TEST REPORT

Applicant:	Volansys Technologies Pvt Ltd
Address:	Block A-7th Floor, Safal Profitaire, Corporate Road, Prahaladnagar, Ahmedabad-380015, Gujarat, India
Equipment Type:	CENTAURI 200 Automotive/Telematics IoT Gateway
Model Name:	CT200-AT
Brand Name:	Volansys
FCC ID:	2AKNO-CT200-AT
ISED Number:	22256-CT200AT
Test Standard:	47 CFR Part 2 (Others refer to chapter 3.1)
Sample Arrival Date:	Feb. 21, 2023
Test Date:	Feb. 22, 2023 – Mar. 08, 2023
Date of Issue:	Aug. 18, 2023

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Huang Jinsheng **Checked by:** Wu Huihui **Approved by:** Tolan Tu

(Testing Director)

Revision History

Version	Issue Date	Revisions Content
Rev. 01	Apr. 13, 2023	Initial Issue
Rev. 02	Aug. 18, 2023	Updated ISED Number, Field Strength of Spurious Radiation in Section A.7, The Max RF Output Power (EIRP/ERP), Antenna Type and Antenna Gain in Section 2.5 and Transmitter Radiated Power (EIRP/ERP) in Section A.1

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☑ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☐ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A. The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Volansys Technologies Pvt Ltd
Address	Block A-7th Floor, Safal Profitaire, Corporate Road, Prahaladnagar, Ahmedabad-380015, Gujarat, India

2.2 Manufacturer Information

Manufacturer	Volansys Technologies Pvt Ltd
Address	Ratana Business Hub, 207, 2nd Floor, Opp Bharat Petrol Pump, Sanathal Chokdi, Changodar Highway, Ahmedabad 382210 Gujarat India

2.3 Factory Information

Factory	Volansys Technologies Pvt Ltd
Address	Ratana Business Hub, 207, 2nd Floor, Opp Bharat Petrol Pump, Sanathal Chokdi, Changodar Highway, Ahmedabad 382210 Gujarat India

2.4 General Description for Equipment under Test (EUT)

EUT Name	CENTAURI 200 Automotive/Telematics IoT Gateway
Model Name Under Test	CT200-AT
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	1.1
Software Version	1.0.0
Dimensions (Approx.)	180 (L) x 100 (W) x 32 (H) mm
Weight (Approx.)	245g

2.5 Technical Information

All Network and Wireless connectivity for EUT	3G Network WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network FDD LTE Band 2/4/5/12/13 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) GPS, GLONASS
About the Product	The equipment is CENTAURI 200 Automotive/Telematics IoT Gateway, intended for used with information technology equipment.

The requirement for the following technical information of the EUT was tested in this report:

Operating Bands	WCDMA/HSDPA/HSUPA Band 2/4/5 FDD LTE Band 2/4/5/12/13	
Modulation Type	WCDMA	QPSK
	HSDPA /HSUPA	QPSK
		16QAM
	LTE	QPSK
		16QAM
Antenna Type	External (GPS+LTE Combo ANT)	
Antenna Gain	2.5 dBi	
The Max RF Output Power (EIRP/ERP)	WCDMA/HSDPA/HSUPA Band 2: 25.27 dBm WCDMA/HSDPA/HSUPA Band 4: 25.44 dBm WCDMA/HSDPA/HSUPA Band 5: 23.48 dBm FDD LTE Band 2: 25.91 dBm FDD LTE Band 4: 25.45 dBm FDD LTE Band 5: 24.05 dBm FDD LTE Band 12: 23.88 dBm FDD LTE Band 13: 23.64 dBm	

Band	Power Class		Tx Frequency Range	Rx Frequency Range
	GMSK	GMSK		
WCDMA B2	3		1850 MHz ~ 1910 MHz	1930 MHz ~ 1990 MHz
WCDMA B4	3		1710 MHz ~ 1755 MHz	2110 MHz ~ 2155 MHz
WCDMA B5	3		824 MHz ~ 849 MHz	869 MHz ~ 894 MHz
LTE B2	3		1850 MHz ~ 1910 MHz	1930 MHz ~ 1990 MHz
LTE B4	3		1710 MHz ~ 1755 MHz	2110 MHz ~ 2155 MHz
LTE B5	3		824 MHz ~ 849 MHz	869 MHz ~ 894 MHz
LTE B12	3		699 MHz ~ 716 MHz	729 MHz ~ 746 MHz
LTE B13	3		777 MHz ~ 787 MHz	746 MHz ~ 756 MHz

Note: The EUT information provided by the applicant, except for The Max RF Conducted Power. For more detailed band specifications and features description, please refer to the manufacturer's specifications or user's manual.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 Subpart H	Cellular Radiotelephone Service
3	47 CFR Part 24 Subpart E	Broadband PCS
4	47 CFR Part 27	Miscellaneous Wireless Communications Services
5	RSS-Gen Issue5	General Requirements and Information for the Certification of Radio Apparatus
6	RSS-130 Issue2	Equipment Operating in the Frequency Bands 617-652 MHz, 663-698 MHz, 698-756 MHz and 777-787 MHz
7	RSS-132 Issue3	Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz
8	RSS-133 Issue6	2 GHz Personal Communications Services
9	RSS-139 Issue4	Advanced Wireless Services (AWS) Equipment Operating in the Bands 1710-1780 MHz and 2110-2200 MHz
10	ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
11	KDB 971168 D01 v03	Measurement Guidance for Certification of Licensed Digital Transmitters

3.2 Test Verdict

No.	Test Description	FCC Part No.	ISED Part No.	Test Result	Test Verdict
1	Conducted RF Output Power	2.1046	RSS-Gen 6.12 RSS-130 4.6 RSS-132 5.4 RSS-133 6.4 RSS-139 6.5	Reporting only (ANNEX A.1)	Pass
2	Effective (Isotropic) Radiated Power	2.1046 22.913 24.232 27.50	RSS-Gen 6.12 RSS-130 4.6 RSS-132 5.4 RSS-133 6.4 RSS-139 6.5	ANNEX A.1	Pass
3	Peak to Average Radio	2.1046 24.232(d) 27.50(d)	RSS-130 4.6 RSS-132 5.4 RSS-133 6.4 RSS-139 6.5	ANNEX A.2	Pass
4	Occupied Bandwidth	2.1049 22.917 24.238 27.53	RSS-Gen 6.7	ANNEX A.3	Pass
5	Frequency Stability	2.1055 22.355 24.235 27.54	RSS-Gen 6.11 RSS-130 4.5 RSS-132 5.3 RSS-133 6.3 RSS-139 6.4	ANNEX A.4	Pass
6	Spurious Emission at Antenna Terminals	2.1051 22.917 24.238 27.53	RSS-Gen 6.13 RSS-130 4.7 RSS-132 5.5 RSS-133 6.5 RSS-139 6.6	ANNEX A.5	Pass
7	Band Edge	2.1051 22.917 24.238 27.53	RSS-130 4.7 RSS-132 5.5 RSS-133 6.5 RSS-139 6.6	ANNEX A.6	Pass
8	Field Strength of Spurious Radiation	2.1053 22.917 24.238 27.53	RSS-Gen 6.13 RSS-130 4.7 RSS-132 5.5 RSS-133 6.5 RSS-139 6.6	ANNEX A.7	Pass
10	Receiver Spurious Emissions	N/A	RSS-Gen 7 RSS-132 5.6	ANNEX A.8	Pass

No.	Test Description	FCC Part No.	ISED Part No.	Test Result	Test Verdict
			RSS-133 6.6		
11	AC Power-line Conducted Emissions	N/A	RSS-Gen 8.8	ANNEX A.9	Pass
Note: The RF module (Model Name: EG91-NA) installed in the EUT is electronically and mechanically identical to the original certified module in the test report No. R1805A0250-R1, R1805A0250-R2, R1805A0250-R3, R1805A0250-R4V1, R1805A0250-R5V1, R1805A0250-R6V1, which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018, so just Conducted RF Output Power & Effective (Isotropic) Radiated Power & Field Strength of Spurious Radiation & Receiver Spurious Emissions & AC Power-line Conducted Emissions were retested in this report. Other test items please refer to the report No. R1805A0250-R1, R1805A0250-R2, R1805A0250-R3, R1805A0250-R4V1, R1805A0250-R5V1, R1805A0250-R6V1, which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018.					

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the environmental conditions were within the listed ranges:

Relative Humidity		20% to 75%
Atmospheric Pressure		98 kPa to 102 kPa
Test Voltage of the EUT	NV (Normal Voltage)	12 V
	LV (Low Voltage)	10 V
	HV (High Voltage)	32 V
Test Temperature of the EUT	NT (Normal Temperature)	15 °C to 35 °C
	LT (Low Temperature)	-30 °C
	HT (High Temperature)	+60 °C

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Version	Cal. Date	Cal. Due
2/3/4/5G RF Test System						
BL410 Test Software	BALUN	BL410R	N/A	2.1.1.496	N/A	N/A
Temperature Chamber	AHK	SP20	1412	N/A	2022.09.20	2023.09.19
Wideband Radio Communication Tester	R&S	CMW 500	167190	V4.0.60	2022.05.19	2023.05.18
Wideband Radio Communication Tester	R&S	CMW 500	102318	V3.2.71	2022.05.19	2023.05.18
Spectrum Analyzer	keysight	N9020A	MY50531628	A.16.09	2022.05.23	2023.05.22
DC Power Supply	ITECH	IT6863A	800014020757120005	N/A	2022.09.09	2023.09.08
Radiated Test System						
Radiated Test System Test Software	BALUN	BL410-E	N/A	V19.918	N/A	N/A
Wideband Radio Communication Tester	R&S	CMW 500	167190	V4.0.60	2022.05.19	2023.05.18
Wideband Radio Communication Tester	R&S	CMW 500	102318	V3.2.71	2022.05.19	2023.05.18
Spectrum Analyzer	keysight	N9020A	MY50531628	A.16.09	2022.05.23	2023.05.22
Test Antenna-Bi-Log(30 MHz-3 GHz)	Schwarzbeck	VULB 9163	9163-624	N/A	2021.08.20	2024.08.19
Test Antenna-Horn (1-18 GHz)	Schwarzbeck	BBHA 9120D	9120D-1917	N/A	2022.06.09	2025.06.08
Test Antenna-Horn (18-40 GHz)	A-INFO	LB-180400KF	J211060273	N/A	2021.07.02	2024.07.01
Anechoic Chamber	YIHENG	9m*6m*6m	#3	N/A	2022.02.09	2024.09.03
EMI Receiver	Keysight	N9038A	MY53220118	A.14.16	2022.09.08	2023.09.07
EMI Receiver	KEYSIGHT	N9010B	MY57110309	A.19.06	2022.09.09	2023.09.08
LISN	SCHWARZBECK	NSLK 8127	8127-687	N/A	2022.06.01	2023.05.31
Shielded Room	Yiheng Electronic Co., Ltd	3.5m*3.1m*2.8m	112	N/A	2022.02.19	2025.02.18

4.3 Test Configurations

Test Items	Test Mode	Test Channel		
		LCH	MCH	HCH
Effective (Isotropic) Radiated Power	WCDMA Band 2	v	v	v
	WCDMA Band 4	v	v	v
	WCDMA Band 5	v	v	v
	HSDPA Band 2	v	v	v
	HSDPA Band 4	v	v	v
	HSDPA Band 5	v	v	v
	HSUPA Band 2	v	v	v
	HSUPA Band 4	v	v	v
	HSUPA Band 5	v	v	v
Field Strength of Spurious Radiation	WCDMA Band 2	v	v	v
	WCDMA Band 4	v	v	v
	WCDMA Band 5	v	v	v
Note 1: The mark “v” means that this configuration is chosen for testing.				

Test Mode	UL Channel	UL Channel No.	UL Frequency (MHz)
WCDMA Band 2	Low Channel	9262	1852.4
	Middle Channel	9400	1880.0
	High Channel	9538	1907.6
WCDMA Band 4	Low Channel	1312	1712.4
	Middle Channel	1413	1732.4
	High Channel	1513	1752.6
WCDMA Band 5	Low Channel	4132	826.4
	Middle Channel	4183	836.4
	High Channel	4233	846.6

LTE Band	Bandwidth (MHz)						Modulation Type		RB#			Test Channel		
	1.4	3	5	10	15	20	QPSK	16-QAM	1	Half	Full	LCH	MCH	HCH
Effective (Isotropic) Radiated Power														
2	v	v	v	v	v	v	v	v	v	v	v	v	v	v
4	v	v	v	v	v	v	v	v	v	v	v	v	v	v
5	v	v	v	v	n	n	v	v	v	v	v	v	v	v
12	v	v	v	v	n	n	v	v	v	v	v	v	v	v
13	n	n	v	v	n	n	v	v	v	v	v	v	v	v
Field Strength of Spurious Radiation														
2	v	v	v	v	v	v	v	--	v	--	--	--	v	--
4	v	v	v	v	v	v	v	--	v	--	--	--	v	--
5	v	v	v	v	n	n	v	--	v	--	--	--	v	--
12	v	v	v	v	n	n	v	--	v	--	--	--	v	--
13	n	n	v	v	n	n	v	--	v	--	--	--	v	--
Note 1: The mark “v” means that this configuration is chosen for testing. Note 2: The mark “n” means that this bandwidth is not supported.														

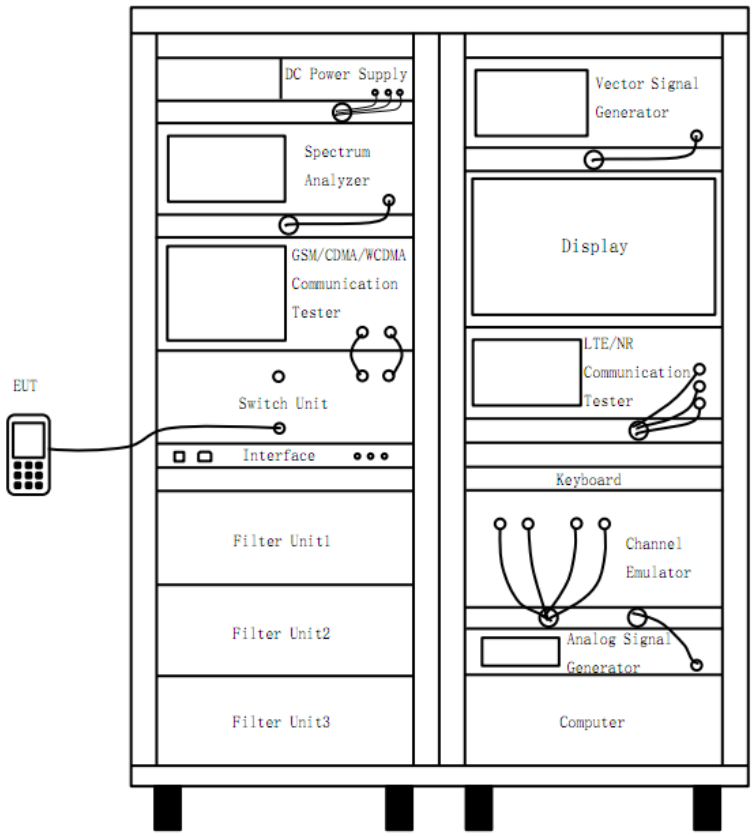
Test Items	Test Mode	Test Channel		
		LCH	MCH	HCH
Receiver Spurious Emissions	WCDMA B5	--	v	--
AC Power-line Conducted Emissions	WCDMA B5	--	v	--
Note 1: The mark “v” means that this configuration is the worst test mode for Receiver Spurious Emissions and AC Power-line Conducted Emissions measurement.				

Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
LTE Band 2	Low Range	1.4	18607	1850.7
		3	18615	1851.5
		5	18625	1852.5
		10	18650	1855
		15	18675	1857.5
		20	18700	1860
	Middle Range	1.4/3/5/10/15/20	18900	1880
	High Range	1.4	19193	1909.3
		3	19185	1908.5
		5	19175	1907.5
		10	19150	1905
		15	19125	1902.5
		20	19100	1900
LTE Band 4	Low Range	1.4	19957	1710.7
		3	19965	1711.5

Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
		5	19975	1712.5
		10	20000	1715
		15	20025	1717.5
		20	20050	1720
	Middle Range	1.4/3/5/10/15/20	20175	1732.5
	High Range	1.4	20393	1754.3
		3	20385	1753.5
		5	20375	1752.5
		10	20350	1750
		15	20325	1747.5
		20	20300	1745
LTE Band 5	Low Range	1.4	20407	824.7
		3	20415	825.5
		5	20425	826.5
		10	20450	829
	Middle Range	1.4/3/5/10	20525	836.5
	High Range	1.4	20643	848.3
		3	20635	847.5
		5	20625	846.5
		10	20600	844
LTE Band 12	Low Range	1.4	23017	699.7
		3	23025	700.5
		5	23035	701.5
		10	23060	704
	Middle Range	1.4/3/5/10	23095	707.5
	High Range	1.4	23173	715.3
		3	23165	714.5
		5	23155	713.5
		10	23130	711
LTE Band 13	Low Range	5	23205	779.5
		10	23230	782
	Middle Range	5/10	23230	782
	High Range	5	23255	784.5
		10	23230	782

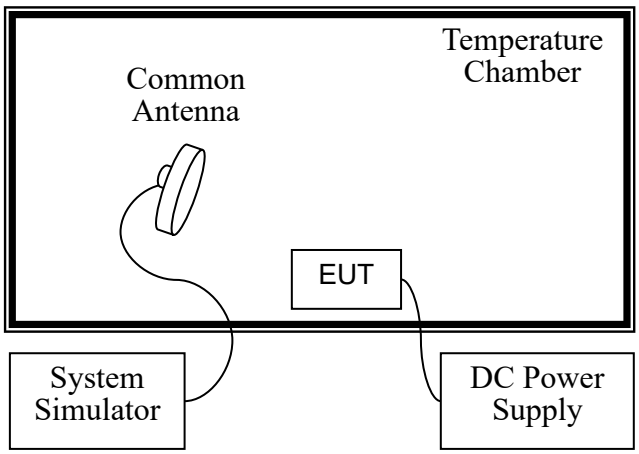
4.4 Test Setup

4.4.1 For Antenna Port Test



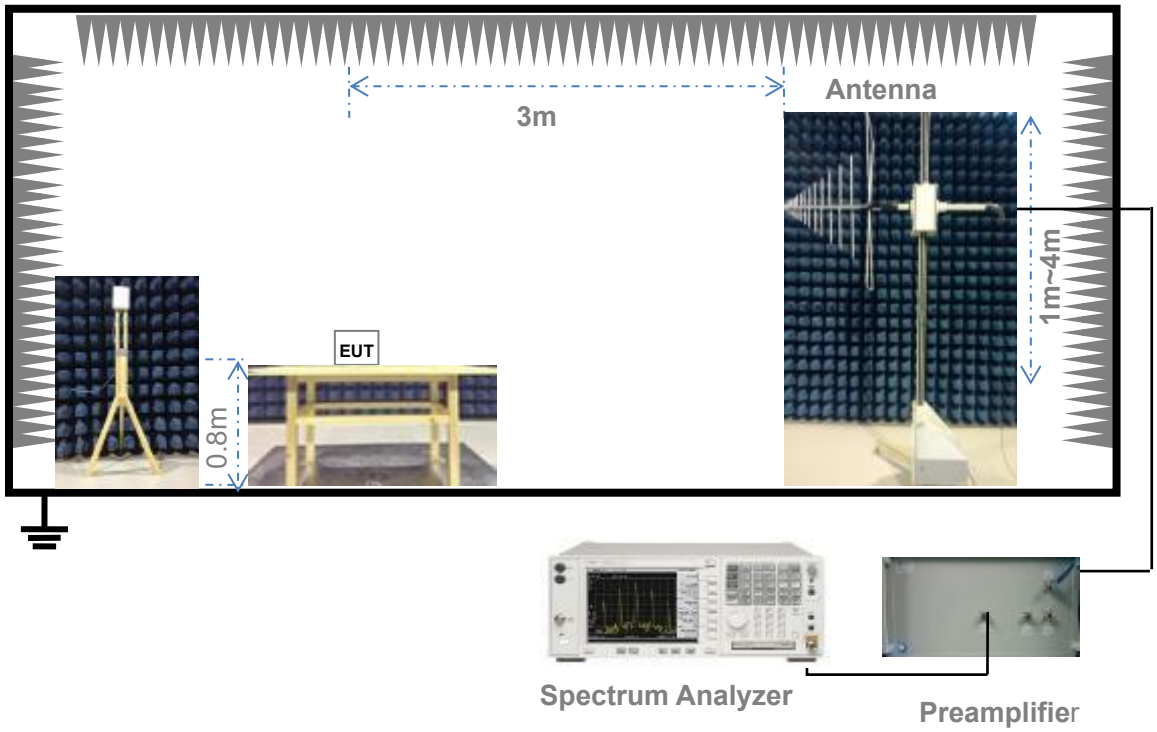
(Diagram 1)

4.4.2 For Frequency Stability Test



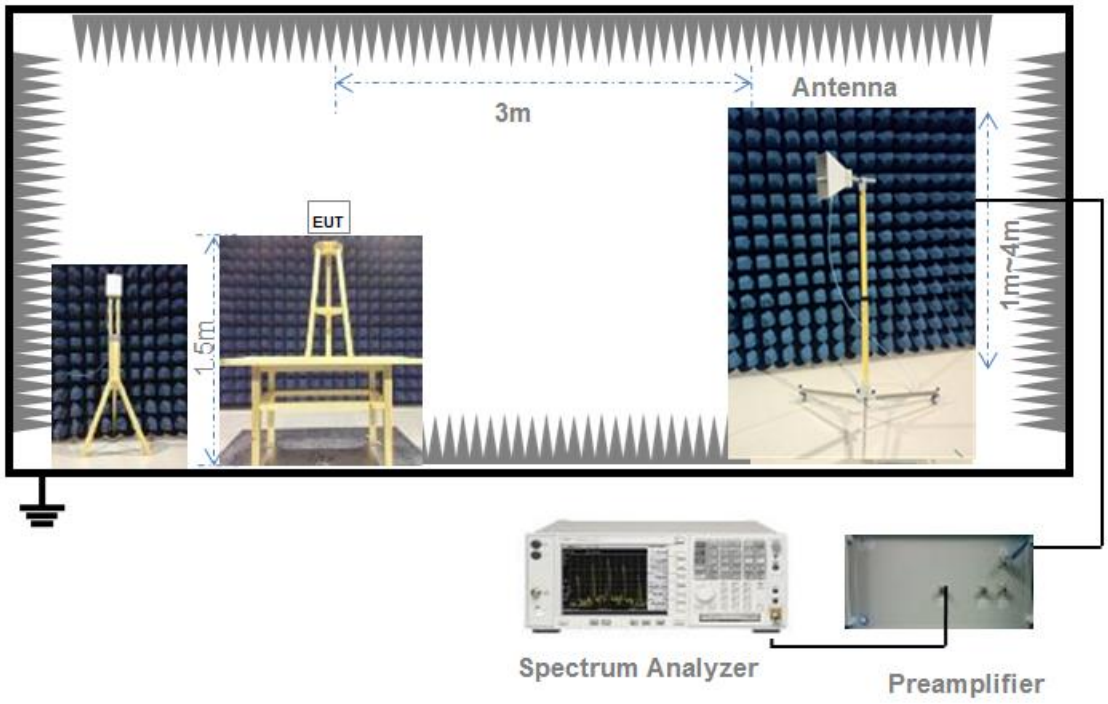
(Diagram 2)

4.4.3 For Radiated Test (30 MHz ~ 1 GHz)



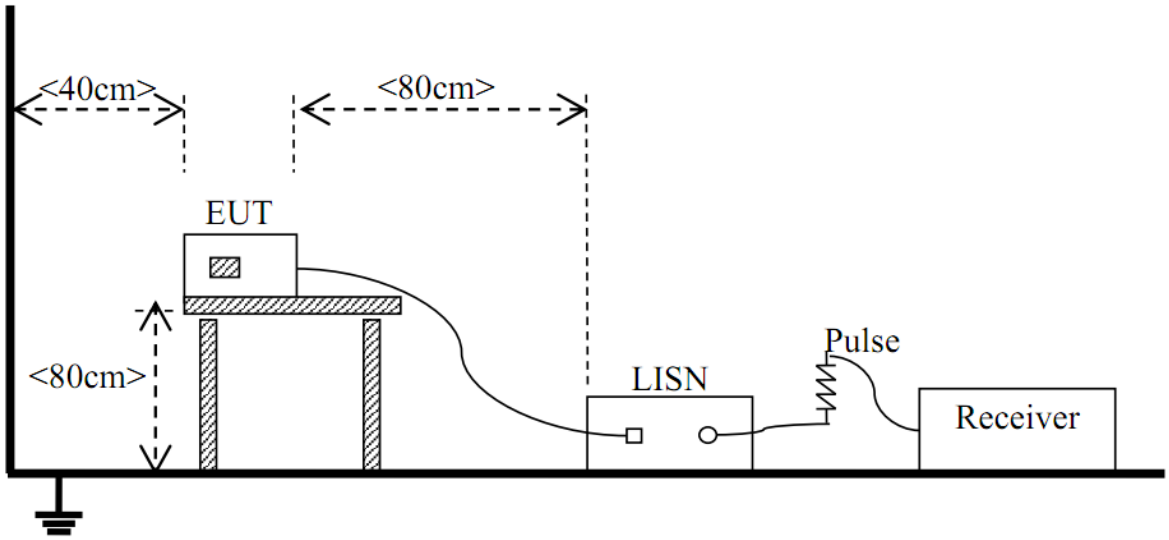
(Diagram 3)

4.4.4 For Radiated Test (Above 1 GHz)



(Diagram 4)

4.4.5 For AC Power-line Conducted Emissions



(Diagram 5)

5 TEST ITEMS

5.1 Transmitter Radiated Power (EIRP/ERP)

5.1.1 Limit

FCC § 2.1046 & 22.913(a) & 24.232(c) & 27.50(a) & 27.50(b) & 27.50(c) & 27.50(d) & 27.50(h) & 27.50(j) & 27.50(k) & 90.635(b) & 90.542(a) & 96.41(b)

According to FCC section 22.913(a) (5), the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC section 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.

According to FCC section 27.50(a) (3), for mobile and portable stations transmitting in the 2305-2315MHz band or the 2350-2360MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards.

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

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

FCC section 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.

(7) Fixed, mobile, and portable (hand-held) stations operating in the 2000-2020 MHz band are limited to 2 watts EIRP.

And FCC section 27.50(h) (2), for 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.

FCC section 27.50(j) (3), for mobile, and portable (hand-held) stations operating in the 3700-3980 MHz band are limited to 1 watt EIRP.

FCC section 27.50(k) (3), Mobile devices are limited to 1Watt (30 dBm) EIRP in the 3450-3550 MHz band.

According to FCC section 90.635(b), the maximum output power of the transmitter for mobile stations is 100 watts (20dBW).

According to FCC section 90.542(a) (7), portable stations (hand-held devices) transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 3 watts ERP.

FCC section 96.41(b), the maximum effective isotropic radiated power (EIRP) and maximum Power Spectral Density (PSD) of any CBSD and End User Device must comply with the limits shown in the table

in this paragraph below:

Device	Maximum EIRP (dBm/10 megahertz)	Maximum PSD (dBm/MHz)
End User Device	23	N/A
Category A CBSD	30	20
Category B CBSD[note1]	47	37
Note1: Category B CBSDs will only be authorized for use after an ESC is approved and commercially deployed consistent with §§ 96.15 and 96.67.		

RSS-Gen § 6.12 & RSS-130 § 4.6 & RSS-132 § 5.4 & RSS-133 § 6.4 & RSS-139 § 6.5 & RSS-195 § 5.5 & RSS-199 § 4.4 & RSS-140 § 4.3 & RSS-192 § 8.6 & RSS-197 § 5.6

According to RSS-130 § 4.6.3, The e.r.p. shall not exceed 30 watts for mobile equipment and outdoor fixed subscriber equipment. The e.r.p. shall not exceed 3 watts for portable equipment and indoor fixed subscriber equipment.

According to RSS-132 § 5.4, the Effective Radiated Power (ERP) for mobile equipment shall not exceed 11.5 watts.

According to RSS-133 § 6.4 (SRSP 510), mobile stations and hand-held portables are limited to 2 watts maximum EIRP.

According to RSS-139 § 6.5, the EIRP for mobile and portable transmitters shall not exceed 1 watt.

According to RSS-195 § 5.5, the EIRP of mobile or portable equipment transmitting in the band 2305-2315MHz or the band 2350-2360MHz, employing 3GPP LTE standards, shall not exceed 250mW within 5MHz bandwidth. For other technologies, the EIRP shall not exceed 50mW within any 1MHz bandwidth.

According to RSS-199 § 4.4, for mobile subscriber equipment, the EIRP shall not exceed 2 watts.

According to RSS-140 § 4.3, the equivalent radiated power (e.r.p.) for control and mobile equipment shall not exceed 30 W. The e.r.p. for portable equipment including handheld devices shall not exceed 3 W.

According to RSS-192 § 8.6, for Subscriber equipment other than fixed subscriber equipment(Non-SAS), the EIRP shall not exceed 23dBm/10MHz.

According to RSS-197 § 5.6, The maximum e.i.r.p. density of mobile equipment shall not exceed 40 mW in any 1 MHz bandwidth.

5.1.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description is used for conducted test, and the section 4.4.3 and 4.4.4 (Diagram 3, 4) test setup description is used for radiated test. The photo of test setup please refer to ANNEX B.

5.1.3 Test Procedure

Description of the Conducted Output Power Measurement

The EUT is coupled to the SS with attenuator through power splitter; the RF load attached to EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. A system simulator is used to establish communication with the EUT, and its parameters are set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The relevant equation for determining the conducted measured value is:

Conducted Output Power Value (dBm) = Measured Value (dBm) + Path Loss (dB)

where:
Conducted Output Power Value = final conducted measured value in the conducted power test, in dBm;
Measured Value = measured conducted power received by spectrum analyzer or power meter, in dBm;
Path Loss = signal attenuation in the connecting cable between the transmitter and spectrum analyzer or power meter, including external cable loss, in dB;

During the test, the data of Path Loss (dB) is added in the spectrum analyzer or power meter, so Measured Value (dBm) is the final values which contains the data of Path Loss (dB).

For example:

In the conducted output power test, when measured value for GSM850 is 24.7 dBm, and path loss is 8.5 dB, then final conducted output power value is:

Conducted Output Power Value (dBm) = 24.7 dBm + 8.5 dB = 33.2 dBm

Description of the Transmitter Radiated Power Measurement

In many cases, the RF output power limits for licensed digital transmission devices is specified in terms of effective radiated power (ERP) or equivalent isotropic radiated power (EIRP). Typically, ERP is specified when the operating frequency is less than or equal to 1 GHz and EIRP is specified when the operating frequency is greater than 1 GHz. Both are determined by adding the transmit antenna gain to the conducted RF output power with the primary difference between the two being that when determining the ERP, the transmit antenna gain is referenced to a dipole antenna (i.e., dBd) whereas when determining the EIRP, the transmit antenna gain is referenced to an isotropic antenna (dBi).

Final measurement calculation as below:

The relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

ERP/EIRP = P_{Meas} + GT − LC

where:
ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P_{Meas}, typically dBW or dBm);
P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
dBd (ERP)=dBi (EIRP) -2.15 dB
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

For example:
In the EIRP test, when P_{Meas} value for GSM1900 is 30.2 dBm, LC is 0.6 dB, and GT is -3.4 dB, then final EIRP value is:
EIRP for GSM1900 = 30.2 dBm - 3.4 dBi - 0.6 dB = 26.2 dBm

The relevant equation for determining the ERP/EIRP from the radiated RF output power is:
ERP/EIRP (dBm) = SA Read Value (dBm) + Correction Factor (dB)

where:
ERP/EIRP = effective or equivalent radiated power, in dBm;
SA Read Value = measured transmitter power received by EMI receiver or spectrum analyzer, in dBm;
Correction Factor = total correction factor including cable loss, in dB;

During the test, the data of Correction Factor (dB) is added in the EMI receiver or spectrum analyzer, so SA Read Value (dBm) is the final values which contains the data of Correction Factor (dB).

For example:

In the ERP test, when SA read value for GSM850 is 21dBm, and correction factor is 8dB, then final ERP value for GSM850 is:

ERP (dBm) = 21dBm + 8dB = 29dBm

5.1.4 Test Result

Please refer to ANNEX A.1.

5.2 Peak to Average Ratio

5.2.1 Limit

FCC § 2.1046 & 24.232(d) & 27.50(d) & 27.50(j) & 27.50(k)

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

According to FCC section 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 24.232 (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 13 dB.

FCC section 24.232(e), peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

According to FCC section 27.50(d) (5) & 27.50(j) & 27.50(k), in measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

5.2.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description is used for this test. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

Here the lowest, middle and highest channels are selected to perform testing to verify the peak-to-average ratio.

