

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

FCC ID: 2ANMU-WP17

Product: Smart Phone

Trade Mark: OUKITEL

Model Number: WP17

Family Model: N/A

Report No.: S21072701305006

Prepared for

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TEST RESULT CERTIFICATION

Applicant's name	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN, 518XXX China
Manufacturer's Name	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN, 518XXX China
Product name	Smart Phone
Model and/or type reference ..	WP17
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	Jul 28. 2021 ~Aug 30, 2021
Date of Issue	Aug 31, 2021
Test Result	Pass

Testing Engineer :



(Allen Liu)

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:	Smart Phone
Trade Mark	OUKITEL
Model Name	WP17
Family Model	N/A
Model Difference	N/A
FCC ID:	2ANMU-WP17
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
Antenna:	FPC Antenna
Antenna gain:	Band 2: 0.39dBi, Band 4: 0.43dBi, Band 5: -0.08dBi, Band 7: 0.32dBi, Band 12: -1.12dBi, Band 17: -1.08dBi, Band 66: 0.43dBi
Power Supply:	DC 3.85V/7760mAh from battery or DC 5V from Adapter.
Adapter:	Model: HJ-FC017K7-US Input: 100-240V~50/60Hz 0.6A Output: 5.0V---2.0A OR 7.0V---2.0A OR 9.0V---2.0A OR 12.0V---1.5A 18.0W
Extreme Vol. Limits:	DC 3.4V to DC 4.2V (Nominal DC 3.85V) (Note 1)

HW Version	2100-MB-P1.1
SW Version	OUKITEL_WP17_EEA_V01
** 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: 2ANMU-WP17** 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, Subpart L, 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

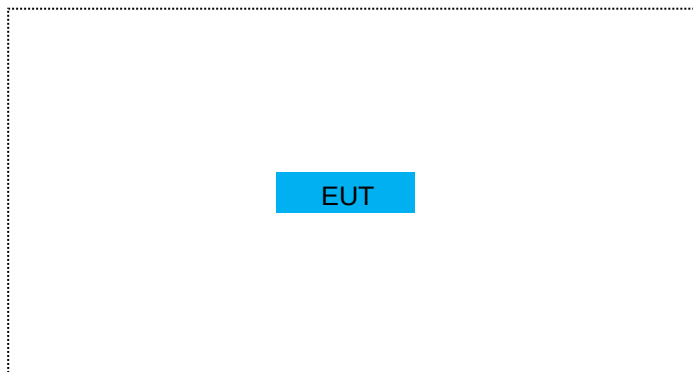
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Smart Phone	WP17	FCC ID: 2ANMU-WP17	EUT

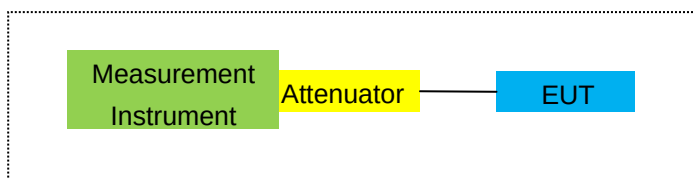
*Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.*

2.4 TEST SETUP

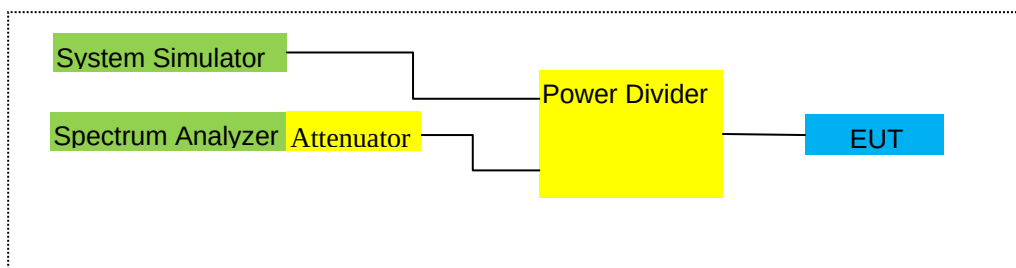
For Radiated Test Cases



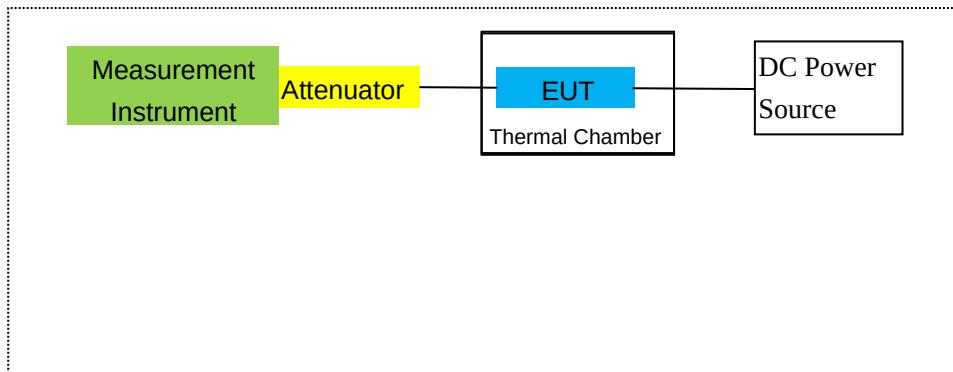
For Conducted Output Power



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	2021.07.01	2022.06.30	1 year
2	Test Receiver	R&S	ESPI	101318	2021.04.27	2022.04.26	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2021.03.29	2022.03.28	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	2021.03.29	2022.03.28	1 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2020.11.20	2021.11.19	1 year
7	Amplifier	EM	EM-30180	060538	2021.07.01	2022.06.30	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2021.04.27	2022.04.26	1 year
9	Power Meter	R&S	NRVS	100696	2021.07.01	2022.06.30	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2021.04.27	2022.04.26	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	2021.04.27	2022.04.26	1 year
15	LISN	R&S	ENV216	101313	2021.04.27	2022.04.26	1 year
16	LISN	EMCO	3816/2	00042990	2021.04.27	2022.04.26	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2021.04.27	2022.04.26	1 year
18	Passive Voltage Probe	R&S	ESH2-Z3	100196	2021.04.27	2022.04.26	1 year
19	Test Cable	N/A	C01	N/A	2020.05.11	2023.05.10	3 year
20	Test Cable	N/A	C02	N/A	2020.05.11	2023.05.10	3 year
21	Test Cable	N/A	C03	N/A	2020.05.11	2023.05.10	3 year
22	Attenuator	MCE	24-10-34	BN9258	2021.07.01	2022.06.30	1 year
23	Spectrum Analyzer	agilent	e4440a	us44300399	2021.04.27	2022.04.26	1 year
24	test receiver	R&S	ESCI	a0304218	2021.04.27	2022.04.26	1 year
25	Communication Tester	R&S	CMU200	A0304247	2021.07.01	2022.06.30	1 year
26	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2021.04.27	2022.04.26	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	2021.07.01	2022.06.30	1 year
29	Communication Tester	R&S	CMW500	148500	2021.07.01	2022.06.30	1 year
30	PSG Analog Signal Generator	Agilent	E8257D	MY51110112	2021.07.01	2022.06.30	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

- ☐ LTE Band2
- 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.

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	-5.28	3.76	28.24	19.20	83.176	Horizontal	Pass
		1880	-3.85	3.91	28.22	20.46	111.173	Horizontal	Pass
		1909.3	-5.50	3.93	28.20	18.77	75.336	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-4.10	3.77	28.23	20.36	108.643	Horizontal	Pass
		1880	-4.40	3.91	28.24	19.93	98.401	Horizontal	Pass
		1908.5	-4.86	3.94	28.25	19.45	88.105	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-5.23	3.77	28.31	19.31	85.310	Horizontal	Pass
		1880	-4.64	3.91	28.22	19.67	92.683	Horizontal	Pass
		1907.5	-3.66	3.94	28.20	20.60	114.815	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1855	-4.50	3.79	28.33	20.04	100.925	Horizontal	Pass
		1880	-4.45	3.95	28.22	19.82	95.940	Horizontal	Pass
		1905	-3.79	3.97	28.19	20.43	110.408	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1857.5	-5.16	3.79	28.34	19.39	86.896	Horizontal	Pass
		1880	-3.61	3.95	28.22	20.66	116.413	Horizontal	Pass
		1902.5	-3.49	3.97	28.18	20.72	118.032	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1860	-3.96	3.81	28.35	20.58	114.288	Horizontal	Pass
		1880	-4.98	3.96	28.22	19.28	84.723	Horizontal	Pass
		1900	-4.11	4.00	28.16	20.05	101.158	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1850.7	-4.56	3.76	28.24	19.92	98.175	Vertical	Pass
		1880	-3.69	3.91	28.22	20.62	115.345	Vertical	Pass
		1909.3	-4.46	3.93	28.20	19.81	95.719	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1851.5	-4.93	3.77	28.23	19.53	89.743	Vertical	Pass
		1880	-4.29	3.91	28.24	20.04	100.925	Vertical	Pass
		1908.5	-3.48	3.94	28.25	20.83	121.060	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1852.5	-4.25	3.77	28.31	20.29	106.905	Vertical	Pass
		1880	-3.63	3.91	28.22	20.68	116.950	Vertical	Pass
		1907.5	-3.45	3.94	28.20	20.81	120.504	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1855	-4.56	3.79	28.33	19.98	99.541	Vertical	Pass
		1880	-5.23	3.95	28.22	19.04	80.168	Vertical	Pass
		1905	-5.49	3.97	28.19	18.73	74.645	Vertical	Pass

