



FCC Test Report

FCC ID: 2A8LQ-WE009US

Applicant: Hareau SAS (Weenect)

Address: 101 rue de Sèvres, 75272 Paris cedex 06 France

Manufacturer: Toplovo Industrial Co., Limited

Address: 5F, Building B2b, Yingzhan Industrial Park, Kengzi Town, Pingshan District, Shenzhen, China 518122

EUT: WE009US GPS tracker

Trade Mark: N/A

Model Number: WE009US
WE009US belongs to general model number WE009

Date of Receipt: Sep. 13, 2024

Test Date: Sep. 13, 2024 - Nov. 01, 2024

Date of Report: Nov. 01, 2024

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China

Applicable Standards: FCC CFR Title 47 Part22 Subpart H
FCC CFR Title 47 Part24 Subpart E
FCC CFR Title 47 Part27
ANSI/ TIA/ EIA-603-E-2016
FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
ANSI C63.26:2015

Test Result: Pass

Report Number: DL-240913013ER

Prepared (Test Engineer): Alisa Song

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.

**TABLE OF CONTENTS**

Test Report Declaration	Page
1. TEST SUMMARY	3
2. GENERAL PRODUCT INFORMATION	4
2.1. Description of Device (EUT)	4
2.2. Product Function	4
2.3. Independent Operation Modes	5
3. TEST SITES	5
3.1. Test Facilities	5
3.2. Measurement Uncertainty	6
3.3. List of Test and Measurement Instruments	7
4. TEST SET-UP	8
4.1. Principle of Configuration Selection	8
4.2. Block Diagram of Test Set-up	8
4.3. Test Environment:	8
5. EMISSION TEST RESULTS	9
5.1. Conducted RF Output Power	9
5.2. -26dB and 99% Occupied Bandwidth	19
5.3. Peak to Average Ratio	20
5.4. Frequency Stability	21
5.5. Conducted Spurious Emissions	27
5.6. Conducted Out of Band Emissions	29
5.7. Transmitter Radiated Power (EIRP/ERP)	31
5.8. Radiated Out of Band Emissions	41
6. PHOTOGRAPHS OF TEST SET-UP	53
7. PHOTOGRAPHS OF THE EUT	53

**1. TEST SUMMARY**

Test Items	Test Requirement	Result
Peak to Average Ratio	2.1046 24.232 (band 2) 22.913 (band 5) 27.50(d) (band 4, band 12)	PASS
99% & -26 dB Occupied Bandwidth	2.1049	PASS
Frequency Stability	2.1055 22.355(band 5) 24.235 (band 2) 27.54 (band 4, band 12)	PASS
Conducted Out of Band Emissions	2.1051,2.1057 22.917 (band 5) 24.238(band 2) 27.53(h) (band 4) 27.53(g) (band 12)	PASS
Band Edge	2.1051,2.1057 22.917 (band 5) 24.238(band 2) 27.53(h) (band 4) 27.53(g) (band 12)	PASS
Transmitter Radiated Power (EIPR/ERP)	2.1046 24.232 (band 2) 22.913 (band 5) 27.50(d) (band 4) 27.50(c) (band 12)	PASS
Radiated Out of Band Emissions	2.1051,2.1057 22.917 (band 5) 24.238(band 2) 27.53(h) (band 4) 27.53(g) (band 12)	PASS



2. GENERAL PRODUCT INFORMATION

2.1. Description of Device (EUT)

Product Name:	WE009US GPS tracker
Trademark	
Model No.:	WE009US WE009US belongs to general model number WE009
Test Model:	WE009US
Model Difference	The product's different for model number and appearance color.
Operation Frequency:	GSM 850: Tx: 824.20 - 848.80MHz; Rx: 869.20 - 893.80MHz GSM1900: Tx: 1850.20 - 1909.80MHz; Rx: 1930.20 - 1989.80MHz LTE Band 2: Tx: 1850.00 - 1910.00MHz; Rx: 1930.00 - 1990.00MHz LTE Band 4: Tx: 1710.00 - 1755.00MHz; Rx: 2110.00 - 2155.00MHz LTE Band 12: Tx: 699.00 - 716.00MHz; Rx: 729.00 - 746.00MHz
Modulation technology:	GPRS Mode with GMSK, EGPRS Mode with 8PSK Modulation LTE Mode with QPSK, 16QAM
Antenna Type:	Internal Antenna
Antenna gain:	GSM850: -0.8dBi, GSM1900: 1.2dBi, LTE Band 2: 1.2dBi, LTE Band 4: 1.2dBi, LTE Band 12: -1.5dBi
Power supply:	DC 5V from charger DC 3.7V from battery
LTE Category	1
Hardware Version	1.0
Software Version	1.0

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. The EUT's all information provided by client.

2.2. Product Function

Refer to Technical Construction Form and User Manual.



2.3. Independent Operation Modes

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

Test modes		
Band	Radiated	Conducted
GSM	GPRS/EGPRS	GPRS/EGPRS
LTE Band 2	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%
LTE Band 4	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%
LTE Band12	Bandwidth:(MHz)1.4/3/5/10MHz Modulation: QPSK/16QAM RB:1/50%/100%	Bandwidth:(MHz)1.4/3/5/10MHz Modulation: QPSK/16QAM RB:1/50%/100%

Note1: for LTE mode, if the bandwidth is different, the test frequency is changed.

2: we pretest all voltage, only the DC 3.7V was worst mode, and the data show in the report.

The product was LTE Category 1 device.

3. TEST SITES

3.1. Test Facilities

Site Description

Name of Firm : Shenzhen DL Testing Technology Co., Ltd.
101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong
Site Location : Industrial Zone, Baolong Street, Longgang District, Shenzhen,
Guangdong, China

FCC Test Firm Registration Number: 854456

Designation Number: CN1307

IC Registered No.: 27485

CAB ID.: CN0118



3.2. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded 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	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$
8	CCDF	$\pm 50\text{Hz}$
9	Bandwidth	$\pm 20\text{kHz}$



3.3. List of Test and Measurement Instruments

3.3.1. For conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
843 Shielded Room	YIHENG	843 Room	843	Nov. 05, 2022	Nov. 04, 2026
EMI Receiver	R&S	ESR	101421	Nov. 05, 2023	Nov. 04, 2024
LISN	R&S	ENV216	102417	Nov. 05, 2023	Nov. 04, 2024
843 Cable 1#	ChengYu	CE Cable	001	Nov. 05, 2023	Nov. 04, 2024
843 Cable 1#	FUJIKURA	843C1#	001	Nov. 05, 2023	Nov. 04, 2024

3.3.2. For radiated test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Nov. 05, 2023	Nov. 04, 2024
Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 05, 2023	Nov. 04, 2024
Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 05, 2023	Nov. 04, 2024
Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00307	Nov. 05, 2023	Nov. 04, 2024
Horn Antenna(1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 05, 2023	Nov. 04, 2024
Horn Antenna(1GHz-18GHz)	Schwarzbeck	BBHA9120D	02133	Nov. 05, 2023	Nov. 04, 2024
Horn Antenna(18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 05, 2023	Nov. 04, 2024
Horn Antenna(18GHz-40GHz)	A.H. Systems	SAS-574	587	Nov. 05, 2023	Nov. 04, 2024
Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 05, 2023	Nov. 04, 2024
Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 05, 2023	Nov. 04, 2024
Amplifier(18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 05, 2023	Nov. 04, 2024
Loop Antenna(9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 05, 2023	Nov. 04, 2024
RF cables1(9kHz-1GHz)	ChengYu	966	004	Nov. 05, 2023	Nov. 04, 2024
RF cables2(1GHz-40GHz)	ChengYu	966	003	Nov. 05, 2023	Nov. 04, 2024
Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 05, 2023	Nov. 04, 2024
Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 05, 2023	Nov. 04, 2024
Signal Analyzer	Agilent	N9020A	MY55370280	Nov. 05, 2023	Nov. 04, 2024
Test Receiver	R&S	ESU 40	100376	Nov. 05, 2023	Nov. 04, 2024
D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 05, 2023	Nov. 04, 2024
Signal Amplifier	DAZE	ZN3380B	11235	Nov. 05, 2023	Nov. 04, 2024
High Pass filter	KANGMAI	WHKX1.0/1.5G-10SS	40	Nov. 05, 2023	Nov. 04, 2024
Filter	COM-MW	ZBSF-C836.5-25-X	BCTC042	Nov. 05, 2023	Nov. 04, 2024
Filter	COM-MW	ZBSF-C1747.5-75-X2	BCTC045	Nov. 05, 2023	Nov. 04, 2024
Filter	COM-MW	ZBSF-C1880-60-X2	BCTC047	Nov. 05, 2023	Nov. 04, 2024
Splitter	Agilent	11435B	1125162	Nov. 05, 2023	Nov. 04, 2024
RF CONDUCTED TEST					
System Simulator	Agilent	E5515C	GB43130252	Nov. 05, 2023	Nov. 04, 2024
Spectrum Analyzer	Agilent	N9020A	MY45108040	Nov. 05, 2023	Nov. 04, 2024
DC Power Supply	LongWei	PS-305D	010965682	Nov. 05, 2023	Nov. 04, 2024
Constant temperature and humidity box	GF	GTH-800-40-2P	MAA9906-012	Nov. 05, 2023	Nov. 04, 2024
Universal radio communication tester	R&S	CMW500	115295	Nov. 05, 2023	Nov. 04, 2024



4. TEST SET-UP

4.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

4.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators

EUT

4.3. Test Environment:

Ambient conditions in the test laboratory:

Items	Actual
Temperature (°C)	21~23
Humidity (%RH)	50~65



5. EMISSION TEST RESULTS

5.1. Conducted RF Output Power

5.1.1. Limit

According to FCC section 2.1046(a), For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

FCC part 24.232 (c), Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

FCC part 22.913(a) (5), The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

FCC part 27.50 (b) (10), Portable stations (hand-held devices) transmitting in the 746–757 MHz, 776–788 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

FCC part 27.50 (c) (10), 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.

FCC part 27.50 (d) (4), 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 watt EIRP. Fixed stations operating in the 1710–1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

FCC part 27.50(h) (2), for BRS and EBS: Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

5.1.2. Test Setup

The EUT, which is powered by the adapter, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power.

5.1.3. Test Result

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT.



