

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

FCC ID: 2AZYA-AC92

Product: Mobile Phone

Trade Mark: ACER

Model Number: SOSPIRO-AC92

Family Model: SOSPIRO-AC92-B, SOSPIRO-AC92-N

Report No.: S23082107102005

Prepared for

Senwa Global International, S.A. de C.V.

Carretera Mexico-Toluca No. 5324 PB, Colonia El Yaqui Del. Cuajimalpa de
Morelos, C.P. 05320 Ciudad de Mexico, Mexico

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.

1&5/F, Building C, 1&2/F, Building E, Fenda Science Park, Sanwei
Community, Hangcheng Street, Baoan District, Shenzhen, Guangdong, China

Tel. 400-800-6106, 0755-2320 0050, 0755-2320 0090

Website: <http://www.ntek.org.cn>

TEST RESULT CERTIFICATION

Applicant's name: Senwa Global International, S.A. de C.V.
Address: Carretera Mexico-Toluca No. 5324 PB, Colonia El Yaqui Del. Cuajimalpa de Morelos, C.P. 05320 Ciudad de Mexico, Mexico
Manufacturer's Name: Senwa Mobile China Ltd
Address: A611, Languang technology building, No. 27, Gaoxin North 6th Road, songpingshan community, Xili street, Nanshan District, Shenzhen, Guangdong Province
Product name: Mobile Phone
Model and/or type reference: SOSPIRO-AC92
Family Model: SOSPIRO-AC92-B, SOSPIRO-AC92-N
Test sample number: S230807058003
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: Aug 21, 2023 ~ Sep 08, 2023
Date of Issue: Sep 08, 2023
Test Result: Pass

Testing Engineer: [Signature]
(Allen Liu)

Authorized Signatory: [Signature]
(Alex Li)

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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	SOSPIRO-AC92
Family Model	SOSPIRO-AC92-B, SOSPIRO-AC92-N
Model Difference	All models are the same circuit and RF module, except the model name and colour.
FCC ID:	2AZYA-AC92
Frequency Bands:	U.S. Bands: <input checked="" type="checkbox"/> LTE FDD Band 2, 4, 5, 7, 12, 13, 17 LTE TDD Band 38
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 13 Uplink: 777MHz-787MHz, Downlink: 746MHz-756MHz; LTE FDD Band 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE TDD Band 38: Uplink & Downlink: 2570 MHz to 2620 MHz
Type of Modulation:	QPSK/16QAM
Antenna:	PIFA Antenna
Antenna gain:	-0.7 dBi,
Power Supply:	DC 3.87V/5100mAh from battery or DC 5V from Adapter.
Adapter:	Model: SGCH0018 Input: 100-240Vca 50/60Hz 0.5A Output: 5.0Vcc 3A, 9.0Vcc 2A 18W
Extreme Vol. Limits:	DC 3.4V to DC 4.4V (Nominal DC 3.87V) (Note 1)
HW Version	ums5121h10_V1.0
SW Version	Acer_AC92_Ver01

** Note1: The High Voltage DC 4.4V and Low Voltage DC 3.4V 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: 2AZYA-AC92** 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&5/F, Building C, 1&2/F, Building E, Fenda Science Park, Sanwei Community, Hangcheng Street, Baoan District, Shenzhen ,Guangdong, China.

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

FCC Registration No.:463705

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

MEASUREMENT UNCERTAINTY

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

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

1.5 SPECIAL ACCESSORIES

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

1.6 WORST-CASE CONFIGURATION AND MODE

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

The device has LTE Bands of: Band 2, Band 4, Band 5, Band 7, Band 12, Band 13, Band 17, Band 38

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	Mobile Phone	SOSPIRO-AC92	FCC ID: 2AZYA-AC92	EUT

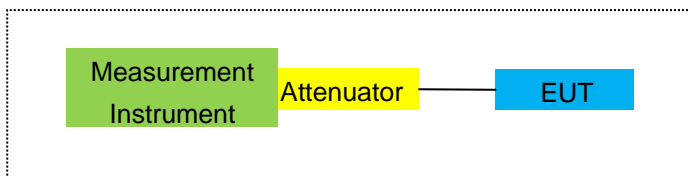
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

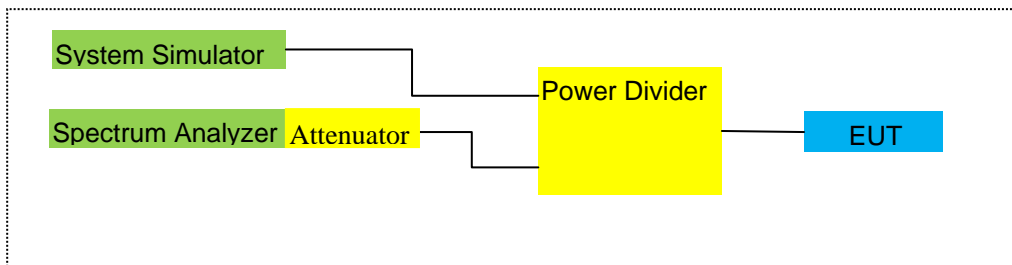
For Radiated Test Cases



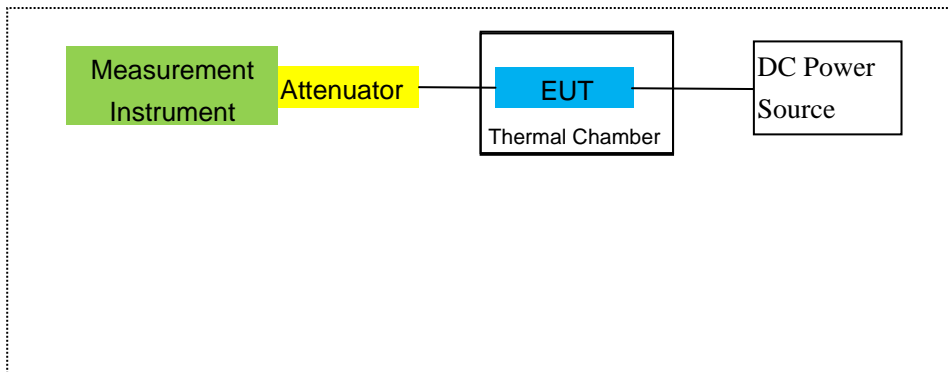
For Conducted Output Power



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	2023.05.29	2024.05.28	1 year
2	Test Receiver	R&S	ESPI	101318	2023.03.27	2024.03.26	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2023.03.27	2024.03.26	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2023.05.06	2026.05.05	3 year
5	Broadband Horn Antenna	SCHWARZBECK	BBHA 9120 D	2816	2023/1/12	2024/1/11	1 year
6	Broadband Horn Antenna	SCHWARZBECK	BBHA 9120 D	2817	2023/1/12	2024/1/11	1 year
7	Amplifier	EM	EM-30180	060538	2023.05.29	2024.05.28	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2023.03.27	2024.03.26	1 year
9	Power Meter	R&S	NRVS	100696	2023.05.29	2024.05.28	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2023.03.27	2024.03.26	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	2023.03.27	2024.03.26	1 year
15	LISN	R&S	ENV216	101313	2023.03.27	2024.03.26	1 year
16	LISN	EMCO	3816/2	00042990	2023.03.27	2024.03.26	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2023.03.27	2024.03.26	1 year
18	Passive Voltage Probe	R&S	ESH2-Z3	100196	2023.03.27	2024.03.26	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	Attenuator	MCE	24-10-34	BN9258	2023.03.27	2024.03.26	1 year
23	Spectrum Analyzer	agilent	e4440a	us44300399	2023.03.27	2024.03.26	1 year
24	test receiver	R&S	ESCI	a0304218	2023.03.27	2024.03.26	1 year

25	Communication Tester	R&S	CMU200	A0304247	2023.05.29	2024.05.28	1 year
26	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2023.03.27	2024.03.26	1 year
27	DC Power Source	N/A	PS-6005D	2017040292 3	2023.05.06	2026.05.05	3 year
28	MXG Vector Signal Generator	Agilent	N5182A	MY47070317	2023.05.29	2024.05.28	1 year
29	Communication Tester	R&S	CMW500	148500	2023.05.29	2024.05.28	1 year
30	MXG Vector Signal Generator	Agilent	N5183B	MY57280984	2022/11/8	2023/11/7	1 year
31	Log-Periodic Antenna	SCHWARZBECK	VULB 9162	584	2023/1/11	2024/1/10	1 year
32	Log-Periodic Antenna	SCHWARZBECK	VULB 9162	586	2023/1/11	2024/1/10	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.

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	13	10	Table 6.2.4-2	Table 6.2.4-2
	6.6.3.3.2				
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

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 38

RESULTS

PASS

Test data reference attachment.

6. BANDEDGE AND EMISSION MASK

RULE PART(S)

FCC: §2.1051, §22.917(a), §24.238(a), §27.53(c)(g)(h)(m)

FCC: §2.1046, §22.913, §24.232

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 CMW500Test 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 display line

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

MODES TESTED

- LTE Band2/4/5/7/12/13/17/38

RESULTS

Test data reference attachment.

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

7. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.917(a), §24.238(a), §27.53(c)(g)(h)(m)

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

MODES TESTED

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17

LTE Band 38

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.

