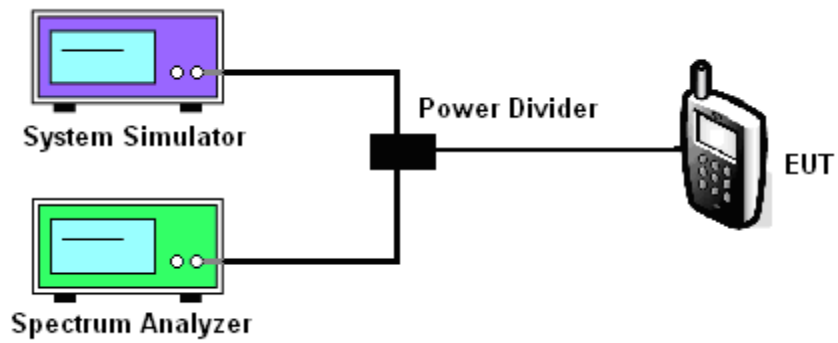
11.2 Measuring Instruments

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-----