According to KDB 971168 D01, there is CCDF procedure for PAPR:

a) Refer to instrument’s analyzer instruction manual for details on how to use the power statistics/CCDF function;

b) Set resolution/measurement bandwidth ≥ signal’s occupied bandwidth;

c) Set the number of counts to a value that stabilizes the measured CCDF curve;

d) Set the measurement interval as follows:

1) for continuous transmissions, set to 1 ms,

2) for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.

e) Record the maximum PAPR level associated with a probability of 0.1%.

Alternate procedure for PAPR:

Use one of the procedures presented in 4.1 to measure the total peak power and record as P_{Pk}. Use one of the applicable procedures presented 4.2 to measure the total average power and record as P_{Avg}. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

PAPR (dB) = P_{Pk} (dBm) - P_{Avg} (dBm).

5.2.4 Test Result

Please refer to ANNEX A.2.

5.3 Occupied Bandwidth

5.3.1 Limit

FCC § 2.1049

RSS-Gen § 6.7

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Many of the individual rule parts specify a relative OBW in lieu of the 99% OBW. In such cases, the OBW is defined as the width of the signal between two points, one below the carrier center frequency and on above the carrier center frequency, outside of which all emissions are attenuated by at least X dB below the transmitter power, where the value of X is typically specified as 26.

5.3.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description is used for this test. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

The following procedure shall be used for measuring power bandwidth.

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the anticipated OBW).

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.

c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least 10log (OBW / RBW) below the reference level.

d) NOTE—Steps a) through c) may require iteration to adjust within the specified tolerances.

e) For -26 dB OBW, the dynamic range of the spectrum analyzer at the selected RBW shall be at least 10dB below the target “-X dB down” requirement, e.g. -26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be 36dB below the reference value.

f) Set the detection mode to peak, and the trace mode to max hold.

g) For 99% OBW, use the 99 % power bandwidth function of the spectrum analyzer (if available) and report the measured bandwidth.

If the instrument does not have a 99 % power bandwidth function, the trace data points are to be recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at

the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99 % power bandwidth is the difference between these two frequencies.

h) For -26 dB OBW, determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).

Determine the “-X dB down amplitude” as equal to (reference value -X). Alternatively, this calculation can be performed by the analyzer by using the marker-delta function.

Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below “-X dB down amplitude” determined in step g). If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.

i) The OBW shall be reported by providing plot(s) of the measuring instrument display. The frequency and amplitude axes and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

j) Change variable modulations, coding, or channel bandwidth settings, then repeat above test procedures.

5.3.4 Test Result

Please refer to ANNEX A.3.

5.4 Frequency Stability

5.4.1 Limit

FCC § 2.1055 & 22.355 & 24.235 & 27.54 & 90.213

RSS-Gen § 6.11 & RSS-130 § 4.5 & RSS-132 § 5.3 & RSS-133 § 6.3 & RSS-139 § 6.4 & RSS-195 § 5.4 & RSS-199 § 4.3 & RSS-140 § 4.2 & RSS-192 § 8.5 & RSS-197 § 5.3

FCC § 2.1055 & RSS-Gen § 6.11

The frequency stability shall be measured with variation of ambient temperature as follows:

(1) The temperature is varied from -30°C to +50°C.

(2) Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than 10°C through the range.

The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating and point which shall be specified by the manufacture.

(3) 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.

FCC § 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 § 24.235

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

FCC § 27.54

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

FCC § 90.213

The frequency stability shall not depart from the reference frequency in excess of ±2.5ppm for mobile stations.

RSS-130 § 4.5

The frequency stability shall be sufficient to ensure that the occupied bandwidth remains within each frequency block range when tested at the temperature and supply voltage variations specified in RSS-Gen.

RSS-132 § 5.3

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations and ±1.5 ppm for base stations.

RSS-133 § 6.3

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations and ±1.0 ppm for base stations.

RSS-139 § 6.4

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

RSS-195 § 5.4

The applicant shall ensure frequency stability by showing that the occupied bandwidth is maintained within the range of the operating frequency blocks when testing under the temperature and supply voltage variations specified for the frequency stability measurement in RSS-Gen.

RSS-199 § 4.3

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

RSS-140 § 4.2

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

RSS-192 § 8.5

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

RSS-197 § 5.3

The transmitter frequency stability limit shall be determined as follows:

a.The frequency offset shall be measured according to the procedure described in RSS-Gen and recorded;

b.Using a resolution bandwidth of 1% of the occupied bandwidth, a reference point at the unwanted emission level specified in Section 5.7 on the emission mask of the lowest and highest channel shall be selected, and the frequency at these points shall be recorded as fL and fH respectively.

The applicant shall ensure frequency stability by showing that fL minus the frequency offset and fH plus the frequency offset shall be within the 3650-3700 MHz band..

5.4.2 Test Setup

The section 4.4.2 (Diagram 2) test setup description is used for this test. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

1. The EUT is placed in a temperature chamber.

2. The temperature is set to 25°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured.

3. The temperature is increased by not more than 10 degrees, allowed to stabilize and soak, and then repeat the frequency error measurement.

4. Repeat procedure 3 until +50°C and -30°C is reached.

5. Change supply voltage, and repeat measurement until extreme voltage is reached.

5.4.4 Test Result

Please refer to ANNEX A.4.

5.5 Spurious Emission at Antenna Terminals

5.5.1 Limit

FCC § 2.1051 & 22.917(a) & 24.238(a) & 27.53(a) & 27.53(c) & 27.53(f) & 27.53(g) & 27.53(h) & 27.53(l) & 27.53(m) & 27.53(n) & 90.691 & 90.543 & 96.41(e)

RSS-Gen § 6.13 & RSS-130 § 4.7 & RSS-132 § 5.5 & RSS-133 § 6.5 & RSS-139 § 6.6 & RSS-195 § 5.6

& RSS-199 § 4.5 & RSS-140 § 4.4 & RSS-192 § 8.7 & RSS-197 § 5.7

In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC § 22.917(a) & 24.238(a) & RSS-132 § 5.5 & RSS-133 § 6.5

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. This is calculated to be -13 dBm.

FCC § 27.53(a) (4)

For mobile and portable stations operating in the 2305-2315MHz and 2350-2360MHz bands:

(1)By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320MHz and on all frequencies between 2345 and 2360MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324MHz and on all frequencies between 2341 and 2345MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328MHz and on all frequencies between 2337 and 2341MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337MHz.

(2)By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292MHz, and 70 + 10 log (P) dB below 2288MHz.

(3)By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365MHz, and not less than 70 + 10 log (P) dB above 2365MHz.

FCC § 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 § 27.53(f)

For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to - 70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC § 27.53(g)

For operations in the 600MHz band and the 698-746MHz 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 kHz bands immediately outside and adjacent to a licensee’s frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC § 27.53(h) (1) & RSS-139 § 6.6

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.

FCC § 27.53(l) (2)

For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

FCC § 27.53(m) (4) & RSS-199 § 4.5

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

• 40+10logP dB (−10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.

• 43+10logP dB (−13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,

• 55+10logP dB (−25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less that 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.

FCC § 27.53(n) (2)

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

FCC § 90.691

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 $Log_{10}(f/6.1)$ decibels or 50 + 10 $Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + $10Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

FCC § 90.543

(e) For operations in the 758–768 MHz and the 788–798 MHz bands, 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 all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(4) Compliance with the provisions of paragraphs (e)(1) and (2) 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.

(f) For operations in the 758–775 MHz and 788–805 MHz bands, all emissions including harmonics in the band 1559– 1610 MHz shall be limited to -70 dBW/ MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC § 96.41(e)

The conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any emission shall not exceed-25 dBm/MHz.The conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed-40 dBm/MHz.

Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than1GHz.However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolutionbandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least26 dB below the transmitter power.

RSS-130 § 4.7

The unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dBW), by at least 43 + 10Log$_{10}$(P) (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.

In addition to the limit outlined above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:

(a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-

775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:

(i) 76 + 10 log10 p (watts), dB, for base and fixed equipment and

(ii) 65 + 10 log10 p (watts), dB, for mobile and portable equipment

(b) The e.i.r.p. in the band 1559-1610 MHz shall not exceed −70 dBW/MHz for wideband signal and −80 dBW for discrete emission with bandwidth less than 700 Hz.

RSS-195 § 5.6

The power of any emission outside the frequency range(s) in which the equipment operates shall be attenuated below the transmitter power, P (dBW), by the amount indicated in table below and graphically represented in figure below, where p is the transmitter output power measured in watts.

Frequency (MHz)	Attenuation (dB)	Frequency (MHz)	Attenuation (dB)
＜2200	43+10 $\log_{10}$ (p)	2324-2328	61+10 $\log_{10}$ (p)
2200-2288	70+10 $\log_{10}$ (p)	2328-2337	67+10 $\log_{10}$ (p)
2288-2292	67+10 $\log_{10}$ (p)	2337-2341	61+10 $\log_{10}$ (p)
2292-2296	61+10 $\log_{10}$ (p)	2341-2345	55+10 $\log_{10}$ (p)
2296-2300	55+10 $\log_{10}$ (p)	2345-2360	43+10 $\log_{10}$ (p) Note
2300-2305	43+10 $\log_{10}$ (p)	2360-2365	43+10 $\log_{10}$ (p)
2305-2320	43+10 $\log_{10}$ (p)Note	2365-2395	70+10 $\log_{10}$ (p)
2320-2324	55+10 $\log_{10}$ (p)	＞2395	43+10 $\log_{10}$ (p)
Note: Measured at the edges of the highest and lowest frequency range(s) in which the equipment is designed to operate. See section 5.2 for the permitted frequency ranges for various equipment types.			

RSS-140 § 4.4

The power of any unwanted emission outside the bands 758-768 MHz and 788-798 MHz shall be attenuated below the transmitter output power P in dBW as follows, where p is the transmitter output power in watts:

For any frequency between 769-775 MHz and 799-806 MHz:

76 + 10 log (p), dB in a 6.25 kHz band for fixed and base station equipment

65 + 10 log (p), dB in a 6.25 kHz band for mobile and portable/hand-held equipment

For any frequency between 775-788 MHz, above 806 MHz, and below 758 MHz: 43 + 10 log (p), dB in a bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the

frequency bands 758-768 MHz and 788-798 MHz, a resolution bandwidth of 30 kHz may be employed.

In addition, the equivalent isotropically radiated power (e.i.r.p.) of all emissions, including harmonics in the band 1559-1610 MHz, shall not exceed −70 dBW/MHz for wideband emissions, and −80 dBW/kHz for discrete emissions of less than 700 Hz bandwidth.

RSS-192 § 8.7.5

For the unwanted emissions shall not exceed:

for subscriber equipment: -30 dBm/MHz in the frequency range greater than (B+5) MHz from the edge of the frequency band, where B is the frequency block group in MHz

for indoor base station equipment: -30 dBm/MHz for frequencies below 3440 MHz and above 3660 MHz.

The power of any emissions outside the frequency band 3650-3700 MHz shall be attenuated below the channel transmitter power P (dBW) by 43 + 10 Log (p), where p is measured in watts.

And Subscriber equipment shall have the TRP (per cell) or conducted power (per single antenna connector), where applicable, of unwanted emission outside the frequency block group not exceeding the following, where B is the frequency block group in MHz as shown in the table below

Frequency block group (B)	Offset frequency from the edge of the frequency block group (MHz)			
	0-1	1-5	5-B	>B
10 MHz, 20MHz, 30 MHz and 40 MHz	-13 dBm/1% of B	-10 dBm/MHz	-13 dBm/MHz	-25 dBm/MHz
> 40 MHz	-24 dBm/30 kHz	-10 dBm/MHz	-13 dBm/MHz	-25 dBm/MHz

RSS-197 § 5.7

The unwanted emissions shall be measured at the frequencies of the highest and lowest channel of all bandwidths and types of modulation that the equipment can operate with a resolution bandwidth of 1 MHz or less, but at least 1% of the occupied bandwidth of the transmitter, provided that the measured power is integrated over a 1 MHz bandwidth.

The power of any emissions outside the frequency band 3650-3700 MHz shall be attenuated below the channel transmitter power P (dBW) by 43 + 10 Log (p), where p is measured in watts.

5.5.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated

in the equipment up to a frequency including its 10th harmonic. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency blocks a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

1. The EUT is coupled to the system simulator and spectrum analyzer; the RF load attached to EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

2. CMW500 is used to establish communication with the EUT, and its parameters are set to force the EUT transmitting at maximum output power.

3. The RF output of the transmitter is connected to the input of the spectrum analyzer through sufficient attenuation.

4. Spurious emissions are tested with 0.001MHz RBW for frequency less than 150kHz, 0.01MHz RBW for frequency less than 30MHz, 0.1MHz RBW for frequency less than 1GHz, and 1MHz RBW for frequency above 1GHz. And sweep point number are at least 401, referring to following formula.

Sweep point number = Span/RBW

VBW=3*RBW

Detector Mode=mean or average power

5. Record the frequencies and levels of spurious emissions.

5.5.4 Test Result

Please refer to ANNEX A.5.

5.6 Band Edge

5.6.1 Limit

FCC § 2.1051 & 22.917(a) & 24.238(a) & 27.53(a) & 27.53(c) & 27.53(g) & 27.53(h) & 27.53(l) & 27.53(m) & 27.53(n) & 90.691 & 90.543 & 96.41(e)

In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC § 22.917(a) & 24.238(a)

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. This is calculated to be -13 dBm.

FCC § 27.53(a) (4)

For mobile and portable stations operating in the 2305-2315MHz and 2350-2360MHz bands:

(1)By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320MHz and on all frequencies between 2345 and 2360MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324MHz and on all frequencies between 2341 and 2345MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328MHz and on all frequencies between 2337 and 2341MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337MHz.

(2)By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292MHz, and 70 + 10 log (P) dB below 2288MHz.

(3)By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365MHz, and not less than 70 + 10 log (P) dB above 2365MHz.

FCC § 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 § 27.53(g)

For operations in the 600MHz band and the 698-746MHz 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 kHz bands immediately outside and adjacent to a licensee’s frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC § 27.53(h) (1)

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.

FCC § 27.53(l) (2)

For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

FCC § 27.53(m) (4)

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

• 40+10logP dB (−10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.

• 43+10logP dB (−13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,

• 55+10logP dB (−25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less that 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.

FCC § 27.53(n) (2)

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

FCC § 90.691

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 $Log_{10}(f/6.1)$ decibels or 50 + 10 $Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + $10Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

FCC § 90.543

(e) For operations in the 758–768 MHz and the 788–798 MHz bands, 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 all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(4) Compliance with the provisions of paragraphs (e)(1) and (2) 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 § 96.41(e)

The conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any emission shall not exceed-25 dBm/MHz.The conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed-40 dBm/MHz.

Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than1GHz.However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolutionbandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least26 dB below the transmitter power.
RSS-130 § 4.7

The unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dBW), by at least 43 + 10Log_{10}(P) (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.

In addition to the limit outlined above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:

(a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:

(i) 76 + 10 log10 p (watts), dB, for base and fixed equipment and

(ii) 65 + 10 log10 p (watts), dB, for mobile and portable equipment

(b) The e.i.r.p. in the band 1559-1610 MHz shall not exceed −70 dBW/MHz for wideband signal and −80 dBW for discrete emission with bandwidth less than 700 Hz.

RSS-195 § 5.6

The power of any emission outside the frequency range(s) in which the equipment operates shall be attenuated below the transmitter power, P (dBW), by the amount indicated in table below and graphically represented in figure below, where p is the transmitter output power measured in watts.

Frequency (MHz)	Attenuation (dB)	Frequency (MHz)	Attenuation (dB)
＜2200	43+10 log_{10} (p)	2324-2328	61+10 log_{10} (p)

2200-2288	70+10 $\log_{10}$ (p)	2328-2337	67+10 $\log_{10}$ (p)
2288-2292	67+10 $\log_{10}$ (p)	2337-2341	61+10 $\log_{10}$ (p)
2292-2296	61+10 $\log_{10}$ (p)	2341-2345	55+10 $\log_{10}$ (p)
2296-2300	55+10 $\log_{10}$ (p)	2345-2360	43+10 $\log_{10}$ (p) Note
2300-2305	43+10 $\log_{10}$ (p)	2360-2365	43+10 $\log_{10}$ (p)
2305-2320	43+10 $\log_{10}$ (p)Note	2365-2395	70+10 $\log_{10}$ (p)
2320-2324	55+10 $\log_{10}$ (p)	＞2395	43+10 $\log_{10}$ (p)
Note: Measured at the edges of the highest and lowest frequency range(s) in which the equipment is designed to operate. See section 5.2 for the permitted frequency ranges for various equipment types.			