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

8. RADIATED MEASUREMENT

8.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913(a)(2), §24.232(c) and §27.50 (h)(2), (b)(10), (c)(10), (d)(4)

LIMITS:

22.913(a) (2)- The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
24.232 (c) Mobile and portable stations are limited to 2 watts EIRP.
27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.
27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.
27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.
27.50 (h)(2) Mobile and other user stations in the 2500–2570 MHz and 2620–2690 MHz bands. 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

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 38

RESULTS

Pass

8.2 LTE BAND 2

Radiated Power (EIRP) for Band 2										
Mode	RB/RB SIZE	Frequency	Result						Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP	Of Max. ERP		
							Average			
						(mW)				
1.4MHz Band QPSK	1/#Mid	1850.7	-2.63	3.76	28.24	21.85	153.109	Horizontal	Pass	
		1880	-2.44	3.91	28.22	21.87	153.815	Horizontal	Pass	
		1909.3	-2.35	3.93	28.20	21.92	155.597	Horizontal	Pass	
3.0MHz Band QPSK	1/#Mid	1851.5	-2.69	3.77	28.23	21.77	150.314	Horizontal	Pass	
		1880	-2.54	3.91	28.24	21.79	151.008	Horizontal	Pass	
		1908.5	-2.41	3.94	28.25	21.90	154.882	Horizontal	Pass	
5.0MHz Band QPSK	1/#Mid	1852.5	-2.58	3.77	28.31	21.96	157.036	Horizontal	Pass	
		1880	-2.20	3.91	28.22	22.11	162.555	Horizontal	Pass	
		1907.5	-2.13	3.94	28.20	22.13	163.305	Horizontal	Pass	
10.0MHz Band QPSK	1/#Mid	1855	-2.44	3.79	28.33	22.10	162.181	Horizontal	Pass	
		1880	-2.14	3.95	28.22	22.13	163.305	Horizontal	Pass	
		1905	-2.03	3.97	28.19	22.19	165.577	Horizontal	Pass	
15.0MHz Band QPSK	1/#Mid	1857.5	-2.40	3.79	28.34	22.15	164.059	Horizontal	Pass	
		1880	-2.19	3.95	28.22	22.08	161.436	Horizontal	Pass	
		1902.5	-2.05	3.97	28.18	22.16	164.437	Horizontal	Pass	
20.0MHz Band QPSK	1/#Mid	1860	-2.39	3.81	28.35	22.15	164.059	Horizontal	Pass	
		1880	-2.06	3.96	28.22	22.20	165.959	Horizontal	Pass	
		1900	-2.00	4.00	28.16	22.16	164.437	Horizontal	Pass	
1.4MHz Band QPSK	1/#Mid	1850.7	-3.50	3.76	28.24	20.98	125.314	Vertical	Pass	
		1880	-2.79	3.91	28.22	21.52	141.906	Vertical	Pass	
		1909.3	-3.49	3.93	28.20	20.78	119.674	Vertical	Pass	
3.0MHz Band QPSK	1/#Mid	1851.5	-3.32	3.77	28.23	21.14	130.017	Vertical	Pass	
		1880	-3.08	3.91	28.24	21.25	133.352	Vertical	Pass	
		1908.5	-3.24	3.94	28.25	21.07	127.938	Vertical	Pass	
5.0MHz Band QPSK	1/#Mid	1852.5	-3.83	3.77	28.31	20.71	117.761	Vertical	Pass	
		1880	-2.91	3.91	28.22	21.40	138.038	Vertical	Pass	
		1907.5	-3.63	3.94	28.20	20.63	115.611	Vertical	Pass	
10.0MHz Band QPSK	1/#Mid	1855	-3.88	3.79	28.33	20.66	116.413	Vertical	Pass	
		1880	-2.93	3.95	28.22	21.34	136.144	Vertical	Pass	
		1905	-2.85	3.97	28.19	21.37	137.088	Vertical	Pass	

15.0MHz		1857.5	-3.08	3.79	28.34	21.47	140.281	Vertical	Pass
Band	1/#Mid	1880	-3.08	3.95	28.22	21.19	131.522	Vertical	Pass
QPSK		1902.5	-2.91	3.97	28.18	21.30	134.896	Vertical	Pass
20.0MHz		1860	-3.27	3.81	28.35	21.27	133.968	Vertical	Pass
Band	1/#Mid	1880	-3.28	3.96	28.22	20.98	125.314	Vertical	Pass
QPSK		1900	-3.01	4.00	28.16	21.15	130.317	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1850.7	-3.75	3.76	28.24	20.73	118.304	Horizontal	Pass
		1880	-3.22	3.91	28.22	21.09	128.529	Horizontal	Pass
		1909.3	-3.15	3.93	28.20	21.12	129.420	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-3.25	3.77	28.23	21.21	132.130	Horizontal	Pass
		1880	-3.33	3.91	28.24	21.00	125.893	Horizontal	Pass
		1908.5	-3.54	3.94	28.25	20.77	119.399	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-3.19	3.77	28.31	21.35	136.458	Horizontal	Pass
		1880	-3.10	3.91	28.22	21.21	132.130	Horizontal	Pass
		1907.5	-2.78	3.94	28.20	21.48	140.605	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-3.24	3.79	28.33	21.30	134.896	Horizontal	Pass
		1880	-3.23	3.95	28.22	21.04	127.057	Horizontal	Pass
		1905	-2.70	3.97	28.19	21.52	141.906	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-3.22	3.79	28.34	21.33	135.831	Horizontal	Pass
		1880	-3.01	3.95	28.22	21.26	133.660	Horizontal	Pass
		1902.5	-2.97	3.97	28.18	21.24	133.045	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-3.11	3.81	28.35	21.43	138.995	Horizontal	Pass
		1880	-2.81	3.96	28.22	21.45	139.637	Horizontal	Pass
		1900	-2.63	4.00	28.16	21.53	142.233	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-4.30	3.76	28.24	20.18	104.232	Vertical	Pass
		1880	-3.81	3.91	28.22	20.50	112.202	Vertical	Pass
		1909.3	-4.53	3.93	28.20	19.74	94.189	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.31	3.77	28.23	20.15	103.514	Vertical	Pass
		1880	-4.13	3.91	28.24	20.20	104.713	Vertical	Pass
		1908.5	-3.99	3.94	28.25	20.32	107.647	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-4.39	3.77	28.31	20.15	103.514	Vertical	Pass
		1880	-3.86	3.91	28.22	20.45	110.917	Vertical	Pass
		1907.5	-4.67	3.94	28.20	19.59	90.991	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-3.98	3.79	28.33	20.56	113.763	Vertical	Pass
		1880	-4.23	3.95	28.22	20.04	100.925	Vertical	Pass
		1905	-4.21	3.97	28.19	20.01	100.231	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.97	3.79	28.34	19.58	90.782	Vertical	Pass
		1880	-4.65	3.95	28.22	19.62	91.622	Vertical	Pass
		1902.5	-4.59	3.97	28.18	19.62	91.622	Vertical	Pass

20.0MHz		1860	-4.94	3.81	28.35	19.60	91.201	Vertical	Pass
Band 16	1/#Mid	1880	-3.77	3.96	28.22	20.49	111.944	Vertical	Pass
QAM		1900	-4.53	4.00	28.16	19.63	91.833	Vertical	Pass

Note:

SG Level= Signal generator output

Max. EIRP Average (dBm)= Factor 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	Cable Loss	Antenna Factor	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	(dBm)	(dB)	Average	Average	Of Max. ERP	
						(dBm)	(mW)		
1.4MHz Band QPSK	1/#Mid	1710.7	-2.54	3.12	27.58	21.92	155.597	Horizontal	Pass
		1732.5	-2.53	3.27	27.61	21.81	151.705	Horizontal	Pass
		1754.3	-2.51	3.29	27.63	21.83	152.405	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-2.71	3.13	27.61	21.77	150.314	Horizontal	Pass
		1732.5	-2.63	3.27	27.61	21.71	148.252	Horizontal	Pass
		1753.5	-2.55	3.30	27.62	21.77	150.314	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-2.48	3.13	27.63	22.02	159.221	Horizontal	Pass
		1732.5	-2.38	3.27	27.61	21.96	157.036	Horizontal	Pass
		1752.5	-2.26	3.30	27.60	22.04	159.956	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-2.42	3.15	27.64	22.07	161.065	Horizontal	Pass
		1732.5	-2.19	3.31	27.61	22.11	162.555	Horizontal	Pass
		1750	-2.21	3.33	27.59	22.05	160.325	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-2.43	3.15	27.65	22.07	161.065	Horizontal	Pass
		1732.5	-2.27	3.31	27.61	22.03	159.588	Horizontal	Pass
		1747.5	-2.21	3.33	27.57	22.03	159.588	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-2.37	3.17	27.66	22.12	162.930	Horizontal	Pass
		1732.5	-2.20	3.32	27.61	22.09	161.808	Horizontal	Pass
		1745	-2.14	3.36	27.56	22.06	160.694	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-3.10	3.12	27.58	21.36	136.773	Vertical	Pass
		1732.5	-3.55	3.27	27.61	20.79	119.950	Vertical	Pass
		1754.3	-3.08	3.29	27.63	21.26	133.660	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.62	3.13	27.61	20.86	121.899	Vertical	Pass
		1732.5	-3.73	3.27	27.61	20.61	115.080	Vertical	Pass
		1753.5	-3.07	3.30	27.62	21.25	133.352	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.34	3.13	27.63	21.16	130.617	Vertical	Pass
		1732.5	-3.46	3.27	27.61	20.88	122.462	Vertical	Pass
		1752.5	-2.93	3.30	27.60	21.37	137.088	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.79	3.15	27.64	20.70	117.490	Vertical	Pass
		1732.5	-3.09	3.31	27.61	21.21	132.130	Vertical	Pass
		1750	-3.21	3.33	27.59	21.05	127.350	Vertical	Pass

15.0MHz		1717.5	-2.97	3.15	27.65	21.53	142.233	Vertical	Pass
Band	1/#Mid	1732.5	-3.54	3.31	27.61	20.76	119.124	Vertical	Pass
QPSK		1747.5	-2.71	3.33	27.57	21.53	142.233	Vertical	Pass
20.0MHz		1720	-3.50	3.17	27.66	20.99	125.603	Vertical	Pass
Band	1/#Mid	1732.5	-3.22	3.32	27.61	21.07	127.938	Vertical	Pass
QPSK		1745	-2.82	3.36	27.56	21.38	137.404	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss	Antenna Factor	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	(dBm)	(dB)	Average	Average	Of Max. ERP	
						(dBm)	(mW)		
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.35	3.12	27.58	21.11	129.122	Horizontal	Pass
		1732.5	-3.20	3.27	27.61	21.14	130.017	Horizontal	Pass
		1754.3	-3.20	3.29	27.63	21.14	130.017	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.29	3.13	27.61	21.19	131.522	Horizontal	Pass
		1732.5	-3.42	3.27	27.61	20.92	123.595	Horizontal	Pass
		1753.5	-3.64	3.30	27.62	20.68	116.950	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-3.12	3.13	27.63	21.38	137.404	Horizontal	Pass
		1732.5	-3.08	3.27	27.61	21.26	133.660	Horizontal	Pass
		1752.5	-2.77	3.30	27.60	21.53	142.233	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-3.19	3.15	27.64	21.30	134.896	Horizontal	Pass
		1732.5	-3.38	3.31	27.61	20.92	123.595	Horizontal	Pass
		1750	-2.76	3.33	27.59	21.50	141.254	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-2.99	3.15	27.65	21.51	141.579	Horizontal	Pass
		1732.5	-3.05	3.31	27.61	21.25	133.352	Horizontal	Pass
		1747.5	-3.07	3.33	27.57	21.17	130.918	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-2.94	3.17	27.66	21.55	142.889	Horizontal	Pass
		1732.5	-2.95	3.32	27.61	21.34	136.144	Horizontal	Pass
		1745	-2.76	3.36	27.56	21.44	139.316	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.70	3.12	27.58	19.76	94.624	Vertical	Pass
		1732.5	-4.06	3.27	27.61	20.28	106.660	Vertical	Pass
		1754.3	-4.60	3.29	27.63	19.74	94.189	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.34	3.13	27.61	20.14	103.276	Vertical	Pass
		1732.5	-3.85	3.27	27.61	20.49	111.944	Vertical	Pass
		1753.5	-4.33	3.30	27.62	19.99	99.770	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.86	3.13	27.63	19.64	92.045	Vertical	Pass
		1732.5	-3.83	3.27	27.61	20.51	112.460	Vertical	Pass
		1752.5	-3.98	3.30	27.60	20.32	107.647	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.32	3.15	27.64	20.17	103.992	Vertical	Pass
		1732.5	-4.46	3.31	27.61	19.84	96.383	Vertical	Pass
		1750	-4.06	3.33	27.59	20.20	104.713	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.22	3.15	27.65	20.28	106.660	Vertical	Pass
		1732.5	-4.51	3.31	27.61	19.79	95.280	Vertical	Pass
		1747.5	-4.02	3.33	27.57	20.22	105.196	Vertical	Pass