15.0MHz		1857.5	-5.44	3.79	28.34	19.11	81.470	Vertical	Pass
Band	1/#Mid	1880	-4.58	3.95	28.22	19.69	93.111	Vertical	Pass
QPSK		1902.5	-4.93	3.97	28.18	19.28	84.723	Vertical	Pass
20.0MHz		1860	-5.36	3.81	28.35	19.18	82.794	Vertical	Pass
Band	1/#Mid	1880	-5.37	3.96	28.22	18.89	77.446	Vertical	Pass
QPSK		1900	-3.20	4.00	28.16	20.96	124.738	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	-4.18	3.76	28.24	20.30	107.152	Horizontal	Pass
		1880	-3.59	3.91	28.22	20.72	118.032	Horizontal	Pass
		1909.3	-3.37	3.93	28.20	20.90	123.027	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-4.11	3.77	28.23	20.35	108.393	Horizontal	Pass
		1880	-3.56	3.91	28.24	20.77	119.399	Horizontal	Pass
		1908.5	-3.52	3.94	28.25	20.79	119.950	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-3.96	3.77	28.31	20.58	114.288	Horizontal	Pass
		1880	-3.70	3.91	28.22	20.61	115.080	Horizontal	Pass
		1907.5	-3.31	3.94	28.20	20.95	124.451	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-4.01	3.79	28.33	20.53	112.980	Horizontal	Pass
		1880	-3.61	3.95	28.22	20.66	116.413	Horizontal	Pass
		1905	-3.15	3.97	28.19	21.07	127.938	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-3.86	3.79	28.34	20.69	117.220	Horizontal	Pass
		1880	-3.66	3.95	28.22	20.61	115.080	Horizontal	Pass
		1902.5	-3.60	3.97	28.18	20.61	115.080	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1860	-3.75	3.81	28.35	20.79	119.950	Horizontal	Pass
		1880	-3.11	3.96	28.22	21.15	130.317	Horizontal	Pass
		1900	-3.29	4.00	28.16	20.87	122.180	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1850.7	-4.12	3.76	28.24	20.36	108.643	Vertical	Pass
		1880	-3.34	3.91	28.22	20.97	125.026	Vertical	Pass
		1909.3	-3.23	3.93	28.20	21.04	127.057	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1851.5	-3.87	3.77	28.23	20.59	114.551	Vertical	Pass
		1880	-3.73	3.91	28.24	20.60	114.815	Vertical	Pass
		1908.5	-3.34	3.94	28.25	20.97	125.026	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1852.5	-3.62	3.77	28.31	20.92	123.595	Vertical	Pass
		1880	-3.93	3.91	28.22	20.38	109.144	Vertical	Pass
		1907.5	-3.16	3.94	28.20	21.10	128.825	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1855	-3.48	3.79	28.33	21.06	127.644	Vertical	Pass
		1880	-3.79	3.95	28.22	20.48	111.686	Vertical	Pass
		1905	-3.84	3.97	28.19	20.38	109.144	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1857.5	-3.53	3.79	28.34	21.02	126.474	Vertical	Pass
		1880	-4.41	3.95	28.22	19.86	96.828	Vertical	Pass
		1902.5	-3.17	3.97	28.18	21.04	127.057	Vertical	Pass

20.0MHz		1860	-3.09	3.81	28.35	21.45	139.637	Vertical	Pass
Band 16	1/#Mid	1880	-3.15	3.96	28.22	21.11	129.122	Vertical	Pass
QAM		1900	-3.23	4.00	28.16	20.93	123.880	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 (dBm)	Antenna Gain (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
						Average	Average		
						(dBm)	(mW)		
1.4MHz Band QPSK	1/#Mid	1710.7	-3.40	3.12	27.58	21.06	127.644	Horizontal	Pass
		1732.5	-3.11	3.27	27.61	21.23	132.739	Horizontal	Pass
		1754.3	-3.56	3.29	27.63	20.78	119.674	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-4.79	3.13	27.61	19.69	93.111	Horizontal	Pass
		1732.5	-5.00	3.27	27.61	19.34	85.901	Horizontal	Pass
		1753.5	-5.29	3.30	27.62	19.03	79.983	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.97	3.13	27.63	20.53	112.980	Horizontal	Pass
		1732.5	-5.35	3.27	27.61	18.99	79.250	Horizontal	Pass
		1752.5	-3.02	3.30	27.60	21.28	134.276	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-3.90	3.15	27.64	20.59	114.551	Horizontal	Pass
		1732.5	-3.19	3.31	27.61	21.11	129.122	Horizontal	Pass
		1750	-3.15	3.33	27.59	21.11	129.122	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-4.74	3.15	27.65	19.76	94.624	Horizontal	Pass
		1732.5	-3.06	3.31	27.61	21.24	133.045	Horizontal	Pass
		1747.5	-3.46	3.33	27.57	20.78	119.674	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-4.85	3.17	27.66	19.64	92.045	Horizontal	Pass
		1732.5	-3.17	3.32	27.61	21.12	129.420	Horizontal	Pass
		1745	-3.50	3.36	27.56	20.70	117.490	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-3.21	3.12	27.58	21.25	133.352	Vertical	Pass
		1732.5	-4.42	3.27	27.61	19.92	98.175	Vertical	Pass
		1754.3	-4.82	3.29	27.63	19.52	89.536	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.16	3.13	27.61	21.32	135.519	Vertical	Pass
		1732.5	-3.50	3.27	27.61	20.84	121.339	Vertical	Pass
		1753.5	-3.36	3.30	27.62	20.96	124.738	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-4.76	3.13	27.63	19.74	94.189	Vertical	Pass
		1732.5	-3.88	3.27	27.61	20.46	111.173	Vertical	Pass
		1752.5	-4.79	3.30	27.60	19.51	89.331	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-4.59	3.15	27.64	19.90	97.724	Vertical	Pass
		1732.5	-4.71	3.31	27.61	19.59	90.991	Vertical	Pass
		1750	-3.39	3.33	27.59	20.87	122.180	Vertical	Pass

15.0MHz	1/#Mid	1717.5	-4.65	3.15	27.65	19.85	96.605	Vertical	Pass
Band		1732.5	-4.08	3.31	27.61	20.22	105.196	Vertical	Pass
QPSK		1747.5	-4.42	3.33	27.57	19.82	95.940	Vertical	Pass
20.0MHz	1/#Mid	1720	-3.64	3.17	27.66	20.85	121.619	Vertical	Pass
Band		1732.5	-3.39	3.32	27.61	20.90	123.027	Vertical	Pass
QPSK		1745	-2.83	3.36	27.56	21.37	137.088	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	Max. EIRP	Polarization Of Max. ERP	
						Average	Average		
						(dBm)	(mW)		
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.45	3.12	27.58	21.01	126.183	Horizontal	Pass
		1732.5	-3.72	3.27	27.61	20.62	115.345	Horizontal	Pass
		1754.3	-3.57	3.29	27.63	20.77	119.399	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-3.49	3.13	27.61	20.99	125.603	Horizontal	Pass
		1732.5	-4.91	3.27	27.61	19.43	87.700	Horizontal	Pass
		1753.5	-3.64	3.30	27.62	20.68	116.950	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-3.79	3.13	27.63	20.71	117.761	Horizontal	Pass
		1732.5	-3.84	3.27	27.61	20.50	112.202	Horizontal	Pass
		1752.5	-2.95	3.30	27.60	21.35	136.458	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-3.42	3.15	27.64	21.07	127.938	Horizontal	Pass
		1732.5	-3.94	3.31	27.61	20.36	108.643	Horizontal	Pass
		1750	-4.11	3.33	27.59	20.15	103.514	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-3.84	3.15	27.65	20.66	116.413	Horizontal	Pass
		1732.5	-3.44	3.31	27.61	20.86	121.899	Horizontal	Pass
		1747.5	-3.24	3.33	27.57	21.00	125.893	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-3.76	3.17	27.66	20.73	118.304	Horizontal	Pass
		1732.5	-2.72	3.32	27.61	21.57	143.549	Horizontal	Pass
		1745	-3.62	3.36	27.56	20.58	114.288	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.18	3.12	27.58	21.28	134.276	Vertical	Pass
		1732.5	-2.88	3.27	27.61	21.46	139.959	Vertical	Pass
		1754.3	-3.41	3.29	27.63	20.93	123.880	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.00	3.13	27.61	20.48	111.686	Vertical	Pass
		1732.5	-4.53	3.27	27.61	19.81	95.719	Vertical	Pass
		1753.5	-3.77	3.30	27.62	20.55	113.501	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-3.83	3.13	27.63	20.67	116.681	Vertical	Pass
		1732.5	-3.68	3.27	27.61	20.66	116.413	Vertical	Pass
		1752.5	-3.85	3.30	27.60	20.45	110.917	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-3.31	3.15	27.64	21.18	131.220	Vertical	Pass
		1732.5	-3.49	3.31	27.61	20.81	120.504	Vertical	Pass
		1750	-2.78	3.33	27.59	21.48	140.605	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-3.15	3.15	27.65	21.35	136.458	Vertical	Pass
		1732.5	-3.70	3.31	27.61	20.60	114.815	Vertical	Pass
		1747.5	-2.67	3.33	27.57	21.57	143.549	Vertical	Pass

