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

FCC ID: XGK-ACERNFCSC

Product: access-ER HF NFC/FAP30/SC

Trade Mark: COPPERNIC

Model No.: access-ER

Family Model: N/A

Report No.: S23120802102006

Issue Date: Jan 03, 2024

Prepared for

Coppernic

20,rue Georges Claude Aix en Provence France 13290

Prepared by

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TEST RESULT CERTIFICATION

Applicant's name	:	Coppernic
Address	:	20,rue Georges Claude Aix en Provence France 13290
Manufacturer's Name	:	Askey Computer Corp.
Address	:	10F, No.119, JIANKANG RD., ZHONGHE DIST., NEW TAIPEI CITY 23585, R.O.C TAIWAN.
Product name	:	access-ER HF NFC/FAP30/SC
Model and/or type reference	:	access-ER
Trade Mark	:	COPPERNIC
Family Model	:	N/A
Test Sample Number		S231208021003
Standards	:	FCC CFR 47 Part 22H, Part 24E, Part 27, Part 90S
Test procedure	:	ANSI C63.26:2015 ANSI/TIA-603-E-2016

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

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Date of Test .....

Date (s) of performance of tests..... Dec 11, 2023 ~ Jan 02. 2024

Date of Issue..... Jan 03. 2024

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

Prepared By	:	Allen Liu (Project Engineer)	Reviewed By	:	Aaron Cheng (Supervisor)
Approved By	:	Alex Li (Manager)			

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	access-ER HF NFC/FAP30/SC
Trade Mark	COPPERNIC
Model Name	access-ER
Family Model	N/A
Model Difference	N/A
FCC ID:	XGK-ACERNFCSC
Frequency Bands:	U.S. Bands: ☒LTE FDD Band 2,4,5,7,17,26,41
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 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE FDD Band 26 Uplink: 814MHz-849MHz, Downlink: 859MHz-894MHz; LTE FDD Band 41 Uplink: 2496MHz-2690MHz,
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:	LDS Antenna
Antenna gain:	Band2:2.25dBi; Band4:1.93dBi; Band5:-0.76dBi; Band7:1.39dBi; Band17:-2.74dBi;Band26:-0.76dBi; Band41:1.59dBi;

Adapter	Adapter : Model: 2ACP0183C Input: 100-240V~ 0.5A 50/60Hz Output: 5.0V⎓3.0A 15.0W/ 9.0V⎓2.0A 18.0W/ 12.0V⎓1.5A 18.0W Charging base Adapter : Model: SYS1541-2412 Input: 100-240V~,1.0A MAX,50-60Hz Output: 12.0V⎓2.0A
Battery	DC 3.85V, 4000mAh
Power Rating	DC 3.85V from battery or DC 5V from adapter DC 3.85V from battery or DC 12V from Charging base
Extreme Vol. Limits:	DC 3.4V to DC 4.2V (Nominal DC 3.85V)（Note 1）
HW Version	DV
SW Version	Android 10
** Note1: The High Voltage DC 4.2V and Low Voltage 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: XGK-ACERNFCSC** filing to comply with the FCC Part 22H&24E&27&90S.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

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

ShenZhen NTEK Testing Technology Co., Ltd.

1&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 2/4/5/7/17/26/41

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

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

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

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

2.2 EUT EXERCISE

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

2.3 CONFIGURATION OF EUT SYSTEM

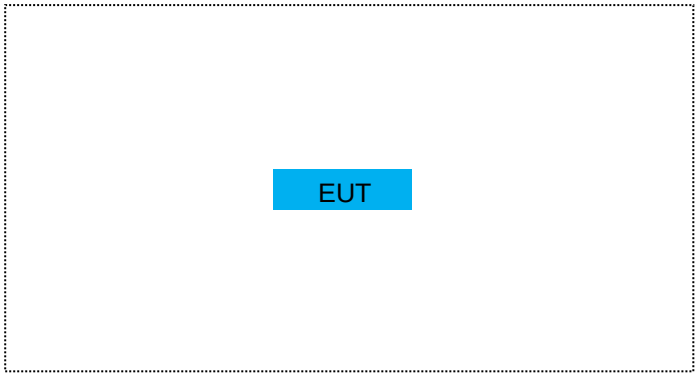
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	access-ER HF NFC/FAP30/SC	access-ER	FCC ID: XGK-ACERNFCSC	EUT

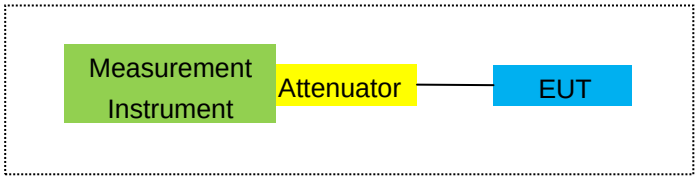
Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.

2.4 TEST SETUP

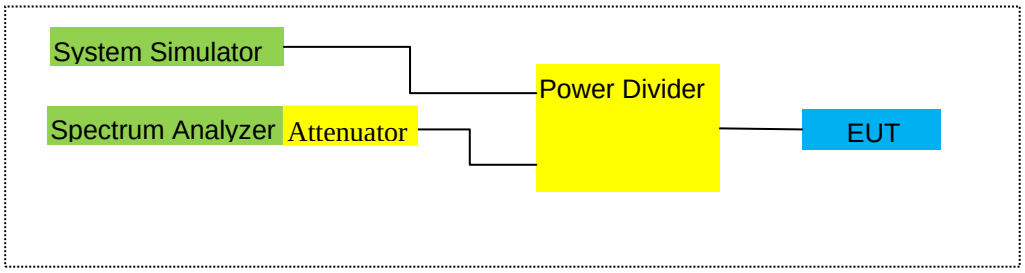
For Radiated Test Cases



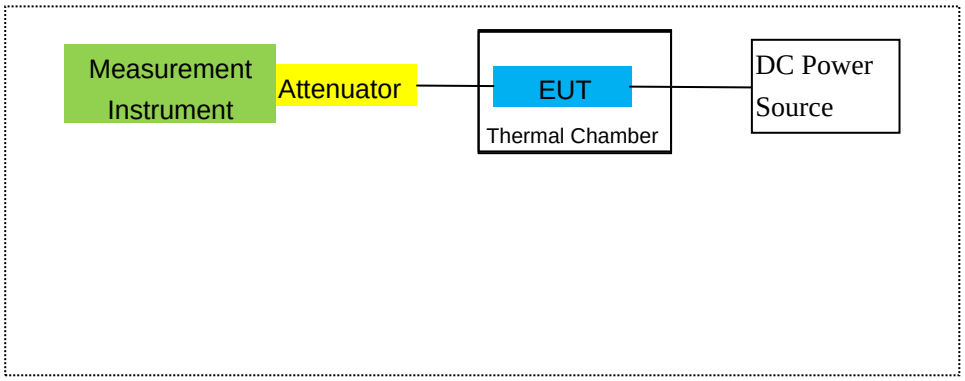
For Conducted Output Power



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	SCHWARZBE CK	VULB 9162	584	2023/1/11	2024/1/10	1 year
32	Log-Periodic Antenna	SCHWARZBE CK	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 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 2/4/5/7/17/26/41

RESULTS

PASS

Test data reference attachment.

6. BANDEDGE AND EMISSION MASK

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53, and §90.691
FCC: §22.359

LIMITS

FCC: §22.917, §24.238, §27.53
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

(m)(4) For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.Show citation box.
(c)(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

FCC: §90.691 Emission mask requirements for EA-based systems.
(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:
(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

TEST PROCEDURE

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

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency

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

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

MODES TESTED

Band 2/4/5/7/17/26/41

RESULTS

Test data reference attachment.

7. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

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

TEST PROCEDURE

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

For each out of band emissions measurement:

□

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

MODES TESTED

□ Band 2/4/5/7/17/26/41

□

7.1 MEASUREMENT METHOD

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

Test data reference attachment.

8. RADIATED MEASUREMENT

8.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

LIMITS:

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.
27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.
27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.
27.50 (h)(2) Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.
90.635(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

TEST PROCEDURE

ANSI/TIA-603-E Clause 2.2.17
KDB 971168 v02r01 RF power output using broadband peak and average power meter method.
KDB 971168 D01 Power Meas License Digital Systems v02r01, “Measurement Guidance for Certification of Licensed Digital Transmitters”

MODES TESTED

Band 2/4/5/7/17/26/41

RESULTS

Pass

8.2 LTE BAND 2

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1850.7	-2.49	3.76	28.24	21.99	158.125	Horizontal	Pass
		1880	-2.30	3.91	28.22	22.01	158.855	Horizontal	Pass
		1909.3	-2.21	3.93	28.20	22.06	160.694	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-2.55	3.77	28.23	21.91	155.239	Horizontal	Pass
		1880	-2.40	3.91	28.24	21.93	155.955	Horizontal	Pass
		1908.5	-2.27	3.94	28.25	22.04	159.956	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-2.44	3.77	28.31	22.10	162.181	Horizontal	Pass
		1880	-2.06	3.91	28.22	22.25	167.880	Horizontal	Pass
		1907.5	-1.99	3.94	28.20	22.27	168.655	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-2.30	3.79	28.33	22.24	167.494	Horizontal	Pass
		1880	-2.00	3.95	28.22	22.27	168.655	Horizontal	Pass
		1905	-1.89	3.97	28.19	22.33	171.002	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-2.26	3.79	28.34	22.29	169.434	Horizontal	Pass
		1880	-2.05	3.95	28.22	22.22	166.725	Horizontal	Pass
		1902.5	-1.91	3.97	28.18	22.30	169.824	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-2.25	3.81	28.35	22.29	169.434	Horizontal	Pass
		1880	-1.92	3.96	28.22	**22.34**	171.396	Horizontal	Pass
		1900	-1.86	4.00	28.16	22.30	169.824	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-3.66	3.76	28.24	20.82	120.781	Vertical	Pass
		1880	-3.12	3.91	28.22	21.19	131.522	Vertical	Pass
		1909.3	-3.32	3.93	28.20	20.95	124.451	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-2.84	3.77	28.23	21.62	145.211	Vertical	Pass
		1880	-2.90	3.91	28.24	21.43	138.995	Vertical	Pass
		1908.5	-3.38	3.94	28.25	20.93	123.880	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.62	3.77	28.31	20.92	123.595	Vertical	Pass
		1880	-3.08	3.91	28.22	21.23	132.739	Vertical	Pass
		1907.5	-3.03	3.94	28.20	21.23	132.739	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1855	-3.78	3.79	28.33	20.76	119.124	Vertical	Pass
		1880	-2.82	3.95	28.22	21.45	139.637	Vertical	Pass
		1905	-2.66	3.97	28.19	21.56	143.219	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1857.5	-3.52	3.79	28.34	21.03	126.765	Vertical	Pass
		1880	-3.46	3.95	28.22	20.81	120.504	Vertical	Pass
		1902.5	-3.42	3.97	28.18	20.79	119.950	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1860	-2.86	3.81	28.35	21.68	147.231	Vertical	Pass
		1880	-3.38	3.96	28.22	20.88	122.462	Vertical	Pass
		1900	-3.27	4.00	28.16	20.89	122.744	Vertical	Pass