20.0MHz		1720	-4.19	3.17	27.66	20.30	107.152	Vertical	Pass
Band 16	1/#Mid	1732.5	-4.20	3.32	27.61	20.09	102.094	Vertical	Pass
QAM		1745	-4.33	3.36	27.56	19.87	97.051	Vertical	Pass

Note:

SG Level= Signal generator output

Max. EIRP Average (dBm)= Factor 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							Polarization	Conclusion
			SG	Cable	Antenna	Correction	Max. EIRP	Max.	Of Max.		
			Level	Loss	Factor		EIRP	ERP			
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	ERP		
					(dBm)	(mW)					
1.4MHz Band QPSK	3/#Mid	824.7	6.76	2.01	19.68	2.15	22.28	169.044	Horizontal	Pass	
		836.5	6.64	2.01	19.77	2.15	22.25	167.880	Horizontal	Pass	
		848.3	6.44	2.02	19.82	2.15	22.09	161.808	Horizontal	Pass	
3.0MHz Band QPSK	1/#Mid	825.5	6.53	2.01	19.70	2.15	22.07	161.065	Horizontal	Pass	
		836.5	6.43	2.01	19.77	2.15	22.04	159.956	Horizontal	Pass	
		847.5	6.30	2.02	19.81	2.15	21.94	156.315	Horizontal	Pass	
5.0MHz Band QPSK	1/#Mid	826.5	6.81	2.01	19.71	2.15	22.36	172.187	Horizontal	Pass	
		836.5	6.69	2.01	19.77	2.15	22.30	169.824	Horizontal	Pass	
		846.5	6.53	2.02	19.79	2.15	22.15	164.059	Horizontal	Pass	
10.0MHz Band QPSK	1/#Mid	829	6.83	2.01	19.73	2.15	22.40	173.780	Horizontal	Pass	
		836.5	6.78	2.01	19.77	2.15	22.39	173.380	Horizontal	Pass	
		844	6.68	2.02	19.78	2.15	22.29	169.434	Horizontal	Pass	
1.4MHz Band QPSK	1/#Mid	824.7	5.49	2.01	19.68	2.15	21.01	126.183	Vertical	Pass	
		836.5	5.91	2.01	19.77	2.15	21.52	141.906	Vertical	Pass	
		848.3	5.65	2.02	19.82	2.15	21.30	134.896	Vertical	Pass	
3.0MHz Band QPSK	1/#Mid	825.5	5.06	2.01	19.70	2.15	20.60	114.815	Vertical	Pass	
		836.5	5.36	2.01	19.77	2.15	20.97	125.026	Vertical	Pass	
		847.5	4.95	2.02	19.81	2.15	20.59	114.551	Vertical	Pass	
5.0MHz Band QPSK	1/#Mid	826.5	5.77	2.01	19.71	2.15	21.32	135.519	Vertical	Pass	
		836.5	5.06	2.01	19.77	2.15	20.67	116.681	Vertical	Pass	
		846.5	5.74	2.02	19.79	2.15	21.36	136.773	Vertical	Pass	
10.0MHz Band QPSK	1/#Mid	829	5.27	2.01	19.73	2.15	20.84	121.339	Vertical	Pass	
		836.5	5.27	2.01	19.77	2.15	20.88	122.462	Vertical	Pass	
		844	5.18	2.02	19.78	2.15	20.79	119.950	Vertical	Pass	

Radiated Power (ERP) for Band 5

Radiated Power (ERP) for Band 5											
Mode	RB/RB SIZE	Frequency	Result							Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss	Antenna Factor	Correction	Max. EIRP	Max. EIRP	Of Max. ERP		
			(dBm)				(dBm)	(dB)			
						(dB)	(dBm)	(mW)			
1.4MHz Band 16 QAM	3/#Mid	824.7	5.91	2.01	19.68	2.15	21.43	138.995	Horizontal	Pass	
		836.5	5.84	2.01	19.77	2.15	21.45	139.637	Horizontal	Pass	
		848.3	5.68	2.02	19.82	2.15	21.33	135.831	Horizontal	Pass	
3.0MHz Band 16 QAM	1/#Mid	825.5	5.99	2.01	19.70	2.15	21.53	142.233	Horizontal	Pass	
		836.5	5.70	2.01	19.77	2.15	21.31	135.207	Horizontal	Pass	
		847.5	5.18	2.02	19.81	2.15	20.82	120.781	Horizontal	Pass	
5.0MHz Band 16 QAM	1/#Mid	826.5	6.31	2.01	19.71	2.15	21.86	153.462	Horizontal	Pass	
		836.5	6.08	2.01	19.77	2.15	21.69	147.571	Horizontal	Pass	
		846.5	5.83	2.02	19.79	2.15	21.45	139.637	Horizontal	Pass	
10.0MHz Band 16 QAM	1/#Mid	829	6.31	2.01	19.73	2.15	21.88	154.170	Horizontal	Pass	
		836.5	6.03	2.01	19.77	2.15	21.64	145.881	Horizontal	Pass	
		844	5.57	2.02	19.78	2.15	21.18	131.220	Horizontal	Pass	
1.4MHz Band 16 QAM	1/#Mid	824.7	5.90	2.01	19.68	2.15	21.42	138.676	Vertical	Pass	
		836.5	4.84	2.01	19.77	2.15	20.45	110.917	Vertical	Pass	
		848.3	4.08	2.02	19.82	2.15	19.73	93.972	Vertical	Pass	
3.0MHz Band 16 QAM	1/#Mid	825.5	5.21	2.01	19.70	2.15	20.75	118.850	Vertical	Pass	
		836.5	4.90	2.01	19.77	2.15	20.51	112.460	Vertical	Pass	
		847.5	5.43	2.02	19.81	2.15	21.07	127.938	Vertical	Pass	
5.0MHz Band 16 QAM	1/#Mid	826.5	4.38	2.01	19.71	2.15	19.93	98.401	Vertical	Pass	
		836.5	5.70	2.01	19.77	2.15	21.31	135.207	Vertical	Pass	
		846.5	5.93	2.02	19.79	2.15	21.55	142.889	Vertical	Pass	
10.0MHz Band 16 QAM	1/#Mid	829	4.40	2.01	19.73	2.15	19.97	99.312	Vertical	Pass	
		836.5	4.77	2.01	19.77	2.15	20.38	109.144	Vertical	Pass	
		844	4.32	2.02	19.78	2.15	19.93	98.401	Vertical	Pass	

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

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

8.5 LTE BAND 7

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result					Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss	Antenna Factor	Max. EIRP	Max. EIRP		
			(dBm)	(dBm)	(dB)	Average	Average		
						(dBm)	(mW)		
5.0MHz Band QPSK	1/#Mid	2502.5	-0.82	4.54	27.75	22.39	173.380	Horizontal	Pass
		2535	-0.65	4.69	27.72	22.38	172.982	Horizontal	Pass
		2567.5	-0.58	4.71	27.71	22.42	174.582	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	-0.75	4.55	27.76	22.46	176.198	Horizontal	Pass
		2535	-0.56	4.69	27.72	22.47	176.604	Horizontal	Pass
		2565	-0.48	4.72	27.70	22.50	177.828	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-0.76	4.55	27.77	22.46	176.198	Horizontal	Pass
		2535	-0.62	4.69	27.72	22.41	174.181	Horizontal	Pass
		2562.5	-0.52	4.72	27.69	22.45	175.792	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-0.70	4.57	27.78	22.51	178.238	Horizontal	Pass
		2535	-0.52	4.73	27.72	22.47	176.604	Horizontal	Pass
		2560	-0.48	4.75	27.68	22.45	175.792	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-2.49	4.54	27.75	20.72	118.032	Vertical	Pass
		2535	-1.66	4.69	27.72	21.37	137.088	Vertical	Pass
		2567.5	-1.51	4.71	27.71	21.49	140.929	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	-2.10	4.55	27.76	21.11	129.122	Vertical	Pass
		2535	-1.96	4.69	27.72	21.07	127.938	Vertical	Pass
		2565	-1.65	4.72	27.70	21.33	135.831	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-1.97	4.55	27.77	21.25	133.352	Vertical	Pass
		2535	-2.14	4.69	27.72	20.89	122.744	Vertical	Pass
		2562.5	-1.83	4.72	27.69	21.14	130.017	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	-1.99	4.57	27.78	21.22	132.434	Vertical	Pass
		2535	-2.06	4.73	27.72	20.93	123.880	Vertical	Pass
		2560	-1.91	4.75	27.68	21.02	126.474	Vertical	Pass

