

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

FCC ID: ZSW-30-137

Product: Mobile Phone

Trade Mark: Bmobile

Model Number: BM65 PRO

Family Model: N/A

Report No.: S24071905902005

Prepared for

b mobile HK Limited

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TEST RESULT CERTIFICATION

Applicant's name..... : b mobile HK Limited

Address : Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street;
Kwai Chung; New Territories; Hong Kong, China

Manufacturer's Name..... : b mobile HK Limited

Address : Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street;
Kwai Chung; New Territories; Hong Kong, China

Product name : Mobile Phone

Model and/or type reference : BM65 PRO

Family Model: N/A

Test sample number S240719059001

Standards..... : FCC CFR 47 Part 22H, Part 24E, Part 27, Part 90S

Test procedure : ANSI C63.26:2015
ANSI/TIA-603-E-2016

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

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Date of Test

Date (s) of performance of tests Jul. 22, 2024 ~ Aug. 09, 2024

Date of Issue Aug. 09, 2024

Test Result **Pass**

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	Mobile Phone
Trade Mark	Bmobile
Model Name	BM65 PRO
Family Model	N/A
Model Difference	N/A
FCC ID:	ZSW-30-137
Frequency Bands:	U.S. Bands: ☒ LTE FDD Band 2, 4, 5, 7, 26, 66 LTE TDD Band 38
Frequency Range:	LTE FDD Band 2 Uplink: 1850MHz-1910MHz, Downlink: 1930MHz-1990MHz; LTE FDD Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz; LTE FDD Band 5 Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE-FDD Band 7 Uplink: 2500MHz-2570MHz, Downlink: 2620MHz-2690MHz; LTE FDD Band 26 Uplink: 814MHz-849MHz, Downlink: 859MHz-894MHz; LTE TDD Band 38 Uplink& Downlink: 2570MHz-2620MHz LTE FDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz;
Type of Modulation:	QPSK/16QAM
Antenna:	FPC Antenna
Antenna gain:	LTE B2:-1.67dBi; B4:-1.05dBi; B5:-3.85dBi; B7:0.5dBi; B26:-3.85dBi; B38:0.5dBi; B66:-1.05dBi;
Power Supply:	DC 3.85V from Battery or DC 5V from Adapter.
Battery	Rated Capacity: DC 3.85V, 4900mAh, 18.86Wh Typical Capacity: DC 3.85V, 5000mAh, 19.25Wh
Adapter:	INPUT: AC 100-240V~50-60Hz 0.3A OUTPUT: DC 5.0V---2A
Extreme Vol. Limits:	DC 3.6V to DC 4.35V (Nominal DC 3.85V) (Note 1)
HW Version	Bmobile_BM65Pro_HW_V1.0
SW Version	Bmobile_BM65Pro_TIGO_LATAM_V001

** Note1: The High Voltage 4.35V and Low Voltage 3.6V 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: ZSW-30-137** filing to comply with the FCC Part 22H&24E &27&90S.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

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

ShenZhen NTEK Testing Technology Co., Ltd.

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

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

FCC Registration No.:463705

IC Registration No.:9270A,

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 26, Band 38, Band 66.

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

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

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

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

2.2 EUT EXERCISE

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

2.3 CONFIGURATION OF EUT SYSTEM

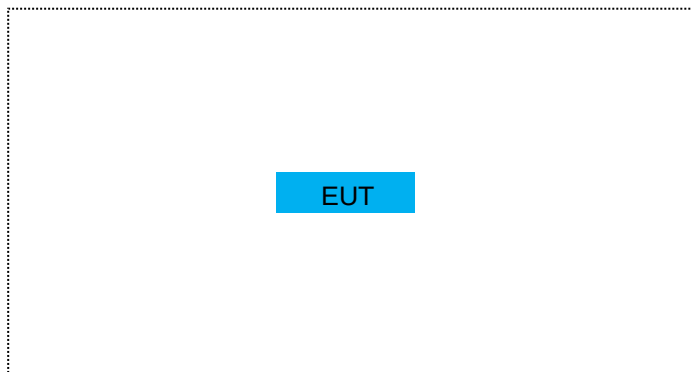
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Mobile Phone	BM65 PRO	FCC ID: ZSW-30-137	EUT

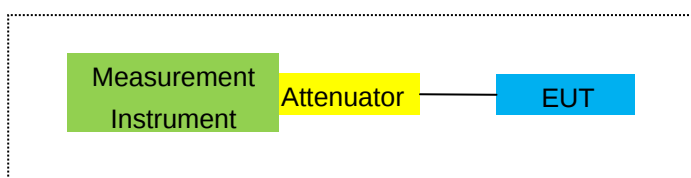
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

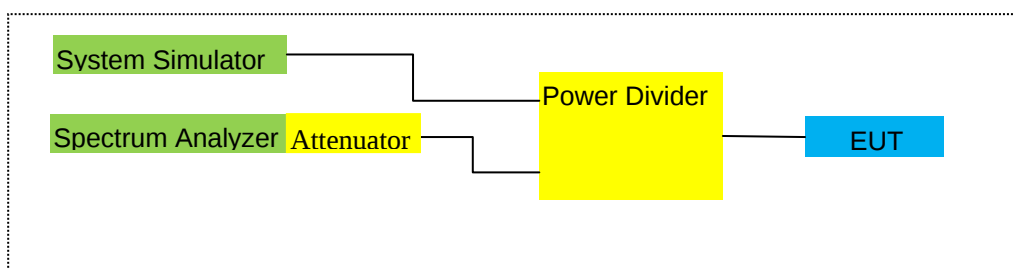
For Radiated Test Cases



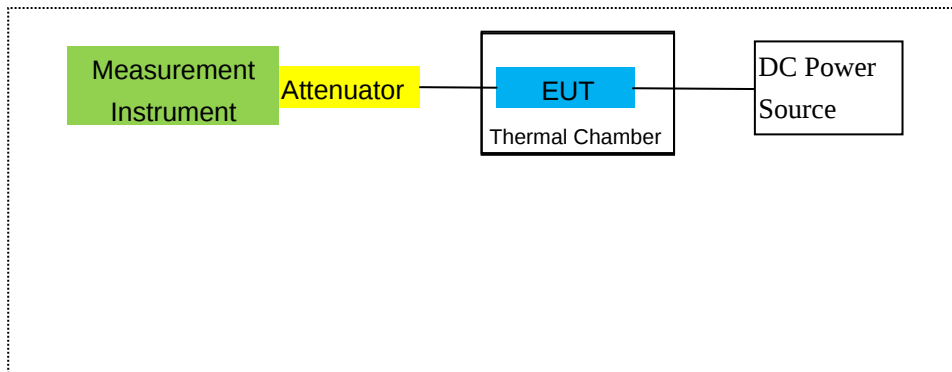
For Conducted Output Power



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	2024.04.25	2025.04.24	1 year
2	Test Receiver	R&S	ESPI	101318	2024.04.26	2025.04.25	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2024.05.12	2025.03.11	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	2024.05.12	2027.05.11	3 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2024.05.12	2027.05.11	3 year
7	Amplifier	EM	EM-30180	060538	2024.04.26	2025.04.25	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2024.03.12	2025.03.11	1 year
9	Power Meter	R&S	NRVS	100696	2024.04.26	2025.04.25	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2024.04.26	2025.04.25	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	2024.04.26	2025.04.25	1 year
15	LISN	R&S	ENV216	101313	2024.04.25	2025.04.24	1 year
16	LISN	EMCO	3816/2	00042990	2024.04.25	2025.04.24	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2024.03.12	2025.03.11	1 year
18	Passive Voltage Probe	R&S	ESH2-Z3	100196	2024.03.12	2025.03.11	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	2024.03.12	2025.03.11	1 year
23	Spectrum Analyzer	agilent	e4440a	us44300399	2024.03.12	2025.03.11	1 year
24	test receiver	R&S	ESCI	a0304218	2024.03.12	2025.03.11	1 year
25	Communication Tester	R&S	CMU200	A0304247	2023.05.06	2026.05.05	3 year

26	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2024.03.12	2025.03.11	1 year
27	DC Power Source	N/A	PS-6005D	20170402923	2023.05.06	2026.05.05	3 year
28	MXG Vector Signal Generator	Agilent	N5182A	MY47070317	2024.04.25	2025.04.24	1 year
29	Communication Tester	R&S	CMW500	148500	2024.04.26	2025.04.25	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 26
LTE Band 38
LTE Band 66

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) and §90.691

FCC: §2.1046, §22.913, §24.232

LIMITS

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

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

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

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

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

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

TEST PROCEDURE

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

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency

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

Set display line

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

MODES TESTED

☐ LTE Band 2/4/5/7/26/38/66

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) and §90.691

LIMITS

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

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

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

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

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

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

TEST PROCEDURE

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

For each out of band emissions measurement:

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

MODES TESTED

- ☐ LTE Band 2/4/5/7/26/38/66

7.1 MEASUREMENT METHOD

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

Test data reference attachment.

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) and §90.635

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 2/4/5/7/26/38/66

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	Polarization Of Max. ERP	
							Average		
							(mW)		
1.4MHz	1/#Mid	1850.7	-4.97	3.76	28.24	19.51	89.331	Horizontal	Pass
Band		1880	-4.78	3.91	28.22	19.53	89.743	Horizontal	Pass
QPSK		1909.3	-4.69	3.93	28.20	19.58	90.782	Horizontal	Pass
3.0MHz	1/#Mid	1851.5	-5.03	3.77	28.23	19.43	87.700	Horizontal	Pass
Band		1880	-4.88	3.91	28.24	19.45	88.105	Horizontal	Pass
QPSK		1908.5	-4.75	3.94	28.25	19.56	90.365	Horizontal	Pass
5.0MHz	1/#Mid	1852.5	-4.92	3.77	28.31	19.62	91.622	Horizontal	Pass
Band		1880	-4.54	3.91	28.22	19.77	94.842	Horizontal	Pass
QPSK		1907.5	-4.47	3.94	28.20	19.79	95.280	Horizontal	Pass
10.0MHz	1/#Mid	1855	-4.78	3.79	28.33	19.76	94.624	Horizontal	Pass
Band		1880	-4.48	3.95	28.22	19.79	95.280	Horizontal	Pass
QPSK		1905	-4.37	3.97	28.19	19.85	96.605	Horizontal	Pass
15.0MHz	1/#Mid	1857.5	-4.74	3.79	28.34	19.81	95.719	Horizontal	Pass
Band		1880	-4.53	3.95	28.22	19.74	94.189	Horizontal	Pass
QPSK		1902.5	-4.39	3.97	28.18	19.82	95.940	Horizontal	Pass
20.0MHz	1/#Mid	1860	-4.73	3.81	28.35	19.81	95.719	Horizontal	Pass
Band		1880	-4.40	3.96	28.22	19.86	96.828	Horizontal	Pass
QPSK		1900	-4.34	4.00	28.16	19.82	95.940	Horizontal	Pass
1.4MHz	1/#Mid	1850.7	-6.14	3.76	28.24	18.34	68.234	Vertical	Pass
Band		1880	-5.60	3.91	28.22	18.71	74.302	Vertical	Pass
QPSK		1909.3	-5.80	3.93	28.20	18.47	70.307	Vertical	Pass
3.0MHz	1/#Mid	1851.5	-5.32	3.77	28.23	19.14	82.035	Vertical	Pass
Band		1880	-5.38	3.91	28.24	18.95	78.524	Vertical	Pass
QPSK		1908.5	-5.86	3.94	28.25	18.45	69.984	Vertical	Pass
5.0MHz	1/#Mid	1852.5	-6.10	3.77	28.31	18.44	69.823	Vertical	Pass
Band		1880	-5.56	3.91	28.22	18.75	74.989	Vertical	Pass
QPSK		1907.5	-5.51	3.94	28.20	18.75	74.989	Vertical	Pass
10.0MHz	1/#Mid	1855	-6.26	3.79	28.33	18.28	67.298	Vertical	Pass
Band		1880	-5.30	3.95	28.22	18.97	78.886	Vertical	Pass
QPSK		1905	-5.14	3.97	28.19	19.08	80.910	Vertical	Pass

