

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

FCC ID: XGK-ACERNFC

Product: access-ER HF NFC/FAP30

Trade Mark: COPPERNIC

Model No.: access-ER

Family Model: N/A

Report No.: S22101403929006

Issue Date: Jan 05, 2023

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
 Taiwan,R.O.C Taiwan
Product name..... : access-ER HF NFC/FAP30
Model and/or type reference .. : access-ER
Trade Mark..... : COPPERNIC
Family Model..... : N/A
Test Sample Number..... S221014039030
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..... Oct 17, 2022 ~ Jan 03, 2023
 Date of Issue Jan 05, 2023
 Test Result..... **Pass**

Testing Engineer : Allen Liu
 (Allen Liu)

Authorized Signatory : Alex Li
 (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:	access-ER HF NFC/FAP30
Trade Mark	COPPERNIC
Model Name	access-ER
Family Model	N/A
Model Difference	N/A
FCC ID:	XGK-ACERNFC
Frequency Bands:	U.S. Bands: <input checked="" type="checkbox"/> 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:	3 dBi

Adapter	<p>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</p>
Battery	DC 3.85V, 4000mAh
Power Rating	<p>DC 3.85V from battery or DC 5V from adapter DC 3.85V from battery or DC 12V from Charging base</p>
Extreme Vol. Limits:	DC 3.4V to DC 4.2V (Nominal DC 3.85V) (Note 1)
HW Version	PCTA200 REV:3
SW Version	ANDROID 10
<p>** 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.</p>	

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: XGK-ACERNFC** filing to comply with the FCC Part 22H&24E&27&90S.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

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

ShenZhen NTEK Testing Technology Co., Ltd.

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

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

FCC Registration No.:463705

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	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

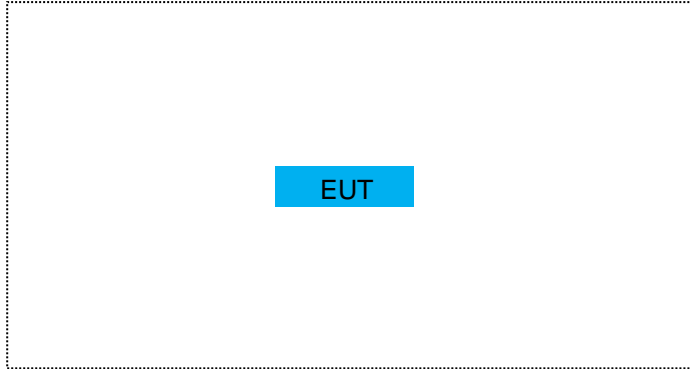
Table 2-1 Equipment Used in EUT System

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

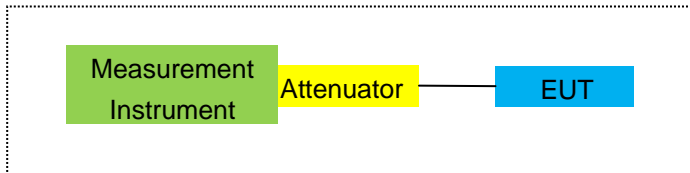
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

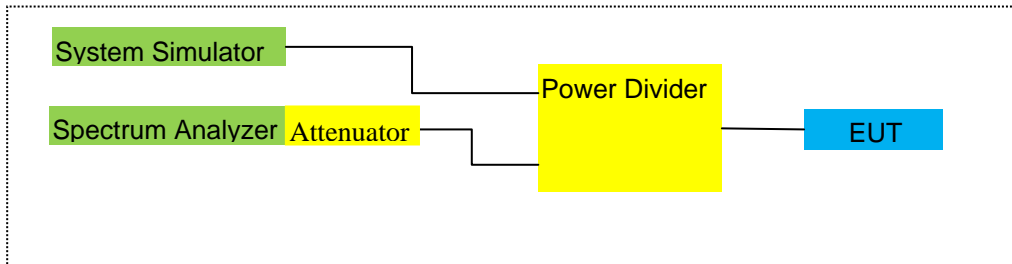
For Radiated Test Cases



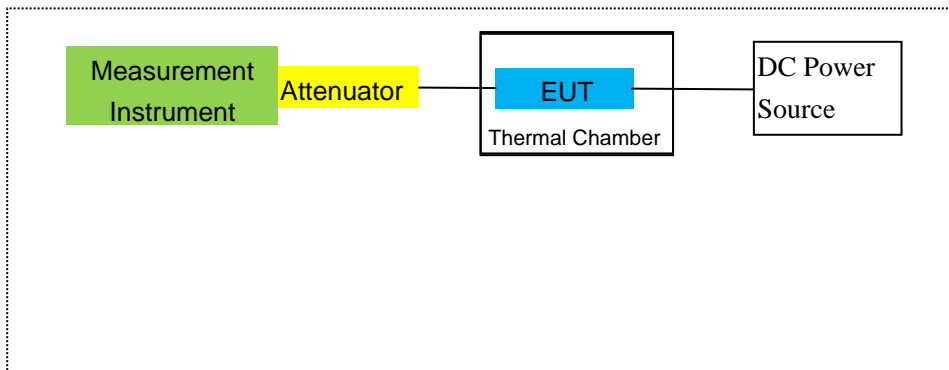
For Conducted Output Power



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	2022.06.16	2023.06.17	1 year
2	Test Receiver	R&S	ESPI	101318	2022.04.06	2023.04.05	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2022.03.30	2023.03.29	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2020.05.11	2023.05.10	3 year
5	Horn Antenna	EM	EM-AH-10180	2011071402	2022.03.31	2023.03.30	1 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2022.11.07	2023.11.06	1 year
7	Amplifier	EM	EM-30180	060538	2022.06.17	2023.06.16	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2022.04.06	2023.04.05	1 year
9	Power Meter	R&S	NRVS	100696	2022.06.17	2023.06.16	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2022.04.06	2023.04.05	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	2022.04.06	2023.04.05	1 year
15	LISN	R&S	ENV216	101313	2022.04.06	2023.04.05	1 year
16	LISN	EMCO	3816/2	00042990	2022.04.06	2023.04.05	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2022.04.06	2023.04.05	1 year
18	Passive Voltage Probe	R&S	ESH2-Z3	100196	2022.04.06	2023.04.05	1 year
19	Test Cable	N/A	C01	N/A	2020.05.11	2023.05.10	3 year
20	Test Cable	N/A	C02	N/A	2020.05.11	2023.05.10	3 year
21	Test Cable	N/A	C03	N/A	2020.05.11	2023.05.10	3 year
22	Attenuator	MCE	24-10-34	BN9258	2022.04.01	2023.03.31	1 year
23	Spectrum Analyzer	agilent	e4440a	us44300399	2022.04.01	2023.03.31	1 year
24	test receiver	R&S	ESCI	a0304218	2022.04.06	2023.04.05	1 year
25	Communication Tester	R&S	CMU200	A0304247	2022.06.16	2023.06.15	1 year

26	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2022.04.06	2023.04.05	1 year
27	DC Power Source	N/A	PS-6005D	2017040292 3	2020.05.11	2023.05.10	3 year
28	MXG Vector Signal Generator	Agilent	N5182A	MY47070317	2022.06.16	2023.06.15	1 year
29	Communication Tester	R&S	CMW500	148500	2022.06.16	2023.06.15	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

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 $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

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

TEST PROCEDURE

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

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency

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

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

MODES TESTED

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

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					Polarization Of	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP		
							Average (mW)		
1.4MHz Band QPSK	1/#Mid	1850.7	-2.76	3.76	28.24	21.72	148.594	Horizontal	Pass
		1880	-2.57	3.91	28.22	21.74	149.279	Horizontal	Pass
		1909.3	-2.48	3.93	28.20	21.79	151.008	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-2.82	3.77	28.23	21.64	145.881	Horizontal	Pass
		1880	-2.67	3.91	28.24	21.66	146.555	Horizontal	Pass
		1908.5	-2.54	3.94	28.25	21.77	150.314	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-2.71	3.77	28.31	21.83	152.405	Horizontal	Pass
		1880	-2.33	3.91	28.22	21.98	157.761	Horizontal	Pass
		1907.5	-2.26	3.94	28.20	22.00	158.489	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-2.57	3.79	28.33	21.97	157.398	Horizontal	Pass
		1880	-2.27	3.95	28.22	22.00	158.489	Horizontal	Pass
		1905	-2.16	3.97	28.19	22.06	160.694	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-2.53	3.79	28.34	22.02	159.221	Horizontal	Pass
		1880	-2.32	3.95	28.22	21.95	156.675	Horizontal	Pass
		1902.5	-2.18	3.97	28.18	22.03	159.588	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-2.52	3.81	28.35	22.02	159.221	Horizontal	Pass
		1880	-2.19	3.96	28.22	22.07	161.065	Horizontal	Pass
		1900	-2.13	4.00	28.16	22.03	159.588	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-3.29	3.76	28.24	21.19	131.522	Vertical	Pass
		1880	-2.92	3.91	28.22	21.39	137.721	Vertical	Pass
		1909.3	-3.39	3.93	28.20	20.88	122.462	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.91	3.77	28.23	20.55	113.501	Vertical	Pass
		1880	-3.06	3.91	28.24	21.27	133.968	Vertical	Pass
		1908.5	-3.25	3.94	28.25	21.06	127.644	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.46	3.77	28.31	21.08	128.233	Vertical	Pass
		1880	-3.54	3.91	28.22	20.77	119.399	Vertical	Pass
		1907.5	-3.02	3.94	28.20	21.24	133.045	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1855	-3.96	3.79	28.33	20.58	114.288	Vertical	Pass
		1880	-2.98	3.95	28.22	21.29	134.586	Vertical	Pass
		1905	-3.25	3.97	28.19	20.97	125.026	Vertical	Pass
15.0MHz	1/#Mid	1857.5	-3.42	3.79	28.34	21.13	129.718	Vertical	Pass

Band QPSK		1880	-3.59	3.95	28.22	20.68	116.950	Vertical	Pass
		1902.5	-3.36	3.97	28.18	20.85	121.619	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1860	-3.23	3.81	28.35	21.31	135.207	Vertical	Pass
		1880	-3.73	3.96	28.22	20.53	112.980	Vertical	Pass
		1900	-3.05	4.00	28.16	21.11	129.122	Vertical	Pass

