FCC CFR47 PART 22H, 24E, 27
CERTIFICATION TEST REPORT
FCC ID: 2AX4YDK10

Product： Smart Phone

Trade Mark： DOOGEE

Model Number： DK10

Family Model： DK10 Pro, V40, V40 Pro, V40 Plus, V40 Ultra

Report No.： S24012405107006

Prepared for

Shenzhen DOOGEE Hengtong Technology CO.,LTD

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Prepared by

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Certificate #4298.01

TEST RESULT CERTIFICATION

Applicant's name..... :	Shenzhen DOOGEE Hengtong Technology CO.,LTD
Address ..... :	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No.22,Longhua New District,Shenzhen,China
Manufacturer's Name..... :	Shenzhen DOOGEE Hengtong Technology CO.,LTD
Address ..... :	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No.22,Longhua New District,Shenzhen,China
Product name..... :	Smart Phone
Model and/or type reference ..... :	DK10
Family Model:	DK10 Pro, V40, V40 Pro, V40 Plus, V40 Ultra
Test sample number	S240124051007
Standards..... :	FCC CFR 47 Part 22H, Part 24E, Part 27
Test procedure ..... :	ANSI C63.26:2015
	ANSI/TIA-603-E-2016

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

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Date of Test .....

Date (s) of performance of tests ..... Jan 26, 2024 ~ Mar 01, 2024

Date of Issue ..... Mar 01, 2024

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

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

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	Smart Phone
Trade Mark	DOOGEE
Model Name	DK10
Family Model	DK10 Pro, V40, V40 Pro, V40 Plus, V40 Ultra
Model Difference	All models are the same circuit and RF module, except the model name.
FCC ID:	2AX4YDK10
Frequency Bands:	U.S. Bands: ☒LTE FDD Band 2, 4, 5, 7, 12, 17, 25, 66,71
Frequency Range:	LTE FDD Band 2 Uplink: 1850MHz-1910MHz, Downlink: 1930MHz-1990MHz; LTE FDD Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz; LTE FDD Band 5 Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE-FDD Band 7 Uplink: 2500MHz-2570MHz, Downlink: 2620MHz-2690MHz; LTE FDD Band 12 Uplink: 699MHz-716MHz, Downlink: 729MHz-746MHz; LTE FDD Band 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE FDD Band 25 Uplink: 1850MHz-1915MHz, Downlink: 1930MHz-1995MHz; LTE FDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz; LTE FDD Band 71 Uplink: 663MHz-698MHz, Downlink: 617MHz-652MHz;
Type of Modulation:	QPSK/16QAM
Antenna:	LDS Antenna
Antenna gain:	Band 2:0.47dBi, Band 4:0.54 dBi, Band 5:0.34 dBi, Band 7:0.28 dBi, Band 12:-0.88 dBi, Band 17:-0.88 dBi, Band 25:0.47 dBi, Band 66:0.54 dBi, Band 71:-1.42 dBi
Battery	DC 7.78V, 2575 mAh
Adapter	Model: TP120C-US Input: AC110-240V~50/60Hz 2.2A Max Type C Output: DC 5.0V⎓3.0A 15.0W, 9.0V⎓3.0A 27.0W, 12.0V⎓3.0A 36.0W, 15.0V⎓3.0A 45.0W, 20.0V⎓5.0A 100.0W PPS: 3.3-20.0V⎓6.0A

Power supply	DC 7.78V from battery or DC 5V/9V/12V/15V/20V from adapter
Extreme Vol. Limits:	DC 6.62V to DC 8.96V (Nominal DC 7.78V)（Note 1）
HW Version	N/A
SW Version	N/A
** Note1: The High Voltage 8.96V and Low Voltage 6.62V 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: 2AX4YDK10** filing to comply with the FCC Part 22H&24E &27

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

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

ShenZhen NTEK Testing Technology Co., Ltd.

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

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

FCC Registration No.:463705

IC Registration No.:9270A,

CNAS Registration No.:L5516

MEASUREMENT UNCERTAINTY

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

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

1.5 SPECIAL ACCESSORIES

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

1.6 WORST-CASE CONFIGURATION AND MODE

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

The device has LTE Bands of: Band 2, Band 4, Band 5, Band 7, Band 12, Band 17, Band 25, Band 66, Band 71.

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

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

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

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

2.2 EUT EXERCISE

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

2.3 CONFIGURATION OF EUT SYSTEM

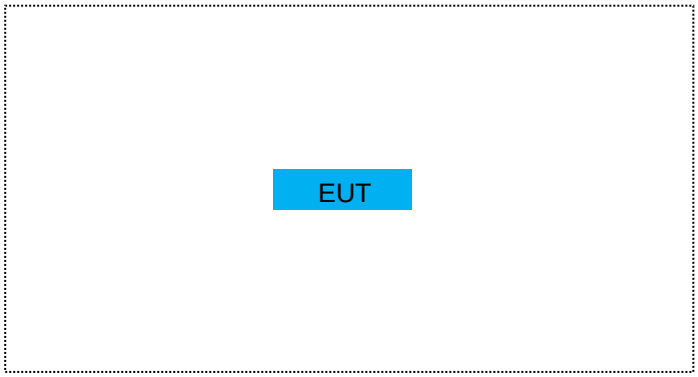
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Smart Phone	DK10	FCC ID: 2AX4YDK10	EUT

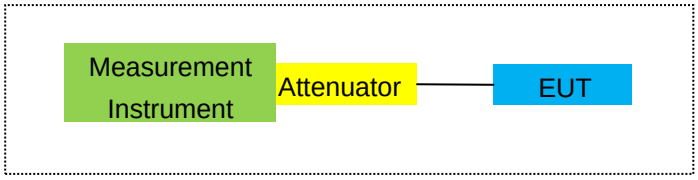
Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.

2.4 TEST SETUP

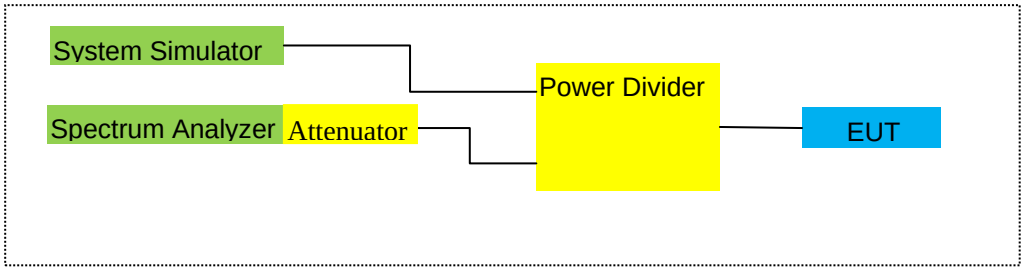
For Radiated Test Cases



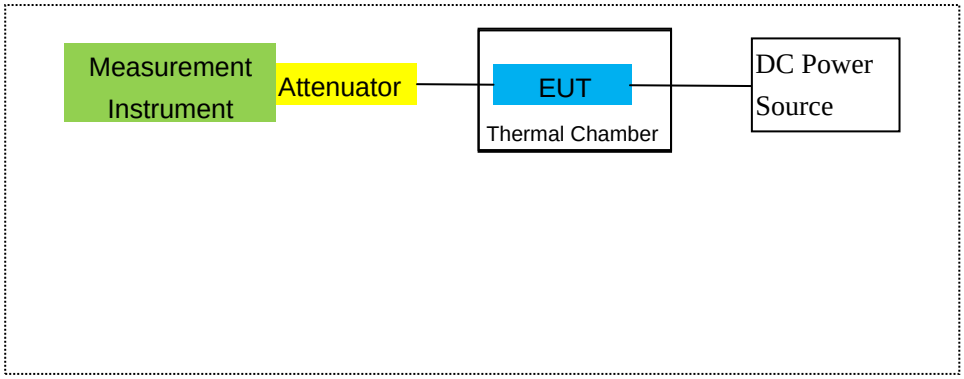
For Conducted Output Power



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	Horn Antenna	EM	EM-AH-10180	2011071402	2023.03.27	2024.03.26	1 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2023.05.29	2024.05.28	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

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

- LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 17
- LTE Band 25
- LTE Band 66
- LTE Band 71

RESULTS

PASS

Test data reference attachment.

6. BANDEDGE AND EMISSION MASK

RULE PART(S)

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

FCC: §2.1046, §22.913, §24.232

LIMITS

The minimum permissible attenuation level of any spurious emission is 43 + log10(P[Watts]), where P is the transmitter power in Watts.

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

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

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

For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c.4) is 65 + 10log10(P) = -35dBm in a 6.25kHz bandwidth.

Per 27.53(m) for operations in the BRS/EBS bands, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth.

TEST PROCEDURE

The transmitter output was connected to a CMW500Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency

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

Set display line

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

MODES TESTED

- LTE Band2/4/5/7/12/17/25/66/71

RESULTS

Test data reference attachment.

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

7. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

The minimum permissible attenuation level of any spurious emission is 43 + log10(P[Watts]), where P is the transmitter power in Watts.
The minimum permissible attenuation level for Band 7 is as following.
Per 27.53(g) for operations in the 698-746 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.
Per 27.53(c.5) for operations in the 776-788 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.
For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c.4) is 65 + 10log10(P) = -35dBm in a 6.25kHz bandwidth.
Per 27.53(m) for operations in the BRS/EBS bands, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth.

TEST PROCEDURE

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

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

MODES TESTED

- LTE Band 2/4/5/7/12/17/25/66/71

7.1 MEASUREMENT METHOD

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

Test data reference attachment.

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

8. RADIATED MEASUREMENT

8.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

LIMITS:

22.913(a) (2)- The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
24.232 (c) Mobile and portable stations are limited to 2 watts EIRP.
27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.
27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.
27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.
27.50 (h)(2)Mobile and other user stations in the 2500–2570 MHz and 2620–2690 MHz bands. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

TEST PROCEDURE

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

MODES TESTED

- LTE Band 2/4/5/7/12/17/25/66/71

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		1850.7	-2.08	3.76	28.24	22.40	173.780	Horizontal	Pass
Band	1/#Mid	1880	-1.89	3.91	28.22	22.42	174.582	Horizontal	Pass
QPSK		1909.3	-1.80	3.93	28.20	22.47	176.604	Horizontal	Pass
3.0MHz		1851.5	-2.14	3.77	28.23	22.32	170.608	Horizontal	Pass
Band	1/#Mid	1880	-1.99	3.91	28.24	22.34	171.396	Horizontal	Pass
QPSK		1908.5	-1.86	3.94	28.25	22.45	175.792	Horizontal	Pass
5.0MHz		1852.5	-2.03	3.77	28.31	22.51	178.238	Horizontal	Pass
Band	1/#Mid	1880	-1.65	3.91	28.22	22.66	184.502	Horizontal	Pass
QPSK		1907.5	-1.58	3.94	28.20	22.68	185.353	Horizontal	Pass
10.0MHz		1855	-1.89	3.79	28.33	22.65	184.077	Horizontal	Pass
Band	1/#Mid	1880	-1.59	3.95	28.22	22.68	185.353	Horizontal	Pass
QPSK		1905	-1.48	3.97	28.19	22.74	187.932	Horizontal	Pass
15.0MHz		1857.5	-1.85	3.79	28.34	22.70	186.209	Horizontal	Pass
Band	1/#Mid	1880	-1.64	3.95	28.22	22.63	183.231	Horizontal	Pass
QPSK		1902.5	-1.50	3.97	28.18	22.71	186.638	Horizontal	Pass
20.0MHz		1860	-1.84	3.81	28.35	22.70	186.209	Horizontal	Pass
Band	1/#Mid	1880	-1.51	3.96	28.22	**22.75**	188.365	Horizontal	Pass
QPSK		1900	-1.45	4.00	28.16	22.71	186.638	Horizontal	Pass
1.4MHz		1850.7	-3.25	3.76	28.24	21.23	132.739	Vertical	Pass
Band	1/#Mid	1880	-2.71	3.91	28.22	21.60	144.544	Vertical	Pass
QPSK		1909.3	-2.91	3.93	28.20	21.36	136.773	Vertical	Pass
3.0MHz		1851.5	-2.43	3.77	28.23	22.03	159.588	Vertical	Pass
Band	1/#Mid	1880	-2.49	3.91	28.24	21.84	152.757	Vertical	Pass
QPSK		1908.5	-2.97	3.94	28.25	21.34	136.144	Vertical	Pass
5.0MHz		1852.5	-3.21	3.77	28.31	21.33	135.831	Vertical	Pass
Band	1/#Mid	1880	-2.67	3.91	28.22	21.64	145.881	Vertical	Pass
QPSK		1907.5	-2.62	3.94	28.20	21.64	145.881	Vertical	Pass
10.0MHz		1855	-3.37	3.79	28.33	21.17	130.918	Vertical	Pass
Band	1/#Mid	1880	-2.41	3.95	28.22	21.86	153.462	Vertical	Pass
QPSK		1905	-2.25	3.97	28.19	21.97	157.398	Vertical	Pass