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)			Average	Average		
						(dBm)	(mW)		
5.0MHz Band 16 QAM	1/#Mid	2502.5	-1.51	4.54	27.75	21.70	147.911	Horizontal	Pass
		2535	-1.20	4.69	27.72	21.83	152.405	Horizontal	Pass
		2567.5	-1.28	4.71	27.71	21.72	148.594	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-1.40	4.55	27.76	21.81	151.705	Horizontal	Pass
		2535	-1.41	4.69	27.72	21.62	145.211	Horizontal	Pass
		2565	-1.68	4.72	27.70	21.30	134.896	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-1.58	4.55	27.77	21.64	145.881	Horizontal	Pass
		2535	-1.55	4.69	27.72	21.48	140.605	Horizontal	Pass
		2562.5	-1.16	4.72	27.69	21.81	151.705	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-1.46	4.57	27.78	21.75	149.624	Horizontal	Pass
		2535	-1.13	4.73	27.72	21.86	153.462	Horizontal	Pass
		2560	-1.23	4.75	27.68	21.70	147.911	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-3.04	4.54	27.75	20.17	103.992	Vertical	Pass
		2535	-2.58	4.69	27.72	20.45	110.917	Vertical	Pass
		2567.5	-2.68	4.71	27.71	20.32	107.647	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-2.02	4.55	27.76	21.19	131.522	Vertical	Pass
		2535	-1.91	4.69	27.72	21.12	129.420	Vertical	Pass
		2565	-2.77	4.72	27.70	20.21	104.954	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-1.99	4.55	27.77	21.23	132.739	Vertical	Pass
		2535	-3.18	4.69	27.72	19.85	96.605	Vertical	Pass
		2562.5	-2.13	4.72	27.69	20.84	121.339	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-2.86	4.57	27.78	20.35	108.393	Vertical	Pass
		2535	-2.36	4.73	27.72	20.63	115.611	Vertical	Pass
		2560	-2.30	4.75	27.68	20.63	115.611	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.6 LTE BAND 12

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss	Antenna Factor	Correction	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	Of Max. ERP	
							(dBm)	(mW)		
1.4MHz Band QPSK	1/#Mid	699.7	7.13	1.91	19.21	2.15	22.28	169.044	Vertical	Pass
		707.5	7.05	1.91	19.26	2.15	22.25	167.880	Vertical	Pass
		715.3	6.83	1.93	19.34	2.15	22.09	161.808	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	700.5	6.92	1.91	19.21	2.15	22.07	161.065	Vertical	Pass
		707.5	6.84	1.91	19.26	2.15	22.04	159.956	Vertical	Pass
		714.5	6.68	1.93	19.34	2.15	21.94	156.315	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	701.5	7.19	1.91	19.23	2.15	22.36	172.187	Vertical	Pass
		707.5	7.10	1.91	19.26	2.15	22.30	169.824	Vertical	Pass
		713.5	6.89	1.92	19.33	2.15	22.15	164.059	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	704	7.21	1.91	19.25	2.15	22.40	173.780	Vertical	Pass
		707.5	7.19	1.91	19.26	2.15	22.39	173.380	Vertical	Pass
		711	7.04	1.92	19.32	2.15	22.29	169.434	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	699.7	5.71	1.91	19.21	2.15	20.86	121.899	Horizontal	Pass
		707.5	6.35	1.91	19.26	2.15	21.55	142.889	Horizontal	Pass
		715.3	6.28	1.93	19.34	2.15	21.54	142.561	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	700.5	5.43	1.91	19.21	2.15	20.58	114.288	Horizontal	Pass
		707.5	6.35	1.91	19.26	2.15	21.55	142.889	Horizontal	Pass
		714.5	6.27	1.93	19.34	2.15	21.53	142.233	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	701.5	6.39	1.91	19.23	2.15	21.56	143.219	Horizontal	Pass
		707.5	5.97	1.91	19.26	2.15	21.17	130.918	Horizontal	Pass
		713.5	6.12	1.92	19.33	2.15	21.38	137.404	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	704	5.41	1.91	19.25	2.15	20.60	114.815	Horizontal	Pass
		707.5	6.12	1.91	19.26	2.15	21.32	135.519	Horizontal	Pass
		711	5.63	1.92	19.32	2.15	20.88	122.462	Horizontal	Pass

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss	Antenna Factor	Correction	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	Of Max. ERP	
							(dBm)	(mW)		
1.4MHz Band 16 QAM	1/#Mid	699.7	7.11	1.91	19.21	2.15	22.26	168.267	Vertical	Pass
		707.5	7.03	1.91	19.26	2.15	22.23	167.109	Vertical	Pass
		715.3	6.81	1.93	19.34	2.15	22.07	161.065	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	6.90	1.91	19.21	2.15	22.05	160.325	Vertical	Pass
		707.5	6.82	1.91	19.26	2.15	22.02	159.221	Vertical	Pass
		714.5	6.66	1.93	19.34	2.15	21.92	155.597	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	7.17	1.91	19.23	2.15	22.34	171.396	Vertical	Pass
		707.5	7.08	1.91	19.26	2.15	22.28	169.044	Vertical	Pass
		713.5	6.87	1.92	19.33	2.15	22.13	163.305	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	704	7.19	1.91	19.25	2.15	22.38	172.982	Vertical	Pass
		707.5	7.17	1.91	19.26	2.15	22.37	172.584	Vertical	Pass
		711	7.02	1.92	19.32	2.15	22.27	168.655	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	699.7	6.15	1.91	19.21	2.15	21.30	134.896	Horizontal	Pass
		707.5	5.80	1.91	19.26	2.15	21.00	125.893	Horizontal	Pass
		715.3	5.30	1.93	19.34	2.15	20.56	113.763	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	6.25	1.91	19.21	2.15	21.40	138.038	Horizontal	Pass
		707.5	6.33	1.91	19.26	2.15	21.53	142.233	Horizontal	Pass
		714.5	5.60	1.93	19.34	2.15	20.86	121.899	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	5.94	1.91	19.23	2.15	21.11	129.122	Horizontal	Pass
		707.5	5.79	1.91	19.26	2.15	20.99	125.603	Horizontal	Pass
		713.5	5.79	1.92	19.33	2.15	21.05	127.350	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	704	5.65	1.91	19.25	2.15	20.84	121.339	Horizontal	Pass
		707.5	5.61	1.91	19.26	2.15	20.81	120.504	Horizontal	Pass
		711	5.86	1.92	19.32	2.15	21.11	129.122	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)

8.7 LTE BAND 13

Radiated Power (ERP) for Band 13										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss	Antenna Factor	Correction	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	Of Max. ERP	
							(dBm)	(mW)		
5.0MHz Band QPSK	25/0	779.5	7.10	1.91	19.23	2.15	22.27	168.66	Horizontal	Pass
		782	6.95	1.91	19.26	2.15	22.15	164.06	Horizontal	Pass
		784.5	6.14	1.92	19.33	2.15	21.40	138.04	Horizontal	Pass
10.0MHz Band QPSK	50/0	782	7.25	1.91	19.26	2.15	22.45	175.79	Horizontal	Pass
5.0MHz Band QPSK	25/0	779.5	6.38	1.91	19.23	2.15	21.55	142.89	Vertical	Pass
		782	5.56	1.91	19.26	2.15	20.76	119.12	Vertical	Pass
		784.5	6.04	1.92	19.33	2.15	21.30	134.90	Vertical	Pass
10.0MHz Band QPSK	50/0	782	6.09	1.91	19.26	2.15	21.29	134.59	Vertical	Pass

Radiated Power (ERP) for Band 13											
Mode	RB/RB SIZE	Frequency	Result							Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss	Antenna Factor	Correction	Max. EIRP	Max. EIRP			
			(dBm)	(dBm)	(dB)	(dB)	Average	Average			
							(dBm)	(mW)			
5.0MHz Band 16 QAM	25/0	779.5	7.03	1.91	19.23	2.15	22.20	165.96	Horizontal	Pass	
		782	5.47	1.91	19.26	2.15	20.67	116.68	Horizontal	Pass	
		784.5	6.16	1.92	19.33	2.15	21.42	138.68	Horizontal	Pass	
10.0MHz Band 16 QAM	50/0	782	7.02	1.91	19.26	2.15	22.22	166.72	Horizontal	Pass	
5.0MHz Band 16 QAM	25/0	779.5	5.51	1.91	19.23	2.15	20.68	116.95	Vertical	Pass	
		782	6.16	1.91	19.26	2.15	21.36	136.77	Vertical	Pass	
		784.5	5.49	1.92	19.33	2.15	20.75	118.85	Vertical	Pass	
10.0MHz Band 16 QAM	50/0	782	5.48	1.92	19.32	2.15	20.73	118.30	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 17

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss	Antenna Factor	Correction	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)	(dBm)	(dB)		Average	Average		
							(dBm)	(mW)		
5.0MHz Band QPSK	1/#Mid	706.5	7.50	1.91	19.23	2.15	22.67	184.927	Vertical	Pass
		710	7.36	1.91	19.26	2.15	22.56	180.302	Vertical	Pass
		713.5	7.26	1.92	19.33	2.15	22.52	178.649	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	709	7.51	1.91	19.25	2.15	22.70	186.209	Vertical	Pass
		710	7.46	1.91	19.26	2.15	22.66	184.502	Vertical	Pass
		711	7.42	1.92	19.32	2.15	22.67	184.927	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	706.5	6.95	1.91	19.23	2.15	22.12	162.930	Horizontal	Pass
		710	6.32	1.91	19.26	2.15	21.52	141.906	Horizontal	Pass
		713.5	7.03	1.92	19.33	2.15	22.29	169.434	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	709	5.50	1.91	19.25	2.15	20.69	117.220	Horizontal	Pass
		710	6.98	1.91	19.26	2.15	22.18	165.196	Horizontal	Pass
		711	6.30	1.92	19.32	2.15	21.55	142.889	Horizontal	Pass

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)				Average	Average		
							(dBm)	(mW)		
5.0MHz	1/#Mid	706.5	6.94	1.91	19.23	2.15	22.11	162.555	Vertical	Pass
Band 16		710	6.85	1.91	19.26	2.15	22.05	160.325	Vertical	Pass
QAM		713.5	6.65	1.92	19.33	2.15	21.91	155.239	Vertical	Pass
10.0MHz	1/#Mid	709	6.48	1.91	19.25	2.15	21.67	146.893	Vertical	Pass
Band 16		710	7.01	1.91	19.26	2.15	22.21	166.341	Vertical	Pass
QAM		711	6.74	1.92	19.32	2.15	21.99	158.125	Vertical	Pass
5.0MHz	1/#Mid	706.5	6.14	1.91	19.23	2.15	21.31	135.207	Horizontal	Pass
Band 16		710	6.18	1.91	19.26	2.15	21.38	137.404	Horizontal	Pass
QAM		713.5	5.52	1.92	19.33	2.15	20.78	119.674	Horizontal	Pass
10.0MHz	1/#Mid	709	5.47	1.91	19.25	2.15	20.66	116.413	Horizontal	Pass
Band 16		710	6.01	1.91	19.26	2.15	21.21	132.130	Horizontal	Pass
QAM		711	5.47	1.92	19.32	2.15	20.72	118.032	Horizontal	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