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1850.7	-3.61	3.76	28.24	20.87	122.180	Horizontal	Pass
		1880	-3.08	3.91	28.22	21.23	132.739	Horizontal	Pass
		1909.3	-3.01	3.93	28.20	21.26	133.660	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-3.11	3.77	28.23	21.35	136.458	Horizontal	Pass
		1880	-3.19	3.91	28.24	21.14	130.017	Horizontal	Pass
		1908.5	-3.40	3.94	28.25	20.91	123.310	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-3.05	3.77	28.31	21.49	140.929	Horizontal	Pass
		1880	-2.96	3.91	28.22	21.35	136.458	Horizontal	Pass
		1907.5	-2.64	3.94	28.20	21.62	145.211	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-3.10	3.79	28.33	21.44	139.316	Horizontal	Pass
		1880	-3.09	3.95	28.22	21.18	131.220	Horizontal	Pass
		1905	-2.56	3.97	28.19	21.66	146.555	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-3.08	3.79	28.34	21.47	140.281	Horizontal	Pass
		1880	-2.87	3.95	28.22	21.40	138.038	Horizontal	Pass
		1902.5	-2.83	3.97	28.18	21.38	137.404	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-2.97	3.81	28.35	21.57	143.549	Horizontal	Pass
		1880	-2.67	3.96	28.22	21.59	144.212	Horizontal	Pass
		1900	-2.49	4.00	28.16	**21.67**	146.893	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-4.18	3.76	28.24	20.30	107.152	Vertical	Pass
		1880	-4.10	3.91	28.22	20.21	104.954	Vertical	Pass
		1909.3	-3.89	3.93	28.20	20.38	109.144	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.02	3.77	28.23	20.44	110.662	Vertical	Pass
		1880	-3.73	3.91	28.24	20.60	114.815	Vertical	Pass
		1908.5	-4.35	3.94	28.25	19.96	99.083	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-3.96	3.77	28.31	20.58	114.288	Vertical	Pass
		1880	-3.78	3.91	28.22	20.53	112.980	Vertical	Pass
		1907.5	-4.33	3.94	28.20	19.93	98.401	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-4.36	3.79	28.33	20.18	104.232	Vertical	Pass
		1880	-4.23	3.95	28.22	20.04	100.925	Vertical	Pass
		1905	-4.23	3.97	28.19	19.99	99.770	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.72	3.79	28.34	19.83	96.161	Vertical	Pass
		1880	-4.35	3.95	28.22	19.92	98.175	Vertical	Pass
		1902.5	-4.30	3.97	28.18	19.91	97.949	Vertical	Pass

20.0MHz	1/#Mid	1860	-4.27	3.81	28.35	20.27	106.414	Vertical	Pass
Band 16		1880	-4.22	3.96	28.22	20.04	100.925	Vertical	Pass
QAM		1900	-3.90	4.00	28.16	20.26	106.170	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.3 LTE BAND 4

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1710.7	-2.40	3.12	27.58	22.06	160.694	Horizontal	Pass
		1732.5	-2.39	3.27	27.61	21.95	156.675	Horizontal	Pass
		1754.3	-2.37	3.29	27.63	21.97	157.398	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-2.57	3.13	27.61	21.91	155.239	Horizontal	Pass
		1732.5	-2.49	3.27	27.61	21.85	153.109	Horizontal	Pass
		1753.5	-2.41	3.30	27.62	21.91	155.239	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-2.34	3.13	27.63	22.16	164.437	Horizontal	Pass
		1732.5	-2.24	3.27	27.61	22.10	162.181	Horizontal	Pass
		1752.5	-2.12	3.30	27.60	22.18	165.196	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-2.28	3.15	27.64	22.21	166.341	Horizontal	Pass
		1732.5	-2.05	3.31	27.61	22.25	167.880	Horizontal	Pass
		1750	-2.07	3.33	27.59	22.19	165.577	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-2.29	3.15	27.65	22.21	166.341	Horizontal	Pass
		1732.5	-2.13	3.31	27.61	22.17	164.816	Horizontal	Pass
		1747.5	-2.07	3.33	27.57	22.17	164.816	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-2.23	3.17	27.66	**22.26**	168.267	Horizontal	Pass
		1732.5	-2.06	3.32	27.61	22.23	167.109	Horizontal	Pass
		1745	-2.00	3.36	27.56	22.20	165.959	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-3.20	3.12	27.58	21.26	133.660	Vertical	Pass
		1732.5	-3.58	3.27	27.61	20.76	119.124	Vertical	Pass
		1754.3	-3.18	3.29	27.63	21.16	130.617	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.10	3.13	27.61	21.38	137.404	Vertical	Pass
		1732.5	-2.63	3.27	27.61	21.71	148.252	Vertical	Pass
		1753.5	-3.47	3.30	27.62	20.85	121.619	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-2.96	3.13	27.63	21.54	142.561	Vertical	Pass
		1732.5	-2.80	3.27	27.61	21.54	142.561	Vertical	Pass
		1752.5	-3.03	3.30	27.60	21.27	133.968	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.53	3.15	27.64	20.96	124.738	Vertical	Pass
		1732.5	-3.02	3.31	27.61	21.28	134.276	Vertical	Pass
		1750	-3.20	3.33	27.59	21.06	127.644	Vertical	Pass

15.0MHz	1/#Mid	1717.5	-3.73	3.15	27.65	20.77	119.399	Vertical	Pass
Band		1732.5	-3.30	3.31	27.61	21.00	125.893	Vertical	Pass
QPSK		1747.5	-3.46	3.33	27.57	20.78	119.674	Vertical	Pass
20.0MHz	1/#Mid	1720	-3.69	3.17	27.66	20.80	120.226	Vertical	Pass
Band		1732.5	-2.64	3.32	27.61	21.65	146.218	Vertical	Pass
QPSK		1745	-3.25	3.36	27.56	20.95	124.451	Vertical	Pass

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.21	3.12	27.58	21.25	133.352	Horizontal	Pass
		1732.5	-3.06	3.27	27.61	21.28	134.276	Horizontal	Pass
		1754.3	-3.06	3.29	27.63	21.28	134.276	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.15	3.13	27.61	21.33	135.831	Horizontal	Pass
		1732.5	-3.28	3.27	27.61	21.06	127.644	Horizontal	Pass
		1753.5	-3.50	3.30	27.62	20.82	120.781	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-2.98	3.13	27.63	21.52	141.906	Horizontal	Pass
		1732.5	-2.94	3.27	27.61	21.40	138.038	Horizontal	Pass
		1752.5	-2.63	3.30	27.60	21.67	146.893	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-3.05	3.15	27.64	21.44	139.316	Horizontal	Pass
		1732.5	-3.24	3.31	27.61	21.06	127.644	Horizontal	Pass
		1750	-2.62	3.33	27.59	21.64	145.881	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-2.85	3.15	27.65	21.65	146.218	Horizontal	Pass
		1732.5	-2.91	3.31	27.61	21.39	137.721	Horizontal	Pass
		1747.5	-2.93	3.33	27.57	21.31	135.207	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-2.80	3.17	27.66	**21.69**	147.571	Horizontal	Pass
		1732.5	-2.81	3.32	27.61	21.48	140.605	Horizontal	Pass
		1745	-2.62	3.36	27.56	21.58	143.880	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.85	3.12	27.58	20.61	115.080	Vertical	Pass
		1732.5	-4.11	3.27	27.61	20.23	105.439	Vertical	Pass
		1754.3	-4.35	3.29	27.63	19.99	99.770	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.04	3.13	27.61	20.44	110.662	Vertical	Pass
		1732.5	-3.94	3.27	27.61	20.40	109.648	Vertical	Pass
		1753.5	-3.98	3.30	27.62	20.34	108.143	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.60	3.13	27.63	19.90	97.724	Vertical	Pass
		1732.5	-4.31	3.27	27.61	20.03	100.693	Vertical	Pass
		1752.5	-3.92	3.30	27.60	20.38	109.144	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.73	3.15	27.64	19.76	94.624	Vertical	Pass
		1732.5	-4.07	3.31	27.61	20.23	105.439	Vertical	Pass
		1750	-4.20	3.33	27.59	20.06	101.391	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.63	3.15	27.65	19.87	97.051	Vertical	Pass
		1732.5	-4.55	3.31	27.61	19.75	94.406	Vertical	Pass
		1747.5	-4.52	3.33	27.57	19.72	93.756	Vertical	Pass

20.0MHz	1/#Mid	1720	-4.09	3.17	27.66	20.40	109.648	Vertical	Pass
Band 16		1732.5	-4.27	3.32	27.61	20.02	100.462	Vertical	Pass
QAM		1745	-3.93	3.36	27.56	20.27	106.414	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.4 LTE BAND 5