The conducted power tables are as follows:

Average Conducted Power(dBm)						
Band	GSM850			PCS1900		
Channel	128	190	251	512	661	810
Frequency	824.20	836.60	848.80	1850.20	1880.00	1909.80
GPRS (GMSK, 1 TX slot)	23.05	23.22	23.24	19.52	19.41	19.02
GPRS (GMSK, 2 TX slot)	23.15	23.31	23.34	19.70	19.60	19.21
GPRS (GMSK, 3 TX slot)	22.89	23.07	23.09	19.57	19.53	19.18
GPRS (GMSK, 4 TX slot)	22.96	23.13	23.18	19.69	19.67	19.32
EGPRS(8PSK, 1 TX slot)	23.96	23.15	23.18	19.41	19.34	16.99
EGPRS(8PSK, 2 TX slot)	23.10	23.28	23.31	19.64	19.56	19.21
EGPRS(8PSK, 3 TX slot)	22.88	23.04	23.07	19.57	19.52	19.17
EGPRS(8PSK, 4 TX slot)	22.94	23.11	23.16	19.69	19.70	19.36



Conducted Power of LTE Band 2						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18607	18900	19193
1.4MHz	QPSK	1	0.00	22.82	22.83	22.94
			2.00	22.37	22.38	22.25
			5.00	22.22	22.23	22.15
		3	0.00	22.35	22.28	22.18
			1.00	22.34	22.29	22.22
			3.00	22.37	22.26	22.13
		6	0.00	22.29	22.27	22.15
	16QAM	1	0.00	22.86	22.91	22.92
			2.00	22.49	22.69	22.18
			5.00	22.31	22.52	22.01
		3	0.00	22.38	22.47	22.22
			1.00	22.42	22.45	22.24
			3.00	22.38	22.46	22.22
		6	0.00	22.5	22.29	22.3
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18615	18900	19185
3MHz	QPSK	1	0.00	22.27	22.13	22.16
			8.00	22.24	22.40	22.53
			14.00	22.14	22.12	22.23
		8	0.00	22.21	22.22	22.25
			4.00	22.22	22.26	22.22
			7.00	22.14	22.22	22.21
		15	0.00	22.15	22.19	22.18
	16QAM	1	0.00	22.52	22.28	22.47
			8.00	22.77	22.55	22.75
			14.00	22.39	22.21	22.48
		8	0.00	22.32	22.29	22.21
			4.00	22.27	22.26	22.24
			7.00	22.26	22.27	22.21
		15	0.00	22.24	22.07	22.32



Conducted Power of LTE Band 2						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18625	18900	19175
5MHz	QPSK	1	0.00	22.28	22.22	22.17
			12.00	22.07	22.47	22.57
			24.00	22.21	22.11	22.18
		12	0.00	22.32	22.39	22.26
			6.00	22.37	22.39	22.25
			13.00	22.34	22.3	22.19
		25	0.00	22.36	22.34	22.23
			0.00	22.62	22.43	22.26
			12.00	22.01	22.66	22.63
	16QAM	1	24.00	22.57	22.37	22.28
		12	0.00	22.36	22.44	22.37
			6.00	22.4	22.49	22.4
			13.00	22.3	22.39	22.33
		25	0.00	22.38	22.34	22.26
		1	0.00	22.24	22.24	22.10
			24.00	22.28	22.39	22.29
			49.00	22.22	22.23	22.15
	QPSK	25	0.00	22.27	22.32	22.28
			12.00	22.28	22.31	22.19
			25.00	22.28	22.31	22.20
		50	0.00	22.29	22.36	22.29
		1	0.00	22.31	22.56	22.32
			2400	22.41	22.71	22.49
			49.00	22.27	22.51	22.38
	16QAM	1	0.00	22.31	22.56	22.32
			2400	22.41	22.71	22.49
			49.00	22.27	22.51	22.38



Conducted Power of LTE Band 2						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18675	18900	19125
15MHz	QPSK	1	0.00	22.24	22.2	22.17
			37.00	22.56	22.66	22.44
			74.00	22.15	22.06	22.14
		37	0.00	22.36	22.37	22.29
			18.00	22.35	22.36	22.29
			38.00	22.41	22.34	22.28
		75	0.00	22.36	22.38	22.31
	16QAM	1	0.00	22.5	22.27	22.08
			38.00	22.78	22.65	22.38
			74.00	22.43	22.14	22.1
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18700	18900	19100
20MHz	QPSK	1	0.00	22.74	22.01	22.28
			49.00	22.39	22.38	22.31
			99.00	22.23	22.32	22.19
		50	0.00	22.55	22.35	22.31
			25.00	22.35	22.35	22.24
			50.00	22.32	22.35	22.15
		100	0.00	22.27	22.42	22.27
	16QAM	1	0.00	22.26	22.13	22.18
			49.00	22.56	22.51	22.35
			99.00	22.26	22.02	22.06

Note: Measurement Uncertainty: ± 2.6 dB.



Conducted Power of LTE Band 4						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19957	20175	20393
1.4MHz	QPSK	1	0.00	22.87	22.85	22.96
			2.00	22.29	22.35	22.34
			5.00	22.14	22.24	22.15
		3	0.00	22.22	22.26	22.29
			2.00	22.19	22.3	22.28
			3.00	22.21	22.29	22.28
		6	0.00	22.17	22.22	22.23
			0.00	22.94	22.91	22.81
			2.00	22.54	22.25	22.38
	16QAM	1	5.00	22.41	22.12	22.21
			0.00	22.34	22.28	22.31
			1.00	22.39	22.31	22.34
		3	3.00	22.38	22.3	22.29
			0.00	22.23	22.36	22.43
			0.00	22.94	22.91	22.81
		6	2.00	22.54	22.25	22.38
			5.00	22.41	22.12	22.21
			0.00	22.34	22.28	22.31
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19965	20175	20385
3MHz	QPSK	1	0.00	22.18	22.28	22.19
			8.00	22.45	22.5	22.53
			14.00	22.21	22.18	22.2
		8	0.00	22.16	22.26	22.26
			4.00	22.18	22.28	22.26
			7.00	22.15	22.21	22.24
		15	0.00	22.15	22.24	22.26
			0.00	22.45	22.44	22.19
			8.00	22.71	22.77	22.42
	16QAM	1	14.00	22.43	22.44	22.27
			0.00	22.13	22.3	22.33
			4.00	22.17	22.32	22.32
		8	7.00	22.14	22.30	22.34
			0.00	22.24	22.17	22.17
			0.00	22.45	22.44	22.19
		15	8.00	22.71	22.77	22.42
			14.00	22.43	22.44	22.27
			0.00	22.13	22.3	22.33



Conducted Power of LTE Band 4						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19975	20175	20375
5MHz	QPSK	1	0.00	22.16	22.14	22.12
			12.00	22.22	22.45	22.49
			24.00	22.13	22.12	22.14
		12	0.00	22.14	22.23	22.24
			6.00	22.21	22.29	22.31
			13.00	22.18	22.21	22.2
		25	0.00	22.18	22.21	22.26
	16QAM	1	0.00	22.21	22.49	22.28
			12.00	22.69	22.78	22.59
			24.00	22.2	22.46	22.29
		12	0.00	22.27	22.2	22.31
			6.00	22.34	22.26	22.41
			13.00	22.31	22.22	22.32
		25	0.00	22.21	22.25	22.26
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20000	20175	20350
10MHz	QPSK	1	0.00	22.2	22.24	22.18
			24.00	22.35	22.3	22.31
			49.00	22.23	22.14	22.19
		25	0.00	22.19	22.26	22.22
			12.00	22.22	22.25	22.21
			25.00	22.29	22.28	22.25
		50	0.00	22.25	22.29	22.22
	16QAM	1	0.00	22.42	22.45	22.29
			24.00	22.59	22.54	22.26
			49.00	22.45	22.4	22.24



Conducted Power of LTE Band 4						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20025	20175	20325
15MHz	QPSK	1	0.00	22.12	22.19	22.15
			38.00	22.05	22.47	22.38
			74.00	22.18	22.08	22.16
		37	0.00	22.20	22.34	22.34
			18.00	22.31	22.35	22.41
			37.00	22.33	22.30	22.34
		75	0.00	22.27	22.35	22.36
			0.00	22.16	22.48	22.24
			38.00	22.51	22.74	22.62
			74.00	22.17	22.32	22.18
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20050	20175	20300
20MHz	QPSK	1	0.00	22.54	22.06	22.59
			49.00	22.42	22.41	22.42
			99.00	22.03	22.01	22.04
		50	0.00	22.22	22.29	22.52
			25.00	22.33	22.3	22.32
			50.00	22.22	22.28	22.28
		100	0.00	22.22	22.29	22.29
			0.00	22.15	22.15	22.05
			49.00	22.57	22.46	22.48
			99.00	22.18	22.07	22.08
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20050	20175	20300
				20050	20175	20300

Note: Measurement Uncertainty: ± 2.6 dB.



Conducted Power of LTE Band 12						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23017	23095	23173
1.4MHz	QPSK	1	0.00	22.81	22.89	22.86
			2.00	22.31	22.17	22.64
			5.00	22.12	22.31	22.50
		3	0.00	22.38	22.09	22.54
			1.00	22.36	22.16	22.49
			3.00	22.21	22.24	22.53
		6	0.00	22.38	22.22	22.70
	16QAM	1	0.00	22.88	22.92	22.95
			2.00	22.47	22.52	22.64
			5.00	22.21	22.70	22.51
		3	0.00	22.49	22.35	22.73
			1.00	22.43	22.42	22.69
			3.00	22.28	22.49	22.63
		6	0.00	22.63	22.34	22.23
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23025	23095	23165
3MHz	QPSK	1	0.00	22.11	22.34	22.75
			8.00	22.03	22.23	22.72
			14.00	22.3	22.14	22.27
		8	0.00	22.31	22.1	22.33
			4.00	22.18	22.27	22.77
			7.00	22.06	22.35	22.63
		15	0.00	22.21	22.22	22.75
	16QAM	1	0.00	22.64	22.75	22.11
			8.00	22.33	22.35	22.09
			14.00	22.16	22.28	22.69
		8	0.00	22.39	22.17	22.79
			4.00	22.32	22.36	22.76
			7.00	22.24	22.47	22.69
		15	0.00	22.22	22.14	22.23



Conducted Power of LTE Band 12						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23035	23095	23155
5MHz	QPSK	1	0.00	22.35	22.22	22.13
			12.00	22.14	22.3	22.13
			24.00	22.63	22.31	22.45
		12	0.00	22.17	22.18	22.21
			6.00	22.14	22.3	22.21
			13.00	22.87	22.36	22.72
		25	0.00	22.04	22.17	22.8
			0.00	22.85	22.04	22.18
			12.00	22.57	22.54	22.04
	16QAM	1	24.00	22.05	22.56	22.72
		12	0.00	22.29	22.1	22.15
			6.00	22.21	22.48	22.15
			13.00	22.15	22.48	22.13
		25	0.00	22.15	22.21	22.25
			0.00	22.56	22.65	22.07
			24.00	22.77	22.27	22.15
			49.00	22.28	22.25	22.54
		25	0.00	22.45	22.75	22.03
			12.00	22.18	22.24	22.15
			25.00	22.28	22.09	22.7
		50	0.00	22.24	22.25	22.29
10MHz	QPSK	1	0.00	22.57	22.75	22.35
			24.00	22.05	22.4	22.47
			49.00	22.57	22.05	22.15
		25	0.00	22.24	22.25	22.29
			0.00	22.56	22.65	22.07
			24.00	22.77	22.27	22.15
	16QAM	1	49.00	22.28	22.25	22.54
			0.00	22.45	22.75	22.03
			12.00	22.18	22.24	22.15
		25	25.00	22.28	22.09	22.7
			0.00	22.24	22.25	22.29
			0.00	22.56	22.65	22.07

Note: Measurement Uncertainty: ± 2.6 dB.



