

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

FCC ID: 2AY6A-T1

Product: Tablet

Trade Mark: CLOUD MOBILE

Model Number: Sunshine T1

Family Model: N/A

Report No.: STR210310001006E

Prepared for

Cloud Mobile Holding LLC

1149 S. HILL ST. SUITE H400, LOS ANGELES, CA 90015

Prepared by

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TEST RESULT CERTIFICATION

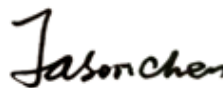
Applicant's name	Cloud Mobile Holding LLC
Address.....	1149 S. HILL ST. SUITE H400, LOS ANGELES, CA 90015
Manufacturer's Name	Cloud Mobile Holding LLC
Address.....	1149 S. HILL ST. SUITE H400, LOS ANGELES, CA 90015
Product name.....	Tablet
Model and/or type reference ..	Sunshine T1
Family Model:	N/A
Standards	FCC CFR 47 Part 22H, Part 24E, Part 27
Test procedure	ANSI C63.26:2015 ANSI/TIA-603-E-2016
This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report. This report shall not be reproduced except in full, without the written approval of NTEK, this document may be altered or revised by NTEK, personal only, and shall be noted in the revision of the document.	
Date of Test	
Date (s) of performance of tests.....	Mar 10. 2021 ~Apr 08, 2021
Date of Issue	Apr 08, 2021
Test Result.....	Pass

Testing Engineer :



(Cheng Jiawen)

Technical Manager :



(Jason Chen)

Authorized Signatory :



(Alex Li)

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	Tablet
Trade Mark	CLOUD MOBILE
Model Name	Sunshine T1
Family Model	N/A
Model Difference	N/A
FCC ID:	2AY6A-T1
Frequency Bands:	U.S. Bands: ☒ LTE FDD Band 2, 4, 5, 7, 12, 17, 66
Frequency Range:	LTE FDD Band 2 Uplink: 1850MHz-1910MHz, Downlink: 1930MHz-1990MHz; LTE FDD Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz; LTE FDD Band 5 Uplink: 824MHz-849MHz, Downlink: 869MHz-894MHz; LTE-FDD Band 7 Uplink: 2500MHz-2570MHz, Downlink: 2620MHz-2690MHz; LTE FDD Band 12 Uplink: 699MHz-716MHz, Downlink: 729MHz-746MHz; LTE FDD Band 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz; LTE FDD Band 66 Uplink: 1710MHz-1780MHz, Downlink: 2110MHz-2200MHz;
Type of Modulation:	QPSK/16QAM
Power Class	Class 3
SIM Card	SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for test.
Antenna:	PIFA Antenna
Antenna gain:	Band 2: 2.36dBi, Band 4: 2.24dBi, Band 5: 2.18dBi, Band 7: 2.92dBi, Band 12: 1.94dBi, Band 17: 1.98dBi, Band 66: 2.26dBi
Power Supply:	DC 3.7V/ 3500mAh from battery or DC 5V from Adapter.
Adapter:	Model: JML-0500150NZ-LW Input: AC 100-240V~50/60Hz 0.3A Output: DC 5V---1.5A
Extreme Vol. Limits:	DC 3.4V to DC 4.2V (Nominal DC 3.7V) (Note 1)
HW Version	MT8765-863-V1.0-16

SW Version	T1_20210407
** Note1: The High Voltage 4.2V and Low Voltage 3.4V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AY6A-T1** filing to comply with the FCC Part 22H&24E &27.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

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

ShenZhen NTEK Testing Technology Co., Ltd.

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

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

FCC Registration No.:463705

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.5dB
2	Conducted Emission Test	$\pm 1.38\text{dB}$
3	RF power, conducted	$\pm 0.16\text{dB}$
4	Spurious emissions, conducted	$\pm 0.21\text{dB}$
5	All emissions, radiated(<1G)	$\pm 4.68\text{dB}$
6	All emissions, radiated(>1G)	$\pm 4.89\text{dB}$
7	Temperature	$\pm 0.5^\circ\text{C}$
8	Humidity	$\pm 2\%$
9	Frequency error, conducted	$\pm 0.19\text{ ppm}$

1.5 SPECIAL ACCESSORIES

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

1.6 WORST-CASE CONFIGURATION AND MODE

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

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

1.6 SUMMARY OF TEST RESULTS

FCC Part22, Subpart H/ FCC Part24, Subpart E, FCC Part27 KDB 971168 D01 Power Meas License Digital Systems v03			
FCC Rule	Test Item	Verdict	Remark
2.1046	Conducted Output Power	PASS	
22.913(d) 24.232(d) 27.50(d)(5) KDB 971168 D01 Clause 5.7	Peak-to-Average Ratio	PASS	
2.1049 22.917(b) 24.238(b) KDB 971168 D01 Clause 4.2	Occupied Bandwidth	PASS	
2.1051 22.917(a) 24.238(a) 27.53(c), (g), (h) KDB 971168 D01 Clause 6	Band Edge	PASS	
22.913(a)(2) 27.50(b)(10), (c)(10) KDB 971168 D01 Clause 5.6	Effective Radiated Power	PASS	

24.232(c) 27.50(h)(2), (d)(4) KDB 971168 D01 Clause 5.6	Equivalent Isotropic Radiated Power	PASS	
2.1053 22.917(a) 24.238(a) 27.53(c)(g)(h)(m) KDB 971168 D01 Clause 7	Field Strength of Spurious Radiation	PASS	
2.1055 22.355 24.235 27.54 KDB 971168 D01 Clause 9	Frequency Stability for Temperature & Voltage	PASS	
2.1051 22.917(a) 24.238(a) 27.53(c)(g)(h)(m) KDB 971168 D01 Clause 6	Conducted Emission	PASS	
Remark: 1. "N/A" denotes test is not applicable in this Test Report. 2. All test items were verified and recorded according to the standards and without any deviation during the test. 3. No modifications are made to the EUT during all test items.			

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	Tablet	Sunshine T1	FCC ID: 2AY6A-T1	EUT

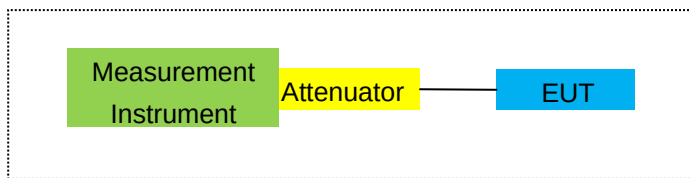
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

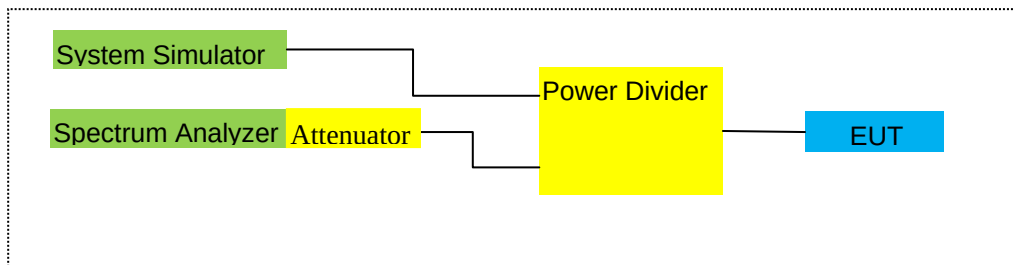
For Radiated Test Cases



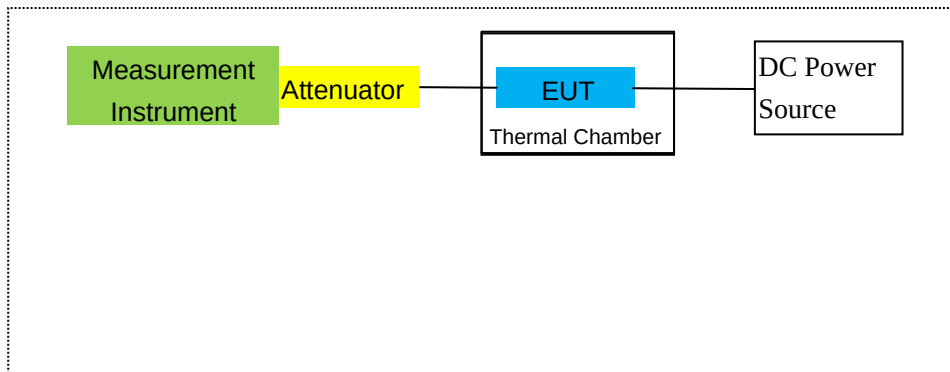
For Conducted Output Power



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	2020.07.13	2021.07.12	1 year
2	Test Receiver	R&S	ESPI	101318	2020.05.11	2021.05.10	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2020.04.11	2021.04.10	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2020.05.11	2023.05.10	3 year
5	Horn Antenna	EM	EM-AH-10180	2011071402	2020.04.11	2021.04.10	1 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2020.11.20	2021.11.19	1 year
7	Amplifier	EM	EM-30180	060538	2020.07.13	2021.07.12	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2020.05.11	2021.05.10	1 year
9	Power Meter	R&S	NRVS	100696	2020.07.13	2021.07.12	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2020.05.11	2021.05.10	1 year
11	Test Cable	N/A	R-01	N/A	2019.08.06	2022.08.05	3 year
12	Test Cable	N/A	R-02	N/A	2019.08.06	2022.08.05	3 year
13	Test Cable	N/A	R-03	N/A	2019.06.28	2022.06.27	3 year
14	Test Receiver	R&S	ESCI	101160	2020.05.11	2021.05.10	1 year
15	LISN	R&S	ENV216	101313	2020.05.11	2021.05.10	1 year
16	LISN	EMCO	3816/2	00042990	2020.05.11	2021.05.10	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2020.05.11	2021.05.10	1 year
18	Passive Voltage Probe	R&S	ESH2-Z3	100196	2020.04.11	2021.04.10	1 year
19	Test Cable	N/A	C01	N/A	2020.05.11	2023.05.10	3 year
20	Test Cable	N/A	C02	N/A	2020.05.11	2023.05.10	3 year
21	Test Cable	N/A	C03	N/A	2020.05.11	2021.05.10	1 year
22	Attenuator	MCE	24-10-34	BN9258	2020.05.11	2021.05.10	1 year
23	Spectrum Analyzer	agilent	e4440a	us44300399	2020.05.11	2021.05.10	1 year
24	test receiver	R&S	ESCI	a0304218	2020.05.11	2021.05.10	1 year
25	Communication Tester	R&S	CMU200	A0304247	2020.07.13	2021.07.12	1 year
26	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2020.05.11	2021.05.10	1 year

27	DC Power Source	N/A	PS-6005D	2017040292 3	2020.05.11	2023.05.10	3 year
28	PSG Analog Signal Generator	Agilent	E8257D	MY51110112	2020.07.13	2021.07.12	1 year
29	Communication Tester	R&S	CMW500	148500	2020.05.11	2021.05.10	1 year
30	PSG Analog Signal Generator	Agilent	E8257D	MY51110112	2020.07.13	2021.07.12	1 year

Note: Each piece of equipment is scheduled for calibration once a year except the Test Cable& DC Power Source which is scheduled for calibration every 3 years.