20.0MHz	1/#Mid	1720	-2.75	3.17	27.66	21.74	149.279	Vertical	Pass
Band 16		1732.5	-3.37	3.32	27.61	20.92	123.595	Vertical	Pass
QAM		1745	-2.82	3.36	27.56	21.38	137.404	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	Frequency	Result							Conclusion
			SG Level	Cable Loss	Antenna Gain	Correction	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	Of Max. ERP	
							(dBm)	(mW)		
1.4MHz Band QPSK	1/#Mid	824.7	6.30	2.01	19.68	2.15	21.82	152.055	Horizontal	Pass
		836.5	5.75	2.01	19.77	2.15	21.36	136.773	Horizontal	Pass
		848.3	6.15	2.02	19.82	2.15	21.80	151.356	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	825.5	5.90	2.01	19.70	2.15	21.44	139.316	Horizontal	Pass
		836.5	5.88	2.01	19.77	2.15	21.49	140.929	Horizontal	Pass
		847.5	6.22	2.02	19.81	2.15	21.86	153.462	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	826.5	5.71	2.01	19.71	2.15	21.26	133.660	Horizontal	Pass
		836.5	6.22	2.01	19.77	2.15	21.83	152.405	Horizontal	Pass
		846.5	5.56	2.02	19.79	2.15	21.18	131.220	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	829	5.88	2.01	19.73	2.15	21.45	139.637	Horizontal	Pass
		836.5	6.16	2.01	19.77	2.15	21.77	150.314	Horizontal	Pass
		844	6.17	2.02	19.78	2.15	21.78	150.661	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	824.7	6.59	2.01	19.68	2.15	22.11	162.555	Vertical	Pass
		836.5	5.57	2.01	19.77	2.15	21.18	131.220	Vertical	Pass
		848.3	5.90	2.02	19.82	2.15	21.55	142.889	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	825.5	5.94	2.01	19.70	2.15	21.48	140.605	Vertical	Pass
		836.5	5.85	2.01	19.77	2.15	21.46	139.959	Vertical	Pass
		847.5	5.62	2.02	19.81	2.15	21.26	133.660	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	826.5	6.39	2.01	19.71	2.15	21.94	156.315	Vertical	Pass
		836.5	5.51	2.01	19.77	2.15	21.12	129.420	Vertical	Pass
		846.5	6.49	2.02	19.79	2.15	22.11	162.555	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	829	6.21	2.01	19.73	2.15	21.78	150.661	Vertical	Pass
		836.5	6.52	2.01	19.77	2.15	22.13	163.305	Vertical	Pass
		844	5.87	2.02	19.78	2.15	21.48	140.605	Vertical	Pass

Radiated Power (ERP) for Band 5										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss (dBm)	Antenna Gain (dB)	Correction	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)			(dB)	Average	Average		
							(dBm)	(mW)		
1.4MHz Band 16 QAM	1/#Mid	824.7	6.01	2.01	19.68	2.15	21.53	142.233	Horizontal	Pass
		836.5	5.49	2.01	19.77	2.15	21.10	128.825	Horizontal	Pass
		848.3	5.30	2.02	19.82	2.15	20.95	124.451	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	5.15	2.01	19.70	2.15	20.69	117.220	Horizontal	Pass
		836.5	5.72	2.01	19.77	2.15	21.33	135.831	Horizontal	Pass
		847.5	5.76	2.02	19.81	2.15	21.40	138.038	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	5.32	2.01	19.71	2.15	20.87	122.180	Horizontal	Pass
		836.5	5.44	2.01	19.77	2.15	21.05	127.350	Horizontal	Pass
		846.5	5.66	2.02	19.79	2.15	21.28	134.276	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	829	5.58	2.01	19.73	2.15	21.15	130.317	Horizontal	Pass
		836.5	5.21	2.01	19.77	2.15	20.82	120.781	Horizontal	Pass
		844	4.94	2.02	19.78	2.15	20.55	113.501	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	824.7	5.55	2.01	19.68	2.15	21.07	127.938	Vertical	Pass
		836.5	4.48	2.01	19.77	2.15	20.09	102.094	Vertical	Pass
		848.3	4.97	2.02	19.82	2.15	20.62	115.345	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	825.5	4.69	2.01	19.70	2.15	20.23	105.439	Vertical	Pass
		836.5	5.29	2.01	19.77	2.15	20.90	123.027	Vertical	Pass
		847.5	5.08	2.02	19.81	2.15	20.72	118.032	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	826.5	4.72	2.01	19.71	2.15	20.27	106.414	Vertical	Pass
		836.5	5.34	2.01	19.77	2.15	20.95	124.451	Vertical	Pass
		846.5	5.31	2.02	19.79	2.15	20.93	123.880	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	829	5.11	2.01	19.73	2.15	20.68	116.950	Vertical	Pass
		836.5	6.08	2.01	19.77	2.15	21.69	147.571	Vertical	Pass
		844	4.84	2.02	19.78	2.15	20.45	110.917	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	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
						Average	Average		
						(dBm)	(mW)		
5.0MHz Band QPSK	1/#Mid	2502.5	-1.14	4.54	27.75	22.07	161.065	Horizontal	Pass
		2535	-0.56	4.69	27.72	22.47	176.604	Horizontal	Pass
		2567.5	-0.54	4.71	27.71	22.46	176.198	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	2505	-1.17	4.55	27.76	22.04	159.956	Horizontal	Pass
		2535	-1.83	4.69	27.72	21.20	131.826	Horizontal	Pass
		2565	-1.78	4.72	27.70	21.20	131.826	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-0.81	4.55	27.77	22.41	174.181	Horizontal	Pass
		2535	-0.83	4.69	27.72	22.20	165.959	Horizontal	Pass
		2562.5	-1.33	4.72	27.69	21.64	145.881	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	2510	-2.09	4.57	27.78	21.12	129.420	Horizontal	Pass
		2535	-1.88	4.73	27.72	21.11	129.122	Horizontal	Pass
		2560	-0.68	4.75	27.68	22.25	167.880	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	2502.5	-1.30	4.54	27.75	21.91	155.239	Vertical	Pass
		2535	-1.83	4.69	27.72	21.20	131.826	Vertical	Pass
		2567.5	-1.78	4.71	27.71	21.22	132.434	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	2505	-1.02	4.55	27.76	22.19	165.577	Vertical	Pass
		2535	-1.33	4.69	27.72	21.70	147.911	Vertical	Pass
		2565	-2.04	4.72	27.70	20.94	124.165	Vertical	Pass
15.0MHz Band QPSK	1/#Mid	2507.5	-1.55	4.55	27.77	21.67	146.893	Vertical	Pass
		2535	-1.74	4.69	27.72	21.29	134.586	Vertical	Pass
		2562.5	-1.57	4.72	27.69	21.40	138.038	Vertical	Pass
20.0MHz Band QPSK	1/#Mid	2510	-1.23	4.57	27.78	21.98	157.761	Vertical	Pass
		2535	-0.53	4.73	27.72	22.46	176.198	Vertical	Pass
		2560	-0.33	4.75	27.68	22.60	181.970	Vertical	Pass

Radiated Power (EIRP) for Band 7									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
						Average	Average		
						(dBm)	(mW)		
5.0MHz Band 16 QAM	1/##Mid	2502.5	-2.60	4.54	27.75	20.61	115.080	Horizontal	Pass
		2535	-2.29	4.69	27.72	20.74	118.577	Horizontal	Pass
		2567.5	-1.67	4.71	27.71	21.33	135.831	Horizontal	Pass
10.0MHz Band 16 QAM	1/##Mid	2505	-2.19	4.55	27.76	21.02	126.474	Horizontal	Pass
		2535	-1.83	4.69	27.72	21.20	131.826	Horizontal	Pass
		2565	-1.79	4.72	27.70	21.19	131.522	Horizontal	Pass
15.0MHz Band 16 QAM	1/##Mid	2507.5	-2.12	4.55	27.77	21.10	128.825	Horizontal	Pass
		2535	-2.10	4.69	27.72	20.93	123.880	Horizontal	Pass
		2562.5	-1.86	4.72	27.69	21.11	129.122	Horizontal	Pass
20.0MHz Band 16 QAM	1/##Mid	2510	-1.61	4.57	27.78	21.60	144.544	Horizontal	Pass
		2535	-1.97	4.73	27.72	21.02	126.474	Horizontal	Pass
		2560	-2.51	4.75	27.68	20.42	110.154	Horizontal	Pass
5.0MHz Band 16 QAM	1/##Mid	2502.5	-2.65	4.54	27.75	20.56	113.763	Vertical	Pass
		2535	-2.07	4.69	27.72	20.96	124.738	Vertical	Pass
		2567.5	-2.48	4.71	27.71	20.52	112.720	Vertical	Pass
10.0MHz Band 16 QAM	1/##Mid	2505	-2.88	4.55	27.76	20.33	107.895	Vertical	Pass
		2535	-3.34	4.69	27.72	19.69	93.111	Vertical	Pass
		2565	-1.62	4.72	27.70	21.36	136.773	Vertical	Pass
15.0MHz Band 16 QAM	1/##Mid	2507.5	-2.07	4.55	27.77	21.15	130.317	Vertical	Pass
		2535	-1.57	4.69	27.72	21.46	139.959	Vertical	Pass
		2562.5	-2.21	4.72	27.69	20.76	119.124	Vertical	Pass
20.0MHz Band 16 QAM	1/##Mid	2510	-1.55	4.57	27.78	21.66	146.555	Vertical	Pass
		2535	-1.26	4.73	27.72	21.73	148.936	Vertical	Pass
		2560	-1.98	4.75	27.68	20.95	124.451	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. EIRP	Max. EIRP	Polarization	
			(dBm)	(dBm)	(dB)	(dB)	Average	Average	Of Max. ERP	
							(dBm)	(mW)		
1.4MHz	1/#Mid	699.7	6.24	1.91	19.21	2.15	21.39	137.721	Vertical	Pass
Band		707.5	5.20	1.91	19.26	2.15	20.40	109.648	Vertical	Pass
QPSK		715.3	4.27	1.93	19.34	2.15	19.53	89.743	Vertical	Pass
3.0MHz	1/#Mid	700.5	5.75	1.91	19.21	2.15	20.90	123.027	Vertical	Pass
Band		707.5	5.16	1.91	19.26	2.15	20.36	108.643	Vertical	Pass
QPSK		714.5	4.65	1.93	19.34	2.15	19.91	97.949	Vertical	Pass
5.0MHz	1/#Mid	701.5	4.91	1.91	19.23	2.15	20.08	101.859	Vertical	Pass
Band		707.5	6.01	1.91	19.26	2.15	21.21	132.130	Vertical	Pass
QPSK		713.5	4.65	1.92	19.33	2.15	19.91	97.949	Vertical	Pass
10.0MHz	1/#Mid	704	5.51	1.91	19.25	2.15	20.70	117.490	Vertical	Pass
Band		707.5	5.90	1.91	19.26	2.15	21.10	128.825	Vertical	Pass
QPSK		711	5.73	1.92	19.32	2.15	20.98	125.314	Vertical	Pass
1.4MHz	1/#Mid	699.7	5.61	1.91	19.21	2.15	20.76	119.124	Horizontal	Pass
Band		707.5	5.09	1.91	19.26	2.15	20.29	106.905	Horizontal	Pass
QPSK		715.3	5.24	1.93	19.34	2.15	20.50	112.202	Horizontal	Pass
3.0MHz	1/#Mid	700.5	5.57	1.91	19.21	2.15	20.72	118.032	Horizontal	Pass
Band		707.5	5.61	1.91	19.26	2.15	20.81	120.504	Horizontal	Pass
QPSK		714.5	5.22	1.93	19.34	2.15	20.48	111.686	Horizontal	Pass
5.0MHz	1/#Mid	701.5	5.68	1.91	19.23	2.15	20.85	121.619	Horizontal	Pass
Band		707.5	5.70	1.91	19.26	2.15	20.90	123.027	Horizontal	Pass
QPSK		713.5	5.97	1.92	19.33	2.15	21.23	132.739	Horizontal	Pass
10.0MHz	1/#Mid	704	6.34	1.91	19.25	2.15	21.53	142.233	Horizontal	Pass
Band		707.5	4.59	1.91	19.26	2.15	19.79	95.280	Horizontal	Pass
QPSK		711	4.73	1.92	19.32	2.15	19.98	99.541	Horizontal	Pass

