

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

FCC ID: ZSW-30-135

Product: Mobile Phone

Trade Mark: Bmobile

Model Number: Novus 65

Family Model: N/A

Report No.: S24080603402005

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 : Novus 65

Family Model: N/A

Test sample number S240806034002

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 Aug. 06, 2024 ~ Aug. 20, 2024

Date of Issue Aug. 20, 2024

Test Result **Pass**

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TABLE OF CONTENTS

1. GENERAL INFORMATION.....	5
1.1 PRODUCT DESCRIPTION	5
1.2 RELATED SUBMITTAL(S) / GRANT (S)	7
1.3 TEST METHODOLOGY.....	7
1.4 TEST FACILITY.....	7
MEASUREMENT UNCERTAINTY	7
1.5 SPECIAL ACCESSORIES.....	7
1.6 WORST-CASE CONFIGURATION AND MODE.....	7
2. SYSTEM TEST CONFIGURATION	8
2.1 EUT CONFIGURATION.....	8
2.2 EUT EXERCISE	8
2.3 CONFIGURATION OF EUT SYSTEM.....	8
2.4 TEST SETUP	9
3.TEST AND MEASUREMENT EQUIPMENT	10
4. OUTPUT POWER.....	12
4.1 OUTPUT POWER MEASUREMENT	12
6. BANDEDGE AND EMISSION MASK.....	15
7. OUT OF BAND EMISSIONS	16
7.1 MEASUREMENT METHOD	17
8. RADIATED MEASUREMENT	18
8.1. RADIATED POWER (ERP & EIRP).....	18
8.2 LTE BAND 2.....	19
8.3 LTE BAND 4.....	23
8.4 LTE BAND 5.....	27
8.5 LTE BAND 7.....	29

8.6 LTE BAND 26A	31
8.7 LTE BAND 26B	33
8.8 LTE BAND 38	36
8.9 LTE BAND 66	38
9. SPURIOUS RADIATION EMISSION	42
9.1 LTE BAND 2.....	44
9.2 LTE BAND 4.....	46
9.3 LTE BAND 5.....	48
9.4 LTE BAND 7.....	50
9.5 LTE BAND 26	52
9.6 LTE BAND 38	56
9.7 LTE BAND 66	58
10. FREQUENCY STABILITY	60
10.1 LTE BAND 2	61
10.2 LTE BAND 4	63
10.3 LTE BAND 5	65
10.4 LTE BAND 7	67
10.5 LTE BAND 26	69
10.6 LTE BAND 38	73
10.7 LTE BAND 66	75
11. PEAK-TO-AVERAGE RATIO.....	77
11.1 Description of the PAR Measurement.....	77
11.2 Measuring Instruments	77
11.3 Test Procedures.....	77
11.4 Test Setup.....	77

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	Novus 65
Family Model	N/A
Model Difference	N/A
FCC ID:	ZSW-30-135
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:-0.38dBi; B4:-0.36dBi; B5:-0.58dBi; B7:-0.29dBi; B26:-0.36dBi; B38:-0.31dBi; B66:-0.36dBi;
Power Supply:	DC 3.85V from Battery or DC 5V from Adapter.
Battery	DC 3.85V, 4000mAh, 15.4Wh
Adapter:	INPUT: AC 100-240V~50-60Hz 0.2A OUTPUT: DC 5.0V---1A
Extreme Vol. Limits:	DC 3.6V to DC 4.35V (Nominal DC 3.85V) (Note 1)
HW Version	BMOBILE_NOVUS_65_HW_V1.0
SW Version	BMOBILE_NOVUS_65_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-30-135** 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

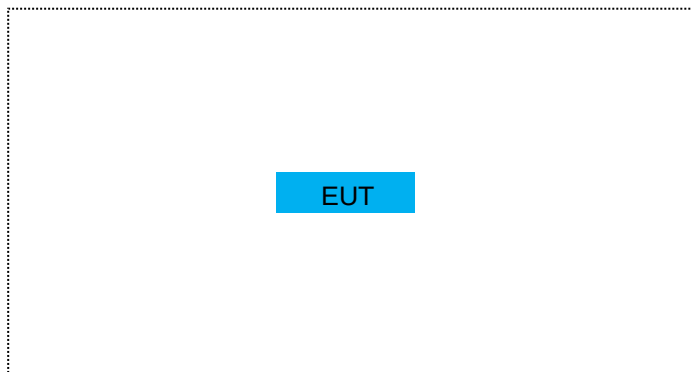
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Mobile Phone	Novus 65	FCC ID: ZSW-30-135	EUT

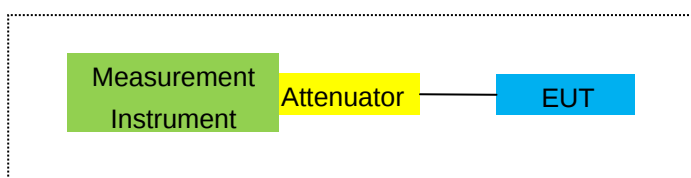
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

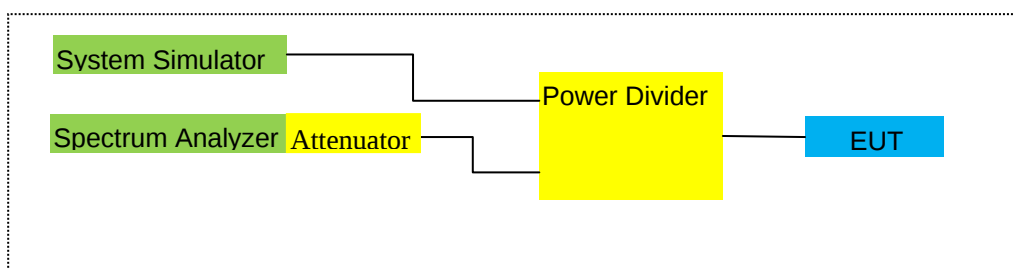
For Radiated Test Cases



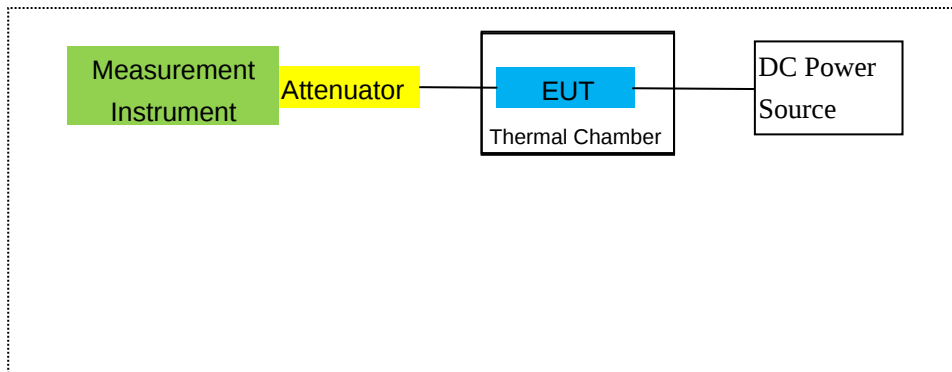
For Conducted Output Power



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
64 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.	Max.	Polarization Of Max. ERP	
						EIRP	EIRP		
						Average (dBm)	Average (mW)		
1.4MHz Band QPSK	1/#Mid	1850.7	-4.67	3.76	28.24	19.81	95.719	Horizontal	Pass
		1880	-4.48	3.91	28.22	19.83	96.161	Horizontal	Pass
		1909.3	-4.39	3.93	28.20	19.88	97.275	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-4.73	3.77	28.23	19.73	93.972	Horizontal	Pass
		1880	-4.58	3.91	28.24	19.75	94.406	Horizontal	Pass
		1908.5	-4.45	3.94	28.25	19.86	96.828	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-4.62	3.77	28.31	19.92	98.175	Horizontal	Pass
		1880	-4.24	3.91	28.22	20.07	101.625	Horizontal	Pass
		1907.5	-4.17	3.94	28.20	20.09	102.094	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-4.48	3.79	28.33	20.06	101.391	Horizontal	Pass
		1880	-4.18	3.95	28.22	20.09	102.094	Horizontal	Pass
		1905	-4.07	3.97	28.19	20.15	103.514	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-4.44	3.79	28.34	20.11	102.565	Horizontal	Pass
		1880	-4.23	3.95	28.22	20.04	100.925	Horizontal	Pass
		1902.5	-4.09	3.97	28.18	20.12	102.802	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-4.43	3.81	28.35	20.11	102.565	Horizontal	Pass
		1880	-4.10	3.96	28.22	20.16	103.753	Horizontal	Pass
		1900	-4.04	4.00	28.16	20.12	102.802	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-5.22	3.76	28.24	19.26	84.333	Vertical	Pass
		1880	-5.41	3.91	28.22	18.90	77.625	Vertical	Pass
		1909.3	-5.72	3.93	28.20	18.55	71.614	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-5.53	3.77	28.23	18.93	78.163	Vertical	Pass
		1880	-4.80	3.91	28.24	19.53	89.743	Vertical	Pass
		1908.5	-5.50	3.94	28.25	18.81	76.033	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-5.87	3.77	28.31	18.67	73.621	Vertical	Pass
		1880	-5.26	3.91	28.22	19.05	80.353	Vertical	Pass
		1907.5	-4.74	3.94	28.20	19.52	89.536	Vertical	Pass
10.0MHz Band	1/#Mid	1855	-5.96	3.79	28.33	18.58	72.111	Vertical	Pass
		1880	-5.41	3.95	28.22	18.86	76.913	Vertical	Pass