4. OUTPUT POWER

4.1 OUTPUT POWER MEASUREMENT

LTE Measurement Procedure:

All LTE bands conducted power peak and average are obtained from the CMW500 telecommunication test set. The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".³

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10, 15, 20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

Test data reference attachment.

5. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

MODES TESTED

- ☐ LTE Band 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 17
- LTE Band 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)

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

For each band edge measurement:

Set the spectrum analyzer span to include the block edge frequency

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

Set display line

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

MODES TESTED

- ☐ LTE Band 2/4/5/7/12/17/66

RESULTS

Test data reference attachment.

7. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

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

- ☐ LTEBand 2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 17
- LTE Band 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)

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 Band2
- LTE Band 4
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 17
- LTE Band 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 Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP	Polarization Of Max. ERP	
							Average (mW)		
1.4MHz Band QPSK	1/#Mid	1850.7	-1.05	3.76	28.24	23.43	220.293	Horizontal	Pass
		1880	0.21	3.91	28.22	24.52	283.139	Horizontal	Pass
		1909.3	-1.14	3.93	28.20	23.13	205.589	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	0.15	3.77	28.23	24.61	289.068	Horizontal	Pass
		1880	-0.39	3.91	28.24	23.94	247.742	Horizontal	Pass
		1908.5	-0.59	3.94	28.25	23.72	235.505	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-0.82	3.77	28.31	23.72	235.505	Horizontal	Pass
		1880	-0.53	3.91	28.22	23.78	238.781	Horizontal	Pass
		1907.5	0.38	3.94	28.20	24.64	291.072	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-0.46	3.79	28.33	24.08	255.859	Horizontal	Pass
		1880	-0.42	3.95	28.22	23.85	242.661	Horizontal	Pass
		1905	0.38	3.97	28.19	24.60	288.403	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-1.18	3.79	28.34	23.37	217.270	Horizontal	Pass
		1880	0.50	3.95	28.22	24.77	299.916	Horizontal	Pass
		1902.5	0.64	3.97	28.18	24.85	305.492	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	0.17	3.81	28.35	24.71	295.801	Horizontal	Pass
		1880	-0.96	3.96	28.22	23.30	213.796	Horizontal	Pass
		1900	0.05	4.00	28.16	24.21	263.633	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-0.41	3.76	28.24	24.07	255.270	Vertical	Pass
		1880	0.42	3.91	28.22	24.73	297.167	Vertical	Pass
		1909.3	-0.42	3.93	28.20	23.85	242.661	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-0.63	3.77	28.23	23.83	241.546	Vertical	Pass
		1880	-0.29	3.91	28.24	24.04	253.513	Vertical	Pass
		1908.5	0.51	3.94	28.25	24.82	303.389	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-0.14	3.77	28.31	24.40	275.423	Vertical	Pass
		1880	0.57	3.91	28.22	24.88	307.610	Vertical	Pass
		1907.5	0.50	3.94	28.20	24.76	299.226	Vertical	Pass
10.0MHz Band	1/#Mid	1855	-0.53	3.79	28.33	24.01	251.768	Vertical	Pass
		1880	-1.12	3.95	28.22	23.15	206.538	Vertical	Pass

QPSK		1905	-1.42	3.97	28.19	22.80	190.546	Vertical	Pass
15.0MH	1/#Mid	1857.5	-1.25	3.79	28.34	23.30	213.796	Vertical	Pass
z Band		1880	-0.31	3.95	28.22	23.96	248.886	Vertical	Pass
QPSK		1902.5	-0.59	3.97	28.18	23.62	230.144	Vertical	Pass
20.0MH	1/#Mid	1860	-1.18	3.81	28.35	23.36	216.770	Vertical	Pass
z Band		1880	-1.25	3.96	28.22	23.01	199.986	Vertical	Pass
QPSK		1900	0.83	4.00	28.16	24.99	315.500	Vertical	Pass

Note:

SG Level= Signal generator output

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

Radiated Power (EIRP) for Band 2									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP	Polarization Of Max. ERP	
							Average		
							(mW)		
1.4MHz Band 16 QAM	1/#Mid	1850.7	-1.39	3.76	28.24	23.09	203.704	Horizontal	Pass
		1880	-1.03	3.91	28.22	23.28	212.814	Horizontal	Pass
		1909.3	-0.79	3.93	28.20	23.48	222.844	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-1.73	3.77	28.23	22.73	187.499	Horizontal	Pass
		1880	-1.09	3.91	28.24	23.24	210.863	Horizontal	Pass
		1908.5	-1.18	3.94	28.25	23.13	205.589	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-1.70	3.77	28.31	22.84	192.309	Horizontal	Pass
		1880	-1.15	3.91	28.22	23.16	207.014	Horizontal	Pass
		1907.5	-0.84	3.94	28.20	23.42	219.786	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-1.35	3.79	28.33	23.19	208.449	Horizontal	Pass
		1880	-1.36	3.95	28.22	22.91	195.434	Horizontal	Pass
		1905	-0.58	3.97	28.19	23.64	231.206	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-1.69	3.79	28.34	22.86	193.197	Horizontal	Pass
		1880	-1.20	3.95	28.22	23.07	202.768	Horizontal	Pass
		1902.5	-1.02	3.97	28.18	23.19	208.449	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-1.15	3.81	28.35	23.39	218.273	Horizontal	Pass
		1880	-0.57	3.96	28.22	23.69	233.884	Horizontal	Pass
		1900	-0.63	4.00	28.16	23.53	225.424	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-1.70	3.76	28.24	22.78	189.671	Vertical	Pass
		1880	-0.70	3.91	28.22	23.61	229.615	Vertical	Pass
		1909.3	-0.79	3.93	28.20	23.48	222.844	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-1.27	3.77	28.23	23.19	208.449	Vertical	Pass
		1880	-1.19	3.91	28.24	23.14	206.063	Vertical	Pass
		1908.5	-0.94	3.94	28.25	23.37	217.270	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-1.00	3.77	28.31	23.54	225.944	Vertical	Pass
		1880	-1.63	3.91	28.22	22.68	185.353	Vertical	Pass
		1907.5	-0.87	3.94	28.20	23.39	218.273	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-1.14	3.79	28.33	23.40	218.776	Vertical	Pass
		1880	-1.22	3.95	28.22	23.05	201.837	Vertical	Pass
		1905	-1.27	3.97	28.19	22.95	197.242	Vertical	Pass
15.0MHz Band 16	1/#Mid	1857.5	-0.95	3.79	28.34	23.60	229.087	Vertical	Pass
		1880	-1.91	3.95	28.22	22.36	172.187	Vertical	Pass

QAM		1902.5	-0.90	3.97	28.18	23.31	214.289	Vertical	Pass
20.0MHz	1/#Mid	1860	-0.62	3.81	28.35	23.92	246.604	Vertical	Pass
Band 16		1880	-0.72	3.96	28.22	23.54	225.944	Vertical	Pass
QAM		1900	-0.86	4.00	28.16	23.30	213.796	Vertical	Pass

Note:

SG Level= Signal generator output

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

8.3 LTE BAND 4

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss	Antenna Gain	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)	(dBm)	(dB)	Average (dBm)	Average (mW)		
1.4MHz Band QPSK	1/#Mid	1710.7	0.60	3.12	27.58	25.06	320.627	Horizontal	Pass
		1732.5	0.64	3.27	27.61	24.98	314.775	Horizontal	Pass
		1754.3	0.45	3.29	27.63	24.79	301.301	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-0.65	3.13	27.61	23.83	241.546	Horizontal	Pass
		1732.5	-1.15	3.27	27.61	23.19	208.449	Horizontal	Pass
		1753.5	-1.66	3.30	27.62	22.66	184.502	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-0.05	3.13	27.63	24.45	278.612	Horizontal	Pass
		1732.5	-1.39	3.27	27.61	22.95	197.242	Horizontal	Pass
		1752.5	0.70	3.30	27.60	25.00	316.228	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-0.08	3.15	27.64	24.41	276.058	Horizontal	Pass
		1732.5	0.69	3.31	27.61	24.99	315.500	Horizontal	Pass
		1750	0.80	3.33	27.59	25.06	320.627	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-0.58	3.15	27.65	23.92	246.604	Horizontal	Pass
		1732.5	0.73	3.31	27.61	25.03	318.420	Horizontal	Pass
		1747.5	0.33	3.33	27.57	24.57	286.418	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-0.77	3.17	27.66	23.72	235.505	Horizontal	Pass
		1732.5	0.78	3.32	27.61	25.07	321.366	Horizontal	Pass
		1745	0.14	3.36	27.56	24.34	271.644	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	0.65	3.12	27.58	25.11	324.340	Vertical	Pass
		1732.5	-0.77	3.27	27.61	23.57	227.510	Vertical	Pass
		1754.3	-0.85	3.29	27.63	23.49	223.357	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	0.54	3.13	27.61	25.02	317.687	Vertical	Pass
		1732.5	0.55	3.27	27.61	24.89	308.319	Vertical	Pass
		1753.5	0.49	3.30	27.62	24.81	302.691	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-1.04	3.13	27.63	23.46	221.820	Vertical	Pass
		1732.5	0.20	3.27	27.61	24.54	284.446	Vertical	Pass
		1752.5	-0.73	3.30	27.60	23.57	227.510	Vertical	Pass
10.0MHz Band	1/#Mid	1715	-0.58	3.15	27.64	23.91	246.037	Vertical	Pass
		1732.5	-0.96	3.31	27.61	23.34	215.774	Vertical	Pass

