

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

FCC ID: 2AZYA-A5PLUS

Product: Mobile Phone

Trade Mark: ACER

Model No.: A5 PLUS

Family Model: N/A

Report No.: N25102001810E

Issue Date: Nov. 17, 2025

Prepared for

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name: Senwa Global International, S.A. de C.V.
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Manufacturer's Name: Senwa Mobile China Ltd
Address: 052, 5th Floor, Block B, Longguang Century Building, No. 23 Haixiu Road, Bao'an District, Shenzhen
Product name.....: Mobile Phone
Model and/or type reference ...: A5 PLUS
Trade Mark.....: ACER
Family Model.....: N/A
Test Sample Number.....: S2510210206-1#
Standards.....: FCC CFR 47 Part 22H, Part 24E, Part 27
Test procedure: ANSI C63.26:2015
 ANSI/TIA-603-E-2016

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

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Date of Test

Date (s) of performance of tests Oct. 21, 2025 ~ Nov. 17, 2025

Date of Issue Nov. 17, 2025

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

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TABLE OF CONTENTS

1. GENERAL INFORMATION	5
1.1 PRODUCT DESCRIPTION	5
1.3 TEST METHODOLOGY	8
1.4 TEST FACILITY	8
MEASUREMENT UNCERTAINTY	8
1.5 SPECIAL ACCESSORIES	8
1.6 WORST-CASE CONFIGURATION AND MODE	8
1.7 SUMMARY OF TEST RESULTS	10
2.1 EUT CONFIGURATION	11
2.2 EUT EXERCISE	11
2.3 CONFIGURATION OF EUT SYSTEM	11
2.4 TEST SETUP	12
3.TEST AND MEASUREMENT EQUIPMENT	13
4. OUTPUT POWER	15
4.1 OUTPUT POWER MEASUREMENT	15
5. OCCUPIED BANDWIDTH	17
6. BANDEDGE AND EMISSION MASK	18
7. OUT OF BAND EMISSIONS	20
7.1 MEASUREMENT METHOD	20
8. RADIATED MEASUREMENT	21
8.1. RADIATED POWER (ERP & EIRP)	21
8.2 LTE BAND 2	22
8.3 LTE BAND 4	24

8.4 LTE BAND 5	26
8.6 LTE BAND 13	30
8.7 LTE BAND 38	32
8.8 LTE BAND 41	34
8.9 LTE BAND 66	36
9. SPURIOUS RADIATION EMISSION	38
9.1 LTE BAND 2	40
9.2 LTE BAND 4	42
9.3 LTE BAND 5	44
9.4 LTE BAND 7	46
9.5 LTE BAND 13	48
9.6 LTE BAND 38	50
9.7 LTE BAND 41	52
9.8 LTE BAND 66	54
10. FREQUENCY STABILITY	56
10.1 LTE BAND 2	57
10.2 LTE BAND 4	59
10.3 LTE BAND 5	61
10.4 LTE BAND 7	63
10.5 LTE BAND 13	65
10.6 LTE BAND 38	67
10.7 LTE BAND 41	69
10.8 LTE BAND 66	71
11. PEAK-TO-AVERAGE RATIO	73
11.1 Description of the PAR Measurement	73
11.2 Measuring Instruments	73
11.3 Test Procedures	73
11.4 Test Setup	74

1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	Mobile Phone
Trade Mark	ACER
Model Name	A5 PLUS
Family Model	N/A
Model Difference	N/A
FCC ID:	2AZYA-A5PLUS
Frequency Bands:	U.S. Bands: ☒ LTE FDD Band 2,4,5,7,13, 66 TDD Band 38, 41
Frequency Range:	LTE FDD Band 2 Uplink: 1850MHz-1910MHz, Downlink: 1930MHz-1990MHz; LTE FDD Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz; LTE FDD Band 5 Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE-FDD Band 7 Uplink: 2500MHz-2570MHz, Downlink: 2620MHz-2690MHz; LTE FDD Band 13 Uplink: 777MHz-787MHz, Downlink: 746MHz-756MHz; LTE TDD Band 38 Uplink&Downlink: 2570MHz-2620MHz, LTE TDD Band 41 Uplink& Downlink: 2535MHz-2655MHz, LTE FDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz;
Type of Modulation:	QPSK/16QAM/64QAM(Only Downlink)
Power Class	Class 3
SIM Card:	SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for test.
Antenna:	FPC Antenna
Antenna Factor:	Band 2: -1.5 dBi, Band 4: -1.2 dBi, Band 5: -1.7 dBi, Band 7: -0.8 dBi, Band 13: -1.9 dBi, Band 38: -0.8 dBi, Band 41: -0.8 dBi, Band 66: -1.2 dBi
Adapter	Model: SGCH2000 Input: AC 100-240V, 50-60Hz 0.3A, Max Output: DC 5.0V, 2A, 10W
Battery	Rated Capacity/ Capacidad Nominal: DC 3.87V, 4900mAh, 18.96Wh Typical Capacity/ Capacidad Typical: DC 3.87V, 5000mAh, 19.35Wh

Power supply	DC 3.87V from battery or DC 5V from Charging Port
Extreme Vol. Limits:	DC 3.29V to DC 4.45V (Nominal DC 3.87V) (Note 1)
HW Version	517-606_MB_V2.0
FW Version	N/A
SW Version	Acer_AC50_Ver01
** Note1: The High Voltage DC 4.45V and Low Voltage 3.29V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

Revision History

Report No.	Version	Description	Issued Date
N25102001810E	Rev.01	Initial issue of report	Nov. 17, 2025

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: 2AZYA-A5PLUS** filing to comply with the FCC Part 22H&24E&27.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

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

ShenZhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R.China.

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

FCC Registration No.:463705

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power, conducted	±0.16dB
3	Spurious emissions, conducted	±0.21dB
4	All emissions, radiated(30MHz~1GHz)	±2.64dB
5	All emissions, radiated(<1G)	±4.68dB
6	All emissions, radiated(>1G)	±4.89dB
7	Temperature	±0.5°C
9	Humidity	±2%
10	All emissions, radiated(9KHz~30MHz)	±6dB
11	Occupied bandwidth	±4.7%
12	Radio Frequency	±1×10 ⁻⁶

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 2/4/5/7/13/38/41/66

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

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

1.7 SUMMARY OF TEST RESULTS

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

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

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

2.2 EUT EXERCISE

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

2.3 CONFIGURATION OF EUT SYSTEM

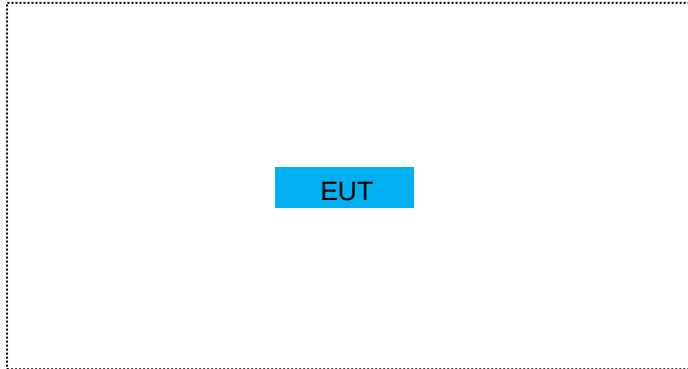
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Mobile Phone	A5 PLUS	FCC ID: 2AZYA-A5PLUS	EUT

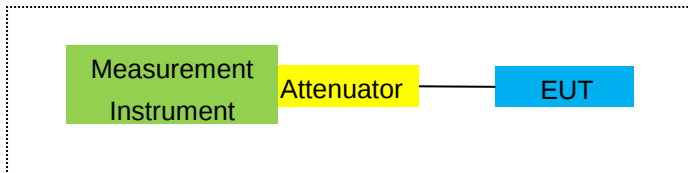
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

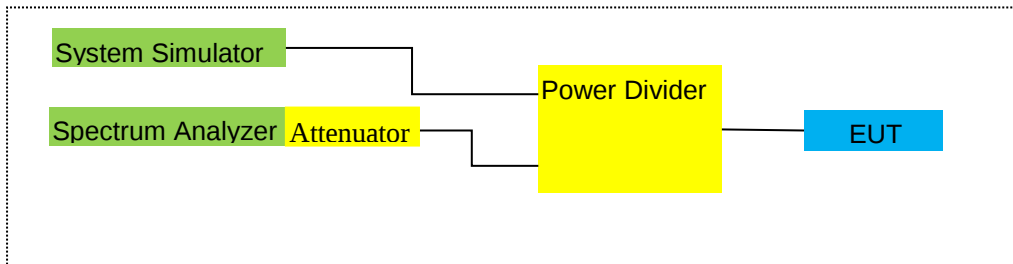
For Radiated Test Cases



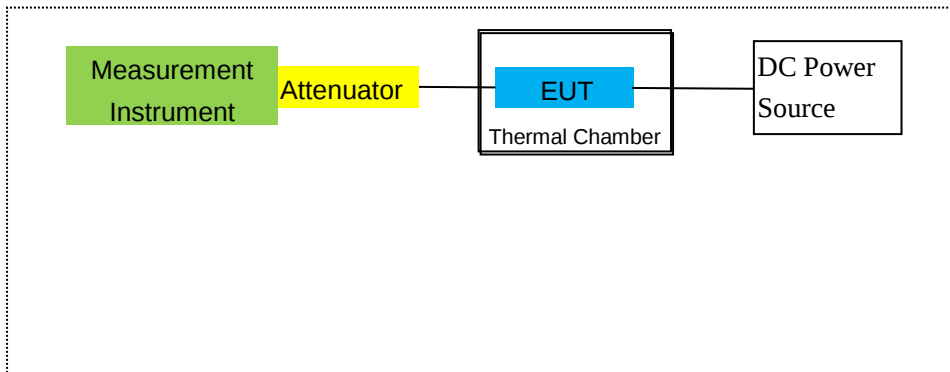
For Conducted Output Power



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



For Frequency Stability



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

3.TEST AND MEASUREMENT EQUIPMENT

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

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	MXA Signal Analyzer	Agilent	N9020A	MY49100060	2025.04.17	2026.04.16	1 year
2	Test Receiver	R&S	ESPI	101318	2025.04.17	2026.04.16	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2025.04.17	2026.04.16	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2024.04.26	2027.04.25	3 year
5	Broadband Horn Antenna	SCHWARZBECK	BBHA 9120 D	2816	2024.5.18	2027.5.17	3 year
6	Broadband Horn Antenna	SCHWARZBECK	BBHA 9120 D	2817	2024.5.18	2027.5.17	3 year
7	Amplifier	EM	EM-30180	060538	2025.04.17	2026.04.16	1 year
8	Active Loop Antenna	SCHWARZBECK	FMZB 1519 B	055	2024.05.17	2027.05.16	3 year
9	Power Meter	R&S	NRVS	100696	2025.04.17	2026.04.16	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2025.04.17	2026.04.16	1 year
11	Test Cable	N/A	R-01	N/A	2023.06.17	2026.06.16	3 year
12	Test Cable	N/A	R-02	N/A	2023.06.17	2026.06.16	3 year
13	Test Cable	N/A	R-03	N/A	2023.06.17	2026.06.16	3 year
14	Test Receiver	R&S	ESCI	101160	2025.04.17	2026.04.16	1 year
15	LISN	R&S	ENV216	101313	2025.04.17	2026.04.16	1 year
16	LISN	EMCO	3816/2	00042990	2025.04.17	2026.04.16	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2024.04.26	2027.04.25	3 year
18	Field strength probe	narda	EP601	711WX81278	2025.04.17	2026.04.16	1 year
19	Test Cable	N/A	C01	N/A	2023.05.06	2026.05.05	3 year
20	Test Cable	N/A	C02	N/A	2023.05.06	2026.05.05	3 year
21	Test Cable	N/A	C03	N/A	2023.05.06	2026.05.05	3 year
22	Spectrum Analyzer	Agilent	E4440A	MY41000130	2025.04.17	2026.04.16	1 year
23	EMI Test Receiver	R&S	ESCI	101160	2025.04.17	2026.04.16	1 year
24	High and Low Temperature Box	WEISS	WT 20/40 EMC Simpac	58226119460030	2024.05.30	2027.05.29	3 year

25	DC Power Source	N/A	PS-6005D	20170402923	2024.04.25	2027.04.24	3 year
26	MXG Vector Signal Generator	Agilent	N5183B	MY57280984	2025.04.17	2026.04.16	1 year
27	Log-Periodic Antenna	SCHWARZBECK	VULB 9162	584	2025.04.17	2026.04.16	1 year
28	Log-Periodic Antenna	SCHWARZBECK	VULB 9162	586	2025.04.17	2026.04.16	1 year
29	Communication Tester	R&S	CMW500	148500	2025.05.06	2026.05.05	1 year

Note: Each piece of equipment is scheduled for calibration once a year except the Test Cable& DC Power Source which is scheduled for calibration every 3 years.