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 Average		
							(mW)		
1.4MHz Band 16 QAM	1/#Mid	1850.7	-3.88	3.76	28.24	20.60	114.815	Horizontal	Pass
		1880	-3.35	3.91	28.22	20.96	124.738	Horizontal	Pass
		1909.3	-3.28	3.93	28.20	20.99	125.603	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-3.38	3.77	28.23	21.08	128.233	Horizontal	Pass
		1880	-3.46	3.91	28.24	20.87	122.180	Horizontal	Pass
		1908.5	-3.67	3.94	28.25	20.64	115.878	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-3.32	3.77	28.31	21.22	132.434	Horizontal	Pass
		1880	-3.23	3.91	28.22	21.08	128.233	Horizontal	Pass
		1907.5	-2.91	3.94	28.20	21.35	136.458	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-3.37	3.79	28.33	21.17	130.918	Horizontal	Pass
		1880	-3.36	3.95	28.22	20.91	123.310	Horizontal	Pass
		1905	-2.83	3.97	28.19	21.39	137.721	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-3.35	3.79	28.34	21.20	131.826	Horizontal	Pass
		1880	-3.14	3.95	28.22	21.13	129.718	Horizontal	Pass
		1902.5	-3.10	3.97	28.18	21.11	129.122	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-3.24	3.81	28.35	21.30	134.896	Horizontal	Pass
		1880	-2.94	3.96	28.22	21.32	135.519	Horizontal	Pass
		1900	-2.76	4.00	28.16	21.40	138.038	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-4.92	3.76	28.24	19.56	90.365	Vertical	Pass
		1880	-3.89	3.91	28.22	20.42	110.154	Vertical	Pass
		1909.3	-4.15	3.93	28.20	20.12	102.802	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.56	3.77	28.23	19.90	97.724	Vertical	Pass
		1880	-4.52	3.91	28.24	19.81	95.719	Vertical	Pass
		1908.5	-4.62	3.94	28.25	19.69	93.111	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-4.14	3.77	28.31	20.40	109.648	Vertical	Pass
		1880	-3.96	3.91	28.22	20.35	108.393	Vertical	Pass
		1907.5	-4.48	3.94	28.20	19.78	95.060	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-4.39	3.79	28.33	20.15	103.514	Vertical	Pass
		1880	-3.93	3.95	28.22	20.34	108.143	Vertical	Pass
		1905	-4.52	3.97	28.19	19.70	93.325	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.52	3.79	28.34	20.03	100.693	Vertical	Pass
		1880	-4.53	3.95	28.22	19.74	94.189	Vertical	Pass
		1902.5	-4.51	3.97	28.18	19.70	93.325	Vertical	Pass

20.0MHz		1860	-4.49	3.81	28.35	20.05	101.158	Vertical	Pass
Band 16	1/#Mid	1880	-4.78	3.96	28.22	19.48	88.716	Vertical	Pass
QAM		1900	-4.01	4.00	28.16	20.15	103.514	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					Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss	Antenna Factor	Max. EIRP	Max. EIRP		
			(dBm)	(dBm)	(dB)	Average	Average		
						(dBm)	(mW)		
1.4MHz Band QPSK	1/#Mid	1710.7	-2.67	3.12	27.58	21.79	151.008	Horizontal	Pass
		1732.5	-2.66	3.27	27.61	21.68	147.231	Horizontal	Pass
		1754.3	-2.64	3.29	27.63	21.70	147.911	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-2.84	3.13	27.61	21.64	145.881	Horizontal	Pass
		1732.5	-2.76	3.27	27.61	21.58	143.880	Horizontal	Pass
		1753.5	-2.68	3.30	27.62	21.64	145.881	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-2.61	3.13	27.63	21.89	154.525	Horizontal	Pass
		1732.5	-2.51	3.27	27.61	21.83	152.405	Horizontal	Pass
		1752.5	-2.39	3.30	27.60	21.91	155.239	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-2.55	3.15	27.64	21.94	156.315	Horizontal	Pass
		1732.5	-2.32	3.31	27.61	21.98	157.761	Horizontal	Pass
		1750	-2.34	3.33	27.59	21.92	155.597	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-2.56	3.15	27.65	21.94	156.315	Horizontal	Pass
		1732.5	-2.40	3.31	27.61	21.90	154.882	Horizontal	Pass
		1747.5	-2.34	3.33	27.57	21.90	154.882	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-2.50	3.17	27.66	21.99	158.125	Horizontal	Pass
		1732.5	-2.33	3.32	27.61	21.96	157.036	Horizontal	Pass
		1745	-2.27	3.36	27.56	21.93	155.955	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-3.34	3.12	27.58	21.12	129.420	Vertical	Pass
		1732.5	-3.57	3.27	27.61	20.77	119.399	Vertical	Pass
		1754.3	-3.90	3.29	27.63	20.44	110.662	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.47	3.13	27.61	21.01	126.183	Vertical	Pass
		1732.5	-3.02	3.27	27.61	21.32	135.519	Vertical	Pass
		1753.5	-2.98	3.30	27.62	21.34	136.144	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.37	3.13	27.63	21.13	129.718	Vertical	Pass
		1732.5	-3.76	3.27	27.61	20.58	114.288	Vertical	Pass
		1752.5	-3.25	3.30	27.60	21.05	127.350	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.25	3.15	27.64	21.24	133.045	Vertical	Pass
		1732.5	-3.00	3.31	27.61	21.30	134.896	Vertical	Pass
		1750	-3.18	3.33	27.59	21.08	128.233	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1717.5	-3.29	3.15	27.65	21.21	132.130	Vertical	Pass
		1732.5	-3.16	3.31	27.61	21.14	130.017	Vertical	Pass
		1747.5	-3.66	3.33	27.57	20.58	114.288	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-3.18	3.17	27.66	21.31	135.207	Vertical	Pass
		1732.5	-2.86	3.32	27.61	21.43	138.995	Vertical	Pass
		1745	-3.41	3.36	27.56	20.79	119.950	Vertical	Pass

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable	Antenna	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	Loss	Factor	Average	Average	Of Max. ERP	
				(dBm)	(dB)	(dBm)	(mW)		
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.48	3.12	27.58	20.98	125.314	Horizontal	Pass
		1732.5	-3.33	3.27	27.61	21.01	126.183	Horizontal	Pass
		1754.3	-3.33	3.29	27.63	21.01	126.183	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.42	3.13	27.61	21.06	127.644	Horizontal	Pass
		1732.5	-3.55	3.27	27.61	20.79	119.950	Horizontal	Pass
		1753.5	-3.77	3.30	27.62	20.55	113.501	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-3.25	3.13	27.63	21.25	133.352	Horizontal	Pass
		1732.5	-3.21	3.27	27.61	21.13	129.718	Horizontal	Pass
		1752.5	-2.90	3.30	27.60	21.40	138.038	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-3.32	3.15	27.64	21.17	130.918	Horizontal	Pass
		1732.5	-3.51	3.31	27.61	20.79	119.950	Horizontal	Pass
		1750	-2.89	3.33	27.59	21.37	137.088	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-3.12	3.15	27.65	21.38	137.404	Horizontal	Pass
		1732.5	-3.18	3.31	27.61	21.12	129.420	Horizontal	Pass
		1747.5	-3.20	3.33	27.57	21.04	127.057	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-3.07	3.17	27.66	21.42	138.676	Horizontal	Pass
		1732.5	-3.08	3.32	27.61	21.21	132.130	Horizontal	Pass
		1745	-2.89	3.36	27.56	21.31	135.207	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.63	3.12	27.58	19.83	96.161	Vertical	Pass
		1732.5	-4.50	3.27	27.61	19.84	96.383	Vertical	Pass
		1754.3	-4.07	3.29	27.63	20.27	106.414	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.09	3.13	27.61	20.39	109.396	Vertical	Pass
		1732.5	-4.27	3.27	27.61	20.07	101.625	Vertical	Pass
		1753.5	-4.27	3.30	27.62	20.05	101.158	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.50	3.13	27.63	20.00	100.000	Vertical	Pass
		1732.5	-4.70	3.27	27.61	19.64	92.045	Vertical	Pass
		1752.5	-4.74	3.30	27.60	19.56	90.365	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.13	3.15	27.64	20.36	108.643	Vertical	Pass
		1732.5	-4.54	3.31	27.61	19.76	94.624	Vertical	Pass
		1750	-3.89	3.33	27.59	20.37	108.893	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.61	3.15	27.65	19.89	97.499	Vertical	Pass
		1732.5	-4.56	3.31	27.61	19.74	94.189	Vertical	Pass
		1747.5	-3.95	3.33	27.57	20.29	106.905	Vertical	Pass

20.0MHz		1720	-4.52	3.17	27.66	19.97	99.312	Vertical	Pass
Band 16	1/#Mid	1732.5	-4.14	3.32	27.61	20.15	103.514	Vertical	Pass
QAM		1745	-4.53	3.36	27.56	19.67	92.683	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	Cable Loss	Antenna Factor	Correction	Max. EIRP	Max. EIRP	Polarization Of	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	Max. ERP	
							(dBm)	(mW)		
1.4MHz Band QPSK	3/#Mid	824.7	6.48	2.01	19.68	2.15	22.00	158.489	Horizontal	Pass
		836.5	6.36	2.01	19.77	2.15	21.97	157.398	Horizontal	Pass
		848.3	6.16	2.02	19.82	2.15	21.81	151.705	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.25	2.01	19.70	2.15	21.79	151.008	Horizontal	Pass
		836.5	6.15	2.01	19.77	2.15	21.76	149.968	Horizontal	Pass
		847.5	6.02	2.02	19.81	2.15	21.66	146.555	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.53	2.01	19.71	2.15	22.08	161.436	Horizontal	Pass
		836.5	6.41	2.01	19.77	2.15	22.02	159.221	Horizontal	Pass
		846.5	6.25	2.02	19.79	2.15	21.87	153.815	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	6.55	2.01	19.73	2.15	22.12	162.930	Horizontal	Pass
		836.5	6.50	2.01	19.77	2.15	22.11	162.555	Horizontal	Pass
		844	6.40	2.02	19.78	2.15	22.01	158.855	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	824.7	5.02	2.01	19.68	2.15	20.54	113.240	Vertical	Pass
		836.5	5.34	2.01	19.77	2.15	20.95	124.451	Vertical	Pass
		848.3	5.59	2.02	19.82	2.15	21.24	133.045	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	5.10	2.01	19.70	2.15	20.64	115.878	Vertical	Pass
		836.5	5.03	2.01	19.77	2.15	20.64	115.878	Vertical	Pass
		847.5	4.87	2.02	19.81	2.15	20.51	112.460	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.27	2.01	19.71	2.15	20.82	120.781	Vertical	Pass
		836.5	5.45	2.01	19.77	2.15	21.06	127.644	Vertical	Pass
		846.5	4.67	2.02	19.79	2.15	20.29	106.905	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	5.49	2.01	19.73	2.15	21.06	127.644	Vertical	Pass
		836.5	5.18	2.01	19.77	2.15	20.79	119.950	Vertical	Pass
		844	5.57	2.02	19.78	2.15	21.18	131.220	Vertical	Pass