QPSK		1905	-4.74	3.97	28.19	19.48	88.716	Vertical	Pass
15.0MHz	1/#Mid	1857.5	-5.34	3.79	28.34	19.21	83.368	Vertical	Pass
Band		1880	-5.06	3.95	28.22	19.21	83.368	Vertical	Pass
QPSK		1902.5	-5.13	3.97	28.18	19.08	80.910	Vertical	Pass
20.0MHz	1/#Mid	1860	-5.22	3.81	28.35	19.32	85.507	Vertical	Pass
Band		1880	-5.57	3.96	28.22	18.69	73.961	Vertical	Pass
QPSK		1900	-5.19	4.00	28.16	18.97	78.886	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	-5.79	3.76	28.24	18.69	73.961	Horizontal	Pass
		1880	-5.26	3.91	28.22	19.05	80.353	Horizontal	Pass
		1909.3	-5.19	3.93	28.20	19.08	80.910	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-5.29	3.77	28.23	19.17	82.604	Horizontal	Pass
		1880	-5.37	3.91	28.24	18.96	78.705	Horizontal	Pass
		1908.5	-5.58	3.94	28.25	18.73	74.645	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-5.23	3.77	28.31	19.31	85.310	Horizontal	Pass
		1880	-5.14	3.91	28.22	19.17	82.604	Horizontal	Pass
		1907.5	-4.82	3.94	28.20	19.44	87.902	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-5.28	3.79	28.33	19.26	84.333	Horizontal	Pass
		1880	-5.27	3.95	28.22	19.00	79.433	Horizontal	Pass
		1905	-4.74	3.97	28.19	19.48	88.716	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-5.26	3.79	28.34	19.29	84.918	Horizontal	Pass
		1880	-5.05	3.95	28.22	19.22	83.560	Horizontal	Pass
		1902.5	-5.01	3.97	28.18	19.20	83.176	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-5.15	3.81	28.35	19.39	86.896	Horizontal	Pass
		1880	-4.85	3.96	28.22	19.41	87.297	Horizontal	Pass
		1900	-4.67	4.00	28.16	19.49	88.920	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-6.76	3.76	28.24	17.72	59.156	Vertical	Pass
		1880	-6.27	3.91	28.22	18.04	63.680	Vertical	Pass
		1909.3	-6.25	3.93	28.20	18.02	63.387	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-6.30	3.77	28.23	18.16	65.464	Vertical	Pass
		1880	-6.73	3.91	28.24	17.60	57.544	Vertical	Pass
		1908.5	-6.65	3.94	28.25	17.66	58.345	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-6.08	3.77	28.31	18.46	70.146	Vertical	Pass
		1880	-6.10	3.91	28.22	18.21	66.222	Vertical	Pass
		1907.5	-6.23	3.94	28.20	18.03	63.533	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-6.90	3.79	28.33	17.64	58.076	Vertical	Pass
		1880	-6.57	3.95	28.22	17.70	58.884	Vertical	Pass
		1905	-5.74	3.97	28.19	18.48	70.469	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-6.79	3.79	28.34	17.76	59.704	Vertical	Pass
		1880	-6.49	3.95	28.22	17.78	59.979	Vertical	Pass
		1902.5	-6.10	3.97	28.18	18.11	64.714	Vertical	Pass

20.0MHz	1/#Mid	1860	-6.43	3.81	28.35	18.11	64.714	Vertical	Pass
Band 16		1880	-6.15	3.96	28.22	18.11	64.714	Vertical	Pass
QAM		1900	-6.43	4.00	28.16	17.73	59.293	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	-4.58	3.12	27.58	19.88	97.275	Horizontal	Pass
		1732.5	-4.57	3.27	27.61	19.77	94.842	Horizontal	Pass
		1754.3	-4.55	3.29	27.63	19.79	95.280	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-4.75	3.13	27.61	19.73	93.972	Horizontal	Pass
		1732.5	-4.67	3.27	27.61	19.67	92.683	Horizontal	Pass
		1753.5	-4.59	3.30	27.62	19.73	93.972	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-4.52	3.13	27.63	19.98	99.541	Horizontal	Pass
		1732.5	-4.42	3.27	27.61	19.92	98.175	Horizontal	Pass
		1752.5	-4.30	3.30	27.60	20.00	100.000	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-4.46	3.15	27.64	20.03	100.693	Horizontal	Pass
		1732.5	-4.23	3.31	27.61	20.07	101.625	Horizontal	Pass
		1750	-4.25	3.33	27.59	20.01	100.231	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-4.47	3.15	27.65	20.03	100.693	Horizontal	Pass
		1732.5	-4.31	3.31	27.61	19.99	99.770	Horizontal	Pass
		1747.5	-4.25	3.33	27.57	19.99	99.770	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-4.41	3.17	27.66	20.08	101.859	Horizontal	Pass
		1732.5	-4.24	3.32	27.61	20.05	101.158	Horizontal	Pass
		1745	-4.18	3.36	27.56	20.02	100.462	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-5.13	3.12	27.58	19.33	85.704	Vertical	Pass
		1732.5	-5.42	3.27	27.61	18.92	77.983	Vertical	Pass
		1754.3	-5.37	3.29	27.63	18.97	78.886	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-5.19	3.13	27.61	19.29	84.918	Vertical	Pass
		1732.5	-5.17	3.27	27.61	19.17	82.604	Vertical	Pass
		1753.5	-4.92	3.30	27.62	19.40	87.096	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-4.99	3.13	27.63	19.51	89.331	Vertical	Pass
		1732.5	-5.35	3.27	27.61	18.99	79.250	Vertical	Pass
		1752.5	-5.36	3.30	27.60	18.94	78.343	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-5.27	3.15	27.64	19.22	83.560	Vertical	Pass
		1732.5	-5.52	3.31	27.61	18.78	75.509	Vertical	Pass
		1750	-4.98	3.33	27.59	19.28	84.723	Vertical	Pass

15.0MHz		1717.5	-5.92	3.15	27.65	18.58	72.111	Vertical	Pass
Band	1/#Mid	1732.5	-5.09	3.31	27.61	19.21	83.368	Vertical	Pass
QPSK		1747.5	-5.30	3.33	27.57	18.94	78.343	Vertical	Pass
20.0MHz		1720	-5.17	3.17	27.66	19.32	85.507	Vertical	Pass
Band	1/#Mid	1732.5	-4.88	3.32	27.61	19.41	87.297	Vertical	Pass
QPSK		1745	-4.73	3.36	27.56	19.47	88.512	Vertical	Pass

Note:

SG Level= Signal generator output

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

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

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss	Antenna Factor	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)	(dBm)	(dB)	Average (dBm)	Average (mW)		
1.4MHz Band 16 QAM	1/#Mid	1710.7	-5.39	3.12	27.58	19.07	80.724	Horizontal	Pass
		1732.5	-5.24	3.27	27.61	19.10	81.283	Horizontal	Pass
		1754.3	-5.24	3.29	27.63	19.10	81.283	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-5.33	3.13	27.61	19.15	82.224	Horizontal	Pass
		1732.5	-5.46	3.27	27.61	18.88	77.268	Horizontal	Pass
		1753.5	-5.68	3.30	27.62	18.64	73.114	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-5.16	3.13	27.63	19.34	85.901	Horizontal	Pass
		1732.5	-5.12	3.27	27.61	19.22	83.560	Horizontal	Pass
		1752.5	-4.81	3.30	27.60	19.49	88.920	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-5.23	3.15	27.64	19.26	84.333	Horizontal	Pass
		1732.5	-5.42	3.31	27.61	18.88	77.268	Horizontal	Pass
		1750	-4.80	3.33	27.59	19.46	88.308	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-5.03	3.15	27.65	19.47	88.512	Horizontal	Pass
		1732.5	-5.09	3.31	27.61	19.21	83.368	Horizontal	Pass
		1747.5	-5.11	3.33	27.57	19.13	81.846	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-4.98	3.17	27.66	19.51	89.331	Horizontal	Pass
		1732.5	-4.99	3.32	27.61	19.30	85.114	Horizontal	Pass
		1745	-4.80	3.36	27.56	19.40	87.096	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-5.96	3.12	27.58	18.50	70.795	Vertical	Pass
		1732.5	-5.90	3.27	27.61	18.44	69.823	Vertical	Pass
		1754.3	-6.72	3.29	27.63	17.62	57.810	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-6.58	3.13	27.61	17.90	61.660	Vertical	Pass
		1732.5	-5.85	3.27	27.61	18.49	70.632	Vertical	Pass
		1753.5	-6.00	3.30	27.62	18.32	67.920	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-6.80	3.13	27.63	17.70	58.884	Vertical	Pass
		1732.5	-6.01	3.27	27.61	18.33	68.077	Vertical	Pass
		1752.5	-6.61	3.30	27.60	17.69	58.749	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-6.39	3.15	27.64	18.10	64.565	Vertical	Pass
		1732.5	-6.42	3.31	27.61	17.88	61.376	Vertical	Pass
		1750	-6.56	3.33	27.59	17.70	58.884	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-6.64	3.15	27.65	17.86	61.094	Vertical	Pass
		1732.5	-6.53	3.31	27.61	17.77	59.841	Vertical	Pass
		1747.5	-5.93	3.33	27.57	18.31	67.764	Vertical	Pass

20.0MHz		1720	-6.01	3.17	27.66	18.48	70.469	Vertical	Pass
Band 16	1/#Mid	1732.5	-6.33	3.32	27.61	17.96	62.517	Vertical	Pass
QAM		1745	-5.94	3.36	27.56	18.26	66.988	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 Of Max. ERP	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average		
							(dBm)	(mW)		
1.4MHz Band QPSK	3/#Mid	824.7	4.72	2.01	19.68	2.15	20.24	105.682	Horizontal	Pass
		836.5	4.60	2.01	19.77	2.15	20.21	104.954	Horizontal	Pass
		848.3	4.40	2.02	19.82	2.15	20.05	101.158	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	4.49	2.01	19.70	2.15	20.03	100.693	Horizontal	Pass
		836.5	4.39	2.01	19.77	2.15	20.00	100.000	Horizontal	Pass
		847.5	4.26	2.02	19.81	2.15	19.90	97.724	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	4.77	2.01	19.71	2.15	20.32	107.647	Horizontal	Pass
		836.5	4.65	2.01	19.77	2.15	20.26	106.170	Horizontal	Pass
		846.5	4.49	2.02	19.79	2.15	20.11	102.565	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	4.79	2.01	19.73	2.15	20.36	108.643	Horizontal	Pass
		836.5	4.74	2.01	19.77	2.15	20.35	108.393	Horizontal	Pass
		844	4.64	2.02	19.78	2.15	20.25	105.925	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	824.7	3.12	2.01	19.68	2.15	18.64	73.114	Vertical	Pass
		836.5	3.36	2.01	19.77	2.15	18.97	78.886	Vertical	Pass
		848.3	3.81	2.02	19.82	2.15	19.46	88.308	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	3.37	2.01	19.70	2.15	18.91	77.804	Vertical	Pass
		836.5	3.49	2.01	19.77	2.15	19.10	81.283	Vertical	Pass
		847.5	3.69	2.02	19.81	2.15	19.33	85.704	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	3.14	2.01	19.71	2.15	18.69	73.961	Vertical	Pass
		836.5	3.30	2.01	19.77	2.15	18.91	77.804	Vertical	Pass
		846.5	3.85	2.02	19.79	2.15	19.47	88.512	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	3.83	2.01	19.73	2.15	19.40	87.096	Vertical	Pass
		836.5	3.20	2.01	19.77	2.15	18.81	76.033	Vertical	Pass
		844	3.81	2.02	19.78	2.15	19.42	87.498	Vertical	Pass