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	3/#Mid	824.7	6.90	2.01	19.68	2.15	22.42	174.582	Horizontal	Pass
		836.5	6.78	2.01	19.77	2.15	22.39	173.380	Horizontal	Pass
		848.3	6.58	2.02	19.82	2.15	22.23	167.109	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.67	2.01	19.70	2.15	22.21	166.341	Horizontal	Pass
		836.5	6.57	2.01	19.77	2.15	22.18	165.196	Horizontal	Pass
		847.5	6.44	2.02	19.81	2.15	22.08	161.436	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.95	2.01	19.71	2.15	22.50	177.828	Horizontal	Pass
		836.5	6.83	2.01	19.77	2.15	22.44	175.388	Horizontal	Pass
		846.5	6.67	2.02	19.79	2.15	22.29	169.434	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	6.97	2.01	19.73	2.15	**22.54**	179.473	Horizontal	Pass
		836.5	6.92	2.01	19.77	2.15	22.53	179.061	Horizontal	Pass
		844	6.82	2.02	19.78	2.15	22.43	174.985	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	5.53	2.01	19.77	2.15	21.14	130.017	Vertical	Pass
		848.3	5.86	2.02	19.82	2.15	21.51	141.579	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.17	2.01	19.70	2.15	21.71	148.252	Vertical	Pass
		836.5	5.66	2.01	19.77	2.15	21.27	133.968	Vertical	Pass
		847.5	5.68	2.02	19.81	2.15	21.32	135.519	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.41	2.01	19.71	2.15	20.96	124.738	Vertical	Pass
		836.5	5.61	2.01	19.77	2.15	21.22	132.434	Vertical	Pass
		846.5	5.68	2.02	19.79	2.15	21.30	134.896	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	5.85	2.01	19.77	2.15	21.46	139.959	Vertical	Pass
		844	6.08	2.02	19.78	2.15	21.69	147.571	Vertical	Pass

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	3/#Mid	824.7	6.05	2.01	19.68	2.15	21.57	143.549	Horizontal	Pass
		836.5	5.98	2.01	19.77	2.15	21.59	144.212	Horizontal	Pass
		848.3	5.82	2.02	19.82	2.15	21.47	140.281	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	6.13	2.01	19.70	2.15	21.67	146.893	Horizontal	Pass
		836.5	5.84	2.01	19.77	2.15	21.45	139.637	Horizontal	Pass
		847.5	5.32	2.02	19.81	2.15	20.96	124.738	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	6.45	2.01	19.71	2.15	22.00	158.489	Horizontal	Pass
		836.5	6.22	2.01	19.77	2.15	21.83	152.405	Horizontal	Pass
		846.5	5.97	2.02	19.79	2.15	21.59	144.212	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	829	6.45	2.01	19.73	2.15	**22.02**	159.221	Horizontal	Pass
		836.5	6.17	2.01	19.77	2.15	21.78	150.661	Horizontal	Pass
		844	5.71	2.02	19.78	2.15	21.32	135.519	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	5.19	2.01	19.68	2.15	20.71	117.761	Vertical	Pass
		836.5	6.10	2.01	19.77	2.15	21.71	148.252	Vertical	Pass
		848.3	5.62	2.02	19.82	2.15	21.27	133.968	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.50	2.01	19.70	2.15	21.04	127.057	Vertical	Pass
		836.5	4.44	2.01	19.77	2.15	20.05	101.158	Vertical	Pass
		847.5	5.11	2.02	19.81	2.15	20.75	118.850	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.15	2.01	19.71	2.15	20.70	117.490	Vertical	Pass
		836.5	4.69	2.01	19.77	2.15	20.30	107.152	Vertical	Pass
		846.5	4.11	2.02	19.79	2.15	19.73	93.972	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	829	4.66	2.01	19.73	2.15	20.23	105.439	Vertical	Pass
		836.5	4.53	2.01	19.77	2.15	20.14	103.276	Vertical	Pass
		844	4.93	2.02	19.78	2.15	20.54	113.240	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)

8.5 LTE BAND 7

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	2502.5	-0.68	4.54	27.75	22.53	179.061	Horizontal	Pass
		2535	-0.51	4.69	27.72	22.52	178.649	Horizontal	Pass
		2567.5	-0.44	4.71	27.71	22.56	180.302	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	-0.61	4.55	27.76	22.60	181.970	Horizontal	Pass
		2535	-0.42	4.69	27.72	22.61	182.390	Horizontal	Pass
		2565	-0.34	4.72	27.70	22.64	183.654	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-0.62	4.55	27.77	22.60	181.970	Horizontal	Pass
		2535	-0.48	4.69	27.72	22.55	179.887	Horizontal	Pass
		2562.5	-0.38	4.72	27.69	22.59	181.552	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-0.56	4.57	27.78	**22.65**	184.077	Horizontal	Pass
		2535	-0.38	4.73	27.72	22.61	182.390	Horizontal	Pass
		2560	-0.34	4.75	27.68	22.59	181.552	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-2.48	4.54	27.75	20.73	118.304	Vertical	Pass
		2535	-2.25	4.69	27.72	20.78	119.674	Vertical	Pass
		2567.5	-1.60	4.71	27.71	21.40	138.038	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	-1.88	4.55	27.76	21.33	135.831	Vertical	Pass
		2535	-1.54	4.69	27.72	21.49	140.929	Vertical	Pass
		2565	-2.15	4.72	27.70	20.83	121.060	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-1.78	4.55	27.77	21.44	139.316	Vertical	Pass
		2535	-1.48	4.69	27.72	21.55	142.889	Vertical	Pass
		2562.5	-2.26	4.72	27.69	20.71	117.761	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	-1.57	4.57	27.78	21.64	145.881	Vertical	Pass
		2535	-2.03	4.73	27.72	20.96	124.738	Vertical	Pass
		2560	-2.21	4.75	27.68	20.72	118.032	Vertical	Pass

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	2502.5	-1.37	4.54	27.75	21.84	152.757	Horizontal	Pass
		2535	-1.06	4.69	27.72	21.97	157.398	Horizontal	Pass
		2567.5	-1.14	4.71	27.71	21.86	153.462	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-1.26	4.55	27.76	21.95	156.675	Horizontal	Pass
		2535	-1.27	4.69	27.72	21.76	149.968	Horizontal	Pass
		2565	-1.54	4.72	27.70	21.44	139.316	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-1.44	4.55	27.77	21.78	150.661	Horizontal	Pass
		2535	-1.41	4.69	27.72	21.62	145.211	Horizontal	Pass
		2562.5	-1.02	4.72	27.69	21.95	156.675	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-1.32	4.57	27.78	21.89	154.525	Horizontal	Pass
		2535	-0.99	4.73	27.72	**22.00**	158.489	Horizontal	Pass
		2560	-1.09	4.75	27.68	21.84	152.757	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-2.74	4.54	27.75	20.47	111.429	Vertical	Pass
		2535	-2.82	4.69	27.72	20.21	104.954	Vertical	Pass
		2567.5	-1.52	4.71	27.71	21.48	140.605	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-1.63	4.55	27.76	21.58	143.880	Vertical	Pass
		2535	-2.07	4.69	27.72	20.96	124.738	Vertical	Pass
		2565	-2.11	4.72	27.70	20.87	122.180	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-2.01	4.55	27.77	21.21	132.130	Vertical	Pass
		2535	-2.27	4.69	27.72	20.76	119.124	Vertical	Pass
		2562.5	-2.45	4.72	27.69	20.52	112.720	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-3.00	4.57	27.78	20.21	104.954	Vertical	Pass
		2535	-2.75	4.73	27.72	20.24	105.682	Vertical	Pass
		2560	-1.86	4.75	27.68	21.07	127.938	Vertical	Pass

Note:

SG Level= Signal generator output

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

8.6 LTE BAND 17

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	706.5	7.73	1.91	19.23	2.15	22.90	194.984	Vertical	Pass
		710	7.59	1.91	19.26	2.15	22.79	190.108	Vertical	Pass
		713.5	7.49	1.92	19.33	2.15	22.75	188.365	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	709	7.74	1.91	19.25	2.15	**22.93**	196.336	Vertical	Pass
		710	7.69	1.91	19.26	2.15	22.89	194.536	Vertical	Pass
		711	7.65	1.92	19.32	2.15	22.90	194.984	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	706.5	6.30	1.91	19.23	2.15	21.47	140.281	Horizontal	Pass
		710	6.12	1.91	19.26	2.15	21.32	135.519	Horizontal	Pass
		713.5	6.53	1.92	19.33	2.15	21.79	151.008	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	709	7.34	1.91	19.25	2.15	22.53	179.061	Horizontal	Pass
		710	7.00	1.91	19.26	2.15	22.20	165.959	Horizontal	Pass
		711	6.09	1.92	19.32	2.15	21.34	136.144	Horizontal	Pass

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	706.5	7.01	1.91	19.23	2.15	22.18	165.196	Vertical	Pass
		710	6.92	1.91	19.26	2.15	22.12	162.930	Vertical	Pass
		713.5	6.72	1.92	19.33	2.15	21.98	157.761	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	709	6.55	1.91	19.25	2.15	21.74	149.279	Vertical	Pass
		710	7.08	1.91	19.26	2.15	**22.28**	169.044	Vertical	Pass
		711	6.81	1.92	19.32	2.15	22.06	160.694	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	706.5	6.10	1.91	19.23	2.15	21.27	133.968	Horizontal	Pass
		710	5.96	1.91	19.26	2.15	21.16	130.617	Horizontal	Pass
		713.5	5.55	1.92	19.33	2.15	20.81	120.504	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	709	5.65	1.91	19.25	2.15	20.84	121.339	Horizontal	Pass
		710	5.45	1.91	19.26	2.15	20.65	116.145	Horizontal	Pass
		711	5.69	1.92	19.32	2.15	20.94	124.165	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 26 A

Radiated Power (ERP) for Band 26(814-824)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz BW QPSK	6/0	814.7	-0.03	3.76	28.24	2.15	22.30	169.82	Horizontal	Pass
		819	0.11	3.91	28.22	2.15	22.27	168.66	Horizontal	Pass
		823.3	-0.01	3.93	28.20	2.15	22.11	162.55	Horizontal	Pass
3.0MHz BW QPSK	15/0	815.5	-0.22	3.77	28.23	2.15	22.09	161.81	Horizontal	Pass
		819	-0.12	3.91	28.24	2.15	22.06	160.69	Horizontal	Pass
		822.5	-0.20	3.94	28.25	2.15	21.96	157.04	Horizontal	Pass
5.0MHz BW QPSK	25/0	816.5	-0.01	3.77	28.31	2.15	22.38	172.98	Horizontal	Pass
		819	0.16	3.91	28.22	2.15	22.32	170.61	Horizontal	Pass
		821.5	0.06	3.94	28.20	2.15	22.17	164.82	Horizontal	Pass
10.0MHz BW QPSK	50/0	819	0.26	3.91	28.22	2.15	**22.42**	174.58	Horizontal	Pass
1.4MHz BW QPSK	6/0	814.7	0.01	3.79	28.34	2.15	22.41	174.18	Vertical	Pass
		819	0.19	3.95	28.22	2.15	22.31	170.22	Vertical	Pass
		823.3	-0.56	3.97	28.18	2.15	21.50	141.25	Vertical	Pass
3.0MHz BW QPSK	15/0	815.5	-1.56	3.77	28.23	2.15	20.75	118.85	Vertical	Pass
		819	-1.20	3.91	28.24	2.15	20.98	125.31	Vertical	Pass
		822.5	-1.20	3.94	28.25	2.15	20.96	124.74	Vertical	Pass
5.0MHz BW QPSK	25/0	816.5	-0.82	3.77	28.31	2.15	21.57	143.55	Vertical	Pass
		819	-0.98	3.91	28.22	2.15	21.18	131.22	Vertical	Pass
		821.5	-0.83	3.94	28.20	2.15	21.28	134.28	Vertical	Pass
10.0MHz BW QPSK	50/0	819	-1.19	3.91	28.22	2.15	20.97	125.03	Vertical	Pass

