CFR 47 FCC PART 02
CFR 47 FCC PART 22 H
CFR 47 FCC PART 24 E
CFR 47 FCC PART 27
RSS-130, RSS-132, RSS-133
RSS-139

TEST REPORT

For

Smart Mini Payment Terminal

MODEL NUMBER: A77

FCC ID: V5PA77GT

IC: 11689A-A77GT

REPORT NUMBER: 4790087823-8

ISSUE DATE: March 22, 2022

Prepared for

PAX Technology Limited
Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong

Prepared by

UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch

Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China

Tel: +86 769 22038881
Fax: +86 769 33244054
Website: www.ul.com

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	01/26/2022	Initial Issue	

Note:
1.This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
2. The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 22 H >< CFR 47 FCC PART 24 E>< CFR 47 FCC PART 27 > < RSS-130, RSS-132, RSS-133, RSS-139>when <Accuracy Method> decision rule is applied.

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	PAX Technology Limited
Address:	Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour Road, Wanchai, Hong Kong

Manufacturer Information

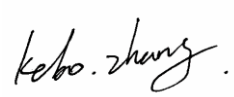
Company Name:	PAX Computer Technology (Shenzhen) C).,Ltd.
Address:	4/F,No.3 Building, Software Park, Second Central Science-TechRoad, High-Tech Industrial Park, Shenzhen, Guangdong, P.R.C.

EUT Information

EUT Name:	Smart Mini Payment Terminal
Model:	A77
Brand:	PAX
Sample Received Date:	Jan 17, 2022
Sample Status:	Normal
Sample ID:	4562698
Date of Tested:	January 26 ~ February 17, 2022

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 22 H	PASS
CFR 47 FCC PART 24 E	PASS
CFR 47 FCC PART 27	PASS
RSS-130, RSS-132, RSS-133, RSS-139	PASS

Prepared By:



Kebo Zhang
Project Engineer

Checked By:

Shawn Wen
Laboratory Leader

Approved By:

Stephen Guo
Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.26-2015, 971168 D01 Power Meas License Digital Systems v03r01, 971168 D02 Misc Rev Approv License Devices v02r01, 412172 D01 v01r01 Determining ERP and EIRP, CFR 47 FCC Part 2, Part 22 H, Part 24 E, Part 27, RSS-130, RSS-132, RSS-133, RSS-139

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011

Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognize national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Conduction emission	3.62 dB
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB
Radiated Emission (Included Fundamental Emission) (1 GHz to 40 GHz)	5.78 dB (1 GHz-18 GHz)
	5.23dB (18 GHz-26 GHz)
	5.64 dB (26 GHz-40 GHz)
Bandwidth	1.1 %
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Smart Mini Payment Terminal
Model	A77
Rated Input	DC 5 V, 2 A
Battery	3.8 Vdc, 5150 mAh

Item	Accessory	Brand Name	Model Name	Description
1	Type-C Cable	N/A	N/A	Length: 1.0 m No Ferrite Core shield

5.2. TEST CHANNEL CONFIGURATION

Mode	TX	Low	Middle	High
LTE Band 2	TX (1.4 MHz)	18607	18900	19193
		1850.7 MHz	1880 MHz	1909.3 MHz
	TX (3 MHz)	18615	18900	19185
		1851.5 MHz	1880 MHz	1908.5 MHz
	TX (5 MHz)	18625	18900	19175
		1852.5 MHz	1880 MHz	1907.5 MHz
	TX (10 MHz)	18650	18900	19150
		1855 MHz	1880 MHz	1905 MHz
	TX (15 MHz)	18675	18900	19125
		1857.5 MHz	1880 MHz	1902.5 MHz
	TX (20 MHz)	18700	18900	19100
		1860 MHz	1880 MHz	1900 MHz

Mode	TX/RX	Low	Middle	High
LTE Band 4	TX (1.4 MHz)	19957	20175	20393
		1710.7 MHz	1732.5 MHz	1754.3 MHz
	TX (3 MHz)	19965	20175	20385
		1711.5 MHz	1732.5 MHz	1753.5 MHz
	TX (5 MHz)	19975	20175	20375
		1712.5 MHz	1732.5 MHz	1752.5 MHz
	TX (10 MHz)	20000	20175	20350
		1715 MHz	1732.5 MHz	1750 MHz
	TX (15 MHz)	20025	20175	20325
		1717.5 MHz	1732.5 MHz	1747.5 MHz
	TX (20 MHz)	20050	20175	20300
		1720 MHz	1732.5 MHz	1745 MHz

Mode	TX/RX	Low	Middle	High
LTE Band 5	TX (1.4 MHz)	20407	20525	20643
		824.7 MHz	836.5 MHz	848.3 MHz
	TX (3 MHz)	20415	20525	20635
		825.5 MHz	836.5 MHz	847.5 MHz
	TX (5 MHz)	20425	20525	20625
		826.5 MHz	836.5 MHz	846.5 MHz
	TX (10 MHz)	20450	20525	20600
		829.0 MHz	836.5 MHz	844.0 MHz

Mode	TX/RX	Low	Middle	High
LTE Band 12	TX (1.4 MHz)	23017	23095	23173
		699.7 MHz	707.5 MHz	715.3 MHz
	TX (3 MHz)	23025	23095	23165
		700.5 MHz	707.5 MHz	714.5 MHz
	TX (5 MHz)	23035	23095	23155
		701.5 MHz	707.5 MHz	713.5 MHz
	TX (10 MHz)	23060	23095	23130
		704.0 MHz	707.5 MHz	711.0 MHz

Mode	TX/RX	Low	Middle	High
LTE Band 13	TX (5 MHz)	23205	23230	23255
		779.5 MHz	782.0 MHz	784.5 MHz
	TX (10 MHz)	23230	23230	23230
		782.0 MHz	782.0 MHz	782.0 MHz

Mode	TX/RX	Low	Middle	High
LTE Band 17	TX (5 MHz)	23755	23790	23825
		706.5 MHz	710.0 MHz	713.5 MHz
	TX (10 MHz)	23780	23790	23800
		709.0 MHz	710.0 MHz	711.0 MHz

5.3. MAXIMUM AVERAGE OUTPUT POWER

LTE Band 2

Part 24/RSS-133	
EIRP Limit(W)	2
Antenna Gain (dBi)	1.69

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% OBW (MHz)	Emission Designator
1.4	QPSK	1850.7	1909.3	22.67	24.36	0.27	1.093	1M09G7W
	16QAM			21.96	23.65	0.23	1.091	1M09D7W
3	QPSK	1851.5	1908.5	22.74	24.43	0.28	2.699	2M70G7W
	16QAM			21.85	23.54	0.23	2.692	2M69D7W
5	QPSK	1852.5	1907.5	22.50	24.19	0.26	4.497	4M50G7W
	16QAM			21.70	23.39	0.22	4.5	4M50D7W
10	QPSK	1855.0	1905.0	22.84	24.53	0.28	8.966	9M00G7W
	16QAM			22.58	24.27	0.27	8.959	9M00D7W
15	QPSK	1857.5	1902.5	22.79	24.48	0.28	13.433	13M43G7W
	16QAM			22.54	24.23	0.26	13.415	13M42D7W
20	QPSK	1860.0	1900.0	22.56	24.25	0.27	17.959	18M00G7W
	16QAM			21.42	23.11	0.20	17.963	18M00D7W

LTE Band 4

Part 27/RSS-139	
EIRP Limit(W)	1.00
Antenna Gain (dBi)	0.75

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% OBW (MHz)	Emission Designator
1.4	QPSK	1710.7	1754.3	22.40	23.15	0.21	1.09	1M09G7W
	16QAM			21.67	22.42	0.17	1.09	1M09D7W
3	QPSK	1711.5	1753.5	22.40	23.15	0.21	2.697	2M70G7W
	16QAM			21.95	22.7	0.19	2.697	2M70D7W
5	QPSK	1712.5	1752.5	22.26	23.01	0.20	4.497	4M50G7W
	16QAM			21.51	22.26	0.17	4.497	4M50D7W
10	QPSK	1715.0	1750.0	22.39	23.14	0.21	8.96	9M00G7W
	16QAM			22.32	23.07	0.20	8.964	9M00D7W
15	QPSK	1717.5	1747.5	22.55	23.3	0.21	13.422	13M4G7W
	16QAM			21.98	22.73	0.19	13.403	13M4D7W
20	QPSK	1720.0	1745.0	22.39	23.14	0.21	17.955	18M0G7W
	16QAM			21.72	22.47	0.18	17.937	18M0D7W