QPSK		1750	0.83	3.33	27.59	25.09	322.849	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-0.67	3.15	27.65	23.83	241.546	Vertical	Pass
		1732.5	-0.12	3.31	27.61	24.18	261.818	Vertical	Pass
		1747.5	-0.51	3.33	27.57	23.73	236.048	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	1720	0.12	3.17	27.66	24.61	289.068	Vertical	Pass
		1732.5	0.83	3.32	27.61	25.12	325.087	Vertical	Pass
		1745	0.91	3.36	27.56	25.11	324.340	Vertical	Pass

Note:

SG Level= Signal generator output

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

Radiated Power (EIRP) for Band 4									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-0.47	3.12	27.58	23.99	250.611	Horizontal	Pass
		1732.5	-0.58	3.27	27.61	23.76	237.684	Horizontal	Pass
		1754.3	-0.52	3.29	27.63	23.82	240.991	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-0.49	3.13	27.61	23.99	250.611	Horizontal	Pass
		1732.5	-1.80	3.27	27.61	22.54	179.473	Horizontal	Pass
		1753.5	-0.45	3.30	27.62	23.87	243.781	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-0.55	3.13	27.63	23.95	248.313	Horizontal	Pass
		1732.5	-0.88	3.27	27.61	23.46	221.820	Horizontal	Pass
		1752.5	0.04	3.30	27.60	24.34	271.644	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-0.43	3.15	27.64	24.06	254.683	Horizontal	Pass
		1732.5	-0.81	3.31	27.61	23.49	223.357	Horizontal	Pass
		1750	-0.92	3.33	27.59	23.34	215.774	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-0.89	3.15	27.65	23.61	229.615	Horizontal	Pass
		1732.5	-0.53	3.31	27.61	23.77	238.232	Horizontal	Pass
		1747.5	-0.13	3.33	27.57	24.11	257.632	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-0.56	3.17	27.66	23.93	247.172	Horizontal	Pass
		1732.5	0.32	3.32	27.61	24.61	289.068	Horizontal	Pass
		1745	-0.31	3.36	27.56	23.89	244.906	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-0.33	3.12	27.58	24.13	258.821	Vertical	Pass
		1732.5	0.17	3.27	27.61	24.51	282.488	Vertical	Pass
		1754.3	-0.65	3.29	27.63	23.69	233.884	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-0.71	3.13	27.61	23.77	238.232	Vertical	Pass
		1732.5	-1.53	3.27	27.61	22.81	190.985	Vertical	Pass
		1753.5	-0.53	3.30	27.62	23.79	239.332	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-0.45	3.13	27.63	24.05	254.097	Vertical	Pass
		1732.5	-0.71	3.27	27.61	23.63	230.675	Vertical	Pass
		1752.5	-0.91	3.30	27.60	23.39	218.273	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-0.34	3.15	27.64	24.15	260.016	Vertical	Pass
		1732.5	-0.34	3.31	27.61	23.96	248.886	Vertical	Pass
		1750	0.17	3.33	27.59	24.43	277.332	Vertical	Pass
15.0MHz Band 16	1/#Mid	1717.5	-0.23	3.15	27.65	24.27	267.301	Vertical	Pass
		1732.5	-0.77	3.31	27.61	23.53	225.424	Vertical	Pass

QAM		1747.5	0.11	3.33	27.57	24.35	272.270	Vertical	Pass
20.0MHz	1/#Mid	1720	0.23	3.17	27.66	24.72	296.483	Vertical	Pass
Band 16		1732.5	-0.07	3.32	27.61	24.22	264.241	Vertical	Pass
QAM		1745	0.00	3.36	27.56	24.20	263.027	Vertical	Pass

Note:

SG Level= Signal generator output

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

8.4 LTE BAND 5

Radiated Power (ERP) for Band 5										
Mode	RB/ RB SIZE	Freque ncy	Result							Conclu sion
			SG Level (dBm)	Cable Loss (dBm)	Anten na Gain (dB)	Corre ction (dB)	Max. ERP Averag e (dBm)	Max. ERP Averag e (mW)	Polarizati on Of Max. ERP	
1.4MHz Band QPSK	1/#Mi d	824.7	8.57	2.01	19.68	2.15	24.09	256.448	Horizontal	Pass
		836.5	8.11	2.01	19.77	2.15	23.72	235.505	Horizontal	Pass
		848.3	8.74	2.02	19.82	2.15	24.39	274.789	Horizontal	Pass
3.0MHz Band QPSK	1/#Mi d	825.5	8.43	2.01	19.70	2.15	23.97	249.459	Horizontal	Pass
		836.5	8.14	2.01	19.77	2.15	23.75	237.137	Horizontal	Pass
		847.5	8.55	2.02	19.81	2.15	24.19	262.422	Horizontal	Pass
5.0MHz Band QPSK	1/#Mi d	826.5	8.25	2.01	19.71	2.15	23.80	239.883	Horizontal	Pass
		836.5	8.43	2.01	19.77	2.15	24.04	253.513	Horizontal	Pass
		846.5	8.06	2.02	19.79	2.15	23.68	233.346	Horizontal	Pass
10.0MH z Band QPSK	1/#Mi d	829	8.35	2.01	19.73	2.15	23.92	246.604	Horizontal	Pass
		836.5	8.74	2.01	19.77	2.15	24.35	272.270	Horizontal	Pass
		844	8.80	2.02	19.78	2.15	24.41	276.058	Horizontal	Pass
1.4MHz Band QPSK	1/#Mi d	824.7	8.89	2.01	19.68	2.15	24.41	276.058	Vertical	Pass
		836.5	8.40	2.01	19.77	2.15	24.01	251.768	Vertical	Pass
		848.3	8.49	2.02	19.82	2.15	24.14	259.418	Vertical	Pass
3.0MHz Band QPSK	1/#Mi d	825.5	8.16	2.01	19.70	2.15	23.70	234.423	Vertical	Pass
		836.5	8.06	2.01	19.77	2.15	23.67	232.809	Vertical	Pass
		847.5	7.86	2.02	19.81	2.15	23.50	223.872	Vertical	Pass
5.0MHz Band QPSK	1/#Mi d	826.5	9.07	2.01	19.71	2.15	24.62	289.734	Vertical	Pass
		836.5	7.96	2.01	19.77	2.15	23.57	227.510	Vertical	Pass
		846.5	9.12	2.02	19.79	2.15	24.74	297.852	Vertical	Pass
10.0MH z Band QPSK	1/#Mi d	829	8.61	2.01	19.73	2.15	24.18	261.818	Vertical	Pass
		836.5	9.17	2.01	19.77	2.15	24.78	300.608	Vertical	Pass
		844	8.58	2.02	19.78	2.15	24.19	262.422	Vertical	Pass

Radiated Power (ERP) for Band 5										
Mode	RB/ RB SIZE	Freque ncy	Result							Conclu sion
			SG Level (dBm)	Cable Loss (dBm)	Anten na Gain (dB)	Corre ction (dB)	Max. ERP Averag e (dBm)	Max. ERP Averag e (mW)	Polarizati on Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mi d	824.7	7.56	2.01	19.68	2.15	23.08	203.236	Horizontal	Pass
		836.5	6.74	2.01	19.77	2.15	22.35	171.791	Horizontal	Pass
		848.3	7.12	2.02	19.82	2.15	22.77	189.234	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mi d	825.5	6.77	2.01	19.70	2.15	22.31	170.216	Horizontal	Pass
		836.5	7.34	2.01	19.77	2.15	22.95	197.242	Horizontal	Pass
		847.5	7.25	2.02	19.81	2.15	22.89	194.536	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mi d	826.5	6.68	2.01	19.71	2.15	22.23	167.109	Horizontal	Pass
		836.5	6.63	2.01	19.77	2.15	22.24	167.494	Horizontal	Pass
		846.5	7.23	2.02	19.79	2.15	22.85	192.752	Horizontal	Pass
10.0MH z Band 16 QAM	1/#Mi d	829	7.19	2.01	19.73	2.15	22.76	188.799	Horizontal	Pass
		836.5	6.81	2.01	19.77	2.15	22.42	174.582	Horizontal	Pass
		844	6.31	2.02	19.78	2.15	21.92	155.597	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mi d	824.7	7.10	2.01	19.68	2.15	22.62	182.810	Vertical	Pass
		836.5	6.16	2.01	19.77	2.15	21.77	150.314	Vertical	Pass
		848.3	6.55	2.02	19.82	2.15	22.20	165.959	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mi d	825.5	6.18	2.01	19.70	2.15	21.72	148.594	Vertical	Pass
		836.5	6.52	2.01	19.77	2.15	22.13	163.305	Vertical	Pass
		847.5	6.68	2.02	19.81	2.15	22.32	170.608	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mi d	826.5	5.95	2.01	19.71	2.15	21.50	141.254	Vertical	Pass
		836.5	6.96	2.01	19.77	2.15	22.57	180.717	Vertical	Pass
		846.5	6.92	2.02	19.79	2.15	22.54	179.473	Vertical	Pass
10.0MH z Band 16 QAM	1/#Mi d	829	6.71	2.01	19.73	2.15	22.28	169.044	Vertical	Pass
		836.5	7.56	2.01	19.77	2.15	23.17	207.491	Vertical	Pass
		844	6.51	2.02	19.78	2.15	22.12	162.930	Vertical	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

8.5 LTE BAND 7

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	2502.5	1.56	4.54	27.75	24.77	299.916	Horizontal	Pass
		2535	2.12	4.69	27.72	25.15	327.341	Horizontal	Pass
		2567.5	2.12	4.71	27.71	25.12	325.087	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	1.66	4.55	27.76	24.87	306.902	Horizontal	Pass
		2535	0.78	4.69	27.72	23.81	240.436	Horizontal	Pass
		2565	1.09	4.72	27.70	24.07	255.270	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	2.05	4.55	27.77	25.27	336.512	Horizontal	Pass
		2535	1.66	4.69	27.72	24.69	294.442	Horizontal	Pass
		2562.5	1.28	4.72	27.69	24.25	266.073	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	0.72	4.57	27.78	23.93	247.172	Horizontal	Pass
		2535	0.79	4.73	27.72	23.78	238.781	Horizontal	Pass
		2560	2.31	4.75	27.68	25.24	334.195	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	1.13	4.54	27.75	24.34	271.644	Vertical	Pass
		2535	0.89	4.69	27.72	23.92	246.604	Vertical	Pass
		2567.5	0.69	4.71	27.71	23.69	233.884	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	1.82	4.55	27.76	25.03	318.420	Vertical	Pass
		2535	1.56	4.69	27.72	24.59	287.740	Vertical	Pass
		2565	0.66	4.72	27.70	23.64	231.206	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	1.33	4.55	27.77	24.55	285.102	Vertical	Pass
		2535	0.98	4.69	27.72	24.01	251.768	Vertical	Pass
		2562.5	1.47	4.72	27.69	24.44	277.971	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	1.53	4.57	27.78	24.74	297.852	Vertical	Pass
		2535	2.32	4.73	27.72	25.31	339.625	Vertical	Pass
		2560	2.18	4.75	27.68	25.11	324.340	Vertical	Pass