Measurement Software

Item	Manufacturer	Software Name	Software Version	Description
1	MWRFTest	MTS 8200	2.0	RF Conducted Test
2	Farad	EZ-EMC_RE	AIT-03A	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 2/4/5/7/13/38/41/66

RESULTS

PASS

Test data reference attachment.

6. BANDEDGE AND EMISSION MASK

RULE PART(S)

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

FCC: §22.359

LIMITS

The minimum permissible attenuation level of any spurious emission is $43 + \log_{10}(P[\text{Watts}])$, where P is the transmitter power in Watts.

The minimum permissible attenuation level for Band 7 is as following.

Per 27.53(g) for operations in the 698-746 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.

Per 27.53(c.5) for operations in the 776-788 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.

For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c.4) is $65 + 10\log_{10}(P) = -35\text{dBm}$ in a 6.25kHz bandwidth.

Per 27.53(m) for operations in the BRS/EBS bands, 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.

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 2/4/5/7/13/38/41/66

RESULTS

Test data reference attachment.

7. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

The minimum permissible attenuation level of any spurious emission is $43 + \log_{10}(P[\text{Watts}])$, where P is the transmitter power in Watts.

The minimum permissible attenuation level for Band 7 is as following.

Per 27.53(g) for operations in the 698-746 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.

Per 27.53(c.5) for operations in the 776-788 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.

For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c.4) is $65 + 10\log_{10}(P) = -35\text{dBm}$ in a 6.25kHz bandwidth.

Per 27.53(m) for operations in the BRS/EBS bands, 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.

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 2/4/5/7/13/38/41/66

7.1 MEASUREMENT METHOD

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

Test data reference attachment.

8. RADIATED MEASUREMENT

8.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

LIMITS:

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

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

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

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

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

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 2/4/5/7/13/38/41/66

RESULTS

Pass

8.2 LTE BAND 2

Radiated Power (EIRP) for Band 2										
Mode	RB/RB SIZE	Frequency	Result						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP		
						Average	Average			
						(dBm)	(mW)			
1.4MHz Band QPSK	6/0	1850.7	15.83	3.76	8.90	20.97	125.026	Horizontal	2	Pass
		1880	13.67	3.91	8.90	18.66	73.451	Horizontal	2	Pass
		1909.3	13.56	3.93	8.90	18.53	71.285	Horizontal	2	Pass
3.0MHz Band QPSK	15/0	1851.5	12.22	3.77	8.90	17.35	54.325	Horizontal	2	Pass
		1880	12.95	3.91	8.90	17.94	62.230	Horizontal	2	Pass
		1908.5	14.54	3.94	8.90	19.5	89.125	Horizontal	2	Pass
5.0MHz Band QPSK	25/0	1852.5	15.22	3.77	8.90	20.35	108.393	Horizontal	2	Pass
		1880	16.48	3.91	8.90	21.47	140.281	Horizontal	2	Pass
		1907.5	15.51	3.94	8.90	20.47	111.429	Horizontal	2	Pass
10.0MHz Band QPSK	50/0	1855	14.96	3.79	8.90	20.07	101.625	Horizontal	2	Pass
		1880	16.95	3.95	8.90	21.9	154.882	Horizontal	2	Pass
		1905	14.52	3.97	8.90	19.45	88.105	Horizontal	2	Pass
15.0MHz Band QPSK	75/0	1857.5	14.42	3.79	8.90	19.53	89.743	Horizontal	2	Pass
		1880	15.44	3.95	8.90	20.39	109.396	Horizontal	2	Pass
		1902.5	14.79	3.97	8.90	19.72	93.756	Horizontal	2	Pass
20.0MHz Band QPSK	100/0	1860	14.50	3.81	8.90	19.59	90.991	Horizontal	2	Pass
		1880	13.41	3.96	8.90	18.35	68.391	Horizontal	2	Pass
		1900	15.28	4.00	8.90	20.18	104.232	Horizontal	2	Pass
1.4MHz Band QPSK	6/0	1850.7	13.89	3.76	8.90	19.03	79.983	Vertical	2	Pass
		1880	14.17	3.91	8.90	19.16	82.414	Vertical	2	Pass
		1909.3	14.50	3.93	8.90	19.47	88.512	Vertical	2	Pass
3.0MHz Band QPSK	15/0	1851.5	14.21	3.77	8.90	19.34	85.901	Vertical	2	Pass
		1880	14.91	3.91	8.90	19.9	97.724	Vertical	2	Pass
		1908.5	13.61	3.94	8.90	18.57	71.945	Vertical	2	Pass
5.0MHz Band QPSK	25/0	1852.5	14.08	3.77	8.90	19.21	83.368	Vertical	2	Pass
		1880	13.24	3.91	8.90	18.23	66.527	Vertical	2	Pass
		1907.5	14.95	3.94	8.90	19.91	97.949	Vertical	2	Pass
10.0MHz Band QPSK	50/0	1855	13.12	3.79	8.90	18.23	66.527	Vertical	2	Pass
		1880	11.82	3.95	8.90	16.77	47.534	Vertical	2	Pass
		1905	12.95	3.97	8.90	17.88	61.376	Vertical	2	Pass
15.0MHz Band QPSK	75/0	1857.5	13.32	3.79	8.90	18.43	69.663	Vertical	2	Pass
		1880	14.99	3.95	8.90	19.94	98.628	Vertical	2	Pass
		1902.5	15.78	3.97	8.90	20.71	117.761	Vertical	2	Pass
20.0MHz Band QPSK	100/0	1860	16.44	3.81	8.90	21.53	142.233	Vertical	2	Pass
		1880	16.99	3.96	8.90	21.93	155.955	Vertical	2	Pass
		1900	15.04	4.00	8.90	19.94	98.628	Vertical	2	Pass

Radiated Power (EIRP) for Band 2										
Mode	RB/RB SIZE	Frequency	Result						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
1.4MHz Band 16 QAM	6/0	1850.7	14.60	3.76	8.90	19.81	95.719	Horizontal	2	Pass
		1880	15.75	3.91	8.90	19.12	81.658	Horizontal	2	Pass
		1909.3	15.45	3.93	8.90	19.21	83.368	Horizontal	2	Pass
3.0MHz Band 16 QAM	15/0	1851.5	15.29	3.77	8.90	17.5	56.234	Horizontal	2	Pass
		1880	14.95	3.91	8.90	18.53	71.285	Horizontal	2	Pass
		1908.5	14.55	3.94	8.90	17.77	59.841	Horizontal	2	Pass
5.0MHz Band 16 QAM	25/0	1852.5	15.14	3.77	8.90	19.41	87.297	Horizontal	2	Pass
		1880	15.50	3.91	8.90	18.11	64.714	Horizontal	2	Pass
		1907.5	14.00	3.94	8.90	16.87	48.641	Horizontal	2	Pass
10.0MHz Band 16 QAM	50/0	1855	15.35	3.79	8.90	19.3	85.114	Horizontal	2	Pass
		1880	14.05	3.95	8.90	18.21	66.222	Horizontal	2	Pass
		1905	15.36	3.97	8.90	18.28	67.298	Horizontal	2	Pass
15.0MHz Band 16 QAM	75/0	1857.5	13.68	3.79	8.90	18.36	68.549	Horizontal	2	Pass
		1880	15.77	3.95	8.90	17.46	55.719	Horizontal	2	Pass
		1902.5	15.65	3.97	8.90	19.71	93.541	Horizontal	2	Pass
20.0MHz Band 16 QAM	100/0	1860	13.84	3.81	8.90	16.92	49.204	Horizontal	2	Pass
		1880	16.17	3.96	8.90	18.17	65.615	Horizontal	2	Pass
		1900	14.55	4.00	8.90	17.47	55.847	Horizontal	2	Pass
1.4MHz Band 16 QAM	6/0	1850.7	14.61	3.76	8.90	18.88	77.268	Vertical	2	Pass
		1880	15.84	3.91	8.90	18.22	66.374	Vertical	2	Pass
		1909.3	15.13	3.93	8.90	18.44	69.823	Vertical	2	Pass
3.0MHz Band 16 QAM	15/0	1851.5	13.77	3.77	8.90	17.06	50.816	Vertical	2	Pass
		1880	14.83	3.91	8.90	19.28	84.723	Vertical	2	Pass
		1908.5	14.56	3.94	8.90	17.82	60.534	Vertical	2	Pass
5.0MHz Band 16 QAM	25/0	1852.5	13.76	3.77	8.90	20.18	104.232	Vertical	2	Pass
		1880	15.05	3.91	8.90	18.76	75.162	Vertical	2	Pass
		1907.5	15.69	3.94	8.90	18.5	70.795	Vertical	2	Pass
10.0MHz Band 16 QAM	50/0	1855	13.98	3.79	8.90	19.56	90.365	Vertical	2	Pass
		1880	15.57	3.95	8.90	18.25	66.834	Vertical	2	Pass
		1905	15.12	3.97	8.90	18.34	68.234	Vertical	2	Pass
15.0MHz Band 16 QAM	75/0	1857.5	13.85	3.79	8.90	17.18	52.240	Vertical	2	Pass
		1880	14.87	3.95	8.90	19.59	90.991	Vertical	2	Pass
		1902.5	13.66	3.97	8.90	17.93	62.087	Vertical	2	Pass
20.0MHz Band 16 QAM	100/0	1860	14.29	3.81	8.90	19.09	81.096	Vertical	2	Pass
		1880	14.90	3.96	8.90	20.37	108.893	Vertical	2	Pass
		1900	13.78	4.00	8.90	18.45	69.984	Vertical	2	Pass

Note:

SG Level= Signal generator output

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

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

8.3 LTE BAND 4

Radiated Power (EIRP) for Band 4										
Mode	RB/RB SIZE	Frequency	Result						Limit	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
									(mW)	
1.4MHz Band QPSK	6/0	1710.7	13.97	3.12	8.90	19.75	94.406	Horizontal	1	Pass
		1732.5	14.72	3.27	8.90	20.35	108.393	Horizontal	1	Pass
		1754.3	16.40	3.29	8.90	22.01	158.855	Horizontal	1	Pass
3.0MHz Band QPSK	15/0	1711.5	13.88	3.13	8.90	19.65	92.257	Horizontal	1	Pass
		1732.5	14.00	3.27	8.90	19.63	91.833	Horizontal	1	Pass
		1753.5	14.92	3.30	8.90	20.52	112.720	Horizontal	1	Pass
5.0MHz Band QPSK	25/0	1712.5	15.68	3.13	8.90	21.45	139.637	Horizontal	1	Pass
		1732.5	14.66	3.27	8.90	20.29	106.905	Horizontal	1	Pass
		1752.5	14.32	3.30	8.90	19.92	98.175	Horizontal	1	Pass
10.0MHz Band QPSK	50/0	1715	15.30	3.15	8.90	21.05	127.350	Horizontal	1	Pass
		1732.5	14.59	3.31	8.90	20.18	104.232	Horizontal	1	Pass
		1750	16.15	3.33	8.90	21.72	148.594	Horizontal	1	Pass
15.0MHz Band QPSK	75/0	1717.5	14.89	3.15	8.90	20.64	115.878	Horizontal	1	Pass
		1732.5	16.94	3.31	8.90	22.53	179.061	Horizontal	1	Pass
		1747.5	16.35	3.33	8.90	21.92	155.597	Horizontal	1	Pass
20.0MHz Band QPSK	100/0	1720	13.61	3.17	8.90	19.34	85.901	Horizontal	1	Pass
		1732.5	14.23	3.32	8.90	19.81	95.719	Horizontal	1	Pass
		1745	13.10	3.36	8.90	18.64	73.114	Horizontal	1	Pass
1.4MHz Band QPSK	6/0	1710.7	14.11	3.12	8.90	19.89	97.499	Vertical	1	Pass
		1732.5	14.51	3.27	8.90	20.14	103.276	Vertical	1	Pass
		1754.3	15.01	3.29	8.90	20.62	115.345	Vertical	1	Pass
3.0MHz Band QPSK	15/0	1711.5	15.57	3.13	8.90	21.34	136.144	Vertical	1	Pass
		1732.5	15.56	3.27	8.90	21.19	131.522	Vertical	1	Pass
		1753.5	16.91	3.30	8.90	22.51	178.238	Vertical	1	Pass
5.0MHz Band QPSK	25/0	1712.5	13.99	3.13	8.90	19.76	94.624	Vertical	1	Pass
		1732.5	16.43	3.27	8.90	22.06	160.694	Vertical	1	Pass
		1752.5	14.34	3.30	8.90	19.94	98.628	Vertical	1	Pass
10.0MHz Band QPSK	50/0	1715	12.89	3.15	8.90	18.64	73.114	Vertical	1	Pass
		1732.5	14.22	3.31	8.90	19.81	95.719	Vertical	1	Pass
		1750	14.05	3.33	8.90	19.62	91.622	Vertical	1	Pass
15.0MHz Band QPSK	75/0	1717.5	15.99	3.15	8.90	21.74	149.279	Vertical	1	Pass
		1732.5	16.53	3.31	8.90	22.12	162.930	Vertical	1	Pass
		1747.5	14.68	3.33	8.90	20.25	105.925	Vertical	1	Pass
20.0MHz Band QPSK	100/0	1720	15.48	3.17	8.90	21.21	132.130	Vertical	1	Pass
		1732.5	17.01	3.32	8.90	22.59	181.552	Vertical	1	Pass
		1745	14.51	3.36	8.90	20.05	101.158	Vertical	1	Pass

Radiated Power (EIRP) for Band 4										
Mode	RB/RB SIZE	Frequency	Result						Limit (mW)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
1.4MHz Band 16 QAM	6/0	1710.7	14.59	3.12	8.90	20.37	108.893	Horizontal	1	Pass
		1732.5	16.72	3.27	8.90	22.35	171.791	Horizontal	1	Pass
		1754.3	14.26	3.29	8.90	19.87	97.051	Horizontal	1	Pass
3.0MHz Band 16 QAM	15/0	1711.5	14.73	3.13	8.90	20.5	112.202	Horizontal	1	Pass
		1732.5	15.79	3.27	8.90	21.42	138.676	Horizontal	1	Pass
		1753.5	15.99	3.30	8.90	21.59	144.212	Horizontal	1	Pass
5.0MHz Band 16 QAM	25/0	1712.5	15.80	3.13	8.90	21.57	143.549	Horizontal	1	Pass
		1732.5	14.94	3.27	8.90	20.57	114.025	Horizontal	1	Pass
		1752.5	16.38	3.30	8.90	21.98	157.761	Horizontal	1	Pass
10.0MHz Band 16 QAM	50/0	1715	16.88	3.15	8.90	22.63	183.231	Horizontal	1	Pass
		1732.5	14.63	3.31	8.90	20.22	105.196	Horizontal	1	Pass
		1750	14.69	3.33	8.90	20.26	106.170	Horizontal	1	Pass
15.0MHz Band 16 QAM	75/0	1717.5	16.28	3.15	8.90	22.03	159.588	Horizontal	1	Pass
		1732.5	17.16	3.31	8.90	22.75	188.365	Horizontal	1	Pass
		1747.5	15.42	3.33	8.90	20.99	125.603	Horizontal	1	Pass
20.0MHz Band 16 QAM	100/0	1720	14.32	3.17	8.90	20.05	101.158	Horizontal	1	Pass
		1732.5	16.43	3.32	8.90	22.01	158.855	Horizontal	1	Pass
		1745	15.81	3.36	8.90	21.35	136.458	Horizontal	1	Pass
1.4MHz Band 16 QAM	6/0	1710.7	15.03	3.12	8.90	20.81	120.504	Vertical	1	Pass
		1732.5	14.77	3.27	8.90	20.4	109.648	Vertical	1	Pass
		1754.3	15.89	3.29	8.90	21.5	141.254	Vertical	1	Pass
3.0MHz Band 16 QAM	15/0	1711.5	13.75	3.13	8.90	19.52	89.536	Vertical	1	Pass
		1732.5	15.96	3.27	8.90	21.59	144.212	Vertical	1	Pass
		1753.5	15.35	3.30	8.90	20.95	124.451	Vertical	1	Pass
5.0MHz Band 16 QAM	25/0	1712.5	15.52	3.13	8.90	21.29	134.586	Vertical	1	Pass
		1732.5	16.60	3.27	8.90	22.23	167.109	Vertical	1	Pass
		1752.5	15.51	3.30	8.90	21.11	129.122	Vertical	1	Pass
10.0MHz Band 16 QAM	50/0	1715	14.31	3.15	8.90	20.06	101.391	Vertical	1	Pass
		1732.5	16.70	3.31	8.90	22.29	169.434	Vertical	1	Pass
		1750	15.13	3.33	8.90	20.7	117.490	Vertical	1	Pass
15.0MHz Band 16 QAM	75/0	1717.5	13.58	3.15	8.90	19.33	85.704	Vertical	1	Pass
		1732.5	15.22	3.31	8.90	20.81	120.504	Vertical	1	Pass
		1747.5	16.36	3.33	8.90	21.93	155.955	Vertical	1	Pass
20.0MHz Band 16 QAM	100/0	1720	16.21	3.17	8.90	21.94	156.315	Vertical	1	Pass
		1732.5	17.41	3.32	8.90	22.99	199.067	Vertical	1	Pass
		1745	16.40	3.36	8.90	21.94	156.315	Vertical	1	Pass

Note:

SG Level= Signal generator output

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

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

8.4 LTE BAND 5

Radiated Power (ERP) for Band 5											
Mode	RB/RB SIZE	Frequency	Result							Limit (mW)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
1.4MHz Band QPSK	6/0	824.7	19.48	2.01	5.30	2.15	20.62	115.345	Horizontal	7	Pass
		836.5	21.03	2.01	5.30	2.15	22.17	164.816	Horizontal	7	Pass
		848.3	19.70	2.02	5.70	2.15	21.23	132.739	Horizontal	7	Pass
3.0MHz Band QPSK	15/0	825.5	20.60	2.01	5.30	2.15	21.74	149.279	Horizontal	7	Pass
		836.5	20.22	2.01	5.30	2.15	21.36	136.773	Horizontal	7	Pass
		847.5	19.70	2.02	5.70	2.15	21.23	132.739	Horizontal	7	Pass
5.0MHz Band QPSK	25/0	826.5	19.78	2.01	5.30	2.15	20.92	123.595	Horizontal	7	Pass
		836.5	20.98	2.01	5.30	2.15	22.12	162.930	Horizontal	7	Pass
		846.5	20.73	2.02	5.70	2.15	22.26	168.267	Horizontal	7	Pass
10.0MHz Band QPSK	50/0	829	19.68	2.01	5.30	2.15	20.82	120.781	Horizontal	7	Pass
		836.5	20.91	2.01	5.30	2.15	22.05	160.325	Horizontal	7	Pass
		844	19.77	2.02	5.70	2.15	21.3	134.896	Horizontal	7	Pass
1.4MHz Band QPSK	6/0	824.7	21.21	2.01	5.30	2.15	22.35	171.791	Vertical	7	Pass
		836.5	20.95	2.01	5.30	2.15	22.09	161.808	Vertical	7	Pass
		848.3	20.29	2.02	5.70	2.15	21.82	152.055	Vertical	7	Pass
3.0MHz Band QPSK	15/0	825.5	20.90	2.01	5.30	2.15	22.04	159.956	Vertical	7	Pass
		836.5	20.43	2.01	5.30	2.15	21.57	143.549	Vertical	7	Pass
		847.5	18.97	2.02	5.70	2.15	20.5	112.202	Vertical	7	Pass
5.0MHz Band QPSK	25/0	826.5	19.10	2.01	5.30	2.15	20.24	105.682	Vertical	7	Pass
		836.5	20.58	2.01	5.30	2.15	21.72	148.594	Vertical	7	Pass
		846.5	19.42	2.02	5.70	2.15	20.95	124.451	Vertical	7	Pass
10.0MHz Band QPSK	50/0	829	18.36	2.01	5.30	2.15	19.5	89.125	Vertical	7	Pass
		836.5	21.22	2.01	5.30	2.15	22.36	172.187	Vertical	7	Pass
		844	19.57	2.02	5.70	2.15	21.1	128.825	Vertical	7	Pass