Radiated Power (ERP) for Band 12										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss (dBm)	Antenna Gain (dB)	Correction	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)			(dB)	Average	Average		
						(dBm)	(mW)			
1.4MHz Band 16 QAM	1/#Mid	699.7	4.31	1.91	19.21	2.15	19.46	88.308	Vertical	Pass
		707.5	4.18	1.91	19.26	2.15	19.38	86.696	Vertical	Pass
		715.3	3.36	1.93	19.34	2.15	18.62	72.778	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	4.75	1.91	19.21	2.15	19.90	97.724	Vertical	Pass
		707.5	4.57	1.91	19.26	2.15	19.77	94.842	Vertical	Pass
		714.5	3.88	1.93	19.34	2.15	19.14	82.035	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	4.41	1.91	19.23	2.15	19.58	90.782	Vertical	Pass
		707.5	4.60	1.91	19.26	2.15	19.80	95.499	Vertical	Pass
		713.5	4.69	1.92	19.33	2.15	19.95	98.855	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	704	4.92	1.91	19.25	2.15	20.11	102.565	Vertical	Pass
		707.5	4.66	1.91	19.26	2.15	19.86	96.828	Vertical	Pass
		711	5.14	1.92	19.32	2.15	20.39	109.396	Vertical	Pass
1.4MHz Band 16 QAM	1/#Mid	699.7	4.53	1.91	19.21	2.15	19.68	92.897	Horizontal	Pass
		707.5	4.92	1.91	19.26	2.15	20.12	102.802	Horizontal	Pass
		715.3	4.52	1.93	19.34	2.15	19.78	95.060	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	700.5	5.00	1.91	19.21	2.15	20.15	103.514	Horizontal	Pass
		707.5	4.96	1.91	19.26	2.15	20.16	103.753	Horizontal	Pass
		714.5	4.92	1.93	19.34	2.15	20.18	104.232	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	701.5	4.61	1.91	19.23	2.15	19.78	95.060	Horizontal	Pass
		707.5	4.74	1.91	19.26	2.15	19.94	98.628	Horizontal	Pass
		713.5	3.46	1.92	19.33	2.15	18.72	74.473	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	704	4.21	1.91	19.25	2.15	19.40	87.096	Horizontal	Pass
		707.5	5.27	1.91	19.26	2.15	20.47	111.429	Horizontal	Pass
		711	4.81	1.92	19.32	2.15	20.06	101.391	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	Cable	Antenna	Correction	Max. EIRP	Max. EIRP	Polarization	
			(dBm)	Loss (dBm)	Gain (dB)	(dB)	Average	Average	Of Max. ERP	
5.0MHz Band QPSK	1/#Mid	706.5	6.76	1.91	19.23	2.15	21.93	155.955	Vertical	Pass
		710	7.09	1.91	19.26	2.15	22.29	169.434	Vertical	Pass
		713.5	7.44	1.92	19.33	2.15	22.70	186.209	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	709	5.67	1.91	19.25	2.15	20.86	121.899	Vertical	Pass
		710	7.13	1.91	19.26	2.15	22.33	171.002	Vertical	Pass
		711	8.18	1.92	19.32	2.15	23.43	220.293	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	706.5	7.40	1.91	19.23	2.15	22.57	180.717	Horizontal	Pass
		710	7.93	1.91	19.26	2.15	23.13	205.589	Horizontal	Pass
		713.5	7.05	1.92	19.33	2.15	22.31	170.216	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	709	7.48	1.91	19.25	2.15	22.67	184.927	Horizontal	Pass
		710	7.57	1.91	19.26	2.15	22.77	189.234	Horizontal	Pass
		711	7.77	1.92	19.32	2.15	23.02	200.447	Horizontal	Pass

Radiated Power (ERP) for Band 17										
Mode	RB/RB SIZE	Frequency	Result							Conclusion
			SG Level	Cable Loss (dBm)	Antenna Gain (dB)	Correction (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
			(dBm)				Average	Average		
							(dBm)	(mW)		
5.0MHz Band 16 QAM	1/#Mid	706.5	6.55	1.91	19.23	2.15	21.72	148.594	Vertical	Pass
		710	6.81	1.91	19.26	2.15	22.01	158.855	Vertical	Pass
		713.5	6.29	1.92	19.33	2.15	21.55	142.889	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	709	6.12	1.91	19.25	2.15	21.31	135.207	Vertical	Pass
		710	5.54	1.91	19.26	2.15	20.74	118.577	Vertical	Pass
		711	6.27	1.92	19.32	2.15	21.52	141.906	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	706.5	5.50	1.91	19.23	2.15	20.67	116.681	Horizontal	Pass
		710	6.33	1.91	19.26	2.15	21.53	142.233	Horizontal	Pass
		713.5	6.12	1.92	19.33	2.15	21.38	137.404	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	709	5.87	1.91	19.25	2.15	21.06	127.644	Horizontal	Pass
		710	7.02	1.91	19.26	2.15	22.22	166.725	Horizontal	Pass
		711	6.95	1.92	19.32	2.15	22.20	165.959	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	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
						Average	Average		
						(dBm)	(mW)		
1.4MHz Band QPSK	1/#Mid	1710.7	-3.41	3.12	27.58	21.05	127.350	Horizontal	Pass
		1745	-3.20	3.27	27.61	21.14	130.017	Horizontal	Pass
		1779.3	-3.57	3.29	27.63	20.77	119.399	Horizontal	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-4.53	3.13	27.61	19.95	98.855	Horizontal	Pass
		1745	-4.79	3.27	27.61	19.55	90.157	Horizontal	Pass
		1778.5	-5.05	3.30	27.62	19.27	84.528	Horizontal	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-3.81	3.13	27.63	20.69	117.220	Horizontal	Pass
		1745	-5.17	3.27	27.61	19.17	82.604	Horizontal	Pass
		1777.5	-3.19	3.30	27.60	21.11	129.122	Horizontal	Pass
10.0MHz Band QPSK	1/#Mid	1715	-4.07	3.15	27.64	20.42	110.154	Horizontal	Pass
		1745	-3.26	3.31	27.61	21.04	127.057	Horizontal	Pass
		1775	-2.86	3.33	27.59	21.40	138.038	Horizontal	Pass
15.0MHz Band QPSK	1/#Mid	1717.5	-4.42	3.15	27.65	20.08	101.859	Horizontal	Pass
		1745	-3.42	3.31	27.61	20.88	122.462	Horizontal	Pass
		1772.5	-3.42	3.33	27.57	20.82	120.781	Horizontal	Pass
20.0MHz Band QPSK	1/#Mid	1720	-4.63	3.17	27.66	19.86	96.828	Horizontal	Pass
		1745	-3.39	3.32	27.61	20.90	123.027	Horizontal	Pass
		1770	-3.76	3.36	27.56	20.44	110.662	Horizontal	Pass
1.4MHz Band QPSK	1/#Mid	1710.7	-3.00	3.12	27.58	21.46	139.959	Vertical	Pass
		1745	-4.49	3.27	27.61	19.85	96.605	Vertical	Pass
		1779.3	-4.75	3.29	27.63	19.59	90.991	Vertical	Pass
3.0MHz Band QPSK	1/#Mid	1711.5	-3.15	3.13	27.61	21.33	135.831	Vertical	Pass
		1745	-3.10	3.27	27.61	21.24	133.045	Vertical	Pass
		1778.5	-3.19	3.30	27.62	21.13	129.718	Vertical	Pass
5.0MHz Band QPSK	1/#Mid	1712.5	-4.51	3.13	27.63	19.99	99.770	Vertical	Pass
		1745	-3.95	3.27	27.61	20.39	109.396	Vertical	Pass
		1777.5	-4.67	3.30	27.60	19.63	91.833	Vertical	Pass
10.0MHz Band QPSK	1/#Mid	1715	-4.54	3.15	27.64	19.95	98.855	Vertical	Pass
		1745	-4.78	3.31	27.61	19.52	89.536	Vertical	Pass
		1775	-3.36	3.33	27.59	20.90	123.027	Vertical	Pass
15.0MHz	1/#Mid	1717.5	-4.16	3.15	27.65	20.34	108.143	Vertical	Pass