15.0MHz	1/#Mid	1857.5	-6.00	3.79	28.34	18.55	71.614	Vertical	Pass
Band		1880	-5.94	3.95	28.22	18.33	68.077	Vertical	Pass
QPSK		1902.5	-5.90	3.97	28.18	18.31	67.764	Vertical	Pass
20.0MHz	1/#Mid	1860	-5.34	3.81	28.35	19.20	83.176	Vertical	Pass
Band		1880	-5.86	3.96	28.22	18.40	69.183	Vertical	Pass
QPSK		1900	-5.75	4.00	28.16	18.41	69.343	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	Max. EIRP	Polarization Of Max. ERP	
						Average (dBm)	Average		
							(mW)		
1.4MHz Band 16 QAM	1/#Mid	1850.7	-6.09	3.76	28.24	18.39	69.024	Horizontal	Pass
		1880	-5.56	3.91	28.22	18.75	74.989	Horizontal	Pass
		1909.3	-5.49	3.93	28.20	18.78	75.509	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-5.59	3.77	28.23	18.87	77.090	Horizontal	Pass
		1880	-5.67	3.91	28.24	18.66	73.451	Horizontal	Pass
		1908.5	-5.88	3.94	28.25	18.43	69.663	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-5.53	3.77	28.31	19.01	79.616	Horizontal	Pass
		1880	-5.44	3.91	28.22	18.87	77.090	Horizontal	Pass
		1907.5	-5.12	3.94	28.20	19.14	82.035	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-5.58	3.79	28.33	18.96	78.705	Horizontal	Pass
		1880	-5.57	3.95	28.22	18.70	74.131	Horizontal	Pass
		1905	-5.04	3.97	28.19	19.18	82.794	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-5.56	3.79	28.34	18.99	79.250	Horizontal	Pass
		1880	-5.35	3.95	28.22	18.92	77.983	Horizontal	Pass
		1902.5	-5.31	3.97	28.18	18.90	77.625	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-5.45	3.81	28.35	19.09	81.096	Horizontal	Pass
		1880	-5.15	3.96	28.22	19.11	81.470	Horizontal	Pass
		1900	-4.97	4.00	28.16	19.19	82.985	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-6.66	3.76	28.24	17.82	60.534	Vertical	Pass
		1880	-6.58	3.91	28.22	17.73	59.293	Vertical	Pass
		1909.3	-6.37	3.93	28.20	17.90	61.660	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-6.50	3.77	28.23	17.96	62.517	Vertical	Pass
		1880	-6.21	3.91	28.24	18.12	64.863	Vertical	Pass
		1908.5	-6.83	3.94	28.25	17.48	55.976	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-6.44	3.77	28.31	18.10	64.565	Vertical	Pass
		1880	-6.26	3.91	28.22	18.05	63.826	Vertical	Pass
		1907.5	-6.81	3.94	28.20	17.45	55.590	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-6.84	3.79	28.33	17.70	58.884	Vertical	Pass
		1880	-6.71	3.95	28.22	17.56	57.016	Vertical	Pass
		1905	-6.71	3.97	28.19	17.51	56.364	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-7.20	3.79	28.34	17.35	54.325	Vertical	Pass
		1880	-6.83	3.95	28.22	17.44	55.463	Vertical	Pass
		1902.5	-6.78	3.97	28.18	17.43	55.335	Vertical	Pass

20.0MHz		1860	-6.75	3.81	28.35	17.79	60.117	Vertical	Pass
Band 16	1/#Mid	1880	-6.70	3.96	28.22	17.56	57.016	Vertical	Pass
QAM		1900	-6.38	4.00	28.16	17.78	59.979	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.3 LTE BAND 4

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss	Antenna Factor	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)	(dBm)	(dB)	Average (dBm)	Average (mW)		
1.4MHz Band QPSK	1/#Mid	1710.7	-4.88	3.12	27.58	19.58	90.782	Horizontal	Pass
		1732.5	-4.87	3.27	27.61	19.47	88.512	Horizontal	Pass
		1754.3	-4.85	3.29	27.63	19.49	88.920	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-5.05	3.13	27.61	19.43	87.700	Horizontal	Pass
		1732.5	-4.97	3.27	27.61	19.37	86.497	Horizontal	Pass
		1753.5	-4.89	3.30	27.62	19.43	87.700	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-4.82	3.13	27.63	19.68	92.897	Horizontal	Pass
		1732.5	-4.72	3.27	27.61	19.62	91.622	Horizontal	Pass
		1752.5	-4.60	3.30	27.60	19.70	93.325	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-4.76	3.15	27.64	19.73	93.972	Horizontal	Pass
		1732.5	-4.53	3.31	27.61	19.77	94.842	Horizontal	Pass
		1750	-4.55	3.33	27.59	19.71	93.541	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-4.77	3.15	27.65	19.73	93.972	Horizontal	Pass
		1732.5	-4.61	3.31	27.61	19.69	93.111	Horizontal	Pass
		1747.5	-4.55	3.33	27.57	19.69	93.111	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-4.71	3.17	27.66	19.78	95.060	Horizontal	Pass
		1732.5	-4.54	3.32	27.61	19.75	94.406	Horizontal	Pass
		1745	-4.48	3.36	27.56	19.72	93.756	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-5.68	3.12	27.58	18.78	75.509	Vertical	Pass
		1732.5	-6.06	3.27	27.61	18.28	67.298	Vertical	Pass
		1754.3	-5.66	3.29	27.63	18.68	73.790	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-5.58	3.13	27.61	18.90	77.625	Vertical	Pass
		1732.5	-5.11	3.27	27.61	19.23	83.753	Vertical	Pass
		1753.5	-5.95	3.30	27.62	18.37	68.707	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-5.44	3.13	27.63	19.06	80.538	Vertical	Pass
		1732.5	-5.28	3.27	27.61	19.06	80.538	Vertical	Pass
		1752.5	-5.51	3.30	27.60	18.79	75.683	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-6.01	3.15	27.64	18.48	70.469	Vertical	Pass
		1732.5	-5.50	3.31	27.61	18.80	75.858	Vertical	Pass
		1750	-5.68	3.33	27.59	18.58	72.111	Vertical	Pass

15.0MHz		1717.5	-6.21	3.15	27.65	18.29	67.453	Vertical	Pass
Band	1/#Mid	1732.5	-5.78	3.31	27.61	18.52	71.121	Vertical	Pass
QPSK		1747.5	-5.94	3.33	27.57	18.30	67.608	Vertical	Pass
20.0MHz		1720	-6.17	3.17	27.66	18.32	67.920	Vertical	Pass
Band	1/#Mid	1732.5	-5.12	3.32	27.61	19.17	82.604	Vertical	Pass
QPSK		1745	-5.73	3.36	27.56	18.47	70.307	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable	Antenna	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	Loss	Factor	Average	Average	Of Max. ERP	
				(dBm)	(dB)	(dBm)	(mW)		
1.4MHz	1/#Mid	1710.7	-5.69	3.12	27.58	18.77	75.336	Horizontal	Pass
Band 16		1732.5	-5.54	3.27	27.61	18.80	75.858	Horizontal	Pass
QAM		1754.3	-5.54	3.29	27.63	18.80	75.858	Horizontal	Pass
3.0MHz	1/#Mid	1711.5	-5.63	3.13	27.61	18.85	76.736	Horizontal	Pass
Band 16		1732.5	-5.76	3.27	27.61	18.58	72.111	Horizontal	Pass
QAM		1753.5	-5.98	3.30	27.62	18.34	68.234	Horizontal	Pass
5.0MHz	1/#Mid	1712.5	-5.46	3.13	27.63	19.04	80.168	Horizontal	Pass
Band 16		1732.5	-5.42	3.27	27.61	18.92	77.983	Horizontal	Pass
QAM		1752.5	-5.11	3.30	27.60	19.19	82.985	Horizontal	Pass
10.0MHz	1/#Mid	1715	-5.53	3.15	27.64	18.96	78.705	Horizontal	Pass
Band 16		1732.5	-5.72	3.31	27.61	18.58	72.111	Horizontal	Pass
QAM		1750	-5.10	3.33	27.59	19.16	82.414	Horizontal	Pass
15.0MHz	1/#Mid	1717.5	-5.33	3.15	27.65	19.17	82.604	Horizontal	Pass
Band 16		1732.5	-5.39	3.31	27.61	18.91	77.804	Horizontal	Pass
QAM		1747.5	-5.41	3.33	27.57	18.83	76.384	Horizontal	Pass
20.0MHz	1/#Mid	1720	-5.28	3.17	27.66	19.21	83.368	Horizontal	Pass
Band 16		1732.5	-5.29	3.32	27.61	19.00	79.433	Horizontal	Pass
QAM		1745	-5.10	3.36	27.56	19.10	81.283	Horizontal	Pass
1.4MHz	1/#Mid	1710.7	-6.33	3.12	27.58	18.13	65.013	Vertical	Pass
Band 16		1732.5	-6.59	3.27	27.61	17.75	59.566	Vertical	Pass
QAM		1754.3	-6.83	3.29	27.63	17.51	56.364	Vertical	Pass
3.0MHz	1/#Mid	1711.5	-6.52	3.13	27.61	17.96	62.517	Vertical	Pass
Band 16		1732.5	-6.42	3.27	27.61	17.92	61.944	Vertical	Pass
QAM		1753.5	-6.46	3.30	27.62	17.86	61.094	Vertical	Pass
5.0MHz	1/#Mid	1712.5	-7.08	3.13	27.63	17.42	55.208	Vertical	Pass
Band 16		1732.5	-6.79	3.27	27.61	17.55	56.885	Vertical	Pass
QAM		1752.5	-6.40	3.30	27.60	17.90	61.660	Vertical	Pass
10.0MHz	1/#Mid	1715	-7.21	3.15	27.64	17.28	53.456	Vertical	Pass
Band 16		1732.5	-6.55	3.31	27.61	17.75	59.566	Vertical	Pass
QAM		1750	-6.68	3.33	27.59	17.58	57.280	Vertical	Pass
15.0MHz	1/#Mid	1717.5	-7.11	3.15	27.65	17.39	54.828	Vertical	Pass
Band 16		1732.5	-7.03	3.31	27.61	17.27	53.333	Vertical	Pass
QAM		1747.5	-7.00	3.33	27.57	17.24	52.966	Vertical	Pass