Radiated Power (ERP) for Band 5											
Mode	RB/RB SIZE	Frequency	Result							Limit (mW)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
1.4MHz Band 16 QAM	6/0	824.7	17.92	2.01	5.30	2.15	19.06	80.538	Horizontal	7	Pass
		836.5	18.18	2.01	5.30	2.15	19.32	85.507	Horizontal	7	Pass
		848.3	18.47	2.02	5.70	2.15	20	100.000	Horizontal	7	Pass
3.0MHz Band 16 QAM	15/0	825.5	17.68	2.01	5.30	2.15	18.82	76.208	Horizontal	7	Pass
		836.5	17.12	2.01	5.30	2.15	18.26	66.988	Horizontal	7	Pass
		847.5	17.50	2.02	5.70	2.15	19.03	79.983	Horizontal	7	Pass
5.0MHz Band 16 QAM	25/0	826.5	18.22	2.01	5.30	2.15	19.36	86.298	Horizontal	7	Pass
		836.5	17.75	2.01	5.30	2.15	18.89	77.446	Horizontal	7	Pass
		846.5	18.02	2.02	5.70	2.15	19.55	90.157	Horizontal	7	Pass
10.0MHz Band 16 QAM	50/0	829	16.67	2.01	5.30	2.15	17.81	60.395	Horizontal	7	Pass
		836.5	17.41	2.01	5.30	2.15	18.55	71.614	Horizontal	7	Pass
		844	17.17	2.02	5.70	2.15	18.7	74.131	Horizontal	7	Pass
1.4MHz Band 16 QAM	6/0	824.7	18.89	2.01	5.30	2.15	20.03	100.693	Vertical	7	Pass
		836.5	19.14	2.01	5.30	2.15	20.28	106.660	Vertical	7	Pass
		848.3	18.72	2.02	5.70	2.15	20.25	105.925	Vertical	7	Pass
3.0MHz Band 16 QAM	15/0	825.5	17.01	2.01	5.30	2.15	18.15	65.313	Vertical	7	Pass
		836.5	17.20	2.01	5.30	2.15	18.34	68.234	Vertical	7	Pass
		847.5	17.37	2.02	5.70	2.15	18.9	77.625	Vertical	7	Pass
5.0MHz Band 16 QAM	25/0	826.5	16.66	2.01	5.30	2.15	17.8	60.256	Vertical	7	Pass
		836.5	15.89	2.01	5.30	2.15	17.03	50.466	Vertical	7	Pass
		846.5	18.48	2.02	5.70	2.15	20.01	100.231	Vertical	7	Pass
10.0MHz Band 16 QAM	50/0	829	17.48	2.01	5.30	2.15	18.62	72.778	Vertical	7	Pass
		836.5	20.35	2.01	5.30	2.15	21.49	140.929	Vertical	7	Pass
		844	19.22	2.02	5.70	2.15	20.75	118.850	Vertical	7	Pass

Note:

SG Level= Signal generator output

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

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

ERP=EIRP-2.15

8.5 LTE BAND 7

Radiated Power (EIRP) for Band 7										
Mode	RB/RB SIZE	Frequency	Result						Limit	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP		
						Average	Average			
						(dBm)	(mW)			
5.0MHz Band QPSK	25/0	2502.5	18.05	4.54	9.00	22.51	178.238	Horizontal	2	Pass
		2535	17.14	4.69	9.00	21.45	139.637	Horizontal	2	Pass
		2567.5	12.52	4.71	9.00	16.81	47.973	Horizontal	2	Pass
10.0MHz Band QPSK	50/0	2505	11.70	4.55	9.00	16.15	41.210	Horizontal	2	Pass
		2535	15.05	4.69	9.00	19.36	86.298	Horizontal	2	Pass
		2565	14.14	4.72	9.00	18.42	69.502	Horizontal	2	Pass
15.0MHz Band QPSK	75/0	2507.5	15.85	4.55	9.00	20.3	107.152	Horizontal	2	Pass
		2535	14.22	4.69	9.00	18.53	71.285	Horizontal	2	Pass
		2562.5	14.76	4.72	9.00	19.04	80.168	Horizontal	2	Pass
20.0MHz Band QPSK	100/0	2510	12.98	4.57	9.00	17.41	55.081	Horizontal	2	Pass
		2535	14.45	4.73	9.00	18.72	74.473	Horizontal	2	Pass
		2560	14.48	4.75	9.00	18.73	74.645	Horizontal	2	Pass
5.0MHz Band QPSK	25/0	2502.5	13.60	4.54	9.00	18.06	63.973	Vertical	2	Pass
		2535	14.46	4.69	9.00	18.77	75.336	Vertical	2	Pass
		2567.5	14.66	4.71	9.00	18.95	78.524	Vertical	2	Pass
10.0MHz Band QPSK	50/0	2505	14.31	4.55	9.00	18.76	75.162	Vertical	2	Pass
		2535	17.20	4.69	9.00	21.51	141.579	Vertical	2	Pass
		2565	15.21	4.72	9.00	19.49	88.920	Vertical	2	Pass
15.0MHz Band QPSK	75/0	2507.5	16.19	4.55	9.00	20.64	115.878	Vertical	2	Pass
		2535	14.03	4.69	9.00	18.34	68.234	Vertical	2	Pass
		2562.5	15.16	4.72	9.00	19.44	87.902	Vertical	2	Pass
20.0MHz Band QPSK	100/0	2510	17.49	4.57	9.00	21.92	155.597	Vertical	2	Pass
		2535	18.42	4.73	9.00	22.69	185.780	Vertical	2	Pass
		2560	17.15	4.75	9.00	21.4	138.038	Vertical	2	Pass

Radiated Power (EIRP) for Band 7										
Mode	RB/RB SIZE	Frequency	Result						Limit	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
5.0MHz Band 16 QAM	25/0	2502.5	12.52	4.54	9.00	16.98	49.888	Horizontal	2	Pass
		2535	14.60	4.69	9.00	18.91	77.804	Horizontal	2	Pass
		2567.5	14.30	4.71	9.00	18.59	72.277	Horizontal	2	Pass
10.0MHz Band 16 QAM	50/0	2505	14.58	4.55	9.00	19.03	79.983	Horizontal	2	Pass
		2535	15.57	4.69	9.00	19.88	97.275	Horizontal	2	Pass
		2565	14.19	4.72	9.00	18.47	70.307	Horizontal	2	Pass
15.0MHz Band 16 QAM	75/0	2507.5	15.95	4.55	9.00	20.4	109.648	Horizontal	2	Pass
		2535	15.25	4.69	9.00	19.56	90.365	Horizontal	2	Pass
		2562.5	12.03	4.72	9.00	16.31	42.756	Horizontal	2	Pass
20.0MHz Band 16 QAM	100/0	2510	13.50	4.57	9.00	17.93	62.087	Horizontal	2	Pass
		2535	12.87	4.73	9.00	17.14	51.761	Horizontal	2	Pass
		2560	13.61	4.75	9.00	17.86	61.094	Horizontal	2	Pass
5.0MHz Band 16 QAM	25/0	2502.5	15.69	4.54	9.00	20.15	103.514	Vertical	2	Pass
		2535	14.90	4.69	9.00	19.21	83.368	Vertical	2	Pass
		2567.5	15.74	4.71	9.00	20.03	100.693	Vertical	2	Pass
10.0MHz Band 16 QAM	50/0	2505	14.88	4.55	9.00	19.33	85.704	Vertical	2	Pass
		2535	16.83	4.69	9.00	21.14	130.017	Vertical	2	Pass
		2565	13.38	4.72	9.00	17.66	58.345	Vertical	2	Pass
15.0MHz Band 16 QAM	75/0	2507.5	14.74	4.55	9.00	19.19	82.985	Vertical	2	Pass
		2535	13.91	4.69	9.00	18.22	66.374	Vertical	2	Pass
		2562.5	12.18	4.72	9.00	16.46	44.259	Vertical	2	Pass
20.0MHz Band 16 QAM	100/0	2510	15.33	4.57	9.00	19.76	94.624	Vertical	2	Pass
		2535	17.36	4.73	9.00	21.63	145.546	Vertical	2	Pass
		2560	13.90	4.75	9.00	18.15	65.313	Vertical	2	Pass

Note:

SG Level= Signal generator output

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

8.6 LTE BAND 13

Radiated Power (ERP) for Band 13											
Mode	RB/RB SIZE	Frequency	Result							Limit	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
5.0MHz Band QPSK	25/0	779.5	18.07	1.91	5.80	2.15	19.81	95.719	Horizontal	3	Pass
		782	20.29	1.91	5.60	2.15	21.83	152.405	Horizontal	3	Pass
		784.5	20.11	1.92	5.70	2.15	21.74	149.279	Horizontal	3	Pass
10.0MHz Band QPSK	50/0	782	19.32	1.91	5.8	2.15	21.06	127.644	Horizontal	3	Pass
5.0MHz Band QPSK	25/0	779.5	19.52	1.91	5.80	2.15	21.26	133.660	Vertical	3	Pass
		782	19.36	1.91	5.60	2.15	20.9	123.027	Vertical	3	Pass
		784.5	19.10	1.92	5.70	2.15	20.73	118.304	Vertical	3	Pass
10.0MHz Band QPSK	50/0	782	20.19	1.91	5.8	2.15	21.93	155.955	Vertical	3	Pass

Radiated Power (ERP) for Band 13											
Mode	RB/RB SIZE	Frequency	Result							Limit	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
5.0MHz Band 16 QAM	25/0	779.5	18.13	1.91	5.80	2.15	19.87	97.051	Horizontal	3	Pass
		782	18.82	1.91	5.60	2.15	20.36	108.643	Horizontal	3	Pass
		784.5	18.93	1.92	5.70	2.15	20.56	113.763	Horizontal	3	Pass
10.0MHz Band 16 QAM	50/0	782	18.56	1.91	5.8	2.15	20.3	107.152	Horizontal	3	Pass
5.0MHz Band 16 QAM	25/0	779.5	17.48	1.91	5.80	2.15	19.22	83.560	Vertical	3	Pass
		782	18.37	1.91	5.60	2.15	19.91	97.949	Vertical	3	Pass
		784.5	18.42	1.92	5.70	2.15	20.05	101.158	Vertical	3	Pass
10.0MHz Band 16 QAM	50/0	782	18.85	1.91	5.8	2.15	20.59	114.551	Vertical	3	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

8.7 LTE BAND 38

Radiated Power (EIRP) for Band38										
Mode	RB/RB SIZE	Frequency	Result						Limit	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP	Max. EIRP Average (mW)	Polarization Of Max. ERP		
						Average				
						(dBm)				
5.0MHz Band QPSK	25/0	2502.5	17.56	4.54	9.00	22.02	159.221	Horizontal	2	Pass
		2535	17.33	4.69	9.00	21.64	145.881	Horizontal	2	Pass
		2567.5	15.70	4.71	9.00	19.99	99.770	Horizontal	2	Pass
10.0MHz Band QPSK	50/0	2505	17.01	4.55	9.00	21.46	139.959	Horizontal	2	Pass
		2535	16.84	4.69	9.00	21.15	130.317	Horizontal	2	Pass
		2565	18.79	4.72	9.00	23.07	202.768	Horizontal	2	Pass
15.0MHz Band QPSK	75/0	2507.5	18.51	4.55	9.00	22.96	197.697	Horizontal	2	Pass
		2535	17.67	4.69	9.00	21.98	157.761	Horizontal	2	Pass
		2562.5	17.46	4.72	9.00	21.74	149.279	Horizontal	2	Pass
20.0MHz Band QPSK	100/0	2510	16.42	4.57	9.00	20.85	121.619	Horizontal	2	Pass
		2535	17.45	4.73	9.00	21.72	148.594	Horizontal	2	Pass
		2560	17.57	4.75	9.00	21.82	152.055	Horizontal	2	Pass
5.0MHz Band QPSK	25/0	2502.5	17.63	4.54	9.00	22.09	161.808	Vertical	2	Pass
		2535	18.50	4.69	9.00	22.81	190.985	Vertical	2	Pass
		2567.5	17.05	4.71	9.00	21.34	136.144	Vertical	2	Pass
10.0MHz Band QPSK	50/0	2505	16.78	4.55	9.00	21.23	132.739	Vertical	2	Pass
		2535	17.96	4.69	9.00	22.27	168.655	Vertical	2	Pass
		2565	17.84	4.72	9.00	22.12	162.930	Vertical	2	Pass
15.0MHz Band QPSK	75/0	2507.5	18.52	4.55	9.00	22.97	198.153	Vertical	2	Pass
		2535	17.87	4.69	9.00	22.18	165.196	Vertical	2	Pass
		2562.5	18.50	4.72	9.00	22.78	189.671	Vertical	2	Pass
20.0MHz Band QPSK	100/0	2510	18.70	4.57	9.00	23.13	205.589	Vertical	2	Pass
		2535	18.64	4.73	9.00	22.91	195.434	Vertical	2	Pass
		2560	18.93	4.75	9.00	23.18	207.970	Vertical	2	Pass