5.2. -26dB and 99% Occupied Bandwidth

5.2.1. Limit

According to FCC section 2.1049

5.2.2. Test Setup

The EUT, which is powered by the adapter, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power.

5.2.3. Test Result

Pass, the table and plot please see annex.



5.3. Peak to Average Ratio

5.3.1. Limit

According to FCC section 2.1046

FCC Part 24.232 (d)

Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of § 24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

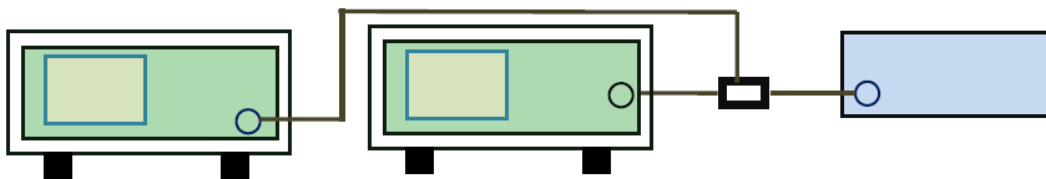
FCC Part 22.913 (d)

Power measurement. Measurement of the ERP of Cellular base transmitters and repeaters must be made using an average power measurement technique. The peak-to-average ratio (PAR) of the transmission must not exceed 13dB.

FCC Part 27.50 (d) (5)

Equipment employed must be authorized in accordance with the provisions of § 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

5.3.2. Test Setup



5.3.3. Test Procedure

According with KDB 971168 v03r01

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

5.3.4. Test Result

Pass, the table and plot please see annex.



5.4. Frequency Stability

5.4.1. Limit

FCC section 24.235: The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

FCC section 22.355: Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C–1 of this section.

Table C–1—Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency range (MHz)	Base, fixed (ppm)	Mobile >3 watts (ppm)	Mobile ≤3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	n/a	n/a
929 to 960	1.5	n/a	n/a
2110 to 2220	10.0	n/a	n/a

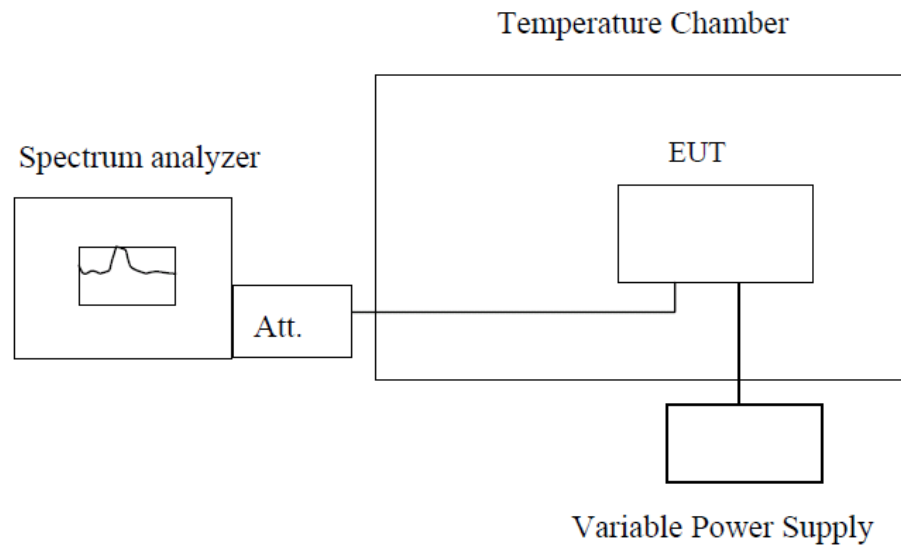
FCC section 27.54: The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from -40°C to +80°C at intervals of not more than 10°C.
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.



5.4.2. Test Setup

**Note :** Measurement setup for testing on Antenna connector

The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber.

The EUT is commanded by the System Simulator (SS) to operate at the maximum output power

5.4.3. Test Result

The nominal, highest and lowest extreme voltages are separately 3.7VDC, 4.07VDC and 3.33VDC which are specified by the applicant; the normal temperature here used is 25°C. The frequency deviation limit of 850MHz band is $\pm 2.5\text{ppm}$, and 1900MHz is $\pm 1\text{ppm}$

For LTE mode, only test the max bandwidth.

The table and plot please see next page.



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit	
GPRS850 Middle channel 836.0MHz	3.80	-40	43	0.0502	±2.5	PASS
	3.80	-30	64	0.0669		
	3.80	-20	57	0.0801		
	3.80	-10	65	0.0406		
	3.80	0	82	0.1339		
	3.80	10	45	0.0275		
	3.80	20	67	0.0538		
	3.80	30	86	0.0789		
	3.80	40	43	0.0646		
	3.80	50	66	0.0251		
	3.80	60	87	0.0406		
	3.80	70	34	0.0514		
	3.80	80	56	0.0932		
	4.37	25	98	0.1506		
	3.80	25	99	0.0383		
	3.23	25	119	0.0909		

Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit	
GPRS1900 Middle channel 1880.0MHz	3.80	-40	56	0.0356	Within The Authorized Frequency	PASS
	3.80	-30	76	0.0298		
	3.80	-20	55	0.0346		
	3.80	-10	98	0.0415		
	3.80	0	45	0.0521		
	3.80	10	67	0.0457		
	3.80	20	76	0.0351		
	3.80	30	55	0.0436		
	3.80	40	76	0.0367		
	3.80	50	89	0.0388		
	3.80	60	34	0.0410		
	3.80	70	66	0.0473		
	3.80	80	95	0.0596		
	4.37	25	109	0.0644		
	3.80	25	89	0.0410		
	3.23	25	118	0.0473		



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit	
LTE Band 2 Bandwidth 20MHz QPSK Middle channel 1880MHz	3.80	-40	75	0.0340	Within The Authorized Frequency	PASS
	3.80	-30	46	0.0186		
	3.80	-20	66	0.0415		
	3.80	-10	77	0.0351		
	3.80	0	38	0.0346		
	3.80	10	65	0.0245		
	3.80	20	77	0.0356		
	3.80	30	42	0.0521		
	3.80	40	65	0.0388		
	3.80	50	79	0.0356		
	3.80	60	98	0.0287		
	3.80	70	77	0.0298		
	3.80	80	79	0.0420		
	4.37	25	75	0.0287		
	3.80	25	45	0.0351		
	3.23	25	143	0.0947		
LTE Band 2 Bandwidth 20MHz 16QAM Middle channel 1880MHz	3.80	-40	61	0.0356	Within The Authorized Frequency	PASS
	3.80	-30	82	0.0441		
	3.80	-20	78	0.0383		
	3.80	-10	72	0.0388		
	3.80	0	48	0.0229		
	3.80	10	62	0.0356		
	3.80	20	82	0.0436		
	3.80	30	34	0.0191		
	3.80	40	51	0.0293		
	3.80	50	32	0.0207		
	3.80	60	58	0.0287		
	3.80	70	53	0.0282		
	3.80	80	27	0.0112		
	4.37	25	71	0.0356		
	3.80	25	79	0.0112		
	3.23	25	139	0.0521		



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit	
LTE Band 4 Bandwidth 15MHz QPSK Middle channel 1732.5MHz	3.80	-40	86	0.0375	Within The Authorized Frequency	PASS
	3.80	-30	67	0.0323		
	3.80	-20	76	0.0196		
	3.80	-10	66	0.0300		
	3.80	0	87	0.0242		
	3.80	10	62	0.0133		
	3.80	20	89	0.0364		
	3.80	30	12	0.0196		
	3.80	40	45	0.0121		
	3.80	50	77	0.0369		
	3.80	60	21	0.0144		
	3.80	70	47	0.0260		
	3.80	80	69	0.0375		
	4.37	25	61	0.0387		
	3.80	25	52	0.0306		
	3.23	25	124	0.0139		
LTE Band 4 Bandwidth 15MHz 16QAM Middle channel 1732.5MHz	3.80	-40	79	0.0375	Within The Authorized Frequency	PASS
	3.80	-30	61	0.0369		
	3.80	-20	52	0.0300		
	3.80	-10	83	0.0502		
	3.80	0	32	0.0196		
	3.80	10	63	0.0364		
	3.80	20	72	0.0450		
	3.80	30	51	0.0329		
	3.80	40	42	0.0242		
	3.80	50	82	0.0502		
	3.80	60	27	0.0139		
	3.80	70	81	0.0496		
	3.80	80	48	0.0266		
	4.37	25	81	0.0496		
	3.80	25	39	0.0190		
	3.23	25	116	0.0323		

Note: Measurement Uncertainty: $\pm 20\text{Hz}$.



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit	
LTE Band 12 Bandwidth 10MHz QPSK Middle channel 707.5MHz	3.80	-40	42	0.0636	Within The Authorized Frequency	PASS
	3.80	-30	58	0.0777		
	3.80	-20	43	0.0608		
	3.80	-10	24	0.0325		
	3.80	0	48	0.0636		
	3.80	10	34	0.0452		
	3.80	20	26	0.0297		
	3.80	30	32	0.0495		
	3.80	40	44	0.0650		
	3.80	50	68	0.0919		
	3.80	60	22	0.0325		
	3.80	70	59	0.0777		
	3.80	80	32	0.0495		
	4.37	25	85	0.1541		
	3.80	25	48	0.0594		
	3.23	25	118	0.1102		
LTE Band 12 Bandwidth 10MHz 16QAM Middle channel 707.5MHz	3.80	-40	52	0.0763	Within The Authorized Frequency	PASS
	3.80	-30	39	0.0481		
	3.80	-20	21	0.0325		
	3.80	-10	48	0.0594		
	3.80	0	22	0.0325		
	3.80	10	29	0.0311		
	3.80	20	52	0.0763		
	3.80	30	59	0.0212		
	3.80	40	38	0.0466		
	3.80	50	41	0.0650		
	3.80	60	62	0.0919		
	3.80	70	48	0.0608		
	3.80	80	29	0.0325		
	4.37	25	82	0.1583		
	3.80	25	85	0.0636		
	3.23	25	113	0.0466		

Note: Measurement Uncertainty: $\pm 20\text{Hz}$.



5.5. Conducted Spurious Emissions

5.5.1. Limit

According to FCC section 22.917(a), Out of band emissions. 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.

FCC section 24.238(a), Out of band emissions. 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.