RSS-140 § 4.4

The power of any unwanted emission outside the bands 758-768 MHz and 788-798 MHz shall be attenuated below the transmitter output power P in dBW as follows, where p is the transmitter output power in watts:

For any frequency between 769-775 MHz and 799-806 MHz:

76 + 10 log (p), dB in a 6.25 kHz band for fixed and base station equipment

65 + 10 log (p), dB in a 6.25 kHz band for mobile and portable/hand-held equipment

For any frequency between 775-788 MHz, above 806 MHz, and below 758 MHz: 43 + 10 log (p), dB in a bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency bands 758-768 MHz and 788-798 MHz, a resolution bandwidth of 30 kHz may be employed.

In addition, the equivalent isotropically radiated power (e.i.r.p.) of all emissions, including harmonics in the band 1559-1610 MHz, shall not exceed −70 dBW/MHz for wideband emissions, and −80 dBW/kHz for discrete emissions of less than 700 Hz bandwidth.

RSS-192 § 8.7.5

For the unwanted emissions shall not exceed:

for subscriber equipment: -30 dBm/MHz in the frequency range greater than (B+5) MHz from the edge of the frequency band, where B is the frequency block group in MHz

for indoor base station equipment: -30 dBm/MHz for frequencies below 3440 MHz and above 3660 MHz.

The power of any emissions outside the frequency band 3650-3700 MHz shall be attenuated below the channel transmitter power P (dBW) by 43 + 10 Log (p), where p is measured in watts.

And Subscriber equipment shall have the TRP (per cell) or conducted power (per single antenna

connector), where applicable, of unwanted emission outside the frequency block group not exceeding the following, where B is the frequency block group in MHz as shown in the table below

Frequency block group (B)	Offset frequency from the edge of the frequency block group (MHz)			
	0-1	1-5	5-B	>B
10 MHz, 20MHz, 30 MHz and 40 MHz	-13 dBm/1% of B	-10 dBm/MHz	-13 dBm/MHz	-25 dBm/MHz
> 40 MHz	-24 dBm/30 kHz	-10 dBm/MHz	-13 dBm/MHz	-25 dBm/MHz

RSS-197 § 5.7

The unwanted emissions shall be measured at the frequencies of the highest and lowest channel of all bandwidths and types of modulation that the equipment can operate with a resolution bandwidth of 1 MHz or less, but at least 1% of the occupied bandwidth of the transmitter, provided that the measured power is integrated over a 1 MHz bandwidth.

The power of any emissions outside the frequency band 3650-3700 MHz shall be attenuated below the channel transmitter power P (dBW) by 43 + 10 Log (p), where p is measured in watts.

5.6.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.6.3 Test Procedure

The EUT, which is powered by the Battery, 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.

1.The EUT is coupled to the system simulator and spectrum analyzer; the RF load attached to EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

2. CMW500 is used to establish communication with the EUT, and its parameters are set to force the EUT transmitting at maximum output power.

3. The RF output of the transmitter is connected to the input of the spectrum analyzer through sufficient attenuation.

4. The center of the spectrum analyzer was set to block edge frequency.

5. Band edge are tested with 1%*cBW (RBW), and sweep point number referred to following formula.

Sweep point number = 2*Span/RBW

VBW=3RBW

6. Record the frequencies and levels of spurious emissions.

For mobile and portable stations, 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. Since it was not possible to set the resolution bandwidth to 6.25 kHz with the available equipment, a bandwidth of 10 kHz was used instead to show compliance. By using a 10 kHz bandwidth on the spectrum analyzer.

10*log(10 kHz / 6.25 kHz) = 2.04 dB
Limit Line = -35 dBm + 2.04 dB = -32.96dBm

5.6.4 Test Result

Please refer to ANNEX A.6.

5.7 Field Strength of Spurious Radiation

5.7.1 Limit

FCC § 2.1053 & 22.917(a) & 24.238(a) & 27.53(a) & 27.53(c) & 27.53(f) & 27.53(g) & 27.53(h) & 27.53(l) & 27.53(m) & 27.53(n) & 90.691& 90.543 & 96.41(e)

FCC § 22.917(a) & 24.238(a)

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. This is calculated to be -13 dBm.

FCC § 27.53(a) (4)

For mobile and portable stations operating in the 2305-2315MHz and 2350-2360MHz bands:

(1)By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320MHz and on all frequencies between 2345 and 2360MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324MHz and on all frequencies between 2341 and 2345MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328MHz and on all frequencies between 2337 and 2341MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337MHz.

(2)By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292MHz, and 70 + 10 log (P) dB below 2288MHz.

(3)By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365MHz, and not less than 70 + 10 log (P) dB above 2365MHz.

FCC § 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 § 27.53(f)

For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to - 70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC § 27.53(g)

For operations in the 600MHz band and the 698-746MHz 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 kHz bands immediately outside and adjacent to a licensee’s frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC § 27.53(h) (1)

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.

FCC § 27.53(l) (2)

For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

FCC § 27.53(m) (4)

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

• 40+10logP dB (−10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.

• 43+10logP dB (−13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,

• 55+10logP dB (−25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less that 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.

FCC § 27.53(n) (2)

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

FCC § 90.691

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 $Log_{10}(f/6.1)$ decibels or 50 + 10 $Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + $10Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

FCC § 90.543

(e) For operations in the 758–768 MHz and the 788–798 MHz bands, 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 all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(4) Compliance with the provisions of paragraphs (e)(1) and (2) 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.

(f) For operations in the 758–775 MHz and 788–805 MHz bands, all emissions including harmonics in the band 1559– 1610 MHz shall be limited to -70 dBW/ MHz equivalent isotropically radiated power (EIRP) for

wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC § 96.41(e)

The conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any emission shall not exceed-25 dBm/MHz.The conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed-40 dBm/MHz.

Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than1GHz.However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolutionbandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least26 dB below the transmitter power.

RSS-130 § 4.7

The unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dBW), by at least 43 + 10Log_{10}(P) (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.

In addition to the limit outlined above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:

(a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:

(i) 76 + 10 log10 p (watts), dB, for base and fixed equipment and

(ii) 65 + 10 log10 p (watts), dB, for mobile and portable equipment

(b) The e.i.r.p. in the band 1559-1610 MHz shall not exceed −70 dBW/MHz for wideband signal and −80 dBW for discrete emission with bandwidth less than 700 Hz.

RSS-195 § 5.6

The power of any emission outside the frequency range(s) in which the equipment operates shall be attenuated below the transmitter power, P (dBW), by the amount indicated in table below and graphically represented in figure below, where p is the transmitter output power measured in watts.

Frequency (MHz)	Attenuation (dB)	Frequency (MHz)	Attenuation (dB)
＜2200	43+10 $\log_{10}$ (p)	2324-2328	61+10 $\log_{10}$ (p)
2200-2288	70+10 $\log_{10}$ (p)	2328-2337	67+10 $\log_{10}$ (p)
2288-2292	67+10 $\log_{10}$ (p)	2337-2341	61+10 $\log_{10}$ (p)
2292-2296	61+10 $\log_{10}$ (p)	2341-2345	55+10 $\log_{10}$ (p)
2296-2300	55+10 $\log_{10}$ (p)	2345-2360	43+10 $\log_{10}$ (p) Note
2300-2305	43+10 $\log_{10}$ (p)	2360-2365	43+10 $\log_{10}$ (p)
2305-2320	43+10 $\log_{10}$ (p)Note	2365-2395	70+10 $\log_{10}$ (p)
2320-2324	55+10 $\log_{10}$ (p)	＞2395	43+10 $\log_{10}$ (p)
Note: Measured at the edges of the highest and lowest frequency range(s) in which the equipment is designed to operate. See section 5.2 for the permitted frequency ranges for various equipment types.			

RSS-140 § 4.4

The power of any unwanted emission outside the bands 758-768 MHz and 788-798 MHz shall be attenuated below the transmitter output power P in dBW as follows, where p is the transmitter output power in watts:

For any frequency between 769-775 MHz and 799-806 MHz:

76 + 10 log (p), dB in a 6.25 kHz band for fixed and base station equipment

65 + 10 log (p), dB in a 6.25 kHz band for mobile and portable/hand-held equipment

For any frequency between 775-788 MHz, above 806 MHz, and below 758 MHz: 43 + 10 log (p), dB in a bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency bands 758-768 MHz and 788-798 MHz, a resolution bandwidth of 30 kHz may be employed.

In addition, the equivalent isotropically radiated power (e.i.r.p.) of all emissions, including harmonics in the band 1559-1610 MHz, shall not exceed −70 dBW/MHz for wideband emissions, and −80 dBW/kHz for discrete emissions of less than 700 Hz bandwidth.

RSS-192 § 8.7.5

For the unwanted emissions shall not exceed:

for subscriber equipment: -30 dBm/MHz in the frequency range greater than (B+5) MHz from the edge of the frequency band, where B is the frequency block group in MHz

for indoor base station equipment: -30 dBm/MHz for frequencies below 3440 MHz and above 3660 MHz.

The power of any emissions outside the frequency band 3650-3700 MHz shall be attenuated below the

channel transmitter power P (dBW) by 43 + 10 Log (p), where p is measured in watts.

And Subscriber equipment shall have the TRP (per cell) or conducted power (per single antenna connector), where applicable, of unwanted emission outside the frequency block group not exceeding the following, where B is the frequency block group in MHz as shown in the table below

Frequency block group (B)	Offset frequency from the edge of the frequency block group (MHz)			
	0-1	1-5	5-B	>B
10 MHz, 20MHz, 30 MHz and 40 MHz	-13 dBm/1% of B	-10 dBm/MHz	-13 dBm/MHz	-25 dBm/MHz
> 40 MHz	-24 dBm/30 kHz	-10 dBm/MHz	-13 dBm/MHz	-25 dBm/MHz

RSS-197 § 5.7

The unwanted emissions shall be measured at the frequencies of the highest and lowest channel of all bandwidths and types of modulation that the equipment can operate with a resolution bandwidth of 1 MHz or less, but at least 1% of the occupied bandwidth of the transmitter, provided that the measured power is integrated over a 1 MHz bandwidth.

The power of any emissions outside the frequency band 3650-3700 MHz shall be attenuated below the channel transmitter power P (dBW) by 43 + 10 Log (p), where p is measured in watts.

5.7.2 Test Setup

The section 4.4.3 and 4.4.4 (Diagram 3, 4) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.7.3 Test Procedure

1. On a test site, the EUT shall be placed at 80cm height on a turn table, and in the position close to normal use as declared by the applicant.

2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.

3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.

4. During the measurement of the EUT, the resolution bandwidth was to 1 MHz and the average bandwidth

was set to 1 MHz.

5. The transmitter shall be switched on; the measuring receiver shall be tuned to the frequency of the

transmitter under test.

6. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.

7. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.

8. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.

9. The maximum signal level detected by the measuring receiver shall be noted.

10. The EUT was replaced by half-wave dipole (824 ~ 849 MHz) or horn antenna (1 850 ~ 1 910 MHz) connected to a signal generator.

11. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase

the sensitivity of the measuring receiver.

12. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.

13. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring received, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.

14. The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

15. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.

Final measurement calculation as below:

The relevant equation for determining the ERP/EIRP from the radiated RF output power is:

ERP/EIRP (dBm) = SA Read Value (dBm) + Correction Factor (dB)

where:
ERP/EIRP = effective or equivalent radiated power, in dBm;
SA Read Value = measured transmitter power received by EMI receiver or spectrum analyzer, in dBm;
Correction Factor = total correction factor including cable loss, in dB;

During the test, the data of Correction Factor (dB) is added in the EMI receiver or spectrum analyzer, so SA Read Value (dBm) is the final values which contains the data of Correction Factor (dB).

For example:

In the ERP test, when SA read value for GSM850 is 21dBm, and correction factor is 8dB, then final ERP value for GSM850 is:

ERP (dBm) = 21dBm + 8dB = 29dBm

5.7.4 Test Result

Please refer to ANNEX A.7.

5.8 Receiver Spurious Emissions

5.8.1 Limit

RSS-Gen § 7.3/4 & RSS-132 § 5.6 & RSS-133 § 6.6 & RSS-197 § 5.7

For emissions at frequencies below 1 GHz, measurements shall be performed using a CISPR quasi-peak detector and the related measurement bandwidth. At frequencies above 1 GHz, measurements shall be performed using a linear average detector with a minimum resolution bandwidth of 1 MHz.

As an alternative to CISPR quasi-peak or average measurements, compliance with the emission limit can be demonstrated using measuring equipment employing a peak detector function properly adjusted for factors such as pulse desensitization, as required, with a measurement bandwidth equal to, or greater than, the applicable CISPR quasi-peak bandwidth or 1 MHz bandwidth, respectively.

Receiver Radiated Limits

Radiated emission measurements shall be performed with the receiver antenna connected to the receiver antenna ports. The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is higher, to at least five times the highest tunable or local oscillator frequency, whichever is higher, without exceeding 40 GHz.

Spurious emissions from receivers shall not exceed the radiated emissions limits shown in Table 2 below.

Table 2 –Receiver radiated emissions limits

Frequency (MHz)	Field Strength (μV/m at 3 metres)
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

Receiver Conducted Limits

If the receiver has a detachable antenna of known impedance, an antenna-conducted spurious emissions measurement is permitted as an alternative to radiated measurement. However, the radiated method is preferred.

The antenna-conducted test shall be performed with the antenna disconnected and with the receiver antenna port connected to a measuring instrument having equal input impedance to that specified for the antenna. The RF cable connecting the receiver under test to the measuring instrument shall also have the same impedance to that specified for the receiver’s antenna.

The spurious emissions from the receiver at any discrete frequency, measured at the antenna port by the antenna-conducted method, shall not exceed 2 nW in the frequency range 30-1000 MHz and 5 nW above 1 GHz.

5.8.2 Test Setup

The section 4.4.3 and 4.4.4 (Diagram 3, 4) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.8.3 Test Procedure

The test employing the methods of measurement described in the publication referenced in Section 3(b) (ANSI C63.4);

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

An initial pre-scan was performed in the chamber using the EMI Receiver in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bi-Log antenna with 2 orthogonal polarities.

5.8.4 Test Result

Please refer to ANNEX A.8.

5.9 AC Power-line Conducted Emissions

5.9.1 Limit

RSS-Gen § 8.8

For AC power-line conducted emissions, both quasi-peak and average detectors having the characteristics specified in CAN/CSA-CISPR 16-1-1:15 for the 150 kHz to 30 MHz frequency range shall be employed.

Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in table 3, as measured using a 50 μH / 50 Ω line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 3 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

Table 3 –AC power-line conducted emissions limits

Frequency (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56[Note1]	56 to 46 [Note1]
0.5 - 5	56	46
5 - 30	60	50

Note 1: The level decreases linearly with the logarithm of the frequency.

5.9.2 Test Setup

The section 4.4.5 (Diagram 5) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.9.3 Test Procedure

The test employing the methods of measurement described in the publication referenced in Section 3(b) (ANSI C63.4);

The EUT is connected to the power mains through a LISN which provides 50 Ω/50 μH of coupling impedance for the measuring instrument. The test frequency range is from 150 kHz to 30 MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.9.4 Test Result

Please refer to ANNEX A.9.

ANNEX A TEST RESULTS

A.1 Transmitter Radiated Power (EIRP/ERP)

WCDMA Mode Test Data

Test Band	Test Channel	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
WCDMA Band 2	LCH	22.49	2.5	24.99	0.316	2.000	Pass
	MCH	22.77	2.5	25.27	0.337	2.000	Pass
	HCH	22.74	2.5	25.24	0.334	2.000	Pass
HSDPA Band 2	LCH	21.80	2.5	24.30	0.269	2.000	Pass
	MCH	21.78	2.5	24.28	0.268	2.000	Pass
	HCH	21.86	2.5	24.36	0.273	2.000	Pass
HSUPA Band 2	LCH	21.49	2.5	23.99	0.251	2.000	Pass
	MCH	21.86	2.5	24.36	0.273	2.000	Pass
	HCH	21.86	2.5	24.36	0.273	2.000	Pass

Test Band	Test Channel	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
WCDMA Band 4	LCH	22.94	2.5	25.44	0.350	1.000	Pass
	MCH	22.64	2.5	25.14	0.327	1.000	Pass
	HCH	22.81	2.5	25.31	0.340	1.000	Pass
HSDPA Band 4	LCH	22.56	2.5	25.06	0.321	1.000	Pass
	MCH	22.53	2.5	25.03	0.318	1.000	Pass
	HCH	22.66	2.5	25.16	0.328	1.000	Pass
HSUPA Band 4	LCH	22.53	2.5	25.03	0.318	1.000	Pass
	MCH	22.28	2.5	24.78	0.301	1.000	Pass
	HCH	22.28	2.5	24.78	0.301	1.000	Pass

Test Band	Test Channel	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
WCDMA Band 5	LCH	22.67	2.5	0.35	23.02	0.200	7.000	Pass
	MCH	22.91	2.5	0.35	23.26	0.212	7.000	Pass
	HCH	23.13	2.5	0.35	23.48	0.223	7.000	Pass
HSDPA Band 5	LCH	22.57	2.5	0.35	22.92	0.196	7.000	Pass
	MCH	22.68	2.5	0.35	23.03	0.201	7.000	Pass
	HCH	22.83	2.5	0.35	23.18	0.208	7.000	Pass
HSUPA Band 5	LCH	22.31	2.5	0.35	22.66	0.185	7.000	Pass
	MCH	22.40	2.5	0.35	22.75	0.188	7.000	Pass
	HCH	22.70	2.5	0.35	23.05	0.202	7.000	Pass

Note 1: For the HSDPA and HSUPA mode, all subtests were tested and just the worst data were recorded in this table.