15.0MHz	1/#Mid	1857.5	-3.11	3.79	28.34	21.44	139.316	Vertical	Pass
Band		1880	-3.05	3.95	28.22	21.22	132.434	Vertical	Pass
QPSK		1902.5	-3.01	3.97	28.18	21.20	131.826	Vertical	Pass
20.0MHz	1/#Mid	1860	-2.45	3.81	28.35	22.09	161.808	Vertical	Pass
Band		1880	-2.97	3.96	28.22	21.29	134.586	Vertical	Pass
QPSK		1900	-2.86	4.00	28.16	21.30	134.896	Vertical	Pass

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

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1850.7	-3.20	3.76	28.24	21.28	134.276	Horizontal	Pass
		1880	-2.67	3.91	28.22	21.64	145.881	Horizontal	Pass
		1909.3	-2.60	3.93	28.20	21.67	146.893	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-2.70	3.77	28.23	21.76	149.968	Horizontal	Pass
		1880	-2.78	3.91	28.24	21.55	142.889	Horizontal	Pass
		1908.5	-2.99	3.94	28.25	21.32	135.519	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-2.64	3.77	28.31	21.90	154.882	Horizontal	Pass
		1880	-2.55	3.91	28.22	21.76	149.968	Horizontal	Pass
		1907.5	-2.23	3.94	28.20	22.03	159.588	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-2.69	3.79	28.33	21.85	153.109	Horizontal	Pass
		1880	-2.68	3.95	28.22	21.59	144.212	Horizontal	Pass
		1905	-2.15	3.97	28.19	22.07	161.065	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-2.67	3.79	28.34	21.88	154.170	Horizontal	Pass
		1880	-2.46	3.95	28.22	21.81	151.705	Horizontal	Pass
		1902.5	-2.42	3.97	28.18	21.79	151.008	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-2.56	3.81	28.35	21.98	157.761	Horizontal	Pass
		1880	-2.26	3.96	28.22	22.00	158.489	Horizontal	Pass
		1900	-2.08	4.00	28.16	**22.08**	161.436	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-3.77	3.76	28.24	20.71	117.761	Vertical	Pass
		1880	-3.69	3.91	28.22	20.62	115.345	Vertical	Pass
		1909.3	-3.48	3.93	28.20	20.79	119.950	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-3.61	3.77	28.23	20.85	121.619	Vertical	Pass
		1880	-3.32	3.91	28.24	21.01	126.183	Vertical	Pass
		1908.5	-3.94	3.94	28.25	20.37	108.893	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-3.55	3.77	28.31	20.99	125.603	Vertical	Pass
		1880	-3.37	3.91	28.22	20.94	124.165	Vertical	Pass
		1907.5	-3.92	3.94	28.20	20.34	108.143	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-3.95	3.79	28.33	20.59	114.551	Vertical	Pass
		1880	-3.82	3.95	28.22	20.45	110.917	Vertical	Pass
		1905	-3.82	3.97	28.19	20.40	109.648	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.31	3.79	28.34	20.24	105.682	Vertical	Pass
		1880	-3.94	3.95	28.22	20.33	107.895	Vertical	Pass
		1902.5	-3.89	3.97	28.18	20.32	107.647	Vertical	Pass

20.0MHz	1/#Mid	1860	-3.86	3.81	28.35	20.68	116.950	Vertical	Pass
Band 16		1880	-3.81	3.96	28.22	20.45	110.917	Vertical	Pass
QAM		1900	-3.49	4.00	28.16	20.67	116.681	Vertical	Pass

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

8.3 LTE BAND 4

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (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	-1.99	3.12	27.58	22.47	176.604	Horizontal	Pass
		1732.5	-1.98	3.27	27.61	22.36	172.187	Horizontal	Pass
		1754.3	-1.96	3.29	27.63	22.38	172.982	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-2.16	3.13	27.61	22.32	170.608	Horizontal	Pass
		1732.5	-2.08	3.27	27.61	22.26	168.267	Horizontal	Pass
		1753.5	-2.00	3.30	27.62	22.32	170.608	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-1.93	3.13	27.63	22.57	180.717	Horizontal	Pass
		1732.5	-1.83	3.27	27.61	22.51	178.238	Horizontal	Pass
		1752.5	-1.71	3.30	27.60	22.59	181.552	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-1.87	3.15	27.64	22.62	182.810	Horizontal	Pass
		1732.5	-1.64	3.31	27.61	22.66	184.502	Horizontal	Pass
		1750	-1.66	3.33	27.59	22.60	181.970	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-1.88	3.15	27.65	22.62	182.810	Horizontal	Pass
		1732.5	-1.72	3.31	27.61	22.58	181.134	Horizontal	Pass
		1747.5	-1.66	3.33	27.57	22.58	181.134	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-1.82	3.17	27.66	**22.67**	184.927	Horizontal	Pass
		1732.5	-1.65	3.32	27.61	22.64	183.654	Horizontal	Pass
		1745	-1.59	3.36	27.56	22.61	182.390	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-2.79	3.12	27.58	21.67	146.893	Vertical	Pass
		1732.5	-3.17	3.27	27.61	21.17	130.918	Vertical	Pass
		1754.3	-2.77	3.29	27.63	21.57	143.549	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-2.69	3.13	27.61	21.79	151.008	Vertical	Pass
		1732.5	-2.22	3.27	27.61	22.12	162.930	Vertical	Pass
		1753.5	-3.06	3.30	27.62	21.26	133.660	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-2.55	3.13	27.63	21.95	156.675	Vertical	Pass
		1732.5	-2.39	3.27	27.61	21.95	156.675	Vertical	Pass
		1752.5	-2.62	3.30	27.60	21.68	147.231	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.12	3.15	27.64	21.37	137.088	Vertical	Pass
		1732.5	-2.61	3.31	27.61	21.69	147.571	Vertical	Pass
		1750	-2.79	3.33	27.59	21.47	140.281	Vertical	Pass
15.0MHz	1/#Mid	1717.5	-3.32	3.15	27.65	21.18	131.220	Vertical	Pass

Band		1732.5	-2.89	3.31	27.61	21.41	138.357	Vertical	Pass
QPSK		1747.5	-3.05	3.33	27.57	21.19	131.522	Vertical	Pass
20.0MHz	1/#Mid	1720	-3.28	3.17	27.66	21.21	132.130	Vertical	Pass
Band		1732.5	-2.23	3.32	27.61	22.06	160.694	Vertical	Pass
QPSK		1745	-2.84	3.36	27.56	21.36	136.773	Vertical	Pass

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

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (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	-2.80	3.12	27.58	21.66	146.555	Horizontal	Pass
		1732.5	-2.65	3.27	27.61	21.69	147.571	Horizontal	Pass
		1754.3	-2.65	3.29	27.63	21.69	147.571	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-2.74	3.13	27.61	21.74	149.279	Horizontal	Pass
		1732.5	-2.87	3.27	27.61	21.47	140.281	Horizontal	Pass
		1753.5	-3.09	3.30	27.62	21.23	132.739	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-2.57	3.13	27.63	21.93	155.955	Horizontal	Pass
		1732.5	-2.53	3.27	27.61	21.81	151.705	Horizontal	Pass
		1752.5	-2.22	3.30	27.60	22.08	161.436	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-2.64	3.15	27.64	21.85	153.109	Horizontal	Pass
		1732.5	-2.83	3.31	27.61	21.47	140.281	Horizontal	Pass
		1750	-2.21	3.33	27.59	22.05	160.325	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-2.44	3.15	27.65	22.06	160.694	Horizontal	Pass
		1732.5	-2.50	3.31	27.61	21.80	151.356	Horizontal	Pass
		1747.5	-2.52	3.33	27.57	21.72	148.594	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-2.39	3.17	27.66	**22.10**	162.181	Horizontal	Pass
		1732.5	-2.40	3.32	27.61	21.89	154.525	Horizontal	Pass
		1745	-2.21	3.36	27.56	21.99	158.125	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.44	3.12	27.58	21.02	126.474	Vertical	Pass
		1732.5	-3.70	3.27	27.61	20.64	115.878	Vertical	Pass
		1754.3	-3.94	3.29	27.63	20.40	109.648	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.63	3.13	27.61	20.85	121.619	Vertical	Pass
		1732.5	-3.53	3.27	27.61	20.81	120.504	Vertical	Pass
		1753.5	-3.57	3.30	27.62	20.75	118.850	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.19	3.13	27.63	20.31	107.399	Vertical	Pass
		1732.5	-3.90	3.27	27.61	20.44	110.662	Vertical	Pass
		1752.5	-3.51	3.30	27.60	20.79	119.950	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.32	3.15	27.64	20.17	103.992	Vertical	Pass
		1732.5	-3.66	3.31	27.61	20.64	115.878	Vertical	Pass
		1750	-3.79	3.33	27.59	20.47	111.429	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.22	3.15	27.65	20.28	106.660	Vertical	Pass
		1732.5	-4.14	3.31	27.61	20.16	103.753	Vertical	Pass
		1747.5	-4.11	3.33	27.57	20.13	103.039	Vertical	Pass

20.0MHz	1/#Mid	1720	-3.68	3.17	27.66	20.81	120.504	Vertical	Pass
Band 16		1732.5	-3.86	3.32	27.61	20.43	110.408	Vertical	Pass
QAM		1745	-3.52	3.36	27.56	20.68	116.950	Vertical	Pass

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

8.4 LTE BAND 5

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							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	6.56	2.01	19.68	2.15	22.08	161.436	Horizontal	Pass
		836.5	6.44	2.01	19.77	2.15	22.05	160.325	Horizontal	Pass
		848.3	6.24	2.02	19.82	2.15	21.89	154.525	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	6.33	2.01	19.70	2.15	21.87	153.815	Horizontal	Pass
		836.5	6.23	2.01	19.77	2.15	21.84	152.757	Horizontal	Pass
		847.5	6.10	2.02	19.81	2.15	21.74	149.279	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.61	2.01	19.71	2.15	22.16	164.437	Horizontal	Pass
		836.5	6.49	2.01	19.77	2.15	22.10	162.181	Horizontal	Pass
		846.5	6.33	2.02	19.79	2.15	21.95	156.675	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	6.63	2.01	19.73	2.15	**22.20**	165.959	Horizontal	Pass
		836.5	6.58	2.01	19.77	2.15	22.19	165.577	Horizontal	Pass
		844	6.48	2.02	19.78	2.15	22.09	161.808	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	824.7	5.15	2.01	19.68	2.15	20.67	116.681	Vertical	Pass
		836.5	5.19	2.01	19.77	2.15	20.80	120.226	Vertical	Pass
		848.3	5.52	2.02	19.82	2.15	21.17	130.918	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	5.83	2.01	19.70	2.15	21.37	137.088	Vertical	Pass
		836.5	5.32	2.01	19.77	2.15	20.93	123.880	Vertical	Pass
		847.5	5.34	2.02	19.81	2.15	20.98	125.314	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.07	2.01	19.71	2.15	20.62	115.345	Vertical	Pass
		836.5	5.27	2.01	19.77	2.15	20.88	122.462	Vertical	Pass
		846.5	5.34	2.02	19.79	2.15	20.96	124.738	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	4.93	2.01	19.73	2.15	20.50	112.202	Vertical	Pass
		836.5	5.51	2.01	19.77	2.15	21.12	129.420	Vertical	Pass
		844	5.74	2.02	19.78	2.15	21.35	136.458	Vertical	Pass