LTE Band 5

Part 22H	
ERP Limit(W)	7.00
Antenna Gain (dBi)	0.82

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% OBW (MHz)	Emission Designator
1.4	QPSK	824.7	848.3	23.44	22.11	0.16	1.092	1M09G7W
	16QAM			22.65	21.32	0.14	1.089	1M10D7W
3	QPSK	825.5	847.5	23.30	21.97	0.16	2.697	2M70G7W
	16QAM			22.60	21.27	0.13	2.696	2M70D7W
5	QPSK	826.5	846.5	23.33	22.00	0.16	4.493	4M50G7W
	16QAM			22.30	20.97	0.13	4.5	4M50D7W
10	QPSK	829.0	844.0	23.58	22.25	0.17	8.976	8M98G7W
	16QAM			22.97	21.64	0.15	8.974	9M00D7W

RSS-132	
EIRP Limit(W)	11.5
Antenna Gain (dBi)	0.75

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% OBW (MHz)	Emission Designator
1.4	QPSK	824.7	848.3	23.44	24.26	0.27	1.092	1M09G7W
	16QAM			22.65	23.47	0.22	1.089	1M10D7W
3	QPSK	825.5	847.5	23.30	24.12	0.26	2.697	2M70G7W
	16QAM			22.60	23.42	0.22	2.696	2M70D7W
5	QPSK	826.5	846.5	23.33	24.15	0.26	4.493	4M50G7W
	16QAM			22.30	23.12	0.21	4.5	4M50D7W
10	QPSK	829.0	844.0	23.58	24.40	0.28	8.976	8M98G7W
	16QAM			22.97	23.79	0.24	8.974	9M00D7W

LTE Band12

Part 27/RSS-130	
ERP Limit(W)	3.00
Antenna Gain (dBi)	0.56

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% OBW (MHz)	Emission Designator
1.4	QPSK	699.7	715.3	23.66	22.07	0.16	1.09	1M09G7W
	16QAM			22.90	21.31	0.14	1.09	1M09D7W
3	QPSK	700.5	714.5	23.71	22.12	0.16	2.697	2M70G7W
	16QAM			23.05	21.46	0.14	2.697	2M70D7W
5	QPSK	701.5	713.5	23.76	22.17	0.16	4.493	4M50G7W
	16QAM			22.82	21.23	0.13	4.501	4M50D7W
10	QPSK	704.0	711.0	23.69	22.1	0.16	8.983	8M98G7W
	16QAM			23.08	21.49	0.14	8.973	9M00D7W

LTE Band 13

Part 27/RSS-130	
ERP Limit(W)	3.00
Antenna Gain (dBi)	0.56

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% OBW (MHz)	Emission Designator
5	QPSK	779.5	784.5	23.40	21.81	0.15	4.499	4M50G7W
	16QAM			22.71	21.12	0.13	4.507	4M51D7W
10	QPSK	782	782	23.72	22.13	0.16	9.006	9M00G7W
	16QAM			23.28	21.69	0.15	9.012	9M01G7W

LTE Band 17

Part 27/RSS-130	
ERP Limit(W)	3.00
Antenna Gain (dBi)	0.56

Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Average (W)	99% OBW (MHz)	Emission Designator
5	QPSK	706.5	713.5	23.58	21.99	0.16	4.488	4M49G7W
	16QAM			22.99	21.40	0.14	4.497	4M50D7W
10	QPSK	709.0	711.0	24.04	22.45	0.18	8.959	9M00G7W
	16QAM			23.74	22.15	0.16	8.966	9M00D7W

5.4. WORST-CASE CONFIGURATION AND MODE

During all testing, EUT is in link mode with base station emulator at maximum power level. The worst-case scenario for all measurements is based on the average conducted output power measurement investigation results. Output power measurements were measured on QPSK, 16QAM. All testing was performed using QPSK and 16QAM modulations to represent the worst case.

The radiated spurious emissions measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT was investigated in three orthogonal orientations X,Y and Z. It was determined that X orientation was the worst-case.

Radiated spurious emissions were investigated below 30 MHz, 30 MHz - 1 GHz and above 1 GHz. There were no emissions found on below 1GHz and above 18 GHz, the emissions between 1 GHz – 18 GHz were tested the highest transmitting power channel and the worse configuration.

Test Items	Worst case test configuration			
Description	Modulation	Channel	Bandwidth (MHz)	RB Configuration
Radiated Spurious Emissions	QPSK	L, M, H	Maximum BW	RB size=1, RB Location= Low

5.5. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Band	Antenna Type	MAX Antenna Gain (dBi)
1	LTE Band 2	PIFA	1.69
1	LTE Band 4	PIFA	0.75
1	LTE Band 5	PIFA	0.82
1	LTE Band 12	PIFA	0.56
1	LTE Band 13	PIFA	0.56
1	LTE Band 17	PIFA	0.56

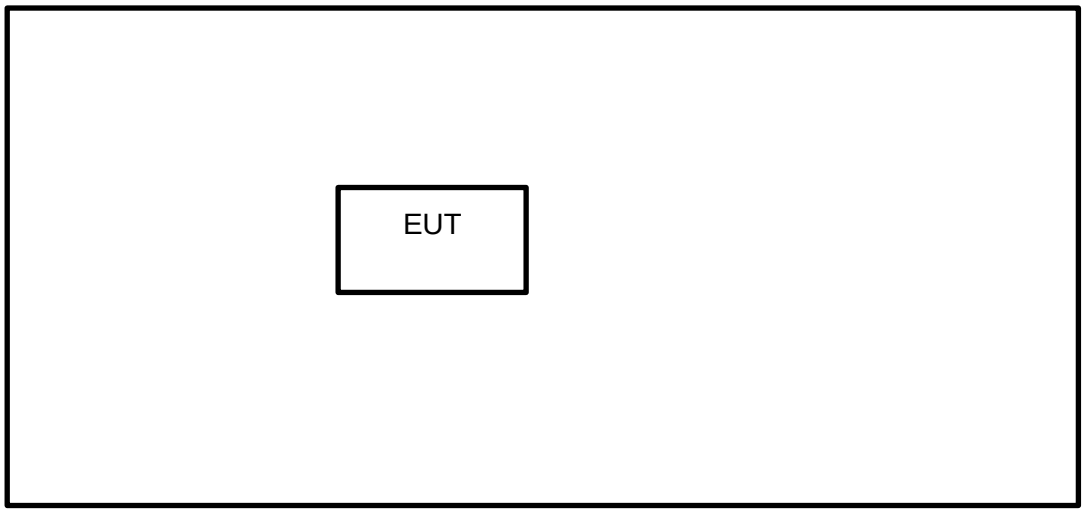
Band	Transmit and Receive Mode	Description
LTE Band 2	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
LTE Band 4	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
LTE Band 5	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
LTE Band 12	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
LTE Band 13	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
LTE Band 17	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.

Note: The value of the antenna gain was declared by customer.

5.6. DESCRIPTION OF TEST SETUP

Item	Equipment	Mfr/Brand	Model/Type No.	Specification	Series No.
1	N/A	N/A	N/A	N/A	N/A

SETUP DIAGRAM FOR RADIATED TESTS



6. MEASURING INSTRUMENT AND SOFTWARE USED

Antenna Terminal Test						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	R&S	FSW40	S421035420	Oct.30, 2021	Oct.29, 2022
☑	Wideband Radio Communication Tester	R&S	CMW500	155523	Oct.30, 2021	Oct.29, 2022
☑	DC Power Supply	Array	3662A	A1512015	Oct.30, 2021	Oct.29, 2022
Software						
Used	Description		Manufacturer	Name		Version
☑	Tonsend Cellular Test System		Tonsend	JS1120 RF Auto Test System		2.6.9.0826
Radiated Test						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Oct.30, 2021	Oct.29, 2022
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Aug.02, 2021	Aug.01, 2024
☑	Preamplifier	HP	8447D	2944A09099	Oct.30, 2021	Oct.29, 2022
☑	EMI Measurement Receiver	R&S	ESR26	101377	Oct.30, 2021	Oct.29, 2022
☑	Horn Antenna	TDK	HRN-0118	130939	July 20, 2021	July 19, 2024
☑	High Gain Horn Antenna	Schwarzbeck	BBHA-9170	691	July 20, 2021	July 19, 2024
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00066	Oct.31, 2021	Oct.30, 2022
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Oct.31, 2021	Oct.30, 2022
☑	Loop antenna	Schwarzbeck	1519B	00008	Jan.17,2022	Jan.17,2025
☑	High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Oct.31, 2021	Oct.30, 2022
Software						
Used	Description		Manufacturer	Name		Version
☑	Test Software for Radiated disturbance		Farad	EZ-EMC		Ver. UL-3A1

7. ANTENNA TERMINAL TEST RESULTS

7.1. EFFECTIVE (ISOTROPIC) RADIATED POWER OF TRANSMITTER

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27.50
RSS-130, RSS-132, RSS-133, RSS-139

LIMITS

22.913(a) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
24.232(c) Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.
27.50(c) Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.
27.50(d) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watts EIRP.
27.50(h) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

RSS-130
The transmitter output power shall be measured in terms of average power. In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

Frequency bands 617-652 MHz and 663-698 MHz
The e.r.p. shall not exceed 3 watts for mobile equipment, fixed subscriber equipment and portable equipment.

