



FCC Test Report

FCC ID: 2BAWE-MT2V

Applicant: Noran International Technology .,Co LTD
Address: Room 508, Building M10, Maqueling Industrial Zone, Nanshan District, Shenzhen, Guangdong, China
Manufacturer: Noran International Technology .,Co LTD
Address: Room 508, Building M10, Maqueling Industrial Zone, Nanshan District, Shenzhen, Guangdong, China
EUT: Car tracker anti-theft
Trade Mark: N/A
Model Number: MT2V
Date of Receipt: Dec. 09, 2023
Test Date: Dec. 09, 2023 - Jan. 17, 2024
Date of Report: Jan. 17, 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-20231228039E

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.

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**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 66)	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 66)	PASS
Conducted Out of Band Emissions	2.1051,2.1057 22.917 (band 5) 24.238(band 2) 27.53(h) (band 4, band 66)	PASS
Band Edge	2.1051,2.1057 22.917 (band 5) 24.238(band 2) 27.53(h) (band 4, band 66)	PASS
Transmitter Radiated Power (EIPR/ERP)	2.1046 24.232 (band 2) 22.913 (band 5) 27.50(d) (band 4, band 66)	PASS
Radiated Out of Band Emissions	2.1051,2.1057 22.917 (band 5) 24.238(band 2) 27.53(h) (band 4, band 66)	PASS

**2. GENERAL PRODUCT INFORMATION****2.1. Description of Device (EUT)**

Product Name:	Car tracker anti-theft
Trademark	N/A
Model No.:	MT2V
Test Model:	MT2V
Model Difference	N/A
Operation Frequency:	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 5: Tx: 824.00 - 849.00MHz; Rx: 869.00 - 894.00MHz LTE Band 66: Tx: 1710.00 - 1780.00MHz; Rx: 2110.00 - 2200.00MHz
Modulation technology:	LTE Mode with QPSK,16QAM
Antenna Type:	External Antenna
Antenna gain:	LTE Band 2: -2.93dBi, LTE Band 4: -4.84dBi, LTE Band 5: -2.91dBi, LTE Band 66: -4.84dBi
Power supply:	DC 12-24V from battery
LTE Category	4
Hardware Version	HV10
Software Version	SV10

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
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 Band 5	Bandwidth:(MHz)1.4/3/5/10MHz Modulation: QPSK/16QAM RB:1/50%/100%	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%
LTE Band66	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%

Test Channel(MHz)			
Band	Low	Middle	High
LTE Band 2	1850.7	1880	1909.3
LTE Band 4	1710.7	1732.5	1754.3
LTE Band 5	824.7	836.5	848.3
LTE Band 66	1710.7	1745.0	1779.0

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

2: we pretest all voltage, only the DC 24V was worst mode, and the data show in the report.

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	Bandwidth	$\pm 0.2\text{MHz}$
9	Frequency Stability	$\pm 0.02\text{MHz}$



3.3. List of Test and Measurement Instruments

3.3.1. For radiated test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Nov. 04, 2023	Nov. 03, 2024
Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 04, 2023	Nov. 03, 2024
Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 04, 2023	Nov. 03, 2024
Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 04, 2023	Nov. 03, 2024
Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 04, 2023	Nov. 03, 2024
Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 04, 2023	Nov. 03, 2024
Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 04, 2023	Nov. 03, 2024
Amplifier(18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 04, 2023	Nov. 03, 2024
Loop Antenna(9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 04, 2023	Nov. 03, 2024
RF cables1 (9kHz-1GHz)	ChengYu	966	004	Nov. 04, 2023	Nov. 03, 2024
RF cables2 (1GHz-40GHz)	ChengYu	966	003	Nov. 04, 2023	Nov. 03, 2024
Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 04, 2023	Nov. 03, 2024
Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 04, 2023	Nov. 03, 2024
Signal Analyzer	Agilent	N9020A	MY55370280	Nov. 04, 2023	Nov. 03, 2024
Test Receiver	R&S	ESU 40	100376	Nov. 04, 2023	Nov. 03, 2024
D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 04, 2023	Nov. 03, 2024
Signal Amplifier	DAZE	ZN3380B	11235	Nov. 04, 2023	Nov. 03, 2024
High Pass filter	KANGMAI	WHKX1.0/1.5G-10SS	40	Nov. 04, 2023	Nov. 03, 2024
Filter	COM-MW	ZBSF-C836.5-25-X	BCTC042	Nov. 04, 2023	Nov. 03, 2024
Filter	COM-MW	ZBSF-C1747.5-75-X2	BCTC045	Nov. 04, 2023	Nov. 03, 2024
Filter	COM-MW	ZBSF-C1880-60-X2	BCTC047	Nov. 04, 2023	Nov. 03, 2024
Splitter	Agilent	11435B	1125162	Nov. 04, 2023	Nov. 03, 2024
RF CONDUCTED TEST					
System Simulator	Agilent	E5515C	GB43130252	Nov. 04, 2023	Nov. 03, 2024
Spectrum Analyzer	Agilent	N9020A	MY45108040	Nov. 04, 2023	Nov. 03, 2024
DC Power Supply	LongWei	PS-305D	010965682	Nov. 04, 2023	Nov. 03, 2024
Constant temperature and humidity box	GF	GTH-800-40-2P	MAA9906-012	Nov. 04, 2023	Nov. 03, 2024
Universal radio communication tester	R&S	CMW500	115295	Nov. 04, 2023	Nov. 03, 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						
Band	LTE Band 2			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	18607/1850.7	18900/1880	19193/1909.3
1.4MHz	QPSK	1	0	18.21	18.22	18.97
		1	2	18.14	18.24	18.14
		1	5	18.36	18.05	18.04
		6	0	18.08	18.36	18.55
	16QAM	1	0	17.28	17.44	17.05
		1	2	17.22	17.08	17.28
		1	5	17.35	17.14	17.14
		6	0	17.17	17.36	17.36
Bandwidth	Modulation	RB size	RB offset	18615/1851.5	18900/1880	19185/1908.5
3MHz	QPSK	1	0	18.78	18.97	18.95
		1	7	18.36	18.14	18.24
		1	14	18.25	18.17	18.38
		15	0	18.33	18.39	18.25
	16QAM	1	0	17.68	17.98	17.85
		1	7	17.54	17.67	16.58
		1	14	17.36	16.56	16.63
		15	0	17.27	16.44	16.48
Bandwidth	Modulation	RB size	RB offset	18625/1852.5	18900/1880	19175/1907.5
5MHz	QPSK	1	0	18.80	18.08	18.04
		1	13	18.36	18.37	18.15
		1	24	18.52	18.54	18.25
		25	0	18.32	18.39	18.02
	16QAM	1	0	17.79	17.12	16.04
		1	13	17.52	17.04	17.33
		1	24	17.34	17.38	17.47
		25	0	17.55	17.17	16.69



Average Conducted Power						
Band	LTE Band 2			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	18650/1855	18900/1880	19150/1905
10MHz	QPSK	1	0	18.42	18.59	18.79
		1	25	18.63	18.76	18.86
		1	49	18.56	18.65	18.71
		50	0	18.58	18.67	18.72
	16QAM	1	0	17.65	17.64	17.03
		1	25	17.83	17.82	17.16
		1	49	17.76	17.74	17.93
		50	0	17.62	17.73	17.77
Bandwidth	Modulation	RB size	RB offset	18675/1857.5	18900/1880	19125/1902.5
15MHz	QPSK	1	0	18.04	18.32	18.15
		1	38	18.23	18.24	18.24
		1	74	18.17	18.17	18.12
		75	0	18.41	18.32	18.41
	16QAM	1	0	17.15	17.14	17.33
		1	38	17.29	17.28	17.29
		1	74	17.05	17.35	17.23
		75	0	17.33	17.42	17.15
Bandwidth	Modulation	RB size	RB offset	18700/1860	18900/1880	19100/1900
20MHz	QPSK	1	0	18.23	18.36	18.35
		1	38	18.14	18.28	18.32
		1	74	18.36	18.17	18.04
		75	0	18.17	18.39	18.12
	16QAM	1	0	17.05	17.15	17.18
		1	38	17.16	17.32	17.16
		1	74	17.11	17.29	17.19
		75	0	17.23	17.22	17.59

Note: Measurement Uncertainty: ± 2.6 dB.



Average Conducted Power						
Band	LTE Band 4			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	19957/1710.7	20175/1732.5	20393/1754.3
1.4MHz	QPSK	1	0	16.15	16.2	16.28
		1	2	16.32	16.42	16.51
		1	5	16.16	16.22	16.31
		6	0	15.29	15.29	15.35
	16QAM	1	0	15.25	15.5	15.19
		1	2	15.41	15.66	15.44
		1	5	15.26	15.48	15.27
		6	0	15.29	15.14	15.32
Bandwidth	Modulation	RB size	RB offset	19965/1711.5	20175/1732.5	20385/1753.5
3MHz	QPSK	1	0	16.21	16.13	16.23
		1	7	16.44	16.47	16.64
		1	14	16.12	16.17	16.31
		15	0	15.17	15.2	15.28
	16QAM	1	0	15.38	15.27	15.6
		1	7	15.71	15.48	15.47
		1	14	15.36	15.25	15.61
		15	0	15.23	15.18	15.33
Bandwidth	Modulation	RB size	RB offset	19975/1712.5	20175/1732.5	20375/1752.5
5MHz	QPSK	1	0	16.07	16.09	16.2
		1	13	16.54	16.48	16.59
		1	24	16.07	16.08	16.26
		25	0	15.2	15.21	15.29
	16QAM	1	0	15.45	15.3	15.28
		1	13	15.84	15.7	15.75
		1	24	15.45	15.22	15.35
		25	0	15.27	15.39	15.45



Average Conducted Power						
Band	LTE Band 4			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	20000/1715	20175/1732.5	20350/1750
10MHz	QPSK	1	0	16.15	16.15	16.22
		1	25	16.23	16.27	16.34
		1	49	16.11	16.11	16.26
		50	0	15.24	15.25	15.29
	16QAM	1	0	15.42	15.28	15.55
		1	25	15.52	15.37	15.66
		1	49	15.4	15.23	15.6
		50	0	15.24	15.14	15.36
Bandwidth	Modulation	RB size	RB offset	20025/1717.5	20175/1732.5	20325/1747.5
15MHz	QPSK	1	0	16.07	16.06	16.18
		1	38	16.41	16.39	16.57
		1	74	16.04	15.99	16.21
		75	0	15.25	15.27	15.31
	16QAM	1	0	15.35	15.18	15.23
		1	38	15.56	15.54	15.58
		1	74	15.29	15.16	15.27
		75	0	15.24	15.41	15.32
Bandwidth	Modulation	RB size	RB offset	20050/1720	20175/1732.5	20300/1745
20MHz	QPSK	1	0	15.88	15.95	15.91
		1	50	16.28	16.35	16.33
		1	99	15.86	15.97	15.93
		100	0	15.21	15.18	15.3
	16QAM	1	0	15.03	15.04	15.1
		1	50	15.35	15.4	15.53
		1	99	15.32	15.04	15.17
		100	0	15.18	15.36	15.22

Note: Measurement Uncertainty: ± 2.6 dB.