Radiated Power (EIRP) for Band38										
Mode	RB/RB SIZE	Frequency	Result						Limit	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dBi)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP		
						Average	Average			
						(dBm)	(mW)			
5.0MHz Band 16 QAM	25/0	2502.5	16.39	4.54	9.00	20.85	121.619	Horizontal	2	Pass
		2535	16.65	4.69	9.00	20.96	124.738	Horizontal	2	Pass
		2567.5	17.31	4.71	9.00	21.6	144.544	Horizontal	2	Pass
10.0MHz Band 16 QAM	50/0	2505	17.23	4.55	9.00	21.68	147.231	Horizontal	2	Pass
		2535	17.41	4.69	9.00	21.72	148.594	Horizontal	2	Pass
		2565	17.65	4.72	9.00	21.93	155.955	Horizontal	2	Pass
15.0MHz Band 16 QAM	75/0	2507.5	17.98	4.55	9.00	22.43	174.985	Horizontal	2	Pass
		2535	17.77	4.69	9.00	22.08	161.436	Horizontal	2	Pass
		2562.5	17.68	4.72	9.00	21.96	157.036	Horizontal	2	Pass
20.0MHz Band 16 QAM	100/0	2510	18.07	4.57	9.00	22.5	177.828	Horizontal	2	Pass
		2535	16.07	4.73	9.00	20.34	108.143	Horizontal	2	Pass
		2560	18.23	4.75	9.00	22.48	177.011	Horizontal	2	Pass
5.0MHz Band 16 QAM	25/0	2502.5	16.57	4.54	9.00	21.03	126.765	Vertical	2	Pass
		2535	16.95	4.69	9.00	21.26	133.660	Vertical	2	Pass
		2567.5	17.53	4.71	9.00	21.82	152.055	Vertical	2	Pass
10.0MHz Band 16 QAM	50/0	2505	17.78	4.55	9.00	22.23	167.109	Vertical	2	Pass
		2535	18.04	4.69	9.00	22.35	171.791	Vertical	2	Pass
		2565	16.89	4.72	9.00	21.17	130.918	Vertical	2	Pass
15.0MHz Band 16 QAM	75/0	2507.5	18.37	4.55	9.00	22.82	191.426	Vertical	2	Pass
		2535	17.36	4.69	9.00	21.67	146.893	Vertical	2	Pass
		2562.5	16.23	4.72	9.00	20.51	112.460	Vertical	2	Pass
20.0MHz Band 16 QAM	100/0	2510	18.43	4.57	9.00	22.86	193.197	Vertical	2	Pass
		2535	18.70	4.73	9.00	22.97	198.153	Vertical	2	Pass
		2560	18.62	4.75	9.00	22.87	193.642	Vertical	2	Pass

Note:

SG Level= Signal generator output

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

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

8.8 LTE BAND 41

Radiated Power (EIRP) for Band 41										
Mode	RB/RB SIZE	Frequency	Result						Limit	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
5.0MHz Band QPSK	25/0	2498.50	16.21	4.54	9.00	20.67	116.681	Horizontal	2	Pass
		2593.00	15.40	4.69	9.00	19.71	93.541	Horizontal	2	Pass
		2687.50	14.12	4.71	9.00	18.41	69.343	Horizontal	2	Pass
10.0MHz Band QPSK	50/0	2501.00	16.71	4.55	9.00	21.16	130.617	Horizontal	2	Pass
		2593.00	15.91	4.69	9.00	20.22	105.196	Horizontal	2	Pass
		2685.00	14.72	4.72	9.00	19	79.433	Horizontal	2	Pass
15.0MHz Band QPSK	75/0	2503.50	13.14	4.55	9.00	17.59	57.412	Horizontal	2	Pass
		2593.00	15.57	4.69	9.00	19.88	97.275	Horizontal	2	Pass
		2682.50	16.81	4.72	9.00	21.09	128.529	Horizontal	2	Pass
20.0MHz Band QPSK	100/0	2506.00	14.77	4.57	9.00	19.2	83.176	Horizontal	2	Pass
		2593.00	15.73	4.73	9.00	20	100.000	Horizontal	2	Pass
		2680.00	15.84	4.75	9.00	20.09	102.094	Horizontal	2	Pass
5.0MHz Band QPSK	25/0	2498.50	16.31	4.54	9.00	20.77	119.399	Vertical	2	Pass
		2593.00	15.24	4.69	9.00	19.55	90.157	Vertical	2	Pass
		2687.50	14.18	4.71	9.00	18.47	70.307	Vertical	2	Pass
10.0MHz Band QPSK	50/0	2501.00	13.84	4.55	9.00	18.29	67.453	Vertical	2	Pass
		2593.00	15.23	4.69	9.00	19.54	89.950	Vertical	2	Pass
		2685.00	15.35	4.72	9.00	19.63	91.833	Vertical	2	Pass
15.0MHz Band QPSK	75/0	2503.50	14.01	4.55	9.00	18.46	70.146	Vertical	2	Pass
		2593.00	16.18	4.69	9.00	20.49	111.944	Vertical	2	Pass
		2682.50	16.31	4.72	9.00	20.59	114.551	Vertical	2	Pass
20.0MHz Band QPSK	100/0	2506.00	16.55	4.57	9.00	20.98	125.314	Vertical	2	Pass
		2593.00	17.09	4.73	9.00	21.36	136.773	Vertical	2	Pass
		2680.00	15.54	4.75	9.00	19.79	95.280	Vertical	2	Pass

Radiated Power (EIRP) for Band 41										
Mode	RB/RB SIZE	Frequency	Result						Limit	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
5.0MHz Band 16 QAM	25/0	2498.50	14.09	4.54	9.00	18.55	71.614	Horizontal	2	Pass
		2593.00	15.86	4.69	9.00	20.17	103.992	Horizontal	2	Pass
		2687.50	16.32	4.71	9.00	20.61	115.080	Horizontal	2	Pass
10.0MHz Band 16 QAM	50/0	2501.00	15.42	4.55	9.00	19.87	97.051	Horizontal	2	Pass
		2593.00	15.54	4.69	9.00	19.85	96.605	Horizontal	2	Pass
		2685.00	16.78	4.72	9.00	21.06	127.644	Horizontal	2	Pass
15.0MHz Band 16 QAM	75/0	2503.50	14.71	4.55	9.00	19.16	82.414	Horizontal	2	Pass
		2593.00	16.75	4.69	9.00	21.06	127.644	Horizontal	2	Pass
		2682.50	16.70	4.72	9.00	20.98	125.314	Horizontal	2	Pass
20.0MHz Band 16 QAM	100/0	2506.00	15.01	4.57	9.00	19.44	87.902	Horizontal	2	Pass
		2593.00	17.05	4.73	9.00	21.32	135.519	Horizontal	2	Pass
		2680.00	14.94	4.75	9.00	19.19	82.985	Horizontal	2	Pass
5.0MHz Band 16 QAM	25/0	2498.50	15.91	4.54	9.00	20.37	108.893	Vertical	2	Pass
		2593.00	15.03	4.69	9.00	19.34	85.901	Vertical	2	Pass
		2687.50	15.80	4.71	9.00	20.09	102.094	Vertical	2	Pass
10.0MHz Band 16 QAM	50/0	2501.00	16.31	4.55	9.00	20.76	119.124	Vertical	2	Pass
		2593.00	15.84	4.69	9.00	20.15	103.514	Vertical	2	Pass
		2685.00	13.27	4.72	9.00	17.55	56.885	Vertical	2	Pass
15.0MHz Band 16 QAM	75/0	2503.50	15.17	4.55	9.00	19.62	91.622	Vertical	2	Pass
		2593.00	14.88	4.69	9.00	19.19	82.985	Vertical	2	Pass
		2682.50	14.88	4.72	9.00	19.16	82.414	Vertical	2	Pass
20.0MHz Band 16 QAM	100/0	2506.00	17.19	4.57	9.00	21.62	145.211	Vertical	2	Pass
		2593.00	17.48	4.73	9.00	21.75	149.624	Vertical	2	Pass
		2680.00	17.17	4.75	9.00	21.42	138.676	Vertical	2	Pass

Note:

SG Level= Signal generator output

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

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

8.9 LTE BAND 66

Radiated Power (EIRP) for Band 66										
Mode	RB/RB SIZE	Frequency	Result						Limit	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
1.4MHz Band QPSK	6/0	1710.7	15.09	3.12	8.90	20.57	114.025	Horizontal	1	Pass
		1745	13.86	3.27	8.90	18.82	76.208	Horizontal	1	Pass
		1779.3	16.28	3.29	8.90	21.14	130.017	Horizontal	1	Pass
3.0MHz Band QPSK	15/0	1711.5	14.20	3.13	8.90	18.5	70.795	Horizontal	1	Pass
		1745	14.87	3.27	8.90	20.29	106.905	Horizontal	1	Pass
		1778.5	15.56	3.30	8.90	19.54	89.950	Horizontal	1	Pass
5.0MHz Band QPSK	25/0	1712.5	16.05	3.13	8.90	20.71	117.761	Horizontal	1	Pass
		1745	16.21	3.27	8.90	21.16	130.617	Horizontal	1	Pass
		1777.5	14.87	3.30	8.90	19.3	85.114	Horizontal	1	Pass
10.0MHz Band QPSK	50/0	1715	15.19	3.15	8.90	19.45	88.105	Horizontal	1	Pass
		1745	15.29	3.31	8.90	20.83	121.060	Horizontal	1	Pass
		1775	16.10	3.33	8.90	20.28	106.660	Horizontal	1	Pass
15.0MHz Band QPSK	75/0	1717.5	15.36	3.15	8.90	21.11	129.122	Horizontal	1	Pass
		1745	15.89	3.31	8.90	20.61	115.080	Horizontal	1	Pass
		1772.5	16.64	3.33	8.90	21.15	130.317	Horizontal	1	Pass
20.0MHz Band QPSK	100/0	1720	13.97	3.17	8.90	20.1	102.329	Horizontal	1	Pass
		1745	15.42	3.32	8.90	21.04	127.057	Horizontal	1	Pass
		1770	15.22	3.36	8.90	20.83	121.060	Horizontal	1	Pass
1.4MHz Band QPSK	6/0	1710.7	15.71	3.12	8.90	19.98	99.541	Vertical	1	Pass
		1745	16.21	3.27	8.90	22.12	162.930	Vertical	1	Pass
		1779.3	15.56	3.29	8.90	20.35	108.393	Vertical	1	Pass
3.0MHz Band QPSK	15/0	1711.5	16.08	3.13	8.90	20.89	122.744	Vertical	1	Pass
		1745	16.14	3.27	8.90	21.28	134.276	Vertical	1	Pass
		1778.5	16.41	3.30	8.90	20.46	111.173	Vertical	1	Pass
5.0MHz Band QPSK	25/0	1712.5	15.17	3.13	8.90	19.91	97.949	Vertical	1	Pass
		1745	15.65	3.27	8.90	19.5	89.125	Vertical	1	Pass
		1777.5	14.24	3.30	8.90	19.08	80.910	Vertical	1	Pass
10.0MHz Band QPSK	50/0	1715	12.72	3.15	8.90	17.62	57.810	Vertical	1	Pass
		1745	16.63	3.31	8.90	20.8	120.226	Vertical	1	Pass
		1775	15.66	3.33	8.90	19.12	81.658	Vertical	1	Pass
15.0MHz Band QPSK	75/0	1717.5	16.69	3.15	8.90	20.63	115.611	Vertical	1	Pass
		1745	16.08	3.31	8.90	20.59	114.551	Vertical	1	Pass
		1772.5	15.30	3.33	8.90	20.35	108.393	Vertical	1	Pass
20.0MHz Band QPSK	100/0	1720	17.39	3.17	8.90	21.59	144.212	Vertical	1	Pass
		1745	17.54	3.32	8.90	22.16	164.437	Vertical	1	Pass
		1770	14.41	3.36	8.90	18.01	63.241	Vertical	1	Pass