Frequency bands 698-756 MHz and 777-787 MHz
The e.r.p. shall not exceed 30 watts for mobile equipment and outdoor fixed subscriber equipment.

RSS-132
The transmitter output power shall be measured in terms of average power. The equivalent isotropically radiated power (e.i.r.p.) for mobile equipment shall not exceed 11.5 watts.

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

RSS-133
The equivalent isotropically radiated power (e.i.r.p.) for transmitters shall not exceed the limits 2W.

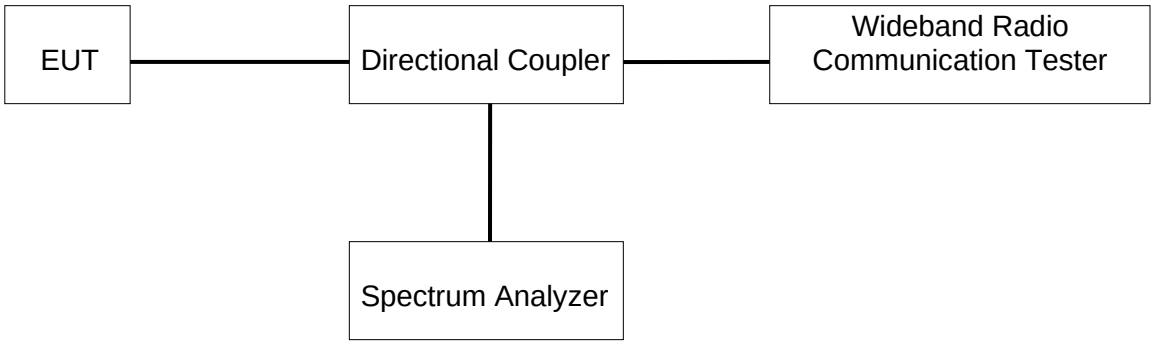
In addition, the transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

RSS-139
The equivalent isotropically radiated power (e.i.r.p.) for mobile and portable transmitters shall not exceed one watt.
In addition, the peak to average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1% of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission.

TEST PROCEDURE

Refer to ANSI C63.26:2015 and KDB 971168 D01 Section 5.6
ERP/ EIRP = PMeas + GT − LC
where:
ERP or EIRP = effective or equivalent isotropically radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);
PMeas = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB
The transmitter has a maximum radiated ERP / EIRP output powers as follows:

TEST SETUP



TEST ENVIRONMENT

Temperature	22.8°C	Relative Humidity	58.3%
Atmosphere Pressure	101kPa	Test Voltage	/

RESULTS

LTE FDD B2			Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 18607	Channel 18900	Channel 19193
1.4MHz	QPSK	1	0	22.44	22.63	22.39
		1	2	22.31	22.67	22.61
		1	5	22.35	22.6	22.41
		3	0	22.34	22.41	22.26
		3	1	22.56	22.35	22.45
		3	3	22.35	22.49	22.42
		6	0	21.34	21.55	21.49
	16QAM	1	0	21.96	21.67	21.5
		1	2	21.95	21.58	21.57
		1	5	21.68	21.68	21.39
		3	0	21.41	21.66	21.2
		3	1	21.38	21.38	21.15
		3	3	21.42	21.31	21.17
		6	0	20.11	20.25	20.82
Bandwidth	Modulation	RB size	RB offset	Channel 18615	Channel 18900	Channel 19185
3MHz	QPSK	1	0	22.74	22.59	22.37
		1	8	22.71	22.55	22.25
		1	14	22.52	22.61	22.28
		8	0	21.28	21.39	21.47
		8	4	21.26	21.36	21.45
		8	7	21.38	21.57	21.48
		15	0	21.29	21.39	21.39
	16QAM	1	0	21.84	21.84	21.78
		1	8	21.73	21.85	21.81
		1	14	21.78	21.8	21.83
		8	0	20.05	20.21	20.54
		8	4	20.33	20.11	20.29
		8	7	20.69	20.38	20.35
		15	0	20.21	20.3	20.22

Bandwidth	Modulation	RB size	RB offset	Channel 18625	Channel 18900	Channel 19175
5MHz	QPSK	1	0	22.06	22.29	22.29
		1	12	22.29	22.5	22.4
		1	24	22.12	22.05	22.23
		12	0	21.27	21.4	21.4
		12	6	21.44	21.45	21.48
		12	13	21.29	21.47	21.36
		25	0	21.39	21.5	21.43
	16QAM	1	0	20.86	20.82	21.33
		1	12	21.56	21.44	21.7
		1	24	20.91	20.93	21.11
		12	0	20.28	20.59	20.57
		12	6	20.34	20.33	20.44
		12	13	20.29	20.55	20.43
		25	0	20.42	20.52	20.43
Bandwidth	Modulation	RB size	RB offset	Channel 18650	Channel 18900	Channel 19150
10MHz	QPSK	1	0	22.6	22.53	22.58
		1	24	22.78	22.84	22.6
		1	49	22.69	22.57	22.51
		25	0	21.37	21.44	21.38
		25	12	21.48	21.43	21.44
		25	25	21.36	21.33	21.39
		50	0	21.37	21.43	21.39
	16QAM	1	0	21.78	21.81	21.39
		1	24	22.39	22.58	22.06
		1	49	22.03	21.91	21.86
		25	0	20.23	20.5	20.36
		25	12	20.43	20.37	20.44
		25	25	20.41	20.29	20.34
		50	0	20.41	20.34	20.27
Bandwidth	Modulation	RB size	RB offset	Channel 18675	Channel 18900	Channel 19125
15MHz	QPSK	1	0	22.51	22.74	22.58
		1	38	22.72	22.79	22.36
		1	74	22.69	22.36	22.57
		38	0	21.39	21.54	21.36
		38	18	21.44	21.46	21.39
		38	37	21.46	21.39	21.44
		75	0	21.39	21.47	21.43
	16QAM	1	0	21.9	21.81	21.9
		1	38	21.98	22.54	22.14
		1	74	21.96	21.65	21.61
		38	0	20.35	20.48	20.45
		38	18	20.37	20.29	20.38

		38	37	20.4	20.38	20.26
		75	0	20.35	20.39	20.29
Bandwidth	Modulation	RB size	RB offset	Channel 18700	Channel 18900	Channel 19100
20MHz	QPSK	1	0	22.56	22.53	22.37
		1	49	22.33	22.48	22.24
		1	99	22.34	22.25	22.26
		50	0	21.42	21.49	21.46
		50	25	21.35	21.54	21.37
		50	50	21.34	21.44	21.42
		100	0	21.33	21.52	21.35
	16QAM	1	0	21.33	21.39	21.29
		1	49	21.34	21.42	21.09
		1	99	21.22	21.3	21.15
		50	0	20.35	20.58	20.47
		50	25	20.38	20.29	20.34
		50	50	20.37	20.44	20.36
		100	0	20.25	20.42	20.28

LTE FDD B4				**Conducted Power(dBm)**		
Bandwidth	Modulation	RB size	RB offset	Channel 19957	Channel 20175	Channel 20393
1.4MHz	QPSK	1	0	22.34	22.29	22.16
		1	2	22.4	22.23	22.35
		1	5	22.36	22.15	22.04
		3	0	22.32	21.97	22.08
		3	1	22.39	22.3	22.11
		3	3	22.21	21.92	22.08
		6	0	21.21	21.07	21
	16QAM	1	0	21.47	21.21	21.1
		1	2	21.59	21.44	21.67
		1	5	21.51	21.34	21.39
		3	0	21.49	21.3	20.99
		3	1	21.27	21.48	21.03
		3	3	21.28	21.33	21
		6	0	19.87	20.04	19.85