Radiated Power (ERP) for Band 5

Radiated Power (ERP) for Band 5										
Mode	RB/R B SIZE	Frequenc y	Result							Conclusio n
			SG	Cable	Antenn	Correctio	Max.	Max.	Polarizatio	
			Level	Loss	a	n	EIRP	EIRP	n Of Max.	
			(dBm	(dBm)	Factor		Averag	Averag	ERP	
			)		(dB)		e	e		
							(dBm)	(mW)		
1.4MHz Band 16 QAM	3/#Mid	824.7	3.87	2.01	19.68	2.15	19.39	86.896	Horizontal	Pass
		836.5	3.80	2.01	19.77	2.15	19.41	87.297	Horizontal	Pass
		848.3	3.64	2.02	19.82	2.15	19.29	84.918	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	3.95	2.01	19.70	2.15	19.49	88.920	Horizontal	Pass
		836.5	3.66	2.01	19.77	2.15	19.27	84.528	Horizontal	Pass
		847.5	3.14	2.02	19.81	2.15	18.78	75.509	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	4.27	2.01	19.71	2.15	19.82	95.940	Horizontal	Pass
		836.5	4.04	2.01	19.77	2.15	19.65	92.257	Horizontal	Pass
		846.5	3.79	2.02	19.79	2.15	19.41	87.297	Horizontal	Pass
10.0MH z Band 16 QAM	1/#Mid	829	4.27	2.01	19.73	2.15	19.84	96.383	Horizontal	Pass
		836.5	3.99	2.01	19.77	2.15	19.60	91.201	Horizontal	Pass
		844	3.53	2.02	19.78	2.15	19.14	82.035	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	2.50	2.01	19.68	2.15	18.02	63.387	Vertical	Pass
		836.5	3.07	2.01	19.77	2.15	18.68	73.790	Vertical	Pass
		848.3	2.76	2.02	19.82	2.15	18.41	69.343	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	3.15	2.01	19.70	2.15	18.69	73.961	Vertical	Pass
		836.5	3.91	2.01	19.77	2.15	19.52	89.536	Vertical	Pass
		847.5	3.47	2.02	19.81	2.15	19.11	81.470	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	2.00	2.01	19.71	2.15	17.55	56.885	Vertical	Pass
		836.5	3.23	2.01	19.77	2.15	18.84	76.560	Vertical	Pass
		846.5	3.05	2.02	19.79	2.15	18.67	73.621	Vertical	Pass
10.0MH z Band 16 QAM	1/#Mid	829	2.86	2.01	19.73	2.15	18.43	69.663	Vertical	Pass
		836.5	1.95	2.01	19.77	2.15	17.56	57.016	Vertical	Pass
		844	3.51	2.02	19.78	2.15	19.12	81.658	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 Loss	Antenna Factor	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)	(dBm)	(dB)	Average (dBm)	Average (mW)		
5.0MHz Band QPSK	1/#Mid	2502.5	-2.86	4.54	27.75	20.35	108.393	Horizontal	Pass
		2535	-2.69	4.69	27.72	20.34	108.143	Horizontal	Pass
		2567.5	-2.62	4.71	27.71	20.38	109.144	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	-2.79	4.55	27.76	20.42	110.154	Horizontal	Pass
		2535	-2.60	4.69	27.72	20.43	110.408	Horizontal	Pass
		2565	-2.52	4.72	27.70	20.46	111.173	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-2.80	4.55	27.77	20.42	110.154	Horizontal	Pass
		2535	-2.66	4.69	27.72	20.37	108.893	Horizontal	Pass
		2562.5	-2.56	4.72	27.69	20.41	109.901	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-2.74	4.57	27.78	20.47	111.429	Horizontal	Pass
		2535	-2.56	4.73	27.72	20.43	110.408	Horizontal	Pass
		2560	-2.52	4.75	27.68	20.41	109.901	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-4.34	4.54	27.75	18.87	77.090	Vertical	Pass
		2535	-4.49	4.69	27.72	18.54	71.450	Vertical	Pass
		2567.5	-3.84	4.71	27.71	19.16	82.414	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	-3.82	4.55	27.76	19.39	86.896	Vertical	Pass
		2535	-3.63	4.69	27.72	19.40	87.096	Vertical	Pass
		2565	-4.09	4.72	27.70	18.89	77.446	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-4.60	4.55	27.77	18.62	72.778	Vertical	Pass
		2535	-4.27	4.69	27.72	18.76	75.162	Vertical	Pass
		2562.5	-3.53	4.72	27.69	19.44	87.902	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	-3.88	4.57	27.78	19.33	85.704	Vertical	Pass
		2535	-3.50	4.73	27.72	19.49	88.920	Vertical	Pass
		2560	-3.99	4.75	27.68	18.94	78.343	Vertical	Pass

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss	Antenna Factor	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	(dBm)	(dB)	Average (dBm)	Average (mW)	Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	2502.5	-3.55	4.54	27.75	19.66	92.470	Horizontal	Pass
		2535	-3.24	4.69	27.72	19.79	95.280	Horizontal	Pass
		2567.5	-3.32	4.71	27.71	19.68	92.897	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-3.44	4.55	27.76	19.77	94.842	Horizontal	Pass
		2535	-3.45	4.69	27.72	19.58	90.782	Horizontal	Pass
		2565	-3.72	4.72	27.70	19.26	84.333	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-3.62	4.55	27.77	19.60	91.201	Horizontal	Pass
		2535	-3.59	4.69	27.72	19.44	87.902	Horizontal	Pass
		2562.5	-3.20	4.72	27.69	19.77	94.842	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-3.50	4.57	27.78	19.71	93.541	Horizontal	Pass
		2535	-3.17	4.73	27.72	19.82	95.940	Horizontal	Pass
		2560	-3.27	4.75	27.68	19.66	92.470	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	-3.79	4.54	27.75	19.42	87.498	Vertical	Pass
		2535	-5.41	4.69	27.72	17.62	57.810	Vertical	Pass
		2567.5	-3.79	4.71	27.71	19.21	83.368	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	-5.19	4.55	27.76	18.02	63.387	Vertical	Pass
		2535	-4.34	4.69	27.72	18.69	73.961	Vertical	Pass
		2565	-4.10	4.72	27.70	18.88	77.268	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	-4.09	4.55	27.77	19.13	81.846	Vertical	Pass
		2535	-4.21	4.69	27.72	18.82	76.208	Vertical	Pass
		2562.5	-3.71	4.72	27.69	19.26	84.333	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	-4.05	4.57	27.78	19.16	82.414	Vertical	Pass
		2535	-3.99	4.73	27.72	19.00	79.433	Vertical	Pass
		2560	-4.40	4.75	27.68	18.53	71.285	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 26A

Radiated Power (ERP) for Band 26(814-824)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
1.4MHz BW QPSK	6/0	814.7	-2.17	3.76	28.24	2.15	20.16	103.75	Horizontal	Pass
		819	-2.03	3.91	28.22	2.15	20.13	103.04	Horizontal	Pass
		823.3	-2.15	3.93	28.20	2.15	19.97	99.31	Horizontal	Pass
3.0MHz BW QPSK	15/0	815.5	-2.36	3.77	28.23	2.15	19.95	98.86	Horizontal	Pass
		819	-2.26	3.91	28.24	2.15	19.92	98.17	Horizontal	Pass
		822.5	-2.34	3.94	28.25	2.15	19.82	95.94	Horizontal	Pass
5.0MHz BW QPSK	25/0	816.5	-2.15	3.77	28.31	2.15	20.24	105.68	Horizontal	Pass
		819	-1.98	3.91	28.22	2.15	20.18	104.23	Horizontal	Pass
		821.5	-2.08	3.94	28.20	2.15	20.03	100.69	Horizontal	Pass
10.0MHz BW QPSK	50/0	819	-1.88	3.91	28.22	2.15	20.28	106.66	Horizontal	Pass
1.4MHz BW QPSK	6/0	814.7	-2.13	3.79	28.34	2.15	20.27	106.41	Vertical	Pass
		819	-1.95	3.95	28.22	2.15	20.17	103.99	Vertical	Pass
		823.3	-2.70	3.97	28.18	2.15	19.36	86.30	Vertical	Pass
3.0MHz BW QPSK	15/0	815.5	-3.70	3.77	28.23	2.15	18.61	72.61	Vertical	Pass
		819	-3.34	3.91	28.24	2.15	18.84	76.56	Vertical	Pass
		822.5	-3.34	3.94	28.25	2.15	18.82	76.21	Vertical	Pass
5.0MHz BW QPSK	25/0	816.5	-2.96	3.77	28.31	2.15	19.43	87.70	Vertical	Pass
		819	-3.12	3.91	28.22	2.15	19.04	80.17	Vertical	Pass
		821.5	-2.97	3.94	28.20	2.15	19.14	82.04	Vertical	Pass
10.0MHz BW QPSK	50/0	819	-3.33	3.91	28.22	2.15	18.83	76.38	Vertical	Pass

Radiated Power (ERP) for Band 26(814-824)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Factor (dB)	Correction (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz	6/0	814.7	-2.23	3.76	28.24	2.15	20.10	102.33	Horizontal	Pass
BW 16		819	-2.09	3.91	28.22	2.15	20.07	101.62	Horizontal	Pass
QAM		823.3	-2.21	3.93	28.20	2.15	19.91	97.95	Horizontal	Pass
3.0MHz	15/0	815.5	-2.42	3.77	28.23	2.15	19.89	97.50	Horizontal	Pass
BW 16		819	-2.32	3.91	28.24	2.15	19.86	96.83	Horizontal	Pass
QAM		822.5	-2.40	3.94	28.25	2.15	19.76	94.62	Horizontal	Pass
5.0MHz	25/0	816.5	-2.21	3.77	28.31	2.15	20.18	104.23	Horizontal	Pass
BW 16		819	-2.04	3.91	28.22	2.15	20.12	102.80	Horizontal	Pass
QAM		821.5	-2.14	3.94	28.20	2.15	19.97	99.31	Horizontal	Pass
10.0MHz	50/0	819	-1.96	3.91	28.24	2.15	20.22	105.20	Horizontal	Pass
BW 16										
QAM										
1.4MHz	6/0	814.7	-2.19	3.79	28.34	2.15	20.21	104.95	Vertical	Pass
BW 16		819	-2.01	3.95	28.22	2.15	20.11	102.57	Vertical	Pass
QAM		823.3	-3.59	3.97	28.18	2.15	18.47	70.31	Vertical	Pass
3.0MHz	15/0	815.5	-3.70	3.77	28.23	2.15	18.61	72.61	Vertical	Pass
BW 16		819	-2.95	3.91	28.24	2.15	19.23	83.75	Vertical	Pass
QAM		822.5	-2.97	3.94	28.25	2.15	19.19	82.99	Vertical	Pass
5.0MHz	25/0	816.5	-3.18	3.77	28.31	2.15	19.21	83.37	Vertical	Pass
BW 16		819	-3.06	3.91	28.22	2.15	19.10	81.28	Vertical	Pass
QAM		821.5	-3.57	3.94	28.20	2.15	18.54	71.45	Vertical	Pass
10.0MHz	50/0	819	-2.98	3.91	28.24	2.15	19.20	83.18	Vertical	Pass
BW 16										
QAM										