Radiated Power (ERP) for Band 5										
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)					
1.4MHz Band 16 QAM	3/#Mid	824.7	5.63	2.01	19.68	2.15	21.15	130.317	Horizontal	Pass
		836.5	5.56	2.01	19.77	2.15	21.17	130.918	Horizontal	Pass
		848.3	5.40	2.02	19.82	2.15	21.05	127.350	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.71	2.01	19.70	2.15	21.25	133.352	Horizontal	Pass
		836.5	5.42	2.01	19.77	2.15	21.03	126.765	Horizontal	Pass
		847.5	4.90	2.02	19.81	2.15	20.54	113.240	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	6.03	2.01	19.71	2.15	21.58	143.880	Horizontal	Pass
		836.5	5.80	2.01	19.77	2.15	21.41	138.357	Horizontal	Pass
		846.5	5.55	2.02	19.79	2.15	21.17	130.918	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	829	6.03	2.01	19.73	2.15	21.60	144.544	Horizontal	Pass
		836.5	5.75	2.01	19.77	2.15	21.36	136.773	Horizontal	Pass
		844	5.29	2.02	19.78	2.15	20.90	123.027	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	4.43	2.01	19.68	2.15	19.95	98.855	Vertical	Pass
		836.5	5.24	2.01	19.77	2.15	20.85	121.619	Vertical	Pass
		848.3	4.94	2.02	19.82	2.15	20.59	114.551	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	4.25	2.01	19.70	2.15	19.79	95.280	Vertical	Pass
		836.5	5.43	2.01	19.77	2.15	21.04	127.057	Vertical	Pass
		847.5	4.82	2.02	19.81	2.15	20.46	111.173	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.21	2.01	19.71	2.15	20.76	119.124	Vertical	Pass
		836.5	4.03	2.01	19.77	2.15	19.64	92.045	Vertical	Pass
		846.5	4.71	2.02	19.79	2.15	20.33	107.895	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	829	5.14	2.01	19.73	2.15	20.71	117.761	Vertical	Pass
		836.5	5.56	2.01	19.77	2.15	21.17	130.918	Vertical	Pass
		844	3.92	2.02	19.78	2.15	19.53	89.743	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					Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss	Antenna Factor	Max. EIRP	Max. EIRP		
			(dBm)			Average	Average		
				(dBm)	(dB)	(dBm)	(mW)		
5.0MHz Band QPSK	1/#Mid	2502.5	-0.95	4.54	27.75	22.26	168.267	Horizontal	Pass
		2535	-0.78	4.69	27.72	22.25	167.880	Horizontal	Pass
		2567.5	-0.71	4.71	27.71	22.29	169.434	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	-0.88	4.55	27.76	22.33	171.002	Horizontal	Pass
		2535	-0.69	4.69	27.72	22.34	171.396	Horizontal	Pass
		2565	-0.61	4.72	27.70	22.37	172.584	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-0.89	4.55	27.77	22.33	171.002	Horizontal	Pass
		2535	-0.75	4.69	27.72	22.28	169.044	Horizontal	Pass
		2562.5	-0.65	4.72	27.69	22.32	170.608	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-0.83	4.57	27.78	22.38	172.982	Horizontal	Pass
		2535	-0.65	4.73	27.72	22.34	171.396	Horizontal	Pass
		2560	-0.61	4.75	27.68	22.32	170.608	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-1.94	4.54	27.75	21.27	133.968	Vertical	Pass
		2535	-2.40	4.69	27.72	20.63	115.611	Vertical	Pass
		2567.5	-2.11	4.71	27.71	20.89	122.744	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	-2.72	4.55	27.76	20.49	111.944	Vertical	Pass
		2535	-2.49	4.69	27.72	20.54	113.240	Vertical	Pass
		2565	-2.51	4.72	27.70	20.47	111.429	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-2.22	4.55	27.77	21.00	125.893	Vertical	Pass
		2535	-1.70	4.69	27.72	21.33	135.831	Vertical	Pass
		2562.5	-2.44	4.72	27.69	20.53	112.980	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	-2.36	4.57	27.78	20.85	121.619	Vertical	Pass
		2535	-2.07	4.73	27.72	20.92	123.595	Vertical	Pass
		2560	-1.55	4.75	27.68	21.38	137.404	Vertical	Pass

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss	Antenna Factor	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)			Average	Average		
						(dBm)	(mW)		
5.0MHz Band 16 QAM	1/#Mid	2502.5	-1.64	4.54	27.75	21.57	143.549	Horizontal	Pass
		2535	-1.33	4.69	27.72	21.70	147.911	Horizontal	Pass
		2567.5	-1.41	4.71	27.71	21.59	144.212	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-1.53	4.55	27.76	21.68	147.231	Horizontal	Pass
		2535	-1.54	4.69	27.72	21.49	140.929	Horizontal	Pass
		2565	-1.81	4.72	27.70	21.17	130.918	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-1.71	4.55	27.77	21.51	141.579	Horizontal	Pass
		2535	-1.68	4.69	27.72	21.35	136.458	Horizontal	Pass
		2562.5	-1.29	4.72	27.69	21.68	147.231	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-1.59	4.57	27.78	21.62	145.211	Horizontal	Pass
		2535	-1.26	4.73	27.72	21.73	148.936	Horizontal	Pass
		2560	-1.36	4.75	27.68	21.57	143.549	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-1.96	4.54	27.75	21.25	133.352	Vertical	Pass
		2535	-3.45	4.69	27.72	19.58	90.782	Vertical	Pass
		2567.5	-2.74	4.71	27.71	20.26	106.170	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-3.00	4.55	27.76	20.21	104.954	Vertical	Pass
		2535	-1.60	4.69	27.72	21.43	138.995	Vertical	Pass
		2565	-2.89	4.72	27.70	20.09	102.094	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-2.28	4.55	27.77	20.94	124.165	Vertical	Pass
		2535	-2.67	4.69	27.72	20.36	108.643	Vertical	Pass
		2562.5	-2.10	4.72	27.69	20.87	122.180	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-2.20	4.57	27.78	21.01	126.183	Vertical	Pass
		2535	-2.80	4.73	27.72	20.19	104.472	Vertical	Pass
		2560	-1.85	4.75	27.68	21.08	128.233	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							Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)			
5.0MHz Band QPSK	1/#Mid	706.5	7.31	1.91	19.23	2.15	22.48	177.011	Vertical	Pass	
		710	7.17	1.91	19.26	2.15	22.37	172.584	Vertical	Pass	
		713.5	7.07	1.92	19.33	2.15	22.33	171.002	Vertical	Pass	
10.0MHz Band QPSK	1/#Mid	709	7.32	1.91	19.25	2.15	22.51	178.238	Vertical	Pass	
		710	7.27	1.91	19.26	2.15	22.47	176.604	Vertical	Pass	
		711	7.23	1.92	19.32	2.15	22.48	177.011	Vertical	Pass	
5.0MHz Band QPSK	1/#Mid	706.5	5.16	1.91	19.23	2.15	20.33	107.895	Horizontal	Pass	
		710	6.56	1.91	19.26	2.15	21.76	149.968	Horizontal	Pass	
		713.5	6.75	1.92	19.33	2.15	22.01	158.855	Horizontal	Pass	
10.0MHz Band QPSK	1/#Mid	709	5.49	1.91	19.25	2.15	20.68	116.950	Horizontal	Pass	
		710	5.92	1.91	19.26	2.15	21.12	129.420	Horizontal	Pass	
		711	5.54	1.92	19.32	2.15	20.79	119.950	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	6.66	1.91	19.23	2.15	21.83	152.405	Vertical	Pass
		710	6.57	1.91	19.26	2.15	21.77	150.314	Vertical	Pass	
		713.5	6.37	1.92	19.33	2.15	21.63	145.546	Vertical	Pass	
10.0MHz	Band 16 QAM	1/#Mid	709	6.20	1.91	19.25	2.15	21.39	137.721	Vertical	Pass
		710	6.73	1.91	19.26	2.15	21.93	155.955	Vertical	Pass	
		711	6.46	1.92	19.32	2.15	21.71	148.252	Vertical	Pass	
5.0MHz	Band 16 QAM	1/#Mid	706.5	5.22	1.91	19.23	2.15	20.39	109.396	Horizontal	Pass
		710	5.24	1.91	19.26	2.15	20.44	110.662	Horizontal	Pass	
		713.5	5.65	1.92	19.33	2.15	20.91	123.310	Horizontal	Pass	
10.0MHz	Band 16 QAM	1/#Mid	709	5.13	1.91	19.25	2.15	20.32	107.647	Horizontal	Pass
		710	5.31	1.91	19.26	2.15	20.51	112.460	Horizontal	Pass	
		711	5.56	1.92	19.32	2.15	20.81	120.504	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(814MHz-824MHz)										
Mode	RB/RB SIZE	Frequency	Result						Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. ERP	Max. ERP		
							Average	Average		
							(dBm)	(mW)		
1.4MHz Band QPSK	1/#Mid	814.7	7.94	2.01	19.68	2.15	23.46	221.820	Vertical	Pass
		819	7.01	2.01	19.77	2.15	22.62	182.810	Vertical	Pass
		823.3	6.00	2.02	19.82	2.15	21.65	146.218	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	815.5	7.54	2.01	19.70	2.15	23.08	203.236	Vertical	Pass
		819	7.25	2.01	19.77	2.15	22.86	193.197	Vertical	Pass
		822.5	6.22	2.02	19.81	2.15	21.86	153.462	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	816.5	6.77	2.01	19.71	2.15	22.32	170.608	Vertical	Pass
		819	7.61	2.01	19.77	2.15	23.22	209.894	Vertical	Pass
		821.5	6.51	2.02	19.79	2.15	22.13	163.305	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	819	7.72	2.01	19.73	2.15	23.29	213.304	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	814.7	7.62	2.01	19.68	2.15	23.14	206.063	Horizontal	Pass
		819	7.06	2.01	19.77	2.15	22.67	184.927	Horizontal	Pass
		823.3	6.88	2.02	19.82	2.15	22.53	179.061	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	815.5	7.19	2.01	19.70	2.15	22.73	187.499	Horizontal	Pass
		819	7.53	2.01	19.77	2.15	23.14	206.063	Horizontal	Pass
		822.5	7.18	2.02	19.81	2.15	22.82	191.426	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	816.5	7.48	2.01	19.71	2.15	23.03	200.909	Horizontal	Pass
		819	7.77	2.01	19.77	2.15	23.38	217.771	Horizontal	Pass
		821.5	7.79	2.02	19.79	2.15	23.41	219.280	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	819	8.16	2.01	19.73	2.15	23.73	236.048	Horizontal	Pass