20.0MHz	1/#Mid	1720	-6.57	3.17	27.66	17.92	61.944	Vertical	Pass
Band 16		1732.5	-6.75	3.32	27.61	17.54	56.754	Vertical	Pass
QAM		1745	-6.41	3.36	27.56	17.79	60.117	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	Cable Loss	Antenna Factor	Correction	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	Of Max. ERP	
							(dBm)	(mW)		
1.4MHz	3/#Mid	824.7	4.42	2.01	19.68	2.15	19.94	98.628	Horizontal	Pass
Band		836.5	4.30	2.01	19.77	2.15	19.91	97.949	Horizontal	Pass
QPSK		848.3	4.10	2.02	19.82	2.15	19.75	94.406	Horizontal	Pass
3.0MHz	1/#Mid	825.5	4.19	2.01	19.70	2.15	19.73	93.972	Horizontal	Pass
Band		836.5	4.09	2.01	19.77	2.15	19.70	93.325	Horizontal	Pass
QPSK		847.5	3.96	2.02	19.81	2.15	19.60	91.201	Horizontal	Pass
5.0MHz	1/#Mid	826.5	4.47	2.01	19.71	2.15	20.02	100.462	Horizontal	Pass
Band		836.5	4.35	2.01	19.77	2.15	19.96	99.083	Horizontal	Pass
QPSK		846.5	4.19	2.02	19.79	2.15	19.81	95.719	Horizontal	Pass
10.0MHz	1/#Mid	829	4.49	2.01	19.73	2.15	20.06	101.391	Horizontal	Pass
Band		836.5	4.44	2.01	19.77	2.15	20.05	101.158	Horizontal	Pass
QPSK		844	4.34	2.02	19.78	2.15	19.95	98.855	Horizontal	Pass
1.4MHz	1/#Mid	824.7	3.01	2.01	19.68	2.15	18.53	71.285	Vertical	Pass
Band		836.5	3.05	2.01	19.77	2.15	18.66	73.451	Vertical	Pass
QPSK		848.3	3.38	2.02	19.82	2.15	19.03	79.983	Vertical	Pass
3.0MHz	1/#Mid	825.5	3.69	2.01	19.70	2.15	19.23	83.753	Vertical	Pass
Band		836.5	3.18	2.01	19.77	2.15	18.79	75.683	Vertical	Pass
QPSK		847.5	3.20	2.02	19.81	2.15	18.84	76.560	Vertical	Pass
5.0MHz	1/#Mid	826.5	2.93	2.01	19.71	2.15	18.48	70.469	Vertical	Pass
Band		836.5	3.13	2.01	19.77	2.15	18.74	74.817	Vertical	Pass
QPSK		846.5	3.20	2.02	19.79	2.15	18.82	76.208	Vertical	Pass
10.0MHz	1/#Mid	829	2.79	2.01	19.73	2.15	18.36	68.549	Vertical	Pass
Band		836.5	3.37	2.01	19.77	2.15	18.98	79.068	Vertical	Pass
QPSK		844	3.60	2.02	19.78	2.15	19.21	83.368	Vertical	Pass

Radiated Power (ERP) for Band 5

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG	Cable	Antenna		Max.	Max.	Polarization	
			Level	Loss	Factor	Correction	EIRP	EIRP	Of Max. ERP	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average		
							(dBm)	(mW)		
1.4MHz	3/#Mid	824.7	3.57	2.01	19.68	2.15	19.09	81.096	Horizontal	Pass
Band 16		836.5	3.50	2.01	19.77	2.15	19.11	81.470	Horizontal	Pass
QAM		848.3	3.34	2.02	19.82	2.15	18.99	79.250	Horizontal	Pass
3.0MHz	1/#Mid	825.5	3.65	2.01	19.70	2.15	19.19	82.985	Horizontal	Pass
Band 16		836.5	3.36	2.01	19.77	2.15	18.97	78.886	Horizontal	Pass
QAM		847.5	2.84	2.02	19.81	2.15	18.48	70.469	Horizontal	Pass
5.0MHz	1/#Mid	826.5	3.97	2.01	19.71	2.15	19.52	89.536	Horizontal	Pass
Band 16		836.5	3.74	2.01	19.77	2.15	19.35	86.099	Horizontal	Pass
QAM		846.5	3.49	2.02	19.79	2.15	19.11	81.470	Horizontal	Pass
10.0MHz	1/#Mid	829	3.97	2.01	19.73	2.15	19.54	89.950	Horizontal	Pass
Band 16		836.5	3.69	2.01	19.77	2.15	19.30	85.114	Horizontal	Pass
QAM		844	3.23	2.02	19.78	2.15	18.84	76.560	Horizontal	Pass
1.4MHz	1/#Mid	824.7	2.71	2.01	19.68	2.15	18.23	66.527	Vertical	Pass
Band 16		836.5	3.62	2.01	19.77	2.15	19.23	83.753	Vertical	Pass
QAM		848.3	3.14	2.02	19.82	2.15	18.79	75.683	Vertical	Pass
3.0MHz	1/#Mid	825.5	3.02	2.01	19.70	2.15	18.56	71.779	Vertical	Pass
Band 16		836.5	1.96	2.01	19.77	2.15	17.57	57.148	Vertical	Pass
QAM		847.5	2.63	2.02	19.81	2.15	18.27	67.143	Vertical	Pass
5.0MHz	1/#Mid	826.5	2.67	2.01	19.71	2.15	18.22	66.374	Vertical	Pass
Band 16		836.5	2.21	2.01	19.77	2.15	17.82	60.534	Vertical	Pass
QAM		846.5	1.63	2.02	19.79	2.15	17.25	53.088	Vertical	Pass
10.0MHz	1/#Mid	829	2.18	2.01	19.73	2.15	17.75	59.566	Vertical	Pass
Band 16		836.5	2.05	2.01	19.77	2.15	17.66	58.345	Vertical	Pass
QAM		844	2.45	2.02	19.78	2.15	18.06	63.973	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	Cable	Antenna	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	Loss	Factor	Average	Average	Of Max. ERP	
				(dBm)	(dB)	(dBm)	(mW)		
5.0MHz Band QPSK	1/#Mid	2502.5	-3.16	4.54	27.75	20.05	101.158	Horizontal	Pass
		2535	-2.99	4.69	27.72	20.04	100.925	Horizontal	Pass
		2567.5	-2.92	4.71	27.71	20.08	101.859	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	-3.09	4.55	27.76	20.12	102.802	Horizontal	Pass
		2535	-2.90	4.69	27.72	20.13	103.039	Horizontal	Pass
		2565	-2.82	4.72	27.70	20.16	103.753	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-3.10	4.55	27.77	20.12	102.802	Horizontal	Pass
		2535	-2.96	4.69	27.72	20.07	101.625	Horizontal	Pass
		2562.5	-2.86	4.72	27.69	20.11	102.565	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-3.04	4.57	27.78	20.17	103.992	Horizontal	Pass
		2535	-2.86	4.73	27.72	20.13	103.039	Horizontal	Pass
		2560	-2.82	4.75	27.68	20.11	102.565	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-4.96	4.54	27.75	18.25	66.834	Vertical	Pass
		2535	-4.73	4.69	27.72	18.30	67.608	Vertical	Pass
		2567.5	-4.08	4.71	27.71	18.92	77.983	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	-4.36	4.55	27.76	18.85	76.736	Vertical	Pass
		2535	-4.02	4.69	27.72	19.01	79.616	Vertical	Pass
		2565	-4.63	4.72	27.70	18.35	68.391	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-4.26	4.55	27.77	18.96	78.705	Vertical	Pass
		2535	-3.96	4.69	27.72	19.07	80.724	Vertical	Pass
		2562.5	-4.74	4.72	27.69	18.23	66.527	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	-4.05	4.57	27.78	19.16	82.414	Vertical	Pass
		2535	-4.51	4.73	27.72	18.48	70.469	Vertical	Pass
		2560	-4.69	4.75	27.68	18.24	66.681	Vertical	Pass

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable	Antenna	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	Loss	Factor	Average	Average	Of Max. ERP	
				(dBm)	(dB)	(dBm)	(mW)		
5.0MHz Band 16 QAM	1/#Mid	2502.5	-3.85	4.54	27.75	19.36	86.298	Horizontal	Pass
		2535	-3.54	4.69	27.72	19.49	88.920	Horizontal	Pass
		2567.5	-3.62	4.71	27.71	19.38	86.696	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-3.74	4.55	27.76	19.47	88.512	Horizontal	Pass
		2535	-3.75	4.69	27.72	19.28	84.723	Horizontal	Pass
		2565	-4.02	4.72	27.70	18.96	78.705	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-3.92	4.55	27.77	19.30	85.114	Horizontal	Pass
		2535	-3.89	4.69	27.72	19.14	82.035	Horizontal	Pass
		2562.5	-3.50	4.72	27.69	19.47	88.512	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-3.80	4.57	27.78	19.41	87.297	Horizontal	Pass
		2535	-3.47	4.73	27.72	19.52	89.536	Horizontal	Pass
		2560	-3.57	4.75	27.68	19.36	86.298	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-5.22	4.54	27.75	17.99	62.951	Vertical	Pass
		2535	-5.30	4.69	27.72	17.73	59.293	Vertical	Pass
		2567.5	-4.00	4.71	27.71	19.00	79.433	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-4.11	4.55	27.76	19.10	81.283	Vertical	Pass
		2535	-4.55	4.69	27.72	18.48	70.469	Vertical	Pass
		2565	-4.59	4.72	27.70	18.39	69.024	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-4.49	4.55	27.77	18.73	74.645	Vertical	Pass
		2535	-4.75	4.69	27.72	18.28	67.298	Vertical	Pass
		2562.5	-4.93	4.72	27.69	18.04	63.680	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-5.48	4.57	27.78	17.73	59.293	Vertical	Pass
		2535	-5.23	4.73	27.72	17.76	59.704	Vertical	Pass
		2560	-4.34	4.75	27.68	18.59	72.277	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 26 A

Radiated Power (ERP) for Band 26(814-824)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG	Cable	Antenna		Max. EIRP	Max.	Polarization	
			Level	Loss	Factor	Correction		EIRP	Of Max. ERP	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average		
							(dBm)	(mW)		
1.4MHz	6/0	814.7	-2.33	3.76	28.24	2.15	20.00	100.00	Horizontal	Pass
BW		819	-2.19	3.91	28.22	2.15	19.97	99.31	Horizontal	Pass
QPSK		823.3	-2.31	3.93	28.20	2.15	19.81	95.72	Horizontal	Pass
3.0MHz	15/0	815.5	-2.52	3.77	28.23	2.15	19.79	95.28	Horizontal	Pass
BW		819	-2.42	3.91	28.24	2.15	19.76	94.62	Horizontal	Pass
QPSK		822.5	-2.50	3.94	28.25	2.15	19.66	92.47	Horizontal	Pass
5.0MHz	25/0	816.5	-2.31	3.77	28.31	2.15	20.08	101.86	Horizontal	Pass
BW		819	-2.14	3.91	28.22	2.15	20.02	100.46	Horizontal	Pass
QPSK		821.5	-2.24	3.94	28.20	2.15	19.87	97.05	Horizontal	Pass
10.0MHz	50/0	819	-2.04	3.91	28.22	2.15	20.12	102.80	Horizontal	Pass
BW										
QPSK										
1.4MHz	6/0	814.7	-2.29	3.79	28.34	2.15	20.11	102.57	Vertical	Pass
BW		819	-2.11	3.95	28.22	2.15	20.01	100.23	Vertical	Pass
QPSK		823.3	-2.86	3.97	28.18	2.15	19.20	83.18	Vertical	Pass
3.0MHz	15/0	815.5	-3.86	3.77	28.23	2.15	18.45	69.98	Vertical	Pass
BW		819	-3.50	3.91	28.24	2.15	18.68	73.79	Vertical	Pass
QPSK		822.5	-3.50	3.94	28.25	2.15	18.66	73.45	Vertical	Pass
5.0MHz	25/0	816.5	-3.12	3.77	28.31	2.15	19.27	84.53	Vertical	Pass
BW		819	-3.28	3.91	28.22	2.15	18.88	77.27	Vertical	Pass
QPSK		821.5	-3.13	3.94	28.20	2.15	18.98	79.07	Vertical	Pass
10.0MHz	50/0	819	-3.49	3.91	28.22	2.15	18.67	73.62	Vertical	Pass
BW										
QPSK										