Band		1745	-3.94	3.31	27.61	20.36	108.643	Vertical	Pass
QPSK		1772.5	-4.35	3.33	27.57	19.89	97.499	Vertical	Pass
20.0MHz		1720	-3.57	3.17	27.66	20.92	123.595	Vertical	Pass
Band	1/#Mid	1745	-2.77	3.32	27.61	21.52	141.906	Vertical	Pass
QPSK		1770	-3.26	3.36	27.56	20.94	124.165	Vertical	Pass

Radiated Power (EIRP) for Band 66									
Mode	RB/RB SIZE	Frequency	Result						Conclusion
			SG Level	Cable Loss (dBm)	Antenna Gain (dB)	Max. EIRP	Max. EIRP	Polarization Of Max. ERP	
						Average	Average		
						(dBm)	(mW)		
1.4MHz Band 16 QAM	1/#Mid	1710.7	-4.33	3.12	27.58	20.13	103.039	Horizontal	Pass
		1745	-4.61	3.27	27.61	19.73	93.972	Horizontal	Pass
		1779.3	-4.58	3.29	27.63	19.76	94.624	Horizontal	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.45	3.13	27.61	20.03	100.693	Horizontal	Pass
		1745	-5.69	3.27	27.61	18.65	73.282	Horizontal	Pass
		1778.5	-4.27	3.30	27.62	20.05	101.158	Horizontal	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.61	3.13	27.63	19.89	97.499	Horizontal	Pass
		1745	-4.59	3.27	27.61	19.75	94.406	Horizontal	Pass
		1777.5	-3.96	3.30	27.60	20.34	108.143	Horizontal	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.66	3.15	27.64	19.83	96.161	Horizontal	Pass
		1745	-4.27	3.31	27.61	20.03	100.693	Horizontal	Pass
		1775	-4.61	3.33	27.59	19.65	92.257	Horizontal	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.73	3.15	27.65	19.77	94.842	Horizontal	Pass
		1745	-4.62	3.31	27.61	19.68	92.897	Horizontal	Pass
		1772.5	-4.25	3.33	27.57	19.99	99.770	Horizontal	Pass
20.0MHz Band 16 QAM	1/#Mid	1720	-4.42	3.17	27.66	20.07	101.625	Horizontal	Pass
		1745	-3.85	3.32	27.61	20.44	110.662	Horizontal	Pass
		1770	-4.50	3.36	27.56	19.70	93.325	Horizontal	Pass
1.4MHz Band 16 QAM	1/#Mid	1710.7	-3.95	3.12	27.58	20.51	112.460	Vertical	Pass
		1745	-3.83	3.27	27.61	20.51	112.460	Vertical	Pass
		1779.3	-4.44	3.29	27.63	19.90	97.724	Vertical	Pass
3.0MHz Band 16 QAM	1/#Mid	1711.5	-4.58	3.13	27.61	19.90	97.724	Vertical	Pass
		1745	-5.46	3.27	27.61	18.88	77.268	Vertical	Pass
		1778.5	-4.43	3.30	27.62	19.89	97.499	Vertical	Pass
5.0MHz Band 16 QAM	1/#Mid	1712.5	-4.55	3.13	27.63	19.95	98.855	Vertical	Pass
		1745	-4.42	3.27	27.61	19.92	98.175	Vertical	Pass
		1777.5	-4.66	3.30	27.60	19.64	92.045	Vertical	Pass
10.0MHz Band 16 QAM	1/#Mid	1715	-4.16	3.15	27.64	20.33	107.895	Vertical	Pass
		1745	-4.53	3.31	27.61	19.77	94.842	Vertical	Pass
		1775	-3.99	3.33	27.59	20.27	106.414	Vertical	Pass
15.0MHz Band 16 QAM	1/#Mid	1717.5	-4.00	3.15	27.65	20.50	112.202	Vertical	Pass
		1745	-4.38	3.31	27.61	19.92	98.175	Vertical	Pass
		1772.5	-3.82	3.33	27.57	20.42	110.154	Vertical	Pass

20.0MHz	1/#Mid	1720	-4.05	3.17	27.66	20.44	110.662	Vertical	Pass
Band 16		1745	-4.26	3.32	27.61	20.03	100.693	Vertical	Pass
QAM		1770	-3.68	3.36	27.56	20.52	112.720	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	-52.59	4.04	33.51	-23.12	-13	-10.12	Horizontal
3701.4	-52.62	4.04	33.51	-23.15	-13	-10.15	Vertical
5552.1	-48.20	5.24	35.84	-17.60	-13	-4.60	Vertical
5552.1	-50.14	5.24	35.84	-19.54	-13	-6.54	Horizontal
174.1	-45.22	1.30	16.40	-30.12	-13	-17.12	Vertical
121.1	-46.52	1.70	17.49	-30.73	-13	-17.73	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-54.92	4.04	33.56	-25.40	-13	-12.40	Horizontal
3760.0	-51.07	4.04	33.56	-21.55	-13	-8.55	Vertical
5640.0	-48.45	5.24	35.91	-17.78	-13	-4.78	Vertical
5640.0	-52.04	5.24	35.91	-21.37	-13	-8.37	Horizontal
239.3	-40.36	1.43	17.64	-24.15	-13	-11.15	Vertical
137.5	-40.60	1.56	17.30	-24.86	-13	-11.86	Horizontal
Test Results for High Channel 1909.3MHz							
3818.6	-50.26	4.04	34.00	-20.30	-13	-7.30	Horizontal
3818.6	-54.26	4.04	34.00	-24.30	-13	-11.30	Vertical
5727.9	-55.41	5.24	36.04	-24.61	-13	-11.61	Vertical
5727.9	-58.39	5.24	36.04	-27.59	-13	-14.59	Horizontal
114.9	-46.09	1.79	15.50	-32.38	-13	-19.38	Vertical
166.7	-40.93	1.70	15.32	-27.31	-13	-14.31	Horizontal

QPSK EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

Test Results for Low Channel 1860MHz							
Frequency(MHz)	SG Level(dBm)	Cable Loss(dB)	Antenna Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3720.0	-51.13	4.07	33.54	-21.66	-13	-8.66	Horizontal
3720.0	-56.45	4.07	33.54	-26.98	-13	-13.98	Vertical
5580.0	-53.45	5.28	35.86	-22.87	-13	-9.87	Vertical
5580.0	-49.80	5.28	35.86	-19.22	-13	-6.22	Horizontal
234.3	-38.24	1.54	16.45	-23.33	-13	-10.33	Vertical
112.7	-43.49	1.56	16.31	-28.74	-13	-15.74	Horizontal
Test Results for Mid Channel 1880MHz							
3760.0	-47.73	4.04	33.56	-18.21	-13	-5.21	Horizontal
3760.0	-48.35	4.04	33.56	-18.83	-13	-5.83	Vertical
5640.0	-50.94	5.24	35.91	-20.27	-13	-7.27	Vertical
5640.0	-50.75	5.24	35.91	-20.08	-13	-7.08	Horizontal
227.6	-43.88	1.49	15.65	-29.72	-13	-16.72	Vertical
125.0	-46.14	1.61	16.88	-30.87	-13	-17.87	Horizontal
Test Results for High Channel 1900MHz							
3800.0	-57.28	4.04	34.00	-27.32	-13	-14.32	Horizontal
3800.0	-55.60	4.04	34.00	-25.64	-13	-12.64	Vertical
5700.0	-48.51	5.24	36.04	-17.71	-13	-4.71	Vertical
5700.0	-57.07	5.24	36.04	-26.27	-13	-13.27	Horizontal
102.4	-47.51	1.63	17.28	-31.86	-13	-18.86	Vertical
185.8	-41.51	1.32	16.43	-26.40	-13	-13.40	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.