Bandwidth	Modulation	RB size	RB offset	Channel 19965	Channel 20175	Channel 20385
3MHz	QPSK	1	0	22.21	22.13	21.9
		1	8	22.4	22.05	22.23
		1	14	22.19	22.04	22.02
		8	0	21.21	21.14	21.05
		8	4	21.23	21.05	21.12
		8	7	21.07	21.19	21.14
		15	0	21.24	21.15	21.14
	16QAM	1	0	21.62	21.42	21.13
		1	8	21.95	21.41	21.63
		1	14	21.62	21.49	21.23
		8	0	19.99	19.97	19.86
		8	4	20.2	20.14	20.04
		8	7	20.28	20.12	19.99
		15	0	20.03	19.96	19.91
Bandwidth	Modulation	RB size	RB offset	Channel 19975	Channel 20175	Channel 20375
5MHz	QPSK	1	0	21.88	21.93	22.06
		1	12	22.15	22	22.26
		1	24	22.14	21.84	22.1
		12	0	21.26	21.14	21.18
		12	6	21.19	21.1	21.19
		12	13	21.17	21.08	21.26
		25	0	21.27	21.13	21.15
	16QAM	1	0	21.22	21.26	21.44
		1	12	21.07	21.16	21.51
		1	24	21.24	21.09	20.98
		12	0	20.17	20.19	20.23
		12	6	20.17	20.23	20.27
		12	13	20.14	20.21	20.24
		25	0	20.24	19.9	20.24

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20000	20175	20350
10MHz	QPSK	1	0	22.39	22.05	21.97
		1	24	22.36	22.37	22.09
		1	49	22.36	22.24	22.11
		25	0	21.19	21.06	21.14
		25	12	21.3	21.04	21.19
		25	25	21.26	21.07	21.19
		50	0	21.16	21.09	21.12
	16QAM	1	0	21.65	21.36	21.58
		1	24	22.32	22.18	21.69
		1	49	21.58	21.47	21.7
		25	0	20.08	20.09	20.26
		25	12	20.13	19.97	20.24
		25	25	20.2	20.09	20.22
		50	0	20.21	20.09	20.16
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20025	20175	20325
15MHz	QPSK	1	0	22.51	22.3	22.07
		1	38	22.34	22.36	22.11
		1	74	22.55	22.38	22.29
		38	0	21.22	21.16	21.17
		38	18	21.25	21.09	21.21
		38	37	21.27	21.11	21.23
		75	0	21.31	21.16	21.22
	16QAM	1	0	21.68	21.44	21.74
		1	38	21.56	21.41	21.95
		1	74	21.98	21.67	21.76
		38	0	20.19	20.18	20.15
		38	18	20.21	20.03	20.19
		38	37	20.33	19.93	20.07
		75	0	20.25	20.08	20.18

Bandwidth	Modulation	RB size	RB offset	Channel 20050	Channel 20175	Channel 20300
20MHz	QPSK	1	0	22.06	22.12	22.3
		1	49	22.23	22.26	22.39
		1	99	22.1	22.05	22.39
		50	0	21.19	21.14	21.3
		50	25	21.19	21.11	21.19
		50	50	21.28	21.18	21.28
		100	0	21.31	21.17	21.27
	16QAM	1	0	21.15	21.17	21.72
		1	49	21.05	20.94	20.88
		1	99	21.2	20.99	21
		50	0	20.27	20.13	20.33
		50	25	20.16	20.12	20.32
		50	50	20.19	20.08	20.31
		100	0	20.21	20.09	20.3

LTE FDD B5			Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel 20407	Channel 20525	Channel 20643
1.4MHz	QPSK	1	0	23.01	23.11	23.08
		1	2	23.44	23.08	23.28
		1	5	23.08	22.99	23.07
		3	0	23.05	23.16	23.37
		3	1	23.07	23.38	23.26
		3	3	23.08	23.05	23.06
		6	0	22.15	22.22	22.06
	16QAM	1	0	22.43	22.15	22.19
		1	2	22.65	21.8	22.27
		1	5	22.4	22.17	22.23
		3	0	22.19	22.03	22.06
		3	1	22.16	21.68	22.17
		3	3	22.05	22.06	22.26
		6	0	20.93	21.4	21.27

Bandwidth	Modulation	RB size	RB offset	Channel 20415	Channel 20525	Channel 20635
3MHz	QPSK	1	0	23.15	23.01	23.07
		1	8	23.21	23.23	22.93
		1	14	23.06	23.3	22.94
		8	0	22.02	22.12	22.06
		8	4	22.01	22.17	22.12
		8	7	21.93	22.23	22.09
		15	0	22.04	22.02	22.11
	16QAM	1	0	22.41	22.48	21.97
		1	8	22.34	22.59	21.97
		1	14	22.26	22.6	21.62
		8	0	21.09	21.13	21.03
		8	4	21.22	21.2	21.1
		8	7	20.97	21.16	21.03
		15	0	21.06	21.14	21.14
Bandwidth	Modulation	RB size	RB offset	Channel 20425	Channel 20525	Channel 20625
5MHz	QPSK	1	0	22.97	22.81	22.87
		1	12	23.06	23.29	23.33
		1	24	22.84	23.03	23.02
		12	0	22.14	22.09	22.15
		12	6	22.1	22.25	22.19
		12	13	22.13	22.12	22.14
		25	0	22.18	22.13	22.11
	16QAM	1	0	22.11	22.05	21.78
		1	12	22.03	22.3	22.18
		1	24	21.84	22.07	21.66
		12	0	21.06	21.13	21.01
		12	6	21.09	20.96	20.99
		12	13	21.1	21.38	20.99
		25	0	21.21	20.97	21.16

Bandwidth	Modulation	RB size	RB offset	Channel 20450	Channel 20525	Channel 20600
10MHz	QPSK	1	0	23.29	23.32	23.13
		1	24	23.58	23.54	23.36
		1	49	23.09	23.14	23.14
		25	0	22.14	22.18	22.13
		25	12	22.14	22.11	22.13
		25	25	22.06	22.18	22.18
		50	0	22.1	22.06	22.11
	16QAM	1	0	22.47	22.52	22.12
		1	24	22.97	22.89	22.17
		1	49	22.57	22.66	22.13
		25	0	21.07	21.27	21.15
		25	12	21.29	21.27	21.25
		25	25	21.11	21.24	21.19
		50	0	21.02	21.13	21.06

LTE FDD B12				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel 23017	Channel 23095	Channel 23173
1.4MHz	QPSK	1	0	23.43	23.42	23.31
		1	2	23.6	23.48	23.63
		1	5	23.39	23.54	23.66
		3	0	23.42	23.31	23.37
		3	1	23.2	23.63	23.55
		3	3	23.27	23.51	23.48
		6	0	22.23	22.27	22.5
	16QAM	1	0	22.57	22.64	22.74
		1	2	22.62	22.62	22.9
		1	5	22.59	22.64	22.85
		3	0	22.5	22.5	22.45
		3	1	22.64	22.55	22.53
		3	3	22.7	22.6	22.58
		6	0	21.45	21.42	21.28

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23025	23095	23165
3MHz	QPSK	1	0	23.55	23.33	23.23
		1	8	23.68	23.7	23.36
		1	14	23.6	23.71	23.43
		8	0	22.45	22.51	22.51
		8	4	22.41	22.48	22.52
		8	7	22.48	22.45	22.57
		15	0	22.54	22.47	22.49
	16QAM	1	0	22.78	22.56	22.57
		1	8	22.9	23.05	22.38
		1	14	22.76	22.82	22.59
		8	0	21.14	21.33	21.41
		8	4	21.45	21.63	21.58
		8	7	20.97	21.61	21.31
		15	0	21.59	21.67	21.51
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23035	23095	23155
5MHz	QPSK	1	0	23.16	23.3	23.45
		1	12	23.47	23.76	23.29
		1	24	23.1	23.21	23.37
		12	0	22.41	22.43	22.5
		12	6	22.4	22.57	22.49
		12	13	22.27	22.38	22.39
		25	0	22.28	22.44	22.38
	16QAM	1	0	22.22	22.47	22.3
		1	12	22.48	22.82	22.48
		1	24	22.05	22.58	22
		12	0	21.34	21.4	21.42
		12	6	21.36	21.64	21.2
		12	13	21.01	21.49	21.26
		25	0	21.33	21.42	21.39

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23060	23095	23130
10MHz	QPSK	1	0	23.49	23.49	23.39
		1	24	23.55	23.69	23.59
		1	49	23.58	23.6	23.45
		25	0	22.4	22.4	22.5
		25	12	22.3	22.4	22.44
		25	25	22.41	22.39	22.4
		50	0	22.38	22.43	22.39
	16QAM	1	0	22.66	22.87	22.47
		1	24	23.08	23.02	22.6
		1	49	22.99	23.03	22.19
		25	0	21.4	21.4	21.48
		25	12	21.22	21.51	21.43
		25	25	21.39	21.4	21.39
		50	0	21.33	21.39	21.65