Note 2: ERP/EIRP = P_{Meas} + GT − LC

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P_{Meas}, typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

ERP = EIRP – 2.15; where ERP and EIRP are expressed in consistent units.

HSDPA Conducted Output Power

Band	Channel	Conducted Output Average Power							
		Subtest1		Subtest2		Subtest3		Subtest4	
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
HSDPA Band 2	LCH	21.56	0.143	21.80	0.151	21.30	0.135	21.29	0.135
	MCH	21.75	0.150	21.78	0.151	21.30	0.135	21.30	0.135
	HCH	21.69	0.148	21.86	0.153	21.39	0.138	21.40	0.138
HSDPA Band 4	LCH	22.56	0.180	22.55	0.180	22.06	0.161	22.07	0.161
	MCH	22.36	0.172	22.53	0.179	22.04	0.160	22.04	0.160
	HCH	22.66	0.185	22.58	0.181	22.12	0.163	22.11	0.163
HSDPA Band 5	LCH	22.36	0.172	22.57	0.181	22.08	0.161	22.08	0.161
	MCH	22.51	0.178	22.68	0.185	22.09	0.162	22.22	0.167
	HCH	22.68	0.185	22.83	0.192	22.36	0.172	22.37	0.173

HSUPA Conducted Output Power

Band	Channel	Conducted Output Average Power									
		Subtest1		Subtest2		Subtest3		Subtest4		Subtest5	
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
HSUPA Band 2	LCH	20.95	0.124	20.59	0.115	20.18	0.104	20.74	0.119	21.49	0.141
	MCH	21.61	0.145	20.24	0.106	19.95	0.099	21.29	0.135	21.86	0.153
	HCH	21.57	0.144	20.23	0.105	19.92	0.098	21.25	0.133	21.86	0.153
HSUPA Band 4	LCH	22.38	0.173	20.61	0.115	21.50	0.141	21.33	0.136	22.53	0.179
	MCH	21.77	0.150	20.55	0.114	21.54	0.143	21.27	0.134	22.28	0.169
	HCH	21.77	0.150	20.51	0.112	21.26	0.134	21.11	0.129	22.28	0.169
HSUPA Band 5	LCH	21.69	0.148	20.55	0.114	21.40	0.138	21.21	0.132	22.31	0.170
	MCH	22.32	0.171	21.12	0.129	21.58	0.144	21.10	0.129	22.40	0.174
	HCH	22.70	0.186	20.81	0.121	21.86	0.153	21.37	0.137	22.58	0.181