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Mid	2502.5	-0.24	4.54	27.75	22.97	198.153	Horizontal	Pass
		2535	0.48	4.69	27.72	23.51	224.388	Horizontal	Pass
		2567.5	0.82	4.71	27.71	23.82	240.991	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	0.72	4.55	27.76	23.93	247.172	Horizontal	Pass
		2535	0.84	4.69	27.72	23.87	243.781	Horizontal	Pass
		2565	0.46	4.72	27.70	23.44	220.800	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	0.50	4.55	27.77	23.72	235.505	Horizontal	Pass
		2535	0.71	4.69	27.72	23.74	236.592	Horizontal	Pass
		2562.5	1.02	4.72	27.69	23.99	250.611	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	0.93	4.57	27.78	24.14	259.418	Horizontal	Pass
		2535	1.01	4.73	27.72	24.00	251.189	Horizontal	Pass
		2560	0.02	4.75	27.68	22.95	197.242	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	2502.5	0.00	4.54	27.75	23.21	209.411	Vertical	Pass
		2535	0.58	4.69	27.72	23.61	229.615	Vertical	Pass
		2567.5	0.33	4.71	27.71	23.33	215.278	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	2505	0.03	4.55	27.76	23.24	210.863	Vertical	Pass
		2535	-0.54	4.69	27.72	22.49	177.419	Vertical	Pass
		2565	0.92	4.72	27.70	23.90	245.471	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	2507.5	0.64	4.55	27.77	23.86	243.220	Vertical	Pass
		2535	0.95	4.69	27.72	23.98	250.035	Vertical	Pass
		2562.5	0.63	4.72	27.69	23.60	229.087	Vertical	Pass
20.0MHz Band 16 QAM	1/#Mid	2510	1.30	4.57	27.78	24.51	282.488	Vertical	Pass
		2535	1.21	4.73	27.72	24.20	263.027	Vertical	Pass
		2560	0.73	4.75	27.68	23.66	232.274	Vertical	Pass

Note:

SG Level= Signal generator output

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

8.5 LTE BAND 12

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss	Antenna Gain	Correction	Max. ERP	Max. ERP	Polarization Of	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	Max. ERP	
							(dBm)	(mW)		
1.4MHz Band QPSK	1/#Mid	699.7	7.81	1.91	19.21	2.15	22.96	197.697	Vertical	Pass
		707.5	8.01	1.91	19.26	2.15	23.21	209.411	Vertical	Pass
		715.3	7.25	1.93	19.34	2.15	22.51	178.238	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	700.5	8.13	1.91	19.21	2.15	23.28	212.814	Vertical	Pass
		707.5	7.80	1.91	19.26	2.15	23.00	199.526	Vertical	Pass
		714.5	7.52	1.93	19.34	2.15	22.78	189.671	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	701.5	7.45	1.91	19.23	2.15	22.62	182.810	Vertical	Pass
		707.5	7.79	1.91	19.26	2.15	22.99	199.067	Vertical	Pass
		713.5	7.13	1.92	19.33	2.15	22.39	173.380	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	704	8.49	1.91	19.25	2.15	23.68	233.346	Vertical	Pass
		707.5	8.00	1.91	19.26	2.15	23.20	208.930	Vertical	Pass
		711	8.52	1.92	19.32	2.15	23.77	238.232	Vertical	Pass
1.4MHz Band QPSK	1/#Mid	699.7	8.51	1.91	19.21	2.15	23.66	232.274	Horizontal	Pass
		707.5	8.42	1.91	19.26	2.15	23.62	230.144	Horizontal	Pass
		715.3	8.24	1.93	19.34	2.15	23.50	223.872	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	700.5	8.52	1.91	19.21	2.15	23.67	232.809	Horizontal	Pass
		707.5	8.02	1.91	19.26	2.15	23.22	209.894	Horizontal	Pass
		714.5	8.34	1.93	19.34	2.15	23.60	229.087	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	701.5	8.02	1.91	19.23	2.15	23.19	208.449	Horizontal	Pass
		707.5	8.32	1.91	19.26	2.15	23.52	224.905	Horizontal	Pass
		713.5	8.30	1.92	19.33	2.15	23.56	226.986	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	704	8.71	1.91	19.25	2.15	23.90	245.471	Horizontal	Pass
		707.5	7.59	1.91	19.26	2.15	22.79	190.108	Horizontal	Pass
		711	7.82	1.92	19.32	2.15	23.07	202.768	Horizontal	Pass

Radiated Power (EIRP) for Band 12										
Mode	RB/ RB SIZE	Freque ncy	Result							Conclu sion
			SG Level	Cable Loss	Anten na Gain	Corre ction	Max. ERP	Max. ERP	Polarizati on Of Max. ERP	
			(dBm)	(dBm)	(dB)	(dB)	Averag e	Averag e		
1.4MHz Band 16 QAM	1/#Mi d	699.7	7.32	1.91	19.21	2.15	22.47	176.604	Vertical	Pass
		707.5	6.77	1.91	19.26	2.15	21.97	157.398	Vertical	Pass
		715.3	6.51	1.93	19.34	2.15	21.77	150.314	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mi d	700.5	7.32	1.91	19.21	2.15	22.47	176.604	Vertical	Pass
		707.5	7.51	1.91	19.26	2.15	22.71	186.638	Vertical	Pass
		714.5	6.63	1.93	19.34	2.15	21.89	154.525	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mi d	701.5	7.62	1.91	19.23	2.15	22.79	190.108	Vertical	Pass
		707.5	7.84	1.91	19.26	2.15	23.04	201.372	Vertical	Pass
		713.5	7.71	1.92	19.33	2.15	22.97	198.153	Vertical	Pass
10.0MH z Band 16 QAM	1/#Mi d	704	7.25	1.91	19.25	2.15	22.44	175.388	Vertical	Pass
		707.5	7.62	1.91	19.26	2.15	22.82	191.426	Vertical	Pass
		711	7.78	1.92	19.32	2.15	23.03	200.909	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mi d	699.7	7.23	1.91	19.21	2.15	22.38	172.982	Horizontal	Pass
		707.5	7.46	1.91	19.26	2.15	22.66	184.502	Horizontal	Pass
		715.3	7.40	1.93	19.34	2.15	22.66	184.502	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mi d	700.5	7.80	1.91	19.21	2.15	22.95	197.242	Horizontal	Pass
		707.5	7.64	1.91	19.26	2.15	22.84	192.309	Horizontal	Pass
		714.5	7.72	1.93	19.34	2.15	22.98	198.609	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mi d	701.5	7.21	1.91	19.23	2.15	22.38	172.982	Horizontal	Pass
		707.5	7.65	1.91	19.26	2.15	22.85	192.752	Horizontal	Pass
		713.5	6.57	1.92	19.33	2.15	21.83	152.405	Horizontal	Pass
10.0MH z Band 16 QAM	1/#Mi d	704	7.43	1.91	19.25	2.15	22.62	182.810	Horizontal	Pass
		707.5	8.10	1.91	19.26	2.15	23.30	213.796	Horizontal	Pass
		711	7.99	1.92	19.32	2.15	23.24	210.863	Horizontal	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

8.6 LTE BAND 17

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/#Midd	706.5	6.82	1.91	19.23	2.15	21.99	158.125	Vertical	Pass
		710	7.62	1.91	19.26	2.15	22.82	191.426	Vertical	Pass
		713.5	7.31	1.92	19.33	2.15	22.57	180.717	Vertical	Pass
10.0MHz Band QPSK	1/#Midd	709	5.68	1.91	19.25	2.15	20.87	122.180	Vertical	Pass
		710	6.61	1.91	19.26	2.15	21.81	151.705	Vertical	Pass
		711	7.75	1.92	19.32	2.15	23.00	199.526	Vertical	Pass
5.0MHz Band QPSK	1/#Midd	706.5	7.46	1.91	19.23	2.15	22.63	183.231	Horizontal	Pass
		710	7.69	1.91	19.26	2.15	22.89	194.536	Horizontal	Pass
		713.5	7.16	1.92	19.33	2.15	22.42	174.582	Horizontal	Pass
10.0MHz Band QPSK	1/#Midd	709	7.76	1.91	19.25	2.15	22.95	197.242	Horizontal	Pass
		710	7.77	1.91	19.26	2.15	22.97	198.153	Horizontal	Pass
		711	8.05	1.92	19.32	2.15	23.30	213.796	Horizontal	Pass

Radiated Power (ERP) for Band 17										
Mode	RB/ RB SIZE	Frequency	Result							Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. ERP Average (dBm)	Max. ERP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band 16 QAM	1/#Midd	706.5	7.23	1.91	19.23	2.15	22.40	173.780	Vertical	Pass
		710	7.13	1.91	19.26	2.15	22.33	171.002	Vertical	Pass
		713.5	6.81	1.92	19.33	2.15	22.07	161.065	Vertical	Pass
10.0MHz z Band 16 QAM	1/#Midd	709	6.85	1.91	19.25	2.15	22.04	159.956	Vertical	Pass
		710	6.23	1.91	19.26	2.15	21.43	138.995	Vertical	Pass
		711	6.99	1.92	19.32	2.15	22.24	167.494	Vertical	Pass
5.0MHz Band 16 QAM	1/#Midd	706.5	6.13	1.91	19.23	2.15	21.30	134.896	Horizontal	Pass
		710	6.82	1.91	19.26	2.15	22.02	159.221	Horizontal	Pass
		713.5	6.64	1.92	19.33	2.15	21.90	154.882	Horizontal	Pass
10.0MHz z Band 16 QAM	1/#Midd	709	6.38	1.91	19.25	2.15	21.57	143.549	Horizontal	Pass
		710	7.75	1.91	19.26	2.15	22.95	197.242	Horizontal	Pass
		711	7.15	1.92	19.32	2.15	22.40	173.780	Horizontal	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