Radiated Power (ERP) for Band 26(814-824)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz BW 16 QAM	6/0	814.7	-0.14	3.76	28.24	2.15	22.19	165.58	Horizontal	Pass
		819	0.00	3.91	28.22	2.15	22.16	164.44	Horizontal	Pass
		823.3	-0.12	3.93	28.20	2.15	22.00	158.49	Horizontal	Pass
3.0MHz BW 16 QAM	15/0	815.5	-0.33	3.77	28.23	2.15	21.98	157.76	Horizontal	Pass
		819	-0.23	3.91	28.24	2.15	21.95	156.68	Horizontal	Pass
		822.5	-0.31	3.94	28.25	2.15	21.85	153.11	Horizontal	Pass
5.0MHz BW 16 QAM	25/0	816.5	-0.12	3.77	28.31	2.15	22.27	168.66	Horizontal	Pass
		819	0.05	3.91	28.22	2.15	22.21	166.34	Horizontal	Pass
		821.5	-0.05	3.94	28.20	2.15	22.06	160.69	Horizontal	Pass
10.0MHz BW 16 QAM	50/0	819	0.13	3.91	28.24	2.15	**22.31**	170.22	Horizontal	Pass
1.4MHz BW 16 QAM	6/0	814.7	-0.10	3.79	28.34	2.15	22.30	169.82	Vertical	Pass
		819	0.08	3.95	28.22	2.15	22.20	165.96	Vertical	Pass
		823.3	-1.50	3.97	28.18	2.15	20.56	113.76	Vertical	Pass
3.0MHz BW 16 QAM	15/0	815.5	-1.61	3.77	28.23	2.15	20.70	117.49	Vertical	Pass
		819	-0.86	3.91	28.24	2.15	21.32	135.52	Vertical	Pass
		822.5	-0.88	3.94	28.25	2.15	21.28	134.28	Vertical	Pass
5.0MHz BW 16 QAM	25/0	816.5	-1.09	3.77	28.31	2.15	21.30	134.90	Vertical	Pass
		819	-0.97	3.91	28.22	2.15	21.19	131.52	Vertical	Pass
		821.5	-1.48	3.94	28.20	2.15	20.63	115.61	Vertical	Pass
10.0MHz BW 16 QAM	50/0	819	-0.89	3.91	28.24	2.15	21.29	134.59	Vertical	Pass

8.8 LTE BAND 26B

Radiated Power (ERP) for Band 26(824-849)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	824.7	5.63	2.01	19.68	2.15	21.15	130.32	Horizontal	Pass
		836.5	5.57	2.01	19.77	2.15	21.18	131.22	Horizontal	Pass
		848.3	5.51	2.02	19.82	2.15	21.16	130.62	Horizontal	Pass
3.0MHz Band QPSK	15/0	825.5	5.67	2.01	19.70	2.15	21.21	132.13	Horizontal	Pass
		836.5	5.30	2.01	19.77	2.15	20.91	123.31	Horizontal	Pass
		847.5	5.75	2.02	19.81	2.15	21.39	137.72	Horizontal	Pass
5.0MHz Band QPSK	25/0	826.5	5.93	2.01	19.71	2.15	21.48	140.60	Horizontal	Pass
		836.5	5.75	2.01	19.77	2.15	21.36	136.77	Horizontal	Pass
		846.5	5.12	2.02	19.79	2.15	20.74	118.58	Horizontal	Pass
10.0MHz Band QPSK	50/0	829	5.14	2.01	19.73	2.15	20.71	117.76	Horizontal	Pass
		836.5	5.26	2.01	19.77	2.15	20.87	122.18	Horizontal	Pass
		844	5.86	2.02	19.78	2.15	21.47	140.28	Horizontal	Pass
15.0MHz Band QPSK	75/0	831.5	4.95	2.01	19.73	2.15	20.52	112.72	Horizontal	Pass
		836.5	5.88	2.01	19.77	2.15	**21.49**	140.93	Horizontal	Pass
		841.5	5.61	2.02	19.78	2.15	21.22	132.43	Horizontal	Pass
1.4MHz Band QPSK	6/0	824.7	5.21	2.01	19.68	2.15	20.73	118.30	Vertical	Pass
		836.5	5.15	2.01	19.77	2.15	20.76	119.12	Vertical	Pass
		848.3	5.41	2.02	19.82	2.15	21.06	127.64	Vertical	Pass
3.0MHz Band QPSK	15/0	825.5	5.35	2.01	19.70	2.15	20.89	122.74	Vertical	Pass
		836.5	4.97	2.01	19.77	2.15	20.58	114.29	Vertical	Pass
		847.5	5.22	2.02	19.81	2.15	20.86	121.90	Vertical	Pass
5.0MHz Band QPSK	25/0	826.5	5.37	2.01	19.71	2.15	20.92	123.59	Vertical	Pass
		836.5	5.12	2.01	19.77	2.15	20.73	118.30	Vertical	Pass
		846.5	5.24	2.02	19.79	2.15	20.86	121.90	Vertical	Pass
10.0MHz Band QPSK	50/0	829	5.01	2.01	19.73	2.15	20.58	114.29	Vertical	Pass
		836.5	5.35	2.01	19.77	2.15	20.96	124.74	Vertical	Pass
		844	5.19	2.02	19.78	2.15	20.80	120.23	Vertical	Pass
15.0MHz Band QPSK	75/0	831.5	5.02	2.01	19.73	2.15	20.59	114.55	Vertical	Pass
		836.5	5.77	2.01	19.77	2.15	21.38	137.40	Vertical	Pass
		841.5	5.37	2.02	19.78	2.15	20.98	125.31	Vertical	Pass

Radiated Power (ERP) for Band 26(824-849)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	6/0	824.7	5.84	2.01	19.68	2.15	21.36	136.77	Horizontal	Pass
		836.5	5.07	2.01	19.77	2.15	20.68	116.95	Horizontal	Pass
		848.3	5.01	2.02	19.82	2.15	20.66	116.41	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	825.5	5.10	2.01	19.70	2.15	20.64	115.88	Horizontal	Pass
		836.5	5.40	2.01	19.77	2.15	21.01	126.18	Horizontal	Pass
		847.5	5.10	2.02	19.81	2.15	20.74	118.58	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	826.5	5.26	2.01	19.71	2.15	20.81	120.50	Horizontal	Pass
		836.5	5.23	2.01	19.77	2.15	20.84	121.34	Horizontal	Pass
		846.5	5.07	2.02	19.79	2.15	20.69	117.22	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	829	5.47	2.01	19.73	2.15	21.04	127.06	Horizontal	Pass
		836.5	5.79	2.01	19.77	2.15	21.40	138.04	Horizontal	Pass
		844	5.03	2.02	19.78	2.15	20.64	115.88	Horizontal	Pass
15.0MHz Band QPSK	75/0	831.5	5.85	2.01	19.73	2.15	**21.42**	138.68	Horizontal	Pass
		836.5	5.03	2.01	19.77	2.15	20.64	115.88	Horizontal	Pass
		841.5	4.83	2.02	19.78	2.15	20.44	110.66	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	824.7	5.35	2.01	19.68	2.15	20.87	122.18	Vertical	Pass
		836.5	5.74	2.01	19.77	2.15	21.35	136.46	Vertical	Pass
		848.3	5.49	2.02	19.82	2.15	21.14	130.02	Vertical	Pass
3.0MHz Band 16 QAM	15/0	825.5	5.29	2.01	19.70	2.15	20.83	121.06	Vertical	Pass
		836.5	5.11	2.01	19.77	2.15	20.72	118.03	Vertical	Pass
		847.5	5.71	2.02	19.81	2.15	21.35	136.46	Vertical	Pass
5.0MHz Band 16 QAM	25/0	826.5	4.98	2.01	19.71	2.15	20.53	112.98	Vertical	Pass
		836.5	5.42	2.01	19.77	2.15	21.03	126.77	Vertical	Pass
		846.5	5.04	2.02	19.79	2.15	20.66	116.41	Vertical	Pass
10.0MHz Band 16 QAM	50/0	829	5.45	2.01	19.73	2.15	21.02	126.47	Vertical	Pass
		836.5	5.67	2.01	19.77	2.15	21.28	134.28	Vertical	Pass
		844	5.05	2.02	19.78	2.15	20.66	116.41	Vertical	Pass

15.0MHz		831.5	4.99	2.01	19.73	2.15	20.56	113.76	Vertical	Pass
Band	75/0	836.5	4.92	2.01	19.77	2.15	20.53	112.98	Vertical	Pass
QPSK		841.5	5.18	2.02	19.78	2.15	20.79	119.95	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)