Radiated Power (ERP) for Band 26(814MHz~824MHz)											
Mode	RB/RB SIZE	Frequency	Result							Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. ERP	Max. ERP			
			(dBm)				Average	Average			
							(dBm)	(mW)			
1.4MHz	1/#Mid	814.7	6.86	2.01	19.68	2.15	22.38	172.982	Vertical	Pass	
Band 16		819	6.47	2.01	19.77	2.15	22.08	161.436	Vertical	Pass	
QAM		823.3	5.57	2.02	19.82	2.15	21.22	132.434	Vertical	Pass	
3.0MHz	1/#Mid	815.5	6.92	2.01	19.70	2.15	22.46	176.198	Vertical	Pass	
Band 16		819	7.02	2.01	19.77	2.15	22.63	183.231	Vertical	Pass	
QAM		822.5	6.34	2.02	19.81	2.15	21.98	157.761	Vertical	Pass	
5.0MHz	1/#Mid	816.5	6.70	2.01	19.71	2.15	22.25	167.880	Vertical	Pass	
Band 16		819	6.83	2.01	19.77	2.15	22.44	175.388	Vertical	Pass	
QAM		821.5	7.03	2.02	19.79	2.15	22.65	184.077	Vertical	Pass	
10.0MHz	1/#Mid	819	7.14	2.01	19.73	2.15	22.71	186.638	Vertical	Pass	
1.4MHz	1/#Mid	814.7	6.96	2.01	19.68	2.15	22.48	177.011	Horizontal	Pass	
Band 16		819	7.26	2.01	19.77	2.15	22.87	193.642	Horizontal	Pass	
QAM		823.3	7.22	2.02	19.82	2.15	22.87	193.642	Horizontal	Pass	
3.0MHz	1/#Mid	815.5	7.38	2.01	19.70	2.15	22.92	195.884	Horizontal	Pass	
Band 16		819	7.07	2.01	19.77	2.15	22.68	185.353	Horizontal	Pass	
QAM		822.5	7.12	2.02	19.81	2.15	22.76	188.799	Horizontal	Pass	
5.0MHz	1/#Mid	816.5	7.09	2.01	19.71	2.15	22.64	183.654	Horizontal	Pass	
Band 16		819	6.95	2.01	19.77	2.15	22.56	180.302	Horizontal	Pass	
QAM		821.5	5.97	2.02	19.79	2.15	21.59	144.212	Horizontal	Pass	
10.0MHz	1/#Mid	819	7.49	2.01	19.73	2.15	23.06	202.302	Horizontal	Pass	

8.8 LTE BAND 26B

Radiated Power (ERP) for Band 26(824MHz-849MHz)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss	Antenna Factor	Correction	Max. ERP	Max. ERP	Polarization Of Max. ERP	
			(dBm)	(dBm)	(dB)		Average	Average		
							(dBm)	(mW)		
1.4MHz Band QPSK	1/#Mid	824.7	7.03	2.01	19.68	2.15	22.55	179.887	Vertical	Pass
		836.5	5.88	2.01	19.77	2.15	21.49	140.929	Vertical	Pass
		848.3	4.89	2.02	19.82	2.15	20.54	113.240	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.61	2.01	19.70	2.15	22.15	164.059	Vertical	Pass
		836.5	5.97	2.01	19.77	2.15	21.58	143.880	Vertical	Pass
		847.5	5.46	2.02	19.81	2.15	21.10	128.825	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.75	2.01	19.71	2.15	21.30	134.896	Vertical	Pass
		836.5	6.61	2.01	19.77	2.15	22.22	166.725	Vertical	Pass
		846.5	5.32	2.02	19.79	2.15	20.94	124.165	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	6.36	2.01	19.73	2.15	21.93	155.955	Vertical	Pass
		836.5	6.64	2.01	19.77	2.15	22.25	167.880	Vertical	Pass
		844	6.16	2.02	19.78	2.15	21.77	150.314	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	831.5	6.54	2.01	19.73	2.15	22.11	162.555	Vertical	Pass
		836.5	6.64	2.01	19.77	2.15	22.25	167.880	Vertical	Pass
		841.5	6.47	2.02	19.78	2.15	22.08	161.436	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	824.7	6.49	2.01	19.68	2.15	22.01	158.855	Horizontal	Pass
		836.5	5.73	2.01	19.77	2.15	21.34	136.144	Horizontal	Pass
		848.3	5.85	2.02	19.82	2.15	21.50	141.254	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.26	2.01	19.70	2.15	21.80	151.356	Horizontal	Pass
		836.5	6.19	2.01	19.77	2.15	21.80	151.356	Horizontal	Pass
		847.5	6.11	2.02	19.81	2.15	21.75	149.624	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.43	2.01	19.71	2.15	21.98	157.761	Horizontal	Pass
		836.5	6.63	2.01	19.77	2.15	22.24	167.494	Horizontal	Pass
		846.5	6.84	2.02	19.79	2.15	22.46	176.198	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	7.25	2.01	19.73	2.15	22.82	191.426	Horizontal	Pass
		836.5	5.57	2.01	19.77	2.15	21.18	131.220	Horizontal	Pass
		844	5.81	2.02	19.78	2.15	21.42	138.676	Horizontal	Pass

15.0MHz		831.5	6.97	2.01	19.73	2.15	22.54	179.473	Horizontal	Pass
Band	1/#Mid	836.5	7.35	2.01	19.77	2.15	22.96	197.697	Horizontal	Pass
QPSK		841.5	6.91	2.02	19.78	2.15	22.52	178.649	Horizontal	Pass

Radiated Power (ERP) for Band 26(824MHz-849MHz)											
Mode	RB/RB SIZE	Frequency	Result							Polarization Of Max. ERP	Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. ERP	Max.			
			Average				Average				
			(dBm)				(mW)				
1.4MHz Band 16 QAM	1/#Mid	824.7	5.77	2.01	19.68	2.15	21.29	134.586	Vertical	Pass	
		836.5	5.34	2.01	19.77	2.15	20.95	124.451	Vertical	Pass	
		848.3	4.82	2.02	19.82	2.15	20.47	111.429	Vertical	Pass	
3.0MHz Band 16 QAM	1/#Mid	825.5	5.89	2.01	19.70	2.15	21.43	138.995	Vertical	Pass	
		836.5	5.98	2.01	19.77	2.15	21.59	144.212	Vertical	Pass	
		847.5	5.56	2.02	19.81	2.15	21.20	131.826	Vertical	Pass	
5.0MHz Band 16 QAM	1/#Mid	826.5	5.75	2.01	19.71	2.15	21.30	134.896	Vertical	Pass	
		836.5	5.77	2.01	19.77	2.15	21.38	137.404	Vertical	Pass	
		846.5	5.89	2.02	19.79	2.15	21.51	141.579	Vertical	Pass	
10.0MHz Band 16 QAM	1/#Mid	829	6.29	2.01	19.73	2.15	21.86	153.462	Vertical	Pass	
		836.5	5.69	2.01	19.77	2.15	21.30	134.896	Vertical	Pass	
		844	6.36	2.02	19.78	2.15	21.97	157.398	Vertical	Pass	
15.0MHz Band 16 QAM	1/#Mid	831.5	6.03	2.01	19.73	2.15	21.60	144.544	Vertical	Pass	
		836.5	5.66	2.01	19.77	2.15	21.27	133.968	Vertical	Pass	
		841.5	6.50	2.02	19.78	2.15	22.11	162.555	Vertical	Pass	
1.4MHz Band 16 QAM	1/#Mid	824.7	5.99	2.01	19.68	2.15	21.51	141.579	Horizontal	Pass	
		836.5	5.98	2.01	19.77	2.15	21.59	144.212	Horizontal	Pass	
		848.3	5.88	2.02	19.82	2.15	21.53	142.233	Horizontal	Pass	
3.0MHz Band 16 QAM	1/#Mid	825.5	6.08	2.01	19.70	2.15	21.62	145.211	Horizontal	Pass	
		836.5	6.01	2.01	19.77	2.15	21.62	145.211	Horizontal	Pass	
		847.5	5.94	2.02	19.81	2.15	21.58	143.880	Horizontal	Pass	
5.0MHz Band 16 QAM	1/#Mid	826.5	5.92	2.01	19.71	2.15	21.47	140.281	Horizontal	Pass	
		836.5	5.82	2.01	19.77	2.15	21.43	138.995	Horizontal	Pass	
		846.5	5.15	2.02	19.79	2.15	20.77	119.399	Horizontal	Pass	