9.2 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	-53.27	4.02	29.80	-27.49	-13	-14.49	Horizontal
3421.4	-48.72	4.02	29.80	-22.94	-13	-9.94	Vertical
5132.1	-54.23	5.24	35.84	-23.63	-13	-10.63	Vertical
5132.1	-54.77	5.24	35.84	-24.17	-13	-11.17	Horizontal
235.5	-39.28	1.35	16.01	-24.62	-13	-11.62	Vertical
83.4	-47.87	1.40	17.99	-31.28	-13	-18.28	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-55.83	4.03	30.00	-29.86	-13	-16.86	Horizontal
3465.0	-47.00	4.03	30.00	-21.03	-13	-8.03	Vertical
5197.5	-47.80	5.25	35.86	-17.19	-13	-4.19	Vertical
5197.5	-52.18	5.25	35.86	-21.57	-13	-8.57	Horizontal
148.9	-45.70	1.37	15.87	-31.20	-13	-18.20	Vertical
104.3	-44.44	1.78	17.02	-29.20	-13	-16.20	Horizontal
Test Results for High Channel 1754.3MHz							
3508.6	-54.89	4.05	30.01	-28.93	-13	-15.93	Horizontal
3508.6	-54.56	4.05	30.01	-28.60	-13	-15.60	Vertical
5262.9	-57.05	5.26	35.86	-26.45	-13	-13.45	Vertical
5262.9	-52.22	5.26	35.86	-21.62	-13	-8.62	Horizontal
149.2	-38.59	1.32	15.83	-24.08	-13	-11.08	Vertical
140.8	-46.72	1.63	16.82	-31.53	-13	-18.53	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 Gain(dB)	Absolute Level(dBm)	Limit (dBm)	Margin(dBm)	Polarity
3440.0	-51.50	4.02	29.80	-25.72	-13	-12.72	Horizontal
3440.0	-50.59	4.02	29.80	-24.81	-13	-11.81	Vertical
5160.0	-54.01	5.24	35.84	-23.41	-13	-10.41	Vertical
5160.0	-49.77	5.24	35.84	-19.17	-13	-6.17	Horizontal
257.4	-45.67	1.72	17.15	-30.24	-13	-17.24	Vertical
278.2	-38.81	1.71	16.55	-23.97	-13	-10.97	Horizontal
Test Results for Mid Channel 1732.5MHz							
3465.0	-54.80	4.03	30.00	-28.83	-13	-15.83	Horizontal
3465.0	-47.00	4.03	30.00	-21.03	-13	-8.03	Vertical
5197.5	-50.74	5.25	35.86	-20.13	-13	-7.13	Vertical
5197.5	-52.40	5.25	35.86	-21.79	-13	-8.79	Horizontal
250.4	-40.95	1.36	17.85	-24.46	-13	-11.46	Vertical
184.3	-40.64	1.52	15.20	-26.96	-13	-13.96	Horizontal
Test Results for High Channel 1745MHz							
3490.0	-50.90	2.91	27.68	-26.13	-13	-13.13	Horizontal
3490.0	-48.82	2.91	27.68	-24.05	-13	-11.05	Vertical
5235.0	-52.49	5.26	35.86	-21.89	-13	-8.89	Vertical
5235.0	-55.67	5.26	35.86	-25.07	-13	-12.07	Horizontal
170.3	-46.81	1.60	16.08	-32.33	-13	-19.33	Vertical
276.7	-40.55	1.33	15.35	-26.53	-13	-13.53	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	-55.92	2.78	27.50	-31.20	-13	-18.20	Horizontal
1649.4	-53.28	2.78	27.50	-28.56	-13	-15.56	Vertical
2474.1	-45.56	2.90	27.80	-20.66	-13	-7.66	Vertical
2474.1	-45.43	2.90	27.80	-20.53	-13	-7.53	Horizontal
220.7	-46.65	1.48	15.59	-32.54	-13	-19.54	Vertical
138.5	-42.77	1.80	17.66	-26.91	-13	-13.91	Horizontal
Test Results For Mid Channel 836.5MHz							
1673.0	-42.31	2.80	27.48	-17.63	-13	-4.63	Horizontal
1673.0	-46.33	2.80	27.48	-21.65	-13	-8.65	Vertical
2509.5	-51.68	2.91	27.70	-26.89	-13	-13.89	Vertical
2509.5	-50.30	2.91	27.70	-25.51	-13	-12.51	Horizontal
125.1	-44.94	1.41	17.18	-29.17	-13	-16.17	Vertical
154.9	-41.20	1.50	15.05	-27.65	-13	-14.65	Horizontal
Test Results for High Channel 848.3MHz							
1696.6	-45.32	2.82	27.43	-20.71	-13	-7.71	Horizontal
1696.6	-45.60	2.82	27.43	-20.99	-13	-7.99	Vertical
2544.9	-49.39	2.92	27.74	-24.57	-13	-11.57	Vertical
2544.9	-43.38	2.92	27.74	-18.56	-13	-5.56	Horizontal
176.4	-40.21	1.76	16.98	-24.99	-13	-11.99	Vertical
278.1	-39.26	1.73	16.91	-24.08	-13	-11.08	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	-41.72	2.78	27.50	-17.00	-13	-4.00	Horizontal
1658.0	-44.51	2.78	27.50	-19.79	-13	-6.79	Vertical
2487.0	-48.66	2.90	27.80	-23.76	-13	-10.76	Vertical
2487.0	-44.00	2.90	27.80	-19.10	-13	-6.10	Horizontal
260.5	-45.58	1.78	15.02	-32.34	-13	-19.34	Vertical
99.1	-46.99	1.71	16.39	-32.31	-13	-19.31	Horizontal
Test Results for Mid Channel 836.5MHz							
1673.0	-49.21	2.80	27.48	-24.53	-13	-11.53	Horizontal
1673.0	-52.23	2.80	27.48	-27.55	-13	-14.55	Vertical
2509.5	-49.10	2.91	27.70	-24.31	-13	-11.31	Vertical
2509.5	-44.25	2.91	27.70	-19.46	-13	-6.46	Horizontal
249.3	-48.05	1.77	17.58	-32.24	-13	-19.24	Vertical
94.8	-44.84	1.56	16.31	-30.09	-13	-17.09	Horizontal
Test Results for High Channel 844MHz							
1688.0	-43.26	2.82	27.43	-18.65	-13	-5.65	Horizontal
1688.0	-41.27	2.82	27.43	-16.66	-13	-3.66	Vertical
2532.0	-44.38	2.92	27.74	-19.56	-13	-6.56	Vertical
2532.0	-45.98	2.92	27.74	-21.16	-13	-8.16	Horizontal
82.8	-39.73	1.46	17.66	-23.53	-13	-10.53	Vertical
170.1	-42.34	1.47	15.42	-28.39	-13	-15.39	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	-60.69	5.23	35.81	-30.11	-25	-5.11	Horizontal
5005.0	-68.27	5.23	35.81	-37.69	-25	-12.69	Vertical
7507.5	-67.88	5.67	36.85	-36.70	-25	-11.70	Vertical
7507.5	-66.16	5.67	36.85	-34.98	-25	-9.98	Horizontal
293.5	-55.79	1.61	15.37	-42.03	-25	-17.03	Vertical
517.6	-59.73	1.52	16.70	-44.55	-25	-19.55	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-62.30	5.23	35.82	-31.71	-25	-6.71	Horizontal
5070.0	-65.86	5.23	35.82	-35.27	-25	-10.27	Vertical
7605.0	-64.86	5.67	36.85	-33.68	-25	-8.68	Vertical
7605.0	-65.71	5.67	36.85	-34.53	-25	-9.53	Horizontal
272.1	-58.99	1.74	17.56	-43.17	-25	-18.17	Vertical
555.7	-51.17	1.64	17.29	-35.52	-25	-10.52	Horizontal
Test Results for High Channel 2567.5MHz							
5135.0	-63.45	5.24	35.83	-32.86	-25	-7.86	Horizontal
5135.0	-66.64	5.24	35.83	-36.05	-25	-11.05	Vertical
7702.5	-65.33	5.68	36.87	-34.14	-25	-9.14	Vertical
7702.5	-62.63	5.68	36.87	-31.44	-25	-6.44	Horizontal
534.5	-57.27	1.62	16.13	-42.76	-25	-17.76	Vertical
416.7	-53.40	1.74	15.03	-40.11	-25	-15.11	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	-69.55	5.23	35.82	-38.96	-25	-13.96	Horizontal
5020.0	-70.26	5.23	35.82	-39.67	-25	-14.67	Vertical
7530.0	-65.51	5.67	36.86	-34.32	-25	-9.32	Vertical
7530.0	-68.74	5.67	36.86	-37.55	-25	-12.55	Horizontal
250.5	-57.67	1.50	16.32	-42.85	-25	-17.85	Vertical
343.2	-59.75	1.40	16.64	-44.51	-25	-19.51	Horizontal
Test Results for Mid Channel 2535MHz							
5070.0	-63.27	5.23	35.82	-32.68	-25	-7.68	Horizontal
5070.0	-67.13	5.23	35.82	-36.54	-25	-11.54	Vertical
7605.0	-65.62	5.67	36.85	-34.44	-25	-9.44	Vertical
7605.0	-65.21	5.67	36.85	-34.03	-25	-9.03	Horizontal
525.1	-58.60	1.59	15.43	-44.76	-25	-19.76	Vertical
573.5	-56.64	1.74	16.80	-41.58	-25	-16.58	Horizontal
Test Results for High Channel 2560MHz							
5120.0	-61.68	5.24	35.83	-31.09	-25	-6.09	Horizontal
5120.0	-65.08	5.24	35.83	-34.49	-25	-9.49	Vertical
7680.0	-73.77	5.70	36.88	-42.59	-25	-17.59	Vertical
7680.0	-70.44	5.70	36.88	-39.26	-25	-14.26	Horizontal
221.3	-51.01	1.74	17.23	-35.52	-25	-10.52	Vertical
563.8	-56.04	1.76	15.81	-41.99	-25	-16.99	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.

9.5 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	-45.71	2.60	27.20	-21.11	-13	-8.11	Horizontal
1399.4	-51.91	2.60	27.20	-27.31	-13	-14.31	Vertical
2099.1	-49.00	2.85	27.54	-24.31	-13	-11.31	Vertical
2099.1	-46.48	2.85	27.54	-21.79	-13	-8.79	Horizontal
243.9	-47.98	1.71	17.84	-31.85	-13	-18.85	Vertical
187.1	-43.62	1.46	15.07	-30.01	-13	-17.01	Horizontal
Test Results For Mid Channel 707.5MHz							
1415.0	-52.14	2.61	27.28	-27.47	-13	-14.47	Horizontal
1415.0	-45.51	2.61	27.28	-20.84	-13	-7.84	Vertical
2122.5	-48.11	2.87	27.59	-23.39	-13	-10.39	Vertical
2122.5	-47.53	2.87	27.59	-22.81	-13	-9.81	Horizontal
252.5	-45.03	1.56	15.61	-30.98	-13	-17.98	Vertical
96.4	-43.12	1.71	17.71	-27.12	-13	-14.12	Horizontal
Test Results for High Channel 715.3MHz							
1430.6	-47.95	2.63	27.28	-23.30	-13	-10.30	Horizontal
1430.6	-49.83	2.63	27.28	-25.18	-13	-12.18	Vertical
2145.9	-47.36	2.88	27.60	-22.64	-13	-9.64	Vertical
2145.9	-45.44	2.88	27.60	-20.72	-13	-7.72	Horizontal
204.8	-37.62	1.75	16.05	-23.32	-13	-10.32	Vertical
163.0	-38.74	1.46	15.52	-24.68	-13	-11.68	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	-44.73	2.61	27.26	-20.08	-13	-7.08	Horizontal
1408.0	-44.45	2.61	27.26	-19.80	-13	-6.80	Vertical
2112.0	-53.80	2.87	27.58	-29.09	-13	-16.09	Vertical
2112.0	-48.18	2.87	27.58	-23.47	-13	-10.47	Horizontal
169.0	-45.70	1.38	15.09	-31.99	-13	-18.99	Vertical
227.1	-47.38	1.67	17.55	-31.50	-13	-18.50	Horizontal
Test Results for Mid Channel 707.5MHz							
1415.0	-50.70	2.61	27.28	-26.03	-13	-13.03	Horizontal
1415.0	-48.39	2.61	27.28	-23.72	-13	-10.72	Vertical
2122.5	-43.79	2.87	27.59	-19.07	-13	-6.07	Vertical
2122.5	-48.00	2.87	27.59	-23.28	-13	-10.28	Horizontal
223.4	-45.03	1.39	16.27	-30.15	-13	-17.15	Vertical
153.3	-47.77	1.37	15.99	-33.15	-13	-20.15	Horizontal
Test Results for High Channel 711MHz							
1422.0	-49.12	2.62	27.28	-24.46	-13	-11.46	Horizontal
1422.0	-50.51	2.62	27.28	-25.85	-13	-12.85	Vertical
2133.0	-49.49	2.87	27.60	-24.76	-13	-11.76	Vertical
2133.0	-48.32	2.87	27.60	-23.59	-13	-10.59	Horizontal
197.8	-47.54	1.57	16.89	-32.22	-13	-19.22	Vertical
144.7	-45.71	1.55	15.82	-31.44	-13	-18.44	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.