Radiated Power (ERP) for Band 26(814-824)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss	Antenna Factor	Correction	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	Of Max. ERP	
							(dBm)	(mW)		
1.4MHz	6/0	814.7	-2.11	3.76	28.24	2.15	20.22	105.20	Horizontal	Pass
BW 16		819	-1.97	3.91	28.22	2.15	20.19	104.47	Horizontal	Pass
QAM		823.3	-2.09	3.93	28.20	2.15	20.03	100.69	Horizontal	Pass
3.0MHz	15/0	815.5	-2.30	3.77	28.23	2.15	20.01	100.23	Horizontal	Pass
BW 16		819	-2.20	3.91	28.24	2.15	19.98	99.54	Horizontal	Pass
QAM		822.5	-2.28	3.94	28.25	2.15	19.88	97.27	Horizontal	Pass
5.0MHz	25/0	816.5	-2.09	3.77	28.31	2.15	20.30	107.15	Horizontal	Pass
BW 16		819	-1.92	3.91	28.22	2.15	20.24	105.68	Horizontal	Pass
QAM		821.5	-2.02	3.94	28.20	2.15	20.09	102.09	Horizontal	Pass
10.0MHz	50/0	819	-1.84	3.91	28.24	2.15	20.34	108.14	Horizontal	Pass
1.4MHz	6/0	814.7	-2.07	3.79	28.34	2.15	20.33	107.89	Vertical	Pass
BW 16		819	-1.89	3.95	28.22	2.15	20.23	105.44	Vertical	Pass
QAM		823.3	-3.47	3.97	28.18	2.15	18.59	72.28	Vertical	Pass
3.0MHz	15/0	815.5	-3.58	3.77	28.23	2.15	18.73	74.64	Vertical	Pass
BW 16		819	-2.83	3.91	28.24	2.15	19.35	86.10	Vertical	Pass
QAM		822.5	-2.85	3.94	28.25	2.15	19.31	85.31	Vertical	Pass
5.0MHz	25/0	816.5	-3.06	3.77	28.31	2.15	19.33	85.70	Vertical	Pass
BW 16		819	-2.94	3.91	28.22	2.15	19.22	83.56	Vertical	Pass
QAM		821.5	-3.45	3.94	28.20	2.15	18.66	73.45	Vertical	Pass
10.0MHz	50/0	819	-2.86	3.91	28.24	2.15	19.32	85.51	Vertical	Pass

8.7 LTE BAND 26B

Radiated Power (ERP) for Band 26(824-849)											
Mode	RB/RB SIZE	Frequency	Result							Conclusion	
			SG	Cable	Antenna	Correction	Max. EIRP	Max.	Polarization Of Max. ERP		
			Level	Loss	Factor		EIRP				
			(dBm)	(dBm)	(dB)		Average	Average			
						(dB)	(dBm)	(mW)			
1.4MHz	Band QPSK	6/0	824.7	3.66	2.01	19.68	2.15	19.18	82.79	Horizontal	Pass
			836.5	3.60	2.01	19.77	2.15	19.21	83.37	Horizontal	Pass
			848.3	3.54	2.02	19.82	2.15	19.19	82.99	Horizontal	Pass
3.0MHz	Band QPSK	15/0	825.5	3.70	2.01	19.70	2.15	19.24	83.95	Horizontal	Pass
			836.5	3.33	2.01	19.77	2.15	18.94	78.34	Horizontal	Pass
			847.5	3.78	2.02	19.81	2.15	19.42	87.50	Horizontal	Pass
5.0MHz	Band QPSK	25/0	826.5	3.96	2.01	19.71	2.15	19.51	89.33	Horizontal	Pass
			836.5	3.78	2.01	19.77	2.15	19.39	86.90	Horizontal	Pass
			846.5	3.15	2.02	19.79	2.15	18.77	75.34	Horizontal	Pass
10.0MHz	Band QPSK	50/0	829	3.17	2.01	19.73	2.15	18.74	74.82	Horizontal	Pass
			836.5	3.29	2.01	19.77	2.15	18.90	77.62	Horizontal	Pass
			844	3.89	2.02	19.78	2.15	19.50	89.13	Horizontal	Pass
15.0MHz	Band QPSK	75/0	831.5	2.98	2.01	19.73	2.15	18.55	71.61	Horizontal	Pass
			836.5	3.91	2.01	19.77	2.15	19.52	89.54	Horizontal	Pass
			841.5	3.64	2.02	19.78	2.15	19.25	84.14	Horizontal	Pass
1.4MHz	Band QPSK	6/0	824.7	3.24	2.01	19.68	2.15	18.76	75.16	Vertical	Pass
			836.5	3.18	2.01	19.77	2.15	18.79	75.68	Vertical	Pass
			848.3	3.44	2.02	19.82	2.15	19.09	81.10	Vertical	Pass
3.0MHz	Band QPSK	15/0	825.5	3.38	2.01	19.70	2.15	18.92	77.98	Vertical	Pass
			836.5	3.00	2.01	19.77	2.15	18.61	72.61	Vertical	Pass
			847.5	3.25	2.02	19.81	2.15	18.89	77.45	Vertical	Pass
5.0MHz	Band QPSK	25/0	826.5	3.40	2.01	19.71	2.15	18.95	78.52	Vertical	Pass
			836.5	3.15	2.01	19.77	2.15	18.76	75.16	Vertical	Pass
			846.5	3.27	2.02	19.79	2.15	18.89	77.45	Vertical	Pass
10.0MHz	Band QPSK	50/0	829	3.04	2.01	19.73	2.15	18.61	72.61	Vertical	Pass
			836.5	3.38	2.01	19.77	2.15	18.99	79.25	Vertical	Pass
			844	3.22	2.02	19.78	2.15	18.83	76.38	Vertical	Pass
15.0MHz	Band QPSK	75/0	831.5	3.05	2.01	19.73	2.15	18.62	72.78	Vertical	Pass
			836.5	3.80	2.01	19.77	2.15	19.41	87.30	Vertical	Pass
			841.5	3.40	2.02	19.78	2.15	19.01	79.62	Vertical	Pass

Radiated Power (ERP) for Band 26(824-849)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG	Cable	Antenna		Max.	Max.	Polarization	
			Level	Loss	Factor	Correction	EIRP	EIRP	Of Max. ERP	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average		
							(dBm)	(mW)		
1.4MHz	6/0	824.7	3.76	2.01	19.68	2.15	19.28	84.72	Horizontal	Pass
Band 16		836.5	2.99	2.01	19.77	2.15	18.60	72.44	Horizontal	Pass
QAM		848.3	2.93	2.02	19.82	2.15	18.58	72.11	Horizontal	Pass
3.0MHz	15/0	825.5	3.02	2.01	19.70	2.15	18.56	71.78	Horizontal	Pass
Band 16		836.5	3.32	2.01	19.77	2.15	18.93	78.16	Horizontal	Pass
QAM		847.5	3.02	2.02	19.81	2.15	18.66	73.45	Horizontal	Pass
5.0MHz	25/0	826.5	3.18	2.01	19.71	2.15	18.73	74.64	Horizontal	Pass
Band 16		836.5	3.15	2.01	19.77	2.15	18.76	75.16	Horizontal	Pass
QAM		846.5	2.99	2.02	19.79	2.15	18.61	72.61	Horizontal	Pass
10.0MHz	50/0	829	3.39	2.01	19.73	2.15	18.96	78.70	Horizontal	Pass
Band 16		836.5	3.71	2.01	19.77	2.15	19.32	85.51	Horizontal	Pass
QAM		844	2.95	2.02	19.78	2.15	18.56	71.78	Horizontal	Pass
15.0MHz	75/0	831.5	3.77	2.01	19.73	2.15	19.34	85.90	Horizontal	Pass
Band		836.5	2.95	2.01	19.77	2.15	18.56	71.78	Horizontal	Pass
QPSK		841.5	2.75	2.02	19.78	2.15	18.36	68.55	Horizontal	Pass
1.4MHz	6/0	824.7	3.27	2.01	19.68	2.15	18.79	75.68	Vertical	Pass
Band 16		836.5	3.66	2.01	19.77	2.15	19.27	84.53	Vertical	Pass
QAM		848.3	3.41	2.02	19.82	2.15	19.06	80.54	Vertical	Pass
3.0MHz	15/0	825.5	3.21	2.01	19.70	2.15	18.75	74.99	Vertical	Pass
Band 16		836.5	3.03	2.01	19.77	2.15	18.64	73.11	Vertical	Pass
QAM		847.5	3.63	2.02	19.81	2.15	19.27	84.53	Vertical	Pass
5.0MHz	25/0	826.5	2.90	2.01	19.71	2.15	18.45	69.98	Vertical	Pass
Band 16		836.5	3.34	2.01	19.77	2.15	18.95	78.52	Vertical	Pass
QAM		846.5	2.96	2.02	19.79	2.15	18.58	72.11	Vertical	Pass

10.0MHz	50/0	829	3.37	2.01	19.73	2.15	18.94	78.34	Vertical	Pass
Band 16		836.5	3.59	2.01	19.77	2.15	19.20	83.18	Vertical	Pass
QAM		844	2.97	2.02	19.78	2.15	18.58	72.11	Vertical	Pass
15.0MHz	75/0	831.5	2.91	2.01	19.73	2.15	18.48	70.47	Vertical	Pass
Band		836.5	2.84	2.01	19.77	2.15	18.45	69.98	Vertical	Pass
QPSK		841.5	3.10	2.02	19.78	2.15	18.71	74.30	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

8.8 LTE BAND 38

Radiated Power (EIRP) for Band 38									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG	Cable	Antenna	Max. EIRP	Max. EIRP	Polarization	
			Level	Loss	Gain			Of Max.	
			(dBm)	(dBm)	(dB)	Average	Average	ERP	
						(dBm)	(mW)		
5.0MHz Band QPSK	25/0	2572.5	-2.12	4.95	27.79	18.28	67.298	Vertical	Pass
		2595	-2.64	4.88	27.71	18.66	73.451	Vertical	Pass
		2617.5	-2.58	4.93	27.95	18.31	67.764	Vertical	Pass
10.0MHz Band QPSK	50/0	2572.5	-2.37	4.81	27.73	18.50	70.795	Vertical	Pass
		2595	-2.47	4.95	27.81	18.61	72.611	Vertical	Pass
		2617.5	-2.59	5.03	27.69	19.23	83.753	Vertical	Pass
15.0MHz Band QPSK	75/0	2575	-2.98	5.01	27.86	18.31	67.764	Vertical	Pass
		2595	-2.6	5	27.65	18.95	78.524	Vertical	Pass
		2615	-2.67	4.87	27.89	19.11	81.470	Vertical	Pass
20.0MHz Band QPSK	100/0	2575	-2.71	4.77	27.78	18.29	67.453	Vertical	Pass
		2595	-2.38	4.87	27.87	18.60	72.444	Vertical	Pass
		2615	-2.56	4.94	27.77	18.34	68.234	Vertical	Pass
5.0MHz Band QPSK	25/0	2577.5	-2.9	4.89	27.88	19.19	82.985	Vertical	Pass
		2595	-2.32	4.87	27.84	19.24	83.946	Vertical	Pass
		2612.5	-2.52	4.92	27.93	18.68	73.790	Vertical	Pass
10.0MHz Band QPSK	50/0	2577.5	-2.53	4.75	27.78	18.62	72.778	Vertical	Pass
		2595	-2.53	4.98	27.82	18.63	72.946	Vertical	Pass
		2612.5	-2.6	4.95	27.83	18.68	73.790	Vertical	Pass
15.0MHz Band QPSK	75/0	2580	-2.53	4.86	27.8	18.92	77.983	Vertical	Pass
		2595	-2.37	4.79	27.83	19.86	96.828	Vertical	Pass
		2610	-2.68	4.89	27.87	19.19	82.985	Vertical	Pass
20.0MHz Band QPSK	100/0	2580	-2.87	4.95	27.73	18.69	73.961	Vertical	Pass
		2595	-2.88	4.91	27.71	19.87	97.051	Vertical	Pass
		2610	-2.81	4.96	27.92	19.19	82.985	Vertical	Pass