LTE FDD B13				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23205	23230	23255
5MHz	QPSK	1	0	22.85	23.01	23.31
		1	12	23.29	23.36	23.33
		1	24	23.4	23.19	23.25
		12	0	22.16	22.3	22.36
		12	6	22.26	22.28	22.3
		12	13	22.38	22.31	22.29
		25	0	22.21	22.34	22.36
	16QAM	1	0	22.07	22.23	22.37
		1	12	22.32	22.25	22.71
		1	24	22.08	22.04	22.35
		12	0	21.14	21.32	21.27
		12	6	21.3	21.33	21.51
		12	13	21.33	21.36	21.31
		25	0	21.43	21.43	21.4

Bandwidth	Modulation	RB size	RB offset	Channel
				23230
10MHz	QPSK	1	0	23.36
		1	24	23.72
		1	49	23.56
		25	0	22.24
		25	12	22.32
		25	25	22.29
		50	0	22.25
	16QAM	1	0	22.73
		1	24	23.15
		1	49	23.28
		25	0	21.15
		25	12	21.32
		25	25	21.45
		50	0	21.27

LTE FDD B17				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23755	23790	23825
5MHz	QPSK	1	0	23.39	23.37	23.47
		1	12	23.58	23.57	23.52
		1	24	23.4	23.52	23.52
		12	0	22.61	22.58	22.63
		12	6	22.61	22.59	22.71
		12	13	22.6	22.47	22.56
		25	0	22.59	22.56	22.59
	16QAM	1	0	22.7	22.35	22.72
		1	12	22.51	22.56	22.99
		1	24	22.65	22.64	21.96
		12	0	21.61	21.57	21.85
		12	6	21.49	21.56	21.81
		12	13	21.65	21.51	21.58
		25	0	21.59	21.75	21.62

Bandwidth	Modulation	RB size	RB offset	Channel 23780	Channel 23790	Channel 23800
10MHz	QPSK	1	0	23.8	23.75	23.49
		1	24	24	23.74	23.6
		1	49	24.04	23.44	23.57
		25	0	22.63	22.59	22.62
		25	12	22.66	22.54	22.58
		25	25	22.6	22.56	22.65
		50	0	22.65	22.6	22.54
	16QAM	1	0	23.35	23.21	22.59
		1	24	23.74	23.22	22.54
		1	49	23.29	23.15	22.31
		25	0	21.57	21.63	21.72
		25	12	21.68	21.66	21.68
		25	25	21.8	21.57	21.67
		50	0	21.57	21.47	21.73

7.2. PEAK TO AVERAGE RADIO

LIMITS

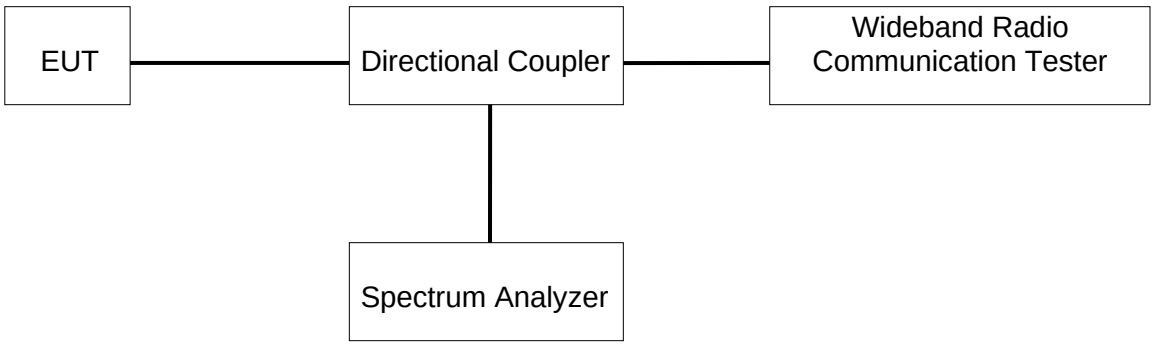
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

TEST PROCEDURE

Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01;

The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The PAR was measured on the Spectrum Analyzer.

TEST SETUP



TEST ENVIRONMENT

Temperature	22.8°C	Relative Humidity	58.3%
Atmosphere Pressure	101kPa	Test Voltage	/

RESULTS

Refer to Appendix A-LTE Conducted Test Results

7.3. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049, RSS-130, RSS-132, RSS-133, RSS-139

LIMITS

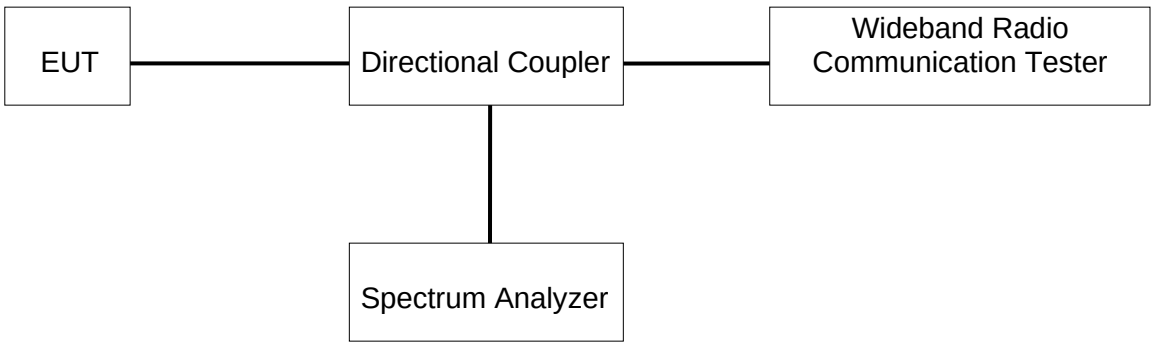
For reporting purposes only.

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.

(Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01)

TEST SETUP



TEST ENVIRONMENT

Temperature	22.9°C	Relative Humidity	68.3%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

RESULTS

Refer to Appendix B-LTE Conducted Test Results

7.4. BAND EDGE EMISSIONS

RULE PART(S)

FCC §2.1051, §22.917, §24.238, §27.53
RSS-130, RSS-132, RSS-133, RSS-139

LIMITS

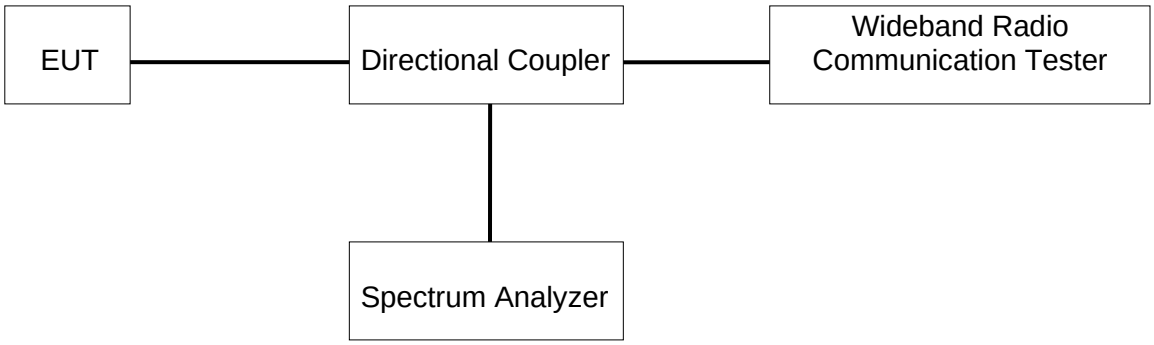
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

TEST PROCEDURE

Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01
The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

a) Set the RBW = 1 ~ 1.5 % of OBW (Typically limited to a minimum RBW of 1% of the OBW)
b) Set VBW ≥ 3 × RBW;
c) Set span ≥ 1.5 times the OBW;
d) Sweep time = Auto;
e) Detector = RMS;
f) Ensure that the number of measurement points ≥ 2*Span/RBW;
g) Trace mode = Average (100);

TEST SETUP



TEST ENVIRONMENT

Temperature	22.9°C	Relative Humidity	68.3%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

RESULTS

Refer to Appendix C-LTE Conducted Test Results

7.5. SPURIOUS EMISSION AT ANTENNA TERMINAL

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53
RSS-130, RSS-132, RSS-133, RSS-139

LIMITS

FCC: §22.901, §22.917, §24.238
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

RSS-132 section 5.5
Mobile and base station equipment shall comply with the limits in (i) and (ii) below.
(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).
(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

RSS-133 section 6.5.1
Equipment shall comply with the limits in (i) and (ii) below.
(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts).
(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

RSS-139 section 6.6
(i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block,2 which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 log10 p (watts) dB.
(ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 log10 p (watts) dB.