8.7 LTE BAND 66

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	1/#Mid	1710.7	0.40	3.12	27.58	24.86	306.196	Horizontal	Pass
		1745	0.81	3.27	27.61	25.15	327.341	Horizontal	Pass
		1779.3	0.42	3.29	27.63	24.76	299.226	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-0.67	3.13	27.61	23.81	240.436	Horizontal	Pass
		1745	-1.04	3.27	27.61	23.30	213.796	Horizontal	Pass
		1778.5	-1.41	3.30	27.62	22.91	195.434	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	0.02	3.13	27.63	24.52	283.139	Horizontal	Pass
		1745	-1.37	3.27	27.61	22.97	198.153	Horizontal	Pass
		1777.5	0.86	3.30	27.60	25.16	328.095	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	0.09	3.15	27.64	24.58	287.078	Horizontal	Pass
		1745	0.75	3.31	27.61	25.05	319.890	Horizontal	Pass
		1775	0.98	3.33	27.59	25.24	334.195	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-0.60	3.15	27.65	23.90	245.471	Horizontal	Pass
		1745	0.60	3.31	27.61	24.90	309.030	Horizontal	Pass
		1772.5	0.29	3.33	27.57	24.53	283.792	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-0.82	3.17	27.66	23.67	232.809	Horizontal	Pass
		1745	0.76	3.32	27.61	25.05	319.890	Horizontal	Pass
		1770	0.16	3.36	27.56	24.36	272.898	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-0.06	3.12	27.58	24.40	275.423	Vertical	Pass
		1745	-0.59	3.27	27.61	23.75	237.137	Vertical	Pass
		1779.3	-0.69	3.29	27.63	23.65	231.739	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	0.69	3.13	27.61	25.17	328.852	Vertical	Pass
		1745	0.52	3.27	27.61	24.86	306.196	Vertical	Pass
		1778.5	0.72	3.30	27.62	25.04	319.154	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-0.57	3.13	27.63	23.93	247.172	Vertical	Pass
		1745	0.07	3.27	27.61	24.41	276.058	Vertical	Pass
		1777.5	-0.75	3.30	27.60	23.55	226.464	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-0.47	3.15	27.64	24.02	252.348	Vertical	Pass
		1745	-1.11	3.31	27.61	23.19	208.449	Vertical	Pass
		1775	0.60	3.33	27.59	24.86	306.196	Vertical	Pass

15.0MH z Band QPSK	1/#Mid	1717.5	-0.46	3.15	27.65	24.04	253.513	Vertical	Pass
		1745	-0.10	3.31	27.61	24.20	263.027	Vertical	Pass
		1772.5	-0.57	3.33	27.57	23.67	232.809	Vertical	Pass
20.0MH z Band QPSK	1/#Mid	1720	0.13	3.17	27.66	24.62	289.734	Vertical	Pass
		1745	1.09	3.32	27.61	25.38	345.144	Vertical	Pass
		1770	0.75	3.36	27.56	24.95	312.608	Vertical	Pass

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level (dBm)	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band 16 QAM	1/#Mid	1710.7	-0.38	3.12	27.58	24.08	255.859	Horizontal	Pass
		1745	-0.67	3.27	27.61	23.67	232.809	Horizontal	Pass
		1779.3	-0.68	3.29	27.63	23.66	232.274	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-0.70	3.13	27.61	23.78	238.781	Horizontal	Pass
		1745	-1.83	3.27	27.61	22.51	178.238	Horizontal	Pass
		1778.5	-0.42	3.30	27.62	23.90	245.471	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-0.65	3.13	27.63	23.85	242.661	Horizontal	Pass
		1745	-0.57	3.27	27.61	23.77	238.232	Horizontal	Pass
		1777.5	-0.04	3.30	27.60	24.26	266.686	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-0.74	3.15	27.64	23.75	237.137	Horizontal	Pass
		1745	-0.36	3.31	27.61	23.94	247.742	Horizontal	Pass
		1775	-0.94	3.33	27.59	23.32	214.783	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-0.77	3.15	27.65	23.73	236.048	Horizontal	Pass
		1745	-0.55	3.31	27.61	23.75	237.137	Horizontal	Pass
		1772.5	-0.09	3.33	27.57	24.15	260.016	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-0.39	3.17	27.66	24.10	257.040	Horizontal	Pass
		1745	0.26	3.32	27.61	24.55	285.102	Horizontal	Pass
		1770	-0.46	3.36	27.56	23.74	236.592	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	0.00	3.12	27.58	24.46	279.254	Vertical	Pass
		1745	-0.08	3.27	27.61	24.26	266.686	Vertical	Pass
		1779.3	-0.54	3.29	27.63	23.80	239.883	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-0.63	3.13	27.61	23.85	242.661	Vertical	Pass
		1745	-1.89	3.27	27.61	22.45	175.792	Vertical	Pass
		1778.5	-0.68	3.30	27.62	23.64	231.206	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-0.70	3.13	27.63	23.80	239.883	Vertical	Pass
		1745	-0.57	3.27	27.61	23.77	238.232	Vertical	Pass
		1777.5	-0.76	3.30	27.60	23.54	225.944	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-0.01	3.15	27.64	24.48	280.543	Vertical	Pass
		1745	-0.54	3.31	27.61	23.76	237.684	Vertical	Pass
		1775	0.13	3.33	27.59	24.39	274.789	Vertical	Pass
15.0MHz Band 16	1/#Mid	1717.5	-0.17	3.15	27.65	24.33	271.019	Vertical	Pass
		1745	-0.38	3.31	27.61	23.92	246.604	Vertical	Pass

QAM		1772.5	0.07	3.33	27.57	24.31	269.774	Vertical	Pass
20.0MHz	1/#Mid	1720	-0.11	3.17	27.66	24.38	274.157	Vertical	Pass
Band 16		1745	-0.33	3.32	27.61	23.96	248.886	Vertical	Pass
QAM		1770	0.03	3.36	27.56	24.23	264.850	Vertical	Pass

Note:

ERP=EIRP-2.15

SG Level= Signal generator output

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

9. SPURIOUS RADIATION EMISSION

RULE PART(S)

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

LIMIT

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

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
LTE Band 4
- ☐ LTE Band 5
LTE Band 7
LTE Band 12
LTE Band 17
LTE Band 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 Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3701.4	-50.54	4.04	33.51	-21.07	-13	-8.07	Horizontal
3701.4	-54.62	4.04	33.51	-25.15	-13	-12.15	Vertical
5552.1	-49.44	5.24	35.84	-18.84	-13	-5.84	Vertical
5552.1	-48.78	5.24	35.84	-18.18	-13	-5.18	Horizontal
170.7	-46.99	1.72	15.08	-33.63	-13	-20.63	Vertical
92.2	-44.38	1.52	16.12	-29.78	-13	-16.78	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-54.37	4.04	33.56	-24.85	-13	-11.85	Horizontal
3760.0	-54.39	4.04	33.56	-24.87	-13	-11.87	Vertical
5640.0	-45.95	5.24	35.91	-15.28	-13	-2.28	Vertical
5640.0	-53.06	5.24	35.91	-22.39	-13	-9.39	Horizontal
253.9	-45.58	1.77	17.52	-29.83	-13	-16.83	Vertical
177.9	-39.15	1.46	17.35	-23.26	-13	-10.26	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-51.14	4.04	34.00	-21.18	-13	-8.18	Horizontal
3818.6	-57.10	4.04	34.00	-27.14	-13	-14.14	Vertical
5727.9	-57.25	5.24	36.04	-26.45	-13	-13.45	Vertical
5727.9	-50.66	5.24	36.04	-19.86	-13	-6.86	Horizontal
204.5	-40.89	1.61	16.05	-26.45	-13	-13.45	Vertical
88.9	-44.63	1.52	17.28	-28.87	-13	-15.87	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 Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3720.0	-53.31	4.07	33.54	-23.84	-13	-10.84	Horizontal
3720.0	-53.33	4.07	33.54	-23.86	-13	-10.86	Vertical
5580.0	-51.34	5.28	35.86	-20.76	-13	-7.76	Vertical
5580.0	-52.55	5.28	35.86	-21.97	-13	-8.97	Horizontal
147.3	-42.81	1.38	17.49	-26.70	-13	-13.70	Vertical
102.4	-46.07	1.66	15.97	-31.76	-13	-18.76	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-47.09	4.04	33.56	-17.57	-13	-4.57	Horizontal
3760.0	-53.03	4.04	33.56	-23.51	-13	-10.51	Vertical
5640.0	-50.54	5.24	35.91	-19.87	-13	-6.87	Vertical
5640.0	-57.85	5.24	35.91	-27.18	-13	-14.18	Horizontal
195.6	-39.13	1.55	16.64	-24.04	-13	-11.04	Vertical
263.1	-39.97	1.69	17.04	-24.62	-13	-11.62	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-49.26	4.04	34.00	-19.30	-13	-6.30	Horizontal
3800.0	-49.15	4.04	34.00	-19.19	-13	-6.19	Vertical
5700.0	-49.84	5.24	36.04	-19.04	-13	-6.04	Vertical
5700.0	-53.83	5.24	36.04	-23.03	-13	-10.03	Horizontal
210.2	-45.73	1.63	15.28	-32.08	-13	-19.08	Vertical
99.4	-39.63	1.73	17.46	-23.90	-13	-10.90	Horizontal