8.9 LTE BAND 41

Radiated Power (EIRP) for Band 41									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	2498.5	-1.05	4.54	27.75	22.16	164.437	Horizontal	Pass
		2593	-0.90	4.69	27.72	22.13	163.305	Horizontal	Pass
		2687.5	-0.78	4.71	27.71	22.22	166.725	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2501	-1.13	4.55	27.76	22.08	161.436	Horizontal	Pass
		2593	-0.99	4.69	27.72	22.04	159.956	Horizontal	Pass
		2685	-0.98	4.72	27.70	22.00	158.489	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2503.5	-0.96	4.55	27.77	22.26	168.267	Horizontal	Pass
		2593	-0.68	4.69	27.72	22.35	171.791	Horizontal	Pass
		2682.5	-0.73	4.72	27.69	22.24	167.494	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2506	-0.57	4.57	27.78	**22.64**	183.654	Horizontal	Pass
		2593	-0.62	4.73	27.72	22.37	172.584	Horizontal	Pass
		2680	-0.62	4.75	27.68	22.31	170.216	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2498.5	-0.85	4.54	27.75	22.36	172.187	Vertical	Pass
		2593	-0.76	4.69	27.72	22.27	168.655	Vertical	Pass
		2687.5	-0.74	4.71	27.71	22.26	168.267	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2501	-0.83	4.55	27.76	22.38	172.982	Vertical	Pass
		2593	-0.67	4.69	27.72	22.36	172.187	Vertical	Pass
		2685	-0.74	4.72	27.70	22.24	167.494	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2503.5	-1.65	4.55	27.77	21.57	143.549	Vertical	Pass
		2593	-1.82	4.69	27.72	21.21	132.130	Vertical	Pass
		2682.5	-1.87	4.72	27.69	21.10	128.825	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2506	-1.89	4.57	27.78	21.32	135.519	Vertical	Pass
		2593	-1.56	4.73	27.72	21.43	138.995	Vertical	Pass
		2680	-1.89	4.75	27.68	21.04	127.057	Vertical	Pass

Radiated Power (EIRP) for Band 41									
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	
5.0MHz Band 16 QAM	1/#Mid	2498.5	-1.10	4.54	27.75	22.11	162.555	Horizontal	Pass
		2593	-0.95	4.69	27.72	22.08	161.436	Horizontal	Pass
		2687.5	-0.83	4.71	27.71	22.17	164.816	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2501	-1.18	4.55	27.76	22.03	159.588	Horizontal	Pass
		2593	-1.04	4.69	27.72	21.99	158.125	Horizontal	Pass
		2685	-1.03	4.72	27.70	21.95	156.675	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2503.5	-1.01	4.55	27.77	22.21	166.341	Horizontal	Pass
		2593	-0.73	4.69	27.72	22.30	169.824	Horizontal	Pass
		2682.5	-0.78	4.72	27.69	22.19	165.577	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2506	-0.73	4.57	27.78	**22.48**	177.011	Horizontal	Pass
		2593	-0.67	4.73	27.72	22.32	170.608	Horizontal	Pass
		2680	-0.67	4.75	27.68	22.26	168.267	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2498.5	-0.90	4.54	27.75	22.31	170.216	Vertical	Pass
		2593	-0.81	4.69	27.72	22.22	166.725	Vertical	Pass
		2687.5	-0.79	4.71	27.71	22.21	166.341	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2501	-0.88	4.55	27.76	22.33	171.002	Vertical	Pass
		2593	-0.72	4.69	27.72	22.31	170.216	Vertical	Pass
		2685	-0.79	4.72	27.70	22.19	165.577	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2503.5	-2.31	4.55	27.77	20.91	123.310	Vertical	Pass
		2593	-2.06	4.69	27.72	20.97	125.026	Vertical	Pass
		2682.5	-1.51	4.72	27.69	21.46	139.959	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2506	-1.84	4.57	27.78	21.37	137.088	Vertical	Pass
		2593	-2.22	4.73	27.72	20.77	119.399	Vertical	Pass
		2680	-2.30	4.75	27.68	20.63	115.611	Vertical	Pass

Note:
SG Level= Signal generator output
Max. EIRP Average (dBm)= Antenna Gain(dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

9. SPURIOUS RADIATION EMISSION

RULE PART(S)

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

LIMIT

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

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

§27.53 (h) For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(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 Log10 (p), dB; and
b. for mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB at the channel edges and 55 + 10 Log10 (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 2/4/5/7/17/26/41

RESULTS

PASS

9.1 LTE BAND 2

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

Test Results for Low Channel 1850.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3701.4	-51.50	4.04	33.51	-22.03	-13	-9.03	Horizontal
3701.4	-55.20	4.04	33.51	-25.73	-13	-12.73	Vertical
5552.1	-51.30	5.24	35.84	-20.70	-13	-7.70	Vertical
5552.1	-53.15	5.24	35.84	-22.55	-13	-9.55	Horizontal
193.0	-42.81	1.43	16.02	-28.22	-13	-15.22	Vertical
268.1	-35.58	1.30	17.99	-18.89	-13	**-5.89**	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-55.30	4.04	33.56	-25.78	-13	-12.78	Horizontal
3760.0	-48.57	4.04	33.56	-19.05	-13	-6.05	Vertical
5640.0	-49.64	5.24	35.91	-18.97	-13	-5.97	Vertical
5640.0	-51.03	5.24	35.91	-20.36	-13	-7.36	Horizontal
207.5	-38.28	1.62	16.97	-22.93	-13	-9.93	Vertical
335.4	-44.32	1.74	15.98	-30.09	-13	-17.09	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-50.77	4.04	34.00	-20.81	-13	-7.81	Horizontal
3818.6	-52.86	4.04	34.00	-22.90	-13	-9.90	Vertical
5727.9	-50.15	5.24	36.04	-19.35	-13	-6.35	Vertical
5727.9	-49.88	5.24	36.04	-19.08	-13	-6.08	Horizontal
180.5	-40.42	1.42	17.29	-24.55	-13	-11.55	Vertical
300.1	-38.85	1.50	17.90	-22.44	-13	-9.44	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	-52.52	4.07	33.54	-23.05	-13	-10.05	Horizontal
3720.0	-53.58	4.07	33.54	-24.11	-13	-11.11	Vertical
5580.0	-50.26	5.28	35.86	-19.68	-13	-6.68	Vertical
5580.0	-49.99	5.28	35.86	-19.41	-13	-6.41	Horizontal
191.7	-38.78	1.58	16.89	-23.46	-13	-10.46	Vertical
270.0	-38.68	1.76	17.26	-23.18	-13	-10.18	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-53.60	4.04	33.56	-24.08	-13	-11.08	Horizontal
3760.0	-50.31	4.04	33.56	-20.79	-13	-7.79	Vertical
5640.0	-51.42	5.24	35.91	-20.75	-13	-7.75	Vertical
5640.0	-54.15	5.24	35.91	-23.48	-13	-10.48	Horizontal
206.0	-43.24	1.46	16.27	-28.43	-13	-15.43	Vertical
395.0	-43.97	1.59	15.15	-30.41	-13	-17.41	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-53.36	4.04	34.00	-23.40	-13	-10.40	Horizontal
3800.0	-52.60	4.04	34.00	-22.64	-13	-9.64	Vertical
5700.0	-55.20	5.24	36.04	-24.40	-13	-11.40	Vertical
5700.0	-52.57	5.24	36.04	-21.77	-13	-8.77	Horizontal
188.7	-38.65	1.36	17.39	-22.61	-13	-9.61	Vertical
406.6	-44.66	1.66	15.39	-30.93	-13	-17.93	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(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	-49.91	4.02	29.80	-24.13	-13	-11.13	Horizontal
3421.4	-53.95	4.02	29.80	-28.17	-13	-15.17	Vertical
5132.1	-55.33	5.24	35.84	-24.73	-13	-11.73	Vertical
5132.1	-53.64	5.24	35.84	-23.04	-13	-10.04	Horizontal
177.9	-35.46	1.68	16.04	-21.10	-13	-8.10	Vertical
460.1	-34.47	1.78	17.74	-18.51	-13	-5.51	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-47.03	4.03	30.00	-21.06	-13	-8.06	Horizontal
3465.0	-50.68	4.03	30.00	-24.71	-13	-11.71	Vertical
5197.5	-52.31	5.25	35.86	-21.70	-13	-8.70	Vertical
5197.5	-52.20	5.25	35.86	-21.59	-13	-8.59	Horizontal
207.9	-34.39	1.72	17.69	-18.42	-13	**-5.42**	Vertical
399.1	-36.30	1.62	16.02	-21.89	-13	-8.89	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-48.81	4.05	30.01	-22.85	-13	-9.85	Horizontal
3508.6	-46.40	4.05	30.01	-20.44	-13	-7.44	Vertical
5262.9	-54.31	5.26	35.86	-23.71	-13	-10.71	Vertical
5262.9	-52.61	5.26	35.86	-22.01	-13	-9.01	Horizontal
210.4	-38.99	1.80	16.69	-24.10	-13	-11.10	Vertical
340.1	-38.46	1.75	16.66	-23.56	-13	-10.56	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	-53.27	4.02	29.80	-27.49	-13	-14.49	Horizontal
3440.0	-50.90	4.02	29.80	-25.12	-13	-12.12	Vertical
5160.0	-52.25	5.24	35.84	-21.65	-13	-8.65	Vertical
5160.0	-52.45	5.24	35.84	-21.85	-13	-8.85	Horizontal
177.4	-38.41	1.57	17.26	-22.72	-13	-9.72	Vertical
469.0	-39.75	1.78	16.35	-25.18	-13	-12.18	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-46.86	4.03	30.00	-20.89	-13	-7.89	Horizontal
3465.0	-53.48	4.03	30.00	-27.51	-13	-14.51	Vertical
5197.5	-51.56	5.25	35.86	-20.95	-13	-7.95	Vertical
5197.5	-53.04	5.25	35.86	-22.43	-13	-9.43	Horizontal
212.5	-41.17	1.44	17.95	-24.66	-13	-11.66	Vertical
356.4	-39.43	1.65	16.09	-24.99	-13	-11.99	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-50.56	2.91	27.68	-25.79	-13	-12.79	Horizontal
3490.0	-52.05	2.91	27.68	-27.28	-13	-14.28	Vertical
5235.0	-51.25	5.26	35.86	-20.65	-13	-7.65	Vertical
5235.0	-50.05	5.26	35.86	-19.45	-13	-6.45	Horizontal
198.8	-41.53	1.61	16.85	-26.29	-13	-13.29	Vertical
297.9	-37.43	1.61	15.19	-23.85	-13	-10.85	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