Average Conducted Power						
Band	LTE Band 5			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	20407/824.7	20525/836.5	20643/848.3
1.4MHz	QPSK	1	0	16.78	16.95	16.9
		1	2	16.23	16.24	16.97
		1	5	16.8	16.84	16.87
		6	0	15.94	15.91	15.92
	16QAM	1	0	15.92	15.14	15.75
		1	2	15.41	15.22	15.86
		1	5	15.87	15.41	15.72
		6	0	15.12	15.04	15.01
Bandwidth	Modulation	RB size	RB offset	20415/825.5	20525/836.5	20635/847.5
3MHz	QPSK	1	0	16.9	16.88	16.96
		1	7	16.14	16.24	16.33
		1	14	16.83	16.84	16.94
		15	0	15.87	15.9	15.9
	16QAM	1	0	15.17	15.97	15.41
		1	7	15.13	15.33	15.36
		1	14	15.11	15.94	15.18
		15	0	14.8	14.82	14.96
Bandwidth	Modulation	RB size	RB offset	20425/826.5	20525/836.5	20625/846.5
5MHz	QPSK	1	0	16.8	16.82	16.91
		1	13	16.24	16.34	16.17
		1	24	16.82	16.81	16.86
		25	0	15.92	15.94	15.95
	16QAM	1	0	15.23	15.33	15.99
		1	13	15.36	15.14	15.47
		1	24	15.14	15.32	15.94
		25	0	14.92	14.92	14.98
Bandwidth	Modulation	RB size	RB offset	20450/829	20525/836.5	20600/844
10MHz	QPSK	1	0	16.84	16.9	16.9
		1	25	16.97	16.24	16.99
		1	49	16.82	16.92	16.86
		50	0	15.88	15.99	15.99
	16QAM	1	0	15.91	15.14	15.17
		1	25	15.32	15.36	15.39
		1	49	15.89	15.41	15.24
		50	0	14.94	15.03	15.07

Note: Measurement Uncertainty: ± 2.6 dB.



Average Conducted Power						
Band	LTE Band 66			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	131979/1710.7	132322/1745	132665/1779.3
1.4MHz	QPSK	1	0	21.76	21.95	21.97
		1	2	21.96	22.11	22.11
		1	5	21.80	21.96	21.96
		6	0	21.23	21.00	21.01
	16QAM	1	0	20.86	21.30	20.80
		1	2	21.09	21.35	21.00
		1	5	20.90	21.31	20.83
		6	0	20.10	20.08	20.10
Bandwidth	Modulation	RB size	RB offset	131987/1711.5	132322/1745	132657/1778.5
3MHz	QPSK	1	0	21.81	21.89	21.93
		1	7	22.16	22.23	22.20
		1	14	21.80	21.88	21.97
		15	0	21.25	21.36	21.27
	16QAM	1	0	21.13	21.02	21.25
		1	7	21.38	21.34	21.53
		1	14	21.11	21.05	21.19
		15	0	20.21	20.36	20.14
Bandwidth	Modulation	RB size	RB offset	131997/1712.5	132322/1745	132647/1777.5
5MHz	QPSK	1	0	21.75	21.84	21.91
		1	12	22.16	22.18	22.38
		1	24	21.83	21.84	21.90
		25	0	21.25	21.34	21.35
	16QAM	1	0	21.16	21.07	20.99
		1	12	21.71	21.46	21.38
		1	24	21.19	21.06	20.98
		25	0	20.35	20.33	20.14



Average Conducted Power						
Band	LTE Band 66			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	132022/1715	132322/1745	132622/1775
10MHz	QPSK	1	0	21.81	21.90	21.99
		1	24	22.00	22.02	22.10
		1	49	21.88	21.92	21.97
		50	0	21.00	21.06	21.03
	16QAM	1	0	21.08	21.01	21.29
		1	24	21.26	21.17	21.35
		1	49	21.17	21.06	21.23
		50	0	20.02	20.06	20.06
Bandwidth	Modulation	RB size	RB offset	132047/1717.5	132322/1745	132597/1772.5
15MHz	QPSK	1	0	21.78	21.84	22.05
		1	38	22.20	22.22	22.23
		1	74	21.79	21.83	21.92
		75	0	21.01	21.10	21.13
	16QAM	1	0	21.04	20.94	21.05
		1	38	21.47	21.32	21.25
		1	74	21.02	20.96	20.89
		75	0	20.03	20.05	20.09
Bandwidth	Modulation	RB size	RB offset	132072/1720	132322/1745	132572/1770
20MHz	QPSK	1	0	21.63	21.63	21.74
		1	50	22.03	22.08	22.09
		1	99	21.66	21.70	21.66
		100	0	21.32	21.00	21.02
	16QAM	1	0	20.84	20.79	20.86
		1	50	21.25	21.21	21.15
		1	99	20.85	20.83	20.74
		100	0	20.15	20.06	20.00

Note: Measurement Uncertainty: $\pm 2.6\text{dB}$.



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.

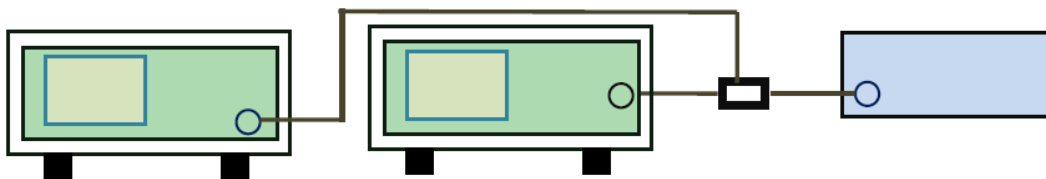
FCC Part 22.913 (d)

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

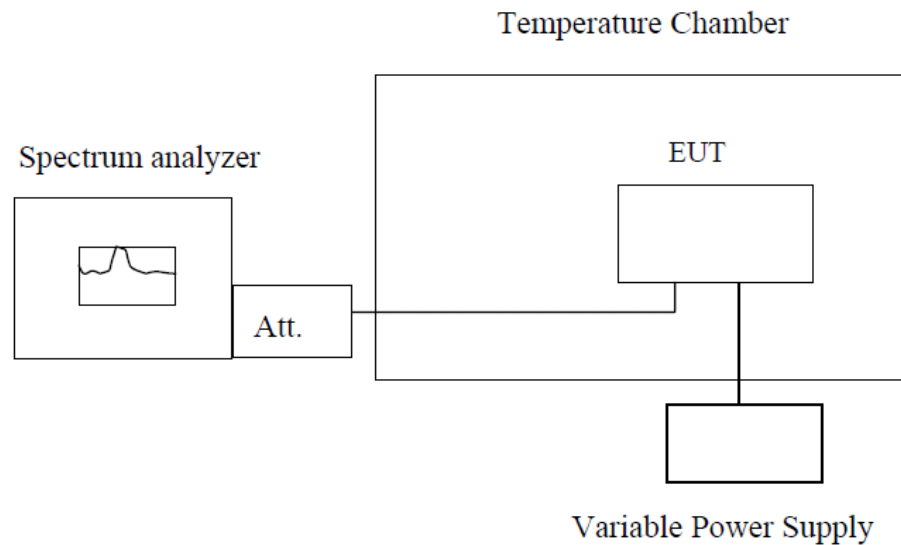
FCC section 27.54: The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

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 3.8VDC, 4.37VDC and 3.23VDC

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	
LTE Band 2 Bandwidth 20MHz QPSK Middle channel 1880MHz	12	-40	64	0.0340	±1	PASS
	12	-30	35	0.0186		
	12	-20	78	0.0415		
	12	-10	66	0.0351		
	12	0	65	0.0346		
	12	10	46	0.0245		
	12	20	67	0.0356		
	12	30	98	0.0521		
	12	40	73	0.0388		
	12	50	67	0.0356		
	12	60	54	0.0287		
	12	70	56	0.0298		
	12	80	79	0.0420		
	13.2	25	54	0.0287		
	12	25	66	0.0351		
	10.8	25	178	0.0947		
LTE Band 2 Bandwidth 20MHz 16QAM Middle channel 1880MHz	12	-40	67	0.0356	±1	PASS
	12	-30	83	0.0441		
	12	-20	72	0.0383		
	12	-10	73	0.0388		
	12	0	43	0.0229		
	12	10	67	0.0356		
	12	20	82	0.0436		
	12	30	36	0.0191		
	12	40	55	0.0293		
	12	50	39	0.0207		
	12	60	54	0.0287		
	12	70	53	0.0282		
	12	80	21	0.0112		
	13.2	25	67	0.0356		
	12	25	21	0.0112		
	10.8	25	98	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	12	-40	65	0.0375	±1	PASS
	12	-30	56	0.0323		
	12	-20	34	0.0196		
	12	-10	52	0.0300		
	12	0	42	0.0242		
	12	10	23	0.0133		
	12	20	63	0.0364		
	12	30	34	0.0196		
	12	40	21	0.0121		
	12	50	64	0.0369		
	12	60	25	0.0144		
	12	70	45	0.0260		
	12	80	65	0.0375		
	13.2	25	67	0.0387		
	12	25	53	0.0306		
	10.8	25	24	0.0139		
LTE Band 4 Bandwidth 15MHz 16QAM Middle channel 1732.5MHz	12	-40	65	0.0375	±1	PASS
	12	-30	64	0.0369		
	12	-20	52	0.0300		
	12	-10	87	0.0502		
	12	0	34	0.0196		
	12	10	63	0.0364		
	12	20	78	0.0450		
	12	30	57	0.0329		
	12	40	42	0.0242		
	12	50	87	0.0502		
	12	60	24	0.0139		
	12	70	86	0.0496		
	12	80	46	0.0266		
	13.2	25	86	0.0496		
	12	25	33	0.0190		
	10.8	25	56	0.0323		

Note: Measurement Uncertainty: ±20Hz.