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

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

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

9.2 LTE BAND 4

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

Test Results for Low Channel 1710.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-49.84	4.02	29.80	-24.06	-13	-11.06	Horizontal
3421.4	-50.20	4.02	29.80	-24.42	-13	-11.42	Vertical
5132.1	-48.86	5.24	35.84	-18.26	-13	-5.26	Vertical
5132.1	-47.81	5.24	35.84	-17.21	-13	-4.21	Horizontal
99.4	-38.29	1.52	15.14	-24.67	-13	-11.67	Vertical
118.1	-39.66	1.40	15.10	-25.96	-13	-12.96	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-53.69	4.03	30.00	-27.72	-13	-14.72	Horizontal
3465.0	-46.52	4.03	30.00	-20.55	-13	-7.55	Vertical
5197.5	-48.62	5.25	35.86	-18.01	-13	-5.01	Vertical
5197.5	-50.52	5.25	35.86	-19.91	-13	-6.91	Horizontal
206.0	-41.44	1.33	15.21	-27.56	-13	-14.56	Vertical
150.4	-45.16	1.59	15.47	-31.28	-13	-18.28	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-53.16	4.05	30.01	-27.20	-13	-14.20	Horizontal
3508.6	-55.01	4.05	30.01	-29.05	-13	-16.05	Vertical
5262.9	-53.50	5.26	35.86	-22.90	-13	-9.90	Vertical
5262.9	-49.61	5.26	35.86	-19.01	-13	-6.01	Horizontal
270.4	-40.74	1.79	17.58	-24.95	-13	-11.95	Vertical
194.1	-40.02	1.72	15.62	-26.12	-13	-13.12	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 Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440.0	-46.46	4.02	29.80	-20.68	-13	-7.68	Horizontal
3440.0	-53.88	4.02	29.80	-28.10	-13	-15.10	Vertical
5160.0	-48.96	5.24	35.84	-18.36	-13	-5.36	Vertical
5160.0	-56.35	5.24	35.84	-25.75	-13	-12.75	Horizontal
259.7	-47.65	1.65	17.39	-31.91	-13	-18.91	Vertical
259.7	-44.12	1.35	15.09	-30.38	-13	-17.38	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-53.07	4.03	30.00	-27.10	-13	-14.10	Horizontal
3465.0	-54.54	4.03	30.00	-28.57	-13	-15.57	Vertical
5197.5	-52.59	5.25	35.86	-21.98	-13	-8.98	Vertical
5197.5	-47.31	5.25	35.86	-16.70	-13	-3.70	Horizontal
201.7	-46.55	1.58	16.68	-31.45	-13	-18.45	Vertical
234.6	-40.59	1.53	16.19	-25.93	-13	-12.93	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-49.68	2.91	27.68	-24.91	-13	-11.91	Horizontal
3490.0	-55.71	2.91	27.68	-30.94	-13	-17.94	Vertical
5235.0	-56.35	5.26	35.86	-25.75	-13	-12.75	Vertical
5235.0	-52.72	5.26	35.86	-22.12	-13	-9.12	Horizontal
206.5	-41.18	1.58	16.49	-26.27	-13	-13.27	Vertical
245.8	-38.84	1.46	17.28	-23.02	-13	-10.02	Horizontal

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

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

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

9.3 LTE BAND 5

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

Test Results for Low Channel 824.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1649.4	-48.57	2.78	27.50	-23.85	-13	-10.85	Horizontal
1649.4	-51.16	2.78	27.50	-26.44	-13	-13.44	Vertical
2474.1	-51.63	2.90	27.80	-26.73	-13	-13.73	Vertical
2474.1	-52.91	2.90	27.80	-28.01	-13	-15.01	Horizontal
253.0	-44.85	1.54	17.26	-29.13	-13	-16.13	Vertical
163.6	-40.39	1.40	17.84	-23.95	-13	-10.95	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-43.87	2.80	27.48	-19.19	-13	-6.19	Horizontal
1673.0	-51.02	2.80	27.48	-26.34	-13	-13.34	Vertical
2509.5	-44.26	2.91	27.70	-19.47	-13	-6.47	Vertical
2509.5	-41.54	2.91	27.70	-16.75	-13	-3.75	Horizontal
93.5	-44.11	1.36	17.86	-27.61	-13	-14.61	Vertical
218.6	-40.88	1.36	17.42	-24.82	-13	-11.82	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-47.98	2.82	27.43	-23.37	-13	-10.37	Horizontal
1696.6	-45.61	2.82	27.43	-21.00	-13	-8.00	Vertical
2544.9	-45.92	2.92	27.74	-21.10	-13	-8.10	Vertical
2544.9	-49.02	2.92	27.74	-24.20	-13	-11.20	Horizontal
191.3	-40.41	1.35	17.56	-24.20	-13	-11.20	Vertical
96.1	-46.31	1.70	15.90	-32.11	-13	-19.11	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 Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1658.0	-42.93	2.78	27.50	-18.21	-13	-5.21	Horizontal
1658.0	-43.49	2.78	27.50	-18.77	-13	-5.77	Vertical
2487.0	-43.54	2.90	27.80	-18.64	-13	-5.64	Vertical
2487.0	-46.82	2.90	27.80	-21.92	-13	-8.92	Horizontal
98.2	-45.29	1.69	17.23	-29.75	-13	-16.75	Vertical
102.5	-42.87	1.33	16.16	-28.04	-13	-15.04	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-48.24	2.80	27.48	-23.56	-13	-10.56	Horizontal
1673.0	-50.93	2.80	27.48	-26.25	-13	-13.25	Vertical
2509.5	-45.32	2.91	27.70	-20.53	-13	-7.53	Vertical
2509.5	-45.61	2.91	27.70	-20.82	-13	-7.82	Horizontal
264.1	-43.32	1.46	16.37	-28.41	-13	-15.41	Vertical
101.4	-39.35	1.59	15.88	-25.06	-13	-12.06	Horizontal
Test Results for High Channel 844MHz							
1688.0	-43.20	2.82	27.43	-18.59	-13	-5.59	Horizontal
1688.0	-41.48	2.82	27.43	-16.87	-13	-3.87	Vertical
2532.0	-45.99	2.92	27.74	-21.17	-13	-8.17	Vertical
2532.0	-43.79	2.92	27.74	-18.97	-13	-5.97	Horizontal
117.6	-44.07	1.34	16.72	-28.69	-13	-15.69	Vertical
225.3	-41.55	1.67	17.86	-25.36	-13	-12.36	Horizontal

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

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

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

9.4 LTE BAND 7

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

Test Results for Low Channel 2502.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5005.0	-67.94	5.23	35.81	-37.36	-25	-12.36	Horizontal
5005.0	-69.96	5.23	35.81	-39.38	-25	-14.38	Vertical
7507.5	-65.35	5.67	36.85	-34.17	-25	-9.17	Vertical
7507.5	-63.36	5.67	36.85	-32.18	-25	-7.18	Horizontal
198.2	-56.39	1.53	18.00	-39.92	-25	-14.92	Vertical
532.1	-60.16	1.43	17.27	-44.32	-25	-19.32	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-63.63	5.23	35.82	-33.04	-25	-8.04	Horizontal
5070.0	-59.75	5.23	35.82	-29.16	-25	-4.16	Vertical
7605.0	-64.01	5.67	36.85	-32.83	-25	-7.83	Vertical
7605.0	-61.65	5.67	36.85	-30.47	-25	-5.47	Horizontal
438.9	-60.67	1.47	15.72	-46.42	-25	-21.42	Vertical
504.2	-59.04	1.34	16.51	-43.87	-25	-18.87	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-61.52	5.24	35.83	-30.93	-25	-5.93	Horizontal
5135.0	-66.45	5.24	35.83	-35.86	-25	-10.86	Vertical
7702.5	-67.14	5.68	36.87	-35.95	-25	-10.95	Vertical
7702.5	-64.24	5.68	36.87	-33.05	-25	-8.05	Horizontal
545.2	-58.19	1.60	15.91	-43.88	-25	-18.88	Vertical
462.6	-53.06	1.60	16.46	-38.20	-25	-13.20	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 Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
5020.0	-64.73	5.23	35.82	-34.14	-25	-9.14	Horizontal
5020.0	-63.60	5.23	35.82	-33.01	-25	-8.01	Vertical
7530.0	-65.97	5.67	36.86	-34.78	-25	-9.78	Vertical
7530.0	-64.23	5.67	36.86	-33.04	-25	-8.04	Horizontal
512.6	-55.74	1.36	15.42	-41.68	-25	-16.68	Vertical
393.6	-55.60	1.56	17.58	-39.58	-25	-14.58	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-62.99	5.23	35.82	-32.40	-25	-7.40	Horizontal
5070.0	-69.74	5.23	35.82	-39.15	-25	-14.15	Vertical
7605.0	-63.65	5.67	36.85	-32.47	-25	-7.47	Vertical
7605.0	-66.33	5.67	36.85	-35.15	-25	-10.15	Horizontal
301.3	-52.45	1.48	17.89	-36.04	-25	-11.04	Vertical
247.5	-56.58	1.35	15.06	-42.87	-25	-17.87	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-67.74	5.24	35.83	-37.15	-25	-12.15	Horizontal
5120.0	-61.04	5.24	35.83	-30.45	-25	-5.45	Vertical
7680.0	-66.94	5.70	36.88	-35.76	-25	-10.76	Vertical
7680.0	-68.78	5.70	36.88	-37.60	-25	-12.60	Horizontal
361.8	-56.42	1.33	17.26	-40.49	-25	-15.49	Vertical
386.5	-52.69	1.48	17.49	-36.68	-25	-11.68	Horizontal

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

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

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

9.5 LTE BAND 12

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

Test Results for Low Channel 699.7MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1399.4	-46.87	2.60	27.20	-22.27	-13	-9.27	Horizontal
1399.4	-50.06	2.60	27.20	-25.46	-13	-12.46	Vertical
2099.1	-47.35	2.85	27.54	-22.66	-13	-9.66	Vertical
2099.1	-46.01	2.85	27.54	-21.32	-13	-8.32	Horizontal
88.2	-40.90	1.61	15.72	-26.79	-13	-13.79	Vertical
141.2	-47.01	1.78	16.84	-31.95	-13	-18.95	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-47.11	2.61	27.28	-22.44	-13	-9.44	Horizontal
1415.0	-52.54	2.61	27.28	-27.87	-13	-14.87	Vertical
2122.5	-51.80	2.87	27.59	-27.08	-13	-14.08	Vertical
2122.5	-45.82	2.87	27.59	-21.10	-13	-8.10	Horizontal
112.0	-44.10	1.63	15.42	-30.31	-13	-17.31	Vertical
203.9	-40.36	1.71	17.98	-24.09	-13	-11.09	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-45.04	2.63	27.28	-20.39	-13	-7.39	Horizontal
1430.6	-49.18	2.63	27.28	-24.53	-13	-11.53	Vertical
2145.9	-48.93	2.88	27.60	-24.21	-13	-11.21	Vertical
2145.9	-44.35	2.88	27.60	-19.63	-13	-6.63	Horizontal
200.2	-41.30	1.46	16.62	-26.14	-13	-13.14	Vertical
143.0	-37.91	1.36	17.01	-22.26	-13	-9.26	Horizontal