FCC section 27.53 (c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;
- (6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

FCC section 27.53 (g)

For operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC section 27.53 (h)

AWS emission limits:

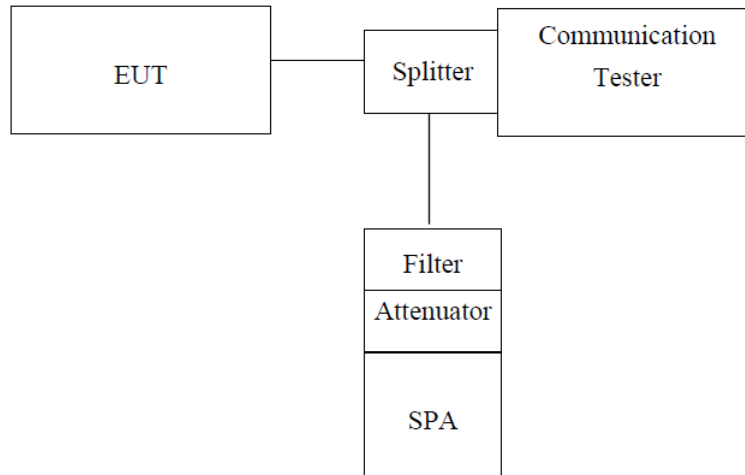
- (1) General protection levels. Except as otherwise specified below, for operations in the 1695–1710 MHz, 1710–1755 MHz, 1755–1780 MHz, 1915–1920 MHz, 1995–2000 MHz, 2000–2020 MHz, 2110–2155 MHz, 2155–2180 MHz, and 2180–2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.
- (2) Additional protection levels. Notwithstanding the foregoing paragraph (h)(1) of this section:
 - (i) Operations in the 2180–2200 MHz band are subject to the out-of-band emission requirements set forth in § 27.1134 for the protection of federal government operations operating in the 2200–2290 MHz band.
 - (ii) For operations in the 2000–2020 MHz band, the power of any emissions below 2000 MHz shall be attenuated below the transmitter power (P) in watts by at least $70 + 10 \log_{10}(P)$ dB.
 - (iii) For operations in the 1915–1920 MHz band, the power of any emission between 1930–1995 MHz shall be attenuated below the transmitter power (P) in watts by at least $70 + 10 \log_{10}(P)$ dB.
 - (iv) For operations in the 1995–2000 MHz band, the power of any emission between 2005–2020 MHz shall be attenuated below the transmitter power (P) in watts by at least $70 + 10 \log_{10}(P)$ dB.

FCC section 27.53 (m) (4)

For mobile digital stations, 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 as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.



5.5.2. Test Setup



Note: Measurement setup for testing on Antenna connector

5.5.3. Measurement Procedure

The testing according to FCC KDB 971168 D01 v03r01 Section 6.0 and ANSI C63.26 2015 Section 5.72, FCC Part 22.917, 24.238, 27.53

5.5.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

For LTE mode, the plot only show the min and max bandwidth's data.

Pass, the table and plot please see annex.



5.6. Conducted Out of Band Emissions

5.6.1. Limit

According to FCC section 22.917(a), Out of band emissions. 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.

FCC section 24.238(a), Out of band emissions. 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.

FCC section 27.53 (c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;
- (6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

FCC section 27.53 (g)

For operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC section 27.53 (h)

AWS emission limits:

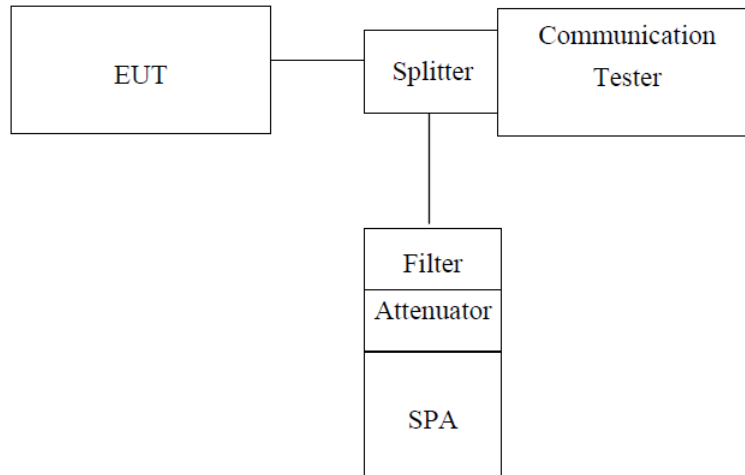
- (1) General protection levels. Except as otherwise specified below, for operations in the 1695–1710 MHz, 1710–1755 MHz, 1755–1780 MHz, 1915–1920 MHz, 1995–2000 MHz, 2000–2020 MHz, 2110–2155 MHz, 2155–2180 MHz, and 2180–2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.
- (2) Additional protection levels. Notwithstanding the foregoing paragraph (h)(1) of this section:
 - (i) Operations in the 2180–2200 MHz band are subject to the out-of-band emission requirements set forth in § 27.1134 for the protection of federal government operations operating in the 2200–2290 MHz band.
 - (ii) For operations in the 2000–2020 MHz band, the power of any emissions below 2000 MHz shall be attenuated below the transmitter power (P) in watts by at least $70 + 10 \log_{10}(P)$ dB.
 - (iii) For operations in the 1915–1920 MHz band, the power of any emission between 1930–1995 MHz shall be attenuated below the transmitter power (P) in watts by at least $70 + 10 \log_{10}(P)$ dB.
 - (iv) For operations in the 1995–2000 MHz band, the power of any emission between 2005–2020 MHz shall be attenuated below the transmitter power (P) in watts by at least $70 + 10 \log_{10}(P)$ dB.

FCC section 27.53 (m) (4)

For mobile digital stations, 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 as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.



5.6.2. Test Setup



Note: Measurement setup for testing on Antenna connector

5.6.3. Measurement Procedure

The testing according to FCC KDB 971168 D01 v03r01 Section 6.0 and ANSI C63.26 2015 Section 5.72, FCC Part 22.917, 24.238, 27.53

5.6.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

Pass, the table and plot please see annex.

Note: The emission above 10GHz was background, so no data show it.



5.7. Transmitter Radiated Power (EIRP/ERP)

5.7.1. Limit

According to FCC section 2.1046(a), For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

FCC part 24.232 (c), Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

FCC part 22.913(a) (5), The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

FCC part 27.50 (b) (10), Portable stations (hand-held devices) transmitting in the 746–757 MHz, 776–788 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

FCC part 27.50 (c) (10), 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.

FCC part 27.50 (d) (4), 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 watt EIRP. Fixed stations operating in the 1710–1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

FCC part 27.50(h) (2), for BRS and EBS: Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

5.7.2. Test Setup

Refer to 5.1.2

5.7.3. Measurement Procedure

ERP in frequency band 824.2 –848.80.8MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:

EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - 2.15$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)}$$

5.7.4. Test Result

Pass, the table and plot please see annex.



ERP Power(dBm)					
Band	GSM850			Limit (dBm)	Result
Channel	128	190	251		
Frequency	824.20	836.60	848.80		
GPRS (GMSK, 1 TX slot)	20.10	20.27	20.29	38.45	Pass
GPRS (GMSK, 2 TX slot)	20.20	20.36	20.39	38.45	Pass
GPRS (GMSK, 3 TX slot)	19.94	20.12	20.14	38.45	Pass
GPRS (GMSK, 4 TX slot)	20.01	20.18	20.23	38.45	Pass
EGPRS(8PSK, 1 TX slot)	21.01	20.20	20.23	38.45	Pass
EGPRS(8PSK, 2 TX slot)	20.15	20.33	20.36	38.45	Pass
EGPRS(8PSK, 3 TX slot)	19.93	20.09	20.12	38.45	Pass
EGPRS(8PSK, 4 TX slot)	19.99	20.16	20.21	38.45	Pass

EIRP Power(dBm)					
Band	PCS1900			Limit (dBm)	Result
Channel	512	661	810		
Frequency	1850.20	1880.00	1909.80		
GPRS (GMSK, 1 TX slot)	20.72	20.61	20.22	33.00	Pass
GPRS (GMSK, 2 TX slot)	20.90	20.80	20.41	33.00	Pass
GPRS (GMSK, 3 TX slot)	20.77	20.73	20.38	33.00	Pass
GPRS (GMSK, 4 TX slot)	20.89	20.87	20.52	33.00	Pass
EGPRS(8PSK, 1 TX slot)	20.61	20.54	18.19	33.00	Pass
EGPRS(8PSK, 2 TX slot)	20.84	20.76	20.41	33.00	Pass
EGPRS(8PSK, 3 TX slot)	20.77	20.72	20.37	33.00	Pass
EGPRS(8PSK, 4 TX slot)	20.89	20.90	20.56	33.00	Pass



LTE Band 2 EIRP Power(dBm)								
Bandwidth	Modulation n	RB size	RB offset	Channel	Channel	Channel		
				18607	18900	19193	Limit (dBm)	Result
1.4MHz	QPSK	1	0.00	24.02	24.03	24.14	33.00	Pass
			2.00	23.57	23.58	23.45	33.00	Pass
			5.00	23.42	23.43	23.35	33.00	Pass
		3	0.00	23.55	23.48	23.38	33.00	Pass
			1.00	23.54	23.49	23.42	33.00	Pass
			3.00	23.57	23.46	23.33	33.00	Pass
		6	0.00	23.49	23.47	23.35	33.00	Pass
	16QAM	1	0.00	24.06	24.11	24.12	33.00	Pass
			2.00	23.69	23.89	23.38	33.00	Pass
			5.00	23.51	23.72	23.21	33.00	Pass
		3	0.00	23.58	23.67	23.42	33.00	Pass
			1.00	23.62	23.65	23.44	33.00	Pass
			3.00	23.58	23.66	23.42	33.00	Pass
		6	0.00	23.70	23.49	23.50	33.00	Pass
Bandwidth	Modulation n	RB size	RB offset	Channel	Channel	Channel		
				18615	18900	19185	Limit (dBm)	Result
3MHz	QPSK	1	0.00	23.47	23.33	23.36	33.00	Pass
			8.00	23.44	23.60	23.73	33.00	Pass
			14.00	23.34	23.32	23.43	33.00	Pass
		8	0.00	23.41	23.42	23.45	33.00	Pass
			4.00	23.42	23.46	23.42	33.00	Pass
			7.00	23.34	23.42	23.41	33.00	Pass
		15	0.00	23.35	23.39	23.38	33.00	Pass
	16QAM	1	0.00	23.72	23.48	23.67	33.00	Pass
			8.00	23.97	23.75	23.95	33.00	Pass
			14.00	23.59	23.41	23.68	33.00	Pass
		8	0.00	23.52	23.49	23.41	33.00	Pass
			4.00	23.47	23.46	23.44	33.00	Pass
			7.00	23.46	23.47	23.41	33.00	Pass
		15	0.00	23.44	23.27	23.52	33.00	Pass



LTE Band 2 EIRP Power(dBm)								
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel		
				18625	18900	19175	Limit (dBm)	Result
5MHz	QPSK	1	0.00	23.48	23.42	23.37	33.00	Pass
			12.00	23.27	23.67	23.77	33.00	Pass
			24.00	23.41	23.31	23.38	33.00	Pass
		12	0.00	23.52	23.59	23.46	33.00	Pass
			6.00	23.57	23.59	23.45	33.00	Pass
			13.00	23.54	23.50	23.39	33.00	Pass
		25	0.00	23.56	23.54	23.43	33.00	Pass
	16QAM	1	0.00	23.82	23.63	23.46	33.00	Pass
			12.00	23.21	23.86	23.83	33.00	Pass
			24.00	23.77	23.57	23.48	33.00	Pass
		12	0.00	23.56	23.64	23.57	33.00	Pass
			6.00	23.60	23.69	23.60	33.00	Pass
			13.00	23.50	23.59	23.53	33.00	Pass
		25	0.00	23.58	23.54	23.46	33.00	Pass
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel		
				18650	18900	19150	Limit (dBm)	Result
10MHz	QPSK	1	0.00	23.44	23.44	23.30	33.00	Pass
			24.00	23.48	23.59	23.49	33.00	Pass
			49.00	23.42	23.43	23.35	33.00	Pass
		25	0.00	23.47	23.52	23.48	33.00	Pass
			12.00	23.48	23.51	23.39	33.00	Pass
			25.00	23.48	23.51	23.40	33.00	Pass
		50	0.00	23.49	23.56	23.49	33.00	Pass
	16QAM	1	0.00	23.51	23.76	23.52	33.00	Pass
			2400	23.61	23.91	23.69	33.00	Pass
			49.00	23.47	23.71	23.58	33.00	Pass