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit	
LTE Band 5 Bandwidth 10MHz QPSK Middle channel 836.5MHz	12	-40	65	0.0777	±2.5	PASS
	12	-30	43	0.0514		
	12	-20	45	0.0538		
	12	-10	32	0.0383		
	12	0	67	0.0801		
	12	10	75	0.0897		
	12	20	35	0.0418		
	12	30	68	0.0813		
	12	40	32	0.0383		
	12	50	56	0.0669		
	12	60	78	0.0932		
	12	70	46	0.0550		
	12	80	87	0.1040		
	13.2	25	35	0.0418		
	12	25	87	0.1040		
	10.8	25	43	0.0514		
LTE Band 5 Bandwidth 10MHz 16QAM Middle channel 836.5MHz	12	-40	34	0.0406	±2.5	PASS
	12	-30	65	0.0777		
	12	-20	67	0.0801		
	12	-10	67	0.0801		
	12	0	87	0.1040		
	12	10	54	0.0646		
	12	20	21	0.0251		
	12	30	67	0.0801		
	12	40	43	0.0514		
	12	50	89	0.1064		
	12	60	54	0.0646		
	12	70	78	0.0932		
	12	80	45	0.0538		
	13.2	25	89	0.1064		
	12	25	46	0.0550		
	10.8	25	89	0.1064		

Note: Measurement Uncertainty: ±20Hz.



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit	
LTE Band 66 Bandwidth 20MHz QPSK Middle channel 1745MHz	12	-40	67	0.0384	±1	PASS
	12	-30	54	0.0309		
	12	-20	57	0.0327		
	12	-10	75	0.0430		
	12	0	78	0.0447		
	12	10	43	0.0246		
	12	20	75	0.0430		
	12	30	34	0.0195		
	12	40	75	0.0430		
	12	50	67	0.0384		
	12	60	66	0.0378		
	12	70	76	0.0436		
	12	80	54	0.0309		
	13.2	25	46	0.0264		
	12	25	68	0.0390		
	10.8	25	65	0.0372		
LTE Band 66 Bandwidth 20MHz 16QAM Middle channel 1745MHz	12	-40	43	0.0246	±1	PASS
	12	-30	78	0.0447		
	12	-20	78	0.0447		
	12	-10	97	0.0556		
	12	0	33	0.0189		
	12	10	65	0.0372		
	12	20	66	0.0378		
	12	30	76	0.0436		
	12	40	47	0.0269		
	12	50	87	0.0499		
	12	60	54	0.0309		
	12	70	65	0.0372		
	12	80	34	0.0195		
	13.2	25	54	0.0309		
	12	25	65	0.0372		
	10.8	25	51	0.0292		

Note: Measurement Uncertainty: ±20Hz.



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:

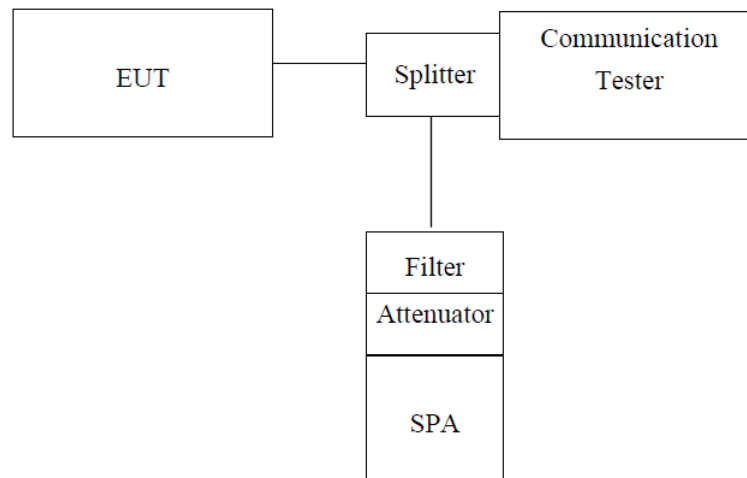
- (1) General protection levels. Except as otherwise specified below, for operations in the 1695–1710 MHz, 1710–1755 MHz, 1755–1780 MHz, 1915–1920 MHz, 1995–2000 MHz, 2000–2020 MHz, 2110–2155 MHz, 2155–2180 MHz, and 2180–2200 bands, the power of any emission outside a licensee's frequency block shall 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:

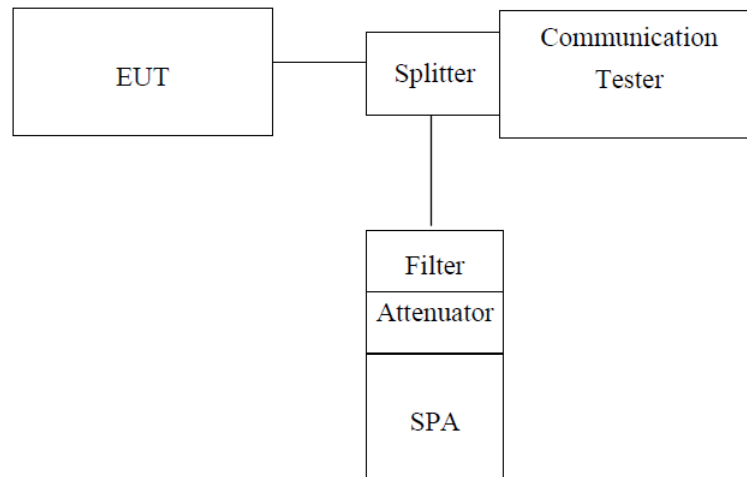
- (1) General protection levels. Except as otherwise specified below, for operations in the 1695–1710 MHz, 1710–1755 MHz, 1755–1780 MHz, 1915–1920 MHz, 1995–2000 MHz, 2000–2020 MHz, 2110–2155 MHz, 2155–2180 MHz, and 2180–2200 bands, the power of any emission outside a licensee's frequency block shall 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.



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.

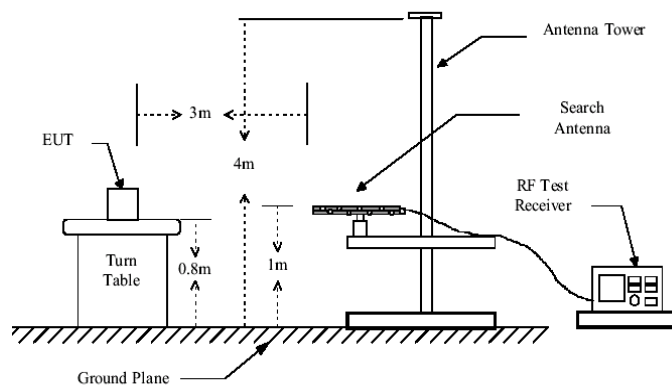
FCC part 27.50 (c) (10), Portable stations (hand-held devices) in the 600 MHz uplink band and the 698–746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

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.

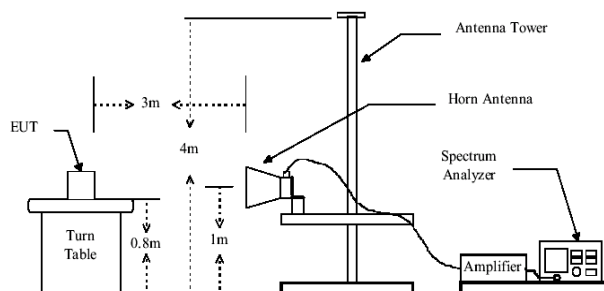
FCC part 27.50(h) (2), for BRS and EBS: Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

5.7.2. Test Setup

Below 1GHz

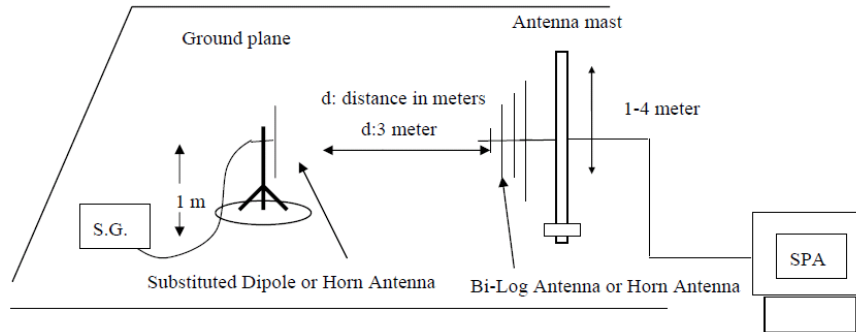


Above 1GHz





Substituted method:



5.7.3. Measurement Procedure

The EUT was placed on a non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. All tests were conducted in a Full-Anechoic Chamber.

During the measurement, the EUT was in communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.

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

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

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

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

5.7.4. Test Result

Pass, the table and plot please see annex.