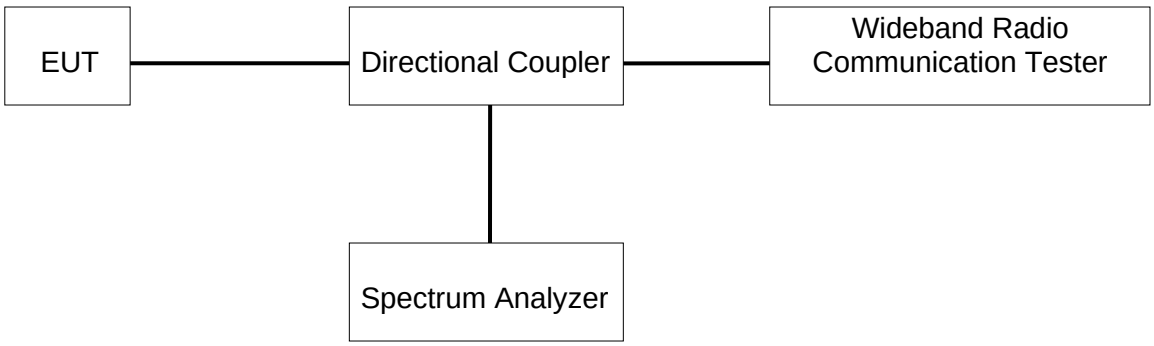
TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v03r01
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.

a) Set the RBW = 100 kHz for emission below 1GHz and 1MHz for emissions above 1GHz (Tests were performed 1 MHz [Worst case], to sweep 1 time for all frequency range)
b) Set VBW ≥ 3 × RBW;
c) Set span ≥ 1.5 times the OBW;
d) Sweep time = auto couple;
e) Detector = rms;
f) Ensure that the number of measurement points = Max (40001);
g) Trace mode = average (LTE 5), Maxhold (LTE Band7);

Note: Please refer to section 5.4 for bandwidth and RB setting about LTE bands.

TEST SETUP



TEST ENVIRONMENT

Temperature	22.9°C	Relative Humidity	68.3%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

RESULTS

Refer to Appendix D-LTE Conducted Test Results

7.6. FREQUENCY STABILITY

Rule Part:
FCC: §2.1055, §22.355, §24.235, §27.54
RSS-130, RSS-132, RSS-133, RSS-139

LIMITS

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

§24.235 and §27.54 - The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

RSS-132 section 5.3
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations and ±1.5 ppm for base stations.
In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the occupied bandwidth stays within each of the sub-bands (see Section 5.1) when tested to the temperature and supply voltage variations specified in RSS-Gen.

RSS-133 section 6.3
The carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and ±1.0 ppm for base stations.
In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the emission bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

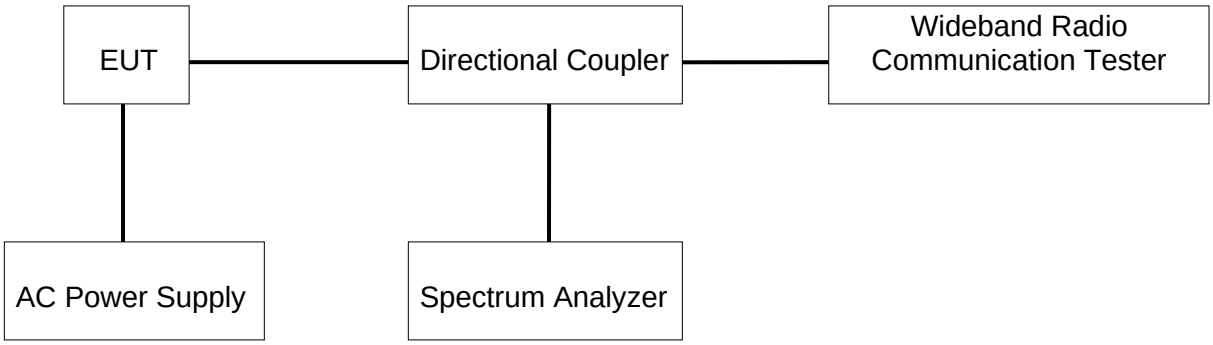
RSS-139 section 6.4
The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

TEST PROCEDURE

Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.

	Normal Test Conditions	Extreme Test Conditions
Relative Humidity	45 % - 75 %	/
Atmospheric Pressure	100 kPa ~102 kPa	/
Temperature	T_N (Normal Temperature): 24.7 °C	T_L (Low Temperature): 0 °C
		T_H (High Temperature): 50 °C
Supply Voltage	V_N (Normal Voltage): DC 3.8 V	V_L (Low Voltage): DC 3.42 V
		V_H (High Voltage): DC 4.18 V

TEST SETUP



RESULTS

Refer to Appendix E-LTE Conducted Test Results

8. RADIATED SPURIOUS EMISSIONS

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53
RSS-130, RSS-132, RSS-133, RSS-139

LIMIT

Part §22.917(a), §24.238(a), §27.53(h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

RSS-132 section 5.5
Mobile and base station equipment shall comply with the limits in (i) and (ii) below.
(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).
(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

RSS-133 section 6.5.1
Equipment shall comply with the limits in (i) and (ii) below.
(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts).
(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

RSS-139 section 6.6
(i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block,2 which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 log10 p (watts) dB.
(ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 log10 p (watts) dB.

For Band 13, 1559-1610 MHz shall be limited to -70 dBW/MHz EIRP for wideband signals and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

TEST PROCEDURE

KDB 971168 D01 Section 7

Below 1GHz test procedure as below:

1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. Calculate power in dBm by the following formula:
ERP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBd)

Where:

Pd is the dipole equivalent power, Pg is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to Pg [dBm] – cable loss [dB]. The calculated Pd levels are then compared to the absolute spurious emission limit of -13 dBm which is equivalent to the required minimum attenuation of 43 + 10log10(Power [Watts]).

Above 1GHz test procedure as below:
1. The EUT was placed on a rotatable wooden table with 0.8 meter above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. Calculate power in dBm by the following formula:
EIRP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi)
EIRP=ERP+2.15dB
Where: Pg is the generator output power into the substitution antenna.
11. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
= P(W)- [43 + 10log(P)] (dB)
= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)

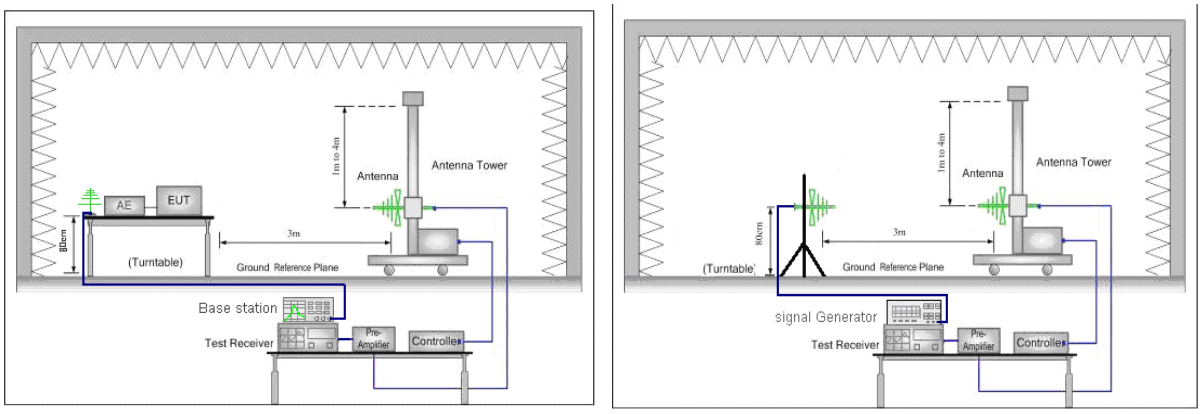
= -13dBm.