9.6 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	-43.02	2.61	27.28	-18.35	-13	-5.35	Horizontal
1413.0	-49.73	2.61	27.28	-25.06	-13	-12.06	Vertical
2119.5	-45.71	2.87	27.59	-20.99	-13	-7.99	Vertical
2119.5	-44.50	2.87	27.59	-19.78	-13	-6.78	Horizontal
196.4	-46.21	1.36	16.11	-31.46	-13	-18.46	Vertical
147.1	-42.63	1.48	17.14	-26.97	-13	-13.97	Horizontal
Test Results For Mid Channel 710MHz							
1420.0	-49.56	2.62	27.30	-24.88	-13	-11.88	Horizontal
1420.0	-47.98	2.62	27.30	-23.30	-13	-10.30	Vertical
2130.0	-48.79	2.87	27.62	-24.04	-13	-11.04	Vertical
2130.0	-43.30	2.87	27.62	-18.55	-13	-5.55	Horizontal
168.3	-44.56	1.46	15.68	-30.34	-13	-17.34	Vertical
155.1	-40.38	1.56	15.66	-26.28	-13	-13.28	Horizontal
Test Results for High Channel 713.5MHz							
1427.0	-44.15	2.66	27.28	-19.53	-13	-6.53	Horizontal
1427.0	-47.36	2.66	27.28	-22.74	-13	-9.74	Vertical
2140.5	-50.32	2.88	27.60	-25.60	-13	-12.60	Vertical
2140.5	-45.51	2.88	27.60	-20.79	-13	-7.79	Horizontal
251.9	-38.23	1.57	15.34	-24.46	-13	-11.46	Vertical
201.7	-40.99	1.35	16.23	-26.11	-13	-13.11	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	-50.19	2.62	27.30	-25.51	-13	-12.51	Horizontal
1418.0	-54.22	2.62	27.30	-29.54	-13	-16.54	Vertical
2127.0	-47.87	2.87	27.62	-23.12	-13	-10.12	Vertical
2127.0	-50.57	2.87	27.62	-25.82	-13	-12.82	Horizontal
178.5	-44.47	1.75	15.40	-30.82	-13	-17.82	Vertical
276.1	-43.83	1.30	16.22	-28.91	-13	-15.91	Horizontal
Test Results for Mid Channel 710MHz							
1420.0	-50.29	2.62	27.30	-25.61	-13	-12.61	Horizontal
1420.0	-52.13	2.62	27.30	-27.45	-13	-14.45	Vertical
2130.0	-48.57	2.87	27.62	-23.82	-13	-10.82	Vertical
2130.0	-47.39	2.87	27.62	-22.64	-13	-9.64	Horizontal
163.7	-40.20	1.80	15.91	-26.09	-13	-13.09	Vertical
278.1	-43.98	1.43	15.04	-30.37	-13	-17.37	Horizontal
Test Results for High Channel 711MHz							
1422.0	-49.93	2.62	27.30	-25.25	-13	-12.25	Horizontal
1422.0	-44.19	2.62	27.30	-19.51	-13	-6.51	Vertical
2133.0	-54.09	2.87	27.62	-29.34	-13	-16.34	Vertical
2133.0	-50.10	2.87	27.62	-25.35	-13	-12.35	Horizontal
154.2	-39.38	1.53	16.49	-24.42	-13	-11.42	Vertical
196.0	-43.66	1.64	16.73	-28.57	-13	-15.57	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	-46.59	4.02	29.80	-20.81	-13	-7.81	Horizontal
3421.4	-54.26	4.02	29.80	-28.48	-13	-15.48	Vertical
5132.1	-50.33	5.24	35.84	-19.73	-13	-6.73	Vertical
5132.1	-48.09	5.24	35.84	-17.49	-13	-4.49	Horizontal
112.6	-42.25	1.52	15.57	-28.20	-13	-15.20	Vertical
220.5	-45.78	1.33	17.14	-29.97	-13	-16.97	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-50.29	4.03	30.00	-24.32	-13	-11.32	Horizontal
3490.0	-51.10	4.03	30.00	-25.13	-13	-12.13	Vertical
5235.0	-49.22	5.25	35.86	-18.61	-13	-5.61	Vertical
5235.0	-51.04	5.25	35.86	-20.43	-13	-7.43	Horizontal
157.3	-48.28	1.53	17.13	-32.68	-13	-19.68	Vertical
213.1	-38.18	1.41	15.95	-23.64	-13	-10.64	Horizontal
Test Results for High Channel 1779.3MHz							
3558.6	-55.94	4.05	30.01	-29.98	-13	-16.98	Horizontal
3558.6	-54.22	4.05	30.01	-28.26	-13	-15.26	Vertical
5337.9	-53.33	5.26	35.86	-22.73	-13	-9.73	Vertical
5337.9	-58.10	5.26	35.86	-27.50	-13	-14.50	Horizontal
170.6	-46.83	1.44	15.51	-32.76	-13	-19.76	Vertical
169.0	-38.68	1.78	15.76	-24.70	-13	-11.70	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	-46.27	4.02	29.80	-20.49	-13	-7.49	Horizontal
3440.0	-53.17	4.02	29.80	-27.39	-13	-14.39	Vertical
5160.0	-48.10	5.24	35.84	-17.50	-13	-4.50	Vertical
5160.0	-52.09	5.24	35.84	-21.49	-13	-8.49	Horizontal
268.8	-41.31	1.62	17.02	-25.91	-13	-12.91	Vertical
161.4	-40.96	1.32	17.31	-24.97	-13	-11.97	Horizontal
Test Results for Mid Channel 1745MHz							
3490.0	-58.07	4.03	30.00	-32.10	-13	-19.10	Horizontal
3490.0	-48.39	4.03	30.00	-22.42	-13	-9.42	Vertical
5235.0	-53.28	5.25	35.86	-22.67	-13	-9.67	Vertical
5235.0	-51.58	5.25	35.86	-20.97	-13	-7.97	Horizontal
159.9	-43.68	1.45	15.17	-29.96	-13	-16.96	Vertical
172.1	-45.49	1.48	17.82	-29.15	-13	-16.15	Horizontal
Test Results for High Channel 1770MHz							
3540.0	-53.89	2.91	27.68	-29.12	-13	-16.12	Horizontal
3540.0	-49.03	2.91	27.68	-24.26	-13	-11.26	Vertical
5310.0	-54.99	5.26	35.86	-24.39	-13	-11.39	Vertical
5310.0	-51.36	5.26	35.86	-20.76	-13	-7.76	Horizontal
197.3	-47.44	1.76	16.38	-32.82	-13	-19.82	Vertical
158.5	-48.31	1.43	17.13	-32.61	-13	-19.61	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 3.85V and High voltage, DC 4.2V.