8.9 LTE BAND 38

Radiated Power (EIRP) for Band 38									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG	Cable	Antenna	Max.	Max. EIRP	Polarization	
			Level	Loss	Gain	EIRP		Of Max.	
			(dBm)	(dBm)	(dB)	Average	Average	ERP	
			(dBm)	(mW)					
5.0MHz Band QPSK	25/0	2572.5	-2.12	4.95	27.79	20.59	114.551	Vertical	Pass
		2595	-2.64	4.88	27.71	20.88	122.462	Vertical	Pass
		2617.5	-2.58	4.93	27.95	21.30	134.896	Vertical	Pass
5.0MHz Band 16 QAM	25/0	2572.5	-2.37	4.81	27.73	21.20	131.826	Vertical	Pass
		2595	-2.47	4.95	27.81	20.64	115.878	Vertical	Pass
		2617.5	-2.59	5.03	27.69	20.80	120.226	Vertical	Pass
10.0MHz Band QPSK	50/0	2575	-2.98	5.01	27.86	21.06	127.644	Vertical	Pass
		2595	-2.6	5	27.65	20.90	123.027	Vertical	Pass
		2615	-2.67	4.87	27.89	21.31	135.207	Vertical	Pass
10.0MHz Band 16 QAM	50/0	2575	-2.71	4.77	27.78	21.45	139.637	Vertical	Pass
		2595	-2.38	4.87	27.87	21.16	130.617	Vertical	Pass
		2615	-2.56	4.94	27.77	21.11	129.122	Vertical	Pass
15.0MHz Band QPSK	75/0	2577.5	-2.9	4.89	27.88	20.65	116.145	Vertical	Pass
		2595	-2.32	4.87	27.84	20.95	124.451	Vertical	Pass
		2612.5	-2.52	4.92	27.93	21.53	142.233	Vertical	Pass
15.0MHz Band 16 QAM	75/0	2577.5	-2.53	4.75	27.78	20.67	116.681	Vertical	Pass
		2595	-2.53	4.98	27.82	21.32	135.519	Vertical	Pass
		2612.5	-2.6	4.95	27.83	21.56	143.219	Vertical	Pass
20.0MHz Band QPSK	100/0	2580	-2.53	4.86	27.8	21.55	142.889	Vertical	Pass
		2595	-2.37	4.79	27.83	22.17	164.816	Vertical	Pass
		2610	-2.68	4.89	27.87	21.09	128.529	Vertical	Pass
20.0MHz Band 16 QAM	100/0	2580	-2.87	4.95	27.73	21.02	126.474	Vertical	Pass
		2595	-2.88	4.91	27.71	21.29	134.586	Vertical	Pass
		2610	-2.81	4.96	27.92	21.31	135.207	Vertical	Pass

Radiated Power (EIRP) for Band 38									
Mode	RB/RB SIZE	Frequency	Result					Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss	Antenna Gain	Max. EIRP	Max. EIRP		
			(dBm)	(dBm)	(dB)	Average	Average		
						(dBm)	(mW)		
5.0MHz Band QPSK	25/0	2572.5	-2.12	4.95	27.79	20.94	124.165	Horizontal	Pass
		2595	-2.64	4.88	27.71	21.31	135.207	Horizontal	Pass
		2617.5	-2.58	4.93	27.95	20.64	115.878	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	2572.5	-2.37	4.81	27.73	20.87	122.180	Horizontal	Pass
		2595	-2.47	4.95	27.81	21.05	127.350	Horizontal	Pass
		2617.5	-2.59	5.03	27.69	21.19	131.522	Horizontal	Pass
10.0MHz Band QPSK	50/0	2575	-2.98	5.01	27.86	21.08	128.233	Horizontal	Pass
		2595	-2.6	5	27.65	20.53	112.980	Horizontal	Pass
		2615	-2.67	4.87	27.89	20.59	114.551	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	2575	-2.71	4.77	27.78	20.94	124.165	Horizontal	Pass
		2595	-2.38	4.87	27.87	20.88	122.462	Horizontal	Pass
		2615	-2.56	4.94	27.77	21.48	140.605	Horizontal	Pass
15.0MHz Band QPSK	75/0	2577.5	-2.9	4.89	27.88	21.11	129.122	Horizontal	Pass
		2595	-2.32	4.87	27.84	21.03	126.765	Horizontal	Pass
		2612.5	-2.52	4.92	27.93	20.87	122.180	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	2577.5	-2.53	4.75	27.78	21.41	138.357	Horizontal	Pass
		2595	-2.53	4.98	27.82	21.29	134.586	Horizontal	Pass
		2612.5	-2.6	4.95	27.83	21.21	132.130	Horizontal	Pass
20.0MHz Band QPSK	100/0	2580	-2.53	4.86	27.8	20.72	118.032	Horizontal	Pass
		2595	-2.37	4.79	27.83	22.09	161.808	Horizontal	Pass
		2610	-2.68	4.89	27.87	21.22	132.434	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	2580	-2.87	4.95	27.73	21.18	131.220	Horizontal	Pass
		2595	-2.88	4.91	27.71	22.19	165.577	Horizontal	Pass
		2610	-2.81	4.96	27.92	20.62	115.345	Horizontal	Pass

Note:

SG Level= Signal generator output

Max. EIRP Average (dBm)= Factor 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: §2.1051, §22.917(a), §24.238(a), §27.53(c)(g)(h)(m)

LIMIT

For Band 7, the minimum permissible attenuation level of any spurious emission is $55 + \log_{10}(P)$ [Watts].

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

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 $43 + 10 \text{ Log}_{10}(p)$, dB; and
- b. for mobile subscriber equipment, the attenuation shall not be less than $43 + 10 \text{ Log}_{10}(p)$, dB at the channel edges and $55 + 10 \text{ Log}_{10}(p)$ 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
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 38

RESULTS

PASS

9.1 LTE BAND 2

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

Test Results for Low Channel 1850.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3701.4	-47.18	4.04	33.51	-17.71	-13	-4.71	Horizontal
3701.4	-52.97	4.04	33.51	-23.50	-13	-10.50	Vertical
5552.1	-47.62	5.24	35.84	-17.02	-13	-4.02	Vertical
5552.1	-51.57	5.24	35.84	-20.97	-13	-7.97	Horizontal
209.8	-38.16	1.43	16.02	-23.57	-13	-10.57	Vertical
292.5	-38.09	1.30	17.99	-21.40	-13	-8.40	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-48.16	4.04	33.56	-18.64	-13	-5.64	Horizontal
3760.0	-47.48	4.04	33.56	-17.96	-13	-4.96	Vertical
5640.0	-46.67	5.24	35.91	-16.00	-13	-3.00	Vertical
5640.0	-52.91	5.24	35.91	-22.24	-13	-9.24	Horizontal
187.6	-43.42	1.62	16.97	-28.07	-13	-15.07	Vertical
258.0	-38.33	1.74	15.98	-24.10	-13	-11.10	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-49.59	4.04	34.00	-19.63	-13	-6.63	Horizontal
3818.6	-50.90	4.04	34.00	-20.94	-13	-7.94	Vertical
5727.9	-53.28	5.24	36.04	-22.48	-13	-9.48	Vertical
5727.9	-49.20	5.24	36.04	-18.40	-13	-5.40	Horizontal
203.3	-42.08	1.42	17.29	-26.21	-13	-13.21	Vertical
241.9	-42.40	1.50	17.90	-25.99	-13	-12.99	Horizontal

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

Test Results for Low Channel 1860MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3720.0	-50.85	4.07	33.54	-21.38	-13	-8.38	Horizontal
3720.0	-51.23	4.07	33.54	-21.76	-13	-8.76	Vertical
5580.0	-50.35	5.28	35.86	-19.77	-13	-6.77	Vertical
5580.0	-50.35	5.28	35.86	-19.77	-13	-6.77	Horizontal
195.4	-38.01	1.58	16.89	-22.69	-13	-9.69	Vertical
434.2	-35.46	1.76	17.26	-19.96	-13	-6.96	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-48.57	4.04	33.56	-19.05	-13	-6.05	Horizontal
3760.0	-48.44	4.04	33.56	-18.92	-13	-5.92	Vertical
5640.0	-51.56	5.24	35.91	-20.89	-13	-7.89	Vertical
5640.0	-52.32	5.24	35.91	-21.65	-13	-8.65	Horizontal
208.8	-40.68	1.46	16.27	-25.87	-13	-12.87	Vertical
308.0	-37.36	1.59	15.15	-23.80	-13	-10.80	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-49.33	4.04	34.00	-19.37	-13	-6.37	Horizontal
3800.0	-50.23	4.04	34.00	-20.27	-13	-7.27	Vertical
5700.0	-51.29	5.24	36.04	-20.49	-13	-7.49	Vertical
5700.0	-53.10	5.24	36.04	-22.30	-13	-9.30	Horizontal
197.6	-36.12	1.36	17.39	-20.08	-13	-7.08	Vertical
280.7	-38.99	1.66	15.39	-25.26	-13	-12.26	Horizontal

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	-50.23	4.02	29.80	-24.45	-13	-11.45	Horizontal
3421.4	-51.07	4.02	29.80	-25.29	-13	-12.29	Vertical
5132.1	-52.15	5.24	35.84	-21.55	-13	-8.55	Vertical
5132.1	-50.64	5.24	35.84	-20.04	-13	-7.04	Horizontal
175.5	-34.83	1.68	16.04	-20.47	-13	-7.47	Vertical
362.7	-34.69	1.78	17.74	-18.73	-13	-5.73	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-53.18	4.03	30.00	-27.21	-13	-14.21	Horizontal
3465.0	-51.09	4.03	30.00	-25.12	-13	-12.12	Vertical
5197.5	-48.58	5.25	35.86	-17.97	-13	-4.97	Vertical
5197.5	-53.29	5.25	35.86	-22.68	-13	-9.68	Horizontal
177.2	-38.08	1.72	17.69	-22.11	-13	-9.11	Vertical
390.7	-37.20	1.62	16.02	-22.79	-13	-9.79	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-52.48	4.05	30.01	-26.52	-13	-13.52	Horizontal
3508.6	-44.68	4.05	30.01	-18.72	-13	-5.72	Vertical
5262.9	-52.34	5.26	35.86	-21.74	-13	-8.74	Vertical
5262.9	-49.21	5.26	35.86	-18.61	-13	-5.61	Horizontal
210.2	-34.03	1.80	16.69	-19.14	-13	-6.14	Vertical
411.0	-38.90	1.75	16.66	-24.00	-13	-11.00	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440.0	-44.70	4.02	29.80	-18.92	-13	-5.92	Horizontal
3440.0	-47.26	4.02	29.80	-21.48	-13	-8.48	Vertical
5160.0	-50.99	5.24	35.84	-20.39	-13	-7.39	Vertical
5160.0	-52.09	5.24	35.84	-21.49	-13	-8.49	Horizontal
191.8	-34.68	1.57	17.26	-18.99	-13	-5.99	Vertical
447.2	-37.49	1.78	16.35	-22.92	-13	-9.92	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-45.64	4.03	30.00	-19.67	-13	-6.67	Horizontal
3465.0	-49.90	4.03	30.00	-23.93	-13	-10.93	Vertical
5197.5	-51.91	5.25	35.86	-21.30	-13	-8.30	Vertical
5197.5	-51.89	5.25	35.86	-21.28	-13	-8.28	Horizontal
182.7	-39.65	1.44	17.95	-23.14	-13	-10.14	Vertical
436.9	-42.93	1.65	16.09	-28.49	-13	-15.49	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-48.64	2.91	27.68	-23.87	-13	-10.87	Horizontal
3490.0	-50.99	2.91	27.68	-26.22	-13	-13.22	Vertical
5235.0	-50.13	5.26	35.86	-19.53	-13	-6.53	Vertical
5235.0	-53.94	5.26	35.86	-23.34	-13	-10.34	Horizontal
210.9	-37.55	1.61	16.85	-22.31	-13	-9.31	Vertical
247.5	-35.15	1.61	15.19	-21.57	-13	-8.57	Horizontal