LTE Mode Test Data

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND2									
1.4 MHz	LCH	QPSK	RB1#0	23.04	2.5	25.54	0.358	2.000	Pass
			RB1#3	23.15	2.5	25.65	0.367	2.000	Pass
			RB1#5	23.08	2.5	25.58	0.361	2.000	Pass
			RB3#0	23.07	2.5	25.57	0.361	2.000	Pass
			RB3#2	23.09	2.5	25.59	0.362	2.000	Pass
			RB3#3	23.04	2.5	25.54	0.358	2.000	Pass
			RB6#0	21.9	2.5	24.40	0.275	2.000	Pass
		16-QAM	RB1#0	22.18	2.5	24.68	0.294	2.000	Pass
			RB1#3	22.36	2.5	24.86	0.306	2.000	Pass
			RB1#5	22.28	2.5	24.78	0.301	2.000	Pass
			RB3#0	22.02	2.5	24.52	0.283	2.000	Pass
			RB3#2	22.06	2.5	24.56	0.286	2.000	Pass
			RB3#3	22.23	2.5	24.73	0.297	2.000	Pass
			RB6#0	21.18	2.5	23.68	0.233	2.000	Pass
	MCH	QPSK	RB1#0	22.68	2.5	25.18	0.330	2.000	Pass
			RB1#3	22.96	2.5	25.46	0.352	2.000	Pass
			RB1#5	22.99	2.5	25.49	0.354	2.000	Pass
			RB3#0	22.98	2.5	25.48	0.353	2.000	Pass
			RB3#2	23.02	2.5	25.52	0.356	2.000	Pass
			RB3#3	22.95	2.5	25.45	0.351	2.000	Pass
			RB6#0	21.98	2.5	24.48	0.281	2.000	Pass
		16-QAM	RB1#0	21.93	2.5	24.43	0.277	2.000	Pass
			RB1#3	21.91	2.5	24.41	0.276	2.000	Pass
			RB1#5	21.56	2.5	24.06	0.255	2.000	Pass
			RB3#0	21.74	2.5	24.24	0.265	2.000	Pass
			RB3#2	21.87	2.5	24.37	0.274	2.000	Pass
			RB3#3	21.79	2.5	24.29	0.269	2.000	Pass
			RB6#0	20.72	2.5	23.22	0.210	2.000	Pass
	HCH	QPSK	RB1#0	22.9	2.5	25.40	0.347	2.000	Pass
			RB1#3	23.09	2.5	25.59	0.362	2.000	Pass
			RB1#5	22.93	2.5	25.43	0.349	2.000	Pass
			RB3#0	22.96	2.5	25.46	0.352	2.000	Pass
			RB3#2	22.95	2.5	25.45	0.351	2.000	Pass
			RB3#3	22.96	2.5	25.46	0.352	2.000	Pass
			RB6#0	21.92	2.5	24.42	0.277	2.000	Pass
		16-QAM	RB1#0	22	2.5	24.50	0.282	2.000	Pass
			RB1#3	22.05	2.5	24.55	0.285	2.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND2									
			RB1#5	21.95	2.5	24.45	0.279	2.000	Pass
			RB3#0	22.18	2.5	24.68	0.294	2.000	Pass
			RB3#2	22.16	2.5	24.66	0.292	2.000	Pass
			RB3#3	22.17	2.5	24.67	0.293	2.000	Pass
			RB6#0	21.19	2.5	23.69	0.234	2.000	Pass
3 MHz	LCH	QPSK	RB1#0	22.93	2.5	25.43	0.349	2.000	Pass
			RB1#7	22.74	2.5	25.24	0.334	2.000	Pass
			RB1#14	22.93	2.5	25.43	0.349	2.000	Pass
			RB8#0	22.06	2.5	24.56	0.286	2.000	Pass
			RB8#4	22.09	2.5	24.59	0.288	2.000	Pass
			RB8#7	22.03	2.5	24.53	0.284	2.000	Pass
			RB15#0	22.03	2.5	24.53	0.284	2.000	Pass
		16-QAM	RB1#0	22.05	2.5	24.55	0.285	2.000	Pass
			RB1#7	21.79	2.5	24.29	0.269	2.000	Pass
			RB1#14	21.9	2.5	24.40	0.275	2.000	Pass
			RB8#0	20.95	2.5	23.45	0.221	2.000	Pass
			RB8#4	21.02	2.5	23.52	0.225	2.000	Pass
			RB8#7	20.97	2.5	23.47	0.222	2.000	Pass
			RB15#0	20.92	2.5	23.42	0.220	2.000	Pass
	MCH	QPSK	RB1#0	22.99	2.5	25.49	0.354	2.000	Pass
			RB1#7	22.74	2.5	25.24	0.334	2.000	Pass
			RB1#14	22.88	2.5	25.38	0.345	2.000	Pass
			RB8#0	21.91	2.5	24.41	0.276	2.000	Pass
			RB8#4	21.91	2.5	24.41	0.276	2.000	Pass
			RB8#7	21.87	2.5	24.37	0.274	2.000	Pass
			RB15#0	21.88	2.5	24.38	0.274	2.000	Pass
		16-QAM	RB1#0	21.68	2.5	24.18	0.262	2.000	Pass
			RB1#7	21.65	2.5	24.15	0.260	2.000	Pass
			RB1#14	21.68	2.5	24.18	0.262	2.000	Pass
			RB8#0	20.83	2.5	23.33	0.215	2.000	Pass
			RB8#4	20.84	2.5	23.34	0.216	2.000	Pass
			RB8#7	20.79	2.5	23.29	0.213	2.000	Pass
			RB15#0	20.87	2.5	23.37	0.217	2.000	Pass
	HCH	QPSK	RB1#0	22.91	2.5	25.41	0.348	2.000	Pass
			RB1#7	22.72	2.5	25.22	0.333	2.000	Pass
			RB1#14	23.15	2.5	25.65	0.367	2.000	Pass
			RB8#0	21.98	2.5	24.48	0.281	2.000	Pass
			RB8#4	21.91	2.5	24.41	0.276	2.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND2									
			RB8#7	21.89	2.5	24.39	0.275	2.000	Pass
			RB15#0	22.01	2.5	24.51	0.282	2.000	Pass
		16-QAM	RB1#0	21.98	2.5	24.48	0.281	2.000	Pass
			RB1#7	21.79	2.5	24.29	0.269	2.000	Pass
			RB1#14	21.84	2.5	24.34	0.272	2.000	Pass
			RB8#0	20.69	2.5	23.19	0.208	2.000	Pass
			RB8#4	20.66	2.5	23.16	0.207	2.000	Pass
			RB8#7	20.69	2.5	23.19	0.208	2.000	Pass
			RB15#0	20.61	2.5	23.11	0.205	2.000	Pass
5 MHz	LCH	QPSK	RB1#0	22.85	2.5	25.35	0.343	2.000	Pass
			RB1#13	22.75	2.5	25.25	0.335	2.000	Pass
			RB1#24	22.73	2.5	25.23	0.333	2.000	Pass
			RB12#0	21.97	2.5	24.47	0.280	2.000	Pass
			RB12#6	21.81	2.5	24.31	0.270	2.000	Pass
			RB12#13	21.89	2.5	24.39	0.275	2.000	Pass
			RB25#0	21.92	2.5	24.42	0.277	2.000	Pass
		16-QAM	RB1#0	21.61	2.5	24.11	0.258	2.000	Pass
			RB1#13	21.37	2.5	23.87	0.244	2.000	Pass
			RB1#24	21.32	2.5	23.82	0.241	2.000	Pass
			RB12#0	20.77	2.5	23.27	0.212	2.000	Pass
			RB12#6	20.65	2.5	23.15	0.207	2.000	Pass
			RB12#13	20.61	2.5	23.11	0.205	2.000	Pass
			RB25#0	21.01	2.5	23.51	0.224	2.000	Pass
	MCH	QPSK	RB1#0	22.73	2.5	25.23	0.333	2.000	Pass
			RB1#13	22.73	2.5	25.23	0.333	2.000	Pass
			RB1#24	22.79	2.5	25.29	0.338	2.000	Pass
			RB12#0	21.9	2.5	24.40	0.275	2.000	Pass
			RB12#6	21.96	2.5	24.46	0.279	2.000	Pass
			RB12#13	21.93	2.5	24.43	0.277	2.000	Pass
			RB25#0	21.97	2.5	24.47	0.280	2.000	Pass
		16-QAM	RB1#0	21.87	2.5	24.37	0.274	2.000	Pass
			RB1#13	21.9	2.5	24.40	0.275	2.000	Pass
			RB1#24	21.8	2.5	24.30	0.269	2.000	Pass
			RB12#0	20.7	2.5	23.20	0.209	2.000	Pass
			RB12#6	20.77	2.5	23.27	0.212	2.000	Pass
			RB12#13	20.74	2.5	23.24	0.211	2.000	Pass
			RB25#0	20.91	2.5	23.41	0.219	2.000	Pass
	HCH	QPSK	RB1#0	22.91	2.5	25.41	0.348	2.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND2									
			RB1#13	22.84	2.5	25.34	0.342	2.000	Pass
			RB1#24	22.87	2.5	25.37	0.344	2.000	Pass
			RB12#0	21.94	2.5	24.44	0.278	2.000	Pass
			RB12#6	21.87	2.5	24.37	0.274	2.000	Pass
			RB12#13	21.91	2.5	24.41	0.276	2.000	Pass
			RB25#0	21.98	2.5	24.48	0.281	2.000	Pass
		16-QAM	RB1#0	21.84	2.5	24.34	0.272	2.000	Pass
			RB1#13	21.72	2.5	24.22	0.264	2.000	Pass
			RB1#24	21.82	2.5	24.32	0.270	2.000	Pass
			RB12#0	20.77	2.5	23.27	0.212	2.000	Pass
			RB12#6	20.92	2.5	23.42	0.220	2.000	Pass
			RB12#13	20.86	2.5	23.36	0.217	2.000	Pass
			RB25#0	20.92	2.5	23.42	0.220	2.000	Pass
10 MHz	LCH	QPSK	RB1#0	23.01	2.5	25.51	0.356	2.000	Pass
			RB1#25	23	2.5	25.50	0.355	2.000	Pass
			RB1#49	22.92	2.5	25.42	0.348	2.000	Pass
			RB25#0	21.92	2.5	24.42	0.277	2.000	Pass
			RB25#13	21.89	2.5	24.39	0.275	2.000	Pass
			RB25#25	21.84	2.5	24.34	0.272	2.000	Pass
			RB50#0	21.93	2.5	24.43	0.277	2.000	Pass
		16-QAM	RB1#0	22.46	2.5	24.96	0.313	2.000	Pass
			RB1#25	22.36	2.5	24.86	0.306	2.000	Pass
			RB1#49	21.89	2.5	24.39	0.275	2.000	Pass
			RB25#0	21.09	2.5	23.59	0.229	2.000	Pass
			RB25#13	21.04	2.5	23.54	0.226	2.000	Pass
			RB25#25	20.99	2.5	23.49	0.223	2.000	Pass
	MCH	QPSK	RB1#0	23.02	2.5	25.52	0.356	2.000	Pass
			RB1#25	23.25	2.5	25.75	0.376	2.000	Pass
			RB1#49	23.03	2.5	25.53	0.357	2.000	Pass
			RB25#0	21.9	2.5	24.40	0.275	2.000	Pass
			RB25#13	22.07	2.5	24.57	0.286	2.000	Pass
			RB25#25	21.91	2.5	24.41	0.276	2.000	Pass
			RB50#0	21.86	2.5	24.36	0.273	2.000	Pass
		16-QAM	RB1#0	21.81	2.5	24.31	0.270	2.000	Pass
			RB1#25	21.77	2.5	24.27	0.267	2.000	Pass
			RB1#49	21.85	2.5	24.35	0.272	2.000	Pass
			RB25#0	20.8	2.5	23.30	0.214	2.000	Pass
			RB25#13	20.85	2.5	23.35	0.216	2.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND2									
			RB25#25	20.8	2.5	23.30	0.214	2.000	Pass
	HCH	QPSK	RB1#0	23.36	2.5	25.86	0.385	2.000	Pass
			RB1#25	23.34	2.5	25.84	0.384	2.000	Pass
			RB1#49	22.92	2.5	25.42	0.348	2.000	Pass
			RB25#0	22.01	2.5	24.51	0.282	2.000	Pass
			RB25#13	22.17	2.5	24.67	0.293	2.000	Pass
			RB25#25	22.03	2.5	24.53	0.284	2.000	Pass
			RB50#0	21.94	2.5	24.44	0.278	2.000	Pass
		16-QAM	RB1#0	21.95	2.5	24.45	0.279	2.000	Pass
			RB1#25	22.04	2.5	24.54	0.284	2.000	Pass
			RB1#49	21.84	2.5	24.34	0.272	2.000	Pass
			RB25#0	20.97	2.5	23.47	0.222	2.000	Pass
			RB25#13	21.01	2.5	23.51	0.224	2.000	Pass
			RB25#25	20.9	2.5	23.40	0.219	2.000	Pass
15 MHz	LCH	QPSK	RB1#0	23.18	2.5	25.68	0.370	2.000	Pass
			RB1#38	23.28	2.5	25.78	0.378	2.000	Pass
			RB1#74	22.99	2.5	25.49	0.354	2.000	Pass
			RB36#0	22	2.5	24.50	0.282	2.000	Pass
			RB36#19	21.96	2.5	24.46	0.279	2.000	Pass
			RB36#39	21.92	2.5	24.42	0.277	2.000	Pass
			RB75#0	22.04	2.5	24.54	0.284	2.000	Pass
		16-QAM	RB1#0	21.86	2.5	24.36	0.273	2.000	Pass
			RB1#38	21.84	2.5	24.34	0.272	2.000	Pass
			RB1#74	21.83	2.5	24.33	0.271	2.000	Pass
	MCH	QPSK	RB1#0	23	2.5	25.50	0.355	2.000	Pass
			RB1#38	22.96	2.5	25.46	0.352	2.000	Pass
			RB1#74	22.91	2.5	25.41	0.348	2.000	Pass
			RB36#0	21.95	2.5	24.45	0.279	2.000	Pass
			RB36#19	21.98	2.5	24.48	0.281	2.000	Pass
			RB36#39	21.92	2.5	24.42	0.277	2.000	Pass
			RB75#0	21.96	2.5	24.46	0.279	2.000	Pass
		16-QAM	RB1#0	21.94	2.5	24.44	0.278	2.000	Pass
			RB1#38	21.93	2.5	24.43	0.277	2.000	Pass
			RB1#74	21.92	2.5	24.42	0.277	2.000	Pass
	HCH	QPSK	RB1#0	22.84	2.5	25.34	0.342	2.000	Pass
			RB1#38	22.94	2.5	25.44	0.350	2.000	Pass
			RB1#74	22.81	2.5	25.31	0.340	2.000	Pass
			RB36#0	21.93	2.5	24.43	0.277	2.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND2									
			RB36#19	22.12	2.5	24.62	0.290	2.000	Pass
			RB36#39	22.03	2.5	24.53	0.284	2.000	Pass
			RB75#0	21.89	2.5	24.39	0.275	2.000	Pass
		16-QAM	RB1#0	21.96	2.5	24.46	0.279	2.000	Pass
			RB1#38	21.94	2.5	24.44	0.278	2.000	Pass
			RB1#74	21.93	2.5	24.43	0.277	2.000	Pass
20 MHz	LCH	QPSK	RB1#0	22.89	2.5	25.39	0.346	2.000	Pass
			RB1#50	23.22	2.5	25.72	0.373	2.000	Pass
			RB1#99	22.83	2.5	25.33	0.341	2.000	Pass
			RB50#0	21.98	2.5	24.48	0.281	2.000	Pass
			RB50#25	22.01	2.5	24.51	0.282	2.000	Pass
			RB50#50	21.89	2.5	24.39	0.275	2.000	Pass
			RB100#0	21.95	2.5	24.45	0.279	2.000	Pass
		16-QAM	RB1#0	21.93	2.5	24.43	0.277	2.000	Pass
			RB1#50	21.92	2.5	24.42	0.277	2.000	Pass
			RB1#99	21.91	2.5	24.41	0.276	2.000	Pass
	MCH	QPSK	RB1#0	22.75	2.5	25.25	0.335	2.000	Pass
			RB1#50	23.22	2.5	25.72	0.373	2.000	Pass
			RB1#99	22.73	2.5	25.23	0.333	2.000	Pass
			RB50#0	22.03	2.5	24.53	0.284	2.000	Pass
			RB50#25	22.08	2.5	24.58	0.287	2.000	Pass
			RB50#50	21.99	2.5	24.49	0.281	2.000	Pass
			RB100#0	21.93	2.5	24.43	0.277	2.000	Pass
		16-QAM	RB1#0	21.98	2.5	24.48	0.281	2.000	Pass
			RB1#50	21.97	2.5	24.47	0.280	2.000	Pass
			RB1#99	21.96	2.5	24.46	0.279	2.000	Pass
	HCH	QPSK	RB1#0	23.28	2.5	25.78	0.378	2.000	Pass
			RB1#50	23.41	2.5	25.91	0.390	2.000	Pass
			RB1#99	23.31	2.5	25.81	0.381	2.000	Pass
			RB50#0	22.03	2.5	24.53	0.284	2.000	Pass
			RB50#25	21.99	2.5	24.49	0.281	2.000	Pass
			RB50#50	22.11	2.5	24.61	0.289	2.000	Pass
			RB100#0	21.95	2.5	24.45	0.279	2.000	Pass
		16-QAM	RB1#0	21.93	2.5	24.43	0.277	2.000	Pass
			RB1#50	22.01	2.5	24.51	0.282	2.000	Pass
			RB1#99	21.99	2.5	24.49	0.281	2.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND4									
1.4 MHz	LCH	QPSK	RB1#0	22.22	2.5	24.72	0.296	1.000	Pass
			RB1#3	22.34	2.5	24.84	0.305	1.000	Pass
			RB1#5	22.18	2.5	24.68	0.294	1.000	Pass
			RB3#0	22.44	2.5	24.94	0.312	1.000	Pass
			RB3#2	22.51	2.5	25.01	0.317	1.000	Pass
			RB3#3	22.46	2.5	24.96	0.313	1.000	Pass
			RB6#0	21.5	2.5	24.00	0.251	1.000	Pass
		16-QAM	RB1#0	21.39	2.5	23.89	0.245	1.000	Pass
			RB1#3	21.35	2.5	23.85	0.243	1.000	Pass
			RB1#5	21.29	2.5	23.79	0.239	1.000	Pass
			RB3#0	21.2	2.5	23.70	0.234	1.000	Pass
			RB3#2	21.24	2.5	23.74	0.237	1.000	Pass
			RB3#3	21.21	2.5	23.71	0.235	1.000	Pass
			RB6#0	20.48	2.5	22.98	0.199	1.000	Pass
	MCH	QPSK	RB1#0	22.23	2.5	24.73	0.297	1.000	Pass
			RB1#3	22.48	2.5	24.98	0.315	1.000	Pass
			RB1#5	22.37	2.5	24.87	0.307	1.000	Pass
			RB3#0	22.37	2.5	24.87	0.307	1.000	Pass
			RB3#2	22.44	2.5	24.94	0.312	1.000	Pass
			RB3#3	22.5	2.5	25.00	0.316	1.000	Pass
			RB6#0	21.44	2.5	23.94	0.248	1.000	Pass
		16-QAM	RB1#0	21.69	2.5	24.19	0.262	1.000	Pass
			RB1#3	21.49	2.5	23.99	0.251	1.000	Pass
			RB1#5	21.24	2.5	23.74	0.237	1.000	Pass
			RB3#0	21.5	2.5	24.00	0.251	1.000	Pass
			RB3#2	21.46	2.5	23.96	0.249	1.000	Pass
			RB3#3	21.4	2.5	23.90	0.245	1.000	Pass
			RB6#0	20.26	2.5	22.76	0.189	1.000	Pass
	HCH	QPSK	RB1#0	22.36	2.5	24.86	0.306	1.000	Pass
			RB1#3	22.41	2.5	24.91	0.310	1.000	Pass
			RB1#5	22.38	2.5	24.88	0.308	1.000	Pass
			RB3#0	22.56	2.5	25.06	0.321	1.000	Pass
			RB3#2	22.55	2.5	25.05	0.320	1.000	Pass
			RB3#3	22.64	2.5	25.14	0.327	1.000	Pass
			RB6#0	21.64	2.5	24.14	0.259	1.000	Pass
		16-QAM	RB1#0	21.28	2.5	23.78	0.239	1.000	Pass
			RB1#3	21.33	2.5	23.83	0.242	1.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND4									
			RB1#5	21.17	2.5	23.67	0.233	1.000	Pass
			RB3#0	21.68	2.5	24.18	0.262	1.000	Pass
			RB3#2	21.75	2.5	24.25	0.266	1.000	Pass