Frequency Stability vs Temperature:

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

Frequency Stability vs Voltage:

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

MODES TESTED

- ☐ LTE Band 2
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	30.2	0.016074	2.5
3.85	1880	-20.7	-0.010984	2.5
4.2	1880	-22.7	-0.012096	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	-33.4	-0.017771	2.5
Extreme (50C)	1880	19.5	0.010388	2.5
Extreme (40C)	1880	-14.6	-0.007745	2.5
Extreme (30C)	1880	1.3	0.000707	2.5
Extreme (10C)	1880	27.9	0.014824	2.5
Extreme (0C)	1880	33.7	0.017936	2.5
Extreme (-10C)	1880	-31.4	-0.016702	2.5
Extreme (-20C)	1880	28.8	0.015293	2.5
Extreme (-30C)	1880	-13.8	-0.007319	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	13.6	0.007218	2.5
3.85	1880	18.2	0.009702	2.5
4.2	1880	-9.1	-0.004819	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1880	11.6	0.006191	2.5
Extreme (50C)	1880	-23.7	-0.012596	2.5
Extreme (40C)	1880	24.5	0.013032	2.5
Extreme (30C)	1880	19.0	0.010090	2.5
Extreme (10C)	1880	16.3	0.008691	2.5
Extreme (0C)	1880	-9.5	-0.005037	2.5
Extreme (-10C)	1880	-10.6	-0.005654	2.5
Extreme (-20C)	1880	26.7	0.014213	2.5
Extreme (-30C)	1880	5.2	0.002787	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	-1.3	-0.000773	2.5
3.85	1732.5	-18.0	-0.010407	2.5
4.2	1732.5	-2.6	-0.001495	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	-16.0	-0.009206	2.5
Extreme (50C)	1732.5	-2.0	-0.001154	2.5
Extreme (40C)	1732.5	-13.5	-0.007786	2.5
Extreme (30C)	1732.5	12.0	0.006898	2.5
Extreme (10C)	1732.5	-4.4	-0.002551	2.5
Extreme (0C)	1732.5	19.1	0.011048	2.5
Extreme (-10C)	1732.5	17.7	0.010240	2.5
Extreme (-20C)	1732.5	-0.3	-0.000173	2.5
Extreme (-30C)	1732.5	2.5	0.001443	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	7.0	0.004063	2.5
3.85	1732.5	-10.2	-0.005882	2.5
4.2	1732.5	-21.3	-0.012294	2.5

Frequency error vs. Temperature

Temperature [°C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1732.5	17.8	0.010263	2.5
Extreme (50C)	1732.5	19.3	0.011163	2.5
Extreme (40C)	1732.5	27.7	0.016012	2.5
Extreme (30C)	1732.5	-5.1	-0.002915	2.5
Extreme (10C)	1732.5	22.4	0.012924	2.5
Extreme (0C)	1732.5	-14.5	-0.008375	2.5
Extreme (-10C)	1732.5	-16.1	-0.009287	2.5
Extreme (-20C)	1732.5	-1.3	-0.000722	2.5
Extreme (-30C)	1732.5	-13.2	-0.007631	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	16.3	0.019510	2.5
3.85	836.5	-11.0	-0.013186	2.5
4.2	836.5	-15.7	-0.018816	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	-8.5	-0.010185	2.5
Extreme (50C)	836.5	7.6	0.009121	2.5
Extreme (40C)	836.5	-0.5	-0.000550	2.5
Extreme (30C)	836.5	26.8	0.031990	2.5
Extreme (10C)	836.5	0.3	0.000395	2.5
Extreme (0C)	836.5	15.0	0.017908	2.5
Extreme (-10C)	836.5	29.5	0.035290	2.5
Extreme (-20C)	836.5	-18.4	-0.021961	2.5
Extreme (-30C)	836.5	22.8	0.027256	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	-10.4	-0.012385	2.5
3.85	836.5	-1.1	-0.001291	2.5
4.2	836.5	9.7	0.011596	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	836.5	16.2	0.019402	2.5
Extreme (50C)	836.5	21.6	0.025846	2.5
Extreme (40C)	836.5	-14.6	-0.017490	2.5
Extreme (30C)	836.5	-14.9	-0.017800	2.5
Extreme (10C)	836.5	16.6	0.019809	2.5
Extreme (0C)	836.5	-11.1	-0.013258	2.5
Extreme (-10C)	836.5	-7.9	-0.009396	2.5
Extreme (-20C)	836.5	-4.7	-0.005631	2.5
Extreme (-30C)	836.5	9.7	0.011536	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	-11.4	-0.004497	2.5
3.85	2535	9.1	0.003598	2.5
4.2	2535	-1.3	-0.000501	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	-31.5	-0.012422	2.5
Extreme (50C)	2535	20.8	0.008217	2.5
Extreme (40C)	2535	-21.4	-0.008454	2.5
Extreme (30C)	2535	8.0	0.003172	2.5
Extreme (10C)	2535	26.5	0.010458	2.5
Extreme (0C)	2535	12.2	0.004809	2.5
Extreme (-10C)	2535	17.2	0.006793	2.5
Extreme (-20C)	2535	-18.6	-0.007318	2.5
Extreme (-30C)	2535	-8.6	-0.003400	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	18.8	0.007420	2.5
3.85	2535	-19.8	-0.007819	2.5
4.2	2535	26.1	0.010276	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	2535	-22.3	-0.008797	2.5
Extreme (50C)	2535	-26.2	-0.010327	2.5
Extreme (40C)	2535	31.9	0.012572	2.5
Extreme (30C)	2535	18.4	0.007258	2.5
Extreme (10C)	2535	9.0	0.003554	2.5
Extreme (0C)	2535	-19.7	-0.007767	2.5
Extreme (-10C)	2535	6.2	0.002462	2.5
Extreme (-20C)	2535	29.4	0.011578	2.5
Extreme (-30C)	2535	-19.3	-0.007609	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	25.9	0.036537	2.5
3.85	707.5	-17.3	-0.024509	2.5
4.2	707.5	14.4	0.020367	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	15.1	0.021314	2.5
Extreme (50C)	707.5	-24.8	-0.035081	2.5
Extreme (40C)	707.5	-23.4	-0.033004	2.5
Extreme (30C)	707.5	-1.5	-0.002049	2.5
Extreme (10C)	707.5	-10.0	-0.014092	2.5
Extreme (0C)	707.5	-22.4	-0.031689	2.5
Extreme (-10C)	707.5	27.5	0.038841	2.5
Extreme (-20C)	707.5	15.7	0.022247	2.5
Extreme (-30C)	707.5	13.9	0.019576	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	-12.4	-0.017512	2.5
3.85	707.5	15.4	0.021795	2.5
4.2	707.5	10.9	0.015406	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	707.5	16.9	0.023859	2.5
Extreme (50C)	707.5	21.1	0.029866	2.5
Extreme (40C)	707.5	-1.9	-0.002686	2.5
Extreme (30C)	707.5	3.9	0.005442	2.5
Extreme (10C)	707.5	11.5	0.016198	2.5
Extreme (0C)	707.5	-11.2	-0.015802	2.5
Extreme (-10C)	707.5	-1.1	-0.001498	2.5
Extreme (-20C)	707.5	5.6	0.007972	2.5
Extreme (-30C)	707.5	-20.5	-0.028905	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	23.7	0.033310	2.5
3.85	710.0	-6.5	-0.009141	2.5
4.2	710.0	12.8	0.018014	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	18.9	0.026676	2.5
Extreme (50C)	710.0	18.6	0.026155	2.5
Extreme (40C)	710.0	13.0	0.018310	2.5
Extreme (30C)	710.0	15.9	0.022380	2.5
Extreme (10C)	710.0	20.6	0.029070	2.5
Extreme (0C)	710.0	14.4	0.020324	2.5
Extreme (-10C)	710.0	11.3	0.015972	2.5
Extreme (-20C)	710.0	-7.3	-0.010225	2.5
Extreme (-30C)	710.0	-23.8	-0.033465	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	9.1	0.012746	2.5
3.85	710.0	-28.5	-0.040085	2.5
4.2	710.0	-8.0	-0.011211	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	710.0	9.2	0.012944	2.5
Extreme (50C)	710.0	-17.8	-0.025085	2.5
Extreme (40C)	710.0	16.0	0.022479	2.5
Extreme (30C)	710.0	15.0	0.021183	2.5
Extreme (10C)	710.0	20.1	0.028338	2.5
Extreme (0C)	710.0	2.8	0.003930	2.5
Extreme (-10C)	710.0	14.1	0.019901	2.5
Extreme (-20C)	710.0	-16.0	-0.022549	2.5
Extreme (-30C)	710.0	-27.1	-0.038155	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	-27.3	-0.015656	2.5
3.85	1745	-16.3	-0.009358	2.5
4.2	1745	12.7	0.007301	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	-8.7	-0.005003	2.5
Extreme (50C)	1745	2.7	0.001564	2.5
Extreme (40C)	1745	-13.4	-0.007673	2.5
Extreme (30C)	1745	-5.6	-0.003232	2.5
Extreme (10C)	1745	17.8	0.010189	2.5
Extreme (0C)	1745	-13.5	-0.007731	2.5
Extreme (-10C)	1745	-20.5	-0.011759	2.5
Extreme (-20C)	1745	-13.4	-0.007662	2.5
Extreme (-30C)	1745	-14.2	-0.008138	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	0.8	0.000447	2.5
3.85	1745	-17.5	-0.010011	2.5
4.2	1745	-4.0	-0.002298	2.5

Frequency error vs. Temperature

Temperature [° C]	Frequency [MHz]	Frequency* Error[Hz]	Frequency Error[ppm]	Limit [ppm]
Normal (25C)	1745	-15.0	-0.008602	2.5
Extreme (50C)	1745	-19.0	-0.010905	2.5
Extreme (40C)	1745	17.1	0.009788	2.5
Extreme (30C)	1745	11.9	0.006808	2.5
Extreme (10C)	1745	-24.3	-0.013920	2.5
Extreme (0C)	1745	20.2	0.011570	2.5
Extreme (-10C)	1745	31.0	0.017788	2.5
Extreme (-20C)	1745	-8.5	-0.004860	2.5
Extreme (-30C)	1745	-19.2	-0.010986	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.

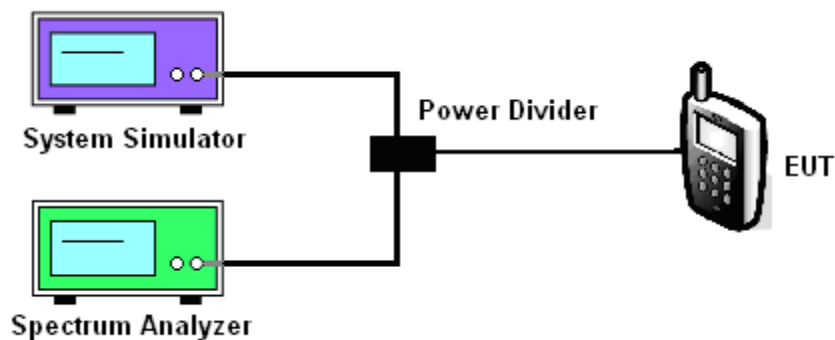
11.2 Measuring Instruments

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----