LTE Band 2 EIRP Power(dBm)								
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel		
				18675	18900	19125	Limit (dBm)	Result
15MHz	QPSK	1	0.00	23.44	23.40	23.37	33.00	Pass
			37.00	23.76	23.86	23.64	33.00	Pass
			74.00	23.35	23.26	23.34	33.00	Pass
		37	0.00	23.56	23.57	23.49	33.00	Pass
			18.00	23.55	23.56	23.49	33.00	Pass
			38.00	23.61	23.54	23.48	33.00	Pass
		75	0.00	23.56	23.58	23.51	33.00	Pass
	16QAM	1	0.00	23.70	23.47	23.28	33.00	Pass
			38.00	23.98	23.85	23.58	33.00	Pass
			74.00	23.63	23.34	23.30	33.00	Pass
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel		
				18700	18900	19100	Limit (dBm)	Result
20MHz	QPSK	1	0.00	23.94	23.21	23.48	33.00	Pass
			49.00	23.59	23.58	23.51	33.00	Pass
			99.00	23.43	23.52	23.39	33.00	Pass
		50	0.00	23.75	23.55	23.51	33.00	Pass
			25.00	23.55	23.55	23.44	33.00	Pass
			50.00	23.52	23.55	23.35	33.00	Pass
		100	0.00	23.47	23.62	23.47	33.00	Pass
	16QAM	1	0.00	23.46	23.33	23.38	33.00	Pass
			49.00	23.76	23.71	23.55	33.00	Pass
			99.00	23.46	23.22	23.26	33.00	Pass

Note: Measurement Uncertainty: ± 2.6 dB.



LTE Band 4 EIRP Power(dBm)								
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Limit (dBm)	Result
				19957	20175	20393		
1.4MHz	QPSK	1	0.00	24.07	24.05	24.16	30.00	Pass
			2.00	23.49	23.55	23.54	30.00	Pass
			5.00	23.34	23.44	23.35	30.00	Pass
		3	0.00	23.42	23.46	23.49	30.00	Pass
			2.00	23.39	23.50	23.48	30.00	Pass
			3.00	23.41	23.49	23.48	30.00	Pass
		6	0.00	23.37	23.42	23.43	30.00	Pass
	16QAM	1	0.00	24.14	24.11	24.01	30.00	Pass
			2.00	23.74	23.45	23.58	30.00	Pass
			5.00	23.61	23.32	23.41	30.00	Pass
		3	0.00	23.54	23.48	23.51	30.00	Pass
			1.00	23.59	23.51	23.54	30.00	Pass
			3.00	23.58	23.50	23.49	30.00	Pass
		6	0.00	23.43	23.56	23.63	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Limit (dBm)	Result
				19965	20175	20385		
3MHz	QPSK	1	0.00	23.38	23.48	23.39	30.00	Pass
			8.00	23.65	23.70	23.73	30.00	Pass
			14.00	23.41	23.38	23.40	30.00	Pass
		8	0.00	23.36	23.46	23.46	30.00	Pass
			4.00	23.38	23.48	23.46	30.00	Pass
			7.00	23.35	23.41	23.44	30.00	Pass
		15	0.00	23.35	23.44	23.46	30.00	Pass
	16QAM	1	0.00	23.65	23.64	23.39	30.00	Pass
			8.00	23.91	23.97	23.62	30.00	Pass
			14.00	23.63	23.64	23.47	30.00	Pass
		8	0.00	23.33	23.50	23.53	30.00	Pass
			4.00	23.37	23.52	23.52	30.00	Pass
			7.00	23.34	23.50	23.54	30.00	Pass
		15	0.00	23.44	23.37	23.37	30.00	Pass



LTE Band 4 EIRP Power(dBm)								
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Limit (dBm)	Result
				19975	20175	20375		
5MHz	QPSK	1	0.00	23.36	23.34	23.32	30.00	Pass
			12.00	23.42	23.65	23.69	30.00	Pass
			24.00	23.33	23.32	23.34	30.00	Pass
		12	0.00	23.34	23.43	23.44	30.00	Pass
			6.00	23.41	23.49	23.51	30.00	Pass
			13.00	23.38	23.41	23.40	30.00	Pass
		25	0.00	23.38	23.41	23.46	30.00	Pass
			0.00	23.41	23.69	23.48	30.00	Pass
			12.00	23.89	23.98	23.79	30.00	Pass
	16QAM	1	24.00	23.40	23.66	23.49	30.00	Pass
			0.00	23.47	23.40	23.51	30.00	Pass
			6.00	23.54	23.46	23.61	30.00	Pass
		12	13.00	23.51	23.42	23.52	30.00	Pass
			0.00	23.41	23.45	23.46	30.00	Pass
			0.00	23.40	23.44	23.38	30.00	Pass
		25	24.00	23.55	23.50	23.51	30.00	Pass
			49.00	23.43	23.34	23.39	30.00	Pass
			0.00	23.39	23.46	23.42	30.00	Pass
10MHz	QPSK	1	12.00	23.42	23.45	23.41	30.00	Pass
			25.00	23.49	23.48	23.45	30.00	Pass
			0.00	23.45	23.49	23.42	30.00	Pass
		25	0.00	23.62	23.65	23.49	30.00	Pass
			24.00	23.79	23.74	23.46	30.00	Pass
			49.00	23.65	23.60	23.44	30.00	Pass
	16QAM	1	0.00	23.40	23.44	23.38	30.00	Pass
			24.00	23.55	23.50	23.51	30.00	Pass
			49.00	23.43	23.34	23.39	30.00	Pass
		25	0.00	23.39	23.46	23.42	30.00	Pass
			12.00	23.42	23.45	23.41	30.00	Pass
			25.00	23.49	23.48	23.45	30.00	Pass
		50	0.00	23.45	23.49	23.42	30.00	Pass
			0.00	23.45	23.49	23.42	30.00	Pass
			0.00	23.45	23.49	23.42	30.00	Pass
		1	0.00	23.40	23.44	23.38	30.00	Pass
			24.00	23.55	23.50	23.51	30.00	Pass
			49.00	23.43	23.34	23.39	30.00	Pass
		25	0.00	23.39	23.46	23.42	30.00	Pass
			12.00	23.42	23.45	23.41	30.00	Pass
			25.00	23.49	23.48	23.45	30.00	Pass
		50	0.00	23.45	23.49	23.42	30.00	Pass
			0.00	23.45	23.49	23.42	30.00	Pass
			0.00	23.45	23.49	23.42	30.00	Pass
		1	0.00	23.40	23.44	23.38	30.00	Pass
			24.00	23.55	23.50	23.51	30.00	Pass
			49.00	23.43	23.34	23.39	30.00	Pass



LTE Band 4 EIRP Power(dBm)								
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Limit (dBm)	Result
				20025	20175	20325		
15MHz	QPSK	1	0.00	23.32	23.39	23.35	30.00	Pass
			38.00	23.25	23.67	23.58	30.00	Pass
			74.00	23.38	23.28	23.36	30.00	Pass
		37	0.00	23.40	23.54	23.54	30.00	Pass
			18.00	23.51	23.55	23.61	30.00	Pass
			37.00	23.53	23.50	23.54	30.00	Pass
		75	0.00	23.47	23.55	23.56	30.00	Pass
			0.00	23.36	23.68	23.44	30.00	Pass
			38.00	23.71	23.94	23.82	30.00	Pass
			74.00	23.37	23.52	23.38	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Limit (dBm)	Result
				20050	20175	20300		
20MHz	QPSK	1	0.00	23.74	23.26	23.79	30.00	Pass
			49.00	23.62	23.61	23.62	30.00	Pass
			99.00	23.23	23.21	23.24	30.00	Pass
		50	0.00	23.42	23.49	23.72	30.00	Pass
			25.00	23.53	23.50	23.52	30.00	Pass
			50.00	23.42	23.48	23.48	30.00	Pass
		100	0.00	23.42	23.49	23.49	30.00	Pass
			0.00	23.35	23.35	23.25	30.00	Pass
			49.00	23.77	23.66	23.68	30.00	Pass
			99.00	23.38	23.27	23.28	30.00	Pass

Note: Measurement Uncertainty: ± 2.6 dB.



LTE Band 12 ERP Power(dBm)								
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Limit (dBm)	Result
				23017	23095	23173		
1.4MHz	QPSK	1	0.00	19.86	19.94	19.91	34.77	Pass
			2.00	19.36	19.22	19.69	34.77	Pass
			5.00	19.17	19.36	19.55	34.77	Pass
		3	0.00	19.43	19.14	19.59	34.77	Pass
			1.00	19.41	19.21	19.54	34.77	Pass
			3.00	19.26	19.29	19.58	34.77	Pass
		6	0.00	19.43	19.27	19.75	34.77	Pass
	16QAM	1	0.00	19.93	19.97	20.00	34.77	Pass
			2.00	19.52	19.57	19.69	34.77	Pass
			5.00	19.26	19.75	19.56	34.77	Pass
		3	0.00	19.54	19.40	19.78	34.77	Pass
			1.00	19.48	19.47	19.74	34.77	Pass
			3.00	19.33	19.54	19.68	34.77	Pass
		6	0.00	19.68	19.39	19.28	34.77	Pass
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Limit (dBm)	Result
				23025	23095	23165		
3MHz	QPSK	1	0.00	19.16	19.39	19.80	34.77	Pass
			8.00	19.08	19.28	19.77	34.77	Pass
			14.00	19.35	19.19	19.32	34.77	Pass
		8	0.00	19.36	19.15	19.38	34.77	Pass
			4.00	19.23	19.32	19.82	34.77	Pass
			7.00	19.11	19.40	19.68	34.77	Pass
		15	0.00	19.26	19.27	19.80	34.77	Pass
	16QAM	1	0.00	19.69	19.80	19.16	34.77	Pass
			8.00	19.38	19.40	19.14	34.77	Pass
			14.00	19.21	19.33	19.74	34.77	Pass
		8	0.00	19.44	19.22	19.84	34.77	Pass
			4.00	19.37	19.41	19.81	34.77	Pass
			7.00	19.29	19.52	19.74	34.77	Pass
		15	0.00	19.27	19.19	19.28	34.77	Pass