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

9.3 LTE BAND 5

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

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1649.4	-52.85	2.78	27.50	-28.13	-13	-15.13	Horizontal
1649.4	-49.04	2.78	27.50	-24.32	-13	-11.32	Vertical
2474.1	-48.25	2.90	27.80	-23.35	-13	-10.35	Vertical
2474.1	-53.55	2.90	27.80	-28.65	-13	-15.65	Horizontal
207.0	-35.63	1.76	17.59	-19.80	-13	**-6.80**	Vertical
366.8	-43.97	1.63	15.87	-29.73	-13	-16.73	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-47.16	2.80	27.48	-22.48	-13	-9.48	Horizontal
1673.0	-48.12	2.80	27.48	-23.44	-13	-10.44	Vertical
2509.5	-53.90	2.91	27.70	-29.11	-13	-16.11	Vertical
2509.5	-49.56	2.91	27.70	-24.77	-13	-11.77	Horizontal
201.8	-41.02	1.61	15.68	-26.95	-13	-13.95	Vertical
249.6	-39.66	1.59	17.52	-23.74	-13	-10.74	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-46.78	2.82	27.43	-22.17	-13	-9.17	Horizontal
1696.6	-49.15	2.82	27.43	-24.54	-13	-11.54	Vertical
2544.9	-51.88	2.92	27.74	-27.06	-13	-14.06	Vertical
2544.9	-49.43	2.92	27.74	-24.61	-13	-11.61	Horizontal
186.1	-40.90	1.69	16.67	-25.91	-13	-12.91	Vertical
432.9	-43.75	1.70	17.18	-28.27	-13	-15.27	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	-44.91	2.78	27.50	-20.19	-13	-7.19	Horizontal
1658.0	-47.65	2.78	27.50	-22.93	-13	-9.93	Vertical
2487.0	-52.92	2.90	27.80	-28.02	-13	-15.02	Vertical
2487.0	-53.45	2.90	27.80	-28.55	-13	-15.55	Horizontal
187.5	-41.76	1.71	15.57	-27.90	-13	-14.90	Vertical
456.9	-44.59	1.34	16.40	-29.53	-13	-16.53	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-46.99	2.80	27.48	-22.31	-13	-9.31	Horizontal
1673.0	-47.49	2.80	27.48	-22.81	-13	-9.81	Vertical
2509.5	-46.34	2.91	27.70	-21.55	-13	-8.55	Vertical
2509.5	-52.19	2.91	27.70	-27.40	-13	-14.40	Horizontal
202.9	-44.04	1.44	17.04	-28.44	-13	-15.44	Vertical
443.3	-44.40	1.76	17.62	-28.54	-13	-15.54	Horizontal
Test Results for High Channel 844MHz							
1688.0	-50.87	2.82	27.43	-26.26	-13	-13.26	Horizontal
1688.0	-45.86	2.82	27.43	-21.25	-13	-8.25	Vertical
2532.0	-53.22	2.92	27.74	-28.40	-13	-15.40	Vertical
2532.0	-52.07	2.92	27.74	-27.25	-13	-14.25	Horizontal
190.7	-41.24	1.74	17.70	-25.28	-13	-12.28	Vertical
270.0	-41.71	1.41	17.46	-25.65	-13	-12.65	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

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

9.4 LTE BAND 7

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

Test Results for Low Channel 2502.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5005.0	-60.44	5.23	35.81	-29.86	-25	-4.86	Horizontal
5005.0	-64.88	5.23	35.81	-34.30	-25	-9.30	Vertical
7507.5	-60.46	5.67	36.85	-29.28	-25	-4.28	Vertical
7507.5	-63.92	5.67	36.85	-32.74	-25	-7.74	Horizontal
177.0	-53.60	1.73	17.97	-37.36	-25	-12.36	Vertical
332.4	-50.25	1.38	15.11	-36.52	-25	-11.52	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-61.44	5.23	35.82	-30.85	-25	-5.85	Horizontal
5070.0	-61.66	5.23	35.82	-31.07	-25	-6.07	Vertical
7605.0	-62.01	5.67	36.85	-30.83	-25	-5.83	Vertical
7605.0	-63.90	5.67	36.85	-32.72	-25	-7.72	Horizontal
200.8	-49.40	1.77	16.17	-34.99	-25	-9.99	Vertical
237.4	-54.32	1.63	15.21	-40.74	-25	-15.74	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-63.27	5.24	35.83	-32.68	-25	-7.68	Horizontal
5135.0	-59.27	5.24	35.83	-28.68	-25	-3.68	Vertical
7702.5	-63.63	5.68	36.87	-32.44	-25	-7.44	Vertical
7702.5	-61.95	5.68	36.87	-30.76	-25	-5.76	Horizontal
189.6	-54.84	1.58	17.56	-38.86	-25	-13.86	Vertical
442.4	-45.02	1.45	16.58	-29.89	-25	-4.89	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
5020.0	-64.60	5.23	35.82	-34.01	-25	-9.01	Horizontal
5020.0	-60.51	5.23	35.82	-29.92	-25	-4.92	Vertical
7530.0	-59.91	5.67	36.86	-28.72	-25	-3.72	Vertical
7530.0	-63.90	5.67	36.86	-32.71	-25	-7.71	Horizontal
190.9	-46.16	1.63	15.76	-32.03	-25	-7.03	Vertical
437.6	-46.35	1.71	15.44	-32.62	-25	-7.62	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-62.66	5.23	35.82	-32.07	-25	-7.07	Horizontal
5070.0	-60.54	5.23	35.82	-29.95	-25	-4.95	Vertical
7605.0	-59.72	5.67	36.85	-28.54	-25	-3.54	Vertical
7605.0	-63.08	5.67	36.85	-31.90	-25	-6.90	Horizontal
187.5	-44.40	1.79	16.84	-29.34	-25	-4.34	Vertical
434.9	-48.40	1.71	17.64	-32.47	-25	-7.47	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-61.38	5.24	35.83	-30.79	-25	-5.79	Horizontal
5120.0	-60.90	5.24	35.83	-30.31	-25	-5.31	Vertical
7680.0	-64.43	5.70	36.88	-33.25	-25	-8.25	Vertical
7680.0	-59.31	5.70	36.88	-28.13	-25	**-3.13**	Horizontal
197.4	-44.81	1.79	16.84	-29.75	-25	-4.75	Vertical
289.2	-49.82	1.71	17.64	-33.89	-25	-8.89	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 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	-51.52	2.61	27.28	-26.85	-13	-13.85	Horizontal
1413.0	-52.08	2.61	27.28	-27.41	-13	-14.41	Vertical
2119.5	-51.94	2.87	27.59	-27.22	-13	-14.22	Vertical
2119.5	-52.79	2.87	27.59	-28.07	-13	-15.07	Horizontal
210.1	-39.60	1.71	16.15	-25.16	-13	-12.16	Vertical
458.6	-40.93	1.41	17.32	-25.02	-13	-12.02	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-44.61	2.62	27.30	-19.93	-13	**-6.93**	Horizontal
1420.0	-53.37	2.62	27.30	-28.69	-13	-15.69	Vertical
2130.0	-44.90	2.87	27.62	-20.15	-13	-7.15	Vertical
2130.0	-51.80	2.87	27.62	-27.05	-13	-14.05	Horizontal
203.4	-36.75	1.42	15.25	-22.93	-13	-9.93	Vertical
334.5	-43.30	1.36	17.19	-27.47	-13	-14.47	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-46.27	2.66	27.28	-21.65	-13	-8.65	Horizontal
1427.0	-51.72	2.66	27.28	-27.10	-13	-14.10	Vertical
2140.5	-47.43	2.88	27.60	-22.71	-13	-9.71	Vertical
2140.5	-50.29	2.88	27.60	-25.57	-13	-12.57	Horizontal
197.8	-41.17	1.32	17.29	-25.20	-13	-12.20	Vertical
450.9	-39.29	1.72	16.89	-24.12	-13	-11.12	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	-54.00	2.62	27.30	-29.32	-13	-16.32	Horizontal
1418.0	-46.70	2.62	27.30	-22.02	-13	-9.02	Vertical
2127.0	-46.37	2.87	27.62	-21.62	-13	-8.62	Vertical
2127.0	-52.77	2.87	27.62	-28.02	-13	-15.02	Horizontal
180.7	-37.53	1.35	16.91	-21.97	-13	-8.97	Vertical
328.0	-44.88	1.62	16.31	-30.19	-13	-17.19	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-53.70	2.62	27.30	-29.02	-13	-16.02	Horizontal
1420.0	-51.96	2.62	27.30	-27.28	-13	-14.28	Vertical
2130.0	-50.30	2.87	27.62	-25.55	-13	-12.55	Vertical
2130.0	-49.06	2.87	27.62	-24.31	-13	-11.31	Horizontal
207.5	-39.55	1.51	17.14	-23.92	-13	-10.92	Vertical
463.0	-38.95	1.77	16.88	-23.84	-13	-10.84	Horizontal
Test Results for High Channel 711MHz							
1422.0	-52.64	2.62	27.30	-27.96	-13	-14.96	Horizontal
1422.0	-51.99	2.62	27.30	-27.31	-13	-14.31	Vertical
2133.0	-47.44	2.87	27.62	-22.69	-13	-9.69	Vertical
2133.0	-52.82	2.87	27.62	-28.07	-13	-15.07	Horizontal
208.7	-39.64	1.78	15.95	-25.47	-13	-12.47	Vertical
264.9	-37.48	1.34	17.95	-20.88	-13	-7.88	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 26

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

Test Results for Low Channel 814.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1629.4	-47.31	2.78	27.50	-22.59	-13	-9.59	Horizontal
1629.4	-46.33	2.78	27.50	-21.61	-13	-8.61	Vertical
2444.1	-46.44	2.90	27.80	-21.54	-13	-8.54	Vertical
2444.1	-47.09	2.90	27.80	-22.19	-13	-9.19	Horizontal
229.6	-33.40	1.54	16.98	-17.96	-13	-4.96	Vertical
83.3	-34.62	1.47	15.82	-20.27	-13	-7.27	Horizontal
Test Results For Mid Channel 819MHz							
1638.0	-46.98	2.80	27.48	-22.30	-13	-9.30	Horizontal
1638.0	-46.17	2.80	27.48	-21.49	-13	-8.49	Vertical
2457.0	-48.43	2.91	27.70	-23.64	-13	-10.64	Vertical
2457.0	-48.00	2.91	27.70	-23.21	-13	-10.21	Horizontal
168.2	-33.11	1.74	16.19	-18.66	-13	-5.66	Vertical
92.9	-34.99	1.46	15.43	-21.02	-13	-8.02	Horizontal
Test Results for High Channel 823.3MHz							
1646.6	-48.04	2.82	27.43	-23.43	-13	-10.43	Horizontal
1646.6	-48.63	2.82	27.43	-24.02	-13	-11.02	Vertical
2469.9	-49.86	2.92	27.74	-25.04	-13	-12.04	Vertical
2469.9	-47.63	2.92	27.74	-22.81	-13	-9.81	Horizontal
213.1	-32.30	1.67	17.05	-16.92	-13	-3.92	Vertical
121.7	-33.33	1.42	16.12	-18.63	-13	-5.63	Horizontal