Radiated Power (EIRP) for Band 38									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG	Cable	Antenna	Max.	Max.	Polarization	
			Level	Loss	Gain	EIRP	EIRP	Of Max.	
			(dBm)	(dBm)	(dB)	Average	Average	ERP	
						(dBm)	(mW)		
5.0MHz Band 16 QAM	25/0	2572.5	-2.12	4.95	27.79	18.86	76.913	Horizontal	Pass
		2595	-2.64	4.88	27.71	19.03	79.983	Horizontal	Pass
		2617.5	-2.58	4.93	27.95	18.98	79.068	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	2572.5	-2.37	4.81	27.73	18.57	71.945	Horizontal	Pass
		2595	-2.47	4.95	27.81	18.61	72.611	Horizontal	Pass
		2617.5	-2.59	5.03	27.69	18.46	70.146	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	2575	-2.98	5.01	27.86	19.12	81.658	Horizontal	Pass
		2595	-2.6	5	27.65	18.61	72.611	Horizontal	Pass
		2615	-2.67	4.87	27.89	18.82	76.208	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	2575	-2.71	4.77	27.78	18.54	71.450	Horizontal	Pass
		2595	-2.38	4.87	27.87	19.08	80.910	Horizontal	Pass
		2615	-2.56	4.94	27.77	18.71	74.302	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	2577.5	-2.9	4.89	27.88	19.31	85.310	Horizontal	Pass
		2595	-2.32	4.87	27.84	19.14	82.035	Horizontal	Pass
		2612.5	-2.52	4.92	27.93	19.06	80.538	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	2577.5	-2.53	4.75	27.78	19.32	85.507	Horizontal	Pass
		2595	-2.53	4.98	27.82	19.40	87.096	Horizontal	Pass
		2612.5	-2.6	4.95	27.83	18.41	69.343	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	2580	-2.53	4.86	27.8	18.79	75.683	Horizontal	Pass
		2595	-2.37	4.79	27.83	19.32	85.507	Horizontal	Pass
		2610	-2.68	4.89	27.87	18.76	75.162	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	2580	-2.87	4.95	27.73	18.71	74.302	Horizontal	Pass
		2595	-2.88	4.91	27.71	19.02	79.799	Horizontal	Pass
		2610	-2.81	4.96	27.92	20.01	100.231	Horizontal	Pass

Note:

SG Level= Signal generator output

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

8.9 LTE BAND 66

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable	Antenna Factor (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
				Loss					
				(dBm)					
1.4MHz	1/#Mid	1710.7	-4.54	3.76	28.24	19.94	98.628	Horizontal	Pass
Band		1745	-4.40	3.91	28.22	19.91	97.949	Horizontal	Pass
QPSK		1779.3	-4.27	3.93	28.2	20.00	100.000	Horizontal	Pass
3.0MHz	1/#Mid	1711.5	-4.60	3.77	28.23	19.86	96.828	Horizontal	Pass
Band		1745	-4.51	3.91	28.24	19.82	95.940	Horizontal	Pass
QPSK		1778.5	-4.53	3.94	28.25	19.78	95.060	Horizontal	Pass
5.0MHz	1/#Mid	1712.5	-4.50	3.77	28.31	20.04	100.925	Horizontal	Pass
Band		1745	-4.18	3.91	28.22	20.13	103.039	Horizontal	Pass
QPSK		1777.5	-4.24	3.94	28.2	20.02	100.462	Horizontal	Pass
10.0MHz	1/#Mid	1715	-4.39	3.79	28.33	20.15	103.514	Horizontal	Pass
Band		1745	-4.12	3.95	28.22	20.15	103.514	Horizontal	Pass
QPSK		1775	-4.13	3.97	28.19	20.09	102.094	Horizontal	Pass
15.0MHz	1/#Mid	1717.5	-4.41	3.79	28.34	20.14	103.276	Horizontal	Pass
Band		1745	-4.22	3.95	28.22	20.05	101.158	Horizontal	Pass
QPSK		1772.5	-4.17	3.97	28.18	20.04	100.925	Horizontal	Pass
20.0MHz	1/#Mid	1720	-4.38	3.81	28.35	20.16	103.753	Horizontal	Pass
Band		1745	-4.12	3.96	28.22	20.14	103.276	Horizontal	Pass
QPSK		1770	-4.14	4	28.16	20.02	100.462	Horizontal	Pass
1.4MHz	1/#Mid	1710.7	-5.80	3.76	28.24	18.68	73.790	Vertical	Pass
Band		1745	-5.55	3.91	28.22	18.76	75.162	Vertical	Pass
QPSK		1779.3	-5.51	3.93	28.2	18.76	75.162	Vertical	Pass
3.0MHz	1/#Mid	1711.5	-5.61	3.77	28.23	18.85	76.736	Vertical	Pass
Band		1745	-4.91	3.91	28.24	19.42	87.498	Vertical	Pass
QPSK		1778.5	-5.28	3.94	28.25	19.03	79.983	Vertical	Pass
5.0MHz	1/#Mid	1712.5	-5.72	3.77	28.31	18.82	76.208	Vertical	Pass
Band		1745	-5.13	3.91	28.22	19.18	82.794	Vertical	Pass
QPSK		1777.5	-5.19	3.94	28.2	19.07	80.724	Vertical	Pass
10.0MHz	1/#Mid	1715	-5.54	3.79	28.34	19.01	79.616	Vertical	Pass
Band		1745	-5.14	3.95	28.22	19.13	81.846	Vertical	Pass
QPSK		1775	-4.83	3.97	28.18	19.38	86.696	Vertical	Pass

15.0MHz	1/#Mid	1717.5	-5.30	3.81	28.35	19.24	83.946	Vertical	Pass
Band		1745	-5.77	3.96	28.22	18.49	70.632	Vertical	Pass
QPSK		1772.5	-5.50	4	28.16	18.66	73.451	Vertical	Pass
20.0MHz	1/#Mid	1720	-5.79	3.79	28.34	18.76	75.162	Vertical	Pass
Band		1745	-5.00	3.95	28.22	19.27	84.528	Vertical	Pass
QPSK		1770	-5.74	3.97	28.18	18.47	70.307	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	1/##Mid	1710.7	-5.50	3.76	28.24	18.98	79.068	Horizontal	Pass
Band 16		1745	-5.11	3.91	28.22	19.20	83.176	Horizontal	Pass
QAM		1779.3	-5.29	3.93	28.2	18.98	79.068	Horizontal	Pass
3.0MHz	1/##Mid	1711.5	-5.89	3.77	28.23	18.57	71.945	Horizontal	Pass
Band 16		1745	-5.14	3.91	28.24	19.19	82.985	Horizontal	Pass
QAM		1778.5	-5.43	3.94	28.25	18.88	77.268	Horizontal	Pass
5.0MHz	1/##Mid	1712.5	-5.31	3.77	28.31	19.23	83.753	Horizontal	Pass
Band 16		1745	-5.37	3.91	28.22	18.94	78.343	Horizontal	Pass
QAM		1777.5	-5.04	3.94	28.2	19.22	83.560	Horizontal	Pass
10.0MHz	1/##Mid	1715	-5.36	3.79	28.33	19.18	82.794	Horizontal	Pass
Band 16		1745	-5.02	3.95	28.22	19.25	84.140	Horizontal	Pass
QAM		1775	-5.34	3.97	28.19	18.88	77.268	Horizontal	Pass
15.0MHz	1/##Mid	1717.5	-5.35	3.79	28.34	19.20	83.176	Horizontal	Pass
Band 16		1745	-5.17	3.95	28.22	19.10	81.283	Horizontal	Pass
QAM		1772.5	-4.96	3.97	28.18	19.25	84.140	Horizontal	Pass
20.0MHz	1/##Mid	1720	-5.18	3.81	28.35	19.36	86.298	Horizontal	Pass
Band 16		1745	-4.96	3.96	28.22	19.30	85.114	Horizontal	Pass
QAM		1770	-4.90	4	28.16	19.26	84.333	Horizontal	Pass
1.4MHz	1/##Mid	1710.7	-5.58	3.76	28.24	18.90	77.625	Vertical	Pass
Band 16		1745	-6.93	3.91	28.22	17.38	54.702	Vertical	Pass
QAM		1779.3	-5.33	3.93	28.2	18.94	78.343	Vertical	Pass
3.0MHz	1/##Mid	1711.5	-6.97	3.77	28.23	17.49	56.105	Vertical	Pass
Band 16		1745	-5.42	3.91	28.24	18.91	77.804	Vertical	Pass
QAM		1778.5	-7.02	3.94	28.25	17.29	53.580	Vertical	Pass
5.0MHz	1/##Mid	1712.5	-6.71	3.77	28.31	17.83	60.674	Vertical	Pass
Band 16		1745	-6.89	3.91	28.22	17.42	55.208	Vertical	Pass
QAM		1777.5	-6.58	3.94	28.2	17.68	58.614	Vertical	Pass
10.0MHz	1/##Mid	1715	-5.37	3.79	28.34	19.18	82.794	Vertical	Pass
Band 16		1745	-5.83	3.95	28.22	18.44	69.823	Vertical	Pass
QAM		1775	-6.88	3.97	28.18	17.33	54.075	Vertical	Pass
15.0MHz	1/##Mid	1717.5	-7.22	3.81	28.35	17.32	53.951	Vertical	Pass
Band 16		1745	-5.21	3.96	28.22	19.05	80.353	Vertical	Pass
QAM		1772.5	-5.50	4	28.16	18.66	73.451	Vertical	Pass

20.0MHz	1/#Mid	1720	-6.91	3.79	28.34	17.64	58.076	Vertical	Pass
Band 16		1745	-6.28	3.95	28.22	17.99	62.951	Vertical	Pass
QAM		1770	-5.19	3.97	28.18	19.02	79.799	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) and §90.691

LIMIT

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

The minimum permissible attenuation level of any spurious emission is $43 + \log_{10} (P \text{ [Watts]})$, 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 $43 + 10 \log_{10}(p)$, dB; and
- b. for mobile subscriber equipment, the attenuation shall not be less than $43 + 10 \log_{10}(p)$, dB at the channel edges and $55 + 10 \log_{10}(p)$ at 5.5 MHz away and beyond the channel edges where p in (a) and (b) is the transmitter power measured in watts.