Radiated Power (ERP) for 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 16 QAM	3/#Mid	824.7	5.71	2.01	19.68	2.15	21.23	132.739	Horizontal	Pass
		836.5	5.64	2.01	19.77	2.15	21.25	133.352	Horizontal	Pass
		848.3	5.48	2.02	19.82	2.15	21.13	129.718	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.79	2.01	19.70	2.15	21.33	135.831	Horizontal	Pass
		836.5	5.50	2.01	19.77	2.15	21.11	129.122	Horizontal	Pass
		847.5	4.98	2.02	19.81	2.15	20.62	115.345	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	6.11	2.01	19.71	2.15	21.66	146.555	Horizontal	Pass
		836.5	5.88	2.01	19.77	2.15	21.49	140.929	Horizontal	Pass
		846.5	5.63	2.02	19.79	2.15	21.25	133.352	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	829	6.11	2.01	19.73	2.15	**21.68**	147.231	Horizontal	Pass
		836.5	5.83	2.01	19.77	2.15	21.44	139.316	Horizontal	Pass
		844	5.37	2.02	19.78	2.15	20.98	125.314	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	4.85	2.01	19.68	2.15	20.37	108.893	Vertical	Pass
		836.5	5.76	2.01	19.77	2.15	21.37	137.088	Vertical	Pass
		848.3	5.28	2.02	19.82	2.15	20.93	123.880	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.16	2.01	19.70	2.15	20.70	117.490	Vertical	Pass
		836.5	4.10	2.01	19.77	2.15	19.71	93.541	Vertical	Pass
		847.5	4.77	2.02	19.81	2.15	20.41	109.901	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	4.81	2.01	19.71	2.15	20.36	108.643	Vertical	Pass
		836.5	4.35	2.01	19.77	2.15	19.96	99.083	Vertical	Pass
		846.5	3.77	2.02	19.79	2.15	19.39	86.896	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	829	4.32	2.01	19.73	2.15	19.89	97.499	Vertical	Pass
		836.5	4.19	2.01	19.77	2.15	19.80	95.499	Vertical	Pass
		844	4.59	2.02	19.78	2.15	20.20	104.713	Vertical	Pass

Note:
ERP=EIRP-2.15
SG Level= Signal generator output
Max. EIRP Average (dBm)= Factor Gain (dB)+ SG Level (dBm)- Cable Loss(dBm)
Factor Gain(dB)=Antenna Gain(dB) + Amplifier Factor (dB)

8.5 LTE BAND 7

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						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	-1.02	4.54	27.75	22.19	165.577	Horizontal	Pass
		2535	-0.85	4.69	27.72	22.18	165.196	Horizontal	Pass
		2567.5	-0.78	4.71	27.71	22.22	166.725	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	-0.95	4.55	27.76	22.26	168.267	Horizontal	Pass
		2535	-0.76	4.69	27.72	22.27	168.655	Horizontal	Pass
		2565	-0.68	4.72	27.70	22.30	169.824	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-0.96	4.55	27.77	22.26	168.267	Horizontal	Pass
		2535	-0.82	4.69	27.72	22.21	166.341	Horizontal	Pass
		2562.5	-0.72	4.72	27.69	22.25	167.880	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-0.90	4.57	27.78	**22.31**	170.216	Horizontal	Pass
		2535	-0.72	4.73	27.72	22.27	168.655	Horizontal	Pass
		2560	-0.68	4.75	27.68	22.25	167.880	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-2.82	4.54	27.75	20.39	109.396	Vertical	Pass
		2535	-2.59	4.69	27.72	20.44	110.662	Vertical	Pass
		2567.5	-1.94	4.71	27.71	21.06	127.644	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	-2.22	4.55	27.76	20.99	125.603	Vertical	Pass
		2535	-1.88	4.69	27.72	21.15	130.317	Vertical	Pass
		2565	-2.49	4.72	27.70	20.49	111.944	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-2.12	4.55	27.77	21.10	128.825	Vertical	Pass
		2535	-1.82	4.69	27.72	21.21	132.130	Vertical	Pass
		2562.5	-2.60	4.72	27.69	20.37	108.893	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	-1.91	4.57	27.78	21.30	134.896	Vertical	Pass
		2535	-2.37	4.73	27.72	20.62	115.345	Vertical	Pass
		2560	-2.55	4.75	27.68	20.38	109.144	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	-1.71	4.54	27.75	21.50	141.254	Horizontal	Pass
		2535	-1.40	4.69	27.72	21.63	145.546	Horizontal	Pass
		2567.5	-1.48	4.71	27.71	21.52	141.906	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-1.60	4.55	27.76	21.61	144.877	Horizontal	Pass
		2535	-1.61	4.69	27.72	21.42	138.676	Horizontal	Pass
		2565	-1.88	4.72	27.70	21.10	128.825	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-1.78	4.55	27.77	21.44	139.316	Horizontal	Pass
		2535	-1.75	4.69	27.72	21.28	134.276	Horizontal	Pass
		2562.5	-1.36	4.72	27.69	21.61	144.877	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-1.66	4.57	27.78	21.55	142.889	Horizontal	Pass
		2535	-1.33	4.73	27.72	**21.66**	146.555	Horizontal	Pass
		2560	-1.43	4.75	27.68	21.50	141.254	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-3.08	4.54	27.75	20.13	103.039	Vertical	Pass
		2535	-3.16	4.69	27.72	19.87	97.051	Vertical	Pass
		2567.5	-1.86	4.71	27.71	21.14	130.017	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-1.97	4.55	27.76	21.24	133.045	Vertical	Pass
		2535	-2.41	4.69	27.72	20.62	115.345	Vertical	Pass
		2565	-2.45	4.72	27.70	20.53	112.980	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-2.35	4.55	27.77	20.87	122.180	Vertical	Pass
		2535	-2.61	4.69	27.72	20.42	110.154	Vertical	Pass
		2562.5	-2.79	4.72	27.69	20.18	104.232	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-3.34	4.57	27.78	19.87	97.051	Vertical	Pass
		2535	-3.09	4.73	27.72	19.90	97.724	Vertical	Pass
		2560	-2.20	4.75	27.68	20.73	118.304	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.6 LTE BAND 12

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (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	1/#Mid	699.7	6.82	1.91	19.21	2.15	21.97	157.398	Vertical	Pass
		707.5	6.74	1.91	19.26	2.15	21.94	156.315	Vertical	Pass
		715.3	6.52	1.93	19.34	2.15	21.78	150.661	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	700.5	6.61	1.91	19.21	2.15	21.76	149.968	Vertical	Pass
		707.5	6.53	1.91	19.26	2.15	21.73	148.936	Vertical	Pass
		714.5	6.37	1.93	19.34	2.15	21.63	145.546	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	701.5	6.88	1.91	19.23	2.15	22.05	160.325	Vertical	Pass
		707.5	6.79	1.91	19.26	2.15	21.99	158.125	Vertical	Pass
		713.5	6.58	1.92	19.33	2.15	21.84	152.757	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	704	6.90	1.91	19.25	2.15	**22.09**	161.808	Vertical	Pass
		707.5	6.88	1.91	19.26	2.15	22.08	161.436	Vertical	Pass
		711	6.73	1.92	19.32	2.15	21.98	157.761	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	699.7	5.74	1.91	19.21	2.15	20.89	122.744	Horizontal	Pass
		707.5	6.05	1.91	19.26	2.15	21.25	133.352	Horizontal	Pass
		715.3	5.89	1.93	19.34	2.15	21.15	130.317	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	700.5	5.12	1.91	19.21	2.15	20.27	106.414	Horizontal	Pass
		707.5	5.16	1.91	19.26	2.15	20.36	108.643	Horizontal	Pass
		714.5	5.30	1.93	19.34	2.15	20.56	113.763	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	701.5	5.67	1.91	19.23	2.15	20.84	121.339	Horizontal	Pass
		707.5	5.35	1.91	19.26	2.15	20.55	113.501	Horizontal	Pass
		713.5	5.68	1.92	19.33	2.15	20.94	124.165	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	704	5.90	1.91	19.25	2.15	21.09	128.529	Horizontal	Pass
		707.5	5.57	1.91	19.26	2.15	20.77	119.399	Horizontal	Pass
		711	5.76	1.92	19.32	2.15	21.01	126.183	Horizontal	Pass

Radiated Power (ERP) for Band 12										
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	1/#Mid	699.7	6.82	1.91	19.21	2.15	21.97	157.398	Vertical	Pass
		707.5	6.74	1.91	19.26	2.15	21.94	156.315	Vertical	Pass
		715.3	6.52	1.93	19.34	2.15	21.78	150.661	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	6.61	1.91	19.21	2.15	21.76	149.968	Vertical	Pass
		707.5	6.53	1.91	19.26	2.15	21.73	148.936	Vertical	Pass
		714.5	6.37	1.93	19.34	2.15	21.63	145.546	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	6.88	1.91	19.23	2.15	22.05	160.325	Vertical	Pass
		707.5	6.79	1.91	19.26	2.15	21.99	158.125	Vertical	Pass
		713.5	6.58	1.92	19.33	2.15	21.84	152.757	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	704	6.90	1.91	19.25	2.15	**22.15**	164.059	Vertical	Pass
		707.5	6.88	1.91	19.26	2.15	22.08	161.436	Vertical	Pass
		711	6.73	1.92	19.32	2.15	21.98	157.761	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	699.7	5.46	1.91	19.21	2.15	20.61	115.080	Horizontal	Pass
		707.5	5.48	1.91	19.26	2.15	20.68	116.950	Horizontal	Pass
		715.3	5.53	1.93	19.34	2.15	20.79	119.950	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	5.52	1.91	19.21	2.15	20.67	116.681	Horizontal	Pass
		707.5	5.63	1.91	19.26	2.15	20.83	121.060	Horizontal	Pass
		714.5	5.36	1.93	19.34	2.15	20.62	115.345	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	5.86	1.91	19.23	2.15	21.03	126.765	Horizontal	Pass
		707.5	5.70	1.91	19.26	2.15	20.90	123.027	Horizontal	Pass
		713.5	5.86	1.92	19.33	2.15	21.12	129.420	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	704	5.34	1.91	19.25	2.15	20.53	112.980	Horizontal	Pass
		707.5	5.11	1.91	19.26	2.15	20.31	107.399	Horizontal	Pass
		711	5.27	1.92	19.32	2.15	20.52	112.720	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 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	6.69	1.91	19.23	2.15	21.86	153.462	Vertical	Pass
		710	6.55	1.91	19.26	2.15	21.75	149.624	Vertical	Pass
		713.5	6.45	1.92	19.33	2.15	21.71	148.252	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	709	6.70	1.91	19.25	2.15	**21.89**	154.525	Vertical	Pass
		710	6.65	1.91	19.26	2.15	21.85	153.109	Vertical	Pass
		711	6.61	1.92	19.32	2.15	21.86	153.462	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	706.5	5.26	1.91	19.23	2.15	20.43	110.408	Horizontal	Pass
		710	5.08	1.91	19.26	2.15	20.28	106.660	Horizontal	Pass
		713.5	5.49	1.92	19.33	2.15	20.75	118.850	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	709	6.30	1.91	19.25	2.15	21.49	140.929	Horizontal	Pass
		710	5.96	1.91	19.26	2.15	21.16	130.617	Horizontal	Pass
		711	5.05	1.92	19.32	2.15	20.30	107.152	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	6.04	1.91	19.23	2.15	21.21	132.130	Vertical	Pass
		710	5.95	1.91	19.26	2.15	21.15	130.317	Vertical	Pass
		713.5	5.75	1.92	19.33	2.15	21.01	126.183	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	709	5.58	1.91	19.25	2.15	20.77	119.399	Vertical	Pass
		710	6.11	1.91	19.26	2.15	**21.31**	135.207	Vertical	Pass
		711	5.84	1.92	19.32	2.15	21.09	128.529	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	706.5	5.13	1.91	19.23	2.15	20.30	107.152	Horizontal	Pass
		710	4.99	1.91	19.26	2.15	20.19	104.472	Horizontal	Pass
		713.5	4.58	1.92	19.33	2.15	19.84	96.383	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	709	4.68	1.91	19.25	2.15	19.87	97.051	Horizontal	Pass
		710	4.48	1.91	19.26	2.15	19.68	92.897	Horizontal	Pass
		711	4.72	1.92	19.32	2.15	19.97	99.312	Horizontal	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