8.7 LTE BAND 26B

Radiated Power (ERP) for Band 26(824-849)										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss	Antenna Factor	Correction	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	Of Max. ERP	
							(dBm)	(mW)		
1.4MHz Band QPSK	6/0	824.7	3.54	2.01	19.68	2.15	19.06	80.54	Horizontal	Pass
		836.5	3.48	2.01	19.77	2.15	19.09	81.10	Horizontal	Pass
		848.3	3.42	2.02	19.82	2.15	19.07	80.72	Horizontal	Pass
3.0MHz Band QPSK	15/0	825.5	3.58	2.01	19.70	2.15	19.12	81.66	Horizontal	Pass
		836.5	3.21	2.01	19.77	2.15	18.82	76.21	Horizontal	Pass
		847.5	3.66	2.02	19.81	2.15	19.30	85.11	Horizontal	Pass
5.0MHz Band QPSK	25/0	826.5	3.84	2.01	19.71	2.15	19.39	86.90	Horizontal	Pass
		836.5	3.66	2.01	19.77	2.15	19.27	84.53	Horizontal	Pass
		846.5	3.03	2.02	19.79	2.15	18.65	73.28	Horizontal	Pass
10.0MHz Band QPSK	50/0	829	3.05	2.01	19.73	2.15	18.62	72.78	Horizontal	Pass
		836.5	3.17	2.01	19.77	2.15	18.78	75.51	Horizontal	Pass
		844	3.77	2.02	19.78	2.15	19.38	86.70	Horizontal	Pass
15.0MHz Band QPSK	75/0	831.5	2.86	2.01	19.73	2.15	18.43	69.66	Horizontal	Pass
		836.5	3.79	2.01	19.77	2.15	19.40	87.10	Horizontal	Pass
		841.5	3.52	2.02	19.78	2.15	19.13	81.85	Horizontal	Pass
1.4MHz Band QPSK	6/0	824.7	3.12	2.01	19.68	2.15	18.64	73.11	Vertical	Pass
		836.5	3.06	2.01	19.77	2.15	18.67	73.62	Vertical	Pass
		848.3	3.32	2.02	19.82	2.15	18.97	78.89	Vertical	Pass
3.0MHz Band QPSK	15/0	825.5	3.26	2.01	19.70	2.15	18.80	75.86	Vertical	Pass
		836.5	2.88	2.01	19.77	2.15	18.49	70.63	Vertical	Pass
		847.5	3.13	2.02	19.81	2.15	18.77	75.34	Vertical	Pass
5.0MHz Band QPSK	25/0	826.5	3.28	2.01	19.71	2.15	18.83	76.38	Vertical	Pass
		836.5	3.03	2.01	19.77	2.15	18.64	73.11	Vertical	Pass
		846.5	3.15	2.02	19.79	2.15	18.77	75.34	Vertical	Pass
10.0MHz Band QPSK	50/0	829	2.92	2.01	19.73	2.15	18.49	70.63	Vertical	Pass
		836.5	3.26	2.01	19.77	2.15	18.87	77.09	Vertical	Pass
		844	3.10	2.02	19.78	2.15	18.71	74.30	Vertical	Pass
15.0MHz Band QPSK	75/0	831.5	2.93	2.01	19.73	2.15	18.50	70.79	Vertical	Pass
		836.5	3.68	2.01	19.77	2.15	19.29	84.92	Vertical	Pass
		841.5	3.28	2.02	19.78	2.15	18.89	77.45	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	3.70	2.01	19.68	2.15	19.22	83.56	Horizontal	Pass
Band 16		836.5	2.93	2.01	19.77	2.15	18.54	71.45	Horizontal	Pass
QAM		848.3	2.87	2.02	19.82	2.15	18.52	71.12	Horizontal	Pass
3.0MHz	15/0	825.5	2.96	2.01	19.70	2.15	18.50	70.79	Horizontal	Pass
Band 16		836.5	3.26	2.01	19.77	2.15	18.87	77.09	Horizontal	Pass
QAM		847.5	2.96	2.02	19.81	2.15	18.60	72.44	Horizontal	Pass
5.0MHz	25/0	826.5	3.12	2.01	19.71	2.15	18.67	73.62	Horizontal	Pass
Band 16		836.5	3.09	2.01	19.77	2.15	18.70	74.13	Horizontal	Pass
QAM		846.5	2.93	2.02	19.79	2.15	18.55	71.61	Horizontal	Pass
10.0MHz	50/0	829	3.33	2.01	19.73	2.15	18.90	77.62	Horizontal	Pass
Band 16		836.5	3.65	2.01	19.77	2.15	19.26	84.33	Horizontal	Pass
QAM		844	2.89	2.02	19.78	2.15	18.50	70.79	Horizontal	Pass
15.0MHz	75/0	831.5	3.71	2.01	19.73	2.15	19.28	84.72	Horizontal	Pass
Band		836.5	2.89	2.01	19.77	2.15	18.50	70.79	Horizontal	Pass
QPSK		841.5	2.69	2.02	19.78	2.15	18.30	67.61	Horizontal	Pass
1.4MHz	6/0	824.7	3.21	2.01	19.68	2.15	18.73	74.64	Vertical	Pass
Band 16		836.5	3.60	2.01	19.77	2.15	19.21	83.37	Vertical	Pass
QAM		848.3	3.35	2.02	19.82	2.15	19.00	79.43	Vertical	Pass
3.0MHz	15/0	825.5	3.15	2.01	19.70	2.15	18.69	73.96	Vertical	Pass
Band 16		836.5	2.97	2.01	19.77	2.15	18.58	72.11	Vertical	Pass
QAM		847.5	3.57	2.02	19.81	2.15	19.21	83.37	Vertical	Pass
5.0MHz	25/0	826.5	2.84	2.01	19.71	2.15	18.39	69.02	Vertical	Pass
Band 16		836.5	3.28	2.01	19.77	2.15	18.89	77.45	Vertical	Pass
QAM		846.5	2.90	2.02	19.79	2.15	18.52	71.12	Vertical	Pass