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

Test Results for Low Channel 704MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1408.0	-43.95	2.61	27.26	-19.30	-13	-6.30	Horizontal
1408.0	-48.27	2.61	27.26	-23.62	-13	-10.62	Vertical
2112.0	-49.46	2.87	27.58	-24.75	-13	-11.75	Vertical
2112.0	-45.86	2.87	27.58	-21.15	-13	-8.15	Horizontal
238.1	-45.37	1.47	15.91	-30.93	-13	-17.93	Vertical
92.7	-42.28	1.61	17.49	-26.40	-13	-13.40	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-49.48	2.61	27.28	-24.81	-13	-11.81	Horizontal
1415.0	-44.96	2.61	27.28	-20.29	-13	-7.29	Vertical
2122.5	-49.82	2.87	27.59	-25.10	-13	-12.10	Vertical
2122.5	-47.60	2.87	27.59	-22.88	-13	-9.88	Horizontal
183.8	-43.91	1.80	15.84	-29.87	-13	-16.87	Vertical
102.2	-38.45	1.65	16.97	-23.13	-13	-10.13	Horizontal
Test Results for High Channel 711MHz							
1422.0	-44.99	2.62	27.28	-20.33	-13	-7.33	Horizontal
1422.0	-43.27	2.62	27.28	-18.61	-13	-5.61	Vertical
2133.0	-42.59	2.87	27.60	-17.86	-13	-4.86	Vertical
2133.0	-51.56	2.87	27.60	-26.83	-13	-13.83	Horizontal
201.6	-47.48	1.61	15.26	-33.83	-13	-20.83	Vertical
136.9	-46.37	1.33	16.09	-31.61	-13	-18.61	Horizontal

Note: $P_{Mea}(dBm) = Power(dBm) + ARpl(dBm)$

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

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

9.6 LTE BAND 17

QPSK EIRP POWER FOR LTE BAND 17 (5MHZ BANDWIDTH)

Test Results for Low Channel 706.5MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1413.0	-43.83	2.61	27.28	-19.16	-13	-6.16	Horizontal
1413.0	-46.98	2.61	27.28	-22.31	-13	-9.31	Vertical
2119.5	-45.42	2.87	27.59	-20.70	-13	-7.70	Vertical
2119.5	-46.95	2.87	27.59	-22.23	-13	-9.23	Horizontal
237.4	-46.24	1.51	17.88	-29.87	-13	-16.87	Vertical
145.2	-46.55	1.54	17.43	-30.66	-13	-17.66	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-44.59	2.62	27.30	-19.91	-13	-6.91	Horizontal
1420.0	-47.46	2.62	27.30	-22.78	-13	-9.78	Vertical
2130.0	-44.80	2.87	27.62	-20.05	-13	-7.05	Vertical
2130.0	-42.37	2.87	27.62	-17.62	-13	-4.62	Horizontal
179.3	-44.23	1.34	16.43	-29.14	-13	-16.14	Vertical
185.1	-40.22	1.79	17.59	-24.42	-13	-11.42	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-50.10	2.66	27.28	-25.48	-13	-12.48	Horizontal
1427.0	-45.53	2.66	27.28	-20.91	-13	-7.91	Vertical
2140.5	-42.64	2.88	27.60	-17.92	-13	-4.92	Vertical
2140.5	-53.04	2.88	27.60	-28.32	-13	-15.32	Horizontal
262.8	-42.40	1.79	17.27	-26.92	-13	-13.92	Vertical
181.7	-45.19	1.76	15.43	-31.52	-13	-18.52	Horizontal

QPSK EIRP POWER FOR LTE BAND 17 (10MHZ BANDWIDTH)

Test Results for Low Channel 709MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
1418.0	-48.12	2.62	27.30	-23.44	-13	-10.44	Horizontal
1418.0	-45.50	2.62	27.30	-20.82	-13	-7.82	Vertical
2127.0	-51.60	2.87	27.62	-26.85	-13	-13.85	Vertical
2127.0	-48.93	2.87	27.62	-24.18	-13	-11.18	Horizontal
250.6	-36.86	1.49	17.11	-21.24	-13	-8.24	Vertical
233.8	-45.25	1.36	17.32	-29.29	-13	-16.29	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-48.71	2.62	27.30	-24.03	-13	-11.03	Horizontal
1420.0	-48.05	2.62	27.30	-23.37	-13	-10.37	Vertical
2130.0	-48.38	2.87	27.62	-23.63	-13	-10.63	Vertical
2130.0	-51.85	2.87	27.62	-27.10	-13	-14.10	Horizontal
103.9	-42.40	1.46	16.56	-27.30	-13	-14.30	Vertical
119.2	-44.79	1.33	16.47	-29.65	-13	-16.65	Horizontal
Test Results for High Channel 711MHz							
1422.0	-42.98	2.62	27.30	-18.30	-13	-5.30	Horizontal
1422.0	-50.10	2.62	27.30	-25.42	-13	-12.42	Vertical
2133.0	-55.32	2.87	27.62	-30.57	-13	-17.57	Vertical
2133.0	-46.63	2.87	27.62	-21.88	-13	-8.88	Horizontal
104.1	-39.56	1.80	16.56	-24.80	-13	-11.80	Vertical
214.1	-44.47	1.63	15.11	-30.99	-13	-17.99	Horizontal

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

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

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

9.7 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 Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3421.4	-54.12	4.02	29.80	-28.34	-13	-15.34	Horizontal
3421.4	-50.65	4.02	29.80	-24.87	-13	-11.87	Vertical
5132.1	-48.81	5.24	35.84	-18.21	-13	-5.21	Vertical
5132.1	-54.78	5.24	35.84	-24.18	-13	-11.18	Horizontal
116.2	-38.33	1.59	16.33	-23.59	-13	-10.59	Vertical
132.7	-45.55	1.76	15.95	-31.36	-13	-18.36	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-54.19	4.03	30.00	-28.22	-13	-15.22	Horizontal
3490.0	-55.37	4.03	30.00	-29.40	-13	-16.40	Vertical
5235.0	-53.20	5.25	35.86	-22.59	-13	-9.59	Vertical
5235.0	-51.25	5.25	35.86	-20.64	-13	-7.64	Horizontal
129.6	-41.29	1.34	16.25	-26.38	-13	-13.38	Vertical
244.2	-38.64	1.68	15.88	-24.44	-13	-11.44	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-49.00	4.05	30.01	-23.04	-13	-10.04	Horizontal
3558.6	-56.30	4.05	30.01	-30.34	-13	-17.34	Vertical
5337.9	-56.81	5.26	35.86	-26.21	-13	-13.21	Vertical
5337.9	-49.70	5.26	35.86	-19.10	-13	-6.10	Horizontal
179.3	-38.01	1.54	17.08	-22.47	-13	-9.47	Vertical
252.4	-44.23	1.33	17.70	-27.86	-13	-14.86	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 Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440.0	-48.13	4.02	29.80	-22.35	-13	-9.35	Horizontal
3440.0	-46.70	4.02	29.80	-20.92	-13	-7.92	Vertical
5160.0	-49.30	5.24	35.84	-18.70	-13	-5.70	Vertical
5160.0	-48.46	5.24	35.84	-17.86	-13	-4.86	Horizontal
272.3	-37.14	1.78	17.14	-21.78	-13	-8.78	Vertical
185.0	-37.70	1.77	16.43	-23.04	-13	-10.04	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-50.70	4.03	30.00	-24.73	-13	-11.73	Horizontal
3490.0	-48.83	4.03	30.00	-22.86	-13	-9.86	Vertical
5235.0	-54.69	5.25	35.86	-24.08	-13	-11.08	Vertical
5235.0	-54.55	5.25	35.86	-23.94	-13	-10.94	Horizontal
252.6	-40.84	1.49	17.91	-24.42	-13	-11.42	Vertical
272.0	-46.82	1.58	15.57	-32.83	-13	-19.83	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-51.04	2.91	27.68	-26.27	-13	-13.27	Horizontal
3540.0	-50.46	2.91	27.68	-25.69	-13	-12.69	Vertical
5310.0	-54.12	5.26	35.86	-23.52	-13	-10.52	Vertical
5310.0	-55.40	5.26	35.86	-24.80	-13	-11.80	Horizontal
255.0	-46.61	1.48	15.30	-32.79	-13	-19.79	Vertical
272.2	-46.21	1.76	15.04	-32.93	-13	-19.93	Horizontal

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

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

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

10. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

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

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- ☐ Temp. = -30° to $+50^{\circ}\text{C}$
- ☐ Voltage = low voltage, DC 3.4V, Normal, DC 3.7V and High voltage, DC 4.2V.

Frequency Stability vs Temperature:

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

Frequency Stability vs Voltage:

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

MODES TESTED

- ☐ LTE Band 2
- LTE Band 4
- ☐ LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 17
- LTE Band 66

RESULTS

See the following pages.

10.1 LTE BAND 2

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	1880	1.6	0.000856	2.5
3.7	1880	7.1	0.003787	2.5
4.2	1880	9.4	0.004973	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	10.4	0.005537	2.5
Extreme (50C)	1880	15.1	0.008021	2.5
Extreme (40C)	1880	-8.5	-0.004537	2.5
Extreme (30C)	1880	20.0	0.010633	2.5
Extreme (10C)	1880	29.8	0.015856	2.5
Extreme (0C)	1880	-27.0	-0.014340	2.5
Extreme (-10C)	1880	18.4	0.009798	2.5
Extreme (-20C)	1880	32.4	0.017223	2.5
Extreme (-30C)	1880	-10.5	-0.005564	2.5

Band 2 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	1880	25.3	0.013441	2.5
3.7	1880	16.2	0.008633	2.5
4.2	1880	1.3	0.000681	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	12.7	0.006755	2.5
Extreme (50C)	1880	14.5	0.007697	2.5
Extreme (40C)	1880	23.8	0.012638	2.5
Extreme (30C)	1880	-16.6	-0.008851	2.5
Extreme (10C)	1880	18.7	0.009947	2.5
Extreme (0C)	1880	-14.3	-0.007612	2.5
Extreme (-10C)	1880	-22.9	-0.012154	2.5
Extreme (-20C)	1880	-13.8	-0.007319	2.5
Extreme (-30C)	1880	-18.5	-0.009840	2.5