8.8 LTE BAND 25

Radiated Power (EIRP) for Band 25									
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	-3.03	3.12	27.58	21.43	138.995	Horizontal	Pass
		1882,5	-2.94	3.27	27.61	21.40	138.038	Horizontal	Pass
		1914.3	-3.10	3.29	27.63	21.24	133.045	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.26	3.13	27.61	21.22	132.434	Horizontal	Pass
		1882,5	-3.15	3.27	27.61	21.19	131.522	Horizontal	Pass
		1913.5	-3.23	3.30	27.62	21.09	128.529	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-2.99	3.13	27.63	21.51	141.579	Horizontal	Pass
		1882,5	-2.89	3.27	27.61	21.45	139.637	Horizontal	Pass
		1912.5	-3.00	3.30	27.60	21.30	134.896	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-2.94	3.15	27.64	21.55	142.889	Horizontal	Pass
		1882,5	-2.76	3.31	27.61	21.54	142.561	Horizontal	Pass
		1910	-2.82	3.33	27.59	21.44	139.316	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-4.31	3.15	27.65	20.19	104.472	Horizontal	Pass
		1882,5	-4.14	3.31	27.61	20.16	103.753	Horizontal	Pass
		1907.5	-4.28	3.33	27.57	19.96	99.083	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-4.49	3.17	27.66	20.00	100.000	Horizontal	Pass
		1882,5	-2.73	3.32	27.61	21.56	143.219	Horizontal	Pass
		1905	-2.54	3.36	27.56	**21.71**	148.252	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-4.06	3.12	27.58	20.40	109.648	Vertical	Pass
		1882,5	-3.80	3.27	27.61	20.54	113.240	Vertical	Pass
		1914.3	-3.94	3.29	27.63	20.40	109.648	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-3.84	3.13	27.61	20.64	115.878	Vertical	Pass
		1882,5	-4.08	3.27	27.61	20.26	106.170	Vertical	Pass
		1913.5	-4.07	3.30	27.62	20.25	105.925	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-3.85	3.13	27.63	20.65	116.145	Vertical	Pass
		1882,5	-4.40	3.27	27.61	19.94	98.628	Vertical	Pass
		1912.5	-3.71	3.30	27.60	20.59	114.551	Vertical	Pass
10.0MHz Band	1/#Mid	1855	-4.40	3.15	27.64	20.09	102.094	Vertical	Pass
		1882,5	-3.86	3.31	27.61	20.44	110.662	Vertical	Pass

QPSK		1910	-4.12	3.33	27.59	20.14	103.276	Vertical	Pass
15.0MHz		1857.5	-4.63	3.15	27.65	19.87	97.051	Vertical	Pass
Band	1/#Mid	1882,5	-3.94	3.31	27.61	20.36	108.643	Vertical	Pass
QPSK		1907.5	-3.68	3.33	27.57	20.56	113.763	Vertical	Pass
20.0MHz		1860	-4.42	3.17	27.66	20.07	101.625	Vertical	Pass
Band	1/#Mid	1882,5	-3.76	3.32	27.61	20.53	112.980	Vertical	Pass
QPSK		1905	-4.34	3.36	27.56	19.86	96.828	Vertical	Pass

Radiated Power (EIRP) for Band 25									
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	-3.09	3.12	27.58	21.37	137.088	Horizontal	Pass
		1882,5	-3.00	3.27	27.61	21.34	136.144	Horizontal	Pass
		1914.3	-3.16	3.29	27.63	21.18	131.220	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-3.32	3.13	27.61	21.16	130.617	Horizontal	Pass
		1882,5	-3.21	3.27	27.61	21.13	129.718	Horizontal	Pass
		1913.5	-3.29	3.30	27.62	21.03	126.765	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-3.05	3.13	27.63	21.45	139.637	Horizontal	Pass
		1882,5	-2.95	3.27	27.61	21.39	137.721	Horizontal	Pass
		1912.5	-3.06	3.30	27.60	21.24	133.045	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-3.00	3.15	27.64	21.49	140.929	Horizontal	Pass
		1882,5	-2.82	3.31	27.61	21.48	140.605	Horizontal	Pass
		1910	-2.69	3.33	27.59	**21.57**	143.549	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-4.05	3.15	27.65	20.45	110.917	Horizontal	Pass
		1882,5	-4.29	3.31	27.61	20.01	100.231	Horizontal	Pass
		1907.5	-4.25	3.33	27.57	19.99	99.770	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-4.71	3.17	27.66	19.78	95.060	Horizontal	Pass
		1882,5	-3.76	3.32	27.61	20.53	112.980	Horizontal	Pass
		1905	-4.43	3.36	27.56	19.77	94.842	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-4.42	3.12	27.58	20.04	100.925	Vertical	Pass
		1882,5	-3.97	3.27	27.61	20.37	108.893	Vertical	Pass
		1914.3	-4.63	3.29	27.63	19.71	93.541	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.44	3.13	27.61	20.04	100.925	Vertical	Pass
		1882,5	-4.32	3.27	27.61	20.02	100.462	Vertical	Pass
		1913.5	-4.28	3.30	27.62	20.04	100.925	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-4.26	3.13	27.63	20.24	105.682	Vertical	Pass
		1882,5	-4.57	3.27	27.61	19.77	94.842	Vertical	Pass
		1912.5	-3.81	3.30	27.60	20.49	111.944	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-4.56	3.15	27.64	19.93	98.401	Vertical	Pass
		1882,5	-3.88	3.31	27.61	20.42	110.154	Vertical	Pass
		1910	-3.69	3.33	27.59	20.57	114.025	Vertical	Pass
15.0MHz Band 16	1/#Mid	1857.5	-4.04	3.15	27.65	20.46	111.173	Vertical	Pass
		1882,5	-3.83	3.31	27.61	20.47	111.429	Vertical	Pass

QAM		1907.5	-4.33	3.33	27.57	19.91	97.949	Vertical	Pass
20.0MHz		1860	-4.37	3.17	27.66	20.12	102.802	Vertical	Pass
Band 16	1/#Mid	1882,5	-3.95	3.32	27.61	20.34	108.143	Vertical	Pass
QAM		1905	-3.88	3.36	27.56	20.32	107.647	Vertical	Pass

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

8.9 LTE BAND 66

Radiated Power (EIRP) for Band 66									
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	1/#Mid	1710.7	-3.29	3.76	28.24	21.19	131.522	Horizontal	Pass
Band		1745	-3.15	3.91	28.22	21.16	130.617	Horizontal	Pass
QPSK		1779.3	-3.02	3.93	28.2	21.25	133.352	Horizontal	Pass
3.0MHz	1/#Mid	1711.5	-3.35	3.77	28.23	21.11	129.122	Horizontal	Pass
Band		1745	-3.26	3.91	28.24	21.07	127.938	Horizontal	Pass
QPSK		1778.5	-3.28	3.94	28.25	21.03	126.765	Horizontal	Pass
5.0MHz	1/#Mid	1712.5	-3.25	3.77	28.31	21.29	134.586	Horizontal	Pass
Band		1745	-2.93	3.91	28.22	21.38	137.404	Horizontal	Pass
QPSK		1777.5	-2.99	3.94	28.2	21.27	133.968	Horizontal	Pass
10.0MHz	1/#Mid	1715	-3.14	3.79	28.33	21.40	138.038	Horizontal	Pass
Band		1745	-2.87	3.95	28.22	21.40	138.038	Horizontal	Pass
QPSK		1775	-2.88	3.97	28.19	21.34	136.144	Horizontal	Pass
15.0MHz	1/#Mid	1717.5	-3.16	3.79	28.34	21.39	137.721	Horizontal	Pass
Band		1745	-2.97	3.95	28.22	21.30	134.896	Horizontal	Pass
QPSK		1772.5	-2.92	3.97	28.18	21.29	134.586	Horizontal	Pass
20.0MHz	1/#Mid	1720	-3.13	3.81	28.35	**21.41**	138.357	Horizontal	Pass
Band		1745	-2.87	3.96	28.22	21.39	137.721	Horizontal	Pass
QPSK		1770	-2.89	4	28.16	21.27	133.968	Horizontal	Pass
1.4MHz	1/#Mid	1710.7	-4.55	3.76	28.24	19.93	98.401	Vertical	Pass
Band		1745	-4.30	3.91	28.22	20.01	100.231	Vertical	Pass
QPSK		1779.3	-4.26	3.93	28.2	20.01	100.231	Vertical	Pass
3.0MHz	1/#Mid	1711.5	-4.36	3.77	28.23	20.10	102.329	Vertical	Pass
Band		1745	-3.66	3.91	28.24	20.67	116.681	Vertical	Pass
QPSK		1778.5	-4.03	3.94	28.25	20.28	106.660	Vertical	Pass
5.0MHz	1/#Mid	1712.5	-4.47	3.77	28.31	20.07	101.625	Vertical	Pass
Band		1745	-3.88	3.91	28.22	20.43	110.408	Vertical	Pass
QPSK		1777.5	-3.94	3.94	28.2	20.32	107.647	Vertical	Pass
10.0MHz	1/#Mid	1715	-4.29	3.79	28.34	20.26	106.170	Vertical	Pass
Band		1745	-3.89	3.95	28.22	20.38	109.144	Vertical	Pass
QPSK		1775	-3.58	3.97	28.18	20.63	115.611	Vertical	Pass

15.0MHz	1/#Mid	1717.5	-4.05	3.81	28.35	20.49	111.944	Vertical	Pass
Band		1745	-4.52	3.96	28.22	19.74	94.189	Vertical	Pass
QPSK		1772.5	-4.25	4	28.16	19.91	97.949	Vertical	Pass
20.0MHz	1/#Mid	1720	-4.54	3.79	28.34	20.01	100.231	Vertical	Pass
Band		1745	-3.75	3.95	28.22	20.52	112.720	Vertical	Pass
QPSK		1770	-4.49	3.97	28.18	19.72	93.756	Vertical	Pass

Radiated Power (EIRP) for Band 66									
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		1710.7	-4.12	3.76	28.24	20.36	108.643	Horizontal	Pass
Band 16	1/#Mid	1745	-3.73	3.91	28.22	20.58	114.288	Horizontal	Pass
QAM		1779.3	-3.91	3.93	28.2	20.36	108.643	Horizontal	Pass
3.0MHz		1711.5	-4.51	3.77	28.23	19.95	98.855	Horizontal	Pass
Band 16	1/#Mid	1745	-3.76	3.91	28.24	20.57	114.025	Horizontal	Pass
QAM		1778.5	-4.05	3.94	28.25	20.26	106.170	Horizontal	Pass
5.0MHz		1712.5	-3.93	3.77	28.31	20.61	115.080	Horizontal	Pass
Band 16	1/#Mid	1745	-3.99	3.91	28.22	20.32	107.647	Horizontal	Pass
QAM		1777.5	-3.66	3.94	28.2	20.60	114.815	Horizontal	Pass
10.0MHz		1715	-3.98	3.79	28.33	20.56	113.763	Horizontal	Pass
Band 16	1/#Mid	1745	-3.64	3.95	28.22	20.63	115.611	Horizontal	Pass
QAM		1775	-3.96	3.97	28.19	20.26	106.170	Horizontal	Pass
15.0MHz		1717.5	-3.97	3.79	28.34	20.58	114.288	Horizontal	Pass
Band 16	1/#Mid	1745	-3.79	3.95	28.22	20.48	111.686	Horizontal	Pass
QAM		1772.5	-3.58	3.97	28.18	20.63	115.611	Horizontal	Pass
20.0MHz		1720	-3.80	3.81	28.35	**20.74**	118.577	Horizontal	Pass
Band 16	1/#Mid	1745	-3.58	3.96	28.22	20.68	116.950	Horizontal	Pass
QAM		1770	-3.52	4	28.16	20.64	115.878	Horizontal	Pass
1.4MHz		1710.7	-4.20	3.76	28.24	20.28	106.660	Vertical	Pass
Band 16	1/#Mid	1745	-5.55	3.91	28.22	18.76	75.162	Vertical	Pass
QAM		1779.3	-3.95	3.93	28.2	20.32	107.647	Vertical	Pass
3.0MHz		1711.5	-5.59	3.77	28.23	18.87	77.090	Vertical	Pass
Band 16	1/#Mid	1745	-4.04	3.91	28.24	20.29	106.905	Vertical	Pass
QAM		1778.5	-5.64	3.94	28.25	18.67	73.621	Vertical	Pass
5.0MHz		1712.5	-5.33	3.77	28.31	19.21	83.368	Vertical	Pass
Band 16	1/#Mid	1745	-5.51	3.91	28.22	18.80	75.858	Vertical	Pass
QAM		1777.5	-5.20	3.94	28.2	19.06	80.538	Vertical	Pass
10.0MHz		1715	-3.99	3.79	28.34	20.56	113.763	Vertical	Pass
Band 16	1/#Mid	1745	-4.45	3.95	28.22	19.82	95.940	Vertical	Pass
QAM		1775	-5.50	3.97	28.18	18.71	74.302	Vertical	Pass
15.0MHz	1/#Mid	1717.5	-5.84	3.81	28.35	18.70	74.131	Vertical	Pass
Band 16		1745	-3.83	3.96	28.22	20.43	110.408	Vertical	Pass