10.0MHz	50/0	829	3.31	2.01	19.73	2.15	18.88	77.27	Vertical	Pass
Band 16		836.5	3.53	2.01	19.77	2.15	19.14	82.04	Vertical	Pass
QAM		844	2.91	2.02	19.78	2.15	18.52	71.12	Vertical	Pass
15.0MHz	75/0	831.5	2.85	2.01	19.73	2.15	18.42	69.50	Vertical	Pass
Band		836.5	2.78	2.01	19.77	2.15	18.39	69.02	Vertical	Pass
QPSK		841.5	3.04	2.02	19.78	2.15	18.65	73.28	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	18.55	71.614	Vertical	Pass
		2595	-2.64	4.88	27.71	19.09	81.096	Vertical	Pass
		2617.5	-2.58	4.93	27.95	19.10	81.283	Vertical	Pass
10.0MHz Band QPSK	50/0	2572.5	-2.37	4.81	27.73	18.67	73.621	Vertical	Pass
		2595	-2.47	4.95	27.81	18.71	74.302	Vertical	Pass
		2617.5	-2.59	5.03	27.69	18.90	77.625	Vertical	Pass
15.0MHz Band QPSK	75/0	2575	-2.98	5.01	27.86	18.88	77.268	Vertical	Pass
		2595	-2.6	5	27.65	19.29	84.918	Vertical	Pass
		2615	-2.67	4.87	27.89	19.05	80.353	Vertical	Pass
20.0MHz Band QPSK	100/0	2575	-2.71	4.77	27.78	19.44	87.902	Vertical	Pass
		2595	-2.38	4.87	27.87	19.20	83.176	Vertical	Pass
		2615	-2.56	4.94	27.77	18.71	74.302	Vertical	Pass
5.0MHz Band QPSK	25/0	2577.5	-2.9	4.89	27.88	19.04	80.168	Vertical	Pass
		2595	-2.32	4.87	27.84	19.05	80.353	Vertical	Pass
		2612.5	-2.52	4.92	27.93	19.49	88.920	Vertical	Pass
10.0MHz Band QPSK	50/0	2577.5	-2.53	4.75	27.78	18.58	72.111	Vertical	Pass
		2595	-2.53	4.98	27.82	19.28	84.723	Vertical	Pass
		2612.5	-2.6	4.95	27.83	18.94	78.343	Vertical	Pass
15.0MHz Band QPSK	75/0	2580	-2.53	4.86	27.8	18.95	78.524	Vertical	Pass
		2595	-2.37	4.79	27.83	18.83	76.384	Vertical	Pass
		2610	-2.68	4.89	27.87	18.71	74.302	Vertical	Pass
20.0MHz Band QPSK	100/0	2580	-2.87	4.95	27.73	18.92	77.983	Vertical	Pass
		2595	-2.88	4.91	27.71	19.05	80.353	Vertical	Pass
		2610	-2.81	4.96	27.92	20.13	103.039	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	18.90	77.625	Horizontal	Pass
		2595	-2.64	4.88	27.71	19.15	82.224	Horizontal	Pass
		2617.5	-2.58	4.93	27.95	19.12	81.658	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	2572.5	-2.37	4.81	27.73	18.65	73.282	Horizontal	Pass
		2595	-2.47	4.95	27.81	18.50	70.795	Horizontal	Pass
		2617.5	-2.59	5.03	27.69	18.74	74.817	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	2575	-2.98	5.01	27.86	18.89	77.446	Horizontal	Pass
		2595	-2.6	5	27.65	18.99	79.250	Horizontal	Pass
		2615	-2.67	4.87	27.89	19.16	82.414	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	2575	-2.71	4.77	27.78	19.29	84.918	Horizontal	Pass
		2595	-2.38	4.87	27.87	19.01	79.616	Horizontal	Pass
		2615	-2.56	4.94	27.77	19.11	81.470	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	19.13	81.846	Horizontal	Pass
		2612.5	-2.52	4.92	27.93	19.27	84.528	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	2577.5	-2.53	4.75	27.78	18.63	72.946	Horizontal	Pass
		2595	-2.53	4.98	27.82	18.53	71.285	Horizontal	Pass
		2612.5	-2.6	4.95	27.83	18.52	71.121	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	2580	-2.53	4.86	27.8	18.55	71.614	Horizontal	Pass
		2595	-2.37	4.79	27.83	18.80	75.858	Horizontal	Pass
		2610	-2.68	4.89	27.87	19.23	83.753	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	2580	-2.87	4.95	27.73	18.59	72.277	Horizontal	Pass
		2595	-2.88	4.91	27.71	18.93	78.163	Horizontal	Pass
		2610	-2.81	4.96	27.92	20.05	101.158	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 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	-4.43	3.76	28.24	20.05	101.158	Horizontal	Pass
		1745	-4.29	3.91	28.22	20.02	100.462	Horizontal	Pass
		1779.3	-4.16	3.93	28.2	20.11	102.565	Horizontal	Pass
3.0MHz Band QPSK	1/##Mid	1711.5	-4.49	3.77	28.23	19.97	99.312	Horizontal	Pass
		1745	-4.40	3.91	28.24	19.93	98.401	Horizontal	Pass
		1778.5	-4.42	3.94	28.25	19.89	97.499	Horizontal	Pass
5.0MHz Band QPSK	1/##Mid	1712.5	-4.39	3.77	28.31	20.15	103.514	Horizontal	Pass
		1745	-4.07	3.91	28.22	20.24	105.682	Horizontal	Pass
		1777.5	-4.13	3.94	28.2	20.13	103.039	Horizontal	Pass
10.0MHz Band QPSK	1/##Mid	1715	-4.28	3.79	28.33	20.26	106.170	Horizontal	Pass
		1745	-4.01	3.95	28.22	20.26	106.170	Horizontal	Pass
		1775	-4.02	3.97	28.19	20.20	104.713	Horizontal	Pass
15.0MHz Band QPSK	1/##Mid	1717.5	-4.30	3.79	28.34	20.25	105.925	Horizontal	Pass
		1745	-4.11	3.95	28.22	20.16	103.753	Horizontal	Pass
		1772.5	-4.06	3.97	28.18	20.15	103.514	Horizontal	Pass
20.0MHz Band QPSK	1/##Mid	1720	-4.27	3.81	28.35	20.27	106.414	Horizontal	Pass
		1745	-4.01	3.96	28.22	20.25	105.925	Horizontal	Pass
		1770	-4.03	4	28.16	20.13	103.039	Horizontal	Pass
1.4MHz Band QPSK	1/##Mid	1710.7	-5.35	3.76	28.24	19.13	81.846	Vertical	Pass
		1745	-4.81	3.91	28.22	19.50	89.125	Vertical	Pass
		1779.3	-5.57	3.93	28.2	18.70	74.131	Vertical	Pass
3.0MHz Band QPSK	1/##Mid	1711.5	-5.35	3.77	28.23	19.11	81.470	Vertical	Pass
		1745	-5.24	3.91	28.24	19.09	81.096	Vertical	Pass
		1778.5	-5.24	3.94	28.25	19.07	80.724	Vertical	Pass
5.0MHz Band QPSK	1/##Mid	1712.5	-5.86	3.77	28.31	18.68	73.790	Vertical	Pass
		1745	-5.06	3.91	28.22	19.25	84.140	Vertical	Pass
		1777.5	-5.64	3.94	28.2	18.62	72.778	Vertical	Pass
10.0MHz Band QPSK	1/##Mid	1715	-5.18	3.79	28.34	19.37	86.497	Vertical	Pass
		1745	-5.40	3.95	28.22	18.87	77.090	Vertical	Pass
		1775	-4.78	3.97	28.18	19.43	87.700	Vertical	Pass

15.0MHz Band QPSK	1/#Mid	1717.5	-5.70	3.81	28.35	18.84	76.560	Vertical	Pass
		1745	-5.17	3.96	28.22	19.09	81.096	Vertical	Pass
		1772.5	-5.50	4	28.16	18.66	73.451	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	-5.29	3.79	28.34	19.26	84.333	Vertical	Pass
		1745	-4.85	3.95	28.22	19.42	87.498	Vertical	Pass
		1770	-5.65	3.97	28.18	18.56	71.779	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 Band 16 QAM	1/#Mid	1710.7	-5.26	3.76	28.24	19.22	83.560	Horizontal	Pass
		1745	-4.87	3.91	28.22	19.44	87.902	Horizontal	Pass
		1779.3	-5.05	3.93	28.2	19.22	83.560	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-5.65	3.77	28.23	18.81	76.033	Horizontal	Pass
		1745	-4.90	3.91	28.24	19.43	87.700	Horizontal	Pass
		1778.5	-5.19	3.94	28.25	19.12	81.658	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-5.07	3.77	28.31	19.47	88.512	Horizontal	Pass
		1745	-5.13	3.91	28.22	19.18	82.794	Horizontal	Pass
		1777.5	-4.80	3.94	28.2	19.46	88.308	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-5.12	3.79	28.33	19.42	87.498	Horizontal	Pass
		1745	-4.78	3.95	28.22	19.49	88.920	Horizontal	Pass
		1775	-5.10	3.97	28.19	19.12	81.658	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-5.11	3.79	28.34	19.44	87.902	Horizontal	Pass
		1745	-4.93	3.95	28.22	19.34	85.901	Horizontal	Pass
		1772.5	-4.72	3.97	28.18	19.49	88.920	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-4.94	3.81	28.35	19.60	91.201	Horizontal	Pass
		1745	-4.72	3.96	28.22	19.54	89.950	Horizontal	Pass
		1770	-4.66	4	28.16	19.50	89.125	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-5.27	3.76	28.24	19.21	83.368	Vertical	Pass
		1745	-6.68	3.91	28.22	17.63	57.943	Vertical	Pass
		1779.3	-5.72	3.93	28.2	18.55	71.614	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-5.28	3.77	28.23	19.18	82.794	Vertical	Pass
		1745	-6.62	3.91	28.24	17.71	59.020	Vertical	Pass
		1778.5	-5.27	3.94	28.25	19.04	80.168	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-6.12	3.77	28.31	18.42	69.502	Vertical	Pass
		1745	-6.39	3.91	28.22	17.92	61.944	Vertical	Pass
		1777.5	-6.44	3.94	28.2	17.82	60.534	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-6.93	3.79	28.34	17.62	57.810	Vertical	Pass
		1745	-6.55	3.95	28.22	17.72	59.156	Vertical	Pass
		1775	-6.01	3.97	28.18	18.20	66.069	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-5.15	3.81	28.35	19.39	86.896	Vertical	Pass
		1745	-4.94	3.96	28.22	19.32	85.507	Vertical	Pass
		1772.5	-5.41	4	28.16	18.75	74.989	Vertical	Pass