10.0MHz	Band 16 QAM	1/#Mid	829	5.57	2.01	19.73	2.15	21.14	130.017	Horizontal	Pass
			836.5	6.28	2.01	19.77	2.15	21.89	154.525	Horizontal	Pass
			844	6.08	2.02	19.78	2.15	21.69	147.571	Horizontal	Pass
15.0MHz	Band 16 QAM	1/#Mid	831.5	6.69	2.01	19.73	2.15	22.26	168.267	Horizontal	Pass
			836.5	6.59	2.01	19.77	2.15	22.20	165.959	Horizontal	Pass
			841.5	6.09	2.02	19.78	2.15	21.70	147.911	Horizontal	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					Polarization Of Max. ERP	Conclusion
			SG Level	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP	Max. EIRP		
			(dBm)			Average	Average		
						(dBm)	(mW)		
5.0MHz Band QPSK	1/#Mid	2572.5	-1.25	4.54	27.75	21.96	157.036	Horizontal	Pass
		2595	-1.10	4.69	27.72	21.93	155.955	Horizontal	Pass
		2617.5	-0.98	4.71	27.71	22.02	159.221	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2575	-1.33	4.55	27.76	21.88	154.170	Horizontal	Pass
		2595	-1.19	4.69	27.72	21.84	152.757	Horizontal	Pass
		2615	-1.18	4.72	27.70	21.80	151.356	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2577.5	-1.16	4.55	27.77	22.06	160.694	Horizontal	Pass
		2595	-0.88	4.69	27.72	22.15	164.059	Horizontal	Pass
		2612.5	-0.93	4.72	27.69	22.04	159.956	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2580	-1.04	4.57	27.78	22.17	164.816	Horizontal	Pass
		2595	-0.82	4.73	27.72	22.17	164.816	Horizontal	Pass
		2610	-0.82	4.75	27.68	22.11	162.555	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2572.5	-1.05	4.54	27.75	22.16	164.437	Vertical	Pass
		2595	-0.96	4.69	27.72	22.07	161.065	Vertical	Pass
		2617.5	-0.94	4.71	27.71	22.06	160.694	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2575	-1.03	4.55	27.76	22.18	165.196	Vertical	Pass
		2595	-0.87	4.69	27.72	22.16	164.437	Vertical	Pass
		2615	-0.94	4.72	27.70	22.04	159.956	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2577.5	-2.74	4.55	27.77	20.48	111.686	Vertical	Pass
		2595	-2.20	4.69	27.72	20.83	121.060	Vertical	Pass
		2612.5	-2.41	4.72	27.69	20.56	113.763	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2580	-2.34	4.57	27.78	20.87	122.180	Vertical	Pass
		2595	-2.09	4.73	27.72	20.90	123.027	Vertical	Pass
		2610	-1.73	4.75	27.68	21.20	131.826	Vertical	Pass

Radiated Power (EIRP) for Band 41									
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	2572.5	-1.40	4.54	27.75	21.81	151.705	Horizontal	Pass
		2595	-1.25	4.69	27.72	21.78	150.661	Horizontal	Pass
		2617.5	-1.13	4.71	27.71	21.87	153.815	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2575	-1.48	4.55	27.76	21.73	148.936	Horizontal	Pass
		2595	-1.34	4.69	27.72	21.69	147.571	Horizontal	Pass
		2615	-1.33	4.72	27.70	21.65	146.218	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2577.5	-1.31	4.55	27.77	21.91	155.239	Horizontal	Pass
		2595	-1.03	4.69	27.72	22.00	158.489	Horizontal	Pass
		2612.5	-1.08	4.72	27.69	21.89	154.525	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2580	-1.19	4.57	27.78	22.02	159.221	Horizontal	Pass
		2595	-0.97	4.73	27.72	22.02	159.221	Horizontal	Pass
		2610	-0.97	4.75	27.68	21.96	157.036	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2572.5	-1.20	4.54	27.75	22.01	158.855	Vertical	Pass
		2595	-1.11	4.69	27.72	21.92	155.597	Vertical	Pass
		2617.5	-1.09	4.71	27.71	21.91	155.239	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2575	-1.18	4.55	27.76	22.03	159.588	Vertical	Pass
		2595	-1.02	4.69	27.72	22.01	158.855	Vertical	Pass
		2615	-1.09	4.72	27.70	21.89	154.525	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2577.5	-2.60	4.55	27.77	20.62	115.345	Vertical	Pass
		2595	-2.02	4.69	27.72	21.01	126.183	Vertical	Pass
		2612.5	-1.99	4.72	27.69	20.98	125.314	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2580	-2.42	4.57	27.78	20.79	119.950	Vertical	Pass
		2595	-1.71	4.73	27.72	21.28	134.276	Vertical	Pass
		2610	-1.79	4.75	27.68	21.14	130.017	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

9. SPURIOUS RADIATION EMISSION

RULE PART(S)

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

LIMIT

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

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

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

TEST PROCEDURE

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

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

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

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

- a. for base station and subscriber equipment, other than mobile subscriber equipment, the attenuation shall not be less than $43 + 10 \text{ Log}_{10} (p)$, 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 2/4/5/7/17/26/41

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	-48.47	4.04	33.51	-19.00	-13	-6.00	Horizontal
3701.4	-53.61	4.04	33.51	-24.14	-13	-11.14	Vertical
5552.1	-53.39	5.24	35.84	-22.79	-13	-9.79	Vertical
5552.1	-49.43	5.24	35.84	-18.83	-13	-5.83	Horizontal
196.3	-37.29	1.43	16.02	-22.70	-13	-9.70	Vertical
282.7	-39.81	1.30	17.99	-23.12	-13	-10.12	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-50.58	4.04	33.56	-21.06	-13	-8.06	Horizontal
3760.0	-52.12	4.04	33.56	-22.60	-13	-9.60	Vertical
5640.0	-52.81	5.24	35.91	-22.14	-13	-9.14	Vertical
5640.0	-53.19	5.24	35.91	-22.52	-13	-9.52	Horizontal
189.0	-37.80	1.62	16.97	-22.45	-13	-9.45	Vertical
354.1	-38.49	1.74	15.98	-24.26	-13	-11.26	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-49.76	4.04	34.00	-19.80	-13	-6.80	Horizontal
3818.6	-48.20	4.04	34.00	-18.24	-13	-5.24	Vertical
5727.9	-48.68	5.24	36.04	-17.88	-13	-4.88	Vertical
5727.9	-50.85	5.24	36.04	-20.05	-13	-7.05	Horizontal
187.0	-36.92	1.42	17.29	-21.05	-13	-8.05	Vertical
438.2	-36.72	1.50	17.90	-20.31	-13	-7.31	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	-46.18	4.07	33.54	-16.71	-13	-3.71	Horizontal
3720.0	-48.78	4.07	33.54	-19.31	-13	-6.31	Vertical
5580.0	-53.41	5.28	35.86	-22.83	-13	-9.83	Vertical
5580.0	-49.65	5.28	35.86	-19.07	-13	-6.07	Horizontal
207.1	-44.47	1.58	16.89	-29.15	-13	-16.15	Vertical
294.4	-38.38	1.76	17.26	-22.88	-13	-9.88	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-53.65	4.04	33.56	-24.13	-13	-11.13	Horizontal
3760.0	-46.81	4.04	33.56	-17.29	-13	-4.29	Vertical
5640.0	-53.37	5.24	35.91	-22.70	-13	-9.70	Vertical
5640.0	-52.28	5.24	35.91	-21.61	-13	-8.61	Horizontal
177.6	-42.14	1.46	16.27	-27.33	-13	-14.33	Vertical
363.3	-38.55	1.59	15.15	-24.99	-13	-11.99	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-48.36	4.04	34.00	-18.40	-13	-5.40	Horizontal
3800.0	-48.11	4.04	34.00	-18.15	-13	-5.15	Vertical
5700.0	-48.66	5.24	36.04	-17.86	-13	-4.86	Vertical
5700.0	-52.42	5.24	36.04	-21.62	-13	-8.62	Horizontal
210.5	-41.77	1.36	17.39	-25.73	-13	-12.73	Vertical
454.4	-34.26	1.66	15.39	-20.53	-13	-7.53	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.

9.2 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	-53.47	4.02	29.80	-27.69	-13	-14.69	Horizontal
3421.4	-45.99	4.02	29.80	-20.21	-13	-7.21	Vertical
5132.1	-48.53	5.24	35.84	-17.93	-13	-4.93	Vertical
5132.1	-51.43	5.24	35.84	-20.83	-13	-7.83	Horizontal
178.6	-34.57	1.68	16.04	-20.21	-13	-7.21	Vertical
286.4	-39.64	1.78	17.74	-23.68	-13	-10.68	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-47.70	4.03	30.00	-21.73	-13	-8.73	Horizontal
3465.0	-49.52	4.03	30.00	-23.55	-13	-10.55	Vertical
5197.5	-51.71	5.25	35.86	-21.10	-13	-8.10	Vertical
5197.5	-50.24	5.25	35.86	-19.63	-13	-6.63	Horizontal
202.6	-36.37	1.72	17.69	-20.40	-13	-7.40	Vertical
257.7	-40.74	1.62	16.02	-26.33	-13	-13.33	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-45.99	4.05	30.01	-20.03	-13	-7.03	Horizontal
3508.6	-52.30	4.05	30.01	-26.34	-13	-13.34	Vertical
5262.9	-46.95	5.26	35.86	-16.35	-13	-3.35	Vertical
5262.9	-53.53	5.26	35.86	-22.93	-13	-9.93	Horizontal
181.1	-36.67	1.80	16.69	-21.78	-13	-8.78	Vertical
250.8	-39.76	1.75	16.66	-24.86	-13	-11.86	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	-47.78	4.02	29.80	-22.00	-13	-9.00	Horizontal
3440.0	-52.94	4.02	29.80	-27.16	-13	-14.16	Vertical
5160.0	-46.65	5.24	35.84	-16.05	-13	-3.05	Vertical
5160.0	-50.91	5.24	35.84	-20.31	-13	-7.31	Horizontal
194.4	-42.54	1.57	17.26	-26.85	-13	-13.85	Vertical
342.7	-43.39	1.78	16.35	-28.82	-13	-15.82	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-45.43	4.03	30.00	-19.46	-13	-6.46	Horizontal
3465.0	-51.00	4.03	30.00	-25.03	-13	-12.03	Vertical
5197.5	-53.81	5.25	35.86	-23.20	-13	-10.20	Vertical
5197.5	-52.03	5.25	35.86	-21.42	-13	-8.42	Horizontal
211.6	-41.15	1.44	17.95	-24.64	-13	-11.64	Vertical
307.1	-43.27	1.65	16.09	-28.83	-13	-15.83	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-46.44	2.91	27.68	-21.67	-13	-8.67	Horizontal
3490.0	-51.79	2.91	27.68	-27.02	-13	-14.02	Vertical
5235.0	-50.23	5.26	35.86	-19.63	-13	-6.63	Vertical
5235.0	-53.81	5.26	35.86	-23.21	-13	-10.21	Horizontal
178.2	-36.66	1.61	16.85	-21.42	-13	-8.42	Vertical
428.8	-40.22	1.61	15.19	-26.64	-13	-13.64	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.