QAM		1772.5	-4.12	4	28.16	20.04	100.925	Vertical	Pass
20.0MHz	1/#Mid	1720	-5.53	3.79	28.34	19.02	79.799	Vertical	Pass
Band 16		1745	-4.90	3.95	28.22	19.37	86.497	Vertical	Pass
QAM		1770	-3.81	3.97	28.18	20.40	109.648	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)

8.10 LTE BAND 71

Radiated Power (ERP) for Band 71										
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	25/0	665.5	5.86	2.01	19.68	2.15	21.38	137.40	Horizontal	Pass
		680.5	5.74	2.01	19.77	2.15	21.35	136.46	Horizontal	Pass
		695.5	5.54	2.02	19.82	2.15	21.19	131.52	Horizontal	Pass
10.0MHz Band QPSK	50/0	668	5.63	2.01	19.70	2.15	21.17	130.92	Horizontal	Pass
		680.5	5.53	2.01	19.77	2.15	21.14	130.02	Horizontal	Pass
		693	5.40	2.02	19.81	2.15	21.04	127.06	Horizontal	Pass
15.0MHz Band QPSK	75/0	670.5	5.91	2.01	19.71	2.15	21.46	139.96	Horizontal	Pass
		680.5	5.79	2.01	19.77	2.15	21.40	138.04	Horizontal	Pass
		690.5	5.63	2.02	19.79	2.15	21.25	133.35	Horizontal	Pass
20.0MHz Band QPSK	100/0	673	5.93	2.01	19.73	2.15	**21.50**	141.25	Horizontal	Pass
		683	5.88	2.01	19.77	2.15	21.49	140.93	Horizontal	Pass
		688	5.78	2.02	19.78	2.15	21.39	137.72	Horizontal	Pass
5.0MHz Band QPSK	25/0	665.5	4.49	2.01	19.68	2.15	20.01	100.23	Vertical	Pass
		680.5	4.63	2.01	19.77	2.15	20.24	105.68	Vertical	Pass
		695.5	4.07	2.02	19.82	2.15	19.72	93.76	Vertical	Pass
15.0MHz Band QPSK	50/0	668	4.34	2.01	19.70	2.15	19.88	97.27	Vertical	Pass
		680.5	4.25	2.01	19.77	2.15	19.86	96.83	Vertical	Pass
		693	4.57	2.02	19.81	2.15	20.21	104.95	Vertical	Pass
15.0MHz Band QPSK	75/0	670.5	4.64	2.01	19.71	2.15	20.19	104.47	Vertical	Pass
		680.5	4.43	2.01	19.77	2.15	20.04	100.93	Vertical	Pass
		690.5	4.59	2.02	19.79	2.15	20.21	104.95	Vertical	Pass
20MHz Band QPSK	100/0	673	4.84	2.01	19.73	2.15	20.41	109.90	Vertical	Pass
		683	4.19	2.01	19.77	2.15	19.80	95.50	Vertical	Pass
		688	4.56	2.02	19.78	2.15	20.17	103.99	Vertical	Pass

Radiated Power (ERP) for Band 71										
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	25/0	665.5	5.91	2.01	19.68	2.15	21.43	139.00	Horizontal	Pass
		680.5	5.79	2.01	19.77	2.15	21.40	138.04	Horizontal	Pass
		695.5	5.59	2.02	19.82	2.15	21.24	133.05	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	668	5.68	2.01	19.70	2.15	21.22	132.43	Horizontal	Pass
		680.5	5.58	2.01	19.77	2.15	21.19	131.52	Horizontal	Pass
		693	5.45	2.02	19.81	2.15	21.09	128.53	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	670.5	5.96	2.01	19.71	2.15	21.51	141.58	Horizontal	Pass
		680.5	5.84	2.01	19.77	2.15	21.45	139.64	Horizontal	Pass
		690.5	5.68	2.02	19.79	2.15	21.30	134.90	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	673	5.98	2.01	19.73	2.15	**21.55**	142.89	Horizontal	Pass
		683	5.93	2.01	19.77	2.15	21.54	142.56	Horizontal	Pass
		688	5.83	2.02	19.78	2.15	21.44	139.32	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	665.5	5.16	2.01	19.68	2.15	20.68	116.95	Vertical	Pass
		680.5	4.31	2.01	19.77	2.15	19.92	98.17	Vertical	Pass
		695.5	4.96	2.02	19.82	2.15	20.61	115.08	Vertical	Pass
10.0MHz Band 16 QAM	50/0	668	5.14	2.01	19.70	2.15	20.68	116.95	Vertical	Pass
		680.5	4.91	2.01	19.77	2.15	20.52	112.72	Vertical	Pass
		693	4.29	2.02	19.81	2.15	19.93	98.40	Vertical	Pass
15.0MHz Band 16 QAM	75/0	670.5	4.88	2.01	19.71	2.15	20.43	110.41	Vertical	Pass
		680.5	4.70	2.01	19.77	2.15	20.31	107.40	Vertical	Pass
		690.5	4.70	2.02	19.79	2.15	20.32	107.65	Vertical	Pass
20.0MHz Band 16 QAM	100/0	673	4.48	2.01	19.73	2.15	20.05	101.16	Vertical	Pass
		683	4.96	2.01	19.77	2.15	20.57	114.02	Vertical	Pass
		688	4.42	2.02	19.78	2.15	20.03	100.69	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: §2.1051,§22.917(a), §24.238(a), §27.53(c)(g)(h)(m)

LIMIT

For Band 7, the minimum permissible attenuation level of any spurious emission is 55 + log10 (P [Watts]).

The minimum permissible attenuation level of any spurious emission is 43 + log10 (P [Watts]), where P is the transmitter power in Watts.

TEST PROCEDURE

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

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

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

The power of any unwanted emissions measured from the channel edge of the equipment shall be attenuated below the transmitter power, P (dBW), as follows:
a. for base station and subscriber equipment, other than mobile subscriber equipment, the attenuation shall not be less than 43 + 10 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 2/4/5/7/12/17/25/66/71

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	-51.39	4.04	33.51	-21.92	-13	-8.92	Horizontal
3701.4	-53.44	4.04	33.51	-23.97	-13	-10.97	Vertical
5552.1	-50.33	5.24	35.84	-19.73	-13	-6.73	Vertical
5552.1	-52.39	5.24	35.84	-21.79	-13	-8.79	Horizontal
206.4	-35.35	1.43	16.02	-20.76	-13	-7.76	Vertical
283.6	-34.28	1.30	17.99	-17.59	-13	**-4.59**	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-52.96	4.04	33.56	-23.44	-13	-10.44	Horizontal
3760.0	-49.38	4.04	33.56	-19.86	-13	-6.86	Vertical
5640.0	-55.12	5.24	35.91	-24.45	-13	-11.45	Vertical
5640.0	-53.37	5.24	35.91	-22.70	-13	-9.70	Horizontal
180.7	-44.72	1.62	16.97	-29.37	-13	-16.37	Vertical
381.0	-35.48	1.74	15.98	-21.25	-13	-8.25	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-53.97	4.04	34.00	-24.01	-13	-11.01	Horizontal
3818.6	-50.49	4.04	34.00	-20.53	-13	-7.53	Vertical
5727.9	-52.73	5.24	36.04	-21.93	-13	-8.93	Vertical
5727.9	-52.37	5.24	36.04	-21.57	-13	-8.57	Horizontal
180.9	-44.59	1.42	17.29	-28.72	-13	-15.72	Vertical
320.8	-39.17	1.50	17.90	-22.76	-13	-9.76	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	-53.50	4.07	33.54	-24.03	-13	-11.03	Horizontal
3720.0	-53.39	4.07	33.54	-23.92	-13	-10.92	Vertical
5580.0	-55.33	5.28	35.86	-24.75	-13	-11.75	Vertical
5580.0	-50.21	5.28	35.86	-19.63	-13	-6.63	Horizontal
187.6	-44.06	1.58	16.89	-28.74	-13	-15.74	Vertical
402.8	-40.22	1.76	17.26	-24.72	-13	-11.72	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-50.92	4.04	33.56	-21.40	-13	-8.40	Horizontal
3760.0	-49.37	4.04	33.56	-19.85	-13	-6.85	Vertical
5640.0	-52.06	5.24	35.91	-21.39	-13	-8.39	Vertical
5640.0	-53.80	5.24	35.91	-23.13	-13	-10.13	Horizontal
186.5	-44.40	1.46	16.27	-29.59	-13	-16.59	Vertical
355.0	-39.25	1.59	15.15	-25.69	-13	-12.69	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-53.07	4.04	34.00	-23.11	-13	-10.11	Horizontal
3800.0	-48.57	4.04	34.00	-18.61	-13	-5.61	Vertical
5700.0	-50.41	5.24	36.04	-19.61	-13	-6.61	Vertical
5700.0	-50.43	5.24	36.04	-19.63	-13	-6.63	Horizontal
186.1	-43.42	1.36	17.39	-27.38	-13	-14.38	Vertical
307.5	-37.23	1.66	15.39	-23.50	-13	-10.50	Horizontal

9.2 LTE BAND 4

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

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3421.4	-52.07	4.02	29.80	-26.29	-13	-13.29	Horizontal
3421.4	-44.97	4.02	29.80	-19.19	-13	-6.19	Vertical
5132.1	-50.24	5.24	35.84	-19.64	-13	-6.64	Vertical
5132.1	-52.74	5.24	35.84	-22.14	-13	-9.14	Horizontal
192.0	-41.57	1.68	16.04	-27.21	-13	-14.21	Vertical
389.2	-35.83	1.78	17.74	-19.87	-13	-6.87	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-50.57	4.03	30.00	-24.60	-13	-11.60	Horizontal
3465.0	-53.88	4.03	30.00	-27.91	-13	-14.91	Vertical
5197.5	-53.12	5.25	35.86	-22.51	-13	-9.51	Vertical
5197.5	-51.79	5.25	35.86	-21.18	-13	-8.18	Horizontal
194.8	-42.59	1.72	17.69	-26.62	-13	-13.62	Vertical
409.0	-41.92	1.62	16.02	-27.51	-13	-14.51	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-52.10	4.05	30.01	-26.14	-13	-13.14	Horizontal
3508.6	-46.49	4.05	30.01	-20.53	-13	-7.53	Vertical
5262.9	-50.15	5.26	35.86	-19.55	-13	-6.55	Vertical
5262.9	-51.24	5.26	35.86	-20.64	-13	-7.64	Horizontal
178.6	-36.46	1.80	16.69	-21.57	-13	-8.57	Vertical
402.4	-36.10	1.75	16.66	-21.20	-13	-8.20	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	-49.06	4.02	29.80	-23.28	-13	-10.28	Horizontal
3440.0	-46.23	4.02	29.80	-20.45	-13	-7.45	Vertical
5160.0	-54.87	5.24	35.84	-24.27	-13	-11.27	Vertical
5160.0	-51.51	5.24	35.84	-20.91	-13	-7.91	Horizontal
205.8	-40.58	1.57	17.26	-24.89	-13	-11.89	Vertical
466.5	-40.06	1.78	16.35	-25.49	-13	-12.49	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-49.16	4.03	30.00	-23.19	-13	-10.19	Horizontal
3465.0	-46.78	4.03	30.00	-20.81	-13	-7.81	Vertical
5197.5	-49.20	5.25	35.86	-18.59	-13	**-5.59**	Vertical
5197.5	-53.55	5.25	35.86	-22.94	-13	-9.94	Horizontal
197.9	-40.96	1.44	17.95	-24.45	-13	-11.45	Vertical
402.5	-34.59	1.65	16.09	-20.15	-13	-7.15	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-50.70	2.91	27.68	-25.93	-13	-12.93	Horizontal
3490.0	-46.45	2.91	27.68	-21.68	-13	-8.68	Vertical
5235.0	-49.22	5.26	35.86	-18.62	-13	-5.62	Vertical
5235.0	-53.68	5.26	35.86	-23.08	-13	-10.08	Horizontal
206.2	-38.55	1.61	16.85	-23.31	-13	-10.31	Vertical
317.4	-44.55	1.61	15.19	-30.97	-13	-17.97	Horizontal