MODES TESTED

- ☐ LTE Band 2/4/5/7/26/38/66

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	-50.42	4.04	33.51	-20.95	-13	-7.95	Horizontal
3701.4	-49.30	4.04	33.51	-19.83	-13	-6.83	Vertical
5552.1	-49.18	5.24	35.84	-18.58	-13	-5.58	Vertical
5552.1	-51.20	5.24	35.84	-20.60	-13	-7.60	Horizontal
207.8	-41.16	1.43	16.02	-26.57	-13	-13.57	Vertical
282.5	-42.12	1.30	17.99	-25.43	-13	-12.43	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-49.73	4.04	33.56	-20.21	-13	-7.21	Horizontal
3760.0	-45.58	4.04	33.56	-16.06	-13	-3.06	Vertical
5640.0	-53.36	5.24	35.91	-22.69	-13	-9.69	Vertical
5640.0	-50.38	5.24	35.91	-19.71	-13	-6.71	Horizontal
184.5	-37.56	1.62	16.97	-22.21	-13	-9.21	Vertical
249.3	-41.80	1.74	15.98	-27.57	-13	-14.57	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-50.27	4.04	34.00	-20.31	-13	-7.31	Horizontal
3818.6	-50.23	4.04	34.00	-20.27	-13	-7.27	Vertical
5727.9	-51.69	5.24	36.04	-20.89	-13	-7.89	Vertical
5727.9	-51.45	5.24	36.04	-20.65	-13	-7.65	Horizontal
177.2	-37.26	1.42	17.29	-21.39	-13	-8.39	Vertical
366.2	-38.48	1.50	17.90	-22.07	-13	-9.07	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	-53.36	4.07	33.54	-23.89	-13	-10.89	Horizontal
3720.0	-45.59	4.07	33.54	-16.12	-13	-3.12	Vertical
5580.0	-49.33	5.28	35.86	-18.75	-13	-5.75	Vertical
5580.0	-53.29	5.28	35.86	-22.71	-13	-9.71	Horizontal
191.0	-35.50	1.58	16.89	-20.18	-13	-7.18	Vertical
330.7	-43.48	1.76	17.26	-27.98	-13	-14.98	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-50.36	4.04	33.56	-20.84	-13	-7.84	Horizontal
3760.0	-46.26	4.04	33.56	-16.74	-13	-3.74	Vertical
5640.0	-50.20	5.24	35.91	-19.53	-13	-6.53	Vertical
5640.0	-49.54	5.24	35.91	-18.87	-13	-5.87	Horizontal
176.7	-38.24	1.46	16.27	-23.43	-13	-10.43	Vertical
369.9	-41.18	1.59	15.15	-27.62	-13	-14.62	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-47.05	4.04	34.00	-17.09	-13	-4.09	Horizontal
3800.0	-51.73	4.04	34.00	-21.77	-13	-8.77	Vertical
5700.0	-47.57	5.24	36.04	-16.77	-13	-3.77	Vertical
5700.0	-51.48	5.24	36.04	-20.68	-13	-7.68	Horizontal
212.0	-36.42	1.36	17.39	-20.38	-13	-7.38	Vertical
438.8	-39.79	1.66	15.39	-26.06	-13	-13.06	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	-52.34	4.02	29.80	-26.56	-13	-13.56	Horizontal
3421.4	-48.12	4.02	29.80	-22.34	-13	-9.34	Vertical
5132.1	-52.42	5.24	35.84	-21.82	-13	-8.82	Vertical
5132.1	-53.61	5.24	35.84	-23.01	-13	-10.01	Horizontal
177.4	-34.81	1.68	16.04	-20.45	-13	-7.45	Vertical
453.5	-44.65	1.78	17.74	-28.69	-13	-15.69	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-46.76	4.03	30.00	-20.79	-13	-7.79	Horizontal
3465.0	-45.36	4.03	30.00	-19.39	-13	-6.39	Vertical
5197.5	-49.35	5.25	35.86	-18.74	-13	-5.74	Vertical
5197.5	-50.19	5.25	35.86	-19.58	-13	-6.58	Horizontal
195.2	-44.20	1.72	17.69	-28.23	-13	-15.23	Vertical
415.0	-44.62	1.62	16.02	-30.21	-13	-17.21	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-48.86	4.05	30.01	-22.90	-13	-9.90	Horizontal
3508.6	-48.24	4.05	30.01	-22.28	-13	-9.28	Vertical
5262.9	-53.66	5.26	35.86	-23.06	-13	-10.06	Vertical
5262.9	-50.27	5.26	35.86	-19.67	-13	-6.67	Horizontal
180.7	-40.33	1.80	16.69	-25.44	-13	-12.44	Vertical
240.1	-44.30	1.75	16.66	-29.40	-13	-16.40	Horizontal

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

Test Results for Low Channel 1720MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440.0	-44.69	4.02	29.80	-18.91	-13	-5.91	Horizontal
3440.0	-45.49	4.02	29.80	-19.71	-13	-6.71	Vertical
5160.0	-49.69	5.24	35.84	-19.09	-13	-6.09	Vertical
5160.0	-50.75	5.24	35.84	-20.15	-13	-7.15	Horizontal
187.1	-38.18	1.57	17.26	-22.49	-13	-9.49	Vertical
421.5	-41.63	1.78	16.35	-27.06	-13	-14.06	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-51.03	4.03	30.00	-25.06	-13	-12.06	Horizontal
3465.0	-48.58	4.03	30.00	-22.61	-13	-9.61	Vertical
5197.5	-46.78	5.25	35.86	-16.17	-13	-3.17	Vertical
5197.5	-49.09	5.25	35.86	-18.48	-13	-5.48	Horizontal
195.4	-41.78	1.44	17.95	-25.27	-13	-12.27	Vertical
421.9	-41.90	1.65	16.09	-27.46	-13	-14.46	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-44.56	2.91	27.68	-19.79	-13	-6.79	Horizontal
3490.0	-50.13	2.91	27.68	-25.36	-13	-12.36	Vertical
5235.0	-50.92	5.26	35.86	-20.32	-13	-7.32	Vertical
5235.0	-52.21	5.26	35.86	-21.61	-13	-8.61	Horizontal
183.2	-36.15	1.61	16.85	-20.91	-13	-7.91	Vertical
238.9	-37.47	1.61	15.19	-23.89	-13	-10.89	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	-51.76	2.78	27.50	-27.04	-13	-14.04	Horizontal
1649.4	-46.84	2.78	27.50	-22.12	-13	-9.12	Vertical
2474.1	-45.88	2.90	27.80	-20.98	-13	-7.98	Vertical
2474.1	-49.99	2.90	27.80	-25.09	-13	-12.09	Horizontal
188.6	-40.32	1.76	17.59	-24.49	-13	-11.49	Vertical
356.0	-36.12	1.63	15.87	-21.88	-13	-8.88	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-50.31	2.80	27.48	-25.63	-13	-12.63	Horizontal
1673.0	-49.86	2.80	27.48	-25.18	-13	-12.18	Vertical
2509.5	-52.12	2.91	27.70	-27.33	-13	-14.33	Vertical
2509.5	-51.51	2.91	27.70	-26.72	-13	-13.72	Horizontal
205.1	-42.40	1.61	15.68	-28.33	-13	-15.33	Vertical
397.4	-35.32	1.59	17.52	-19.40	-13	-6.40	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-45.19	2.82	27.43	-20.58	-13	-7.58	Horizontal
1696.6	-50.35	2.82	27.43	-25.74	-13	-12.74	Vertical
2544.9	-48.50	2.92	27.74	-23.68	-13	-10.68	Vertical
2544.9	-51.66	2.92	27.74	-26.84	-13	-13.84	Horizontal
204.4	-44.91	1.69	16.67	-29.92	-13	-16.92	Vertical
373.8	-34.63	1.70	17.18	-19.15	-13	-6.15	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	-48.13	2.78	27.50	-23.41	-13	-10.41	Horizontal
1658.0	-50.73	2.78	27.50	-26.01	-13	-13.01	Vertical
2487.0	-44.73	2.90	27.80	-19.83	-13	-6.83	Vertical
2487.0	-50.52	2.90	27.80	-25.62	-13	-12.62	Horizontal
200.1	-35.95	1.71	15.57	-22.09	-13	-9.09	Vertical
386.0	-43.54	1.34	16.40	-28.48	-13	-15.48	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-48.95	2.80	27.48	-24.27	-13	-11.27	Horizontal
1673.0	-48.37	2.80	27.48	-23.69	-13	-10.69	Vertical
2509.5	-50.79	2.91	27.70	-26.00	-13	-13.00	Vertical
2509.5	-50.16	2.91	27.70	-25.37	-13	-12.37	Horizontal
204.3	-42.94	1.44	17.04	-27.34	-13	-14.34	Vertical
245.5	-36.58	1.76	17.62	-20.72	-13	-7.72	Horizontal
Test Results for High Channel 844MHz							
1688.0	-50.52	2.82	27.43	-25.91	-13	-12.91	Horizontal
1688.0	-44.58	2.82	27.43	-19.97	-13	-6.97	Vertical
2532.0	-50.27	2.92	27.74	-25.45	-13	-12.45	Vertical
2532.0	-51.73	2.92	27.74	-26.91	-13	-13.91	Horizontal
199.2	-38.57	1.74	17.70	-22.61	-13	-9.61	Vertical
419.1	-43.52	1.41	17.46	-27.46	-13	-14.46	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	-64.57	5.23	35.81	-33.99	-25	-8.99	Horizontal
5005.0	-61.13	5.23	35.81	-30.55	-25	-5.55	Vertical
7507.5	-60.96	5.67	36.85	-29.78	-25	-4.78	Vertical
7507.5	-60.90	5.67	36.85	-29.72	-25	-4.72	Horizontal
186.5	-50.36	1.73	17.97	-34.12	-25	-9.12	Vertical
323.6	-49.16	1.38	15.11	-35.43	-25	-10.43	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-63.97	5.23	35.82	-33.38	-25	-8.38	Horizontal
5070.0	-59.96	5.23	35.82	-29.37	-25	-4.37	Vertical
7605.0	-64.73	5.67	36.85	-33.55	-25	-8.55	Vertical
7605.0	-59.69	5.67	36.85	-28.51	-25	-3.51	Horizontal
184.1	-45.82	1.77	16.17	-31.41	-25	-6.41	Vertical
414.3	-51.52	1.63	15.21	-37.94	-25	-12.94	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-64.14	5.24	35.83	-33.55	-25	-8.55	Horizontal
5135.0	-60.86	5.24	35.83	-30.27	-25	-5.27	Vertical
7702.5	-59.35	5.68	36.87	-28.16	-25	-3.16	Vertical
7702.5	-61.92	5.68	36.87	-30.73	-25	-5.73	Horizontal
175.5	-46.78	1.58	17.56	-30.80	-25	-5.80	Vertical
332.9	-50.58	1.45	16.58	-35.45	-25	-10.45	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	-60.84	5.23	35.82	-30.25	-25	-5.25	Horizontal
5020.0	-62.38	5.23	35.82	-31.79	-25	-6.79	Vertical
7530.0	-63.62	5.67	36.86	-32.43	-25	-7.43	Vertical
7530.0	-59.55	5.67	36.86	-28.36	-25	-3.36	Horizontal
207.0	-46.23	1.63	15.76	-32.10	-25	-7.10	Vertical
334.1	-46.15	1.71	15.44	-32.42	-25	-7.42	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-61.66	5.23	35.82	-31.07	-25	-6.07	Horizontal
5070.0	-64.84	5.23	35.82	-34.25	-25	-9.25	Vertical
7605.0	-60.78	5.67	36.85	-29.60	-25	-4.60	Vertical
7605.0	-63.19	5.67	36.85	-32.01	-25	-7.01	Horizontal
182.1	-46.65	1.79	16.84	-31.59	-25	-6.59	Vertical
468.7	-54.81	1.71	17.64	-38.88	-25	-13.88	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-60.68	5.24	35.83	-30.09	-25	-5.09	Horizontal
5120.0	-59.24	5.24	35.83	-28.65	-25	-3.65	Vertical
7680.0	-64.45	5.70	36.88	-33.27	-25	-8.27	Vertical
7680.0	-64.31	5.70	36.88	-33.13	-25	-8.13	Horizontal
211.5	-47.72	1.79	16.84	-32.66	-25	-7.66	Vertical
464.4	-44.38	1.71	17.64	-28.45	-25	-3.45	Horizontal