			RB3#3	21.76	2.5	24.26	0.267	1.000	Pass
			RB6#0	20.67	2.5	23.17	0.207	1.000	Pass
3 MHz	LCH	QPSK	RB1#0	22.44	2.5	24.94	0.312	1.000	Pass
			RB1#7	22.5	2.5	25.00	0.316	1.000	Pass
			RB1#14	22.51	2.5	25.01	0.317	1.000	Pass
			RB8#0	21.48	2.5	23.98	0.250	1.000	Pass
			RB8#4	21.53	2.5	24.03	0.253	1.000	Pass
			RB8#7	21.52	2.5	24.02	0.252	1.000	Pass
			RB15#0	21.57	2.5	24.07	0.255	1.000	Pass
		16-QAM	RB1#0	21.34	2.5	23.84	0.242	1.000	Pass
			RB1#7	21.29	2.5	23.79	0.239	1.000	Pass
			RB1#14	21.46	2.5	23.96	0.249	1.000	Pass
			RB8#0	20.33	2.5	22.83	0.192	1.000	Pass
			RB8#4	20.37	2.5	22.87	0.194	1.000	Pass
			RB8#7	20.36	2.5	22.86	0.193	1.000	Pass
			RB15#0	20.54	2.5	23.04	0.201	1.000	Pass
	MCH	QPSK	RB1#0	22.45	2.5	24.95	0.313	1.000	Pass
			RB1#7	22.33	2.5	24.83	0.304	1.000	Pass
			RB1#14	22.48	2.5	24.98	0.315	1.000	Pass
			RB8#0	21.53	2.5	24.03	0.253	1.000	Pass
			RB8#4	21.61	2.5	24.11	0.258	1.000	Pass
			RB8#7	21.47	2.5	23.97	0.249	1.000	Pass
			RB15#0	21.56	2.5	24.06	0.255	1.000	Pass
		16-QAM	RB1#0	21.42	2.5	23.92	0.247	1.000	Pass
			RB1#7	21.24	2.5	23.74	0.237	1.000	Pass
			RB1#14	21.36	2.5	23.86	0.243	1.000	Pass
			RB8#0	20.63	2.5	23.13	0.206	1.000	Pass
			RB8#4	20.57	2.5	23.07	0.203	1.000	Pass
			RB8#7	20.56	2.5	23.06	0.202	1.000	Pass
			RB15#0	20.48	2.5	22.98	0.199	1.000	Pass
	HCH	QPSK	RB1#0	22.36	2.5	24.86	0.306	1.000	Pass
			RB1#7	22.34	2.5	24.84	0.305	1.000	Pass
			RB1#14	22.53	2.5	25.03	0.318	1.000	Pass
			RB8#0	21.53	2.5	24.03	0.253	1.000	Pass
			RB8#4	21.58	2.5	24.08	0.256	1.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND4									
			RB8#7	21.44	2.5	23.94	0.248	1.000	Pass
			RB15#0	21.57	2.5	24.07	0.255	1.000	Pass
		16-QAM	RB1#0	21.49	2.5	23.99	0.251	1.000	Pass
			RB1#7	21.38	2.5	23.88	0.244	1.000	Pass
			RB1#14	21.61	2.5	24.11	0.258	1.000	Pass
			RB8#0	20.44	2.5	22.94	0.197	1.000	Pass
			RB8#4	20.44	2.5	22.94	0.197	1.000	Pass
			RB8#7	20.43	2.5	22.93	0.196	1.000	Pass
			RB15#0	20.6	2.5	23.10	0.204	1.000	Pass
5 MHz	LCH	QPSK	RB1#0	22.41	2.5	24.91	0.310	1.000	Pass
			RB1#13	22.48	2.5	24.98	0.315	1.000	Pass
			RB1#24	22.37	2.5	24.87	0.307	1.000	Pass
			RB12#0	21.52	2.5	24.02	0.252	1.000	Pass
			RB12#6	21.54	2.5	24.04	0.254	1.000	Pass
			RB12#13	21.65	2.5	24.15	0.260	1.000	Pass
			RB25#0	21.53	2.5	24.03	0.253	1.000	Pass
		16-QAM	RB1#0	21.29	2.5	23.79	0.239	1.000	Pass
			RB1#13	21.25	2.5	23.75	0.237	1.000	Pass
			RB1#24	21.09	2.5	23.59	0.229	1.000	Pass
			RB12#0	20.38	2.5	22.88	0.194	1.000	Pass
			RB12#6	20.41	2.5	22.91	0.195	1.000	Pass
			RB12#13	20.42	2.5	22.92	0.196	1.000	Pass
			RB25#0	20.69	2.5	23.19	0.208	1.000	Pass
	MCH	QPSK	RB1#0	22.33	2.5	24.83	0.304	1.000	Pass
			RB1#13	22.42	2.5	24.92	0.310	1.000	Pass
			RB1#24	22.39	2.5	24.89	0.308	1.000	Pass
			RB12#0	21.53	2.5	24.03	0.253	1.000	Pass
			RB12#6	21.52	2.5	24.02	0.252	1.000	Pass
			RB12#13	21.67	2.5	24.17	0.261	1.000	Pass
			RB25#0	21.6	2.5	24.10	0.257	1.000	Pass
		16-QAM	RB1#0	21.51	2.5	24.01	0.252	1.000	Pass
			RB1#13	21.5	2.5	24.00	0.251	1.000	Pass
			RB1#24	21.49	2.5	23.99	0.251	1.000	Pass
			RB12#0	20.24	2.5	22.74	0.188	1.000	Pass
			RB12#6	20.33	2.5	22.83	0.192	1.000	Pass
			RB12#13	20.3	2.5	22.80	0.191	1.000	Pass
			RB25#0	20.35	2.5	22.85	0.193	1.000	Pass
	HCH	QPSK	RB1#0	22.47	2.5	24.97	0.314	1.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND4									
			RB1#13	22.41	2.5	24.91	0.310	1.000	Pass
			RB1#24	22.55	2.5	25.05	0.320	1.000	Pass
			RB12#0	21.53	2.5	24.03	0.253	1.000	Pass
			RB12#6	21.41	2.5	23.91	0.246	1.000	Pass
			RB12#13	21.62	2.5	24.12	0.258	1.000	Pass
			RB25#0	21.6	2.5	24.10	0.257	1.000	Pass
		16-QAM	RB1#0	21.32	2.5	23.82	0.241	1.000	Pass
			RB1#13	20.84	2.5	23.34	0.216	1.000	Pass
			RB1#24	20.95	2.5	23.45	0.221	1.000	Pass
			RB12#0	20.46	2.5	22.96	0.198	1.000	Pass
			RB12#6	20.35	2.5	22.85	0.193	1.000	Pass
			RB12#13	20.38	2.5	22.88	0.194	1.000	Pass
			RB25#0	20.46	2.5	22.96	0.198	1.000	Pass
10 MHz	LCH	QPSK	RB1#0	22.47	2.5	24.97	0.314	1.000	Pass
			RB1#25	22.58	2.5	25.08	0.322	1.000	Pass
			RB1#49	22.2	2.5	24.70	0.295	1.000	Pass
			RB25#0	21.52	2.5	24.02	0.252	1.000	Pass
			RB25#13	21.48	2.5	23.98	0.250	1.000	Pass
			RB25#25	21.42	2.5	23.92	0.247	1.000	Pass
			RB50#0	21.47	2.5	23.97	0.249	1.000	Pass
		16-QAM	RB1#0	21.23	2.5	23.73	0.236	1.000	Pass
			RB1#25	21.24	2.5	23.74	0.237	1.000	Pass
			RB1#49	20.86	2.5	23.36	0.217	1.000	Pass
			RB25#0	20.54	2.5	23.04	0.201	1.000	Pass
			RB25#13	20.41	2.5	22.91	0.195	1.000	Pass
			RB25#25	20.34	2.5	22.84	0.192	1.000	Pass
	MCH	QPSK	RB1#0	22.39	2.5	24.89	0.308	1.000	Pass
			RB1#25	22.52	2.5	25.02	0.318	1.000	Pass
			RB1#49	22.45	2.5	24.95	0.313	1.000	Pass
			RB25#0	21.45	2.5	23.95	0.248	1.000	Pass
			RB25#13	21.47	2.5	23.97	0.249	1.000	Pass
			RB25#25	21.52	2.5	24.02	0.252	1.000	Pass
			RB50#0	21.45	2.5	23.95	0.248	1.000	Pass
		16-QAM	RB1#0	21.25	2.5	23.75	0.237	1.000	Pass
			RB1#25	21.25	2.5	23.75	0.237	1.000	Pass
			RB1#49	21.35	2.5	23.85	0.243	1.000	Pass
			RB25#0	20.41	2.5	22.91	0.195	1.000	Pass
			RB25#13	20.54	2.5	23.04	0.201	1.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND4									
			RB25#25	20.4	2.5	22.90	0.195	1.000	Pass
	HCH	QPSK	RB1#0	22.52	2.5	25.02	0.318	1.000	Pass
			RB1#25	22.53	2.5	25.03	0.318	1.000	Pass
			RB1#49	22.41	2.5	24.91	0.310	1.000	Pass
			RB25#0	21.56	2.5	24.06	0.255	1.000	Pass
			RB25#13	21.51	2.5	24.01	0.252	1.000	Pass
			RB25#25	21.41	2.5	23.91	0.246	1.000	Pass
			RB50#0	21.51	2.5	24.01	0.252	1.000	Pass
		16-QAM	RB1#0	21.61	2.5	24.11	0.258	1.000	Pass
			RB1#25	21.5	2.5	24.00	0.251	1.000	Pass
			RB1#49	21.23	2.5	23.73	0.236	1.000	Pass
			RB25#0	20.7	2.5	23.20	0.209	1.000	Pass
			RB25#13	20.65	2.5	23.15	0.207	1.000	Pass
			RB25#25	20.47	2.5	22.97	0.198	1.000	Pass
15 MHz	LCH	QPSK	RB1#0	22.28	2.5	24.78	0.301	1.000	Pass
			RB1#38	22.39	2.5	24.89	0.308	1.000	Pass
			RB1#74	22.26	2.5	24.76	0.299	1.000	Pass
			RB36#0	21.41	2.5	23.91	0.246	1.000	Pass
			RB36#19	21.34	2.5	23.84	0.242	1.000	Pass
			RB36#39	21.28	2.5	23.78	0.239	1.000	Pass
			RB75#0	21.45	2.5	23.95	0.248	1.000	Pass
		16-QAM	RB1#0	21.46	2.5	23.96	0.249	1.000	Pass
			RB1#38	21.44	2.5	23.94	0.248	1.000	Pass
			RB1#74	21.43	2.5	23.93	0.247	1.000	Pass
	MCH	QPSK	RB1#0	22.23	2.5	24.73	0.297	1.000	Pass
			RB1#38	22.34	2.5	24.84	0.305	1.000	Pass
			RB1#74	22.4	2.5	24.90	0.309	1.000	Pass
			RB36#0	21.47	2.5	23.97	0.249	1.000	Pass
			RB36#19	21.45	2.5	23.95	0.248	1.000	Pass
			RB36#39	21.58	2.5	24.08	0.256	1.000	Pass
			RB75#0	21.41	2.5	23.91	0.246	1.000	Pass
		16-QAM	RB1#0	21.55	2.5	24.05	0.254	1.000	Pass
			RB1#38	21.54	2.5	24.04	0.254	1.000	Pass
			RB1#74	21.53	2.5	24.03	0.253	1.000	Pass
	HCH	QPSK	RB1#0	22.71	2.5	25.21	0.332	1.000	Pass
			RB1#38	22.64	2.5	25.14	0.327	1.000	Pass
			RB1#74	22.44	2.5	24.94	0.312	1.000	Pass
			RB36#0	21.73	2.5	24.23	0.265	1.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND4									
			RB36#19	21.58	2.5	24.08	0.256	1.000	Pass
			RB36#39	21.49	2.5	23.99	0.251	1.000	Pass
			RB75#0	21.58	2.5	24.08	0.256	1.000	Pass
		16-QAM	RB1#0	21.56	2.5	24.06	0.255	1.000	Pass
			RB1#38	21.55	2.5	24.05	0.254	1.000	Pass
			RB1#74	21.62	2.5	24.12	0.258	1.000	Pass
20 MHz	LCH	QPSK	RB1#0	22.17	2.5	24.67	0.293	1.000	Pass
			RB1#50	22.47	2.5	24.97	0.314	1.000	Pass
			RB1#99	22.3	2.5	24.80	0.302	1.000	Pass
			RB50#0	21.48	2.5	23.98	0.250	1.000	Pass
			RB50#25	21.38	2.5	23.88	0.244	1.000	Pass
			RB50#50	21.55	2.5	24.05	0.254	1.000	Pass
			RB100#0	21.39	2.5	23.89	0.245	1.000	Pass
		16-QAM	RB1#0	21.37	2.5	23.87	0.244	1.000	Pass
			RB1#50	21.48	2.5	23.98	0.250	1.000	Pass
			RB1#99	21.47	2.5	23.97	0.249	1.000	Pass
	MCH	QPSK	RB1#0	22.42	2.5	24.92	0.310	1.000	Pass
			RB1#50	22.68	2.5	25.18	0.330	1.000	Pass
			RB1#99	22.53	2.5	25.03	0.318	1.000	Pass
			RB50#0	21.54	2.5	24.04	0.254	1.000	Pass
			RB50#25	21.59	2.5	24.09	0.256	1.000	Pass
			RB50#50	21.63	2.5	24.13	0.259	1.000	Pass
			RB100#0	21.58	2.5	24.08	0.256	1.000	Pass
		16-QAM	RB1#0	21.58	2.5	24.08	0.256	1.000	Pass
			RB1#50	21.57	2.5	24.07	0.255	1.000	Pass
			RB1#99	21.56	2.5	24.06	0.255	1.000	Pass
	HCH	QPSK	RB1#0	22.91	2.5	25.41	0.348	1.000	Pass
			RB1#50	22.95	2.5	25.45	0.351	1.000	Pass
			RB1#99	22.56	2.5	25.06	0.321	1.000	Pass
			RB50#0	21.76	2.5	24.26	0.267	1.000	Pass
			RB50#25	21.7	2.5	24.20	0.263	1.000	Pass
			RB50#50	21.49	2.5	23.99	0.251	1.000	Pass
			RB100#0	21.54	2.5	24.04	0.254	1.000	Pass
		16-QAM	RB1#0	21.59	2.5	24.09	0.256	1.000	Pass
			RB1#50	21.58	2.5	24.08	0.256	1.000	Pass
			RB1#99	21.57	2.5	24.07	0.255	1.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND5										
1.4 MHz	LCH	QPSK	RB1#0	22.75	2.5	0.35	23.10	0.204	7.000	Pass
			RB1#3	22.8	2.5	0.35	23.15	0.207	7.000	Pass
			RB1#5	22.95	2.5	0.35	23.30	0.214	7.000	Pass
			RB3#0	22.81	2.5	0.35	23.16	0.207	7.000	Pass
			RB3#2	22.97	2.5	0.35	23.32	0.215	7.000	Pass
			RB3#3	22.93	2.5	0.35	23.28	0.213	7.000	Pass
			RB6#0	22.11	2.5	0.35	22.46	0.176	7.000	Pass
		16-QAM	RB1#0	21.83	2.5	0.35	22.18	0.165	7.000	Pass
			RB1#3	21.82	2.5	0.35	22.17	0.165	7.000	Pass
			RB1#5	21.88	2.5	0.35	22.23	0.167	7.000	Pass
			RB3#0	22.05	2.5	0.35	22.40	0.174	7.000	Pass
			RB3#2	21.91	2.5	0.35	22.26	0.168	7.000	Pass
			RB3#3	22.03	2.5	0.35	22.38	0.173	7.000	Pass
			RB6#0	20.98	2.5	0.35	21.33	0.136	7.000	Pass
	MCH	QPSK	RB1#0	22.83	2.5	0.35	23.18	0.208	7.000	Pass
			RB1#3	23.01	2.5	0.35	23.36	0.217	7.000	Pass
			RB1#5	22.89	2.5	0.35	23.24	0.211	7.000	Pass
			RB3#0	23.1	2.5	0.35	23.45	0.221	7.000	Pass
			RB3#2	23	2.5	0.35	23.35	0.216	7.000	Pass
			RB3#3	22.98	2.5	0.35	23.33	0.215	7.000	Pass
			RB6#0	22.06	2.5	0.35	22.41	0.174	7.000	Pass
		16-QAM	RB1#0	22.03	2.5	0.35	22.38	0.173	7.000	Pass
			RB1#3	22.09	2.5	0.35	22.44	0.175	7.000	Pass
			RB1#5	21.86	2.5	0.35	22.21	0.166	7.000	Pass
			RB3#0	22.1	2.5	0.35	22.45	0.176	7.000	Pass
			RB3#2	22.01	2.5	0.35	22.36	0.172	7.000	Pass
			RB3#3	22	2.5	0.35	22.35	0.172	7.000	Pass
			RB6#0	20.98	2.5	0.35	21.33	0.136	7.000	Pass
	HCH	QPSK	RB1#0	23.08	2.5	0.35	23.43	0.220	7.000	Pass
			RB1#3	23.13	2.5	0.35	23.48	0.223	7.000	Pass
			RB1#5	22.99	2.5	0.35	23.34	0.216	7.000	Pass
			RB3#0	23.19	2.5	0.35	23.54	0.226	7.000	Pass
			RB3#2	23.2	2.5	0.35	23.55	0.226	7.000	Pass
			RB3#3	23.22	2.5	0.35	23.57	0.228	7.000	Pass
			RB6#0	22.19	2.5	0.35	22.54	0.179	7.000	Pass
		16-QAM	RB1#0	22.14	2.5	0.35	22.49	0.177	7.000	Pass
			RB1#3	22.19	2.5	0.35	22.54	0.179	7.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND5										
			RB1#5	22.09	2.5	0.35	22.44	0.175	7.000	Pass
			RB3#0	22.42	2.5	0.35	22.77	0.189	7.000	Pass
			RB3#2	22.5	2.5	0.35	22.85	0.193	7.000	Pass
			RB3#3	22.4	2.5	0.35	22.75	0.188	7.000	Pass
			RB6#0	21.54	2.5	0.35	21.89	0.155	7.000	Pass
3 MHz	LCH	QPSK	RB1#0	22.87	2.5	0.35	23.22	0.210	7.000	Pass
			RB1#7	23.05	2.5	0.35	23.40	0.219	7.000	Pass
			RB1#14	23.13	2.5	0.35	23.48	0.223	7.000	Pass
			RB8#0	22.06	2.5	0.35	22.41	0.174	7.000	Pass
			RB8#4	22.17	2.5	0.35	22.52	0.179	7.000	Pass
			RB8#7	22.1	2.5	0.35	22.45	0.176	7.000	Pass
			RB15#0	22.1	2.5	0.35	22.45	0.176	7.000	Pass
		16-QAM	RB1#0	21.81	2.5	0.35	22.16	0.164	7.000	Pass
			RB1#7	21.87	2.5	0.35	22.22	0.167	7.000	Pass
			RB1#14	21.7	2.5	0.35	22.05	0.160	7.000	Pass
			RB8#0	21.19	2.5	0.35	21.54	0.143	7.000	Pass
			RB8#4	21.49	2.5	0.35	21.84	0.153	7.000	Pass
			RB8#7	21.44	2.5	0.35	21.79	0.151	7.000	Pass
			RB15#0	21.27	2.5	0.35	21.62	0.145	7.000	Pass
	MCH	QPSK	RB1#0	23.13	2.5	0.35	23.48	0.223	7.000	Pass
			RB1#7	23.06	2.5	0.35	23.41	0.219	7.000	Pass
			RB1#14	22.94	2.5	0.35	23.29	0.213	7.000	Pass
			RB8#0	22.16	2.5	0.35	22.51	0.178	7.000	Pass
			RB8#4	22.2	2.5	0.35	22.55	0.180	7.000	Pass
			RB8#7	22.16	2.5	0.35	22.51	0.178	7.000	Pass
			RB15#0	22.16	2.5	0.35	22.51	0.178	7.000	Pass
		16-QAM	RB1#0	21.91	2.5	0.35	22.26	0.168	7.000	Pass
			RB1#7	21.7	2.5	0.35	22.05	0.160	7.000	Pass
			RB1#14	21.83	2.5	0.35	22.18	0.165	7.000	Pass
			RB8#0	21.28	2.5	0.35	21.63	0.146	7.000	Pass
			RB8#4	21.32	2.5	0.35	21.67	0.147	7.000	Pass
			RB8#7	21.28	2.5	0.35	21.63	0.146	7.000	Pass
			RB15#0	21.13	2.5	0.35	21.48	0.141	7.000	Pass
	HCH	QPSK	RB1#0	23.2	2.5	0.35	23.55	0.226	7.000	Pass
			RB1#7	23.04	2.5	0.35	23.39	0.218	7.000	Pass
			RB1#14	23.1	2.5	0.35	23.45	0.221	7.000	Pass
			RB8#0	22.29	2.5	0.35	22.64	0.184	7.000	Pass