NOTE 1: Radiated spurious emissions were investigated below 30 MHz, 30 MHz – 1 GHz and above 1 GHz. There were no emissions found on below 30 MHz and 30 MHz – 1 GHz. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

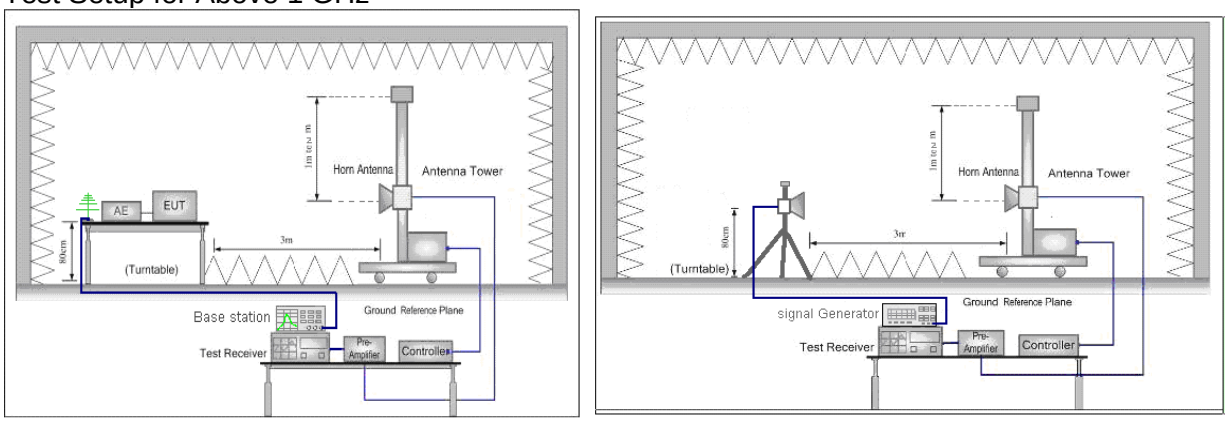
NOTE 2: Please refer to section 5 for bandwidth and RB setting about LTE bands.

TEST SETUP

Test Setup for Below 1 GHz



Test Setup for Above 1 GHz



TEST ENVIRONMENT

Temperature	22.9°C	Relative Humidity	68.3%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

RESULTS

LTE Band 2

QPSK-20 MHz-Low Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1210.000	13.38	28.21	41.59	82.20	-40.61	peak
2870.000	16.07	33.54	49.61	82.20	-32.59	peak
3720.000	47.06	-3.92	43.14	82.20	-39.06	peak
5550.000	58.39	1.43	59.82	82.20	-22.38	peak
7395.000	49.69	5.99	55.68	82.20	-26.52	peak
11685.000	36.24	16.76	53.00	82.20	-29.20	peak

QPSK-20 MHz-Low Channel-Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1280.000	14.22	28.33	42.55	82.20	-39.65	peak
1500.000	13.89	29.05	42.94	82.20	-39.26	peak
5580.000	53.22	1.31	54.53	82.20	-27.67	peak
7395.000	43.62	5.99	49.61	82.20	-32.59	peak
10230.000	36.39	11.73	48.12	82.20	-34.08	peak
12360.000	34.47	17.55	52.02	82.20	-30.18	peak

QPSK-20 MHz-Mid Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1232.000	13.76	28.26	42.02	82.20	-40.18	peak
2760.000	16.07	33.35	49.42	82.20	-32.78	peak
3735.000	53.56	-3.85	49.71	82.20	-32.49	peak
5610.000	62.47	1.23	63.70	82.20	-18.50	peak
7485.000	44.40	6.36	50.76	82.20	-31.44	peak
9360.000	41.79	10.07	51.86	82.20	-30.34	peak

QPSK-20 MHz- Mid Channel-Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1250.000	12.99	28.28	41.27	82.20	-40.93	peak
1500.000	13.41	29.05	42.46	82.20	-39.74	peak
1768.000	24.87	30.39	55.26	82.20	-26.94	peak
3735.000	46.83	-3.85	42.98	82.20	-39.22	peak
5610.000	60.46	1.23	61.69	82.20	-20.51	peak
7485.000	39.78	6.36	46.14	82.20	-36.06	peak

QPSK-20 MHz-High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1242.000	13.33	28.27	41.60	82.20	-40.60	peak
1546.000	13.94	29.31	43.25	82.20	-38.95	peak
2722.000	16.18	33.24	49.42	82.20	-32.78	peak
5700.000	56.58	1.28	57.86	82.20	-24.34	peak
7560.000	52.35	6.12	58.47	82.20	-23.73	peak
11625.000	34.67	16.33	51.00	82.20	-31.20	peak

QPSK-20 MHz- High Channel-Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1234.000	12.95	28.26	41.21	82.20	-40.99	peak
2748.000	15.68	33.32	49.00	82.20	-33.20	peak
5700.000	57.10	1.28	58.38	82.20	-23.82	peak
7560.000	46.26	6.12	52.38	82.20	-29.82	peak
9450.000	39.58	10.18	49.76	82.20	-32.44	peak
11925.000	34.02	17.24	51.26	82.20	-30.94	peak

Note: Limit= -13dBm+95.2=82.2 dBuV/m

LTE Band 4

QPSK-20 MHz-Low Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1214.000	12.99	28.23	41.22	82.20	-40.98	peak
2574.000	15.37	32.79	48.16	82.20	-34.04	peak
3465.000	51.43	-4.98	46.45	82.20	-35.75	peak
5205.000	57.20	0.90	58.10	82.20	-24.10	peak
6945.000	41.61	5.33	46.94	82.20	-35.26	peak
11505.000	35.35	16.01	51.36	82.20	-30.84	peak

QPSK-20 MHz-Low Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1360.000	13.30	28.59	41.89	82.20	-40.31	peak
2488.000	15.06	33.11	48.17	82.20	-34.03	peak
2708.000	15.48	33.20	48.68	82.20	-33.52	peak
5250.000	47.68	0.65	48.33	82.20	-33.87	peak
7755.000	37.61	6.80	44.41	82.20	-37.79	peak
8985.000	37.10	9.86	46.96	82.20	-35.24	peak

QPSK-20 MHz-Mid Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1276.000	13.25	28.33	41.58	82.20	-40.62	peak
2340.000	22.74	32.24	54.98	82.20	-27.22	peak
3435.000	53.17	-5.03	48.14	82.20	-34.06	peak
5160.000	57.84	0.52	58.36	82.20	-23.84	peak
6885.000	40.99	4.82	45.81	82.20	-36.39	peak
11700.000	32.52	16.87	49.39	82.20	-32.81	peak

QPSK-20 MHz-Mid Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1286.000	13.89	28.34	42.23	82.20	-39.97	peak
2866.000	16.11	33.53	49.64	82.20	-32.56	peak
3435.000	45.54	-5.03	40.51	82.20	-41.69	peak
5160.000	46.15	0.52	46.67	82.20	-35.53	peak
6885.000	39.05	4.82	43.87	82.20	-38.33	peak
11415.000	35.23	15.85	51.08	82.20	-31.12	peak

QPSK-20 MHz-High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1350.000	13.45	28.55	42.00	82.20	-40.20	peak
2840.000	16.42	33.50	49.92	82.20	-32.28	peak
3420.000	50.81	-5.07	45.74	82.20	-36.46	peak
5130.000	59.94	0.20	60.14	82.20	-22.06	peak
6840.000	39.73	4.43	44.16	82.20	-38.04	peak
10335.000	35.93	12.01	47.94	82.20	-34.26	peak

QPSK-20 MHz-High Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1206.000	12.75	28.21	40.96	82.20	-41.24	peak
2496.000	15.89	33.14	49.03	82.20	-33.17	peak
3420.000	54.92	-5.07	49.85	82.20	-32.35	peak
5130.000	51.35	0.20	51.55	82.20	-30.65	peak
9585.000	37.22	10.60	47.82	82.20	-34.38	peak
12300.000	32.85	17.68	50.53	82.20	-31.67	peak

Note: Limit= -13dBm+95.2=82.2dBuV/m

LTE Band 5

QPSK-10 MHz-Low Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1646.000	59.41	-11.56	47.85	82.20	-34.35	peak
4111.000	46.73	-3.64	43.09	82.20	-39.11	peak
4944.000	43.84	-1.13	42.71	82.20	-39.49	peak
9126.000	37.45	8.83	46.28	82.20	-35.92	peak
11812.000	33.92	17.21	51.13	82.20	-31.07	peak
13920.000	31.74	20.58	52.32	82.20	-29.88	peak

QPSK-20 MHz-Low Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1646.000	54.34	-11.56	42.78	82.20	-39.42	peak
4111.000	44.50	-3.64	40.86	82.20	-41.34	peak
8973.000	36.85	9.21	46.06	82.20	-36.14	peak
11421.000	35.11	15.37	50.48	82.20	-31.72	peak
13920.000	31.22	20.58	51.80	82.20	-30.40	peak
15637.000	33.15	15.39	48.54	82.20	-33.66	peak

QPSK-10 MHz-Mid Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1663.000	54.98	-11.45	43.53	82.20	-38.67	peak
4995.000	46.31	-1.12	45.19	82.20	-37.01	peak
9381.000	36.97	9.56	46.53	82.20	-35.67	peak
11795.000	33.24	17.19	50.43	82.20	-31.77	peak
13801.000	31.06	20.50	51.56	82.20	-30.64	peak
15620.000	32.88	15.40	48.28	82.20	-33.92	peak