EUT mode	Channel	Antenna Pol.	S.G. output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Result
LTE BAND 2 1.4MHz QPSK	Lowest	V	5.54	19.35	2.54	22.35	33.00	Pass
		H	5.62	19.35	2.54	22.43		
	Middle	V	5.87	19.51	2.62	22.76	33.00	Pass
		H	5.32	19.51	2.62	22.21		
	Highest	V	5.74	19.96	2.69	23.01	33.00	Pass
		H	5.70	19.96	2.69	22.97		
LTE BAND 2 3MHz QPSK	Lowest	V	5.43	19.35	2.54	22.24	33.00	Pass
		H	5.52	19.35	2.54	22.33		
	Middle	V	5.35	19.51	2.62	22.24	33.00	Pass
		H	5.21	19.51	2.62	22.10		
	Highest	V	5.62	19.96	2.69	22.89	33.00	Pass
		H	5.61	19.96	2.69	22.88		
LTE BAND 2 5MHz QPSK	Lowest	V	5.62	19.35	2.54	22.43	33.00	Pass
		H	5.71	19.35	2.54	22.52		
	Middle	V	5.55	19.51	2.62	22.44	33.00	Pass
		H	5.40	19.51	2.62	22.29		
	Highest	V	5.82	19.96	2.69	23.09	33.00	Pass
		H	5.79	19.96	2.69	23.06		
LTE BAND 2 10MHz QPSK	Lowest	V	5.58	19.35	2.54	22.39	33.00	Pass
		H	5.85	19.35	2.54	22.66		
	Middle	V	5.86	19.51	2.62	22.75	33.00	Pass
		H	5.38	19.51	2.62	22.27		
	Highest	V	5.74	19.96	2.69	23.01	33.00	Pass
		H	5.63	19.96	2.69	22.90		
LTE BAND 2 15MHz QPSK	Lowest	V	5.48	19.35	2.54	22.29	33.00	Pass
		H	5.59	19.35	2.54	22.40		
	Middle	V	5.25	19.51	2.62	22.14	33.00	Pass
		H	5.29	19.51	2.62	22.18		
	Highest	V	5.67	19.96	2.69	22.94	33.00	Pass
		H	5.63	19.96	2.69	22.90		
LTE BAND 2 20MHz QPSK	Lowest	V	5.85	19.35	2.54	22.66	33.00	Pass
		H	5.79	19.35	2.54	22.60		
	Middle	V	5.58	19.51	2.62	22.47	33.00	Pass
		H	5.39	19.51	2.62	22.28		
	Highest	V	5.54	19.96	2.69	22.81	33.00	Pass
		H	5.78	19.96	2.69	23.05		



EUT mode	Channel	Antenna Pol.	S.G. output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Result
LTE BAND 2 1.4MHz 16QAM	Lowest	V	5.45	19.35	2.54	22.26	33.00	Pass
		H	5.53	19.35	2.54	22.34		
	Middle	V	6.37	19.51	2.62	23.26	33.00	Pass
		H	5.24	19.51	2.62	22.13		
	Highest	V	5.65	19.96	2.69	22.92	33.00	Pass
		H	5.61	19.96	2.69	22.88		
LTE BAND 2 3MHz 16QAM	Lowest	V	5.35	19.35	2.54	22.16	33.00	Pass
		H	5.44	19.35	2.54	22.25		
	Middle	V	6.24	19.51	2.62	23.13	33.00	Pass
		H	5.13	19.51	2.62	22.02		
	Highest	V	5.53	19.96	2.69	22.80	33.00	Pass
		H	5.52	19.96	2.69	22.79		
LTE BAND 2 5MHz 16QAM	Lowest	V	5.53	19.35	2.54	22.34	33.00	Pass
		H	5.62	19.35	2.54	22.43		
	Middle	V	6.46	19.51	2.62	23.35	33.00	Pass
		H	6.31	19.51	2.62	23.20		
	Highest	V	5.73	19.96	2.69	23.00	33.00	Pass
		H	5.70	19.96	2.69	22.97		
LTE BAND 2 10MHz 16QAM	Lowest	V	5.03	19.33	2.52	21.84	33.00	Pass
		H	5.19	19.33	2.52	22.00		
	Middle	V	5.44	19.50	2.60	22.34	33.00	Pass
		H	5.28	19.50	2.60	22.18		
	Highest	V	5.71	19.94	2.71	22.94	33.00	Pass
		H	5.64	19.94	2.71	22.87		
LTE BAND 2 15MHz 16QAM	Lowest	V	5.03	19.33	2.52	21.84	33.00	Pass
		H	5.19	19.33	2.52	22.00		
	Middle	V	5.44	19.50	2.60	22.34	33.00	Pass
		H	5.28	19.50	2.60	22.18		
	Highest	V	5.71	19.94	2.71	22.94	33.00	Pass
		H	5.64	19.94	2.71	22.87		
LTE BAND 2 20MHz 16QAM	Lowest	V	5.12	19.33	2.52	21.93	33.00	Pass
		H	5.28	19.33	2.52	22.09		
	Middle	V	5.53	19.50	2.60	22.43	33.00	Pass
		H	5.37	19.50	2.60	22.27		
	Highest	V	5.81	19.94	2.71	23.04	33.00	Pass
		H	5.74	19.94	2.71	22.97		



EUT mode	Channel	Antenna Pol.	S.G. output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Result
LTE BAND 4 1.4MHz QPSK	Lowest	V	5.50	19.35	2.54	22.31	30.00	Pass
		H	5.56	19.35	2.54	22.37		
	Middle	V	6.40	19.51	2.62	23.29	30.00	Pass
		H	5.26	19.51	2.62	22.15		
	Highest	V	5.68	19.96	2.69	22.95	30.00	Pass
		H	5.64	19.96	2.69	22.91		
LTE BAND 4 3MHz QPSK	Lowest	V	5.37	19.35	2.54	22.18	30.00	Pass
		H	5.48	19.35	2.54	22.29		
	Middle	V	5.29	19.51	2.62	22.18	30.00	Pass
		H	5.15	19.51	2.62	22.04		
	Highest	V	5.56	19.96	2.69	22.83	30.00	Pass
		H	5.55	19.96	2.69	22.82		
LTE BAND 4 5MHz QPSK	Lowest	V	5.57	19.35	2.54	22.38	30.00	Pass
		H	5.65	19.35	2.54	22.46		
	Middle	V	5.50	19.51	2.62	22.39	30.00	Pass
		H	5.34	19.51	2.62	22.23		
	Highest	V	5.76	19.96	2.69	23.03	30.00	Pass
		H	5.73	19.96	2.69	23.00		
LTE BAND 4 10MHz QPSK	Lowest	V	5.06	19.33	2.52	21.87	30.00	Pass
		H	5.20	19.33	2.52	22.01		
	Middle	V	5.47	19.50	2.60	22.37	30.00	Pass
		H	5.29	19.50	2.60	22.19		
	Highest	V	5.74	19.94	2.71	22.97	30.00	Pass
		H	5.67	19.94	2.71	22.90		
LTE BAND 4 15MHz QPSK	Lowest	V	5.06	19.33	2.52	21.87	30.00	Pass
		H	5.20	19.33	2.52	22.01		
	Middle	V	5.47	19.50	2.60	22.37	30.00	Pass
		H	5.29	19.50	2.60	22.19		
	Highest	V	5.74	19.94	2.71	22.97	30.00	Pass
		H	5.67	19.94	2.71	22.90		
LTE BAND 4 20MHz QPSK	Lowest	V	5.06	19.33	2.52	21.87	30.00	Pass
		H	5.20	19.33	2.52	22.01		
	Middle	V	5.47	19.50	2.60	22.37	30.00	Pass
		H	5.29	19.50	2.60	22.19		
	Highest	V	5.74	19.94	2.71	22.97	30.00	Pass
		H	5.67	19.94	2.71	22.90		



EUT mode	Channel	Antenna Pol.	S.G. output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Result
LTE BAND 4 1.4MHz 16QAM	Lowest	V	5.56	19.35	2.54	22.37	30.00	Pass
		H	5.64	19.35	2.54	22.45		
	Middle	V	6.48	19.51	2.62	23.37	30.00	Pass
		H	5.32	19.51	2.62	22.21		
	Highest	V	5.76	19.96	2.69	23.03	30.00	Pass
		H	5.72	19.96	2.69	22.99		
LTE BAND 4 3MHz 16QAM	Lowest	V	5.44	19.35	2.54	22.25	30.00	Pass
		H	5.54	19.35	2.54	22.35		
	Middle	V	5.35	19.51	2.62	22.24	30.00	Pass
		H	5.21	19.51	2.62	22.10		
	Highest	V	5.64	19.96	2.69	22.91	30.00	Pass
		H	5.63	19.96	2.69	22.90		
LTE BAND 4 5MHz 16QAM	Lowest	V	5.54	19.35	2.54	22.35	30.00	Pass
		H	5.63	19.35	2.54	22.44		
	Middle	V	5.47	19.51	2.62	22.36	30.00	Pass
		H	5.31	19.51	2.62	22.20		
	Highest	V	5.74	19.96	2.69	23.01	30.00	Pass
		H	5.71	19.96	2.69	22.98		
LTE BAND 4 10MHz 16QAM	Lowest	V	5.12	19.33	2.52	21.93	30.00	Pass
		H	5.27	19.33	2.52	22.08		
	Middle	V	5.54	19.50	2.60	22.44	30.00	Pass
		H	5.36	19.50	2.60	22.26		
	Highest	V	5.81	19.94	2.71	23.04	30.00	Pass
		H	5.75	19.94	2.71	22.98		
LTE BAND 4 15MHz 16QAM	Lowest	V	5.12	19.33	2.52	21.93	30.00	Pass
		H	5.27	19.33	2.52	22.08		
	Middle	V	5.54	19.50	2.60	22.44	30.00	Pass
		H	5.36	19.50	2.60	22.26		
	Highest	V	5.81	19.94	2.71	23.04	30.00	Pass
		H	5.75	19.94	2.71	22.98		
LTE BAND 4 20MHz 16QAM	Lowest	V	5.12	19.33	2.52	21.93	30.00	Pass
		H	5.27	19.33	2.52	22.08		
	Middle	V	5.54	19.50	2.60	22.44	30.00	Pass
		H	5.36	19.50	2.60	22.26		
	Highest	V	5.81	19.94	2.71	23.04	30.00	Pass
		H	5.75	19.94	2.71	22.98		