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

10.2 LTE BAND 4

Band 4 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	1732.5	14.4	0.008306	2.5
3.7	1732.5	-12.2	-0.007025	2.5
4.2	1732.5	12.3	0.007105	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	29.6	0.017097	2.5
Extreme (50C)	1732.5	9.9	0.005709	2.5
Extreme (40C)	1732.5	-17.2	-0.009911	2.5
Extreme (30C)	1732.5	9.8	0.005645	2.5
Extreme (10C)	1732.5	26.3	0.015157	2.5
Extreme (0C)	1732.5	21.9	0.012629	2.5
Extreme (-10C)	1732.5	-28.1	-0.016231	2.5
Extreme (-20C)	1732.5	16.7	0.009628	2.5
Extreme (-30C)	1732.5	4.4	0.002528	2.5

Band 4 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	1732.5	-3.7	-0.002113	2.5
3.7	1732.5	0.1	0.000081	2.5
4.2	1732.5	-1.6	-0.000895	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	27.8	0.016052	2.5
Extreme (50C)	1732.5	-20.2	-0.011654	2.5
Extreme (40C)	1732.5	18.9	0.010903	2.5
Extreme (30C)	1732.5	-12.3	-0.007071	2.5
Extreme (10C)	1732.5	-5.0	-0.002909	2.5
Extreme (0C)	1732.5	10.0	0.005760	2.5
Extreme (-10C)	1732.5	-18.4	-0.010597	2.5
Extreme (-20C)	1732.5	-17.0	-0.009795	2.5
Extreme (-30C)	1732.5	-3.9	-0.002268	2.5

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

10.3 LTE BAND 5

Band 5 QPSK, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	836.5	17.0	0.020359	2.5
3.7	836.5	8.1	0.009731	2.5
4.2	836.5	12.1	0.014429	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	-6.1	-0.007233	2.5
Extreme (50C)	836.5	10.2	0.012230	2.5
Extreme (40C)	836.5	34.3	0.040992	2.5
Extreme (30C)	836.5	-17.6	-0.021052	2.5
Extreme (10C)	836.5	11.4	0.013616	2.5
Extreme (0C)	836.5	13.3	0.015935	2.5
Extreme (-10C)	836.5	-21.3	-0.025463	2.5
Extreme (-20C)	836.5	11.3	0.013545	2.5
Extreme (-30C)	836.5	-1.1	-0.001267	2.5

Band 5 16QAM, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	836.5	6.1	0.007268	2.5
3.7	836.5	-23.3	-0.027854	2.5
4.2	836.5	2.4	0.002869	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	-6.5	-0.007818	2.5
Extreme (50C)	836.5	3.1	0.003682	2.5
Extreme (40C)	836.5	-21.3	-0.025487	2.5
Extreme (30C)	836.5	-19.4	-0.023204	2.5
Extreme (10C)	836.5	-20.7	-0.024794	2.5
Extreme (0C)	836.5	7.8	0.009337	2.5
Extreme (-10C)	836.5	2.2	0.002642	2.5
Extreme (-20C)	836.5	12.3	0.014692	2.5
Extreme (-30C)	836.5	-6.6	-0.007914	2.5

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

10.4 LTE BAND 7

Band 7 QPSK, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	2535	10.7	0.004229	2.5
3.7	2535	-12.8	-0.005053	2.5
4.2	2535	27.3	0.010765	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	-4.9	-0.001933	2.5
Extreme (50C)	2535	-23.8	-0.009377	2.5
Extreme (40C)	2535	-14.2	-0.005606	2.5
Extreme (30C)	2535	-17.9	-0.007045	2.5
Extreme (10C)	2535	-23.6	-0.009290	2.5
Extreme (0C)	2535	7.6	0.002990	2.5
Extreme (-10C)	2535	25.0	0.009850	2.5
Extreme (-20C)	2535	-10.1	-0.003976	2.5
Extreme (-30C)	2535	3.8	0.001499	2.5

Band 7 16QAM, (20MHz BANDWIDTH RB size 100 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	2535	3.9	0.001523	2.5
3.7	2535	-7.3	-0.002864	2.5
4.2	2535	-11.5	-0.004548	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	-17.7	-0.006982	2.5
Extreme (50C)	2535	-10.8	-0.004252	2.5
Extreme (40C)	2535	-3.7	-0.001460	2.5
Extreme (30C)	2535	-15.5	-0.006110	2.5
Extreme (10C)	2535	-6.2	-0.002426	2.5
Extreme (0C)	2535	-5.9	-0.002323	2.5
Extreme (-10C)	2535	2.0	0.000777	2.5
Extreme (-20C)	2535	16.4	0.006469	2.5
Extreme (-30C)	2535	28.5	0.011250	2.5

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

10.5 LTE BAND 12

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	707.5	-29.9	-0.042290	2.5
3.7	707.5	6.2	0.008721	2.5
4.2	707.5	-6.6	-0.009357	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	21.4	0.030205	2.5
Extreme (50C)	707.5	14.9	0.021102	2.5
Extreme (40C)	707.5	32.8	0.046304	2.5
Extreme (30C)	707.5	23.5	0.033145	2.5
Extreme (10C)	707.5	17.5	0.024735	2.5
Extreme (0C)	707.5	2.3	0.003265	2.5
Extreme (-10C)	707.5	21.7	0.030671	2.5
Extreme (-20C)	707.5	-7.7	-0.010813	2.5
Extreme (-30C)	707.5	-12.2	-0.017286	2.5

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

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	707.5	-14.2	-0.020000	2.5
3.7	707.5	31.8	0.044933	2.5
4.2	707.5	9.6	0.013512	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	-2.5	-0.003576	2.5
Extreme (50C)	707.5	32.5	0.045965	2.5
Extreme (40C)	707.5	-13.5	-0.019138	2.5
Extreme (30C)	707.5	4.3	0.006092	2.5
Extreme (10C)	707.5	19.5	0.027576	2.5
Extreme (0C)	707.5	-5.4	-0.007647	2.5
Extreme (-10C)	707.5	-18.7	-0.026403	2.5
Extreme (-20C)	707.5	-9.5	-0.013456	2.5
Extreme (-30C)	707.5	9.6	0.013541	2.5

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

10.6 LTE BAND 17

Band 17 QPSK, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	710.0	21.1	0.029704	2.5
3.7	710.0	16.8	0.023620	2.5
4.2	710.0	-24.8	-0.034915	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	-20.8	-0.029338	2.5
Extreme (50C)	710.0	-16.0	-0.022465	2.5
Extreme (40C)	710.0	18.9	0.026648	2.5
Extreme (30C)	710.0	-16.6	-0.023324	2.5
Extreme (10C)	710.0	-22.7	-0.032028	2.5
Extreme (0C)	710.0	-4.8	-0.006761	2.5
Extreme (-10C)	710.0	12.3	0.017296	2.5
Extreme (-20C)	710.0	18.1	0.025465	2.5
Extreme (-30C)	710.0	-14.4	-0.020254	2.5

Band 17 16QAM, (10MHz BANDWIDTH RB size 50 RB Offset 0)

Frequency error vs. Voltage

Voltage [Vdc]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
3.4	710.0	1.3	0.001873	2.5
3.7	710.0	-21.7	-0.030521	2.5
4.2	710.0	-18.0	-0.025324	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	-24.1	-0.033958	2.5
Extreme (50C)	710.0	-10.3	-0.014507	2.5
Extreme (40C)	710.0	-19.6	-0.027563	2.5
Extreme (30C)	710.0	6.2	0.008704	2.5
Extreme (10C)	710.0	-3.5	-0.004901	2.5
Extreme (0C)	710.0	-4.6	-0.006479	2.5
Extreme (-10C)	710.0	-25.4	-0.035704	2.5
Extreme (-20C)	710.0	-26.9	-0.037887	2.5
Extreme (-30C)	710.0	-22.8	-0.032155	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

Band 66 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]
3.4	1745	-11.8	-0.006768	2.5
3.7	1745	13.0	0.007467	2.5
4.2	1745	-1.2	-0.000705	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	0.6	0.000332	2.5
Extreme (50C)	1745	-9.7	-0.005570	2.5
Extreme (40C)	1745	7.4	0.004223	2.5
Extreme (30C)	1745	-7.6	-0.004378	2.5
Extreme (10C)	1745	0.1	0.000057	2.5
Extreme (0C)	1745	-8.4	-0.004819	2.5
Extreme (-10C)	1745	14.8	0.008476	2.5
Extreme (-20C)	1745	-5.6	-0.003226	2.5
Extreme (-30C)	1745	19.1	0.010951	2.5

Band 66 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]
3.4	1745	18.5	0.010585	2.5
3.7	1745	16.0	0.009186	2.5
4.2	1745	-29.8	-0.017072	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	28.2	0.016172	2.5
Extreme (50C)	1745	-29.1	-0.016648	2.5
Extreme (40C)	1745	3.5	0.002029	2.5
Extreme (30C)	1745	-24.5	-0.014052	2.5
Extreme (10C)	1745	27.9	0.016011	2.5
Extreme (0C)	1745	16.6	0.009507	2.5
Extreme (-10C)	1745	-11.9	-0.006808	2.5
Extreme (-20C)	1745	11.3	0.006476	2.5
Extreme (-30C)	1745	-16.3	-0.009330	2.5

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

11. Peak-to-Average Ratio

11.1 Description of the PAR Measurement

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

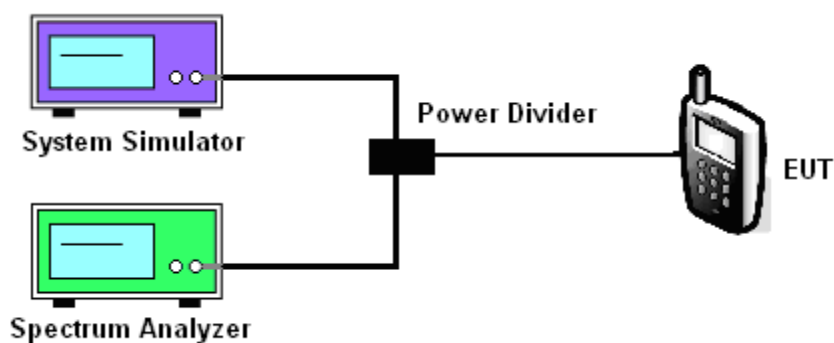
11.2 Measuring Instruments

See list of measuring instruments of this test report.

11.3 Test Procedures

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. For LTE operating modes:
 - a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
 - b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.

11.4 Test Setup



MODES TESTED

☒ LTE Band 2/4/5/7/12/17/66

☐

Test data reference attachment.

----END OF REPORT----