20.0MHz	1/#Mid	1720	-6.92	3.79	28.34	17.63	57.943	Vertical	Pass
Band 16		1745	-6.17	3.95	28.22	18.10	64.565	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	-53.46	4.04	33.51	-23.99	-13	-10.99	Horizontal
3701.4	-47.66	4.04	33.51	-18.19	-13	-5.19	Vertical
5552.1	-53.40	5.24	35.84	-22.80	-13	-9.80	Vertical
5552.1	-49.03	5.24	35.84	-18.43	-13	-5.43	Horizontal
197.1	-35.53	1.43	16.02	-20.94	-13	-7.94	Vertical
439.8	-44.86	1.30	17.99	-28.17	-13	-15.17	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-47.83	4.04	33.56	-18.31	-13	-5.31	Horizontal
3760.0	-53.36	4.04	33.56	-23.84	-13	-10.84	Vertical
5640.0	-45.70	5.24	35.91	-15.03	-13	-2.03	Vertical
5640.0	-50.92	5.24	35.91	-20.25	-13	-7.25	Horizontal
202.4	-43.16	1.62	16.97	-27.81	-13	-14.81	Vertical
373.1	-34.10	1.74	15.98	-19.87	-13	-6.87	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-44.65	4.04	34.00	-14.69	-13	-1.69	Horizontal
3818.6	-45.12	4.04	34.00	-15.16	-13	-2.16	Vertical
5727.9	-49.94	5.24	36.04	-19.14	-13	-6.14	Vertical
5727.9	-49.76	5.24	36.04	-18.96	-13	-5.96	Horizontal
196.0	-39.36	1.42	17.29	-23.49	-13	-10.49	Vertical
268.0	-43.70	1.50	17.90	-27.29	-13	-14.29	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	-53.54	4.07	33.54	-24.07	-13	-11.07	Horizontal
3720.0	-44.46	4.07	33.54	-14.99	-13	-1.99	Vertical
5580.0	-47.08	5.28	35.86	-16.50	-13	-3.50	Vertical
5580.0	-49.87	5.28	35.86	-19.29	-13	-6.29	Horizontal
207.3	-38.58	1.58	16.89	-23.26	-13	-10.26	Vertical
403.7	-41.42	1.76	17.26	-25.92	-13	-12.92	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-44.48	4.04	33.56	-14.96	-13	-1.96	Horizontal
3760.0	-48.03	4.04	33.56	-18.51	-13	-5.51	Vertical
5640.0	-51.39	5.24	35.91	-20.72	-13	-7.72	Vertical
5640.0	-52.64	5.24	35.91	-21.97	-13	-8.97	Horizontal
175.0	-34.61	1.46	16.27	-19.80	-13	-6.80	Vertical
355.1	-41.45	1.59	15.15	-27.89	-13	-14.89	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-45.14	4.04	34.00	-15.18	-13	-2.18	Horizontal
3800.0	-44.36	4.04	34.00	-14.40	-13	-1.40	Vertical
5700.0	-47.02	5.24	36.04	-16.22	-13	-3.22	Vertical
5700.0	-50.63	5.24	36.04	-19.83	-13	-6.83	Horizontal
207.1	-36.88	1.36	17.39	-20.84	-13	-7.84	Vertical
304.9	-42.06	1.66	15.39	-28.33	-13	-15.33	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	-45.74	4.02	29.80	-19.96	-13	-6.96	Horizontal
3421.4	-46.64	4.02	29.80	-20.86	-13	-7.86	Vertical
5132.1	-46.32	5.24	35.84	-15.72	-13	-2.72	Vertical
5132.1	-49.49	5.24	35.84	-18.89	-13	-5.89	Horizontal
182.0	-40.60	1.68	16.04	-26.24	-13	-13.24	Vertical
251.9	-37.22	1.78	17.74	-21.26	-13	-8.26	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-44.60	4.03	30.00	-18.63	-13	-5.63	Horizontal
3465.0	-52.82	4.03	30.00	-26.85	-13	-13.85	Vertical
5197.5	-48.98	5.25	35.86	-18.37	-13	-5.37	Vertical
5197.5	-53.70	5.25	35.86	-23.09	-13	-10.09	Horizontal
180.6	-44.29	1.72	17.69	-28.32	-13	-15.32	Vertical
255.0	-44.64	1.62	16.02	-30.23	-13	-17.23	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-51.99	4.05	30.01	-26.03	-13	-13.03	Horizontal
3508.6	-51.97	4.05	30.01	-26.01	-13	-13.01	Vertical
5262.9	-46.36	5.26	35.86	-15.76	-13	-2.76	Vertical
5262.9	-52.04	5.26	35.86	-21.44	-13	-8.44	Horizontal
206.7	-41.00	1.80	16.69	-26.11	-13	-13.11	Vertical
447.4	-40.43	1.75	16.66	-25.53	-13	-12.53	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	-49.10	4.02	29.80	-23.32	-13	-10.32	Horizontal
3440.0	-46.56	4.02	29.80	-20.78	-13	-7.78	Vertical
5160.0	-47.90	5.24	35.84	-17.30	-13	-4.30	Vertical
5160.0	-53.85	5.24	35.84	-23.25	-13	-10.25	Horizontal
196.9	-43.92	1.57	17.26	-28.23	-13	-15.23	Vertical
260.3	-44.09	1.78	16.35	-29.52	-13	-16.52	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-48.32	4.03	30.00	-22.35	-13	-9.35	Horizontal
3465.0	-53.62	4.03	30.00	-27.65	-13	-14.65	Vertical
5197.5	-52.87	5.25	35.86	-22.26	-13	-9.26	Vertical
5197.5	-51.48	5.25	35.86	-20.87	-13	-7.87	Horizontal
185.5	-42.90	1.44	17.95	-26.39	-13	-13.39	Vertical
387.5	-39.50	1.65	16.09	-25.06	-13	-12.06	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-52.80	2.91	27.68	-28.03	-13	-15.03	Horizontal
3490.0	-45.97	2.91	27.68	-21.20	-13	-8.20	Vertical
5235.0	-52.14	5.26	35.86	-21.54	-13	-8.54	Vertical
5235.0	-51.55	5.26	35.86	-20.95	-13	-7.95	Horizontal
189.9	-41.08	1.61	16.85	-25.84	-13	-12.84	Vertical
414.3	-44.14	1.61	15.19	-30.56	-13	-17.56	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	-51.74	2.78	27.50	-27.02	-13	-14.02	Horizontal
1649.4	-51.37	2.78	27.50	-26.65	-13	-13.65	Vertical
2474.1	-53.15	2.90	27.80	-28.25	-13	-15.25	Vertical
2474.1	-51.80	2.90	27.80	-26.90	-13	-13.90	Horizontal
206.7	-40.29	1.76	17.59	-24.46	-13	-11.46	Vertical
420.7	-36.30	1.63	15.87	-22.06	-13	-9.06	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-52.45	2.80	27.48	-27.77	-13	-14.77	Horizontal
1673.0	-44.77	2.80	27.48	-20.09	-13	-7.09	Vertical
2509.5	-53.61	2.91	27.70	-28.82	-13	-15.82	Vertical
2509.5	-51.65	2.91	27.70	-26.86	-13	-13.86	Horizontal
211.3	-36.04	1.61	15.68	-21.97	-13	-8.97	Vertical
244.2	-42.26	1.59	17.52	-26.34	-13	-13.34	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-48.22	2.82	27.43	-23.61	-13	-10.61	Horizontal
1696.6	-47.36	2.82	27.43	-22.75	-13	-9.75	Vertical
2544.9	-47.83	2.92	27.74	-23.01	-13	-10.01	Vertical
2544.9	-51.53	2.92	27.74	-26.71	-13	-13.71	Horizontal
197.7	-44.17	1.69	16.67	-29.18	-13	-16.18	Vertical
334.7	-37.31	1.70	17.18	-21.83	-13	-8.83	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	-47.74	2.78	27.50	-23.02	-13	-10.02	Horizontal
1658.0	-45.03	2.78	27.50	-20.31	-13	-7.31	Vertical
2487.0	-50.37	2.90	27.80	-25.47	-13	-12.47	Vertical
2487.0	-53.49	2.90	27.80	-28.59	-13	-15.59	Horizontal
186.1	-38.23	1.71	15.57	-24.37	-13	-11.37	Vertical
294.5	-42.83	1.34	16.40	-27.77	-13	-14.77	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-52.95	2.80	27.48	-28.27	-13	-15.27	Horizontal
1673.0	-50.34	2.80	27.48	-25.66	-13	-12.66	Vertical
2509.5	-47.64	2.91	27.70	-22.85	-13	-9.85	Vertical
2509.5	-50.99	2.91	27.70	-26.20	-13	-13.20	Horizontal
193.7	-41.59	1.44	17.04	-25.99	-13	-12.99	Vertical
398.0	-39.37	1.76	17.62	-23.51	-13	-10.51	Horizontal
Test Results for High Channel 844MHz							
1688.0	-47.67	2.82	27.43	-23.06	-13	-10.06	Horizontal
1688.0	-52.34	2.82	27.43	-27.73	-13	-14.73	Vertical
2532.0	-48.79	2.92	27.74	-23.97	-13	-10.97	Vertical
2532.0	-49.60	2.92	27.74	-24.78	-13	-11.78	Horizontal
196.0	-38.31	1.74	17.70	-22.35	-13	-9.35	Vertical
322.2	-38.78	1.41	17.46	-22.72	-13	-9.72	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	-59.58	5.23	35.81	-29.00	-25	-4.00	Horizontal
5005.0	-59.26	5.23	35.81	-28.68	-25	-3.68	Vertical
7507.5	-64.98	5.67	36.85	-33.80	-25	-8.80	Vertical
7507.5	-64.13	5.67	36.85	-32.95	-25	-7.95	Horizontal
175.7	-44.79	1.73	17.97	-28.55	-25	-3.55	Vertical
274.9	-45.90	1.38	15.11	-32.17	-25	-7.17	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-62.82	5.23	35.82	-32.23	-25	-7.23	Horizontal
5070.0	-62.45	5.23	35.82	-31.86	-25	-6.86	Vertical
7605.0	-62.13	5.67	36.85	-30.95	-25	-5.95	Vertical
7605.0	-64.37	5.67	36.85	-33.19	-25	-8.19	Horizontal
199.4	-52.65	1.77	16.17	-38.24	-25	-13.24	Vertical
232.6	-53.22	1.63	15.21	-39.64	-25	-14.64	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-59.56	5.24	35.83	-28.97	-25	-3.97	Horizontal
5135.0	-64.74	5.24	35.83	-34.15	-25	-9.15	Vertical
7702.5	-64.71	5.68	36.87	-33.52	-25	-8.52	Vertical
7702.5	-60.46	5.68	36.87	-29.27	-25	-4.27	Horizontal
179.7	-53.63	1.58	17.56	-37.65	-25	-12.65	Vertical
275.0	-52.58	1.45	16.58	-37.45	-25	-12.45	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	-64.19	5.23	35.82	-33.60	-25	-8.60	Horizontal
5020.0	-62.24	5.23	35.82	-31.65	-25	-6.65	Vertical
7530.0	-61.65	5.67	36.86	-30.46	-25	-5.46	Vertical
7530.0	-61.68	5.67	36.86	-30.49	-25	-5.49	Horizontal
185.4	-45.55	1.63	15.76	-31.42	-25	-6.42	Vertical
445.0	-44.63	1.71	15.44	-30.90	-25	-5.90	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-62.16	5.23	35.82	-31.57	-25	-6.57	Horizontal
5070.0	-63.37	5.23	35.82	-32.78	-25	-7.78	Vertical
7605.0	-62.12	5.67	36.85	-30.94	-25	-5.94	Vertical
7605.0	-63.93	5.67	36.85	-32.75	-25	-7.75	Horizontal
183.2	-53.03	1.79	16.84	-37.97	-25	-12.97	Vertical
437.5	-47.00	1.71	17.64	-31.07	-25	-6.07	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-64.43	5.24	35.83	-33.84	-25	-8.84	Horizontal
5120.0	-64.86	5.24	35.83	-34.27	-25	-9.27	Vertical
7680.0	-60.83	5.70	36.88	-29.65	-25	-4.65	Vertical
7680.0	-61.07	5.70	36.88	-29.89	-25	-4.89	Horizontal
210.1	-49.81	1.79	16.84	-34.75	-25	-9.75	Vertical
295.1	-46.08	1.71	17.64	-30.15	-25	-5.15	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	-47.26	2.78	27.50	-22.54	-13	-9.54	Horizontal
1629.4	-41.01	2.78	27.50	-16.29	-13	-3.29	Vertical
2444.1	-48.50	2.90	27.80	-23.60	-13	-10.60	Vertical
2444.1	-46.97	2.90	27.80	-22.07	-13	-9.07	Horizontal