9.5 LTE BAND 26

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

Test Results for Low Channel 814.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1629.4	-49.41	2.78	27.50	-24.69	-13	-11.69	Horizontal
1629.4	-41.12	2.78	27.50	-16.40	-13	-3.40	Vertical
2444.1	-49.08	2.90	27.80	-24.18	-13	-11.18	Vertical
2444.1	-49.17	2.90	27.80	-24.27	-13	-11.27	Horizontal
229.6	-34.83	1.54	16.98	-19.39	-13	-6.39	Vertical
83.3	-32.59	1.47	15.82	-18.24	-13	-5.24	Horizontal
Test Results For Mid Channel 819MHz							
1638.0	-47.95	2.80	27.48	-23.27	-13	-10.27	Horizontal
1638.0	-42.58	2.80	27.48	-17.90	-13	-4.90	Vertical
2457.0	-49.45	2.91	27.70	-24.66	-13	-11.66	Vertical
2457.0	-48.05	2.91	27.70	-23.26	-13	-10.26	Horizontal
168.2	-33.47	1.74	16.19	-19.02	-13	-6.02	Vertical
92.9	-32.51	1.46	15.43	-18.54	-13	-5.54	Horizontal
Test Results for High Channel 823.3MHz							
1646.6	-46.33	2.82	27.43	-21.72	-13	-8.72	Horizontal
1646.6	-45.92	2.82	27.43	-21.31	-13	-8.31	Vertical
2469.9	-48.97	2.92	27.74	-24.15	-13	-11.15	Vertical
2469.9	-46.07	2.92	27.74	-21.25	-13	-8.25	Horizontal
213.1	-32.37	1.67	17.05	-16.99	-13	-3.99	Vertical
121.7	-32.33	1.42	16.12	-17.63	-13	-4.63	Horizontal

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

Test Results for Channel 819MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1638.0	-46.65	2.78	27.50	-21.93	-13	-8.93	Horizontal
1638.0	-43.20	2.78	27.50	-18.48	-13	-5.48	Vertical
2457.0	-49.16	2.90	27.80	-24.26	-13	-11.26	Vertical
2457.0	-46.20	2.90	27.80	-21.30	-13	-8.30	Horizontal
253.7	-33.30	1.43	17.34	-17.39	-13	-4.39	Vertical
256.8	-32.11	1.56	15.71	-17.96	-13	-4.96	Horizontal

QPSK EIRP POWER FOR LTE BAND 26(824MHz~849MHz) (1.4MHZ BANDWIDTH)

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1649.4	-46.10	2.78	27.50	-21.38	-13	-8.38	Horizontal
1649.4	-44.89	2.78	27.50	-20.17	-13	-7.17	Vertical
2474.1	-48.76	2.90	27.80	-23.86	-13	-10.86	Vertical
2474.1	-49.57	2.90	27.80	-24.67	-13	-11.67	Horizontal
237.0	-34.48	1.33	17.34	-18.47	-13	-5.47	Vertical
180.5	-32.25	1.47	16.80	-16.92	-13	-3.92	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-47.23	2.80	27.48	-22.55	-13	-9.55	Horizontal
1673.0	-46.34	2.80	27.48	-21.66	-13	-8.66	Vertical
2509.5	-47.81	2.91	27.70	-23.02	-13	-10.02	Vertical
2509.5	-49.52	2.91	27.70	-24.73	-13	-11.73	Horizontal
140.8	-34.83	1.75	15.46	-21.12	-13	-8.12	Vertical
90.6	-34.15	1.52	16.14	-19.53	-13	-6.53	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-47.29	2.82	27.43	-22.68	-13	-9.68	Horizontal
1696.6	-49.65	2.82	27.43	-25.04	-13	-12.04	Vertical
2544.9	-48.23	2.92	27.74	-23.41	-13	-10.41	Vertical
2544.9	-49.49	2.92	27.74	-24.67	-13	-11.67	Horizontal
171.4	-33.39	1.67	16.09	-18.97	-13	-5.97	Vertical
247.2	-32.70	1.80	17.55	-16.95	-13	-3.95	Horizontal

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

Test Results for Low Channel 831.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Factor(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1663.0	-48.78	2.78	27.50	-24.06	-13	-11.06	Horizontal
1663.0	-41.03	2.78	27.50	-16.31	-13	-3.31	Vertical
2494.5	-48.98	2.90	27.80	-24.08	-13	-11.08	Vertical
2494.5	-49.79	2.90	27.80	-24.89	-13	-11.89	Horizontal
255.4	-34.99	1.52	15.72	-20.79	-13	-7.79	Vertical
163.1	-34.49	1.40	17.03	-18.86	-13	-5.86	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-47.68	2.80	27.48	-23.00	-13	-10.00	Horizontal
1673.0	-47.92	2.80	27.48	-23.24	-13	-10.24	Vertical
2509.5	-46.78	2.91	27.70	-21.99	-13	-8.99	Vertical
2509.5	-46.29	2.91	27.70	-21.50	-13	-8.50	Horizontal
227.1	-34.76	1.74	16.38	-20.12	-13	-7.12	Vertical
101.3	-34.77	1.79	15.20	-21.36	-13	-8.36	Horizontal
Test Results for High Channel 841.5MHz							
1683.0	-49.76	2.82	27.43	-25.15	-13	-12.15	Horizontal
1683.0	-48.91	2.82	27.43	-24.30	-13	-11.30	Vertical
2524.5	-48.45	2.92	27.74	-23.63	-13	-10.63	Vertical
2524.5	-48.39	2.92	27.74	-23.57	-13	-10.57	Horizontal
261.1	-32.73	1.78	17.44	-17.07	-13	-4.07	Vertical
120.1	-34.57	1.70	15.93	-20.34	-13	-7.34	Horizontal

9.6 LTE BAND 38

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

Test Results for Low Channel 2572.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5145	-53.90	4.01	27.5	-30.41	-25	-5.41	Horizontal
5145	-53.30	4.01	27.5	-29.81	-25	-4.81	Vertical
7717.5	-49.87	5.09	27.8	-27.16	-25	-2.16	Vertical
7717.5	-53.97	5.09	27.8	-31.26	-25	-6.26	Horizontal
Test Results For Mid Channel 2595MHz							
5190	-53.60	4.1	27.48	-30.22	-25	-5.22	Horizontal
5190	-53.35	4.1	27.48	-29.97	-25	-4.97	Vertical
7785	-53.04	5.42	27.7	-30.76	-25	-5.76	Vertical
7785	-54.83	5.42	27.7	-32.55	-25	-7.55	Horizontal
Test Results for High Channel 2617.5MHz							
5234	-55.30	4.11	27.43	-31.98	-25	-6.98	Horizontal
5234	-54.28	4.11	27.43	-30.96	-25	-5.96	Vertical
7851	-54.91	5.31	27.74	-32.48	-25	-7.48	Vertical
7851	-50.11	5.31	27.74	-27.68	-25	-2.68	Horizontal

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

Test Results for Low Channel 2580MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5160	-51.40	3.89	27.5	-27.79	-25	-2.79	Horizontal
5160	-52.52	3.89	27.5	-28.91	-25	-3.91	Vertical
7740	-56.90	5.33	27.8	-34.43	-25	-9.43	Vertical
7740	-51.07	5.33	27.8	-28.60	-25	-3.60	Horizontal
Test Results for Mid Channel 2595MHz							
5190	-57.45	4.1	27.48	-34.07	-25	-9.07	Horizontal
5190	-54.16	4.1	27.48	-30.78	-25	-5.78	Vertical
7785	-53.05	5.42	27.7	-30.77	-25	-5.77	Vertical
7785	-53.22	5.42	27.7	-30.94	-25	-5.94	Horizontal
Test Results for High Channel 2610MHz							
5220	-53.86	4.01	27.43	-30.44	-25	-5.44	Horizontal
5220	-55.30	4.01	27.43	-31.88	-25	-6.88	Vertical
7830	-51.16	5.34	27.74	-28.76	-25	-3.76	Vertical
7830	-53.54	5.34	27.74	-31.14	-25	-6.14	Horizontal

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

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

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

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

9.7 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	-46.55	4.02	29.80	-20.77	-13	-7.77	Horizontal
3421.4	-46.15	4.02	29.80	-20.37	-13	-7.37	Vertical
5132.1	-50.94	5.24	35.84	-20.34	-13	-7.34	Vertical
5132.1	-54.92	5.24	35.84	-24.32	-13	-11.32	Horizontal
112.6	-46.90	1.52	15.57	-32.85	-13	-19.85	Vertical
220.5	-50.88	1.33	17.14	-35.07	-13	-22.07	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-51.70	4.03	30.00	-25.73	-13	-12.73	Horizontal
3490.0	-50.62	4.03	30.00	-24.65	-13	-11.65	Vertical
5235.0	-53.94	5.25	35.86	-23.33	-13	-10.33	Vertical
5235.0	-48.23	5.25	35.86	-17.62	-13	-4.62	Horizontal
157.3	-49.70	1.53	17.13	-34.10	-13	-21.10	Vertical
213.1	-54.21	1.41	15.95	-39.67	-13	-26.67	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-54.67	4.05	30.01	-28.71	-13	-15.71	Horizontal
3558.6	-54.74	4.05	30.01	-28.78	-13	-15.78	Vertical
5337.9	-49.42	5.26	35.86	-18.82	-13	-5.82	Vertical
5337.9	-47.70	5.26	35.86	-17.10	-13	-4.10	Horizontal
170.6	-47.81	1.44	15.51	-33.74	-13	-20.74	Vertical
169.0	-45.94	1.78	15.76	-31.96	-13	-18.96	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	-48.05	4.02	29.80	-22.27	-13	-9.27	Horizontal
3440.0	-46.99	4.02	29.80	-21.21	-13	-8.21	Vertical
5160.0	-54.24	5.24	35.84	-23.64	-13	-10.64	Vertical
5160.0	-53.06	5.24	35.84	-22.46	-13	-9.46	Horizontal
268.8	-49.48	1.62	17.02	-34.08	-13	-21.08	Vertical
161.4	-51.19	1.32	17.31	-35.20	-13	-22.20	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-44.93	4.03	30.00	-18.96	-13	-5.96	Horizontal
3490.0	-51.15	4.03	30.00	-25.18	-13	-12.18	Vertical
5235.0	-54.93	5.25	35.86	-24.32	-13	-11.32	Vertical
5235.0	-51.79	5.25	35.86	-21.18	-13	-8.18	Horizontal
159.9	-46.99	1.45	15.17	-33.27	-13	-20.27	Vertical
172.1	-48.71	1.48	17.82	-32.37	-13	-19.37	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-50.89	2.91	27.68	-26.12	-13	-13.12	Horizontal
3540.0	-45.81	2.91	27.68	-21.04	-13	-8.04	Vertical
5310.0	-50.71	5.26	35.86	-20.11	-13	-7.11	Vertical
5310.0	-52.88	5.26	35.86	-22.28	-13	-9.28	Horizontal
197.3	-46.50	1.76	16.38	-31.88	-13	-18.88	Vertical
158.5	-44.61	1.43	17.13	-28.91	-13	-15.91	Horizontal

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

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

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

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

10. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- ☐ Temp. = -30° to $+50^{\circ}\text{C}$
- ☐ Voltage = low voltage DC 3.4V, Normal, DC 3.85V and High voltage, DC 4.4V.