9.3 LTE BAND 5

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

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1649.4	-45.29	2.78	27.50	-20.57	-13	-7.57	Horizontal
1649.4	-47.00	2.78	27.50	-22.28	-13	-9.28	Vertical
2474.1	-45.72	2.90	27.80	-20.82	-13	-7.82	Vertical
2474.1	-50.27	2.90	27.80	-25.37	-13	-12.37	Horizontal
196.5	-36.51	1.76	17.59	-20.68	-13	-7.68	Vertical
446.4	-36.12	1.63	15.87	-21.88	-13	-8.88	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-47.34	2.80	27.48	-22.66	-13	-9.66	Horizontal
1673.0	-46.25	2.80	27.48	-21.57	-13	-8.57	Vertical
2509.5	-49.84	2.91	27.70	-25.05	-13	-12.05	Vertical
2509.5	-52.83	2.91	27.70	-28.04	-13	-15.04	Horizontal
191.9	-43.42	1.61	15.68	-29.35	-13	-16.35	Vertical
450.6	-36.68	1.59	17.52	-20.76	-13	-7.76	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-50.90	2.82	27.43	-26.29	-13	-13.29	Horizontal
1696.6	-48.60	2.82	27.43	-23.99	-13	-10.99	Vertical
2544.9	-47.34	2.92	27.74	-22.52	-13	-9.52	Vertical
2544.9	-49.48	2.92	27.74	-24.66	-13	-11.66	Horizontal
191.6	-40.82	1.69	16.67	-25.83	-13	-12.83	Vertical
331.9	-41.94	1.70	17.18	-26.46	-13	-13.46	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	-44.97	2.78	27.50	-20.25	-13	-7.25	Horizontal
1658.0	-51.17	2.78	27.50	-26.45	-13	-13.45	Vertical
2487.0	-52.76	2.90	27.80	-27.86	-13	-14.86	Vertical
2487.0	-50.69	2.90	27.80	-25.79	-13	-12.79	Horizontal
179.1	-40.29	1.71	15.57	-26.43	-13	-13.43	Vertical
339.4	-40.72	1.34	16.40	-25.66	-13	-12.66	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-51.93	2.80	27.48	-27.25	-13	-14.25	Horizontal
1673.0	-52.68	2.80	27.48	-28.00	-13	-15.00	Vertical
2509.5	-51.30	2.91	27.70	-26.51	-13	-13.51	Vertical
2509.5	-50.73	2.91	27.70	-25.94	-13	-12.94	Horizontal
192.1	-40.91	1.44	17.04	-25.31	-13	-12.31	Vertical
438.0	-35.81	1.76	17.62	-19.95	-13	-6.95	Horizontal
Test Results for High Channel 844MHz							
1688.0	-51.32	2.82	27.43	-26.71	-13	-13.71	Horizontal
1688.0	-44.21	2.82	27.43	-19.60	-13	**-6.60**	Vertical
2532.0	-51.12	2.92	27.74	-26.30	-13	-13.30	Vertical
2532.0	-53.23	2.92	27.74	-28.41	-13	-15.41	Horizontal
211.9	-44.57	1.74	17.70	-28.61	-13	-15.61	Vertical
254.3	-35.88	1.41	17.46	-19.82	-13	-6.82	Horizontal

9.4 LTE BAND 7

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

Test Results for Low Channel 2502.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
5005.0	-61.00	5.23	35.81	-30.42	-25	-5.42	Horizontal
5005.0	-63.55	5.23	35.81	-32.97	-25	-7.97	Vertical
7507.5	-63.03	5.67	36.85	-31.85	-25	-6.85	Vertical
7507.5	-64.89	5.67	36.85	-33.71	-25	-8.71	Horizontal
204.7	-48.28	1.73	17.97	-32.04	-25	-7.04	Vertical
329.1	-46.62	1.38	15.11	-32.89	-25	-7.89	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-64.33	5.23	35.82	-33.74	-25	-8.74	Horizontal
5070.0	-61.13	5.23	35.82	-30.54	-25	-5.54	Vertical
7605.0	-63.86	5.67	36.85	-32.68	-25	-7.68	Vertical
7605.0	-60.24	5.67	36.85	-29.06	-25	-4.06	Horizontal
212.1	-45.44	1.77	16.17	-31.03	-25	-6.03	Vertical
323.4	-52.63	1.63	15.21	-39.05	-25	-14.05	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-61.05	5.24	35.83	-30.46	-25	-5.46	Horizontal
5135.0	-63.47	5.24	35.83	-32.88	-25	-7.88	Vertical
7702.5	-60.20	5.68	36.87	-29.01	-25	**-4.01**	Vertical
7702.5	-65.30	5.68	36.87	-34.11	-25	-9.11	Horizontal
190.4	-45.57	1.58	17.56	-29.59	-25	-4.59	Vertical
384.0	-48.39	1.45	16.58	-33.26	-25	-8.26	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	-61.58	5.23	35.82	-30.99	-25	-5.99	Horizontal
5020.0	-60.30	5.23	35.82	-29.71	-25	-4.71	Vertical
7530.0	-62.53	5.67	36.86	-31.34	-25	-6.34	Vertical
7530.0	-63.60	5.67	36.86	-32.41	-25	-7.41	Horizontal
198.2	-50.72	1.63	15.76	-36.59	-25	-11.59	Vertical
334.8	-47.66	1.71	15.44	-33.93	-25	-8.93	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-62.67	5.23	35.82	-32.08	-25	-7.08	Horizontal
5070.0	-62.73	5.23	35.82	-32.14	-25	-7.14	Vertical
7605.0	-61.35	5.67	36.85	-30.17	-25	-5.17	Vertical
7605.0	-63.37	5.67	36.85	-32.19	-25	-7.19	Horizontal
177.0	-48.95	1.79	16.84	-33.89	-25	-8.89	Vertical
357.2	-51.75	1.71	17.64	-35.82	-25	-10.82	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-63.03	5.24	35.83	-32.44	-25	-7.44	Horizontal
5120.0	-61.28	5.24	35.83	-30.69	-25	-5.69	Vertical
7680.0	-68.50	5.70	36.88	-37.32	-25	-12.32	Vertical
7680.0	-64.88	5.70	36.88	-33.70	-25	-8.70	Horizontal
178.9	-49.31	1.79	16.84	-34.25	-25	-9.25	Vertical
390.7	-45.13	1.71	17.64	-29.20	-25	-4.20	Horizontal

9.5 LTE BAND 12

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

Test Results for Low Channel 699.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1399.4	-44.21	2.60	27.20	-19.61	-13	-6.61	Horizontal
1399.4	-44.53	2.60	27.20	-19.93	-13	-6.93	Vertical
2099.1	-51.35	2.85	27.54	-26.66	-13	-13.66	Vertical
2099.1	-50.60	2.85	27.54	-25.91	-13	-12.91	Horizontal
185.6	-34.91	1.49	17.78	-18.62	-13	-5.62	Vertical
348.5	-39.71	1.36	17.33	-23.74	-13	-10.74	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-51.37	2.61	27.28	-26.70	-13	-13.70	Horizontal
1415.0	-46.88	2.61	27.28	-22.21	-13	-9.21	Vertical
2122.5	-50.10	2.87	27.59	-25.38	-13	-12.38	Vertical
2122.5	-50.44	2.87	27.59	-25.72	-13	-12.72	Horizontal
175.1	-39.55	1.73	15.74	-25.54	-13	-12.54	Vertical
289.7	-43.98	1.62	15.79	-29.81	-13	-16.81	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-53.20	2.63	27.28	-28.55	-13	-15.55	Horizontal
1430.6	-48.89	2.63	27.28	-24.24	-13	-11.24	Vertical
2145.9	-47.85	2.88	27.60	-23.13	-13	-10.13	Vertical
2145.9	-53.77	2.88	27.60	-29.05	-13	-16.05	Horizontal
190.3	-34.10	1.61	18.00	-17.71	-13	**-4.71**	Vertical
323.9	-44.26	1.45	15.49	-30.23	-13	-17.23	Horizontal

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

Test Results for Low Channel 704MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1408.0	-53.87	2.61	27.26	-29.22	-13	-16.22	Horizontal
1408.0	-52.96	2.61	27.26	-28.31	-13	-15.31	Vertical
2112.0	-52.84	2.87	27.58	-28.13	-13	-15.13	Vertical
2112.0	-51.55	2.87	27.58	-26.84	-13	-13.84	Horizontal
191.1	-36.01	1.31	16.97	-20.35	-13	-7.35	Vertical
256.4	-37.63	1.65	16.70	-22.58	-13	-9.58	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-51.34	2.61	27.28	-26.67	-13	-13.67	Horizontal
1415.0	-46.72	2.61	27.28	-22.05	-13	-9.05	Vertical
2122.5	-48.85	2.87	27.59	-24.13	-13	-11.13	Vertical
2122.5	-50.06	2.87	27.59	-25.34	-13	-12.34	Horizontal
181.4	-34.84	1.72	17.99	-18.57	-13	-5.57	Vertical
361.7	-43.20	1.73	17.94	-26.99	-13	-13.99	Horizontal
Test Results for High Channel 711MHz							
1422.0	-52.05	2.62	27.28	-27.39	-13	-14.39	Horizontal
1422.0	-47.91	2.62	27.28	-23.25	-13	-10.25	Vertical
2133.0	-50.12	2.87	27.60	-25.39	-13	-12.39	Vertical
2133.0	-53.80	2.87	27.60	-29.07	-13	-16.07	Horizontal
206.4	-34.55	1.58	15.93	-20.20	-13	-7.20	Vertical
314.8	-36.54	1.36	15.59	-22.31	-13	-9.31	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 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	-52.07	2.61	27.28	-27.40	-13	-14.40	Horizontal
1413.0	-51.93	2.61	27.28	-27.26	-13	-14.26	Vertical
2119.5	-45.34	2.87	27.59	-20.62	-13	-7.62	Vertical
2119.5	-50.43	2.87	27.59	-25.71	-13	-12.71	Horizontal
181.7	-39.24	1.71	16.15	-24.80	-13	-11.80	Vertical
267.0	-34.95	1.41	17.32	-19.04	-13	**-6.04**	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-45.02	2.62	27.30	-20.34	-13	-7.34	Horizontal
1420.0	-48.51	2.62	27.30	-23.83	-13	-10.83	Vertical
2130.0	-50.15	2.87	27.62	-25.40	-13	-12.40	Vertical
2130.0	-50.98	2.87	27.62	-26.23	-13	-13.23	Horizontal
203.5	-35.28	1.42	15.25	-21.46	-13	-8.46	Vertical
354.0	-35.40	1.36	17.19	-19.57	-13	-6.57	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-52.85	2.66	27.28	-28.23	-13	-15.23	Horizontal
1427.0	-52.05	2.66	27.28	-27.43	-13	-14.43	Vertical
2140.5	-46.96	2.88	27.60	-22.24	-13	-9.24	Vertical
2140.5	-52.86	2.88	27.60	-28.14	-13	-15.14	Horizontal
207.5	-37.27	1.32	17.29	-21.30	-13	-8.30	Vertical
381.5	-37.86	1.72	16.89	-22.69	-13	-9.69	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	-47.76	2.62	27.30	-23.08	-13	-10.08	Horizontal
1418.0	-52.25	2.62	27.30	-27.57	-13	-14.57	Vertical
2127.0	-52.33	2.87	27.62	-27.58	-13	-14.58	Vertical
2127.0	-51.01	2.87	27.62	-26.26	-13	-13.26	Horizontal
176.7	-43.52	1.35	16.91	-27.96	-13	-14.96	Vertical
359.2	-37.55	1.62	16.31	-22.86	-13	-9.86	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-50.12	2.62	27.30	-25.44	-13	-12.44	Horizontal
1420.0	-44.19	2.62	27.30	-19.51	-13	-6.51	Vertical
2130.0	-47.43	2.87	27.62	-22.68	-13	-9.68	Vertical
2130.0	-49.92	2.87	27.62	-25.17	-13	-12.17	Horizontal
205.0	-37.45	1.51	17.14	-21.82	-13	-8.82	Vertical
311.5	-37.04	1.77	16.88	-21.93	-13	-8.93	Horizontal
Test Results for High Channel 711MHz							
1422.0	-52.61	2.62	27.30	-27.93	-13	-14.93	Horizontal
1422.0	-45.05	2.62	27.30	-20.37	-13	-7.37	Vertical
2133.0	-47.91	2.87	27.62	-23.16	-13	-10.16	Vertical
2133.0	-53.95	2.87	27.62	-29.20	-13	-16.20	Horizontal
208.6	-36.15	1.78	15.95	-21.98	-13	-8.98	Vertical
271.7	-36.12	1.34	17.95	-19.52	-13	-6.52	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.