LTE Band 12 ERP Power(dBm)								
Bandwidth	Modulation n	RB size	RB offset	Channel	Channel	Channel		
				23035	23095	23155	Limit (dBm)	Result
5MHz	QPSK	1	0.00	19.40	19.27	19.18	34.77	Pass
			12.00	19.19	19.35	19.18	34.77	Pass
			24.00	19.68	19.36	19.50	34.77	Pass
		12	0.00	19.22	19.23	19.26	34.77	Pass
			6.00	19.19	19.35	19.26	34.77	Pass
			13.00	19.92	19.41	19.77	34.77	Pass
		25	0.00	19.09	19.22	19.85	34.77	Pass
	16QAM	1	0.00	19.90	19.09	19.23	34.77	Pass
			12.00	19.62	19.59	19.09	34.77	Pass
			24.00	19.10	19.61	19.77	34.77	Pass
		12	0.00	19.34	19.15	19.20	34.77	Pass
			6.00	19.26	19.53	19.20	34.77	Pass
			13.00	19.20	19.53	19.18	34.77	Pass
		25	0.00	19.20	19.26	19.30	34.77	Pass
Bandwidth	Modulation n	RB size	RB offset	Channel	Channel	Channel		
				23060	23095	23130	Limit (dBm)	Result
10MHz	QPSK	1	0.00	19.61	19.70	19.12	34.77	Pass
			24.00	19.82	19.32	19.20	34.77	Pass
			49.00	19.33	19.30	19.59	34.77	Pass
		25	0.00	19.50	19.80	19.08	34.77	Pass
			12.00	19.23	19.29	19.20	34.77	Pass
			25.00	19.33	19.14	19.75	34.77	Pass
	50	0.00	19.29	19.30	19.34	34.77	Pass	
	16QAM	1	0.00	19.62	19.80	19.40	34.77	Pass
			24.00	19.10	19.45	19.52	34.77	Pass
49.00			19.62	19.10	19.20	34.77	Pass	

Note: Measurement Uncertainty: ± 2.6 dB.



5.8. Radiated Out of Band Emissions

5.8.1. Limit

According to FCC section 22.917(a), Out of band emissions. 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.

FCC section 24.238(a), Out of band emissions. 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.

FCC section 27.53 (c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;
- (6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

FCC section 27.53 (g)

For operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC section 27.53 (h)

AWS emission limits:

- (1) General protection levels. Except as otherwise specified below, for operations in the 1695–1710 MHz, 1710–1755 MHz, 1755–1780 MHz, 1915–1920 MHz, 1995–2000 MHz, 2000–2020 MHz, 2110–2155 MHz, 2155–2180 MHz, and 2180–2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.
- (2) Additional protection levels. Notwithstanding the foregoing paragraph (h)(1) of this section:
 - (i) Operations in the 2180–2200 MHz band are subject to the out-of-band emission requirements set forth in § 27.1134 for the protection of federal government operations operating in the 2200–2290 MHz band.
 - (ii) For operations in the 2000–2020 MHz band, the power of any emissions below 2000 MHz shall be attenuated below the transmitter power (P) in watts by at least $70 + 10 \log_{10}(P)$ dB.
 - (iii) For operations in the 1915–1920 MHz band, the power of any emission between 1930–1995 MHz shall be attenuated below the transmitter power (P) in watts by at least $70 + 10 \log_{10}(P)$ dB.
 - (iv) For operations in the 1995–2000 MHz band, the power of any emission between 2005–2020 MHz shall be attenuated below the transmitter power (P) in watts by at least $70 + 10 \log_{10}(P)$ dB.

FCC section 27.53 (m) (4)

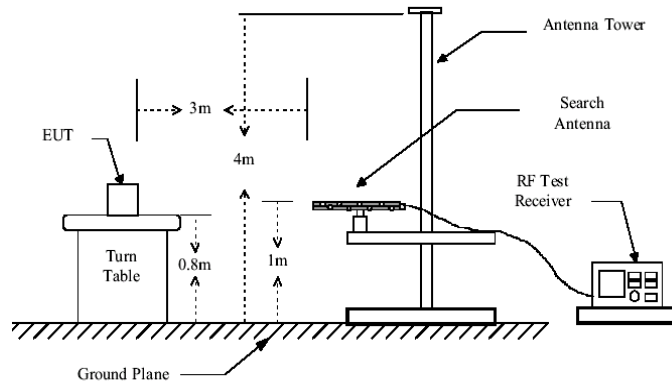
For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and



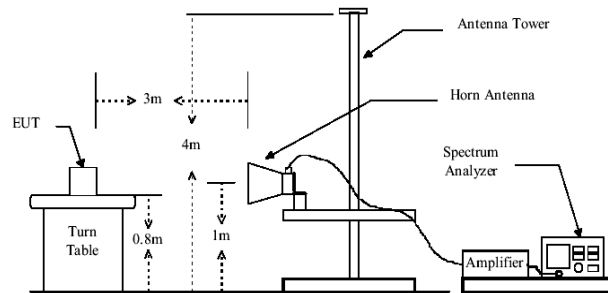
conditions as adjacent channel BRS or EBS licensees.

5.8.2. Test Setup

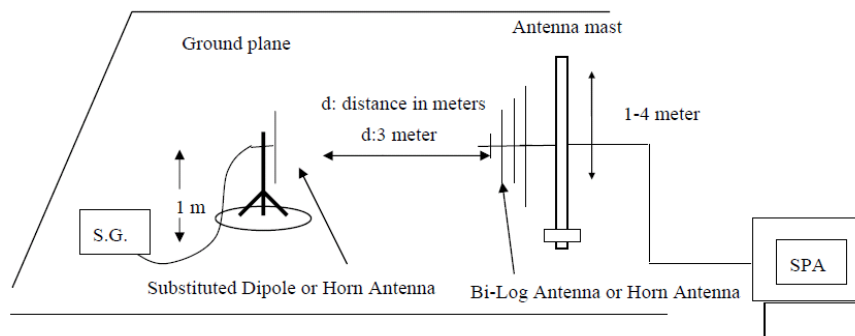
Below 1GHz



Above 1GHz



Substituted method:





5.8.3. Measurement Procedure

The EUT was placed on a non-conductive, The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. all test in Full-Anechoic Chamber.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

$EIRP (Level) = S.G. output (dBm) + Antenna Gain(dBi) - Cable Loss (dB)$

Note: Measurement Uncertainty: ± 3.6 dB.

The data show only the worst results, and the other results are very low and not shown in the report.