EUT mode	Channel	Antenna Pol.	S.G. output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)	Result
LTE BAND 5 1.4MHz QPSK	Lowest	V	6.97	15.68	1.65	18.85	38.45	Pass
		H	8.00	15.68	1.65	19.88		
	Middle	V	7.52	15.70	1.67	19.40	38.45	Pass
		H	7.41	15.70	1.67	19.29		
	Highest	V	8.18	15.70	1.71	20.02	38.45	Pass
		H	6.97	15.70	1.71	18.81		
LTE BAND 5 3MHz QPSK	Lowest	V	7.80	15.68	1.65	19.68	38.45	Pass
		H	7.85	15.68	1.65	19.73		
	Middle	V	7.36	15.70	1.67	19.24	38.45	Pass
		H	7.26	15.70	1.67	19.14		
	Highest	V	7.02	15.70	1.71	18.86	38.45	Pass
		H	7.82	15.70	1.71	19.66		
LTE BAND 5 5MHz QPSK	Lowest	V	7.89	15.68	1.65	19.77	38.45	Pass
		H	7.93	15.68	1.65	19.81		
	Middle	V	7.45	15.70	1.67	19.33	38.45	Pass
		H	7.35	15.70	1.67	19.23		
	Highest	V	7.11	15.70	1.71	18.95	38.45	Pass
		H	7.90	15.70	1.71	19.74		
LTE BAND 5 10MHz QPSK	Lowest	V	7.81	15.68	1.65	19.69	38.45	Pass
		H	7.86	15.68	1.65	19.74		
	Middle	V	7.37	15.70	1.67	19.25	38.45	Pass
		H	6.28	15.70	1.67	18.16		
	Highest	V	8.03	15.70	1.71	19.87	38.45	Pass
		H	7.83	15.70	1.71	19.67		
LTE BAND 5 1.4MHz 16QAM	Lowest	V	7.00	15.68	1.65	18.88	38.45	Pass
		H	8.03	15.68	1.65	19.91		
	Middle	V	7.55	15.70	1.67	19.43	38.45	Pass
		H	7.44	15.70	1.67	19.32		
	Highest	V	7.21	15.70	1.71	19.05	38.45	Pass
		H	7.00	15.70	1.71	18.84		
LTE BAND 5 3MHz 16QAM	Lowest	V	7.83	15.68	1.65	19.71	38.45	Pass
		H	7.88	15.68	1.65	19.76		
	Middle	V	7.39	15.70	1.67	19.27	38.45	Pass
		H	7.28	15.70	1.67	19.16		
	Highest	V	7.05	15.70	1.71	18.89	38.45	Pass
		H	7.85	15.70	1.71	19.69		
LTE BAND 5 5MHz 16QAM	Lowest	V	7.92	15.68	1.65	19.80	38.45	Pass
		H	7.97	15.68	1.65	19.85		
	Middle	V	7.48	15.70	1.67	19.36	38.45	Pass
		H	7.38	15.70	1.67	19.26		
	Highest	V	7.13	15.70	1.71	18.97	38.45	Pass
		H	7.93	15.70	1.71	19.77		
LTE BAND 5 10MHz 16QAM	Lowest	V	7.84	15.68	1.65	19.72	38.45	Pass
		H	7.89	15.68	1.65	19.77		
	Middle	V	7.40	15.70	1.67	19.28	38.45	Pass
		H	7.29	15.70	1.67	19.17		
	Highest	V	8.06	15.70	1.71	19.90	38.45	Pass
		H	7.93	15.70	1.71	19.77		



EUT mode	Channel	Antenna Pol.	S.G. output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Result
LTE BAND 66 1.4MHz QPSK	Lowest	V	4.97	19.35	2.54	21.78	30	Pass
		H	5.00	19.35	2.54	21.81		
	Middle	V	4.52	19.51	2.62	21.41	30	Pass
		H	4.41	19.51	2.62	21.30		
	Highest	V	5.18	19.96	2.69	22.45	30	Pass
		H	4.97	19.96	2.69	22.24		
LTE BAND 66 3MHz QPSK	Lowest	V	4.80	19.35	2.54	21.61	30	Pass
		H	4.85	19.35	2.54	21.66		
	Middle	V	4.36	19.51	2.62	21.25	30	Pass
		H	5.26	19.51	2.62	22.15		
	Highest	V	5.02	19.96	2.69	22.29	30	Pass
		H	4.82	19.96	2.69	22.09		
LTE BAND 66 1.4MHz 16QAM	Lowest	V	5.00	19.35	2.54	21.81	30	Pass
		H	5.03	19.35	2.54	21.84		
	Middle	V	4.55	19.51	2.62	21.44	30	Pass
		H	5.44	19.51	2.62	22.33		
	Highest	V	5.21	19.96	2.69	22.48	30	Pass
		H	5.00	19.96	2.69	22.27		
LTE BAND 66 3MHz 16QAM	Lowest	V	4.83	19.35	2.54	21.64	30	Pass
		H	4.88	19.35	2.54	21.69		
	Middle	V	4.39	19.51	2.62	21.28	30	Pass
		H	4.28	19.51	2.62	21.17		
	Highest	V	4.05	19.96	2.69	21.32	30	Pass
		H	4.85	19.96	2.69	22.12		



EUT mode	Channel	Antenna Pol.	S.G. output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)	Result
LTE BAND 66 5MHz QPSK	Lowest	V	5.58	19.35	2.54	22.39	30	Pass
		H	5.66	19.35	2.54	22.47		
	Middle	V	6.51	19.51	2.62	23.40	30	Pass
		H	5.34	19.51	2.62	22.23		
	Highest	V	5.78	19.96	2.69	23.05	30	Pass
		H	5.74	19.96	2.69	23.01		
LTE BAND 66 10MHz QPSK	Lowest	V	5.46	19.35	2.54	22.27	30	Pass
		H	5.56	19.35	2.54	22.37		
	Middle	V	5.37	19.51	2.62	22.26	30	Pass
		H	5.24	19.51	2.62	22.13		
	Highest	V	5.66	19.96	2.69	22.93	30	Pass
		H	5.65	19.96	2.69	22.92		
LTE BAND 66 15MHz QPSK	Lowest	V	5.56	19.35	2.54	22.37	30	Pass
		H	5.65	19.35	2.54	22.46		
	Middle	V	5.49	19.51	2.62	22.38	30	Pass
		H	5.33	19.51	2.62	22.22		
	Highest	V	5.76	19.96	2.69	23.03	30	Pass
		H	5.73	19.96	2.69	23.00		
LTE BAND 66 20MHz QPSK	Lowest	V	5.58	19.35	2.54	22.39	30	Pass
		H	5.66	19.35	2.54	22.47		
	Middle	V	5.51	19.51	2.62	22.40	30	Pass
		H	5.34	19.51	2.62	22.23		
	Highest	V	5.78	19.96	2.69	23.05	30	Pass
		H	5.74	19.96	2.69	23.01		
LTE BAND 66 5MHz 16QAM	Lowest	V	5.41	19.35	2.54	22.22	30	Pass
		H	5.50	19.35	2.54	22.31		
	Middle	V	5.33	19.51	2.62	22.22	30	Pass
		H	5.19	19.51	2.62	22.08		
	Highest	V	5.60	19.96	2.69	22.87	30	Pass
		H	5.59	19.96	2.69	22.86		
LTE BAND 66 10MHz 16QAM	Lowest	V	5.50	19.35	2.54	22.31	30	Pass
		H	5.59	19.35	2.54	22.40		
	Middle	V	5.43	19.51	2.62	22.32	30	Pass
		H	5.29	19.51	2.62	22.18		
	Highest	V	5.70	19.96	2.69	22.97	30	Pass
		H	5.67	19.96	2.69	22.94		
LTE BAND 66 15MHz 16QAM	Lowest	V	5.41	19.35	2.54	22.22	30	Pass
		H	5.50	19.35	2.54	22.31		
	Middle	V	5.33	19.51	2.62	22.22	30	Pass
		H	5.19	19.51	2.62	22.08		
	Highest	V	5.60	19.96	2.69	22.87	30	Pass
		H	5.59	19.96	2.69	22.86		
LTE BAND 66 20MHz 16QAM	Lowest	V	5.50	19.35	2.54	22.31	30	Pass
		H	5.59	19.35	2.54	22.40		
	Middle	V	5.43	19.51	2.62	22.32	30	Pass
		H	5.29	19.51	2.62	22.18		
	Highest	V	5.70	19.96	2.69	22.97	30	Pass
		H	5.35	19.96	2.69	22.62		



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.

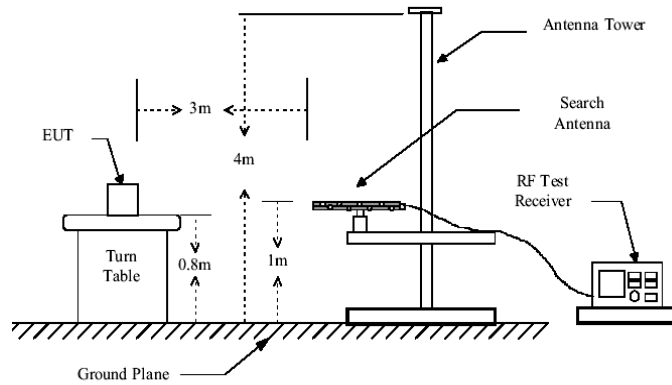
FCC section 27.53 (m) (4)

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.