9.7 LTE BAND 25

QPSK EIRP POWER FOR LTE BAND 25 (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
3701.4	-48.43	4.02	29.80	-22.65	-13	-9.65	Horizontal
3701.4	-45.89	4.02	29.80	-20.11	-13	-7.11	Vertical
5552.1	-58.20	5.24	35.84	-27.60	-13	-14.60	Vertical
5552.1	-56.30	5.24	35.84	-25.70	-13	-12.70	Horizontal
93.9	-32.41	1.59	15.11	-18.89	-13	-5.89	Vertical
119.7	-33.62	1.80	15.61	-19.81	-13	-6.81	Horizontal
Test Results for Mid Channel 1732.5MHz							
3765.0	-47.86	4.03	30.00	-21.89	-13	-8.89	Horizontal
3765.0	-52.50	4.03	30.00	-26.53	-13	-13.53	Vertical
5647.5	-53.60	5.25	35.86	-22.99	-13	-9.99	Vertical
5647.5	-54.50	5.25	35.86	-23.89	-13	-10.89	Horizontal
166.1	-40.20	1.37	15.62	-25.95	-13	-12.95	Vertical
274.4	-39.30	1.55	17.51	-23.34	-13	-10.34	Horizontal
Test Results for High Channel 1754.3MHz							
3828.6	-49.70	4.05	30.01	-23.74	-13	-10.74	Horizontal
3828.6	-47.36	4.05	30.01	-21.40	-13	-8.40	Vertical
5742.9	-49.73	5.26	35.86	-19.13	-13	-6.13	Vertical
5742.9	-52.30	5.26	35.86	-21.70	-13	-8.70	Horizontal
108.6	-42.60	1.66	17.19	-27.07	-13	-14.07	Vertical
138.7	-39.30	1.35	17.94	-22.71	-13	-9.71	Horizontal

QPSK EIRP POWER FOR LTE BAND 25 (20MHZ BANDWIDTH)

Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3720.0	-47.66	4.02	29.80	-21.88	-13	-8.88	Horizontal
3720.0	-52.30	4.02	29.80	-26.52	-13	-13.52	Vertical
5580.0	-51.30	5.24	35.84	-20.70	-13	-7.70	Vertical
5580.0	-55.30	5.24	35.84	-24.70	-13	-11.70	Horizontal
146.2	-34.32	1.70	15.24	-20.78	-13	-7.78	Vertical
215.4	-39.32	1.42	16.58	-24.16	-13	-11.16	Horizontal
Test Results for Mid Channel 1732.5MHz							
3765.0	-48.30	4.03	30.00	-22.33	-13	-9.33	Horizontal
3765.0	-52.30	4.03	30.00	-26.33	-13	-13.33	Vertical
5647.5	-51.60	5.25	35.86	-20.99	-13	-7.99	Vertical
5647.5	-55.30	5.25	35.86	-24.69	-13	-11.69	Horizontal
132.2	-34.28	1.64	16.16	-19.76	-13	-6.76	Vertical
133.3	-38.20	1.62	17.37	-22.45	-13	-9.45	Horizontal
Test Results for High Channel 1745MHz							
3810.0	-47.48	2.91	27.68	-22.71	-13	-9.71	Horizontal
3810.0	-47.68	2.91	27.68	-22.91	-13	-9.91	Vertical
5715.0	-48.84	5.26	35.86	-18.24	-13	-5.24	Vertical
5715.0	-52.20	5.26	35.86	-21.60	-13	-8.60	Horizontal
212.6	-39.30	1.49	15.29	-25.50	-13	-12.50	Vertical
275.8	-40.00	1.79	16.42	-25.37	-13	-12.37	Horizontal

9.8 LTE BAND 66

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

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3421.4	-44.88	4.02	29.80	-19.10	-13	-6.10	Horizontal
3421.4	-45.44	4.02	29.80	-19.66	-13	-6.66	Vertical
5132.1	-52.77	5.24	35.84	-22.17	-13	-9.17	Vertical
5132.1	-52.25	5.24	35.84	-21.65	-13	-8.65	Horizontal
112.6	-51.61	1.52	15.57	-37.56	-13	-24.56	Vertical
220.5	-47.06	1.33	17.14	-31.25	-13	-18.25	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-50.27	4.03	30.00	-24.30	-13	-11.30	Horizontal
3490.0	-48.50	4.03	30.00	-22.53	-13	-9.53	Vertical
5235.0	-50.69	5.25	35.86	-20.08	-13	-7.08	Vertical
5235.0	-48.89	5.25	35.86	-18.28	-13	**-5.28**	Horizontal
157.3	-45.30	1.53	17.13	-29.70	-13	-16.70	Vertical
213.1	-45.81	1.41	15.95	-31.27	-13	-18.27	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-49.15	4.05	30.01	-23.19	-13	-10.19	Horizontal
3558.6	-50.03	4.05	30.01	-24.07	-13	-11.07	Vertical
5337.9	-51.12	5.26	35.86	-20.52	-13	-7.52	Vertical
5337.9	-50.91	5.26	35.86	-20.31	-13	-7.31	Horizontal
170.6	-47.56	1.44	15.51	-33.49	-13	-20.49	Vertical
169.0	-44.31	1.78	15.76	-30.33	-13	-17.33	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
3440.0	-48.27	4.02	29.80	-22.49	-13	-9.49	Horizontal
3440.0	-48.38	4.02	29.80	-22.60	-13	-9.60	Vertical
5160.0	-53.83	5.24	35.84	-23.23	-13	-10.23	Vertical
5160.0	-53.51	5.24	35.84	-22.91	-13	-9.91	Horizontal
268.8	-46.93	1.62	17.02	-31.53	-13	-18.53	Vertical
161.4	-51.14	1.32	17.31	-35.15	-13	-22.15	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-45.11	4.03	30.00	-19.14	-13	-6.14	Horizontal
3490.0	-52.52	4.03	30.00	-26.55	-13	-13.55	Vertical
5235.0	-51.24	5.25	35.86	-20.63	-13	-7.63	Vertical
5235.0	-49.71	5.25	35.86	-19.10	-13	-6.10	Horizontal
159.9	-45.32	1.45	15.17	-31.60	-13	-18.60	Vertical
172.1	-53.01	1.48	17.82	-36.67	-13	-23.67	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-54.75	2.91	27.68	-29.98	-13	-16.98	Horizontal
3540.0	-44.59	2.91	27.68	-19.82	-13	-6.82	Vertical
5310.0	-50.79	5.26	35.86	-20.19	-13	-7.19	Vertical
5310.0	-51.24	5.26	35.86	-20.64	-13	-7.64	Horizontal
197.3	-47.76	1.76	16.38	-33.14	-13	-20.14	Vertical
158.5	-53.69	1.43	17.13	-37.99	-13	-24.99	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.

9.9 LTE BAND 71

QPSK EIRP POWER FOR LTE BAND 71 (5MHZ BANDWIDTH)

Test Results for Low Channel 665.5.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1331	-53.31	2.61	27.28	-28.64	-13	-15.64	Horizontal
1331	-50.79	2.61	27.28	-26.12	-13	-13.12	Vertical
1996.5	-51.53	2.87	27.59	-26.81	-13	-13.81	Vertical
1996.5	-52.91	2.87	27.59	-28.19	-13	-15.19	Horizontal
Test Results For Mid Channel 680.5MHz							
1361	-52.25	2.62	27.30	-27.57	-13	-14.57	Horizontal
1361	-50.07	2.62	27.30	-25.39	-13	-12.39	Vertical
2041.5	-52.59	2.87	27.62	-27.84	-13	-14.84	Vertical
2041.5	-51.29	2.87	27.62	-26.54	-13	-13.54	Horizontal
Test Results for High Channel 695.5MHz							
1391	-49.12	2.66	27.28	-24.50	-13	-11.50	Horizontal
1391	-50.54	2.66	27.28	-25.92	-13	-12.92	Vertical
2086.5	-51.93	2.88	27.60	-27.21	-13	-14.21	Vertical
2086.5	-54.12	2.88	27.60	-29.40	-13	-16.40	Horizontal

QPSK EIRP POWER FOR LTE BAND 71 (20MHZ BANDWIDTH)

Test Results for Low Channel 673MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit （dBm）	Margin(dBm)	Polarity
1346	-53.95	2.62	27.30	-29.27	-13	-16.27	Horizontal
1346	-50.90	2.62	27.30	-26.22	-13	-13.22	Vertical
2019	-52.40	2.87	27.62	-27.65	-13	-14.65	Vertical
2019	-53.42	2.87	27.62	-28.67	-13	-15.67	Horizontal
Test Results for Mid Channel 683MHz							
1366	-51.96	2.62	27.30	-27.28	-13	-14.28	Horizontal
1366	-50.31	2.62	27.30	-25.63	-13	-12.63	Vertical
2049	-53.16	2.87	27.62	-28.41	-13	-15.41	Vertical
2049	-51.52	2.87	27.62	-26.77	-13	-13.77	Horizontal
Test Results for High Channel 688MHz							
1376	-49.53	2.62	27.30	-24.85	-13	-11.85	Horizontal
1376	-50.24	2.62	27.30	-25.56	-13	-12.56	Vertical
2064	-52.70	2.87	27.62	-27.95	-13	-14.95	Vertical
2064	-54.56	2.87	27.62	-29.81	-13	-16.81	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

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 6.62V, Normal, DC 7.78V and High voltage, DC 8.96V.

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 2/4/5/7/12/17/25/66/71

RESULTS

See the following pages.

10.1 LTE BAND 2

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 QPSK, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	1880	12.3	0.006539	2.5
7.78	1880	14.3	0.007594	2.5
8.96	1880	13.1	0.006956	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 QPSK, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1880	13.0	0.006911	2.5
Extreme (50C)	1880	11.9	0.006331	2.5
Extreme (40C)	1880	13.4	0.007110	2.5
Extreme (30C)	1880	13.2	0.007032	2.5
Extreme (10C)	1880	13.8	0.007326	2.5
Extreme (0C)	1880	12.1	0.006429	2.5
Extreme (-10C)	1880	13.1	0.006954	2.5
Extreme (-20C)	1880	14.0	0.007425	2.5
Extreme (-30C)	1880	15.1	0.008028	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 16QAM, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	1880	9.4	0.005026	2.5
7.78	1880	8.8	0.004678	2.5
8.96	1880	7.9	0.004218	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 2 16QAM, (CH 18900 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1880	9.9	0.005247	2.5
Extreme (50C)	1880	9.0	0.004774	2.5
Extreme (40C)	1880	7.7	0.004101	2.5
Extreme (30C)	1880	9.0	0.004805	2.5
Extreme (10C)	1880	9.2	0.004873	2.5
Extreme (0C)	1880	8.5	0.004515	2.5
Extreme (-10C)	1880	8.7	0.004621	2.5
Extreme (-20C)	1880	8.6	0.004564	2.5
Extreme (-30C)	1880	8.2	0.004353	2.5

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

10.2 LTE BAND 4

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	1732.5	8.9	0.005146	2.5
7.78	1732.5	9.2	0.005293	2.5
8.96	1732.5	8.1	0.004704	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 QPSK, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1732.5	8.4	0.004849	2.5
Extreme (50C)	1732.5	8.9	0.005132	2.5
Extreme (40C)	1732.5	7.9	0.004540	2.5
Extreme (30C)	1732.5	5.9	0.003414	2.5
Extreme (10C)	1732.5	7.2	0.004182	2.5
Extreme (0C)	1732.5	9.3	0.005343	2.5
Extreme (-10C)	1732.5	8.6	0.004979	2.5
Extreme (-20C)	1732.5	6.5	0.003769	2.5
Extreme (-30C)	1732.5	8.4	0.004826	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	1732.5	10.2	0.005900	2.5
7.78	1732.5	9.0	0.005208	2.5
8.96	1732.5	8.4	0.004837	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 4 16QAM, (CH 20175 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1732.5	9.7	0.005611	2.5
Extreme (50C)	1732.5	9.0	0.005169	2.5
Extreme (40C)	1732.5	8.4	0.004860	2.5
Extreme (30C)	1732.5	8.7	0.005004	2.5
Extreme (10C)	1732.5	9.0	0.005177	2.5
Extreme (0C)	1732.5	7.9	0.004560	2.5
Extreme (-10C)	1732.5	9.1	0.005261	2.5
Extreme (-20C)	1732.5	9.3	0.005394	2.5
Extreme (-30C)	1732.5	7.8	0.004475	2.5