5.8.4. Test Result

Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
GPRS850 Lowest	87.53	Vertical	-75.55	3.35	0.38	-72.58	-13	PASS
	1648.40	Vertical	-46.25	7.76	3.75	-42.24		
	2472.60	Vertical	-47.36	9.84	4.94	-42.46		
	3296.80	Vertical	-39.78	10.21	5.32	-34.89		
	4121.00	Vertical	-43.16	11.36	6.02	-37.82		
	4945.20	Vertical	-44.70	14.52	6.68	-36.86		
GPRS 850 Middle	88.46	Vertical	-75.55	3.35	0.38	-72.58	-13	PASS
	1673.20	Vertical	-47.57	7.76	3.75	-43.56		
	2509.80	Vertical	-47.16	9.84	4.94	-42.26		
	3346.40	Vertical	-42.77	10.21	5.32	-37.88		
	4183.00	Vertical	-42.18	11.36	6.02	-36.84		
	5019.60	Vertical	-46.15	14.52	6.68	-38.31		
GPRS 850 Highest	88.65	Vertical	-75.51	3.35	0.38	-72.54	-13	PASS
	1697.60	Vertical	-47.16	7.79	3.53	-42.90		
	2546.40	Vertical	-41.62	9.88	5.02	-36.76		
	3395.20	Vertical	-37.82	10.25	5.54	-33.11		
	4244.00	Vertical	-44.67	11.38	6.16	-39.45		
	5092.80	Vertical	-47.11	14.56	6.72	-39.27		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
GPRS 1900 Lowest	87.54	Vertical	-75.12	3.35	0.38	-72.15	-13	PASS
	3700.40	Vertical	-45.98	7.76	3.75	-41.97		
	5550.60	Vertical	-47.09	9.84	4.94	-42.19		
	7400.80	Vertical	-39.55	10.21	5.32	-34.66		
	9251.00	Vertical	-42.92	11.36	6.02	-37.58		
	11101.20	Vertical	-44.45	14.52	6.68	-36.61		
GPRS 1900 Middle	88.70	Vertical	-75.12	3.35	0.38	-72.15	-13	PASS
	3760.00	Vertical	-47.30	7.76	3.75	-43.29		
	5640.00	Vertical	-46.90	9.84	4.94	-42.00		
	7520.00	Vertical	-42.53	10.21	5.32	-37.64		
	9400.00	Vertical	-41.94	11.36	6.02	-36.60		
	11280.00	Vertical	-45.88	14.52	6.68	-38.04		
GPRS 1900 Highest	88.76	Vertical	-75.08	3.35	0.38	-72.11	-13	PASS
	3819.60	Vertical	-46.90	7.79	3.53	-42.64		
	5729.40	Vertical	-41.37	9.88	5.02	-36.51		
	7639.20	Vertical	-37.59	10.25	5.54	-32.88		
	9549.00	Vertical	-44.43	11.38	6.16	-39.21		
	11458.80	Vertical	-46.86	14.56	6.72	-39.02		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 2 QPSK 1.4MHz Lowest	87.15	Vertical	-75.17	3.35	0.38	-72.20	-13	PASS
	3701.40	Vertical	-46.00	7.76	3.75	-41.99		
	5552.10	Vertical	-47.12	9.84	4.94	-42.22		
	7402.80	Vertical	-39.57	10.21	5.32	-34.68		
	9253.50	Vertical	-42.95	11.36	6.02	-37.61		
	11104.20	Vertical	-44.48	14.52	6.68	-36.64		
LTE BAND 2 QPSK 1.4MHz Middle	88.27	Vertical	-75.17	3.35	0.38	-72.20	-13	PASS
	3760.00	Vertical	-47.33	7.76	3.75	-43.32		
	5640.00	Vertical	-46.93	9.84	4.94	-42.03		
	7520.00	Vertical	-42.56	10.21	5.32	-37.67		
	9400.00	Vertical	-41.97	11.36	6.02	-36.63		
	11280.00	Vertical	-45.90	14.52	6.68	-38.06		
LTE BAND 2 QPSK 1.4MHz Highest	88.21	Vertical	-75.13	3.35	0.38	-72.16	-13	PASS
	3819.60	Vertical	-46.93	7.79	3.53	-42.67		
	5729.40	Vertical	-41.40	9.88	5.02	-36.54		
	7639.20	Vertical	-37.62	10.25	5.54	-32.91		
	9549.00	Vertical	-44.46	11.38	6.16	-39.24		
	11458.80	Vertical	-46.88	14.56	6.72	-39.04		
LTE BAND 2 QPSK 3MHz Lowest	87.33	Vertical	-75.17	3.35	0.38	-72.20	-13	PASS
	3700.40	Vertical	-46.00	7.76	3.75	-41.99		
	5550.60	Vertical	-46.80	9.84	4.94	-41.90		
	7400.80	Vertical	-39.31	10.21	5.32	-34.42		
	9251.00	Vertical	-42.66	11.36	6.02	-37.32		
	11101.20	Vertical	-44.18	14.52	6.68	-36.34		
LTE BAND 2 QPSK 3MHz Middle	88.32	Vertical	-74.75	3.35	0.38	-71.78	-13	PASS
	3760.00	Vertical	-47.07	7.76	3.75	-43.06		
	5640.00	Vertical	-46.66	9.84	4.94	-41.76		
	7520.00	Vertical	-42.32	10.21	5.32	-37.43		
	9400.00	Vertical	-41.74	11.36	6.02	-36.40		
	11280.00	Vertical	-45.65	14.52	6.68	-37.81		
LTE BAND 2 QPSK 3MHz Highest	88.45	Vertical	-74.71	3.35	0.38	-71.74	-13	PASS
	3819.60	Vertical	-46.66	7.79	3.53	-42.40		
	5729.40	Vertical	-41.17	9.88	5.02	-36.31		
	7639.20	Vertical	-37.41	10.25	5.54	-32.70		
	9549.00	Vertical	-44.21	11.38	6.16	-38.99		
	11458.80	Vertical	-46.62	14.56	6.72	-38.78		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 2 QPSK 5MHz Lowest	87.54	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	3700.40	Vertical	-45.78	7.76	3.75	-41.77		
	5550.60	Vertical	-46.88	9.84	4.94	-41.98		
	7400.80	Vertical	-39.38	10.21	5.32	-34.49		
	9251.00	Vertical	-42.73	11.36	6.02	-37.39		
	11101.20	Vertical	-44.25	14.52	6.68	-36.41		
LTE BAND 2 QPSK 5MHz Middle	88.76	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	3760.00	Vertical	-47.09	7.76	3.75	-43.08		
	5640.00	Vertical	-46.69	9.84	4.94	-41.79		
	7520.00	Vertical	-42.34	10.21	5.32	-37.45		
	9400.00	Vertical	-41.76	11.36	6.02	-36.42		
	11280.00	Vertical	-45.68	14.52	6.68	-37.84		
LTE BAND 2 QPSK 5MHz Highest	88.56	Vertical	-74.75	3.35	0.38	-71.78	-13	PASS
	3819.60	Vertical	-46.69	7.79	3.53	-42.43		
	5729.40	Vertical	-41.19	9.88	5.02	-36.33		
	7639.20	Vertical	-37.43	10.25	5.54	-32.72		
	9549.00	Vertical	-44.23	11.38	6.16	-39.01		
	11458.80	Vertical	-46.65	14.56	6.72	-38.81		
LTE BAND 2 QPSK 10MHz Lowest	87.23	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	3700.40	Vertical	-46.03	7.76	3.75	-42.02		
	5550.60	Vertical	-46.83	9.84	4.94	-41.93		
	7400.80	Vertical	-39.33	10.21	5.32	-34.44		
	9251.00	Vertical	-42.68	11.36	6.02	-37.34		
	11101.20	Vertical	-44.20	14.52	6.68	-36.36		
LTE BAND 2 QPSK 10MHz Middle	88.56	Vertical	-74.84	3.35	0.38	-71.87	-13	PASS
	3760.00	Vertical	-47.12	7.76	3.75	-43.11		
	5640.00	Vertical	-46.72	9.84	4.94	-41.82		
	7520.00	Vertical	-42.37	10.21	5.32	-37.48		
	9400.00	Vertical	-41.78	11.36	6.02	-36.44		
	11280.00	Vertical	-45.71	14.52	6.68	-37.87		
LTE BAND 2 QPSK 10MHz Highest	88.54	Vertical	-74.80	3.35	0.38	-71.83	-13	PASS
	3819.60	Vertical	-46.72	7.79	3.53	-42.46		
	5729.40	Vertical	-41.22	9.88	5.02	-36.36		
	7639.20	Vertical	-37.45	10.25	5.54	-32.74		
	9549.00	Vertical	-44.26	11.38	6.16	-39.04		
	11458.80	Vertical	-46.68	14.56	6.72	-38.84		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 2 QPSK 15MHz Lowest	87.41	Vertical	-74.61	3.35	0.38	-71.64	-13	PASS
	3700.40	Vertical	-45.71	7.76	3.75	-41.70		
	5550.60	Vertical	-46.81	9.84	4.94	-41.91		
	7400.80	Vertical	-39.32	10.21	5.32	-34.43		
	9251.00	Vertical	-42.67	11.36	6.02	-37.33		
	11101.20	Vertical	-44.18	14.52	6.68	-36.34		
LTE BAND 2 QPSK 15MHz Middle	88.14	Vertical	-74.68	3.35	0.38	-71.71	-13	PASS
	3760.00	Vertical	-47.02	7.76	3.75	-43.01		
	5640.00	Vertical	-46.62	9.84	4.94	-41.72		
	7520.00	Vertical	-42.28	10.21	5.32	-37.39		
	9400.00	Vertical	-41.70	11.36	6.02	-36.36		
	11280.00	Vertical	-45.61	14.52	6.68	-37.77		
LTE BAND 2 QPSK 15MHz Highest	88.62	Vertical	-74.64	3.35	0.38	-71.67	-13	PASS
	3819.60	Vertical	-46.62	7.79	3.53	-42.36		
	5729.40	Vertical	-41.13	9.88	5.02	-36.27		
	7639.20	Vertical	-37.37	10.25	5.54	-32.66		
	9549.00	Vertical	-44.16	11.38	6.16	-38.94		
	11458.80	Vertical	-46.58	14.56	6.72	-38.74		
LTE BAND 2 QPSK 20MHz Lowest	87.53	Vertical	-74.65	3.35	0.38	-71.68	-13	PASS
	3700.40	Vertical	-45.69	7.76	3.75	-41.68		
	5550.60	Vertical	-46.79	9.84	4.94	-41.89		
	7400.80	Vertical	-39.31	10.21	5.32	-34.42		
	9251.00	Vertical	-42.65	11.36	6.02	-37.31		
	11101.20	Vertical	-44.17	14.52	6.68	-36.33		
LTE BAND 2 QPSK 20MHz Middle	88.65	Vertical	-74.65	3.35	0.38	-71.68	-13	PASS
	3760.00	Vertical	-47.00	7.76	3.75	-42.99		
	5640.00	Vertical	-46.60	9.84	4.94	-41.70		
	7520.00	Vertical	-42.26	10.21	5.32	-37.37		
	9400.00	Vertical	-41.68	11.36	6.02	-36.34		
	11280.00	Vertical	-45.59	14.52	6.68	-37.75		
LTE BAND 2 QPSK 20MHz Highest	88.34	Vertical	-74.61	3.35	0.38	-71.64	-13	PASS
	3819.60	Vertical	-46.60	7.79	3.53	-42.34		
	5729.40	Vertical	-41.11	9.88	5.02	-36.25		
	7639.20	Vertical	-37.35	10.25	5.54	-32.64		
	9549.00	Vertical	-44.14	11.38	6.16	-38.92		
	11458.80	Vertical	-46.56	14.56	6.72	-38.72		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 4 QPSK 1.4MHz Lowest	87.28	Vertical	-74.76	3.35	0.38	-71.79	-13	PASS
	3421.40	Vertical	-45.75	7.76	3.75	-41.74		
	5132.10	Vertical	-46.86	9.84	4.94	-41.96		
	6842.80	Vertical	-39.36	10.21	5.32	-34.47		
	8553.50	Vertical	-42.71	11.36	6.02	-37.37		
	10264.20	Vertical	-44.24	14.52	6.68	-36.40		
LTE BAND 4 QPSK 1.4MHz Middle	88.21	Vertical	-74.76	3.35	0.38	-71.79	-13	PASS
	3465.00	Vertical	-47.06	7.76	3.75	-43.05		
	5197.50	Vertical	-46.67	9.84	4.94	-41.77		
	6930.00	Vertical	-42.32	10.21	5.32	-37.43		
	8662.50	Vertical	-41.73	11.36	6.02	-36.39		
	10395.00	Vertical	-45.66	14.52	6.68	-37.82		
LTE BAND 4 QPSK 1.4MHz Highest	88.43	Vertical	-74.72	3.35	0.38	-71.75	-13	PASS
	3508.60	Vertical	-46.67	7.79	3.53	-42.41		
	5262.90	Vertical	-41.17	9.88	5.02	-36.31		
	7017.20	Vertical	-37.41	10.25	5.54	-32.70		
	8771.50	Vertical	-44.22	11.38	6.16	-39.00		
	10525.80	Vertical	-46.63	14.56	6.72	-38.79		