Frequency Stability vs Temperature:

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

Frequency Stability vs Voltage:

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

MODES TESTED

- ☐ LTE Band 2/4/5/7/26/38/66

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]
3.6	1880	12.6	0.006688	2.5
3.85	1880	13.7	0.007289	2.5
4.35	1880	12.8	0.006817	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	12.5	0.006626	2.5
Extreme (50C)	1880	11.1	0.005907	2.5
Extreme (40C)	1880	13.5	0.007168	2.5
Extreme (30C)	1880	13.8	0.007324	2.5
Extreme (10C)	1880	13.6	0.007252	2.5
Extreme (0C)	1880	11.8	0.006287	2.5
Extreme (-10C)	1880	12.6	0.006695	2.5
Extreme (-20C)	1880	14.4	0.007662	2.5
Extreme (-30C)	1880	15.1	0.008012	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	1880	10.2	0.005422	2.5
3.85	1880	8.4	0.004489	2.5
4.35	1880	8.2	0.004371	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	9.1	0.004858	2.5
Extreme (50C)	1880	9.1	0.004856	2.5
Extreme (40C)	1880	8.3	0.004432	2.5
Extreme (30C)	1880	9.5	0.005047	2.5
Extreme (10C)	1880	8.8	0.004673	2.5
Extreme (0C)	1880	7.7	0.004107	2.5
Extreme (-10C)	1880	9.5	0.005043	2.5
Extreme (-20C)	1880	9.3	0.004932	2.5
Extreme (-30C)	1880	7.9	0.004221	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]
3.6	1732.5	8.9	0.005111	2.5
3.85	1732.5	8.5	0.004892	2.5
4.35	1732.5	8.2	0.004728	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	8.3	0.004813	2.5
Extreme (50C)	1732.5	8.5	0.004889	2.5
Extreme (40C)	1732.5	7.7	0.004464	2.5
Extreme (30C)	1732.5	5.8	0.003354	2.5
Extreme (10C)	1732.5	7.3	0.004186	2.5
Extreme (0C)	1732.5	9.0	0.005176	2.5
Extreme (-10C)	1732.5	8.5	0.004894	2.5
Extreme (-20C)	1732.5	6.7	0.003851	2.5
Extreme (-30C)	1732.5	8.2	0.004707	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	1732.5	10.0	0.005770	2.5
3.85	1732.5	9.1	0.005238	2.5
4.35	1732.5	8.1	0.004649	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	9.8	0.005648	2.5
Extreme (50C)	1732.5	8.4	0.004870	2.5
Extreme (40C)	1732.5	8.3	0.004807	2.5
Extreme (30C)	1732.5	9.2	0.005315	2.5
Extreme (10C)	1732.5	8.8	0.005077	2.5
Extreme (0C)	1732.5	7.9	0.004542	2.5
Extreme (-10C)	1732.5	8.5	0.004908	2.5
Extreme (-20C)	1732.5	8.8	0.005062	2.5
Extreme (-30C)	1732.5	8.5	0.004935	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]
3.6	836.5	5.3	0.006350	2.5
3.85	836.5	7.2	0.008550	2.5
4.35	836.5	4.7	0.005595	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	5.8	0.006953	2.5
Extreme (50C)	836.5	6.0	0.007120	2.5
Extreme (40C)	836.5	6.3	0.007575	2.5
Extreme (30C)	836.5	5.9	0.007092	2.5
Extreme (10C)	836.5	5.9	0.007044	2.5
Extreme (0C)	836.5	5.5	0.006594	2.5
Extreme (-10C)	836.5	5.6	0.006743	2.5
Extreme (-20C)	836.5	6.5	0.007786	2.5
Extreme (-30C)	836.5	6.3	0.007590	2.5

16QAM, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	836.5	6.1	0.007296	2.5
3.85	836.5	6.8	0.008102	2.5
4.35	836.5	4.4	0.005265	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.5	0.007715	2.5
Extreme (50C)	836.5	6.2	0.007458	2.5
Extreme (40C)	836.5	6.1	0.007256	2.5
Extreme (30C)	836.5	6.8	0.008147	2.5
Extreme (10C)	836.5	5.8	0.006954	2.5
Extreme (0C)	836.5	5.7	0.006787	2.5
Extreme (-10C)	836.5	6.0	0.007121	2.5
Extreme (-20C)	836.5	6.5	0.007783	2.5
Extreme (-30C)	836.5	6.5	0.007794	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]
3.6	2535	9.8	0.003848	2.5
3.85	2535	9.3	0.003660	2.5
4.35	2535	8.5	0.003371	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	9.6	0.003790	2.5
Extreme (50C)	2535	8.7	0.003431	2.5
Extreme (40C)	2535	8.3	0.003259	2.5
Extreme (30C)	2535	8.9	0.003496	2.5
Extreme (10C)	2535	8.2	0.003252	2.5
Extreme (0C)	2535	8.6	0.003389	2.5
Extreme (-10C)	2535	9.4	0.003709	2.5
Extreme (-20C)	2535	8.8	0.003452	2.5
Extreme (-30C)	2535	7.9	0.003136	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	2535	6.7	0.002636	2.5
3.85	2535	6.2	0.002465	2.5
4.35	2535	5.3	0.002103	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	6.6	0.002585	2.5
Extreme (50C)	2535	5.4	0.002113	2.5
Extreme (40C)	2535	5.2	0.002034	2.5
Extreme (30C)	2535	7.1	0.002808	2.5
Extreme (10C)	2535	5.3	0.002084	2.5
Extreme (0C)	2535	5.1	0.002008	2.5
Extreme (-10C)	2535	5.5	0.002189	2.5
Extreme (-20C)	2535	5.5	0.002172	2.5
Extreme (-30C)	2535	6.0	0.002367	2.5

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

10.5 LTE BAND 26

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	819	8.5	0.010417	2.5
3.85	819	5.1	0.006252	2.5
4.35	819	6.5	0.007876	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	819	8.1	0.009855	2.5
Extreme (50C)	819	1.1	0.001394	2.5
Extreme (40C)	819	2.1	0.002559	2.5
Extreme (30C)	819	6.8	0.008361	2.5
Extreme (10C)	819	5.2	0.006366	2.5
Extreme (0C)	819	6.3	0.007680	2.5
Extreme (-10C)	819	8.4	0.010217	2.5
Extreme (-20C)	819	6.9	0.008428	2.5
Extreme (-30C)	819	4.9	0.005994	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	819	2.8	0.003369	2.5
3.85	819	6.5	0.007942	2.5
4.35	819	5.6	0.006849	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	819	6.6	0.008018	2.5
Extreme (50C)	819	8.9	0.010814	2.5
Extreme (40C)	819	7.0	0.008495	2.5
Extreme (30C)	819	4.3	0.005261	2.5
Extreme (10C)	819	6.1	0.007474	2.5
Extreme (0C)	819	5.7	0.006979	2.5
Extreme (-10C)	819	8.1	0.009924	2.5
Extreme (-20C)	819	6.3	0.007665	2.5
Extreme (-30C)	819	7.8	0.009494	2.5

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

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	836.5	8.5	0.010178	2.5
3.85	836.5	6.7	0.008025	2.5
4.35	836.5	8.9	0.010617	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	11.0	0.013136	2.5
Extreme (50C)	836.5	9.2	0.011029	2.5
Extreme (40C)	836.5	6.5	0.007821	2.5
Extreme (30C)	836.5	9.0	0.010703	2.5
Extreme (10C)	836.5	7.4	0.008862	2.5
Extreme (0C)	836.5	9.1	0.010863	2.5
Extreme (-10C)	836.5	1.5	0.001743	2.5
Extreme (-20C)	836.5	8.5	0.010204	2.5
Extreme (-30C)	836.5	7.1	0.008493	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	836.5	9.0	0.010800	2.5
3.85	836.5	11.9	0.014280	2.5
4.35	836.5	10.2	0.012207	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.6	0.007920	2.5
Extreme (50C)	836.5	8.7	0.010411	2.5
Extreme (40C)	836.5	7.7	0.009218	2.5
Extreme (30C)	836.5	7.2	0.008629	2.5
Extreme (10C)	836.5	6.6	0.007895	2.5
Extreme (0C)	836.5	5.9	0.007100	2.5
Extreme (-10C)	836.5	5.5	0.006580	2.5
Extreme (-20C)	836.5	3.3	0.011237	2.5
Extreme (-30C)	836.5	8.1	0.007292	2.5

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

10.6 LTE BAND 38

Band 38 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	2595	9.0	0.003460	2.5
3.85	2595	6.7	0.002601	2.5
4.35	2595	7.1	0.002745	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	7.1	0.002740	2.5
Extreme (50C)	2595	4.4	0.001714	2.5
Extreme (40C)	2595	5.5	0.002128	2.5
Extreme (30C)	2595	4.9	0.001895	2.5
Extreme (10C)	2595	6.5	0.002486	2.5
Extreme (0C)	2595	5.0	0.001934	2.5
Extreme (-10C)	2595	9.6	0.003715	2.5
Extreme (-20C)	2595	10.3	0.003982	2.5
Extreme (-30C)	2595	6.0	0.002309	2.5

Band 38 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	2595	8.3	0.003214	2.5
3.85	2595	6.8	0.002639	2.5
4.35	2595	6.9	0.002667	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	7.9	0.003055	2.5
Extreme (50C)	2595	4.7	0.001798	2.5
Extreme (40C)	2595	5.5	0.002115	2.5
Extreme (30C)	2595	5.0	0.001914	2.5
Extreme (10C)	2595	6.7	0.002597	2.5
Extreme (0C)	2595	5.2	0.002000	2.5
Extreme (-10C)	2595	9.4	0.003638	2.5
Extreme (-20C)	2595	10.7	0.004143	2.5
Extreme (-30C)	2595	5.8	0.002249	2.5

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

10.7 LTE BAND 66

QPSK, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	1745	12.9	0.00738	2.5
3.85	1745	13.7	0.00783	2.5
4.35	1745	12.8	0.00735	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	7.4	0.004263	2.5
Extreme (50C)	1745	5.2	0.002997	2.5
Extreme (40C)	1745	5.2	0.003007	2.5
Extreme (30C)	1745	4.8	0.002777	2.5
Extreme (10C)	1745	6.4	0.003673	2.5
Extreme (0C)	1745	5.0	0.002853	2.5
Extreme (-10C)	1745	9.2	0.005254	2.5
Extreme (-20C)	1745	10.7	0.006115	2.5
Extreme (-30C)	1745	6.2	0.003574	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	1745	12.5	0.007170	2.5
3.85	1745	13.8	0.007902	2.5
4.35	1745	13.8	0.007891	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	7.3	0.004179	2.5
Extreme (50C)	1745	4.6	0.002611	2.5
Extreme (40C)	1745	5.7	0.003293	2.5
Extreme (30C)	1745	4.5	0.002592	2.5
Extreme (10C)	1745	6.9	0.003951	2.5
Extreme (0C)	1745	4.8	0.002727	2.5
Extreme (-10C)	1745	9.2	0.005273	2.5
Extreme (-20C)	1745	10.4	0.005984	2.5
Extreme (-30C)	1745	6.2	0.003573	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.

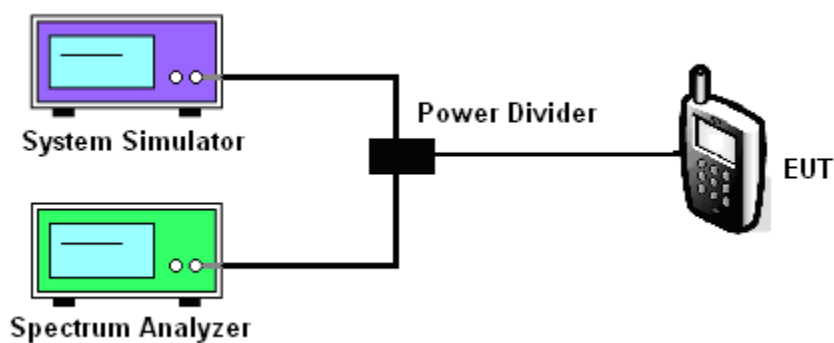
11.2 Measuring Instruments

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 2/4/5/7/38/66
- ☐

Test data reference attachment.

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