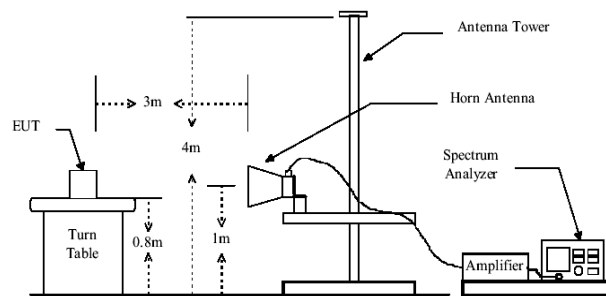


5.8.2. Test Setup

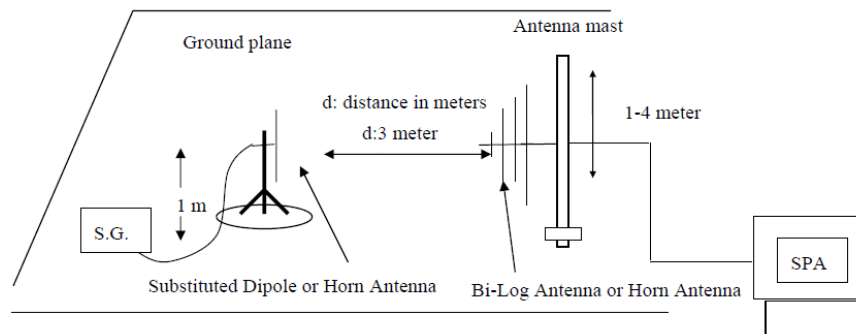
Below 1GHz



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.

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

Note: Measurement Uncertainty: $\pm 3.6 \text{ dB}$.