9.3 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	-49.76	2.78	27.50	-25.04	-13	-12.04	Horizontal
1649.4	-46.58	2.78	27.50	-21.86	-13	-8.86	Vertical
2474.1	-46.36	2.90	27.80	-21.46	-13	-8.46	Vertical
2474.1	-51.23	2.90	27.80	-26.33	-13	-13.33	Horizontal
176.7	-37.96	1.76	17.59	-22.13	-13	-9.13	Vertical
422.2	-42.87	1.63	15.87	-28.63	-13	-15.63	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-47.99	2.80	27.48	-23.31	-13	-10.31	Horizontal
1673.0	-45.49	2.80	27.48	-20.81	-13	-7.81	Vertical
2509.5	-49.18	2.91	27.70	-24.39	-13	-11.39	Vertical
2509.5	-53.08	2.91	27.70	-28.29	-13	-15.29	Horizontal
210.5	-43.35	1.61	15.68	-29.28	-13	-16.28	Vertical
438.5	-43.10	1.59	17.52	-27.18	-13	-14.18	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-44.64	2.82	27.43	-20.03	-13	-7.03	Horizontal
1696.6	-48.34	2.82	27.43	-23.73	-13	-10.73	Vertical
2544.9	-46.52	2.92	27.74	-21.70	-13	-8.70	Vertical
2544.9	-51.22	2.92	27.74	-26.40	-13	-13.40	Horizontal
178.2	-40.71	1.69	16.67	-25.72	-13	-12.72	Vertical
378.0	-36.20	1.70	17.18	-20.72	-13	-7.72	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	-51.20	2.78	27.50	-26.48	-13	-13.48	Horizontal
1658.0	-44.84	2.78	27.50	-20.12	-13	-7.12	Vertical
2487.0	-51.52	2.90	27.80	-26.62	-13	-13.62	Vertical
2487.0	-50.73	2.90	27.80	-25.83	-13	-12.83	Horizontal
201.3	-34.59	1.71	15.57	-20.73	-13	-7.73	Vertical
462.3	-35.07	1.34	16.40	-20.01	-13	-7.01	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-51.38	2.80	27.48	-26.70	-13	-13.70	Horizontal
1673.0	-52.47	2.80	27.48	-27.79	-13	-14.79	Vertical
2509.5	-49.98	2.91	27.70	-25.19	-13	-12.19	Vertical
2509.5	-49.86	2.91	27.70	-25.07	-13	-12.07	Horizontal
178.0	-35.87	1.44	17.04	-20.27	-13	-7.27	Vertical
293.2	-36.59	1.76	17.62	-20.73	-13	-7.73	Horizontal
Test Results for High Channel 844MHz							
1688.0	-47.81	2.82	27.43	-23.20	-13	-10.20	Horizontal
1688.0	-53.19	2.82	27.43	-28.58	-13	-15.58	Vertical
2532.0	-48.76	2.92	27.74	-23.94	-13	-10.94	Vertical
2532.0	-52.85	2.92	27.74	-28.03	-13	-15.03	Horizontal
183.1	-37.03	1.74	17.70	-21.07	-13	-8.07	Vertical
418.3	-37.71	1.41	17.46	-21.65	-13	-8.65	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.