229.6	-34.74	1.54	16.98	-19.30	-13	-6.30	Vertical
83.3	-32.71	1.47	15.82	-18.36	-13	-5.36	Horizontal
Test Results For Mid Channel 819MHz							
1638.0	-49.53	2.80	27.48	-24.85	-13	-11.85	Horizontal
1638.0	-43.86	2.80	27.48	-19.18	-13	-6.18	Vertical
2457.0	-47.27	2.91	27.70	-22.48	-13	-9.48	Vertical
2457.0	-48.41	2.91	27.70	-23.62	-13	-10.62	Horizontal
168.2	-33.95	1.74	16.19	-19.50	-13	-6.50	Vertical
92.9	-32.08	1.46	15.43	-18.11	-13	-5.11	Horizontal
Test Results for High Channel 823.3MHz							
1646.6	-47.29	2.82	27.43	-22.68	-13	-9.68	Horizontal
1646.6	-44.44	2.82	27.43	-19.83	-13	-6.83	Vertical
2469.9	-48.35	2.92	27.74	-23.53	-13	-10.53	Vertical
2469.9	-49.65	2.92	27.74	-24.83	-13	-11.83	Horizontal
213.1	-34.15	1.67	17.05	-18.77	-13	-5.77	Vertical
121.7	-33.19	1.42	16.12	-18.49	-13	-5.49	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	-47.78	2.78	27.50	-23.06	-13	-10.06	Horizontal
1638.0	-42.31	2.78	27.50	-17.59	-13	-4.59	Vertical
2457.0	-48.21	2.90	27.80	-23.31	-13	-10.31	Vertical
2457.0	-47.20	2.90	27.80	-22.30	-13	-9.30	Horizontal
253.7	-33.57	1.43	17.34	-17.66	-13	-4.66	Vertical
256.8	-32.36	1.56	15.71	-18.21	-13	-5.21	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	-47.23	2.78	27.50	-22.51	-13	-9.51	Horizontal
1649.4	-44.70	2.78	27.50	-19.98	-13	-6.98	Vertical
2474.1	-47.96	2.90	27.80	-23.06	-13	-10.06	Vertical
2474.1	-48.12	2.90	27.80	-23.22	-13	-10.22	Horizontal
237.0	-33.56	1.33	17.34	-17.55	-13	-4.55	Vertical
180.5	-33.39	1.47	16.80	-18.06	-13	-5.06	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-49.33	2.80	27.48	-24.65	-13	-11.65	Horizontal
1673.0	-44.09	2.80	27.48	-19.41	-13	-6.41	Vertical
2509.5	-48.73	2.91	27.70	-23.94	-13	-10.94	Vertical
2509.5	-49.69	2.91	27.70	-24.90	-13	-11.90	Horizontal
140.8	-32.13	1.75	15.46	-18.42	-13	-5.42	Vertical
90.6	-33.73	1.52	16.14	-19.11	-13	-6.11	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-48.30	2.82	27.43	-23.69	-13	-10.69	Horizontal
1696.6	-49.87	2.82	27.43	-25.26	-13	-12.26	Vertical
2544.9	-46.71	2.92	27.74	-21.89	-13	-8.89	Vertical
2544.9	-46.30	2.92	27.74	-21.48	-13	-8.48	Horizontal
171.4	-34.24	1.67	16.09	-19.82	-13	-6.82	Vertical
247.2	-32.25	1.80	17.55	-16.50	-13	-3.50	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	-48.53	2.78	27.50	-23.81	-13	-10.81	Horizontal
1663.0	-43.51	2.78	27.50	-18.79	-13	-5.79	Vertical
2494.5	-49.11	2.90	27.80	-24.21	-13	-11.21	Vertical
2494.5	-49.64	2.90	27.80	-24.74	-13	-11.74	Horizontal
255.4	-32.57	1.52	15.72	-18.37	-13	-5.37	Vertical
163.1	-34.63	1.40	17.03	-19.00	-13	-6.00	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-48.75	2.80	27.48	-24.07	-13	-11.07	Horizontal
1673.0	-47.18	2.80	27.48	-22.50	-13	-9.50	Vertical
2509.5	-49.71	2.91	27.70	-24.92	-13	-11.92	Vertical
2509.5	-46.24	2.91	27.70	-21.45	-13	-8.45	Horizontal
227.1	-32.02	1.74	16.38	-17.38	-13	-4.38	Vertical
101.3	-34.59	1.79	15.20	-21.18	-13	-8.18	Horizontal
Test Results for High Channel 841.5MHz							
1683.0	-47.17	2.82	27.43	-22.56	-13	-9.56	Horizontal
1683.0	-44.83	2.82	27.43	-20.22	-13	-7.22	Vertical
2524.5	-47.08	2.92	27.74	-22.26	-13	-9.26	Vertical
2524.5	-46.68	2.92	27.74	-21.86	-13	-8.86	Horizontal
261.1	-34.11	1.78	17.44	-18.45	-13	-5.45	Vertical
120.1	-32.28	1.70	15.93	-18.05	-13	-5.05	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	-52.94	4.01	27.5	-29.45	-25	-4.45	Horizontal
5145	-54.06	4.01	27.5	-30.57	-25	-5.57	Vertical
7717.5	-49.91	5.09	27.8	-27.20	-25	-2.20	Vertical
7717.5	-50.42	5.09	27.8	-27.71	-25	-2.71	Horizontal
Test Results For Mid Channel 2595MHz							
5190	-53.89	4.1	27.48	-30.51	-25	-5.51	Horizontal
5190	-49.75	4.1	27.48	-26.37	-25	-1.37	Vertical
7785	-50.96	5.42	27.7	-28.68	-25	-3.68	Vertical
7785	-50.35	5.42	27.7	-28.07	-25	-3.07	Horizontal
Test Results for High Channel 2617.5MHz							
5234	-53.49	4.11	27.43	-30.17	-25	-5.17	Horizontal
5234	-50.75	4.11	27.43	-27.43	-25	-2.43	Vertical
7851	-50.73	5.31	27.74	-28.30	-25	-3.30	Vertical
7851	-51.96	5.31	27.74	-29.53	-25	-4.53	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	-49.90	3.89	27.5	-26.29	-25	-1.29	Horizontal
5160	-50.91	3.89	27.5	-27.30	-25	-2.30	Vertical
7740	-53.84	5.33	27.8	-31.37	-25	-6.37	Vertical
7740	-52.09	5.33	27.8	-29.62	-25	-4.62	Horizontal
Test Results for Mid Channel 2595MHz							
5190	-50.61	4.1	27.48	-27.23	-25	-2.23	Horizontal
5190	-50.07	4.1	27.48	-26.69	-25	-1.69	Vertical
7785	-49.99	5.42	27.7	-27.71	-25	-2.71	Vertical
7785	-52.28	5.42	27.7	-30.00	-25	-5.00	Horizontal
Test Results for High Channel 2610MHz							
5220	-53.92	4.01	27.43	-30.50	-25	-5.50	Horizontal
5220	-54.30	4.01	27.43	-30.88	-25	-5.88	Vertical
7830	-51.58	5.34	27.74	-29.18	-25	-4.18	Vertical
7830	-51.48	5.34	27.74	-29.08	-25	-4.08	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	-50.74	4.02	29.80	-24.96	-13	-11.96	Horizontal
3421.4	-51.68	4.02	29.80	-25.90	-13	-12.90	Vertical
5132.1	-54.28	5.24	35.84	-23.68	-13	-10.68	Vertical
5132.1	-52.53	5.24	35.84	-21.93	-13	-8.93	Horizontal
112.6	-44.35	1.52	15.57	-30.30	-13	-17.30	Vertical
220.5	-47.49	1.33	17.14	-31.68	-13	-18.68	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-50.22	4.03	30.00	-24.25	-13	-11.25	Horizontal
3490.0	-52.66	4.03	30.00	-26.69	-13	-13.69	Vertical
5235.0	-51.30	5.25	35.86	-20.69	-13	-7.69	Vertical
5235.0	-49.67	5.25	35.86	-19.06	-13	-6.06	Horizontal
157.3	-44.24	1.53	17.13	-28.64	-13	-15.64	Vertical
213.1	-47.61	1.41	15.95	-33.07	-13	-20.07	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-46.72	4.05	30.01	-20.76	-13	-7.76	Horizontal
3558.6	-45.88	4.05	30.01	-19.92	-13	-6.92	Vertical
5337.9	-51.27	5.26	35.86	-20.67	-13	-7.67	Vertical
5337.9	-51.27	5.26	35.86	-20.67	-13	-7.67	Horizontal
170.6	-45.78	1.44	15.51	-31.71	-13	-18.71	Vertical
169.0	-50.84	1.78	15.76	-36.86	-13	-23.86	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	-54.38	4.02	29.80	-28.60	-13	-15.60	Horizontal
3440.0	-44.26	4.02	29.80	-18.48	-13	-5.48	Vertical
5160.0	-52.00	5.24	35.84	-21.40	-13	-8.40	Vertical
5160.0	-49.99	5.24	35.84	-19.39	-13	-6.39	Horizontal
268.8	-47.22	1.62	17.02	-31.82	-13	-18.82	Vertical
161.4	-52.12	1.32	17.31	-36.13	-13	-23.13	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-54.57	4.03	30.00	-28.60	-13	-15.60	Horizontal
3490.0	-53.76	4.03	30.00	-27.79	-13	-14.79	Vertical
5235.0	-50.43	5.25	35.86	-19.82	-13	-6.82	Vertical
5235.0	-47.76	5.25	35.86	-17.15	-13	-4.15	Horizontal
159.9	-51.08	1.45	15.17	-37.36	-13	-24.36	Vertical
172.1	-45.09	1.48	17.82	-28.75	-13	-15.75	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-53.96	2.91	27.68	-29.19	-13	-16.19	Horizontal
3540.0	-52.06	2.91	27.68	-27.29	-13	-14.29	Vertical
5310.0	-50.31	5.26	35.86	-19.71	-13	-6.71	Vertical
5310.0	-50.39	5.26	35.86	-19.79	-13	-6.79	Horizontal
197.3	-54.35	1.76	16.38	-39.73	-13	-26.73	Vertical
158.5	-44.83	1.43	17.13	-29.13	-13	-16.13	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	12.3	0.006556	2.5
3.85	1880	14.2	0.007544	2.5
4.35	1880	13.3	0.007056	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	12.2	0.006503	2.5
Extreme (50C)	1880	11.6	0.006197	2.5
Extreme (40C)	1880	14.1	0.007480	2.5
Extreme (30C)	1880	13.8	0.007367	2.5
Extreme (10C)	1880	13.5	0.007185	2.5
Extreme (0C)	1880	11.8	0.006261	2.5
Extreme (-10C)	1880	12.8	0.006803	2.5
Extreme (-20C)	1880	13.7	0.007305	2.5
Extreme (-30C)	1880	14.8	0.007899	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	1880	9.6	0.005116	2.5
3.85	1880	9.0	0.004812	2.5
4.35	1880	7.9	0.004189	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	9.9	0.005254	2.5
Extreme (50C)	1880	9.1	0.004816	2.5
Extreme (40C)	1880	8.6	0.004550	2.5
Extreme (30C)	1880	9.0	0.004776	2.5
Extreme (10C)	1880	8.5	0.004522	2.5
Extreme (0C)	1880	8.0	0.004252	2.5
Extreme (-10C)	1880	9.4	0.005012	2.5
Extreme (-20C)	1880	9.3	0.004948	2.5
Extreme (-30C)	1880	8.3	0.004440	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	8.7	0.005050	2.5
3.85	1732.5	8.5	0.004878	2.5
4.35	1732.5	8.1	0.004686	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	8.8	0.005051	2.5
Extreme (50C)	1732.5	8.5	0.004889	2.5
Extreme (40C)	1732.5	7.9	0.004539	2.5
Extreme (30C)	1732.5	6.1	0.003545	2.5
Extreme (10C)	1732.5	7.4	0.004257	2.5
Extreme (0C)	1732.5	9.3	0.005360	2.5
Extreme (-10C)	1732.5	8.0	0.004628	2.5
Extreme (-20C)	1732.5	6.6	0.003790	2.5
Extreme (-30C)	1732.5	8.1	0.004690	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	0.005755	2.5
3.85	1732.5	9.1	0.005262	2.5
4.35	1732.5	7.8	0.004499	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	9.7	0.005594	2.5
Extreme (50C)	1732.5	8.9	0.005129	2.5
Extreme (40C)	1732.5	8.3	0.004800	2.5
Extreme (30C)	1732.5	8.7	0.004994	2.5
Extreme (10C)	1732.5	9.4	0.005422	2.5
Extreme (0C)	1732.5	8.0	0.004595	2.5
Extreme (-10C)	1732.5	9.2	0.005328	2.5
Extreme (-20C)	1732.5	9.1	0.005272	2.5
Extreme (-30C)	1732.5	8.2	0.004739	2.5