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)		
LTE BAND 2 1.4MHz Lowest	87.15	Vertical	-75.24	3.35	0.38	-72.27	-13	PASS
	3701.40	Vertical	-46.04	7.76	3.75	-42.03		
	5552.10	Vertical	-47.16	9.84	4.94	-42.26		
	7402.80	Vertical	-39.61	10.21	5.32	-34.72		
	9253.50	Vertical	-42.99	11.36	6.02	-37.65		
	11104.20	Vertical	-44.52	14.52	6.68	-36.68		
LTE BAND 2 1.4MHz Middle	88.27	Vertical	-75.24	3.35	0.38	-72.27	-13	PASS
	3760.00	Vertical	-47.37	7.76	3.75	-43.36		
	5640.00	Vertical	-46.97	9.84	4.94	-42.07		
	7520.00	Vertical	-42.60	10.21	5.32	-37.71		
	9400.00	Vertical	-42.01	11.36	6.02	-36.67		
	11280.00	Vertical	-45.94	14.52	6.68	-38.10		
LTE BAND 2 1.4MHz Highest	88.21	Vertical	-75.20	3.35	0.38	-72.23	-13	PASS
	3819.60	Vertical	-46.97	7.79	3.53	-42.71		
	5729.40	Vertical	-41.44	9.88	5.02	-36.58		
	7639.20	Vertical	-37.65	10.25	5.54	-32.94		
	9549.00	Vertical	-44.49	11.38	6.16	-39.27		
	11458.80	Vertical	-46.91	14.56	6.72	-39.07		
LTE BAND 2 3MHz Lowest	87.33	Vertical	-75.24	3.35	0.38	-72.27	-13	PASS
	3700.40	Vertical	-46.04	7.76	3.75	-42.03		
	5550.60	Vertical	-46.84	9.84	4.94	-41.94		
	7400.80	Vertical	-39.35	10.21	5.32	-34.46		
	9251.00	Vertical	-42.70	11.36	6.02	-37.36		
	11101.20	Vertical	-44.22	14.52	6.68	-36.38		
LTE BAND 2 3MHz Middle	88.32	Vertical	-74.82	3.35	0.38	-71.85	-13	PASS
	3760.00	Vertical	-47.11	7.76	3.75	-43.10		
	5640.00	Vertical	-46.70	9.84	4.94	-41.80		
	7520.00	Vertical	-42.36	10.21	5.32	-37.47		
	9400.00	Vertical	-41.78	11.36	6.02	-36.44		
	11280.00	Vertical	-45.69	14.52	6.68	-37.85		
LTE BAND 2 3MHz Highest	88.45	Vertical	-74.78	3.35	0.38	-71.81	-13	PASS
	3819.60	Vertical	-46.70	7.79	3.53	-42.44		
	5729.40	Vertical	-41.21	9.88	5.02	-36.35		
	7639.20	Vertical	-37.44	10.25	5.54	-32.73		
	9549.00	Vertical	-44.24	11.38	6.16	-39.02		
	11458.80	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 2 5MHz Lowest	87.54	Vertical	-74.86	3.35	0.38	-71.89	-13	PASS
	3700.40	Vertical	-45.82	7.76	3.75	-41.81		
	5550.60	Vertical	-46.92	9.84	4.94	-42.02		
	7400.80	Vertical	-39.42	10.21	5.32	-34.53		
	9251.00	Vertical	-42.77	11.36	6.02	-37.43		
	11101.20	Vertical	-44.29	14.52	6.68	-36.45		
LTE BAND 2 5MHz Middle	88.76	Vertical	-74.86	3.35	0.38	-71.89	-13	PASS
	3760.00	Vertical	-47.13	7.76	3.75	-43.12		
	5640.00	Vertical	-46.73	9.84	4.94	-41.83		
	7520.00	Vertical	-42.38	10.21	5.32	-37.49		
	9400.00	Vertical	-41.80	11.36	6.02	-36.46		
	11280.00	Vertical	-45.72	14.52	6.68	-37.88		
LTE BAND 2 5MHz Highest	88.56	Vertical	-74.82	3.35	0.38	-71.85	-13	PASS
	3819.60	Vertical	-46.73	7.79	3.53	-42.47		
	5729.40	Vertical	-41.23	9.88	5.02	-36.37		
	7639.20	Vertical	-37.46	10.25	5.54	-32.75		
	9549.00	Vertical	-44.26	11.38	6.16	-39.04		
	11458.80	Vertical	-46.68	14.56	6.72	-38.84		
LTE BAND 2 10MHz Lowest	87.23	Vertical	-74.86	3.35	0.38	-71.89	-13	PASS
	3700.40	Vertical	-46.07	7.76	3.75	-42.06		
	5550.60	Vertical	-46.87	9.84	4.94	-41.97		
	7400.80	Vertical	-39.37	10.21	5.32	-34.48		
	9251.00	Vertical	-42.72	11.36	6.02	-37.38		
	11101.20	Vertical	-44.24	14.52	6.68	-36.40		
LTE BAND 2 10MHz Middle	88.56	Vertical	-74.91	3.35	0.38	-71.94	-13	PASS
	3760.00	Vertical	-47.16	7.76	3.75	-43.15		
	5640.00	Vertical	-46.76	9.84	4.94	-41.86		
	7520.00	Vertical	-42.41	10.21	5.32	-37.52		
	9400.00	Vertical	-41.82	11.36	6.02	-36.48		
	11280.00	Vertical	-45.75	14.52	6.68	-37.91		
LTE BAND 2 10MHz Highest	88.54	Vertical	-74.87	3.35	0.38	-71.90	-13	PASS
	3819.60	Vertical	-46.76	7.79	3.53	-42.50		
	5729.40	Vertical	-41.26	9.88	5.02	-36.40		
	7639.20	Vertical	-37.48	10.25	5.54	-32.77		
	9549.00	Vertical	-44.29	11.38	6.16	-39.07		
	11458.80	Vertical	-46.71	14.56	6.72	-38.87		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 2 15MHz Lowest	87.41	Vertical	-74.68	3.35	0.38	-71.71	-13	PASS
	3700.40	Vertical	-45.75	7.76	3.75	-41.74		
	5550.60	Vertical	-46.85	9.84	4.94	-41.95		
	7400.80	Vertical	-39.36	10.21	5.32	-34.47		
	9251.00	Vertical	-42.71	11.36	6.02	-37.37		
	11101.20	Vertical	-44.22	14.52	6.68	-36.38		
LTE BAND 2 15MHz Middle	88.14	Vertical	-74.75	3.35	0.38	-71.78	-13	PASS
	3760.00	Vertical	-47.06	7.76	3.75	-43.05		
	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 15MHz Highest	88.62	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	-37.40	10.25	5.54	-32.69		
	9549.00	Vertical	-44.19	11.38	6.16	-38.97		
	11458.80	Vertical	-46.61	14.56	6.72	-38.77		
LTE BAND 2 20MHz Lowest	87.53	Vertical	-74.72	3.35	0.38	-71.75	-13	PASS
	3700.40	Vertical	-45.73	7.76	3.75	-41.72		
	5550.60	Vertical	-46.83	9.84	4.94	-41.93		
	7400.80	Vertical	-39.35	10.21	5.32	-34.46		
	9251.00	Vertical	-42.69	11.36	6.02	-37.35		
	11101.20	Vertical	-44.21	14.52	6.68	-36.37		
LTE BAND 2 20MHz Middle	88.65	Vertical	-74.72	3.35	0.38	-71.75	-13	PASS
	3760.00	Vertical	-47.04	7.76	3.75	-43.03		
	5640.00	Vertical	-46.64	9.84	4.94	-41.74		
	7520.00	Vertical	-42.30	10.21	5.32	-37.41		
	9400.00	Vertical	-41.72	11.36	6.02	-36.38		
	11280.00	Vertical	-45.63	14.52	6.68	-37.79		
LTE BAND 2 20MHz Highest	88.34	Vertical	-74.68	3.35	0.38	-71.71	-13	PASS
	3819.60	Vertical	-46.64	7.79	3.53	-42.38		
	5729.40	Vertical	-41.15	9.88	5.02	-36.29		
	7639.20	Vertical	-37.38	10.25	5.54	-32.67		
	9549.00	Vertical	-44.17	11.38	6.16	-38.95		
	11458.80	Vertical	-46.59	14.56	6.72	-38.75		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 4 1.4MHz Lowest	87.28	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	3421.40	Vertical	-45.79	7.76	3.75	-41.78		
	5132.10	Vertical	-46.90	9.84	4.94	-42.00		
	6842.80	Vertical	-39.40	10.21	5.32	-34.51		
	8553.50	Vertical	-42.75	11.36	6.02	-37.41		
	10264.20	Vertical	-44.28	14.52	6.68	-36.44		
LTE BAND 4 1.4MHz Middle	88.21	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	3465.00	Vertical	-47.10	7.76	3.75	-43.09		
	5197.50	Vertical	-46.71	9.84	4.94	-41.81		
	6930.00	Vertical	-42.36	10.21	5.32	-37.47		
	8662.50	Vertical	-41.77	11.36	6.02	-36.43		
	10395.00	Vertical	-45.70	14.52	6.68	-37.86		
LTE BAND 4 1.4MHz Highest	88.43	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	3508.60	Vertical	-46.71	7.79	3.53	-42.45		
	5262.90	Vertical	-41.21	9.88	5.02	-36.35		
	7017.20	Vertical	-37.44	10.25	5.54	-32.73		
	8771.50	Vertical	-44.25	11.38	6.16	-39.03		
	10525.80	Vertical	-46.66	14.56	6.72	-38.82		
LTE BAND 4 3MHz Lowest	87.45	Vertical	-74.86	3.35	0.38	-71.89	-13	PASS
	3423.00	Vertical	-45.81	7.76	3.75	-41.80		
	5134.50	Vertical	-46.92	9.84	4.94	-42.02		
	6846.00	Vertical	-39.41	10.21	5.32	-34.52		
	8557.50	Vertical	-42.77	11.36	6.02	-37.43		
	10269.00	Vertical	-44.29	14.52	6.68	-36.45		
LTE BAND 4 3MHz Middle	88.21	Vertical	-74.88	3.35	0.38	-71.91	-13	PASS
	3508.60	Vertical	-47.12	7.76	3.75	-43.11		
	5262.90	Vertical	-46.73	9.84	4.94	-41.83		
	7017.20	Vertical	-42.38	10.21	5.32	-37.49		
	8771.50	Vertical	-41.79	11.36	6.02	-36.45		
	10525.80	Vertical	-45.72	14.52	6.68	-37.88		
LTE BAND 4 3MHz Highest	88.33	Vertical	-74.82	3.35	0.38	-71.85	-13	PASS
	3507.00	Vertical	-46.73	7.79	3.53	-42.47		
	5260.50	Vertical	-41.23	9.88	5.02	-36.37		
	7014.00	Vertical	-37.46	10.25	5.54	-32.75		
	8767.50	Vertical	-44.26	11.38	6.16	-39.04		
	10521.00	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 4 5MHz Lowest	87.34	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	3425.00	Vertical	-45.80	7.76	3.75	-41.79		
	5137.50	Vertical	-46.90	9.84	4.94	-42.00		
	6850.00	Vertical	-39.40	10.21	5.32	-34.51		
	8562.50	Vertical	-42.75	11.36	6.02	-37.41		
	10275.00	Vertical	-44.27	14.52	6.68	-36.43		
LTE BAND 4 5MHz Middle	88.24	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	3423.00	Vertical	-47.11	7.76	3.75	-43.10		
	5134.50	Vertical	-46.71	9.84	4.94	-41.81		
	6846.00	Vertical	-42.37	10.21	5.32	-37.48		
	8557.50	Vertical	-41.78	11.36	6.02	-36.44		
	10269.00	Vertical	-45.70	14.52	6.68	-37.86		
LTE BAND 4 5MHz Highest	88.34	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	3505.00	Vertical	-46.71	7.79	3.53	-42.45		
	5257.50	Vertical	-41.22	9.88	5.02	-36.36		
	7010.00	Vertical	-37.45	10.25	5.54	-32.74		
	8762.50	Vertical	-44.24	11.38	6.16	-39.02		
	10515.00	Vertical	-46.66	14.56	6.72	-38.82		
LTE BAND 4 10MHz Lowest	87.21	Vertical	-74.77	3.35	0.38	-71.80	-13	PASS
	3430.00	Vertical	-45.76	7.76	3.75	-41.75		
	5145.00	Vertical	-46.87	9.84	4.94	-41.97		
	6860.00	Vertical	-39.38	10.21	5.32	-34.49		
	8575.00	Vertical	-42.72	11.36	6.02	-37.38		
	10290.00	Vertical	-44.24	14.52	6.68	-36.40		
LTE BAND 4 10MHz Middle	88.41	Vertical	-74.72	3.35	0.38	-71.75	-13	PASS
	3505.00	Vertical	-47.08	7.76	3.75	-43.07		
	5257.50	Vertical	-46.68	9.84	4.94	-41.78		
	7010.00	Vertical	-42.34	10.21	5.32	-37.45		
	8762.50	Vertical	-41.75	11.36	6.02	-36.41		
	10515.00	Vertical	-45.66	14.52	6.68	-37.82		
LTE BAND 4 10MHz Highest	88.34	Vertical	-74.73	3.35	0.38	-71.76	-13	PASS
	3500.00	Vertical	-46.68	7.79	3.53	-42.42		
	5250.00	Vertical	-41.19	9.88	5.02	-36.33		
	7000.00	Vertical	-37.42	10.25	5.54	-32.71		
	8750.00	Vertical	-44.21	11.38	6.16	-38.99		
	10500.00	Vertical	-46.63	14.56	6.72	-38.79		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 4 15MHz Lowest	87.32	Vertical	-74.73	3.35	0.38	-71.76	-13	PASS
	3435.00	Vertical	-45.73	7.76	3.75	-41.72		
	5152.50	Vertical	-46.84	9.84	4.94	-41.94		
	6870.00	Vertical	-39.36	10.21	5.32	-34.47		
	8587.50	Vertical	-42.70	11.36	6.02	-37.36		
	10305.00	Vertical	-44.22	14.52	6.68	-36.38		
LTE BAND 4 15MHz Middle	88.32	Vertical	-74.73	3.35	0.38	-71.76	-13	PASS