Radiated Power (EIRP) for Band 66										
Mode	RB/RB SIZE	Frequency	Result						Limit (W)	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP		
1.4MHz Band 16 QAM	6/0	1710.7	16.00	3.12	8.9	21.78	150.661	Horizontal	1	Pass
		1745	15.60	3.27	8.9	21.23	132.739	Horizontal	1	Pass
		1779.3	15.64	3.29	8.9	21.25	133.352	Horizontal	1	Pass
3.0MHz Band 16 QAM	15/0	1711.5	15.75	3.13	8.9	21.52	141.906	Horizontal	1	Pass
		1745	14.78	3.27	8.9	20.41	109.901	Horizontal	1	Pass
		1778.5	14.94	3.3	8.9	20.54	113.240	Horizontal	1	Pass
5.0MHz Band 16 QAM	25/0	1712.5	14.76	3.13	8.9	20.53	112.980	Horizontal	1	Pass
		1745	13.06	3.27	8.9	18.69	73.961	Horizontal	1	Pass
		1777.5	14.54	3.3	8.9	20.14	103.276	Horizontal	1	Pass
10.0MHz Band 16 QAM	50/0	1715	16.09	3.15	8.9	21.84	152.757	Horizontal	1	Pass
		1745	14.04	3.31	8.9	19.63	91.833	Horizontal	1	Pass
		1775	13.43	3.33	8.9	19	79.433	Horizontal	1	Pass
15.0MHz Band 16 QAM	75/0	1717.5	14.04	3.15	8.9	19.79	95.280	Horizontal	1	Pass
		1745	15.33	3.31	8.9	20.92	123.595	Horizontal	1	Pass
		1772.5	15.00	3.33	8.9	20.57	114.025	Horizontal	1	Pass
20.0MHz Band 16 QAM	100/0	1720	15.12	3.17	8.9	20.85	121.619	Horizontal	1	Pass
		1745	15.67	3.32	8.9	21.25	133.352	Horizontal	1	Pass
		1770	15.87	3.36	8.9	21.41	138.357	Horizontal	1	Pass
1.4MHz Band 16 QAM	6/0	1710.7	15.36	3.12	8.9	21.14	130.017	Vertical	1	Pass
		1745	15.29	3.27	8.9	20.92	123.595	Vertical	1	Pass
		1779.3	15.00	3.29	8.9	20.61	115.080	Vertical	1	Pass
3.0MHz Band 16 QAM	15/0	1711.5	13.91	3.13	8.9	19.68	92.897	Vertical	1	Pass
		1745	14.10	3.27	8.9	19.73	93.972	Vertical	1	Pass
		1778.5	14.65	3.3	8.9	20.25	105.925	Vertical	1	Pass
5.0MHz Band 16 QAM	25/0	1712.5	16.24	3.13	8.9	22.01	158.855	Vertical	1	Pass
		1745	15.49	3.27	8.9	21.12	129.420	Vertical	1	Pass
		1777.5	14.11	3.3	8.9	19.71	93.541	Vertical	1	Pass
10.0MHz Band 16 QAM	50/0	1715	13.09	3.15	8.9	18.84	76.560	Vertical	1	Pass
		1745	15.42	3.31	8.9	21.01	126.183	Vertical	1	Pass
		1775	15.40	3.33	8.9	20.97	125.026	Vertical	1	Pass
15.0MHz Band 16 QAM	75/0	1717.5	14.20	3.15	8.9	19.95	98.855	Vertical	1	Pass
		1745	14.96	3.31	8.9	20.55	113.501	Vertical	1	Pass
		1772.5	15.09	3.33	8.9	20.66	116.413	Vertical	1	Pass
20.0MHz Band 16 QAM	100/0	1720	15.23	3.17	8.9	20.96	124.738	Vertical	1	Pass
		1745	16.51	3.32	8.9	22.09	161.808	Vertical	1	Pass
		1770	16.07	3.36	8.9	21.61	144.877	Vertical	1	Pass

Note:

SG Level= Signal generator output

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

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

9. SPURIOUS RADIATION EMISSION

RULE PART(S)

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

LIMIT

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

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

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

TEST PROCEDURE

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

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

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

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

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

MODES TESTED

LTE Band 2/4/5/7/13/38/41/66

RESULTS

PASS

Note: Other emissions which has not list below has attenuated 20dB below the limit.

9.1 LTE BAND 2

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

Test Results for Low Channel 1850.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3701.4	-52.14	4.04	33.51	-22.67	-13	-9.67	Horizontal
3701.4	-51.90	4.04	33.51	-22.43	-13	-9.43	Vertical
5552.1	-49.12	5.24	35.84	-18.52	-13	-5.52	Vertical
5552.1	-51.01	5.24	35.84	-20.41	-13	-7.41	Horizontal
Test Results for Mid Channel 1880MHz							
3760	-54.19	4.04	33.56	-24.67	-13	-11.67	Horizontal
3760	-47.70	4.04	33.56	-18.18	-13	-5.18	Vertical
5640	-49.26	5.24	35.91	-18.59	-13	-5.59	Vertical
5640	-55.44	5.24	35.91	-24.77	-13	-11.77	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-49.08	4.04	34.00	-19.12	-13	-6.12	Horizontal
3818.6	-53.12	4.04	34.00	-23.16	-13	-10.16	Vertical
5727.9	-53.50	5.24	36.04	-22.70	-13	-9.70	Vertical
5727.9	-51.96	5.24	36.04	-21.16	-13	-8.16	Horizontal

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

Test Results for Low Channel 1860MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3720	-48.18	4.07	33.54	-18.71	-13	-5.71	Horizontal
3720	-48.83	4.07	33.54	-19.36	-13	-6.36	Vertical
5580	-57.73	5.28	35.86	-27.15	-13	-14.15	Vertical
5580	-50.57	5.28	35.86	-19.99	-13	-6.99	Horizontal
Test Results for Mid Channel 1880MHz							
3760	-52.44	4.04	33.56	-22.92	-13	-9.92	Horizontal
3760	-54.78	4.04	33.56	-25.26	-13	-12.26	Vertical
5640	-57.42	5.24	35.91	-26.75	-13	-13.75	Vertical
5640	-49.31	5.24	35.91	-18.64	-13	-5.64	Horizontal
Test Results for High Channel 1900MHz							
3800	-48.90	4.04	34.00	-18.94	-13	-5.94	Horizontal
3800	-47.43	4.04	34.00	-17.47	-13	-4.47	Vertical
5700	-56.64	5.24	36.04	-25.84	-13	-12.84	Vertical
5700	-52.64	5.24	36.04	-21.84	-13	-8.84	Horizontal

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

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

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

9.2 LTE BAND 4

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

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-49.79	4.02	29.80	-24.01	-13	-11.01	Horizontal
3421.4	-53.65	4.02	29.80	-27.87	-13	-14.87	Vertical
5132.1	-55.38	5.24	35.84	-24.78	-13	-11.78	Vertical
5132.1	-49.63	5.24	35.84	-19.03	-13	-6.03	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465	-47.63	4.03	30.00	-21.66	-13	-8.66	Horizontal
3465	-48.98	4.03	30.00	-23.01	-13	-10.01	Vertical
5197.5	-57.68	5.25	35.86	-27.07	-13	-14.07	Vertical
5197.5	-54.05	5.25	35.86	-23.44	-13	-10.44	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-53.27	4.05	30.01	-27.31	-13	-14.31	Horizontal
3508.6	-53.94	4.05	30.01	-27.98	-13	-14.98	Vertical
5262.9	-50.40	5.26	35.86	-19.80	-13	-6.80	Vertical
5262.9	-54.53	5.26	35.86	-23.93	-13	-10.93	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440	-54.10	4.02	29.80	-28.32	-13	-15.32	Horizontal
3440	-49.53	4.02	29.80	-23.75	-13	-10.75	Vertical
5160	-56.01	5.24	35.84	-25.41	-13	-12.41	Vertical
5160	-56.08	5.24	35.84	-25.48	-13	-12.48	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465	-53.28	4.03	30.00	-27.31	-13	-14.31	Horizontal
3465	-48.56	4.03	30.00	-22.59	-13	-9.59	Vertical
5197.5	-56.34	5.25	35.86	-25.73	-13	-12.73	Vertical
5197.5	-49.04	5.25	35.86	-18.43	-13	-5.43	Horizontal
Test Results for High Channel 1745MHz							
2490	-52.11	2.91	27.68	-27.34	-13	-14.34	Horizontal
3490	-49.31	2.91	27.68	-24.54	-13	-11.54	Vertical
5235	-56.70	5.26	35.86	-26.10	-13	-13.10	Vertical
5235	-55.90	5.26	35.86	-25.30	-13	-12.30	Horizontal

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

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

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

9.3 LTE BAND 5

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

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1649.4	-53.15	2.78	27.50	-28.43	-13	-15.43	Horizontal
1649.4	-47.30	2.78	27.50	-22.58	-13	-9.58	Vertical
2474.1	-56.39	2.90	27.80	-31.49	-13	-18.49	Vertical
2474.1	-49.76	2.90	27.80	-24.86	-13	-11.86	Horizontal
Test Results For Mid Channel 836.5MHz							
1673	-50.69	2.78	27.48	-25.99	-13	-12.99	Horizontal
1673	-53.29	2.78	27.48	-28.59	-13	-15.59	Vertical
2509.5	-56.69	2.91	27.70	-31.90	-13	-18.90	Vertical
2509.5	-56.37	2.91	27.70	-31.58	-13	-18.58	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-52.90	2.78	27.43	-28.25	-13	-15.25	Horizontal
1696.6	-50.82	2.78	27.43	-26.17	-13	-13.17	Vertical
2544.9	-52.11	2.92	27.74	-27.29	-13	-14.29	Vertical
2544.9	-52.38	2.92	27.74	-27.56	-13	-14.56	Horizontal

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

Test Results for Low Channel 829MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1658	-48.17	2.78	27.50	-23.45	-13	-10.45	Horizontal
1658	-54.72	2.78	27.50	-30.00	-13	-17.00	Vertical
2487	-52.50	2.90	27.80	-27.60	-13	-14.60	Vertical
2487	-55.89	2.90	27.80	-30.99	-13	-17.99	Horizontal
Test Results for Mid Channel 836.5MHz							
1673	-52.57	2.78	27.48	-27.87	-13	-14.87	Horizontal
1673	-50.90	2.78	27.48	-26.20	-13	-13.20	Vertical
2509.5	-52.99	2.91	27.70	-28.20	-13	-15.20	Vertical
2509.5	-56.84	2.91	27.70	-32.05	-13	-19.05	Horizontal
Test Results for High Channel 844MHz							
1688	-50.90	2.78	27.43	-26.25	-13	-13.25	Horizontal
1688	-52.97	2.78	27.43	-28.32	-13	-15.32	Vertical
2532	-55.01	2.92	27.74	-30.19	-13	-17.19	Vertical
2532	-54.12	2.92	27.74	-29.30	-13	-16.30	Horizontal