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	-47.52	2.78	27.50	-22.80	-13	-9.80	Horizontal
1649.4	-53.07	2.78	27.50	-28.35	-13	-15.35	Vertical
2474.1	-46.93	2.90	27.80	-22.03	-13	-9.03	Vertical
2474.1	-49.16	2.90	27.80	-24.26	-13	-11.26	Horizontal
201.5	-43.42	1.76	17.59	-27.59	-13	-14.59	Vertical
312.9	-41.10	1.63	15.87	-26.86	-13	-13.86	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-46.62	2.80	27.48	-21.94	-13	-8.94	Horizontal
1673.0	-45.97	2.80	27.48	-21.29	-13	-8.29	Vertical
2509.5	-50.70	2.91	27.70	-25.91	-13	-12.91	Vertical
2509.5	-50.26	2.91	27.70	-25.47	-13	-12.47	Horizontal
195.6	-41.91	1.61	15.68	-27.84	-13	-14.84	Vertical
320.3	-39.56	1.59	17.52	-23.64	-13	-10.64	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-44.56	2.82	27.43	-19.95	-13	-6.95	Horizontal
1696.6	-48.61	2.82	27.43	-24.00	-13	-11.00	Vertical
2544.9	-47.39	2.92	27.74	-22.57	-13	-9.57	Vertical
2544.9	-53.41	2.92	27.74	-28.59	-13	-15.59	Horizontal
179.8	-40.65	1.69	16.67	-25.66	-13	-12.66	Vertical
408.8	-34.33	1.70	17.18	-18.85	-13	-5.85	Horizontal

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

Test Results for Low Channel 829MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1658.0	-53.60	2.78	27.50	-28.88	-13	-15.88	Horizontal
1658.0	-52.62	2.78	27.50	-27.90	-13	-14.90	Vertical
2487.0	-53.55	2.90	27.80	-28.65	-13	-15.65	Vertical
2487.0	-50.33	2.90	27.80	-25.43	-13	-12.43	Horizontal
179.2	-40.37	1.71	15.57	-26.51	-13	-13.51	Vertical
278.8	-41.32	1.34	16.40	-26.26	-13	-13.26	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-49.27	2.80	27.48	-24.59	-13	-11.59	Horizontal
1673.0	-45.33	2.80	27.48	-20.65	-13	-7.65	Vertical
2509.5	-48.36	2.91	27.70	-23.57	-13	-10.57	Vertical
2509.5	-52.82	2.91	27.70	-28.03	-13	-15.03	Horizontal
181.3	-43.28	1.44	17.04	-27.68	-13	-14.68	Vertical
361.7	-36.94	1.76	17.62	-21.08	-13	-8.08	Horizontal
Test Results for High Channel 844MHz							
1688.0	-49.99	2.82	27.43	-25.38	-13	-12.38	Horizontal
1688.0	-49.24	2.82	27.43	-24.63	-13	-11.63	Vertical
2532.0	-46.99	2.92	27.74	-22.17	-13	-9.17	Vertical
2532.0	-51.80	2.92	27.74	-26.98	-13	-13.98	Horizontal
205.9	-34.93	1.74	17.70	-18.97	-13	-5.97	Vertical
420.3	-39.54	1.41	17.46	-23.48	-13	-10.48	Horizontal

9.4 LTE BAND 7

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

Test Results for Low Channel 2502.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5005.0	-63.63	5.23	35.81	-33.05	-25	-8.05	Horizontal
5005.0	-64.74	5.23	35.81	-34.16	-25	-9.16	Vertical
7507.5	-64.53	5.67	36.85	-33.35	-25	-8.35	Vertical
7507.5	-60.12	5.67	36.85	-28.94	-25	-3.94	Horizontal
178.4	-54.01	1.73	17.97	-37.77	-25	-12.77	Vertical
409.3	-54.54	1.38	15.11	-40.81	-25	-15.81	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-59.37	5.23	35.82	-28.78	-25	-3.78	Horizontal
5070.0	-62.97	5.23	35.82	-32.38	-25	-7.38	Vertical
7605.0	-64.40	5.67	36.85	-33.22	-25	-8.22	Vertical
7605.0	-64.76	5.67	36.85	-33.58	-25	-8.58	Horizontal
194.1	-51.14	1.77	16.17	-36.73	-25	-11.73	Vertical
282.8	-47.98	1.63	15.21	-34.40	-25	-9.40	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-59.50	5.24	35.83	-28.91	-25	-3.91	Horizontal
5135.0	-63.29	5.24	35.83	-32.70	-25	-7.70	Vertical
7702.5	-64.48	5.68	36.87	-33.29	-25	-8.29	Vertical
7702.5	-61.00	5.68	36.87	-29.81	-25	-4.81	Horizontal
210.8	-46.30	1.58	17.56	-30.32	-25	-5.32	Vertical
420.6	-45.23	1.45	16.58	-30.10	-25	-5.10	Horizontal

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

Test Results for Low Channel 2510MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5020.0	-63.43	5.23	35.82	-32.84	-25	-7.84	Horizontal
5020.0	-61.03	5.23	35.82	-30.44	-25	-5.44	Vertical
7530.0	-65.00	5.67	36.86	-33.81	-25	-8.81	Vertical
7530.0	-59.89	5.67	36.86	-28.70	-25	-3.70	Horizontal
198.6	-52.52	1.63	15.76	-38.39	-25	-13.39	Vertical
468.5	-45.97	1.71	15.44	-32.24	-25	-7.24	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-64.51	5.23	35.82	-33.92	-25	-8.92	Horizontal
5070.0	-59.09	5.23	35.82	-28.50	-25	-3.50	Vertical
7605.0	-60.21	5.67	36.85	-29.03	-25	-4.03	Vertical
7605.0	-63.20	5.67	36.85	-32.02	-25	-7.02	Horizontal
197.7	-48.99	1.79	16.84	-33.93	-25	-8.93	Vertical
362.2	-50.81	1.71	17.64	-34.88	-25	-9.88	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-59.11	5.24	35.83	-28.52	-25	-3.52	Horizontal
5120.0	-62.39	5.24	35.83	-31.80	-25	-6.80	Vertical
7680.0	-61.12	5.70	36.88	-29.94	-25	-4.94	Vertical
7680.0	-64.24	5.70	36.88	-33.06	-25	-8.06	Horizontal
207.2	-44.50	1.79	16.84	-29.44	-25	-4.44	Vertical
251.2	-48.16	1.71	17.64	-32.23	-25	-7.23	Horizontal

9.5 LTE BAND 12

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

Test Results for Low Channel 699.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1399.4	-49.01	2.60	27.20	-24.41	-13	-11.41	Horizontal
1399.4	-53.77	2.60	27.20	-29.17	-13	-16.17	Vertical
2099.1	-47.14	2.85	27.54	-22.45	-13	-9.45	Vertical
2099.1	-50.67	2.85	27.54	-25.98	-13	-12.98	Horizontal
194.9	-42.56	1.49	17.78	-26.27	-13	-13.27	Vertical
422.3	-43.49	1.36	17.33	-27.52	-13	-14.52	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-44.59	2.61	27.28	-19.92	-13	-6.92	Horizontal
1415.0	-51.72	2.61	27.28	-27.05	-13	-14.05	Vertical
2122.5	-51.53	2.87	27.59	-26.81	-13	-13.81	Vertical
2122.5	-51.41	2.87	27.59	-26.69	-13	-13.69	Horizontal
189.4	-40.29	1.73	15.74	-26.28	-13	-13.28	Vertical
370.9	-42.30	1.62	15.79	-28.13	-13	-15.13	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-46.21	2.63	27.28	-21.56	-13	-8.56	Horizontal
1430.6	-46.60	2.63	27.28	-21.95	-13	-8.95	Vertical
2145.9	-47.80	2.88	27.60	-23.08	-13	-10.08	Vertical
2145.9	-51.33	2.88	27.60	-26.61	-13	-13.61	Horizontal
208.7	-35.49	1.61	18.00	-19.10	-13	-6.10	Vertical
410.6	-35.05	1.45	15.49	-21.02	-13	-8.02	Horizontal

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

Test Results for Low Channel 704MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1408.0	-49.61	2.61	27.26	-24.96	-13	-11.96	Horizontal
1408.0	-50.73	2.61	27.26	-26.08	-13	-13.08	Vertical
2112.0	-51.21	2.87	27.58	-26.50	-13	-13.50	Vertical
2112.0	-52.77	2.87	27.58	-28.06	-13	-15.06	Horizontal
184.6	-43.17	1.31	16.97	-27.51	-13	-14.51	Vertical
378.3	-43.08	1.65	16.70	-28.03	-13	-15.03	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-50.32	2.61	27.28	-25.65	-13	-12.65	Horizontal
1415.0	-50.11	2.61	27.28	-25.44	-13	-12.44	Vertical
2122.5	-47.77	2.87	27.59	-23.05	-13	-10.05	Vertical
2122.5	-52.12	2.87	27.59	-27.40	-13	-14.40	Horizontal
183.2	-41.28	1.72	17.99	-25.01	-13	-12.01	Vertical
232.6	-37.99	1.73	17.94	-21.78	-13	-8.78	Horizontal
Test Results for High Channel 711MHz							
1422.0	-51.24	2.62	27.28	-26.58	-13	-13.58	Horizontal
1422.0	-53.12	2.62	27.28	-28.46	-13	-15.46	Vertical
2133.0	-51.62	2.87	27.60	-26.89	-13	-13.89	Vertical
2133.0	-49.97	2.87	27.60	-25.24	-13	-12.24	Horizontal
178.9	-40.90	1.58	15.93	-26.55	-13	-13.55	Vertical
377.8	-34.19	1.36	15.59	-19.96	-13	-6.96	Horizontal