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

Test Results for Channel 819MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1638.0	-49.15	2.78	27.50	-24.43	-13	-11.43	Horizontal
1638.0	-41.97	2.78	27.50	-17.25	-13	-4.25	Vertical
2457.0	-48.60	2.90	27.80	-23.70	-13	-10.70	Vertical
2457.0	-48.22	2.90	27.80	-23.32	-13	-10.32	Horizontal
253.7	-33.53	1.43	17.34	-17.62	-13	-4.62	Vertical
256.8	-32.27	1.56	15.71	-18.12	-13	-5.12	Horizontal

QPSK EIRP POWER FOR LTE BAND 26(824MHz~849MHz) (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	-49.77	2.78	27.50	-25.05	-13	-12.05	Horizontal
1649.4	-44.64	2.78	27.50	-19.92	-13	-6.92	Vertical
2474.1	-47.35	2.90	27.80	-22.45	-13	-9.45	Vertical
2474.1	-48.51	2.90	27.80	-23.61	-13	-10.61	Horizontal
237.0	-32.05	1.33	17.34	-16.04	-13	-3.04	Vertical
180.5	-34.02	1.47	16.80	-18.69	-13	-5.69	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-48.44	2.80	27.48	-23.76	-13	-10.76	Horizontal
1673.0	-49.18	2.80	27.48	-24.50	-13	-11.50	Vertical
2509.5	-49.45	2.91	27.70	-24.66	-13	-11.66	Vertical
2509.5	-48.22	2.91	27.70	-23.43	-13	-10.43	Horizontal
140.8	-34.30	1.75	15.46	-20.59	-13	-7.59	Vertical
90.6	-34.61	1.52	16.14	-19.99	-13	-6.99	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-48.63	2.82	27.43	-24.02	-13	-11.02	Horizontal
1696.6	-47.41	2.82	27.43	-22.80	-13	-9.80	Vertical
2544.9	-49.20	2.92	27.74	-24.38	-13	-11.38	Vertical
2544.9	-49.33	2.92	27.74	-24.51	-13	-11.51	Horizontal
171.4	-33.15	1.67	16.09	-18.73	-13	-5.73	Vertical
247.2	-32.87	1.80	17.55	-17.12	-13	-4.12	Horizontal

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

Test Results for Low Channel 831.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1663.0	-49.45	2.78	27.50	-24.73	-13	-11.73	Horizontal
1663.0	-42.75	2.78	27.50	-18.03	-13	-5.03	Vertical
2494.5	-48.09	2.90	27.80	-23.19	-13	-10.19	Vertical
2494.5	-47.36	2.90	27.80	-22.46	-13	-9.46	Horizontal
255.4	-32.60	1.52	15.72	-18.40	-13	-5.40	Vertical
163.1	-32.63	1.40	17.03	-17.00	-13	-4.00	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-47.49	2.80	27.48	-22.81	-13	-9.81	Horizontal
1673.0	-46.95	2.80	27.48	-22.27	-13	-9.27	Vertical
2509.5	-48.49	2.91	27.70	-23.70	-13	-10.70	Vertical
2509.5	-47.81	2.91	27.70	-23.02	-13	-10.02	Horizontal
227.1	-34.22	1.74	16.38	-19.58	-13	-6.58	Vertical
101.3	-34.59	1.79	15.20	-21.18	-13	-8.18	Horizontal
Test Results for High Channel841.5MHz							
1683.0	-48.35	2.82	27.43	-23.74	-13	-10.74	Horizontal
1683.0	-45.17	2.82	27.43	-20.56	-13	-7.56	Vertical
2524.5	-49.53	2.92	27.74	-24.71	-13	-11.71	Vertical
2524.5	-47.65	2.92	27.74	-22.83	-13	-9.83	Horizontal
261.1	-32.10	1.78	17.44	-16.44	-13	-3.44	Vertical
120.1	-33.72	1.70	15.93	-19.49	-13	-6.49	Horizontal

9.7 LTE BAND 41

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

Test Results for Low Channel 2572.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5145.0	-60.49	5.23	35.81	-29.91	-25	-4.91	Horizontal
5145.0	-60.22	5.23	35.81	-29.64	-25	-4.64	Vertical
7717.5	-61.97	5.67	36.85	-30.79	-25	-5.79	Vertical
7717.5	-59.66	5.67	36.85	-28.48	-25	-3.48	Horizontal
435.3	-45.24	1.38	15.98	-30.64	-25	-5.64	Vertical
465.8	-48.46	1.62	15.66	-34.42	-25	-9.42	Horizontal
Test Results for Mid Channel 2595MHz							
5190.0	-60.55	5.23	35.82	-29.96	-25	-4.96	Horizontal
5190.0	-60.95	5.23	35.82	-30.36	-25	-5.36	Vertical
7785.0	-59.91	5.67	36.85	-28.73	-25	-3.73	Vertical
7785.0	-59.74	5.67	36.85	-28.56	-25	-3.56	Horizontal
510.4	-49.73	1.62	16.17	-35.18	-25	-10.18	Vertical
562.9	-48.99	1.74	17.63	-33.10	-25	-8.10	Horizontal
Test Results for High Channel 2617.5MHz							
5235.0	-60.22	5.24	35.83	-29.63	-25	-4.63	Horizontal
5235.0	-62.79	5.24	35.83	-32.20	-25	-7.20	Vertical
7852.5	-60.72	5.68	36.87	-29.53	-25	-4.53	Vertical
7852.5	-64.64	5.68	36.87	-33.45	-25	-8.45	Horizontal
197.6	-46.31	1.55	15.84	-32.02	-25	-7.02	Vertical
353.1	-49.32	1.51	17.06	-33.77	-25	-8.77	Horizontal

QPSK EIRP POWER FOR LTE BAND 41 (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
5160.0	-63.72	5.23	35.82	-33.13	-25	-8.13	Horizontal
5160.0	-60.74	5.23	35.82	-30.15	-25	-5.15	Vertical
7740.0	-59.57	5.67	36.86	-28.38	-25	**-3.38**	Vertical
7740.0	-61.89	5.67	36.86	-30.70	-25	-5.70	Horizontal
128.9	-46.91	1.43	15.51	-32.83	-25	-7.83	Vertical
344.8	-44.50	1.40	16.97	-28.93	-25	-3.93	Horizontal
Test Results for Mid Channel 2595MHz							
5190.0	-63.35	5.23	35.82	-32.76	-25	-7.76	Horizontal
5190.0	-61.16	5.23	35.82	-30.57	-25	-5.57	Vertical
7785.0	-61.71	5.67	36.85	-30.53	-25	-5.53	Vertical
7785.0	-60.18	5.67	36.85	-29.00	-25	-4.00	Horizontal
100.8	-48.32	1.77	16.72	-33.37	-25	-8.37	Vertical
263.5	-46.60	1.31	16.99	-30.92	-25	-5.92	Horizontal
Test Results for High Channel 2610MHz							
5220.0	-59.64	5.24	35.83	-29.05	-25	-4.05	Horizontal
5220.0	-61.21	5.24	35.83	-30.62	-25	-5.62	Vertical
7830.0	-64.96	5.70	36.88	-33.78	-25	-8.78	Vertical
7830.0	-64.42	5.70	36.88	-33.24	-25	-8.24	Horizontal
349.9	-45.77	1.70	15.73	-31.74	-25	-6.74	Vertical
110.3	-49.34	1.75	17.33	-33.76	-25	-8.76	Horizontal

Note: PMea(dBm)= Power(dBm)+ ARpl (dBm)

. Over Limit= : PMea(dBm)-Limit(dBm)

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

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

10. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30° to +50°C
- Voltage =low voltage, DC 3.4V, Normal,DC 3.85V and High voltage, DC 4.2V.

Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to -30ºC 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 +50ºC is reached.

Frequency Stability vs Voltage:

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

MODES TESTED

LTE Band 2/4/5/7/17/26/41

RESULTS

See the following pages.