9.4 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	-60.99	5.23	35.81	-30.41	-25	-5.41	Horizontal
5005.0	-64.62	5.23	35.81	-34.04	-25	-9.04	Vertical
7507.5	-61.99	5.67	36.85	-30.81	-25	-5.81	Vertical
7507.5	-62.14	5.67	36.85	-30.96	-25	-5.96	Horizontal
197.3	-48.48	1.73	17.97	-32.24	-25	-7.24	Vertical
283.0	-54.26	1.38	15.11	-40.53	-25	-15.53	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-59.23	5.23	35.82	-28.64	-25	-3.64	Horizontal
5070.0	-60.65	5.23	35.82	-30.06	-25	-5.06	Vertical
7605.0	-62.28	5.67	36.85	-31.10	-25	-6.10	Vertical
7605.0	-64.68	5.67	36.85	-33.50	-25	-8.50	Horizontal
201.6	-52.55	1.77	16.17	-38.14	-25	-13.14	Vertical
266.9	-46.02	1.63	15.21	-32.44	-25	-7.44	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-64.00	5.24	35.83	-33.41	-25	-8.41	Horizontal
5135.0	-61.48	5.24	35.83	-30.89	-25	-5.89	Vertical
7702.5	-62.42	5.68	36.87	-31.23	-25	-6.23	Vertical
7702.5	-61.86	5.68	36.87	-30.67	-25	-5.67	Horizontal
198.2	-50.14	1.58	17.56	-34.16	-25	-9.16	Vertical
460.6	-48.43	1.45	16.58	-33.30	-25	-8.30	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	-64.23	5.23	35.82	-33.64	-25	-8.64	Horizontal
5020.0	-64.95	5.23	35.82	-34.36	-25	-9.36	Vertical
7530.0	-63.31	5.67	36.86	-32.12	-25	-7.12	Vertical
7530.0	-63.54	5.67	36.86	-32.35	-25	-7.35	Horizontal
192.0	-51.19	1.63	15.76	-37.06	-25	-12.06	Vertical
312.3	-47.81	1.71	15.44	-34.08	-25	-9.08	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-63.09	5.23	35.82	-32.50	-25	-7.50	Horizontal
5070.0	-62.14	5.23	35.82	-31.55	-25	-6.55	Vertical
7605.0	-61.91	5.67	36.85	-30.73	-25	-5.73	Vertical
7605.0	-62.20	5.67	36.85	-31.02	-25	-6.02	Horizontal
210.8	-50.44	1.79	16.84	-35.38	-25	-10.38	Vertical
446.3	-49.39	1.71	17.64	-33.46	-25	-8.46	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-63.98	5.24	35.83	-33.39	-25	-8.39	Horizontal
5120.0	-60.86	5.24	35.83	-30.27	-25	-5.27	Vertical
7680.0	-64.52	5.70	36.88	-33.34	-25	-8.34	Vertical
7680.0	-61.65	5.70	36.88	-30.47	-25	-5.47	Horizontal
202.2	-49.60	1.79	16.84	-34.54	-25	-9.54	Vertical
440.0	-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	-52.79	2.61	27.28	-28.12	-13	-15.12	Horizontal
1413.0	-50.83	2.61	27.28	-26.16	-13	-13.16	Vertical
2119.5	-51.68	2.87	27.59	-26.96	-13	-13.96	Vertical
2119.5	-51.13	2.87	27.59	-26.41	-13	-13.41	Horizontal
182.3	-34.84	1.71	16.15	-20.40	-13	-7.40	Vertical
392.4	-40.13	1.41	17.32	-24.22	-13	-11.22	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-50.18	2.62	27.30	-25.50	-13	-12.50	Horizontal
1420.0	-49.66	2.62	27.30	-24.98	-13	-11.98	Vertical
2130.0	-50.29	2.87	27.62	-25.54	-13	-12.54	Vertical
2130.0	-49.74	2.87	27.62	-24.99	-13	-11.99	Horizontal
210.9	-36.08	1.42	15.25	-22.26	-13	-9.26	Vertical
460.8	-41.97	1.36	17.19	-26.14	-13	-13.14	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-50.27	2.66	27.28	-25.65	-13	-12.65	Horizontal
1427.0	-46.11	2.66	27.28	-21.49	-13	-8.49	Vertical
2140.5	-50.47	2.88	27.60	-25.75	-13	-12.75	Vertical
2140.5	-49.64	2.88	27.60	-24.92	-13	-11.92	Horizontal
205.7	-39.36	1.32	17.29	-23.39	-13	-10.39	Vertical
304.9	-44.10	1.72	16.89	-28.93	-13	-15.93	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	-47.59	2.62	27.30	-22.91	-13	-9.91	Horizontal
1418.0	-52.88	2.62	27.30	-28.20	-13	-15.20	Vertical
2127.0	-48.74	2.87	27.62	-23.99	-13	-10.99	Vertical
2127.0	-52.03	2.87	27.62	-27.28	-13	-14.28	Horizontal
177.1	-40.54	1.35	16.91	-24.98	-13	-11.98	Vertical
402.6	-38.00	1.62	16.31	-23.31	-13	-10.31	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-49.37	2.62	27.30	-24.69	-13	-11.69	Horizontal
1420.0	-45.23	2.62	27.30	-20.55	-13	-7.55	Vertical
2130.0	-50.00	2.87	27.62	-25.25	-13	-12.25	Vertical
2130.0	-52.17	2.87	27.62	-27.42	-13	-14.42	Horizontal
187.2	-34.02	1.51	17.14	-18.39	-13	-5.39	Vertical
357.2	-34.62	1.77	16.88	-19.51	-13	-6.51	Horizontal
Test Results for High Channel 711MHz							
1422.0	-47.36	2.62	27.30	-22.68	-13	-9.68	Horizontal
1422.0	-47.18	2.62	27.30	-22.50	-13	-9.50	Vertical
2133.0	-53.36	2.87	27.62	-28.61	-13	-15.61	Vertical
2133.0	-49.62	2.87	27.62	-24.87	-13	-11.87	Horizontal
205.1	-35.12	1.78	15.95	-20.95	-13	-7.95	Vertical
284.0	-38.47	1.34	17.95	-21.87	-13	-8.87	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	-46.30	2.78	27.50	-21.58	-13	-8.58	Horizontal
1629.4	-48.27	2.78	27.50	-23.55	-13	-10.55	Vertical
2444.1	-47.83	2.90	27.80	-22.93	-13	-9.93	Vertical
2444.1	-47.79	2.90	27.80	-22.89	-13	-9.89	Horizontal
229.6	-34.50	1.54	16.98	-19.06	-13	-6.06	Vertical
83.3	-32.07	1.47	15.82	-17.72	-13	-4.72	Horizontal
Test Results For Mid Channel 819MHz							
1638.0	-47.36	2.80	27.48	-22.68	-13	-9.68	Horizontal
1638.0	-43.65	2.80	27.48	-18.97	-13	-5.97	Vertical
2457.0	-46.06	2.91	27.70	-21.27	-13	-8.27	Vertical
2457.0	-49.60	2.91	27.70	-24.81	-13	-11.81	Horizontal
168.2	-32.91	1.74	16.19	-18.46	-13	-5.46	Vertical
92.9	-33.74	1.46	15.43	-19.77	-13	-6.77	Horizontal
Test Results for High Channel 823.3MHz							
1646.6	-49.48	2.82	27.43	-24.87	-13	-11.87	Horizontal
1646.6	-41.01	2.82	27.43	-16.40	-13	-3.40	Vertical
2469.9	-46.59	2.92	27.74	-21.77	-13	-8.77	Vertical
2469.9	-46.20	2.92	27.74	-21.38	-13	-8.38	Horizontal
213.1	-34.51	1.67	17.05	-19.13	-13	-6.13	Vertical
121.7	-33.16	1.42	16.12	-18.46	-13	-5.46	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	-48.12	2.78	27.50	-23.40	-13	-10.40	Horizontal
1638.0	-44.70	2.78	27.50	-19.98	-13	-6.98	Vertical
2457.0	-48.53	2.90	27.80	-23.63	-13	-10.63	Vertical
2457.0	-48.02	2.90	27.80	-23.12	-13	-10.12	Horizontal
253.7	-34.35	1.43	17.34	-18.44	-13	-5.44	Vertical
256.8	-34.47	1.56	15.71	-20.32	-13	-7.32	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	-48.48	2.78	27.50	-23.76	-13	-10.76	Horizontal
1649.4	-42.19	2.78	27.50	-17.47	-13	-4.47	Vertical
2474.1	-47.73	2.90	27.80	-22.83	-13	-9.83	Vertical
2474.1	-46.92	2.90	27.80	-22.02	-13	-9.02	Horizontal
237.0	-33.76	1.33	17.34	-17.75	-13	-4.75	Vertical
180.5	-32.07	1.47	16.80	-16.74	-13	-3.74	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-47.86	2.80	27.48	-23.18	-13	-10.18	Horizontal
1673.0	-41.93	2.80	27.48	-17.25	-13	-4.25	Vertical
2509.5	-47.46	2.91	27.70	-22.67	-13	-9.67	Vertical
2509.5	-49.09	2.91	27.70	-24.30	-13	-11.30	Horizontal
140.8	-34.24	1.75	15.46	-20.53	-13	-7.53	Vertical
90.6	-34.20	1.52	16.14	-19.58	-13	-6.58	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-47.13	2.82	27.43	-22.52	-13	-9.52	Horizontal
1696.6	-41.65	2.82	27.43	-17.04	-13	-4.04	Vertical
2544.9	-47.65	2.92	27.74	-22.83	-13	-9.83	Vertical
2544.9	-48.34	2.92	27.74	-23.52	-13	-10.52	Horizontal
171.4	-32.05	1.67	16.09	-17.63	-13	-4.63	Vertical
247.2	-33.28	1.80	17.55	-17.53	-13	-4.53	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	-47.62	2.78	27.50	-22.90	-13	-9.90	Horizontal
1663.0	-46.12	2.78	27.50	-21.40	-13	-8.40	Vertical
2494.5	-46.74	2.90	27.80	-21.84	-13	-8.84	Vertical
2494.5	-48.60	2.90	27.80	-23.70	-13	-10.70	Horizontal
255.4	-33.43	1.52	15.72	-19.23	-13	-6.23	Vertical
163.1	-34.77	1.40	17.03	-19.14	-13	-6.14	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-46.47	2.80	27.48	-21.79	-13	-8.79	Horizontal
1673.0	-47.72	2.80	27.48	-23.04	-13	-10.04	Vertical
2509.5	-47.54	2.91	27.70	-22.75	-13	-9.75	Vertical
2509.5	-49.66	2.91	27.70	-24.87	-13	-11.87	Horizontal
227.1	-32.90	1.74	16.38	-18.26	-13	-5.26	Vertical
101.3	-34.74	1.79	15.20	-21.33	-13	-8.33	Horizontal
Test Results for High Channel 841.5MHz							
1683.0	-46.33	2.82	27.43	-21.72	-13	-8.72	Horizontal
1683.0	-42.21	2.82	27.43	-17.60	-13	-4.60	Vertical
2524.5	-47.27	2.92	27.74	-22.45	-13	-9.45	Vertical
2524.5	-49.27	2.92	27.74	-24.45	-13	-11.45	Horizontal
261.1	-32.04	1.78	17.44	-16.38	-13	-3.38	Vertical
120.1	-34.60	1.70	15.93	-20.37	-13	-7.37	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	-59.28	5.23	35.81	-28.70	-25	-3.70	Horizontal
5145.0	-59.14	5.23	35.81	-28.56	-25	-3.56	Vertical
7717.5	-60.80	5.67	36.85	-29.62	-25	-4.62	Vertical
7717.5	-64.53	5.67	36.85	-33.35	-25	-8.35	Horizontal
435.3	-47.25	1.38	15.98	-32.65	-25	-7.65	Vertical
465.8	-45.79	1.62	15.66	-31.75	-25	-6.75	Horizontal
Test Results for Mid Channel 2595MHz							
5190.0	-64.31	5.23	35.82	-33.72	-25	-8.72	Horizontal
5190.0	-62.88	5.23	35.82	-32.29	-25	-7.29	Vertical
7785.0	-63.28	5.67	36.85	-32.10	-25	-7.10	Vertical
7785.0	-61.94	5.67	36.85	-30.76	-25	-5.76	Horizontal
510.4	-45.76	1.62	16.17	-31.21	-25	-6.21	Vertical
562.9	-46.76	1.74	17.63	-30.87	-25	-5.87	Horizontal
Test Results for High Channel 2617.5MHz							
5235.0	-61.45	5.24	35.83	-30.86	-25	-5.86	Horizontal
5235.0	-64.41	5.24	35.83	-33.82	-25	-8.82	Vertical
7852.5	-60.26	5.68	36.87	-29.07	-25	-4.07	Vertical
7852.5	-60.01	5.68	36.87	-28.82	-25	-3.82	Horizontal
197.6	-47.52	1.55	15.84	-33.23	-25	-8.23	Vertical
353.1	-45.08	1.51	17.06	-29.53	-25	-4.53	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	-61.41	5.23	35.82	-30.82	-25	-5.82	Horizontal
5160.0	-64.61	5.23	35.82	-34.02	-25	-9.02	Vertical
7740.0	-64.17	5.67	36.86	-32.98	-25	-7.98	Vertical
7740.0	-62.32	5.67	36.86	-31.13	-25	-6.13	Horizontal
128.9	-49.32	1.43	15.51	-35.24	-25	-10.24	Vertical
344.8	-46.06	1.40	16.97	-30.49	-25	-5.49	Horizontal
Test Results for Mid Channel 2595MHz							
5190.0	-60.12	5.23	35.82	-29.53	-25	-4.53	Horizontal
5190.0	-62.02	5.23	35.82	-31.43	-25	-6.43	Vertical
7785.0	-60.77	5.67	36.85	-29.59	-25	-4.59	Vertical
7785.0	-63.92	5.67	36.85	-32.74	-25	-7.74	Horizontal
100.8	-46.32	1.77	16.72	-31.37	-25	-6.37	Vertical
263.5	-47.73	1.31	16.99	-32.05	-25	-7.05	Horizontal
Test Results for High Channel 2610MHz							
5220.0	-62.85	5.24	35.83	-32.26	-25	-7.26	Horizontal
5220.0	-63.85	5.24	35.83	-33.26	-25	-8.26	Vertical
7830.0	-61.91	5.70	36.88	-30.73	-25	-5.73	Vertical
7830.0	-59.59	5.70	36.88	-28.41	-25	-3.41	Horizontal
349.9	-44.50	1.70	15.73	-30.47	-25	-5.47	Vertical
110.3	-44.70	1.75	17.33	-29.12	-25	-4.12	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, §90.213,

LIMITS

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

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = -30° to $+50^{\circ}\text{C}$
- Voltage = low voltage, DC 3.4V, Normal, DC 3.85V and High voltage, DC 4.2V.

Frequency Stability vs Temperature:

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

Frequency Stability vs Voltage:

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

MODES TESTED

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

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	8.8	0.00466	2.5
3.85	1880	6.9	0.00368	2.5
4.20	1880	5.1	0.00272	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	6.0	0.00318	2.5
Extreme (50C)	1880	6.9	0.00365	2.5
Extreme (40C)	1880	7.7	0.00411	2.5
Extreme (30C)	1880	8.5	0.00451	2.5
Extreme (10C)	1880	9.0	0.00478	2.5
Extreme (0C)	1880	6.4	0.00340	2.5
Extreme (-10C)	1880	8.4	0.00449	2.5
Extreme (-20C)	1880	7.9	0.00422	2.5
Extreme (-30C)	1880	6.0	0.00319	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	7.5	0.00402	2.5
3.85	1880	6.4	0.00338	2.5
4.20	1880	7.2	0.00383	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	7.5	0.00397	2.5
Extreme (50C)	1880	6.6	0.00352	2.5
Extreme (40C)	1880	5.0	0.00264	2.5
Extreme (30C)	1880	6.7	0.00355	2.5
Extreme (10C)	1880	6.2	0.00329	2.5
Extreme (0C)	1880	4.5	0.00237	2.5
Extreme (-10C)	1880	9.4	0.00497	2.5
Extreme (-20C)	1880	5.8	0.00308	2.5
Extreme (-30C)	1880	6.6	0.00348	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	6.4	0.00372	2.5
3.85	1732.5	5.4	0.00312	2.5
4.20	1732.5	6.2	0.00360	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	5.1	0.00292	2.5
Extreme (50C)	1732.5	9.4	0.00542	2.5
Extreme (40C)	1732.5	5.9	0.00343	2.5
Extreme (30C)	1732.5	6.1	0.00355	2.5
Extreme (10C)	1732.5	6.1	0.00350	2.5
Extreme (0C)	1732.5	9.3	0.00535	2.5
Extreme (-10C)	1732.5	5.7	0.00328	2.5
Extreme (-20C)	1732.5	5.9	0.00342	2.5
Extreme (-30C)	1732.5	6.0	0.00346	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	6.2	0.00357	2.5
3.85	1732.5	6.4	0.00368	2.5
4.20	1732.5	5.5	0.00316	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	-6.3	-0.00366	2.5
Extreme (50C)	1732.5	-3.4	-0.00199	2.5
Extreme (40C)	1732.5	5.0	0.00291	2.5
Extreme (30C)	1732.5	-3.7	-0.00213	2.5
Extreme (10C)	1732.5	6.5	0.00378	2.5
Extreme (0C)	1732.5	4.3	0.00250	2.5
Extreme (-10C)	1732.5	9.5	0.00546	2.5
Extreme (-20C)	1732.5	11.2	0.00648	2.5
Extreme (-30C)	1732.5	5.7	0.00328	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	6.5	0.00777	2.5
3.85	836.5	8.7	0.01036	2.5
4.20	836.5	4.2	0.00498	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.5	0.00778	2.5
Extreme (50C)	836.5	8.1	0.00963	2.5
Extreme (40C)	836.5	9.1	0.01082	2.5
Extreme (30C)	836.5	5.3	0.00629	2.5
Extreme (10C)	836.5	6.9	0.00830	2.5
Extreme (0C)	836.5	4.9	0.00581	2.5
Extreme (-10C)	836.5	3.4	0.00405	2.5
Extreme (-20C)	836.5	5.8	0.00695	2.5
Extreme (-30C)	836.5	6.2	0.00746	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	8.8	0.01058	2.5
3.85	836.5	9.3	0.01108	2.5
4.20	836.5	7.8	0.00937	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.1	0.00725	2.5
Extreme (50C)	836.5	5.0	0.00602	2.5
Extreme (40C)	836.5	3.7	0.00448	2.5
Extreme (30C)	836.5	2.6	0.00307	2.5
Extreme (10C)	836.5	6.9	0.00827	2.5
Extreme (0C)	836.5	2.8	0.00340	2.5
Extreme (-10C)	836.5	9.5	0.01139	2.5
Extreme (-20C)	836.5	6.7	0.00798	2.5
Extreme (-30C)	836.5	6.6	0.00792	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	6.6	0.00261	2.5
3.85	2535	5.9	0.00231	2.5
4.20	2535	7.0	0.00277	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	7.6	0.00299	2.5
Extreme (50C)	2535	7.3	0.00288	2.5
Extreme (40C)	2535	5.8	0.00230	2.5
Extreme (30C)	2535	7.0	0.00278	2.5
Extreme (10C)	2535	6.7	0.00266	2.5
Extreme (0C)	2535	4.3	0.00171	2.5
Extreme (-10C)	2535	9.9	0.00392	2.5
Extreme (-20C)	2535	5.1	0.00201	2.5
Extreme (-30C)	2535	6.5	0.00256	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	5.2	0.00204	2.5
3.85	2535	6.5	0.00256	2.5
4.20	2535	10.0	0.00393	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	7.1	0.00278	2.5
Extreme (50C)	2535	6.5	0.00257	2.5
Extreme (40C)	2535	5.9	0.00232	2.5
Extreme (30C)	2535	3.3	0.00129	2.5
Extreme (10C)	2535	6.3	0.00248	2.5
Extreme (0C)	2535	4.5	0.00176	2.5
Extreme (-10C)	2535	9.8	0.00387	2.5
Extreme (-20C)	2535	10.7	0.00421	2.5
Extreme (-30C)	2535	6.5	0.00256	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	6.6	0.00925	2.5
3.85	710.0	4.2	0.00598	2.5
4.20	710.0	8.5	0.01193	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	4.6	0.00655	2.5
Extreme (50C)	710.0	5.7	0.00800	2.5
Extreme (40C)	710.0	6.8	0.00953	2.5
Extreme (30C)	710.0	6.8	0.00961	2.5
Extreme (10C)	710.0	4.7	0.00667	2.5
Extreme (0C)	710.0	7.7	0.01080	2.5
Extreme (-10C)	710.0	5.3	0.00742	2.5
Extreme (-20C)	710.0	5.2	0.00729	2.5
Extreme (-30C)	710.0	6.5	0.00920	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	5.3	0.00744	2.5
3.85	710.0	4.6	0.00654	2.5
4.20	710.0	3.1	0.00438	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	5.4	0.00754	2.5
Extreme (50C)	710.0	4.5	0.00631	2.5
Extreme (40C)	710.0	3.9	0.00556	2.5
Extreme (30C)	710.0	3.7	0.00516	2.5
Extreme (10C)	710.0	6.3	0.00888	2.5
Extreme (0C)	710.0	4.6	0.00653	2.5
Extreme (-10C)	710.0	9.2	0.01298	2.5
Extreme (-20C)	710.0	6.3	0.00888	2.5
Extreme (-30C)	710.0	6.1	0.00862	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	12.8	0.01564	2.5
3.85	819	13.5	0.01648	2.5
4.20	819	12.9	0.01571	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	7.5	0.00918	2.5
Extreme (50C)	819	-4.1	-0.00500	2.5
Extreme (40C)	819	4.9	0.00601	2.5
Extreme (30C)	819	-3.8	-0.00465	2.5
Extreme (10C)	819	6.3	0.00774	2.5
Extreme (0C)	819	4.8	0.00584	2.5
Extreme (-10C)	819	9.1	0.01115	2.5
Extreme (-20C)	819	10.6	0.01295	2.5
Extreme (-30C)	819	6.0	0.00738	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	8.8	0.01076	2.5
3.85	819	6.2	0.00758	2.5
4.20	819	5.8	0.00713	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	7.6	0.00924	2.5
Extreme (50C)	819	5.1	0.00618	2.5
Extreme (40C)	819	5.0	0.00608	2.5
Extreme (30C)	819	5.1	0.00621	2.5
Extreme (10C)	819	6.1	0.00747	2.5
Extreme (0C)	819	5.2	0.00638	2.5
Extreme (-10C)	819	9.7	0.01184	2.5
Extreme (-20C)	819	10.5	0.01276	2.5
Extreme (-30C)	819	6.2	0.00758	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	12.8	0.01528	2.5
3.85	836.5	13.8	0.01652	2.5
4.20	836.5	13.2	0.01575	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	7.7	0.00915	2.5
Extreme (50C)	836.5	4.9	0.00591	2.5
Extreme (40C)	836.5	5.4	0.00641	2.5
Extreme (30C)	836.5	4.5	0.00544	2.5
Extreme (10C)	836.5	6.9	0.00826	2.5
Extreme (0C)	836.5	4.9	0.00582	2.5
Extreme (-10C)	836.5	9.8	0.01175	2.5
Extreme (-20C)	836.5	10.5	0.01252	2.5
Extreme (-30C)	836.5	5.7	0.00686	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	13.1	0.01571	2.5
3.85	836.5	14.2	0.01701	2.5
4.20	836.5	13.0	0.01550	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	7.6	0.00907	2.5
Extreme (50C)	836.5	4.6	0.00548	2.5
Extreme (40C)	836.5	5.0	0.00595	2.5
Extreme (30C)	836.5	4.7	0.00564	2.5
Extreme (10C)	836.5	6.0	0.00723	2.5
Extreme (0C)	836.5	4.5	0.00533	2.5
Extreme (-10C)	836.5	9.3	0.01106	2.5
Extreme (-20C)	836.5	11.1	0.01327	2.5
Extreme (-30C)	836.5	6.4	0.00760	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	0.00336	2.5
3.85	2593	6.2	0.00240	2.5
4.20	2593	7.2	0.00277	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	7.3	0.00281	2.5
Extreme (50C)	2593	4.4	0.00171	2.5
Extreme (40C)	2593	5.4	0.00209	2.5
Extreme (30C)	2593	4.7	0.00182	2.5
Extreme (10C)	2593	6.1	0.00235	2.5
Extreme (0C)	2593	5.0	0.00194	2.5
Extreme (-10C)	2593	9.2	0.00355	2.5
Extreme (-20C)	2593	11.1	0.00430	2.5
Extreme (-30C)	2593	5.8	0.00224	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	8.3	0.00322	2.5
3.85	2593	6.3	0.00244	2.5
4.20	2593	6.2	0.00239	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2593	7.4	0.00284	2.5
Extreme (50C)	2593	4.7	0.00182	2.5
Extreme (40C)	2593	5.3	0.00205	2.5
Extreme (30C)	2593	5.1	0.00196	2.5
Extreme (10C)	2593	6.2	0.00240	2.5
Extreme (0C)	2593	4.6	0.00179	2.5
Extreme (-10C)	2593	9.3	0.00361	2.5
Extreme (-20C)	2593	10.7	0.00413	2.5
Extreme (-30C)	2593	6.6	0.00254	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.

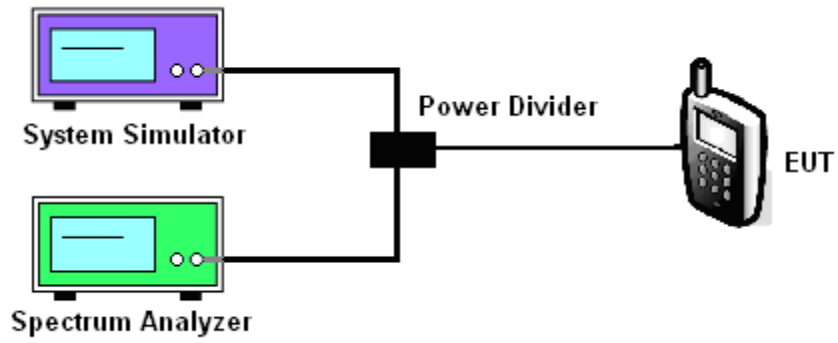
11.2 Measuring Instruments

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----