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

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

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

9.4 LTE BAND 7

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

Test Results for Low Channel 2502.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5005	-58.00	5.23	35.81	-27.42	-25	-2.42	Horizontal
5005	-61.14	5.23	35.81	-30.56	-25	-5.56	Vertical
7507.5	-64.16	5.67	36.85	-32.98	-25	-7.98	Vertical
7507.5	-60.56	5.67	36.85	-29.38	-25	-4.38	Horizontal
Test Results for Mid Channel 2535MHz							
5070	-61.54	5.23	35.82	-30.95	-25	-5.95	Horizontal
5070	-58.29	5.23	35.82	-27.70	-25	-2.70	Vertical
7605	-60.77	5.67	36.85	-29.59	-25	-4.59	Vertical
7605	-63.55	5.67	36.85	-32.37	-25	-7.37	Horizontal
Test Results for High Channel 2567.5MHz							
5135	-59.41	5.24	35.83	-28.82	-25	-3.82	Horizontal
5135	-61.05	5.24	35.83	-30.46	-25	-5.46	Vertical
7702.5	-60.20	5.68	36.87	-29.01	-25	-4.01	Vertical
7702.5	-60.08	5.68	36.87	-28.89	-25	-3.89	Horizontal

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

Test Results for Low Channel 2510MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5020	-58.58	5.23	35.82	-27.99	-25	-2.99	Horizontal
5020	-59.74	5.23	35.82	-29.15	-25	-4.15	Vertical
7530	-64.75	5.67	36.86	-33.56	-25	-8.56	Vertical
7530	-62.04	5.67	36.86	-30.85	-25	-5.85	Horizontal
Test Results for Mid Channel 2535MHz							
5070	-57.45	5.23	35.82	-26.86	-25	-1.86	Horizontal
5070	-58.14	5.23	35.82	-27.55	-25	-2.55	Vertical
7605	-59.67	5.67	36.85	-28.49	-25	-3.49	Vertical
7605	-60.28	5.67	36.85	-29.10	-25	-4.10	Horizontal
Test Results for High Channel 2560MHz							
5120	-57.93	5.24	35.83	-27.34	-25	-2.34	Horizontal
5120	-57.13	5.24	35.83	-26.54	-25	-1.54	Vertical
7680	-63.57	5.70	36.88	-32.39	-25	-7.39	Vertical
7680	-59.55	5.70	36.88	-28.37	-25	-3.37	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 13

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

Test Results for Low Channel 779.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1559	-70.60	2.61	27.28	-45.93	-40	-5.93	Horizontal
1559	-74.45	2.61	27.28	-49.78	-40	-9.78	Vertical
2338.5	-57.99	2.87	27.59	-33.27	-13	-20.27	Vertical
2338.5	-55.27	2.87	27.59	-30.55	-13	-17.55	Horizontal
Test Results For Mid Channel 782MHz							
1564	-69.60	2.62	27.30	-44.92	-40	-4.92	Horizontal
1564	-71.44	2.62	27.30	-46.76	-40	-6.76	Vertical
2346	-49.48	2.87	27.62	-24.73	-13	-11.73	Vertical
2346	-49.77	2.87	27.62	-25.02	-13	-12.02	Horizontal
Test Results for High Channel 784.5MHz							
1569	-70.75	2.66	27.28	-46.13	-40	-6.13	Horizontal
1569	-74.20	2.66	27.28	-49.58	-40	-9.58	Vertical
2353.5	-56.72	2.88	27.60	-32.00	-13	-19.00	Vertical
2353.5	-54.67	2.88	27.60	-29.95	-13	-16.95	Horizontal

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

Test Results for Channel 782MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1564	-79.36	2.62	27.30	-54.68	-40	-14.68	Horizontal
1564	-72.78	2.62	27.30	-48.10	-40	-8.10	Vertical
2346	-56.72	2.87	27.62	-31.97	-13	-18.97	Vertical
2346	-54.67	2.87	27.62	-29.92	-13	-16.92	Horizontal

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

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

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

9.6 LTE BAND 38

QPSK EIRP POWER FOR LTE BAND 38 (5MHZ BANDWIDTH)

Test Results for Low Channel 2572.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5145	-54.27	2.63	27.26	-29.64	-25	-4.64	Horizontal
5145	-54.41	2.63	27.26	-29.78	-25	-4.78	Vertical
7717.5	-58.80	2.67	27.58	-33.89	-25	-8.89	Vertical
7717.5	-61.37	2.67	27.58	-36.46	-25	-11.46	Horizontal
Test Results For Mid Channel 2595MHz							
5190	-53.71	2.62	27.28	-29.05	-25	-4.05	Horizontal
5190	-55.21	2.62	27.28	-30.55	-25	-5.55	Vertical
7785	-55.49	2.85	27.62	-30.72	-25	-5.72	Vertical
7785	-59.80	2.85	27.62	-35.03	-25	-10.03	Horizontal
Test Results for High Channel 2617.5MHz							
5235	-57.41	2.64	27.28	-32.77	-25	-7.77	Horizontal
5235	-55.54	2.64	27.28	-30.90	-25	-5.90	Vertical
7852.5	-57.50	2.85	27.70	-32.65	-25	-7.65	Vertical
7852.5	-55.70	2.85	27.70	-30.85	-25	-5.85	Horizontal

QPSK EIRP POWER FOR LTE BAND 38 (20MHZ BANDWIDTH)

Test Results for Low Channel 2580MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5160	-53.26	2.63	27.30	-28.59	-25	-3.59	Horizontal
5160	-55.24	2.63	27.30	-30.57	-25	-5.57	Vertical
7740	-60.15	2.67	27.62	-35.20	-25	-10.20	Vertical
7740	-55.28	2.67	27.62	-30.33	-25	-5.33	Horizontal
Test Results for Mid Channel 2595MHz							
5190	-53.07	2.62	27.33	-28.36	-25	-3.36	Horizontal
5190	-57.18	2.62	27.33	-32.47	-25	-7.47	Vertical
7785	-56.78	2.85	27.67	-31.96	-25	-6.96	Vertical
7785	-57.02	2.85	27.67	-32.20	-25	-7.20	Horizontal
Test Results for High Channel 2610MHz							
5220	-53.27	2.64	27.33	-28.58	-25	-3.58	Horizontal
5220	-56.18	2.64	27.33	-31.49	-25	-6.49	Vertical
7830	-54.64	2.85	27.67	-29.82	-25	-4.82	Vertical
7830	-60.65	2.85	27.67	-35.83	-25	-10.83	Horizontal

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

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

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

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

9.7 LTE BAND 41

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

Test Results for Low Channel 2537.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5205	-54.38	2.63	27.26	-29.75	-25	-4.75	Horizontal
5205	-54.87	2.63	27.26	-30.24	-25	-5.24	Vertical
7807.5	-61.13	2.67	27.58	-36.22	-25	-11.22	Vertical
7807.5	-56.68	2.67	27.58	-31.77	-25	-6.77	Horizontal
Test Results for Mid Channel 2595MHz							
5210	-56.30	2.62	27.28	-31.64	-25	-6.64	Horizontal
5210	-57.30	2.62	27.28	-32.64	-25	-7.64	Vertical
7815	-59.66	2.85	27.62	-34.89	-25	-9.89	Vertical
7815	-57.76	2.85	27.62	-32.99	-25	-7.99	Horizontal
Test Results for High Channel 2652.5MHz							
5375	-57.70	2.64	27.28	-33.06	-25	-8.06	Horizontal
5375	-57.08	2.64	27.28	-32.44	-25	-7.44	Vertical
8062.5	-57.06	2.85	27.70	-32.21	-25	-7.21	Vertical
8062.5	-54.59	2.85	27.70	-29.74	-25	-4.74	Horizontal

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

Test Results for Low Channel 2545MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5012	-57.41	2.63	27.30	-32.74	-25	-7.74	Horizontal
5012	-54.35	2.63	27.30	-29.68	-25	-4.68	Vertical
7518	-57.94	2.67	27.62	-32.99	-25	-7.99	Vertical
7518	-60.75	2.67	27.62	-35.80	-25	-10.80	Horizontal
Test Results for Mid Channel 2595MHz							
5186	-55.66	2.62	27.33	-30.95	-25	-5.95	Horizontal
5186	-55.97	2.62	27.33	-31.26	-25	-6.26	Vertical
7779	-61.08	2.85	27.67	-36.26	-25	-11.26	Vertical
7779	-59.98	2.85	27.67	-35.16	-25	-10.16	Horizontal
Test Results for High Channel 2645MHz							
5360	-57.06	2.64	27.33	-32.37	-25	-7.37	Horizontal
5360	-56.31	2.64	27.33	-31.62	-25	-6.62	Vertical
8040	-54.05	2.85	27.67	-29.23	-25	-4.23	Vertical
8040	-60.07	2.85	27.67	-35.25	-25	-10.25	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.

9.8 LTE BAND 66

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

Test Results for Low Channel 1710.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-52.66	2.61	27.28	-27.99	-13	-14.99	Horizontal
3421.4	-51.86	2.61	27.28	-27.19	-13	-14.19	Vertical
5132.1	-50.33	2.87	27.59	-25.61	-13	-12.61	Vertical
5132.1	-50.77	2.87	27.59	-26.05	-13	-13.05	Horizontal
Test Results for Mid Channel 1745MHz							
3490	-53.49	2.62	27.3	-28.81	-13	-15.81	Horizontal
3490	-54.46	2.62	27.3	-29.78	-13	-16.78	Vertical
5337.9	-57.43	2.87	27.62	-32.68	-13	-19.68	Vertical
5337.9	-55.14	2.87	27.62	-30.39	-13	-17.39	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-52.02	2.66	27.28	-27.40	-13	-14.40	Horizontal
3558.6	-50.87	2.66	27.28	-26.25	-13	-13.25	Vertical
5337.9	-56.59	2.88	27.6	-31.87	-13	-18.87	Vertical
5337.9	-56.56	2.88	27.6	-31.84	-13	-18.84	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440	-51.29	2.62	27.3	-26.61	-13	-13.61	Horizontal
3440	-52.09	2.62	27.3	-27.41	-13	-14.41	Vertical
5160	-49.94	2.87	27.62	-25.19	-13	-12.19	Vertical
5160	-49.80	2.87	27.62	-25.05	-13	-12.05	Horizontal
Test Results for Mid Channel 1745MHz							
3490	-50.50	2.62	27.3	-25.82	-13	-12.82	Horizontal
3490	-49.45	2.62	27.3	-24.77	-13	-11.77	Vertical
5337.9	-52.79	2.87	27.62	-28.04	-13	-15.04	Vertical
5337.9	-50.23	2.87	27.62	-25.48	-13	-12.48	Horizontal
Test Results for High Channel 1770MHz							
3540	-47.71	2.62	27.3	-23.03	-13	-10.03	Horizontal
3540	-48.38	2.62	27.3	-23.70	-13	-10.70	Vertical
5310	-50.39	2.87	27.62	-25.64	-13	-12.64	Vertical
5310	-55.33	2.87	27.62	-30.58	-13	-17.58	Horizontal

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

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

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

10. FREQUENCY STABILITY

RULE PART(S)

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

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 2/4/5/7/13/38/41/66

RESULTS

See the following pages.