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

. Margin = Spurious Emission Level - Limit

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

9.6 LTE BAND 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
1559.0	-71.40	2.61	27.28	-46.73	-40	-6.73	Horizontal
1559.0	-72.24	2.61	27.28	-47.57	-40	-7.57	Vertical
2338.5	-44.08	2.87	27.59	-19.36	-13	-6.36	Vertical
2338.5	-41.71	2.87	27.59	-16.99	-13	-3.99	Horizontal
120.1	-35.94	1.54	15.61	-21.87	-13	-8.87	Vertical
197.8	-34.76	1.51	15.21	-21.06	-13	-8.06	Horizontal
Test Results For Mid Channel 782MHz							
1564.0	-73.52	2.62	27.30	-48.84	-40	-8.84	Horizontal
1564.0	-71.18	2.62	27.30	-46.50	-40	-6.50	Vertical
2346.0	-45.30	2.87	27.62	-20.55	-13	-7.55	Vertical
2346.0	-44.23	2.87	27.62	-19.48	-13	-6.48	Horizontal
131.2	-37.73	1.65	16.17	-23.21	-13	-10.21	Vertical
267.5	-34.71	1.48	16.88	-19.31	-13	-6.31	Horizontal
Test Results for High Channel 784.5MHz							
1569.0	-73.27	2.66	27.28	-48.65	-40	-8.65	Horizontal
1569.0	-69.15	2.66	27.28	-44.53	-40	-4.53	Vertical
2353.5	-44.26	2.88	27.60	-19.54	-13	-6.54	Vertical
2353.5	-44.79	2.88	27.60	-20.07	-13	-7.07	Horizontal
80.8	-34.20	1.54	16.40	-19.34	-13	-6.34	Vertical
155.6	-39.31	1.43	15.77	-24.97	-13	-11.97	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
1564.0	-71.98	2.62	27.30	-47.30	-40	-7.30	Horizontal
1564.0	-70.69	2.62	27.30	-46.01	-40	-6.01	Vertical
2346.0	-44.15	2.87	27.62	-19.40	-13	-6.40	Vertical
2346.0	-42.36	2.87	27.62	-17.61	-13	-4.61	Horizontal
129.1	-34.52	1.43	17.03	-18.92	-13	-5.92	Vertical
86.9	-36.82	1.62	16.63	-21.81	-13	-8.81	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.

9.7 LTE BAND 17

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

Test Results for Low Channel 706.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1413.0	-47.25	2.61	27.28	-22.58	-13	-9.58	Horizontal
1413.0	-53.50	2.61	27.28	-28.83	-13	-15.83	Vertical
2119.5	-47.86	2.87	27.59	-23.14	-13	-10.14	Vertical
2119.5	-50.94	2.87	27.59	-26.22	-13	-13.22	Horizontal
199.7	-44.64	1.71	16.15	-30.20	-13	-17.20	Vertical
333.3	-40.18	1.41	17.32	-24.27	-13	-11.27	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-44.25	2.62	27.30	-19.57	-13	-6.57	Horizontal
1420.0	-45.03	2.62	27.30	-20.35	-13	-7.35	Vertical
2130.0	-45.81	2.87	27.62	-21.06	-13	-8.06	Vertical
2130.0	-52.18	2.87	27.62	-27.43	-13	-14.43	Horizontal
184.7	-38.55	1.42	15.25	-24.73	-13	-11.73	Vertical
433.9	-34.96	1.36	17.19	-19.13	-13	-6.13	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-46.08	2.66	27.28	-21.46	-13	-8.46	Horizontal
1427.0	-47.94	2.66	27.28	-23.32	-13	-10.32	Vertical
2140.5	-44.37	2.88	27.60	-19.65	-13	-6.65	Vertical
2140.5	-53.54	2.88	27.60	-28.82	-13	-15.82	Horizontal
194.3	-40.53	1.32	17.29	-24.56	-13	-11.56	Vertical
388.4	-34.15	1.72	16.89	-18.98	-13	-5.98	Horizontal

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

Test Results for Low Channel 709MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1418.0	-47.52	2.62	27.30	-22.84	-13	-9.84	Horizontal
1418.0	-48.73	2.62	27.30	-24.05	-13	-11.05	Vertical
2127.0	-53.72	2.87	27.62	-28.97	-13	-15.97	Vertical
2127.0	-49.60	2.87	27.62	-24.85	-13	-11.85	Horizontal
193.5	-41.66	1.35	16.91	-26.10	-13	-13.10	Vertical
413.0	-38.89	1.62	16.31	-24.20	-13	-11.20	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-48.68	2.62	27.30	-24.00	-13	-11.00	Horizontal
1420.0	-47.88	2.62	27.30	-23.20	-13	-10.20	Vertical
2130.0	-53.81	2.87	27.62	-29.06	-13	-16.06	Vertical
2130.0	-50.52	2.87	27.62	-25.77	-13	-12.77	Horizontal
198.8	-35.54	1.51	17.14	-19.91	-13	-6.91	Vertical
357.4	-35.53	1.77	16.88	-20.42	-13	-7.42	Horizontal
Test Results for High Channel 711MHz							
1422.0	-49.07	2.62	27.30	-24.39	-13	-11.39	Horizontal
1422.0	-50.09	2.62	27.30	-25.41	-13	-12.41	Vertical
2133.0	-48.36	2.87	27.62	-23.61	-13	-10.61	Vertical
2133.0	-50.74	2.87	27.62	-25.99	-13	-12.99	Horizontal
183.1	-35.10	1.78	15.95	-20.93	-13	-7.93	Vertical
259.7	-34.37	1.34	17.95	-17.77	-13	-4.77	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.

9.8 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 Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5145	-58.85	4.01	27.5	-35.36	-25	-10.36	Horizontal
5145	-58.11	4.01	27.5	-34.62	-25	-9.62	Vertical
7717.5	-59.63	5.09	27.8	-36.92	-25	-11.92	Vertical
7717.5	-57.15	5.09	27.8	-34.44	-25	-9.44	Horizontal
Test Results For Mid Channel 2595MHz							
5190	-56.59	4.1	27.48	-33.21	-25	-8.21	Horizontal
5190	-61.66	4.1	27.48	-38.28	-25	-13.28	Vertical
7785	-58.37	5.42	27.7	-36.09	-25	-11.09	Vertical
7785	-56.99	5.42	27.7	-34.71	-25	-9.71	Horizontal
Test Results for High Channel 2617.5MHz							
5234	-58.30	4.11	27.43	-34.98	-25	-9.98	Horizontal
5234	-59.30	4.11	27.43	-35.98	-25	-10.98	Vertical
7851	-59.14	5.31	27.74	-36.71	-25	-11.71	Vertical
7851	-56.55	5.31	27.74	-34.12	-25	-9.12	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 Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5160	-61.00	3.89	27.5	-37.39	-25	-12.39	Horizontal
5160	-61.01	3.89	27.5	-37.40	-25	-12.40	Vertical
7740	-56.99	5.33	27.8	-34.52	-25	-9.52	Vertical
7740	-61.74	5.33	27.8	-39.27	-25	-14.27	Horizontal
Test Results for Mid Channel 2595MHz							
5190	-60.65	4.1	27.48	-37.27	-25	-12.27	Horizontal
5190	-62.17	4.1	27.48	-38.79	-25	-13.79	Vertical
7785	-57.48	5.42	27.7	-35.20	-25	-10.20	Vertical
7785	-59.36	5.42	27.7	-37.08	-25	-12.08	Horizontal
Test Results for High Channel 2610MHz							
5220	-57.42	4.01	27.43	-34.00	-25	-9.00	Horizontal
5220	-57.63	4.01	27.43	-34.21	-25	-9.21	Vertical
7830	-61.63	5.34	27.74	-39.23	-25	-14.23	Vertical
7830	-60.04	5.34	27.74	-37.64	-25	-12.64	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.

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 3.4V, Normal, DC 3.87V and High voltage, DC 4.4V.

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
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 17
- LTE Band 38

RESULTS

See the following pages.

10.1 LTE BAND 2

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 QPSK, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1880	13.0	0.006938	2.5
3.87	1880	14.0	0.007469	2.5
4.4	1880	13.5	0.007167	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 QPSK, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1880	12.2	0.006499	2.5
Extreme (50C)	1880	11.1	0.005916	2.5
Extreme (40C)	1880	13.4	0.007149	2.5
Extreme (30C)	1880	13.5	0.007180	2.5
Extreme (10C)	1880	14.0	0.007457	2.5
Extreme (0C)	1880	12.4	0.006569	2.5
Extreme (-10C)	1880	13.4	0.007115	2.5
Extreme (-20C)	1880	13.7	0.007301	2.5
Extreme (-30C)	1880	14.8	0.007866	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 16QAM, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1880	9.7	0.005134	2.5
3.87	1880	9.0	0.004763	2.5
4.4	1880	8.5	0.004543	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 16QAM, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1880	9.9	0.005252	2.5
Extreme (50C)	1880	8.6	0.004590	2.5
Extreme (40C)	1880	8.5	0.004524	2.5
Extreme (30C)	1880	9.2	0.004910	2.5
Extreme (10C)	1880	8.7	0.004634	2.5
Extreme (0C)	1880	7.7	0.004091	2.5
Extreme (-10C)	1880	8.9	0.004760	2.5
Extreme (-20C)	1880	9.0	0.004800	2.5
Extreme (-30C)	1880	8.0	0.004276	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

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1732.5	8.9	0.005123	2.5
3.87	1732.5	9.0	0.005171	2.5
4.4	1732.5	7.9	0.004574	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1732.5	8.3	0.004769	2.5
Extreme (50C)	1732.5	8.4	0.004872	2.5
Extreme (40C)	1732.5	7.0	0.004059	2.5
Extreme (30C)	1732.5	5.8	0.003331	2.5
Extreme (10C)	1732.5	7.1	0.004090	2.5
Extreme (0C)	1732.5	9.2	0.005290	2.5
Extreme (-10C)	1732.5	8.3	0.004807	2.5
Extreme (-20C)	1732.5	7.3	0.004232	2.5
Extreme (-30C)	1732.5	8.3	0.004797	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	1732.5	9.7	0.005621	2.5
3.87	1732.5	8.6	0.004938	2.5
4.4	1732.5	8.0	0.004640	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1732.5	9.6	0.005544	2.5
Extreme (50C)	1732.5	9.2	0.005300	2.5
Extreme (40C)	1732.5	8.4	0.004842	2.5
Extreme (30C)	1732.5	9.1	0.005262	2.5
Extreme (10C)	1732.5	8.9	0.005142	2.5
Extreme (0C)	1732.5	8.5	0.004930	2.5
Extreme (-10C)	1732.5	8.6	0.004985	2.5
Extreme (-20C)	1732.5	9.3	0.005391	2.5
Extreme (-30C)	1732.5	8.2	0.004739	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