10.1 LTE BAND 2

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.40	1880	13.1	0.006943	2.5
3.85	1880	14.2	0.007555	2.5
4.20	1880	13.5	0.007182	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	13.0	0.006920	2.5
Extreme (50C)	1880	11.4	0.006062	2.5
Extreme (40C)	1880	13.9	0.007370	2.5
Extreme (30C)	1880	13.9	0.007395	2.5
Extreme (10C)	1880	13.6	0.007237	2.5
Extreme (0C)	1880	12.4	0.006586	2.5
Extreme (-10C)	1880	12.8	0.006821	2.5
Extreme (-20C)	1880	13.9	0.007383	2.5
Extreme (-30C)	1880	14.6	0.007762	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]
3.40	1880	9.4	0.005003	2.5
3.85	1880	8.5	0.004530	2.5
4.20	1880	7.9	0.004207	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	9.9	0.005245	2.5
Extreme (50C)	1880	9.2	0.004893	2.5
Extreme (40C)	1880	8.2	0.004361	2.5
Extreme (30C)	1880	8.7	0.004632	2.5
Extreme (10C)	1880	9.0	0.004793	2.5
Extreme (0C)	1880	7.7	0.004088	2.5
Extreme (-10C)	1880	9.4	0.004981	2.5
Extreme (-20C)	1880	8.5	0.004529	2.5
Extreme (-30C)	1880	7.9	0.004203	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]
3.40	1732.5	8.7	0.005031	2.5
3.85	1732.5	8.6	0.004944	2.5
4.20	1732.5	8.7	0.004995	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	8.7	0.005019	2.5
Extreme (50C)	1732.5	9.2	0.005289	2.5
Extreme (40C)	1732.5	7.3	0.004213	2.5
Extreme (30C)	1732.5	6.3	0.003636	2.5
Extreme (10C)	1732.5	7.5	0.004309	2.5
Extreme (0C)	1732.5	9.7	0.005598	2.5
Extreme (-10C)	1732.5	8.1	0.004688	2.5
Extreme (-20C)	1732.5	6.9	0.003960	2.5
Extreme (-30C)	1732.5	8.0	0.004598	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]
3.40	1732.5	9.3	0.005385	2.5
3.85	1732.5	9.4	0.005402	2.5
4.20	1732.5	8.5	0.004930	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	10.2	0.005861	2.5
Extreme (50C)	1732.5	9.2	0.005313	2.5
Extreme (40C)	1732.5	8.0	0.004597	2.5
Extreme (30C)	1732.5	9.1	0.005262	2.5
Extreme (10C)	1732.5	8.9	0.005134	2.5
Extreme (0C)	1732.5	8.1	0.004701	2.5
Extreme (-10C)	1732.5	8.6	0.004982	2.5
Extreme (-20C)	1732.5	9.0	0.005192	2.5
Extreme (-30C)	1732.5	8.5	0.004912	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]
3.40	836.5	6.2	0.007364	2.5
3.85	836.5	7.0	0.008388	2.5
4.20	836.5	4.6	0.005481	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.4	0.007638	2.5
Extreme (50C)	836.5	5.4	0.006496	2.5
Extreme (40C)	836.5	6.1	0.007302	2.5
Extreme (30C)	836.5	6.1	0.007324	2.5
Extreme (10C)	836.5	5.5	0.006590	2.5
Extreme (0C)	836.5	5.4	0.006421	2.5
Extreme (-10C)	836.5	5.2	0.006225	2.5
Extreme (-20C)	836.5	6.1	0.007264	2.5
Extreme (-30C)	836.5	6.7	0.008050	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]
3.40	836.5	6.0	0.007114	2.5
3.85	836.5	6.3	0.007539	2.5
4.20	836.5	4.9	0.005829	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.6	0.007852	2.5
Extreme (50C)	836.5	6.2	0.007388	2.5
Extreme (40C)	836.5	6.4	0.007612	2.5
Extreme (30C)	836.5	6.2	0.007382	2.5
Extreme (10C)	836.5	5.5	0.006578	2.5
Extreme (0C)	836.5	5.3	0.006289	2.5
Extreme (-10C)	836.5	5.2	0.006253	2.5
Extreme (-20C)	836.5	6.1	0.007272	2.5
Extreme (-30C)	836.5	6.1	0.007304	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]
3.40	2535	10.4	0.004095	2.5
3.85	2535	8.5	0.003369	2.5
4.20	2535	8.7	0.003443	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	9.7	0.003845	2.5
Extreme (50C)	2535	9.1	0.003575	2.5
Extreme (40C)	2535	7.9	0.003123	2.5
Extreme (30C)	2535	9.0	0.003559	2.5
Extreme (10C)	2535	7.7	0.003044	2.5
Extreme (0C)	2535	8.0	0.003172	2.5
Extreme (-10C)	2535	9.0	0.003559	2.5
Extreme (-20C)	2535	8.6	0.003401	2.5
Extreme (-30C)	2535	8.4	0.003328	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]
3.40	2535	6.7	0.002651	2.5
3.85	2535	6.0	0.002349	2.5
4.20	2535	6.2	0.002443	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	6.8	0.002674	2.5
Extreme (50C)	2535	5.2	0.002067	2.5
Extreme (40C)	2535	5.2	0.002066	2.5
Extreme (30C)	2535	6.6	0.002614	2.5
Extreme (10C)	2535	5.7	0.002253	2.5
Extreme (0C)	2535	5.1	0.002029	2.5
Extreme (-10C)	2535	5.1	0.002010	2.5
Extreme (-20C)	2535	6.1	0.002425	2.5
Extreme (-30C)	2535	5.9	0.002322	2.5

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

10.5 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]
3.40	710.0	9.7	0.013602	2.5
3.85	710.0	8.8	0.012460	2.5
4.20	710.0	8.3	0.011671	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	10.0	0.014084	2.5
Extreme (50C)	710.0	8.9	0.012596	2.5
Extreme (40C)	710.0	7.9	0.011085	2.5
Extreme (30C)	710.0	8.8	0.012363	2.5
Extreme (10C)	710.0	9.1	0.012824	2.5
Extreme (0C)	710.0	8.3	0.011760	2.5
Extreme (-10C)	710.0	9.2	0.012904	2.5
Extreme (-20C)	710.0	8.7	0.012232	2.5
Extreme (-30C)	710.0	8.0	0.011223	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]
3.40	710.0	10.1	0.014188	2.5
3.85	710.0	9.0	0.012631	2.5
4.20	710.0	8.8	0.012450	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.6	0.013528	2.5
Extreme (50C)	710.0	8.4	0.011853	2.5
Extreme (40C)	710.0	8.2	0.011582	2.5
Extreme (30C)	710.0	9.2	0.012993	2.5
Extreme (10C)	710.0	7.7	0.010895	2.5
Extreme (0C)	710.0	8.3	0.011736	2.5
Extreme (-10C)	710.0	9.8	0.013863	2.5
Extreme (-20C)	710.0	8.5	0.011955	2.5
Extreme (-30C)	710.0	7.9	0.011135	2.5

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

10.6 LTE BAND 26

Band 26 A (814MHz~824MHz) QPSK,10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A QPSK, (CH 26740 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.40	819	8.4	0.010228	2.5
3.85	819	5.2	0.006333	2.5
4.20	819	6.6	0.008021	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A QPSK, (CH 26740RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	819	8.3	0.010139	2.5
Extreme (50C)	819	1.6	0.002001	2.5
Extreme (40C)	819	2.6	0.003222	2.5
Extreme (30C)	819	7.0	0.008497	2.5
Extreme (10C)	819	5.5	0.006732	2.5
Extreme (0C)	819	6.2	0.007604	2.5
Extreme (-10C)	819	8.3	0.010139	2.5
Extreme (-20C)	819	6.5	0.007928	2.5
Extreme (-30C)	819	4.7	0.005715	2.5

Band 26A (814MHz~824MHz) 16QAM, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A 16QAM, (CH 26740 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
3.40	819	2.2	0.002738	2.5
3.85	819	6.0	0.007330	2.5
4.20	819	5.3	0.006481	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26A 16QAM, (CH 26740 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	819	6.1	0.007438	2.5
Extreme (50C)	819	8.4	0.010238	2.5
Extreme (40C)	819	6.2	0.007596	2.5
Extreme (30C)	819	4.4	0.005345	2.5
Extreme (10C)	819	6.6	0.008017	2.5
Extreme (0C)	819	5.4	0.006603	2.5
Extreme (-10C)	819	8.3	0.010173	2.5
Extreme (-20C)	819	6.1	0.007474	2.5
Extreme (-30C)	819	7.4	0.008975	2.5

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

Band 26B ((824MHz~849MHz) QPSK,15MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B QPSK, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
3.40	836.5	8.1	0.009705	2.5
3.85	836.5	6.6	0.007831	2.5
4.20	836.5	8.0	0.009607	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B QPSK, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
Normal (25C)	836.5	10.4	0.012479	2.5
Extreme (50C)	836.5	9.7	0.011557	2.5
Extreme (40C)	836.5	6.6	0.007868	2.5
Extreme (30C)	836.5	8.1	0.009704	2.5
Extreme (10C)	836.5	7.0	0.008426	2.5
Extreme (0C)	836.5	9.6	0.011515	2.5
Extreme (-10C)	836.5	1.6	0.001887	2.5
Extreme (-20C)	836.5	8.5	0.010205	2.5
Extreme (-30C)	836.5	7.5	0.008971	2.5

Band 26B (824MHz~849MHz) 16QAM, (15MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B 16QAM, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
3.40	836.5	9.9	0.011821	2.5
3.85	836.5	11.4	0.013650	2.5
4.20	836.5	10.9	0.013053	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 26B 16QAM, (CH 26915 RB size 75 RB Offset 0 15MHz BANDWIDTH)				
Normal (25C)	836.5	6.2	0.007399	2.5
Extreme (50C)	836.5	8.4	0.010088	2.5
Extreme (40C)	836.5	7.2	0.008557	2.5
Extreme (30C)	836.5	7.8	0.009316	2.5
Extreme (10C)	836.5	6.5	0.007799	2.5
Extreme (0C)	836.5	5.4	0.006413	2.5
Extreme (-10C)	836.5	5.9	0.007069	2.5
Extreme (-20C)	836.5	3.3	0.011237	2.5
Extreme (-30C)	836.5	8.6	0.007292	2.5

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

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]
3.40	2593	8.7	0.003355	2.5
3.85	2593	6.7	0.002601	2.5
4.20	2593	7.2	0.002788	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	7.7	0.002979	2.5
Extreme (50C)	2593	4.4	0.001713	2.5
Extreme (40C)	2593	5.5	0.002118	2.5
Extreme (30C)	2593	5.0	0.001925	2.5
Extreme (10C)	2593	6.9	0.002653	2.5
Extreme (0C)	2593	5.2	0.001998	2.5
Extreme (-10C)	2593	9.6	0.003706	2.5
Extreme (-20C)	2593	11.0	0.004244	2.5
Extreme (-30C)	2593	5.9	0.002280	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]
3.40	2593	8.4	0.003232	2.5
3.85	2593	6.3	0.002416	2.5
4.20	2593	6.7	0.002592	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	7.3	0.002820	2.5
Extreme (50C)	2593	4.8	0.001861	2.5
Extreme (40C)	2593	5.2	0.002001	2.5
Extreme (30C)	2593	5.2	0.002005	2.5
Extreme (10C)	2593	6.3	0.002410	2.5
Extreme (0C)	2593	4.9	0.001903	2.5
Extreme (-10C)	2593	9.3	0.003590	2.5
Extreme (-20C)	2593	10.5	0.004056	2.5
Extreme (-30C)	2593	6.2	0.002372	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.

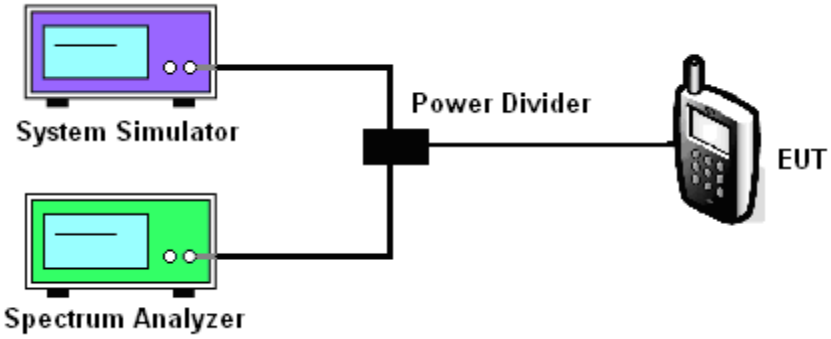
11.2 Measuring Instruments

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 2/4/5/7/17/26/41

Test data reference attachment.

----END OF REPORT----