LTE BAND 4 QPSK 3MHz Lowest	87.45	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	3423.00	Vertical	-45.77	7.76	3.75	-41.76		
	5134.50	Vertical	-46.88	9.84	4.94	-41.98		
	6846.00	Vertical	-39.37	10.21	5.32	-34.48		
	8557.50	Vertical	-42.73	11.36	6.02	-37.39		
	10269.00	Vertical	-44.25	14.52	6.68	-36.41		
LTE BAND 4 QPSK 3MHz Middle	88.21	Vertical	-74.81	3.35	0.38	-71.84	-13	PASS
	3508.60	Vertical	-47.08	7.76	3.75	-43.07		
	5262.90	Vertical	-46.69	9.84	4.94	-41.79		
	7017.20	Vertical	-42.34	10.21	5.32	-37.45		
	8771.50	Vertical	-41.75	11.36	6.02	-36.41		
	10525.80	Vertical	-45.68	14.52	6.68	-37.84		
LTE BAND 4 QPSK 3MHz Highest	88.33	Vertical	-74.75	3.35	0.38	-71.78	-13	PASS
	3507.00	Vertical	-46.69	7.79	3.53	-42.43		
	5260.50	Vertical	-41.19	9.88	5.02	-36.33		
	7014.00	Vertical	-37.43	10.25	5.54	-32.72		
	8767.50	Vertical	-44.23	11.38	6.16	-39.01		
	10521.00	Vertical	-46.65	14.56	6.72	-38.81		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 4 QPSK 5MHz Lowest	87.34	Vertical	-74.76	3.35	0.38	-71.79	-13	PASS
	3425.00	Vertical	-45.76	7.76	3.75	-41.75		
	5137.50	Vertical	-46.86	9.84	4.94	-41.96		
	6850.00	Vertical	-39.36	10.21	5.32	-34.47		
	8562.50	Vertical	-42.71	11.36	6.02	-37.37		
	10275.00	Vertical	-44.23	14.52	6.68	-36.39		
LTE BAND 4 QPSK 5MHz Middle	88.24	Vertical	-74.76	3.35	0.38	-71.79	-13	PASS
	3423.00	Vertical	-47.07	7.76	3.75	-43.06		
	5134.50	Vertical	-46.67	9.84	4.94	-41.77		
	6846.00	Vertical	-42.33	10.21	5.32	-37.44		
	8557.50	Vertical	-41.74	11.36	6.02	-36.40		
	10269.00	Vertical	-45.66	14.52	6.68	-37.82		
LTE BAND 4 QPSK 5MHz Highest	88.34	Vertical	-74.72	3.35	0.38	-71.75	-13	PASS
	3505.00	Vertical	-46.67	7.79	3.53	-42.41		
	5257.50	Vertical	-41.18	9.88	5.02	-36.32		
	7010.00	Vertical	-37.42	10.25	5.54	-32.71		
	8762.50	Vertical	-44.21	11.38	6.16	-38.99		
	10515.00	Vertical	-46.63	14.56	6.72	-38.79		
LTE BAND 4 QPSK 10MHz Lowest	87.21	Vertical	-74.70	3.35	0.38	-71.73	-13	PASS
	3430.00	Vertical	-45.72	7.76	3.75	-41.71		
	5145.00	Vertical	-46.83	9.84	4.94	-41.93		
	6860.00	Vertical	-39.34	10.21	5.32	-34.45		
	8575.00	Vertical	-42.68	11.36	6.02	-37.34		
	10290.00	Vertical	-44.20	14.52	6.68	-36.36		
LTE BAND 4 QPSK 10MHz Middle	88.41	Vertical	-74.65	3.35	0.38	-71.68	-13	PASS
	3505.00	Vertical	-47.04	7.76	3.75	-43.03		
	5257.50	Vertical	-46.64	9.84	4.94	-41.74		
	7010.00	Vertical	-42.30	10.21	5.32	-37.41		
	8762.50	Vertical	-41.71	11.36	6.02	-36.37		
	10515.00	Vertical	-45.62	14.52	6.68	-37.78		
LTE BAND 4 QPSK 10MHz Highest	88.34	Vertical	-74.66	3.35	0.38	-71.69	-13	PASS
	3500.00	Vertical	-46.64	7.79	3.53	-42.38		
	5250.00	Vertical	-41.15	9.88	5.02	-36.29		
	7000.00	Vertical	-37.39	10.25	5.54	-32.68		
	8750.00	Vertical	-44.18	11.38	6.16	-38.96		
	10500.00	Vertical	-46.60	14.56	6.72	-38.76		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 4 QPSK 15MHz Lowest	87.32	Vertical	-74.66	3.35	0.38	-71.69	-13	PASS
	3435.00	Vertical	-45.69	7.76	3.75	-41.68		
	5152.50	Vertical	-46.80	9.84	4.94	-41.90		
	6870.00	Vertical	-39.32	10.21	5.32	-34.43		
	8587.50	Vertical	-42.66	11.36	6.02	-37.32		
	10305.00	Vertical	-44.18	14.52	6.68	-36.34		
LTE BAND 4 QPSK 15MHz Middle	88.32	Vertical	-74.66	3.35	0.38	-71.69	-13	PASS
	3505.00	Vertical	-47.01	7.76	3.75	-43.00		
	5257.50	Vertical	-46.62	9.84	4.94	-41.72		
	7010.00	Vertical	-42.27	10.21	5.32	-37.38		
	8762.50	Vertical	-41.69	11.36	6.02	-36.35		
	10515.00	Vertical	-45.59	14.52	6.68	-37.75		
LTE BAND 4 QPSK 15MHz Highest	88.32	Vertical	-74.62	3.35	0.38	-71.65	-13	PASS
	3495.00	Vertical	-46.62	7.79	3.53	-42.36		
	5242.50	Vertical	-41.12	9.88	5.02	-36.26		
	6990.00	Vertical	-37.36	10.25	5.54	-32.65		
	8737.50	Vertical	-44.16	11.38	6.16	-38.94		
	10485.00	Vertical	-46.58	14.56	6.72	-38.74		
LTE BAND 4 QPSK 20MHz Lowest	87.34	Vertical	-74.70	3.35	0.38	-71.73	-13	PASS
	3440.00	Vertical	-45.72	7.76	3.75	-41.71		
	5160.00	Vertical	-46.82	9.84	4.94	-41.92		
	6880.00	Vertical	-39.33	10.21	5.32	-34.44		
	8600.00	Vertical	-42.68	11.36	6.02	-37.34		
	10320.00	Vertical	-44.20	14.52	6.68	-36.36		
LTE BAND 4 QPSK 20MHz Middle	88.45	Vertical	-74.75	3.35	0.38	-71.78	-13	PASS
	3505.00	Vertical	-47.03	7.76	3.75	-43.02		
	5257.50	Vertical	-46.64	9.84	4.94	-41.74		
	7010.00	Vertical	-42.29	10.21	5.32	-37.40		
	8762.50	Vertical	-41.71	11.36	6.02	-36.37		
	10515.00	Vertical	-45.62	14.52	6.68	-37.78		
LTE BAND 4 QPSK 20MHz Highest	88.56	Vertical	-74.66	3.35	0.38	-71.69	-13	PASS
	3490.00	Vertical	-46.64	7.79	3.53	-42.38		
	5235.00	Vertical	-41.14	9.88	5.02	-36.28		
	6980.00	Vertical	-37.38	10.25	5.54	-32.67		
	8725.00	Vertical	-44.18	11.38	6.16	-38.96		
	10470.00	Vertical	-46.60	14.56	6.72	-38.76		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 12 QPSK 1.4MHz Lowest	87.18	Vertical	-74.60	3.35	0.38	-71.63	-13	PASS
	1398.20	Vertical	-45.65	7.76	3.75	-41.64		
	2097.30	Vertical	-46.76	9.84	4.94	-41.86		
	2796.40	Vertical	-39.28	10.21	5.32	-34.39		
	3495.50	Vertical	-42.62	11.36	6.02	-37.28		
	4194.60	Vertical	-44.14	14.52	6.68	-36.30		
LTE BAND 12 QPSK 1.4MHz Middle	88.32	Vertical	-74.60	3.35	0.38	-71.63	-13	PASS
	1415.00	Vertical	-46.98	7.76	3.75	-42.97		
	2122.50	Vertical	-46.57	9.84	4.94	-41.67		
	2830.00	Vertical	-42.24	10.21	5.32	-37.35		
	3537.50	Vertical	-41.65	11.36	6.02	-36.31		
	4245.00	Vertical	-45.55	14.52	6.68	-37.71		
LTE BAND 12 QPSK 1.4MHz Highest	88.11	Vertical	-74.56	3.35	0.38	-71.59	-13	PASS
	1430.60	Vertical	-46.57	7.79	3.53	-42.31		
	2145.90	Vertical	-41.09	9.88	5.02	-36.23		
	2861.20	Vertical	-37.33	10.25	5.54	-32.62		
	3576.50	Vertical	-44.12	11.38	6.16	-38.90		
	4291.80	Vertical	-46.53	14.56	6.72	-38.69		
LTE BAND 12 QPSK 3MHz Lowest	87.32	Vertical	-74.62	3.35	0.38	-71.65	-13	PASS
	1401.00	Vertical	-45.67	7.76	3.75	-41.66		
	2101.50	Vertical	-46.78	9.84	4.94	-41.88		
	2802.00	Vertical	-39.29	10.21	5.32	-34.40		
	3502.50	Vertical	-42.63	11.36	6.02	-37.29		
	4203.00	Vertical	-44.15	14.52	6.68	-36.31		
LTE BAND 12 QPSK 3MHz Middle	88.21	Vertical	-74.64	3.35	0.38	-71.67	-13	PASS
	1415.00	Vertical	-47.00	7.76	3.75	-42.99		
	2122.50	Vertical	-46.61	9.84	4.94	-41.71		
	2830.00	Vertical	-42.26	10.21	5.32	-37.37		
	3537.50	Vertical	-41.68	11.36	6.02	-36.34		
	4245.00	Vertical	-45.59	14.52	6.68	-37.75		
LTE BAND 12 QPSK 3MHz Highest	88.76	Vertical	-74.61	3.35	0.38	-71.64	-13	PASS
	1429.00	Vertical	-46.61	7.79	3.53	-42.35		
	2143.50	Vertical	-41.11	9.88	5.02	-36.25		
	2858.00	Vertical	-37.35	10.25	5.54	-32.64		
	3572.50	Vertical	-44.14	11.38	6.16	-38.92		
	4287.00	Vertical	-46.57	14.56	6.72	-38.73		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 12 QPSK 5MHz Lowest	87.18	Vertical	-74.77	3.35	0.38	-71.80	-13	PASS
	1403.00	Vertical	-45.76	7.76	3.75	-41.75		
	2104.50	Vertical	-46.87	9.84	4.94	-41.97		
	2806.00	Vertical	-39.37	10.21	5.32	-34.48		
	3507.50	Vertical	-42.72	11.36	6.02	-37.38		
	4209.00	Vertical	-44.24	14.52	6.68	-36.40		
LTE BAND 12 QPSK 5MHz Middle	88.32	Vertical	-74.77	3.35	0.38	-71.80	-13	PASS
	1415.00	Vertical	-47.09	7.76	3.75	-43.08		
	2122.50	Vertical	-46.68	9.84	4.94	-41.78		
	2830.00	Vertical	-42.34	10.21	5.32	-37.45		
	3537.50	Vertical	-41.75	11.36	6.02	-36.41		
	4245.00	Vertical	-45.65	14.52	6.68	-37.81		
LTE BAND 12 QPSK 5MHz Highest	88.11	Vertical	-74.73	3.35	0.38	-71.76	-13	PASS
	1427.00	Vertical	-46.68	7.79	3.53	-42.42		
	2140.50	Vertical	-41.18	9.88	5.02	-36.32		
	2854.00	Vertical	-37.42	10.25	5.54	-32.71		
	3567.50	Vertical	-44.22	11.38	6.16	-39.00		
	4281.00	Vertical	-46.64	14.56	6.72	-38.80		
LTE BAND 12 QPSK 10MHz Lowest	87.32	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	1408.00	Vertical	-45.78	7.76	3.75	-41.77		
	2112.00	Vertical	-46.89	9.84	4.94	-41.99		
	2816.00	Vertical	-39.38	10.21	5.32	-34.49		
	3520.00	Vertical	-42.73	11.36	6.02	-37.39		
	4224.00	Vertical	-44.25	14.52	6.68	-36.41		
LTE BAND 12 QPSK 10MHz Middle	88.21	Vertical	-74.81	3.35	0.38	-71.84	-13	PASS
	1415.00	Vertical	-47.11	7.76	3.75	-43.10		
	2122.50	Vertical	-46.72	9.84	4.94	-41.82		
	2830.00	Vertical	-42.36	10.21	5.32	-37.47		
	3537.50	Vertical	-41.78	11.36	6.02	-36.44		
	4245.00	Vertical	-45.69	14.52	6.68	-37.85		
LTE BAND 12 QPSK 10MHz Highest	88.76	Vertical	-74.78	3.35	0.38	-71.81	-13	PASS
	1422.00	Vertical	-46.72	7.79	3.53	-42.46		
	2133.00	Vertical	-41.20	9.88	5.02	-36.34		
	2844.00	Vertical	-37.44	10.25	5.54	-32.73		
	3555.00	Vertical	-44.24	11.38	6.16	-39.02		
	4266.00	Vertical	-46.68	14.56	6.72	-38.84		



6. PHOTOGRAPHS OF TEST SET-UP

Reference to the appendix I for details.

7. PHOTOGRAPHS OF THE EUT

Reference to the appendix II for details.

***** END OF REPORT *****