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 QPSK, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	836.5	5.7	0.006783	2.5
3.87	836.5	6.5	0.007827	2.5
4.4	836.5	5.2	0.006166	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 QPSK, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	836.5	6.0	0.007194	2.5
Extreme (50C)	836.5	5.7	0.006797	2.5
Extreme (40C)	836.5	6.0	0.007229	2.5
Extreme (30C)	836.5	6.7	0.008040	2.5
Extreme (10C)	836.5	5.2	0.006243	2.5
Extreme (0C)	836.5	5.0	0.006015	2.5
Extreme (-10C)	836.5	5.8	0.006987	2.5
Extreme (-20C)	836.5	6.0	0.007227	2.5
Extreme (-30C)	836.5	6.2	0.007456	2.5

16QAM, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 16QAM, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.4	836.5	6.0	0.007136	2.5
3.87	836.5	6.8	0.008124	2.5
4.4	836.5	4.9	0.005902	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 16QAM, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	836.5	6.1	0.007334	2.5
Extreme (50C)	836.5	6.0	0.007160	2.5
Extreme (40C)	836.5	6.1	0.007285	2.5
Extreme (30C)	836.5	6.5	0.007747	2.5
Extreme (10C)	836.5	5.7	0.006766	2.5
Extreme (0C)	836.5	4.9	0.005867	2.5
Extreme (-10C)	836.5	5.5	0.006523	2.5
Extreme (-20C)	836.5	5.8	0.006966	2.5
Extreme (-30C)	836.5	6.4	0.007660	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

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 QPSK, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	2535	10.4	0.004087	2.5
3.87	2535	8.4	0.003330	2.5
4.4	2535	8.6	0.003376	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 QPSK, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2535	9.2	0.003637	2.5
Extreme (50C)	2535	9.2	0.003627	2.5
Extreme (40C)	2535	8.7	0.003440	2.5
Extreme (30C)	2535	9.3	0.003660	2.5
Extreme (10C)	2535	7.6	0.003002	2.5
Extreme (0C)	2535	8.1	0.003191	2.5
Extreme (-10C)	2535	9.6	0.003770	2.5
Extreme (-20C)	2535	8.5	0.003371	2.5
Extreme (-30C)	2535	8.2	0.003215	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 16QAM, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
3.4	2535	6.9	0.002720	2.5
3.87	2535	6.5	0.002563	2.5
4.4	2535	5.2	0.002070	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 16QAM, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2535	7.2	0.002838	2.5
Extreme (50C)	2535	6.0	0.002366	2.5
Extreme (40C)	2535	5.6	0.002205	2.5
Extreme (30C)	2535	6.2	0.002464	2.5
Extreme (10C)	2535	5.4	0.002137	2.5
Extreme (0C)	2535	4.9	0.001916	2.5
Extreme (-10C)	2535	5.3	0.002088	2.5
Extreme (-20C)	2535	6.2	0.002426	2.5
Extreme (-30C)	2535	5.7	0.002237	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]
3.4	707.5	8.9	0.012530	2.5
3.87	707.5	9.8	0.013811	2.5
4.4	707.5	9.1	0.012803	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8.8	0.012456	2.5
Extreme (50C)	707.5	7.6	0.010684	2.5
Extreme (40C)	707.5	7.4	0.010474	2.5
Extreme (30C)	707.5	8.0	0.011237	2.5
Extreme (10C)	707.5	7.3	0.010364	2.5
Extreme (0C)	707.5	8.7	0.012343	2.5
Extreme (-10C)	707.5	8.8	0.012440	2.5
Extreme (-20C)	707.5	8.7	0.012356	2.5
Extreme (-30C)	707.5	7.9	0.011157	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]
3.4	707.5	7.0	0.009855	2.5
3.87	707.5	8.1	0.011436	2.5
4.4	707.5	7.6	0.010783	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	6.5	0.009175	2.5
Extreme (50C)	707.5	5.5	0.007765	2.5
Extreme (40C)	707.5	6.4	0.009110	2.5
Extreme (30C)	707.5	-7.7	-0.010912	2.5
Extreme (10C)	707.5	-8.2	-0.011590	2.5
Extreme (0C)	707.5	2.9	0.004100	2.5
Extreme (-10C)	707.5	-5.2	-0.007292	2.5
Extreme (-20C)	707.5	-8.7	-0.012302	2.5
Extreme (-30C)	707.5	-10.2	-0.014350	2.5

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

10.6 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]
3.4	782.0	12.3	0.017289	2.5
3.87	782.0	13.8	0.019475	2.5
4.4	782.0	13.1	0.018466	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	14.1	0.019929	2.5
Extreme (50C)	782.0	14.1	0.019929	2.5
Extreme (40C)	782.0	14.8	0.020872	2.5
Extreme (30C)	782.0	13.6	0.019205	2.5
Extreme (10C)	782.0	13.7	0.019247	2.5
Extreme (0C)	782.0	13.9	0.019526	2.5
Extreme (-10C)	782.0	14.0	0.019704	2.5
Extreme (-20C)	782.0	14.4	0.020261	2.5
Extreme (-30C)	782.0	13.9	0.019548	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]
3.4	782.0	12.2	0.017187	2.5
3.87	782.0	13.8	0.019456	2.5
4.4	782.0	13.6	0.019102	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	782.0	12.6	0.017770	2.5
Extreme (50C)	782.0	12.1	0.017028	2.5
Extreme (40C)	782.0	13.6	0.019142	2.5
Extreme (30C)	782.0	13.5	0.019015	2.5
Extreme (10C)	782.0	13.5	0.019018	2.5
Extreme (0C)	782.0	11.9	0.016722	2.5
Extreme (-10C)	782.0	13.3	0.018700	2.5
Extreme (-20C)	782.0	14.6	0.020553	2.5
Extreme (-30C)	782.0	14.4	0.020256	2.5

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

10.7 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]
3.4	710.0	9.6	0.013587	2.5
3.87	710.0	9.0	0.012619	2.5
4.4	710.0	8.3	0.011632	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.3	0.013098	2.5
Extreme (50C)	710.0	9.2	0.012966	2.5
Extreme (40C)	710.0	7.7	0.010880	2.5
Extreme (30C)	710.0	8.7	0.012322	2.5
Extreme (10C)	710.0	8.6	0.012059	2.5
Extreme (0C)	710.0	8.4	0.011820	2.5
Extreme (-10C)	710.0	8.6	0.012078	2.5
Extreme (-20C)	710.0	8.8	0.012342	2.5
Extreme (-30C)	710.0	7.6	0.010727	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]
3.4	710.0	9.6	0.013515	2.5
3.87	710.0	9.0	0.012686	2.5
4.4	710.0	8.3	0.011674	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.5	0.013416	2.5
Extreme (50C)	710.0	9.0	0.012617	2.5
Extreme (40C)	710.0	8.7	0.012308	2.5
Extreme (30C)	710.0	8.4	0.011864	2.5
Extreme (10C)	710.0	8.3	0.011671	2.5
Extreme (0C)	710.0	8.4	0.011855	2.5
Extreme (-10C)	710.0	9.4	0.013236	2.5
Extreme (-20C)	710.0	8.5	0.011969	2.5
Extreme (-30C)	710.0	8.3	0.011713	2.5

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

10.8 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)				
3.4	2595	9.0	0.003456	2.5
3.87	2595	6.4	0.002474	2.5
4.4	2595	7.3	0.002829	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	7.9	0.003039	2.5
Extreme (50C)	2595	4.5	0.001739	2.5
Extreme (40C)	2595	5.9	0.002270	2.5
Extreme (30C)	2595	4.4	0.001685	2.5
Extreme (10C)	2595	6.7	0.002570	2.5
Extreme (0C)	2595	4.8	0.001847	2.5
Extreme (-10C)	2595	9.5	0.003661	2.5
Extreme (-20C)	2595	11.0	0.004242	2.5
Extreme (-30C)	2595	6.5	0.002520	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)				
3.4	2595	8.2	0.003166	2.5
3.87	2595	6.6	0.002556	2.5
4.4	2595	6.9	0.002648	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	7.1	0.002718	2.5
Extreme (50C)	2595	4.4	0.001710	2.5
Extreme (40C)	2595	5.6	0.002140	2.5
Extreme (30C)	2595	5.2	0.001995	2.5
Extreme (10C)	2595	6.6	0.002558	2.5
Extreme (0C)	2595	4.5	0.001720	2.5
Extreme (-10C)	2595	9.1	0.003490	2.5
Extreme (-20C)	2595	10.4	0.003992	2.5
Extreme (-30C)	2595	5.9	0.002286	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.

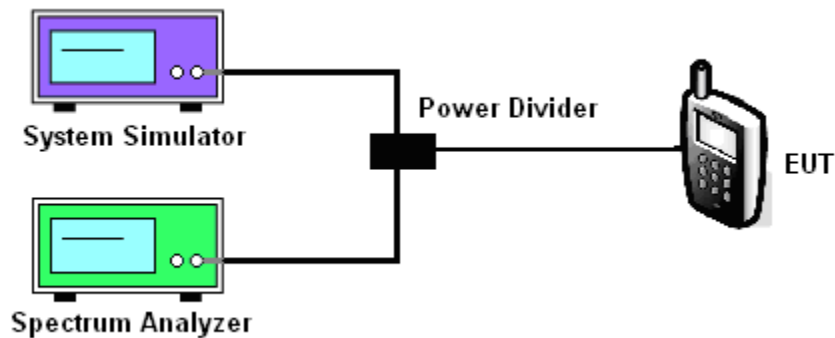
11.2 Measuring Instruments

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 GSM/EGPRS operating modes:
 - a. Set the RBW = 1MHz, VBW = 1MHz, Peak detector in spectrum analyzer.
 - b. Set EUT in maximum power output, and triggered the burst signal.
 - c. Measured respectively the Peak level and Mean level, and the deviation was recorded as Peak to Average Ratio.
4. For UMTS 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 Band2/4/5/7/12/13/17/38
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Test data reference attachment.

----END OF REPORT----