	3505.00	Vertical	-47.05	7.76	3.75	-43.04		
	5257.50	Vertical	-46.66	9.84	4.94	-41.76		
	7010.00	Vertical	-42.31	10.21	5.32	-37.42		
	8762.50	Vertical	-41.73	11.36	6.02	-36.39		
	10515.00	Vertical	-45.63	14.52	6.68	-37.79		
LTE BAND 4 15MHz Highest	88.32	Vertical	-74.69	3.35	0.38	-71.72	-13	PASS
	3495.00	Vertical	-46.66	7.79	3.53	-42.40		
	5242.50	Vertical	-41.16	9.88	5.02	-36.30		
	6990.00	Vertical	-37.39	10.25	5.54	-32.68		
	8737.50	Vertical	-44.19	11.38	6.16	-38.97		
	10485.00	Vertical	-46.61	14.56	6.72	-38.77		
LTE BAND 4 20MHz Lowest	87.34	Vertical	-74.77	3.35	0.38	-71.80	-13	PASS
	3440.00	Vertical	-45.76	7.76	3.75	-41.75		
	5160.00	Vertical	-46.86	9.84	4.94	-41.96		
	6880.00	Vertical	-39.37	10.21	5.32	-34.48		
	8600.00	Vertical	-42.72	11.36	6.02	-37.38		
	10320.00	Vertical	-44.24	14.52	6.68	-36.40		
LTE BAND 4 20MHz Middle	88.45	Vertical	-74.82	3.35	0.38	-71.85	-13	PASS
	3505.00	Vertical	-47.07	7.76	3.75	-43.06		
	5257.50	Vertical	-46.68	9.84	4.94	-41.78		
	7010.00	Vertical	-42.33	10.21	5.32	-37.44		
	8762.50	Vertical	-41.75	11.36	6.02	-36.41		
	10515.00	Vertical	-45.66	14.52	6.68	-37.82		
LTE BAND 4 20MHz Highest	88.56	Vertical	-74.73	3.35	0.38	-71.76	-13	PASS
	3490.00	Vertical	-46.68	7.79	3.53	-42.42		
	5235.00	Vertical	-41.18	9.88	5.02	-36.32		
	6980.00	Vertical	-37.41	10.25	5.54	-32.70		
	8725.00	Vertical	-44.21	11.38	6.16	-38.99		
	10470.00	Vertical	-46.63	14.56	6.72	-38.79		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 5 1.4MHz Lowest	87.45	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 5 1.4MHz Middle	88.21	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 5 1.4MHz Highest	88.77	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	-37.42	10.25	5.54	-32.71		
	9549.00	Vertical	-44.22	11.38	6.16	-39.00		
	11458.80	Vertical	-46.64	14.56	6.72	-38.80		
LTE BAND 5 3MHz Lowest	87.98	Vertical	-74.74	3.35	0.38	-71.77	-13	PASS
	3700.40	Vertical	-45.74	7.76	3.75	-41.73		
	5550.60	Vertical	-46.85	9.84	4.94	-41.95		
	7400.80	Vertical	-39.36	10.21	5.32	-34.47		
	9251.00	Vertical	-42.70	11.36	6.02	-37.36		
	11101.20	Vertical	-44.22	14.52	6.68	-36.38		
LTE BAND 5 3MHz Middle	88.78	Vertical	-74.87	3.35	0.38	-71.90	-13	PASS
	3760.00	Vertical	-47.14	7.76	3.75	-43.13		
	5640.00	Vertical	-46.74	9.84	4.94	-41.84		
	7520.00	Vertical	-42.39	10.21	5.32	-37.50		
	9400.00	Vertical	-41.80	11.36	6.02	-36.46		
	11280.00	Vertical	-45.72	14.52	6.68	-37.88		
LTE BAND 5 3MHz Highest	88.67	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	3819.60	Vertical	-46.74	7.79	3.53	-42.48		
	5729.40	Vertical	-41.23	9.88	5.02	-36.37		
	7639.20	Vertical	-37.46	10.25	5.54	-32.75		
	9549.00	Vertical	-44.27	11.38	6.16	-39.05		
	11458.80	Vertical	-46.69	14.56	6.72	-38.85		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 5 5MHz Lowest	87.66	Vertical	-74.35	3.35	0.38	-71.38	-13	PASS
	3700.40	Vertical	-45.50	7.76	3.75	-41.49		
	5550.60	Vertical	-46.60	9.84	4.94	-41.70		
	7400.80	Vertical	-39.15	10.21	5.32	-34.26		
	9251.00	Vertical	-42.48	11.36	6.02	-37.14		
	11101.20	Vertical	-43.99	14.52	6.68	-36.15		
LTE BAND 5 5MHz Middle	88.32	Vertical	-74.35	3.35	0.38	-71.38	-13	PASS
	3760.00	Vertical	-46.81	7.76	3.75	-42.80		
	5640.00	Vertical	-46.42	9.84	4.94	-41.52		
	7520.00	Vertical	-42.09	10.21	5.32	-37.20		
	9400.00	Vertical	-41.51	11.36	6.02	-36.17		
	11280.00	Vertical	-45.40	14.52	6.68	-37.56		
LTE BAND 5 5MHz Highest	88.32	Vertical	-74.31	3.35	0.38	-71.34	-13	PASS
	3819.60	Vertical	-46.42	7.79	3.53	-42.16		
	5729.40	Vertical	-40.95	9.88	5.02	-36.09		
	7639.20	Vertical	-37.20	10.25	5.54	-32.49		
	9549.00	Vertical	-43.96	11.38	6.16	-38.74		
	11458.80	Vertical	-46.37	14.56	6.72	-38.53		
LTE BAND 5 10MHz Lowest	87.23	Vertical	-74.38	3.35	0.38	-71.41	-13	PASS
	3700.40	Vertical	-45.52	7.76	3.75	-41.51		
	5550.60	Vertical	-46.61	9.84	4.94	-41.71		
	7400.80	Vertical	-39.16	10.21	5.32	-34.27		
	9251.00	Vertical	-42.50	11.36	6.02	-37.16		
	11101.20	Vertical	-44.01	14.52	6.68	-36.17		
LTE BAND 5 10MHz Middle	88.21	Vertical	-74.45	3.35	0.38	-71.48	-13	PASS
	3760.00	Vertical	-46.87	7.76	3.75	-42.86		
	5640.00	Vertical	-46.47	9.84	4.94	-41.57		
	7520.00	Vertical	-42.16	10.21	5.32	-37.27		
	9400.00	Vertical	-41.57	11.36	6.02	-36.23		
	11280.00	Vertical	-45.46	14.52	6.68	-37.62		
LTE BAND 5 10MHz Highest	88.15	Vertical	-74.41	3.35	0.38	-71.44	-13	PASS
	3819.60	Vertical	-46.47	7.79	3.53	-42.21		
	5729.40	Vertical	-41.01	9.88	5.02	-36.15		
	7639.20	Vertical	-37.26	10.25	5.54	-32.55		
	9549.00	Vertical	-44.02	11.38	6.16	-38.80		
	11458.80	Vertical	-46.42	14.56	6.72	-38.58		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 66 1.4MHz Lowest	87.18	Vertical	-74.58	3.35	0.38	-71.61	-13	PASS
	3421.40	Vertical	-45.64	7.76	3.75	-41.63		
	5132.10	Vertical	-46.74	9.84	4.94	-41.84		
	6842.80	Vertical	-39.27	10.21	5.32	-34.38		
	8553.50	Vertical	-42.61	11.36	6.02	-37.27		
	10264.20	Vertical	-44.13	14.52	6.68	-36.29		
LTE BAND 66 1.4MHz Middle	88.32	Vertical	-74.58	3.35	0.38	-71.61	-13	PASS
	3490.00	Vertical	-46.96	7.76	3.75	-42.95		
	5235.00	Vertical	-46.55	9.84	4.94	-41.65		
	6980.00	Vertical	-42.23	10.21	5.32	-37.34		
	8725.00	Vertical	-41.64	11.36	6.02	-36.30		
	10470.00	Vertical	-45.54	14.52	6.68	-37.70		
LTE BAND 66 1.4MHz Highest	88.11	Vertical	-74.54	3.35	0.38	-71.57	-13	PASS
	3558.60	Vertical	-46.55	7.79	3.53	-42.29		
	5337.90	Vertical	-41.08	9.88	5.02	-36.22		
	7117.20	Vertical	-37.32	10.25	5.54	-32.61		
	8896.50	Vertical	-44.10	11.38	6.16	-38.88		
	10675.80	Vertical	-46.50	14.56	6.72	-38.66		
LTE BAND 66 3MHz Lowest	87.32	Vertical	-74.60	3.35	0.38	-71.63	-13	PASS
	3423.00	Vertical	-45.66	7.76	3.75	-41.65		
	5134.50	Vertical	-46.76	9.84	4.94	-41.86		
	6846.00	Vertical	-39.28	10.21	5.32	-34.39		
	8557.50	Vertical	-42.62	11.36	6.02	-37.28		
	10269.00	Vertical	-44.14	14.52	6.68	-36.30		
LTE BAND 66 3MHz Middle	88.21	Vertical	-74.62	3.35	0.38	-71.65	-13	PASS
	3490.00	Vertical	-46.98	7.76	3.75	-42.97		
	5235.00	Vertical	-46.59	9.84	4.94	-41.69		
	6980.00	Vertical	-42.25	10.21	5.32	-37.36		
	8725.00	Vertical	-41.67	11.36	6.02	-36.33		
	10470.00	Vertical	-45.58	14.52	6.68	-37.74		
LTE BAND 66 3MHz Highest	88.76	Vertical	-74.59	3.35	0.38	-71.62	-13	PASS
	3557.00	Vertical	-46.59	7.79	3.53	-42.33		
	5335.50	Vertical	-41.10	9.88	5.02	-36.24		
	7114.00	Vertical	-37.34	10.25	5.54	-32.63		
	8892.50	Vertical	-44.12	11.38	6.16	-38.90		
	10671.00	Vertical	-46.54	14.56	6.72	-38.70		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 66 5MHz Lowest	87.45	Vertical	-74.47	3.35	0.38	-71.50	-13	PASS
	3425.00	Vertical	-45.58	7.76	3.75	-41.57		
	5137.50	Vertical	-46.68	9.84	4.94	-41.78		
	6850.00	Vertical	-39.21	10.21	5.32	-34.32		
	8562.50	Vertical	-42.55	11.36	6.02	-37.21		
	10275.00	Vertical	-44.06	14.52	6.68	-36.22		
LTE BAND 66 5MHz Middle	88.65	Vertical	-74.47	3.35	0.38	-71.50	-13	PASS
	3490.00	Vertical	-46.88	7.76	3.75	-42.87		
	5235.00	Vertical	-46.49	9.84	4.94	-41.59		
	6980.00	Vertical	-42.16	10.21	5.32	-37.27		
	8725.00	Vertical	-41.58	11.36	6.02	-36.24		
	10470.00	Vertical	-45.48	14.52	6.68	-37.64		
LTE BAND 66 5MHz Highest	88.36	Vertical	-74.43	3.35	0.38	-71.46	-13	PASS
	3555.00	Vertical	-46.49	7.79	3.53	-42.23		
	5332.50	Vertical	-41.02	9.88	5.02	-36.16		
	7110.00	Vertical	-37.26	10.25	5.54	-32.55		
	8887.50	Vertical	-44.03	11.38	6.16	-38.81		
	10665.00	Vertical	-46.44	14.56	6.72	-38.60		
LTE BAND 66 10MHz Lowest	87.11	Vertical	-74.49	3.35	0.38	-71.52	-13	PASS
	3430.00	Vertical	-45.59	7.76	3.75	-41.58		
	5145.00	Vertical	-46.69	9.84	4.94	-41.79		
	6860.00	Vertical	-39.22	10.21	5.32	-34.33		
	8575.00	Vertical	-42.63	11.36	6.02	-37.29		
	10290.00	Vertical	-44.15	14.52	6.68	-36.31		
LTE BAND 66 10MHz Middle	88.21	Vertical	-74.51	3.35	0.38	-71.54	-13	PASS
	3490.00	Vertical	-46.91	7.76	3.75	-42.90		
	5235.00	Vertical	-46.51	9.84	4.94	-41.61		
	6980.00	Vertical	-42.18	10.21	5.32	-37.29		
	8725.00	Vertical	-41.60	11.36	6.02	-36.26		
	10470.00	Vertical	-45.50	14.52	6.68	-37.66		
LTE BAND 66 10MHz Highest	88.54	Vertical	-74.47	3.35	0.38	-71.50	-13	PASS
	3550.00	Vertical	-46.51	7.79	3.53	-42.25		
	5325.00	Vertical	-41.04	9.88	5.02	-36.18		
	7100.00	Vertical	-37.28	10.25	5.54	-32.57		
	8875.00	Vertical	-44.05	11.38	6.16	-38.83		
	10650.00	Vertical	-46.46	14.56	6.72	-38.62		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 66 20MHz Lowest	87.18	Vertical	-73.55	3.35	0.38	-70.58	-13	PASS
	3440.00	Vertical	-45.01	7.76	3.75	-41.00		
	5160.00	Vertical	-46.11	9.84	4.94	-41.21		
	6880.00	Vertical	-38.73	10.21	5.32	-33.84		
	8600.00	Vertical	-42.03	11.36	6.02	-36.69		
	10320.00	Vertical	-43.52	14.52	6.68	-35.68		
LTE BAND 66 20MHz Middle	88.43	Vertical	-73.55	3.35	0.38	-70.58	-13	PASS
	3490.00	Vertical	-46.31	7.76	3.75	-42.30		
	5235.00	Vertical	-45.92	9.84	4.94	-41.02		
	6980.00	Vertical	-41.64	10.21	5.32	-36.75		
	8725.00	Vertical	-41.07	11.36	6.02	-35.73		
	10470.00	Vertical	-44.91	14.52	6.68	-37.07		
LTE BAND 66 20MHz Highest	88.12	Vertical	-73.51	3.35	0.38	-70.54	-13	PASS
	3540.00	Vertical	-45.92	7.79	3.53	-41.66		
	5310.00	Vertical	-40.51	9.88	5.02	-35.65		
	7080.00	Vertical	-36.81	10.25	5.54	-32.10		
	8850.00	Vertical	-43.49	11.38	6.16	-38.27		
	10620.00	Vertical	-45.87	14.56	6.72	-38.03		



6. PHOTOGRAPHS OF TEST SET-UP

Please see setup photo.

7. PHOTOGRAPHS OF THE EUT

Please see external photo and internal photo.

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