10.1 LTE BAND 2

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1880	2	0.001064	2.5
3.87	1880	0	0.000000	2.5
4.45	1880	14	0.007447	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	13	0.006915	2.5
Extreme (50C)	1880	12	0.006383	2.5
Extreme (40C)	1880	16	0.008511	2.5
Extreme (30C)	1880	2	0.001064	2.5
Extreme (10C)	1880	10	0.005319	2.5
Extreme (0C)	1880	9	0.004787	2.5
Extreme (-10C)	1880	1	0.000532	2.5
Extreme (-20C)	1880	14	0.007447	2.5
Extreme (-30C)	1880	3	0.001596	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	6	0.003191	2.5
3.87	1880	11	0.005851	2.5
4.45	1880	1	0.000532	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	10	0.005319	2.5
Extreme (50C)	1880	27	0.014362	2.5
Extreme (40C)	1880	20	0.010638	2.5
Extreme (30C)	1880	12	0.006383	2.5
Extreme (10C)	1880	23	0.012234	2.5
Extreme (0C)	1880	27	0.014362	2.5
Extreme (-10C)	1880	12	0.006383	2.5
Extreme (-20C)	1880	3	0.001596	2.5
Extreme (-30C)	1880	27	0.014362	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	15	0.008658	2.5
3.87	1732.5	5	0.002886	2.5
4.45	1732.5	13	0.007504	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	19	0.010967	2.5
Extreme (50C)	1732.5	14	0.008081	2.5
Extreme (40C)	1732.5	8	0.004618	2.5
Extreme (30C)	1732.5	23	0.013276	2.5
Extreme (10C)	1732.5	21	0.012121	2.5
Extreme (0C)	1732.5	17	0.009812	2.5
Extreme (-10C)	1732.5	5	0.002886	2.5
Extreme (-20C)	1732.5	6	0.003463	2.5
Extreme (-30C)	1732.5	13	0.007504	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1732.5	9	0.005195	2.5
3.87	1732.5	27	0.015584	2.5
4.45	1732.5	21	0.012121	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	9	0.005195	2.5
Extreme (50C)	1732.5	26	0.015007	2.5
Extreme (40C)	1732.5	17	0.009812	2.5
Extreme (30C)	1732.5	12	0.006926	2.5
Extreme (10C)	1732.5	24	0.013853	2.5
Extreme (0C)	1732.5	7	0.004040	2.5
Extreme (-10C)	1732.5	7	0.004040	2.5
Extreme (-20C)	1732.5	7	0.004040	2.5
Extreme (-30C)	1732.5	17	0.009812	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	0	0.000000	2.5
3.87	836.5	24	0.028691	2.5
4.45	836.5	13	0.015541	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	2	0.002391	2.5
Extreme (50C)	836.5	20	0.023909	2.5
Extreme (40C)	836.5	3	0.003586	2.5
Extreme (30C)	836.5	9	0.010759	2.5
Extreme (10C)	836.5	22	0.026300	2.5
Extreme (0C)	836.5	3	0.003586	2.5
Extreme (-10C)	836.5	11	0.013150	2.5
Extreme (-20C)	836.5	12	0.014345	2.5
Extreme (-30C)	836.5	20	0.023909	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	11	0.013150	2.5
4.45	836.5	7	0.008368	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	2	0.002391	2.5
Extreme (50C)	836.5	12	0.014345	2.5
Extreme (40C)	836.5	8	0.009564	2.5
Extreme (30C)	836.5	19	0.022714	2.5
Extreme (10C)	836.5	22	0.026300	2.5
Extreme (0C)	836.5	19	0.022714	2.5
Extreme (-10C)	836.5	11	0.013150	2.5
Extreme (-20C)	836.5	26	0.031082	2.5
Extreme (-30C)	836.5	5	0.005977	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	2	0.000789	2.5
3.87	2535	13	0.005128	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	7	0.002761	2.5
Extreme (50C)	2535	21	0.008284	2.5
Extreme (40C)	2535	15	0.005917	2.5
Extreme (30C)	2535	25	0.009862	2.5
Extreme (10C)	2535	15	0.005917	2.5
Extreme (0C)	2535	24	0.009467	2.5
Extreme (-10C)	2535	17	0.006706	2.5
Extreme (-20C)	2535	11	0.004339	2.5
Extreme (-30C)	2535	25	0.009862	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	11	0.004339	2.5
3.87	2535	3	0.001183	2.5
4.45	2535	12	0.004734	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	19	0.007495	2.5
Extreme (50C)	2535	19	0.007495	2.5
Extreme (40C)	2535	10	0.003945	2.5
Extreme (30C)	2535	2	0.000789	2.5
Extreme (10C)	2535	16	0.006312	2.5
Extreme (0C)	2535	24	0.009467	2.5
Extreme (-10C)	2535	15	0.005917	2.5
Extreme (-20C)	2535	18	0.007101	2.5
Extreme (-30C)	2535	17	0.006706	2.5

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

10.5 LTE BAND 13

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	782.0	25	0.031969	2.5
3.87	782.0	20	0.025575	2.5
4.45	782.0	14	0.017903	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	8	0.010230	2.5
Extreme (50C)	782.0	1	0.001279	2.5
Extreme (40C)	782.0	12	0.015345	2.5
Extreme (30C)	782.0	3	0.003836	2.5
Extreme (10C)	782.0	22	0.028133	2.5
Extreme (0C)	782.0	18	0.023018	2.5
Extreme (-10C)	782.0	26	0.033248	2.5
Extreme (-20C)	782.0	25	0.031969	2.5
Extreme (-30C)	782.0	17	0.021739	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	782.0	21	0.026854	2.5
3.87	782.0	12	0.015345	2.5
4.45	782.0	25	0.031969	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	12	0.015345	2.5
Extreme (50C)	782.0	9	0.011509	2.5
Extreme (40C)	782.0	27	0.034527	2.5
Extreme (30C)	782.0	20	0.025575	2.5
Extreme (10C)	782.0	7	0.008951	2.5
Extreme (0C)	782.0	25	0.031969	2.5
Extreme (-10C)	782.0	15	0.019182	2.5
Extreme (-20C)	782.0	23	0.029412	2.5
Extreme (-30C)	782.0	5	0.006394	2.5

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

10.6 LTE BAND 38

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 38 QPSK, (CH 37850 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.29	2595	13	0.005010	2.5
3.87	2595	3	0.001156	2.5
4.45	2595	17	0.006551	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 38 QPSK, (CH 37850 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2595	0	0.000000	2.5
Extreme (50C)	2595	23	0.008863	2.5
Extreme (40C)	2595	6	0.002312	2.5
Extreme (30C)	2595	5	0.001927	2.5
Extreme (10C)	2595	16	0.006166	2.5
Extreme (0C)	2595	11	0.004239	2.5
Extreme (-10C)	2595	1	0.000385	2.5
Extreme (-20C)	2595	11	0.004239	2.5
Extreme (-30C)	2595	2	0.000771	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 38 16QAM, (CH 37850 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.29	2595	12	0.004624	2.5
3.87	2595	13	0.005010	2.5
4.45	2595	9	0.003468	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 38 16QAM, (CH 37850 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2595	21	0.008092	2.5
Extreme (50C)	2595	8	0.003083	2.5
Extreme (40C)	2595	25	0.009634	2.5
Extreme (30C)	2595	14	0.005395	2.5
Extreme (10C)	2595	23	0.008863	2.5
Extreme (0C)	2595	0	0.000000	2.5
Extreme (-10C)	2595	12	0.004624	2.5
Extreme (-20C)	2595	7	0.002697	2.5
Extreme (-30C)	2595	7	0.002697	2.5

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

10.7 LTE BAND 41

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	2593	5	0.001928	2.5
3.87	2593	16	0.006170	2.5
4.45	2593	7	0.002700	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	1	0.000386	2.5
Extreme (50C)	2593	26	0.010027	2.5
Extreme (40C)	2593	10	0.003857	2.5
Extreme (30C)	2593	24	0.009256	2.5
Extreme (10C)	2593	21	0.008099	2.5
Extreme (0C)	2593	26	0.010027	2.5
Extreme (-10C)	2593	8	0.003085	2.5
Extreme (-20C)	2593	1	0.000386	2.5
Extreme (-30C)	2593	14	0.005399	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	2593	24	0.009256	2.5
3.87	2593	1	0.000386	2.5
4.45	2593	25	0.009641	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	11	0.004242	2.5
Extreme (50C)	2593	4	0.001543	2.5
Extreme (40C)	2593	26	0.010027	2.5
Extreme (30C)	2593	9	0.003471	2.5
Extreme (10C)	2593	1	0.000386	2.5
Extreme (0C)	2593	17	0.006556	2.5
Extreme (-10C)	2593	1	0.000386	2.5
Extreme (-20C)	2593	7	0.002700	2.5
Extreme (-30C)	2593	16	0.006170	2.5

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

10.8 LTE BAND 66

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1745	17	0.009742	2.5
3.87	1745	3	0.001719	2.5
4.45	1745	1	0.000573	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	25	0.014327	2.5
Extreme (50C)	1745	15	0.008596	2.5
Extreme (40C)	1745	25	0.014327	2.5
Extreme (30C)	1745	20	0.011461	2.5
Extreme (10C)	1745	26	0.014900	2.5
Extreme (0C)	1745	27	0.015473	2.5
Extreme (-10C)	1745	19	0.010888	2.5
Extreme (-20C)	1745	14	0.008023	2.5
Extreme (-30C)	1745	4	0.002292	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.29	1745	13	0.007450	2.5
3.87	1745	1	0.000573	2.5
4.45	1745	24	0.013754	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	19	0.010888	2.5
Extreme (50C)	1745	12	0.006877	2.5
Extreme (40C)	1745	16	0.009169	2.5
Extreme (30C)	1745	21	0.012034	2.5
Extreme (10C)	1745	1	0.000573	2.5
Extreme (0C)	1745	12	0.006877	2.5
Extreme (-10C)	1745	12	0.006877	2.5
Extreme (-20C)	1745	27	0.015473	2.5
Extreme (-30C)	1745	22	0.012607	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.

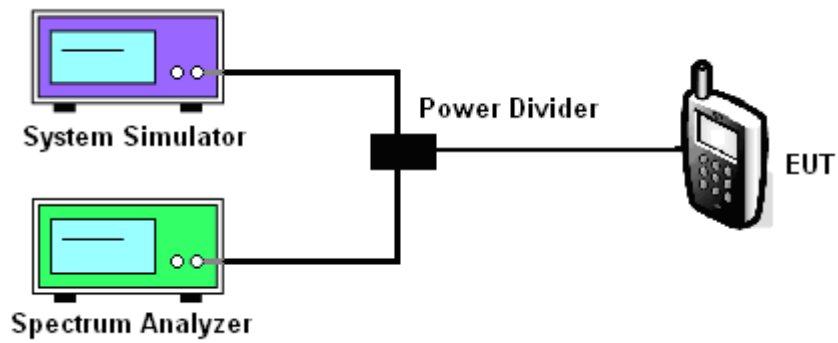
11.2 Measuring Instruments

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 2/4/5/7/13/38/41/66

Test data reference attachment.

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