QPSK-10 MHz-Mid Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1663.000	49.31	-11.45	37.86	82.20	-44.34	peak
5658.000	39.83	0.69	40.52	82.20	-41.68	peak
9585.000	36.85	10.11	46.96	82.20	-35.24	peak
11880.000	33.14	17.17	50.31	82.20	-31.89	peak
13920.000	31.23	20.58	51.81	82.20	-30.39	peak
15620.000	32.40	15.40	47.80	82.20	-34.40	peak

QPSK-10 MHz-High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1663.000	58.26	-11.45	46.81	82.20	-35.39	peak
3805.000	42.17	-4.34	37.83	82.20	-44.37	peak
5029.000	45.77	-0.93	44.84	82.20	-37.36	peak
8990.000	36.99	9.41	46.40	82.20	-35.80	peak
11829.000	34.42	17.20	51.62	82.20	-30.58	peak
13920.000	31.39	20.58	51.97	82.20	-30.23	peak

QPSK-10 MHz-High Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2513.000	49.58	-8.70	40.88	82.20	-41.32	peak
4995.000	42.24	-1.12	41.12	82.20	-41.08	peak
8939.000	37.87	8.80	46.67	82.20	-35.53	peak
11880.000	33.63	17.17	50.80	82.20	-31.40	peak
13920.000	31.94	20.58	52.52	82.20	-29.68	peak
15620.000	32.93	15.40	48.33	82.20	-33.87	peak

Note: Limit= -13dBm+95.2=82.2dBuV/m

LTE Band 12

QPSK-10 MHz-Low Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1391.000	62.64	-13.09	49.55	82.20	-32.65	peak
2088.000	52.09	-10.41	41.68	82.20	-40.52	peak
4893.000	45.44	-1.13	44.31	82.20	-37.89	peak
9381.000	37.68	9.56	47.24	82.20	-34.96	peak
11880.000	33.31	17.17	50.48	82.20	-31.72	peak
13937.000	31.53	20.60	52.13	82.20	-30.07	peak

QPSK-10 MHz-Low Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1391.000	61.54	-13.09	48.45	82.20	-33.75	peak
4995.000	42.49	-1.12	41.37	82.20	-40.83	peak
9007.000	36.90	9.49	46.39	82.20	-35.81	peak
11693.000	32.66	16.54	49.20	82.20	-33.00	peak
13920.000	30.25	20.58	50.83	82.20	-31.37	peak
15620.000	32.28	15.40	47.68	82.20	-34.52	peak

QPSK-10 MHz-Mid Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1391.000	59.86	-13.09	46.77	82.20	-35.43	peak
4910.000	41.67	-1.13	40.54	82.20	-41.66	peak
9432.000	37.20	9.76	46.96	82.20	-35.24	peak
11795.000	33.73	17.19	50.92	82.20	-31.28	peak
13920.000	31.70	20.58	52.28	82.20	-29.92	peak
15620.000	32.84	15.40	48.24	82.20	-33.96	peak

QPSK-10 MHz-Mid Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1391.000	58.68	-13.09	45.59	82.20	-36.61	peak
4995.000	42.31	-1.12	41.19	82.20	-41.01	peak
8225.000	37.83	7.16	44.99	82.20	-37.21	peak
10248.000	37.55	11.04	48.59	82.20	-33.61	peak
13597.000	30.71	19.71	50.42	82.20	-31.78	peak
15620.000	33.15	15.40	48.55	82.20	-33.65	peak

QPSK-10 MHz-High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1425.000	56.53	-12.89	43.64	82.20	-38.56	peak
4944.000	41.66	-1.13	40.53	82.20	-41.67	peak
7766.000	41.28	5.97	47.25	82.20	-34.95	peak
11829.000	33.57	17.20	50.77	82.20	-31.43	peak
13801.000	30.63	20.50	51.13	82.20	-31.07	peak
15314.000	33.04	15.48	48.52	82.20	-33.68	peak

QPSK-10 MHz-High Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1408.000	56.40	-13.00	43.40	82.20	-38.80	peak
4995.000	43.03	-1.12	41.91	82.20	-40.29	peak
8208.000	37.14	7.21	44.35	82.20	-37.85	peak
11948.000	32.33	17.13	49.46	82.20	-32.74	peak
13920.000	30.55	20.58	51.13	82.20	-31.07	peak
15943.000	33.02	15.35	48.37	82.20	-33.83	peak

Note: Limit= -13dBm+95.2=82.2dBuV/m

LTE Band 13

In the 1559-1610 MHz frequency, the limit is−80 dBW EIRP for narrowband and all modulation are tested and met requirements.

QPSK-10 MHz- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1560.000	53.42	-12.16	41.26	55.20	-13.94	peak
4621.000	41.82	-1.91	39.91	82.20	-42.29	peak
7783.000	46.53	6.02	52.55	82.20	-29.65	peak
11812.000	31.58	17.21	48.79	82.20	-33.41	peak
13920.000	29.38	20.58	49.96	82.20	-32.24	peak
15620.000	32.69	15.40	48.09	82.20	-34.11	peak

QPSK-10 MHz- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1602.000	47.15	-8.73	38.42	55.20	-16.78	peak
4995.000	42.21	-1.12	41.09	82.20	-41.11	peak
7766.000	41.15	5.97	47.12	82.20	-35.08	peak
11744.000	33.04	16.86	49.90	82.20	-32.30	peak
13937.000	31.61	20.60	52.21	82.20	-29.99	peak
15620.000	33.33	15.40	48.73	82.20	-33.47	peak

Note: Limit= -13dBm+95.2=82.2dBuV/m

LTE Band 17

QPSK-10 MHz-Low Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1408.000	57.40	-13.00	44.40	82.20	-37.80	peak
4859.000	40.93	-1.14	39.79	82.20	-42.41	peak
9160.000	37.75	8.65	46.40	82.20	-35.80	peak
11948.000	33.38	17.13	50.51	82.20	-31.69	peak
13563.000	32.64	19.66	52.30	82.20	-29.90	peak
16300.000	31.95	16.48	48.43	82.20	-33.77	peak

QPSK-10 MHz-Low Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1408.000	56.17	-13.00	43.17	82.20	-39.03	peak
4995.000	42.42	-1.12	41.30	82.20	-40.90	peak
8208.000	37.70	7.21	44.91	82.20	-37.29	peak
11863.000	33.58	17.18	50.76	82.20	-31.44	peak
13920.000	31.90	20.58	52.48	82.20	-29.72	peak
16045.000	32.54	15.52	48.06	82.20	-34.14	peak

QPSK-10 MHz-Mid Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1408.000	57.12	-13.00	44.12	82.20	-38.08	peak
4927.000	40.97	-1.12	39.85	82.20	-42.35	peak
7766.000	41.92	5.97	47.89	82.20	-34.31	peak
11812.000	33.70	17.21	50.91	82.20	-31.29	peak
13784.000	32.73	20.44	53.17	82.20	-29.03	peak
15620.000	32.82	15.40	48.22	82.20	-33.98	peak

QPSK-10 MHz-Mid Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1425.000	55.49	-12.89	42.60	82.20	-39.60	peak
4995.000	41.50	-1.12	40.38	82.20	-41.82	peak
9500.000	37.15	9.93	47.08	82.20	-35.12	peak
12339.000	34.40	16.96	51.36	82.20	-30.84	peak
13818.000	31.85	20.51	52.36	82.20	-29.84	peak
15620.000	33.18	15.40	48.58	82.20	-33.62	peak

QPSK-10 MHz-High Channel- Horizontal

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1425.000	57.06	-12.89	44.17	82.20	-38.03	peak
4213.000	42.63	-2.83	39.80	82.20	-42.40	peak
7766.000	39.39	5.97	45.36	82.20	-36.84	peak
10248.000	34.46	11.04	45.50	82.20	-36.70	peak
11795.000	33.89	17.19	51.08	82.20	-31.12	peak
13801.000	32.09	20.50	52.59	82.20	-29.61	peak

QPSK-10 MHz-High Channel- Vertical

Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1408.000	55.46	-13.00	42.46	82.20	-39.74	peak
4638.000	42.04	-1.84	40.20	82.20	-42.00	peak
7885.000	39.85	5.77	45.62	82.20	-36.58	peak
11744.000	34.96	16.86	51.82	82.20	-30.38	peak
13920.000	32.41	20.58	52.99	82.20	-29.21	peak
16402.000	31.40	16.93	48.33	82.20	-33.87	peak

Note: Limit= -13dBm+95.2=82.2dBuV/m

END OF REPORT