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

10.3 LTE BAND 5

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 QPSK, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
6.62	836.5	5.9	0.007018	2.5
7.78	836.5	6.7	0.008038	2.5
8.96	836.5	5.0	0.006022	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 QPSK, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	836.5	6.1	0.007250	2.5
Extreme (50C)	836.5	5.8	0.006981	2.5
Extreme (40C)	836.5	6.1	0.007333	2.5
Extreme (30C)	836.5	6.7	0.008040	2.5
Extreme (10C)	836.5	5.5	0.006617	2.5
Extreme (0C)	836.5	5.0	0.006007	2.5
Extreme (-10C)	836.5	5.8	0.006874	2.5
Extreme (-20C)	836.5	6.4	0.007611	2.5
Extreme (-30C)	836.5	6.7	0.008009	2.5

16QAM, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 16QAM, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
6.62	836.5	5.8	0.006976	2.5
7.78	836.5	6.8	0.008077	2.5
8.96	836.5	4.5	0.005411	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 5 16QAM, (CH 20525 RB size 50 RB Offset 0 10MHz BANDWIDTH)				
Normal (25C)	836.5	6.6	0.007847	2.5
Extreme (50C)	836.5	6.3	0.007564	2.5
Extreme (40C)	836.5	6.4	0.007633	2.5
Extreme (30C)	836.5	6.5	0.007783	2.5
Extreme (10C)	836.5	5.9	0.007017	2.5
Extreme (0C)	836.5	5.8	0.006878	2.5
Extreme (-10C)	836.5	5.2	0.006190	2.5
Extreme (-20C)	836.5	6.6	0.007889	2.5
Extreme (-30C)	836.5	6.4	0.007643	2.5

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

10.4 LTE BAND 7

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 QPSK, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	2535	9.9	0.003897	2.5
7.78	2535	8.9	0.003502	2.5
8.96	2535	8.8	0.003474	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 QPSK, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2535	9.7	0.003844	2.5
Extreme (50C)	2535	9.3	0.003681	2.5
Extreme (40C)	2535	8.3	0.003255	2.5
Extreme (30C)	2535	8.6	0.003390	2.5
Extreme (10C)	2535	7.9	0.003097	2.5
Extreme (0C)	2535	8.2	0.003217	2.5
Extreme (-10C)	2535	9.2	0.003635	2.5
Extreme (-20C)	2535	9.0	0.003568	2.5
Extreme (-30C)	2535	8.8	0.003469	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 16QAM, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	2535	6.4	0.002520	2.5
7.78	2535	6.6	0.002620	2.5
8.96	2535	5.7	0.002238	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 7 16QAM, (CH 21100 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	2535	6.7	0.002633	2.5
Extreme (50C)	2535	5.6	0.002208	2.5
Extreme (40C)	2535	5.1	0.002025	2.5
Extreme (30C)	2535	6.3	0.002472	2.5
Extreme (10C)	2535	5.4	0.002116	2.5
Extreme (0C)	2535	5.0	0.001972	2.5
Extreme (-10C)	2535	5.5	0.002177	2.5
Extreme (-20C)	2535	5.7	0.002230	2.5
Extreme (-30C)	2535	5.8	0.002290	2.5

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

10.5 LTE BAND 12

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
6.62	707.5	8.7	0.012331	2.5
7.78	707.5	9.7	0.013765	2.5
8.96	707.5	8.2	0.011595	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	8.5	0.012068	2.5
Extreme (50C)	707.5	7.6	0.010720	2.5
Extreme (40C)	707.5	7.3	0.010289	2.5
Extreme (30C)	707.5	8.1	0.011391	2.5
Extreme (10C)	707.5	7.8	0.011095	2.5
Extreme (0C)	707.5	9.0	0.012673	2.5
Extreme (-10C)	707.5	8.2	0.011652	2.5
Extreme (-20C)	707.5	9.1	0.012830	2.5
Extreme (-30C)	707.5	7.5	0.010620	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
6.62	707.5	7.4	0.010520	2.5
7.78	707.5	8.0	0.011254	2.5
8.96	707.5	7.4	0.010445	2.5

Frequency error vs. Temperature

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

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

10.6 LTE BAND 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]
6.62	710.0	10.0	0.014138	2.5
7.78	710.0	9.0	0.012669	2.5
8.96	710.0	8.0	0.011210	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.4	0.013207	2.5
Extreme (50C)	710.0	8.7	0.012241	2.5
Extreme (40C)	710.0	8.3	0.011755	2.5
Extreme (30C)	710.0	9.1	0.012792	2.5
Extreme (10C)	710.0	9.1	0.012866	2.5
Extreme (0C)	710.0	7.6	0.010741	2.5
Extreme (-10C)	710.0	8.6	0.012176	2.5
Extreme (-20C)	710.0	8.6	0.012043	2.5
Extreme (-30C)	710.0	7.8	0.010963	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]
6.62	710.0	10.3	0.014476	2.5
7.78	710.0	8.8	0.012374	2.5
8.96	710.0	8.8	0.012327	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.8	0.013785	2.5
Extreme (50C)	710.0	8.5	0.011972	2.5
Extreme (40C)	710.0	8.8	0.012407	2.5
Extreme (30C)	710.0	8.9	0.012492	2.5
Extreme (10C)	710.0	8.5	0.011913	2.5
Extreme (0C)	710.0	8.0	0.011335	2.5
Extreme (-10C)	710.0	9.4	0.013251	2.5
Extreme (-20C)	710.0	8.5	0.012038	2.5
Extreme (-30C)	710.0	8.5	0.011962	2.5

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

10.7 LTE BAND 25

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 QPSK, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	1882.5	21	0.011155	2.5
7.78	1882.5	20	0.010624	2.5
8.96	1882.5	18	0.009562	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 QPSK, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1882.5	4.8	0.002534	2.5
Extreme (50C)	1882.5	9.3	0.004931	2.5
Extreme (40C)	1882.5	6.9	0.003683	2.5
Extreme (30C)	1882.5	6.2	0.003282	2.5
Extreme (10C)	1882.5	5.1	0.002690	2.5
Extreme (0C)	1882.5	9.0	0.004756	2.5
Extreme (-10C)	1882.5	1.4	0.000760	2.5
Extreme (-20C)	1882.5	2.2	0.001171	2.5
Extreme (-30C)	1882.5	6.6	0.003529	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 16QAM, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	1882.5	9.8	0.005210	2.5
7.78	1882.5	7.3	0.003877	2.5
8.96	1882.5	5.9	0.003117	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 25 16QAM, (CH 26365 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1882.5	7.0	0.003727	2.5
Extreme (50C)	1882.5	5.5	0.002910	2.5
Extreme (40C)	1882.5	8.3	0.004413	2.5
Extreme (30C)	1882.5	1.8	0.000941	2.5
Extreme (10C)	1882.5	2.1	0.001092	2.5
Extreme (0C)	1882.5	6.9	0.003644	2.5
Extreme (-10C)	1882.5	5.4	0.002893	2.5
Extreme (-20C)	1882.5	7.2	0.003812	2.5
Extreme (-30C)	1882.5	6.8	0.003614	2.5

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

10.8 LTE BAND 66

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 QPSK, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	1745	13.2	0.00756	2.5
7.78	1745	13.3	0.00764	2.5
8.96	1745	13.1	0.00751	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 QPSK, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1745	7.5	0.004317	2.5
Extreme (50C)	1745	4.7	0.002669	2.5
Extreme (40C)	1745	5.4	0.003111	2.5
Extreme (30C)	1745	4.5	0.002577	2.5
Extreme (10C)	1745	6.8	0.003871	2.5
Extreme (0C)	1745	4.9	0.002795	2.5
Extreme (-10C)	1745	9.8	0.005595	2.5
Extreme (-20C)	1745	10.7	0.006137	2.5
Extreme (-30C)	1745	6.6	0.003796	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 16QAM, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	1745	12.9	0.007365	2.5
7.78	1745	13.9	0.007986	2.5
8.96	1745	13.3	0.007649	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 66 16QAM, (CH 132322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	1745	7.7	0.004410	2.5
Extreme (50C)	1745	5.0	0.002846	2.5
Extreme (40C)	1745	5.7	0.003270	2.5
Extreme (30C)	1745	5.2	0.002988	2.5
Extreme (10C)	1745	6.5	0.003722	2.5
Extreme (0C)	1745	4.4	0.002526	2.5
Extreme (-10C)	1745	9.1	0.005195	2.5
Extreme (-20C)	1745	10.6	0.006052	2.5
Extreme (-30C)	1745	6.0	0.003419	2.5

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

10.9 LTE BAND 71

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 71 QPSK, (CH 133322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	683	8.6	0.01259	2.5
7.78	683	13.4	0.01962	2.5
8.96	683	13	0.01903	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 71 QPSK, (CH 133322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	683	7.7	0.011274	2.5
Extreme (50C)	683	5.2	0.007613	2.5
Extreme (40C)	683	5.1	0.007467	2.5
Extreme (30C)	683	5	0.007321	2.5
Extreme (10C)	683	6.6	0.009663	2.5
Extreme (0C)	683	4.8	0.007028	2.5
Extreme (-10C)	683	9.8	0.014348	2.5
Extreme (-20C)	683	7.2	0.010542	2.5
Extreme (-30C)	683	7.3	0.010688	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 71 16QAM, (CH 133322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
6.62	683	12.3	0.018009	2.5
7.78	683	14.2	0.020791	2.5
8.96	683	11.2	0.016398	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
BAND 71 16QAM, (CH 133322 RB size 100 RB Offset 0 20MHz BANDWIDTH)				
Normal (25C)	683	7.7	0.011274	2.5
Extreme (50C)	683	4.7	0.006881	2.5
Extreme (40C)	683	5.9	0.008638	2.5
Extreme (30C)	683	5.2	0.007613	2.5
Extreme (10C)	683	5.2	0.007613	2.5
Extreme (0C)	683	6.3	0.009224	2.5
Extreme (-10C)	683	9.4	0.013763	2.5
Extreme (-20C)	683	8.2	0.012006	2.5
Extreme (-30C)	683	8.4	0.012299	2.5

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

11. Peak-to-Average Ratio

11.1 Description of the PAR Measurement

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

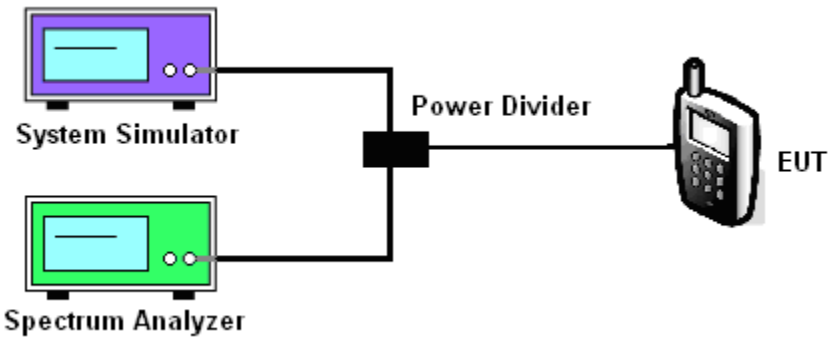
11.2 Measuring Instruments

See list of measuring instruments of this test report.

11.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. For GSM/EGPRS operating modes:
   a. Set the RBW = 1MHz, VBW = 1MHz, Peak detector in spectrum analyzer.
   b. Set EUT in maximum power output, and triggered the burst signal.
   c. Measured respectively the Peak level and Mean level, and the deviation was recorded as Peak to Average Ratio.
4. For UMTS operating modes:
   a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
   b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.

11.4 Test Setup



MODES TESTED

- LTE Band 2/4/5/7/12/17/25//66/71
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Test data reference attachment.

----END OF REPORT----