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

10.3 LTE BAND 5

QPSK, (10MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	836.5	5.9	0.007100	2.5
3.85	836.5	6.7	0.007968	2.5
4.35	836.5	4.7	0.005652	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.4	0.007698	2.5
Extreme (50C)	836.5	5.8	0.006951	2.5
Extreme (40C)	836.5	6.6	0.007886	2.5
Extreme (30C)	836.5	6.9	0.008200	2.5
Extreme (10C)	836.5	5.3	0.006378	2.5
Extreme (0C)	836.5	5.8	0.006886	2.5
Extreme (-10C)	836.5	5.7	0.006759	2.5
Extreme (-20C)	836.5	6.2	0.007411	2.5
Extreme (-30C)	836.5	6.6	0.007876	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	6.3	0.007481	2.5
3.85	836.5	6.6	0.007844	2.5
4.35	836.5	4.8	0.005731	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.3	0.007508	2.5
Extreme (50C)	836.5	6.1	0.007341	2.5
Extreme (40C)	836.5	5.7	0.006776	2.5
Extreme (30C)	836.5	6.4	0.007599	2.5
Extreme (10C)	836.5	5.9	0.007011	2.5
Extreme (0C)	836.5	5.2	0.006273	2.5
Extreme (-10C)	836.5	6.0	0.007161	2.5
Extreme (-20C)	836.5	5.9	0.007106	2.5
Extreme (-30C)	836.5	5.9	0.007071	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	10.2	0.004019	2.5
3.85	2535	9.0	0.003546	2.5
4.35	2535	8.8	0.003459	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	9.0	0.003554	2.5
Extreme (50C)	2535	8.5	0.003365	2.5
Extreme (40C)	2535	8.4	0.003325	2.5
Extreme (30C)	2535	9.0	0.003549	2.5
Extreme (10C)	2535	8.6	0.003386	2.5
Extreme (0C)	2535	8.0	0.003173	2.5
Extreme (-10C)	2535	9.1	0.003603	2.5
Extreme (-20C)	2535	9.0	0.003567	2.5
Extreme (-30C)	2535	8.2	0.003225	2.5

16QAM, (20MHz BANDWIDTH)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.6	2535	6.4	0.002510	2.5
3.85	2535	6.0	0.002353	2.5
4.35	2535	5.4	0.002134	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	6.3	0.002490	2.5
Extreme (50C)	2535	5.2	0.002065	2.5
Extreme (40C)	2535	5.3	0.002085	2.5
Extreme (30C)	2535	6.9	0.002725	2.5
Extreme (10C)	2535	5.8	0.002295	2.5
Extreme (0C)	2535	4.8	0.001911	2.5
Extreme (-10C)	2535	4.8	0.001892	2.5
Extreme (-20C)	2535	6.0	0.002378	2.5
Extreme (-30C)	2535	6.0	0.002351	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	8.7	0.010606	2.5
3.85	819	5.7	0.006995	2.5
4.35	819	6.9	0.008439	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	819	8.9	0.010882	2.5
Extreme (50C)	819	1.6	0.001964	2.5
Extreme (40C)	819	2.1	0.002591	2.5
Extreme (30C)	819	6.3	0.007719	2.5
Extreme (10C)	819	5.9	0.007209	2.5
Extreme (0C)	819	6.1	0.007462	2.5
Extreme (-10C)	819	8.8	0.010779	2.5
Extreme (-20C)	819	6.8	0.008268	2.5
Extreme (-30C)	819	4.9	0.006044	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	3.0	0.003663	2.5
3.85	819	6.1	0.007490	2.5
4.35	819	5.4	0.006575	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	819	6.3	0.007655	2.5
Extreme (50C)	819	8.3	0.010190	2.5
Extreme (40C)	819	6.7	0.008178	2.5
Extreme (30C)	819	5.0	0.006071	2.5
Extreme (10C)	819	6.4	0.007798	2.5
Extreme (0C)	819	5.1	0.006179	2.5
Extreme (-10C)	819	8.4	0.010240	2.5
Extreme (-20C)	819	6.4	0.007829	2.5
Extreme (-30C)	819	7.8	0.009583	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	9.0	0.010716	2.5
3.85	836.5	6.2	0.007404	2.5
4.35	836.5	8.4	0.010064	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	10.5	0.012610	2.5
Extreme (50C)	836.5	9.7	0.011654	2.5
Extreme (40C)	836.5	6.3	0.007514	2.5
Extreme (30C)	836.5	8.9	0.010591	2.5
Extreme (10C)	836.5	7.1	0.008434	2.5
Extreme (0C)	836.5	9.1	0.010881	2.5
Extreme (-10C)	836.5	1.8	0.002149	2.5
Extreme (-20C)	836.5	8.3	0.009936	2.5
Extreme (-30C)	836.5	7.1	0.008441	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	9.2	0.011023	2.5
3.85	836.5	11.8	0.014161	2.5
4.35	836.5	10.6	0.012705	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	6.1	0.007295	2.5
Extreme (50C)	836.5	8.2	0.009793	2.5
Extreme (40C)	836.5	7.3	0.008770	2.5
Extreme (30C)	836.5	7.9	0.009388	2.5
Extreme (10C)	836.5	7.0	0.008352	2.5
Extreme (0C)	836.5	6.0	0.007131	2.5
Extreme (-10C)	836.5	5.2	0.006251	2.5
Extreme (-20C)	836.5	3.3	0.011237	2.5
Extreme (-30C)	836.5	8.3	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	8.3	0.003191	2.5
3.85	2595	6.6	0.002528	2.5
4.35	2595	7.7	0.002966	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	7.3	0.002809	2.5
Extreme (50C)	2595	5.1	0.001956	2.5
Extreme (40C)	2595	5.1	0.001961	2.5
Extreme (30C)	2595	4.9	0.001904	2.5
Extreme (10C)	2595	6.4	0.002468	2.5
Extreme (0C)	2595	5.2	0.002013	2.5
Extreme (-10C)	2595	9.8	0.003761	2.5
Extreme (-20C)	2595	10.7	0.004117	2.5
Extreme (-30C)	2595	6.1	0.002345	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	8.9	0.003428	2.5
3.85	2595	6.6	0.002534	2.5
4.35	2595	6.8	0.002602	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2595	7.9	0.003057	2.5
Extreme (50C)	2595	5.1	0.001959	2.5
Extreme (40C)	2595	4.9	0.001900	2.5
Extreme (30C)	2595	4.9	0.001876	2.5
Extreme (10C)	2595	6.6	0.002533	2.5
Extreme (0C)	2595	4.9	0.001892	2.5
Extreme (-10C)	2595	9.9	0.003818	2.5
Extreme (-20C)	2595	10.5	0.004034	2.5
Extreme (-30C)	2595	6.3	0.002439	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	13.1	0.00752	2.5
3.85	1745	14.2	0.00814	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	7.5	0.004291	2.5
Extreme (50C)	1745	5.1	0.002909	2.5
Extreme (40C)	1745	5.8	0.003301	2.5
Extreme (30C)	1745	4.8	0.002743	2.5
Extreme (10C)	1745	6.1	0.003519	2.5
Extreme (0C)	1745	5.0	0.002868	2.5
Extreme (-10C)	1745	9.7	0.005543	2.5
Extreme (-20C)	1745	11.2	0.006424	2.5
Extreme (-30C)	1745	6.5	0.003729	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	0.007138	2.5
3.85	1745	13.9	0.007984	2.5
4.35	1745	13.5	0.007744	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	7.6	0.004338	2.5
Extreme (50C)	1745	5.3	0.003016	2.5
Extreme (40C)	1745	5.5	0.003169	2.5
Extreme (30C)	1745	5.1	0.002909	2.5
Extreme (10C)	1745	6.7	0.003835	2.5
Extreme (0C)	1745	5.0	0.002890	2.5
Extreme (-10C)	1745	9.5	0.005449	2.5
Extreme (-20C)	1745	10.6	0.006052	2.5
Extreme (-30C)	1745	5.8	0.003310	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.

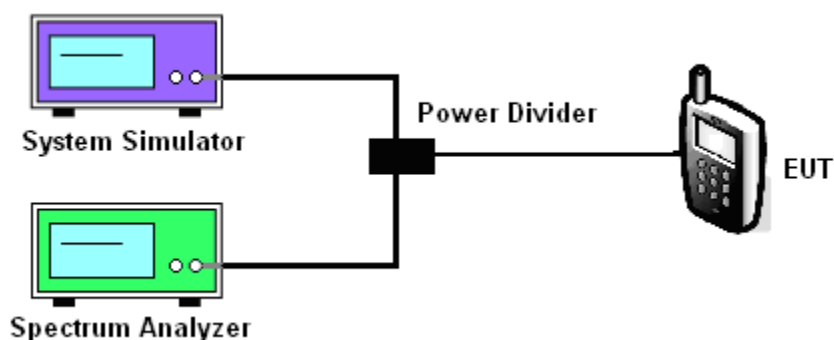
11.2 Measuring Instruments

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 2/4/5/7/26/38/66
- ☐

Test data reference attachment.

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