			RB8#4	22.2	2.5	0.35	22.55	0.180	7.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND5										
			RB8#7	22.2	2.5	0.35	22.55	0.180	7.000	Pass
			RB15#0	22.25	2.5	0.35	22.60	0.182	7.000	Pass
		16-QAM	RB1#0	22.26	2.5	0.35	22.61	0.182	7.000	Pass
			RB1#7	22.02	2.5	0.35	22.37	0.173	7.000	Pass
			RB1#14	22.23	2.5	0.35	22.58	0.181	7.000	Pass
			RB8#0	21.49	2.5	0.35	21.84	0.153	7.000	Pass
			RB8#4	21.4	2.5	0.35	21.75	0.150	7.000	Pass
			RB8#7	21.4	2.5	0.35	21.75	0.150	7.000	Pass
			RB15#0	21.06	2.5	0.35	21.41	0.138	7.000	Pass
5 MHz	LCH	QPSK	RB1#0	23.11	2.5	0.35	23.46	0.222	7.000	Pass
			RB1#13	23.18	2.5	0.35	23.53	0.225	7.000	Pass
			RB1#24	22.99	2.5	0.35	23.34	0.216	7.000	Pass
			RB12#0	22.07	2.5	0.35	22.42	0.175	7.000	Pass
			RB12#6	22.1	2.5	0.35	22.45	0.176	7.000	Pass
			RB12#13	22.05	2.5	0.35	22.40	0.174	7.000	Pass
			RB25#0	22.01	2.5	0.35	22.36	0.172	7.000	Pass
		16-QAM	RB1#0	21.61	2.5	0.35	21.96	0.157	7.000	Pass
			RB1#13	21.51	2.5	0.35	21.86	0.153	7.000	Pass
			RB1#24	21.38	2.5	0.35	21.73	0.149	7.000	Pass
			RB12#0	21.21	2.5	0.35	21.56	0.143	7.000	Pass
			RB12#6	21.05	2.5	0.35	21.40	0.138	7.000	Pass
			RB12#13	20.98	2.5	0.35	21.33	0.136	7.000	Pass
			RB25#0	21.29	2.5	0.35	21.64	0.146	7.000	Pass
	MCH	QPSK	RB1#0	22.97	2.5	0.35	23.32	0.215	7.000	Pass
			RB1#13	22.99	2.5	0.35	23.34	0.216	7.000	Pass
			RB1#24	22.99	2.5	0.35	23.34	0.216	7.000	Pass
			RB12#0	22.2	2.5	0.35	22.55	0.180	7.000	Pass
			RB12#6	22.22	2.5	0.35	22.57	0.181	7.000	Pass
			RB12#13	22.03	2.5	0.35	22.38	0.173	7.000	Pass
			RB25#0	22.16	2.5	0.35	22.51	0.178	7.000	Pass
		16-QAM	RB1#0	21.99	2.5	0.35	22.34	0.171	7.000	Pass
			RB1#13	21.79	2.5	0.35	22.14	0.164	7.000	Pass
			RB1#24	21.64	2.5	0.35	21.99	0.158	7.000	Pass
			RB12#0	20.96	2.5	0.35	21.31	0.135	7.000	Pass
			RB12#6	21.22	2.5	0.35	21.57	0.144	7.000	Pass
			RB12#13	21.2	2.5	0.35	21.55	0.143	7.000	Pass
			RB25#0	21.37	2.5	0.35	21.72	0.149	7.000	Pass
	HCH	QPSK	RB1#0	23.07	2.5	0.35	23.42	0.220	7.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND5										
			RB1#13	23.17	2.5	0.35	23.52	0.225	7.000	Pass
			RB1#24	23.18	2.5	0.35	23.53	0.225	7.000	Pass
			RB12#0	22.29	2.5	0.35	22.64	0.184	7.000	Pass
			RB12#6	22.28	2.5	0.35	22.63	0.183	7.000	Pass
			RB12#13	22.15	2.5	0.35	22.50	0.178	7.000	Pass
			RB25#0	22.26	2.5	0.35	22.61	0.182	7.000	Pass
		16-QAM	RB1#0	22.08	2.5	0.35	22.43	0.175	7.000	Pass
			RB1#13	21.94	2.5	0.35	22.29	0.169	7.000	Pass
			RB1#24	21.68	2.5	0.35	22.03	0.160	7.000	Pass
			RB12#0	21.3	2.5	0.35	21.65	0.146	7.000	Pass
			RB12#6	21.3	2.5	0.35	21.65	0.146	7.000	Pass
			RB12#13	21.15	2.5	0.35	21.50	0.141	7.000	Pass
			RB25#0	21.28	2.5	0.35	21.63	0.146	7.000	Pass
10 MHz	LCH	QPSK	RB1#0	23.03	2.5	0.35	23.38	0.218	7.000	Pass
			RB1#25	23.12	2.5	0.35	23.47	0.222	7.000	Pass
			RB1#49	23.09	2.5	0.35	23.44	0.221	7.000	Pass
			RB25#0	22.23	2.5	0.35	22.58	0.181	7.000	Pass
			RB25#13	22.26	2.5	0.35	22.61	0.182	7.000	Pass
			RB25#25	22.15	2.5	0.35	22.50	0.178	7.000	Pass
			RB50#0	22.1	2.5	0.35	22.45	0.176	7.000	Pass
		16-QAM	RB1#0	21.97	2.5	0.35	22.32	0.171	7.000	Pass
			RB1#25	22.51	2.5	0.35	22.86	0.193	7.000	Pass
			RB1#49	22.5	2.5	0.35	22.85	0.193	7.000	Pass
			RB25#0	21.28	2.5	0.35	21.63	0.146	7.000	Pass
			RB25#13	21.23	2.5	0.35	21.58	0.144	7.000	Pass
			RB25#25	21.21	2.5	0.35	21.56	0.143	7.000	Pass
	MCH	QPSK	RB1#0	22.91	2.5	0.35	23.26	0.212	7.000	Pass
			RB1#25	23.01	2.5	0.35	23.36	0.217	7.000	Pass
			RB1#49	23.06	2.5	0.35	23.41	0.219	7.000	Pass
			RB25#0	22.12	2.5	0.35	22.47	0.177	7.000	Pass
			RB25#13	22.13	2.5	0.35	22.48	0.177	7.000	Pass
			RB25#25	22.13	2.5	0.35	22.48	0.177	7.000	Pass
			RB50#0	22.26	2.5	0.35	22.61	0.182	7.000	Pass
		16-QAM	RB1#0	21.81	2.5	0.35	22.16	0.164	7.000	Pass
			RB1#25	21.86	2.5	0.35	22.21	0.166	7.000	Pass
			RB1#49	21.96	2.5	0.35	22.31	0.170	7.000	Pass
			RB25#0	21.11	2.5	0.35	21.46	0.140	7.000	Pass
			RB25#13	21.12	2.5	0.35	21.47	0.140	7.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND5										
			RB25#25	21.11	2.5	0.35	21.46	0.140	7.000	Pass
	HCH	QPSK	RB1#0	23.37	2.5	0.35	23.72	0.236	7.000	Pass
			RB1#25	23.7	2.5	0.35	24.05	0.254	7.000	Pass
			RB1#49	23.23	2.5	0.35	23.58	0.228	7.000	Pass
			RB25#0	22.27	2.5	0.35	22.62	0.183	7.000	Pass
			RB25#13	22.33	2.5	0.35	22.68	0.185	7.000	Pass
			RB25#25	22.23	2.5	0.35	22.58	0.181	7.000	Pass
			RB50#0	22.33	2.5	0.35	22.68	0.185	7.000	Pass
		16-QAM	RB1#0	22.15	2.5	0.35	22.50	0.178	7.000	Pass
			RB1#25	22.23	2.5	0.35	22.58	0.181	7.000	Pass
			RB1#49	22.1	2.5	0.35	22.45	0.176	7.000	Pass
			RB25#0	21.41	2.5	0.35	21.76	0.150	7.000	Pass
			RB25#13	21.56	2.5	0.35	21.91	0.155	7.000	Pass
			RB25#25	21.46	2.5	0.35	21.81	0.152	7.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND12										
1.4 MHz	LCH	QPSK	RB1#0	23.3	2.5	0.35	23.65	0.232	3.000	Pass
			RB1#3	23.32	2.5	0.35	23.67	0.233	3.000	Pass
			RB1#5	23.22	2.5	0.35	23.57	0.228	3.000	Pass
			RB3#0	23.21	2.5	0.35	23.56	0.227	3.000	Pass
			RB3#2	23.22	2.5	0.35	23.57	0.228	3.000	Pass
			RB3#3	23.19	2.5	0.35	23.54	0.226	3.000	Pass
			RB6#0	22.2	2.5	0.35	22.55	0.180	3.000	Pass
		16-QAM	RB1#0	22.52	2.5	0.35	22.87	0.194	3.000	Pass
			RB1#3	22.11	2.5	0.35	22.46	0.176	3.000	Pass
			RB1#5	22.01	2.5	0.35	22.36	0.172	3.000	Pass
			RB3#0	21.77	2.5	0.35	22.12	0.163	3.000	Pass
			RB3#2	21.87	2.5	0.35	22.22	0.167	3.000	Pass
			RB3#3	21.76	2.5	0.35	22.11	0.163	3.000	Pass
			RB6#0	21.13	2.5	0.35	21.48	0.141	3.000	Pass
	MCH	QPSK	RB1#0	22.89	2.5	0.35	23.24	0.211	3.000	Pass
			RB1#3	23.05	2.5	0.35	23.40	0.219	3.000	Pass
			RB1#5	23	2.5	0.35	23.35	0.216	3.000	Pass
			RB3#0	23.24	2.5	0.35	23.59	0.229	3.000	Pass
			RB3#2	23.13	2.5	0.35	23.48	0.223	3.000	Pass
			RB3#3	23.09	2.5	0.35	23.44	0.221	3.000	Pass
			RB6#0	22.14	2.5	0.35	22.49	0.177	3.000	Pass
		16-QAM	RB1#0	21.98	2.5	0.35	22.33	0.171	3.000	Pass
			RB1#3	22	2.5	0.35	22.35	0.172	3.000	Pass
			RB1#5	21.86	2.5	0.35	22.21	0.166	3.000	Pass
			RB3#0	21.84	2.5	0.35	22.19	0.166	3.000	Pass
			RB3#2	21.78	2.5	0.35	22.13	0.163	3.000	Pass
			RB3#3	22.04	2.5	0.35	22.39	0.173	3.000	Pass
			RB6#0	20.72	2.5	0.35	21.07	0.128	3.000	Pass
	HCH	QPSK	RB1#0	23.17	2.5	0.35	23.52	0.225	3.000	Pass
			RB1#3	23.25	2.5	0.35	23.60	0.229	3.000	Pass
			RB1#5	23.1	2.5	0.35	23.45	0.221	3.000	Pass
			RB3#0	23.1	2.5	0.35	23.45	0.221	3.000	Pass
			RB3#2	23.03	2.5	0.35	23.38	0.218	3.000	Pass
			RB3#3	22.97	2.5	0.35	23.32	0.215	3.000	Pass
			RB6#0	22.02	2.5	0.35	22.37	0.173	3.000	Pass
		16-QAM	RB1#0	22.05	2.5	0.35	22.40	0.174	3.000	Pass
			RB1#3	21.93	2.5	0.35	22.28	0.169	3.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND12										
			RB1#5	21.88	2.5	0.35	22.23	0.167	3.000	Pass
			RB3#0	22.25	2.5	0.35	22.60	0.182	3.000	Pass
			RB3#2	22.26	2.5	0.35	22.61	0.182	3.000	Pass
			RB3#3	22.2	2.5	0.35	22.55	0.180	3.000	Pass
			RB6#0	21.02	2.5	0.35	21.37	0.137	3.000	Pass
3 MHz	LCH	QPSK	RB1#0	23.09	2.5	0.35	23.44	0.221	3.000	Pass
			RB1#7	23.19	2.5	0.35	23.54	0.226	3.000	Pass
			RB1#14	22.92	2.5	0.35	23.27	0.212	3.000	Pass
			RB8#0	22.19	2.5	0.35	22.54	0.179	3.000	Pass
			RB8#4	22.3	2.5	0.35	22.65	0.184	3.000	Pass
			RB8#7	22.16	2.5	0.35	22.51	0.178	3.000	Pass
			RB15#0	22.22	2.5	0.35	22.57	0.181	3.000	Pass
		16-QAM	RB1#0	22.24	2.5	0.35	22.59	0.182	3.000	Pass
			RB1#7	22.17	2.5	0.35	22.52	0.179	3.000	Pass
			RB1#14	21.98	2.5	0.35	22.33	0.171	3.000	Pass
			RB8#0	21.16	2.5	0.35	21.51	0.142	3.000	Pass
			RB8#4	21.17	2.5	0.35	21.52	0.142	3.000	Pass
			RB8#7	21.14	2.5	0.35	21.49	0.141	3.000	Pass
			RB15#0	21.13	2.5	0.35	21.48	0.141	3.000	Pass
	MCH	QPSK	RB1#0	22.92	2.5	0.35	23.27	0.212	3.000	Pass
			RB1#7	22.94	2.5	0.35	23.29	0.213	3.000	Pass
			RB1#14	22.71	2.5	0.35	23.06	0.202	3.000	Pass
			RB8#0	22.16	2.5	0.35	22.51	0.178	3.000	Pass
			RB8#4	22.15	2.5	0.35	22.50	0.178	3.000	Pass
			RB8#7	22.13	2.5	0.35	22.48	0.177	3.000	Pass
			RB15#0	22.19	2.5	0.35	22.54	0.179	3.000	Pass
		16-QAM	RB1#0	21.93	2.5	0.35	22.28	0.169	3.000	Pass
			RB1#7	21.99	2.5	0.35	22.34	0.171	3.000	Pass
			RB1#14	21.76	2.5	0.35	22.11	0.163	3.000	Pass
			RB8#0	21	2.5	0.35	21.35	0.136	3.000	Pass
			RB8#4	21.16	2.5	0.35	21.51	0.142	3.000	Pass
			RB8#7	21.17	2.5	0.35	21.52	0.142	3.000	Pass
			RB15#0	21.09	2.5	0.35	21.44	0.139	3.000	Pass
	HCH	QPSK	RB1#0	23.15	2.5	0.35	23.50	0.224	3.000	Pass
			RB1#7	23.03	2.5	0.35	23.38	0.218	3.000	Pass
			RB1#14	22.79	2.5	0.35	23.14	0.206	3.000	Pass
			RB8#0	22.19	2.5	0.35	22.54	0.179	3.000	Pass
			RB8#4	22.14	2.5	0.35	22.49	0.177	3.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND12										
			RB8#7	22.03	2.5	0.35	22.38	0.173	3.000	Pass
			RB15#0	22.04	2.5	0.35	22.39	0.173	3.000	Pass
		16-QAM	RB1#0	22.03	2.5	0.35	22.38	0.173	3.000	Pass
			RB1#7	21.99	2.5	0.35	22.34	0.171	3.000	Pass
			RB1#14	21.85	2.5	0.35	22.20	0.166	3.000	Pass
			RB8#0	20.75	2.5	0.35	21.10	0.129	3.000	Pass
			RB8#4	20.81	2.5	0.35	21.16	0.131	3.000	Pass
			RB8#7	20.6	2.5	0.35	20.95	0.124	3.000	Pass
			RB15#0	20.71	2.5	0.35	21.06	0.128	3.000	Pass
5 MHz	LCH	QPSK	RB1#0	23.05	2.5	0.35	23.40	0.219	3.000	Pass
			RB1#13	23.06	2.5	0.35	23.41	0.219	3.000	Pass
			RB1#24	22.97	2.5	0.35	23.32	0.215	3.000	Pass
			RB12#0	22.14	2.5	0.35	22.49	0.177	3.000	Pass
			RB12#6	22.07	2.5	0.35	22.42	0.175	3.000	Pass
			RB12#13	22.07	2.5	0.35	22.42	0.175	3.000	Pass
			RB25#0	22	2.5	0.35	22.35	0.172	3.000	Pass
		16-QAM	RB1#0	21.85	2.5	0.35	22.20	0.166	3.000	Pass
			RB1#13	21.49	2.5	0.35	21.84	0.153	3.000	Pass
			RB1#24	21.54	2.5	0.35	21.89	0.155	3.000	Pass
			RB12#0	20.91	2.5	0.35	21.26	0.134	3.000	Pass
			RB12#6	20.94	2.5	0.35	21.29	0.135	3.000	Pass
			RB12#13	20.93	2.5	0.35	21.28	0.134	3.000	Pass
			RB25#0	20.93	2.5	0.35	21.28	0.134	3.000	Pass
	MCH	QPSK	RB1#0	23	2.5	0.35	23.35	0.216	3.000	Pass
			RB1#13	23.15	2.5	0.35	23.50	0.224	3.000	Pass
			RB1#24	22.74	2.5	0.35	23.09	0.204	3.000	Pass
			RB12#0	22.02	2.5	0.35	22.37	0.173	3.000	Pass
			RB12#6	22.11	2.5	0.35	22.46	0.176	3.000	Pass
			RB12#13	21.96	2.5	0.35	22.31	0.170	3.000	Pass
			RB25#0	21.99	2.5	0.35	22.34	0.171	3.000	Pass
		16-QAM	RB1#0	22	2.5	0.35	22.35	0.172	3.000	Pass
			RB1#13	22.12	2.5	0.35	22.47	0.177	3.000	Pass
			RB1#24	21.73	2.5	0.35	22.08	0.161	3.000	Pass
			RB12#0	20.73	2.5	0.35	21.08	0.128	3.000	Pass
			RB12#6	21.13	2.5	0.35	21.48	0.141	3.000	Pass
			RB12#13	20.86	2.5	0.35	21.21	0.132	3.000	Pass
			RB25#0	21.03	2.5	0.35	21.38	0.137	3.000	Pass
	HCH	QPSK	RB1#0	22.79	2.5	0.35	23.14	0.206	3.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND12										
			RB1#13	23.08	2.5	0.35	23.43	0.220	3.000	Pass
			RB1#24	22.72	2.5	0.35	23.07	0.203	3.000	Pass
			RB12#0	22	2.5	0.35	22.35	0.172	3.000	Pass
			RB12#6	22.08	2.5	0.35	22.43	0.175	3.000	Pass
			RB12#13	21.95	2.5	0.35	22.30	0.170	3.000	Pass
			RB25#0	22.02	2.5	0.35	22.37	0.173	3.000	Pass
		16-QAM	RB1#0	21.64	2.5	0.35	21.99	0.158	3.000	Pass
			RB1#13	21.76	2.5	0.35	22.11	0.163	3.000	Pass
			RB1#24	21.39	2.5	0.35	21.74	0.149	3.000	Pass
			RB12#0	20.84	2.5	0.35	21.19	0.132	3.000	Pass
			RB12#6	20.93	2.5	0.35	21.28	0.134	3.000	Pass
			RB12#13	20.81	2.5	0.35	21.16	0.131	3.000	Pass
			RB25#0	20.88	2.5	0.35	21.23	0.133	3.000	Pass
10 MHz	LCH	QPSK	RB1#0	23.35	2.5	0.35	23.70	0.234	3.000	Pass
			RB1#25	23.19	2.5	0.35	23.54	0.226	3.000	Pass
			RB1#49	22.77	2.5	0.35	23.12	0.205	3.000	Pass
			RB25#0	22.04	2.5	0.35	22.39	0.173	3.000	Pass
			RB25#13	22.07	2.5	0.35	22.42	0.175	3.000	Pass
			RB25#25	22.11	2.5	0.35	22.46	0.176	3.000	Pass
			RB50#0	22.08	2.5	0.35	22.43	0.175	3.000	Pass
		16-QAM	RB1#0	22.02	2.5	0.35	22.37	0.173	3.000	Pass
			RB1#25	22.43	2.5	0.35	22.78	0.190	3.000	Pass
			RB1#49	21.47	2.5	0.35	21.82	0.152	3.000	Pass
			RB25#0	20.92	2.5	0.35	21.27	0.134	3.000	Pass
			RB25#13	21.15	2.5	0.35	21.50	0.141	3.000	Pass
			RB25#25	20.99	2.5	0.35	21.34	0.136	3.000	Pass
	MCH	QPSK	RB1#0	22.83	2.5	0.35	23.18	0.208	3.000	Pass
			RB1#25	23.53	2.5	0.35	23.88	0.244	3.000	Pass
			RB1#49	22.88	2.5	0.35	23.23	0.210	3.000	Pass
			RB25#0	22.05	2.5	0.35	22.40	0.174	3.000	Pass
			RB25#13	22.01	2.5	0.35	22.36	0.172	3.000	Pass
			RB25#25	21.95	2.5	0.35	22.30	0.170	3.000	Pass
			RB50#0	22.01	2.5	0.35	22.36	0.172	3.000	Pass
		16-QAM	RB1#0	21.76	2.5	0.35	22.11	0.163	3.000	Pass
			RB1#25	21.92	2.5	0.35	22.27	0.169	3.000	Pass
			RB1#49	21.26	2.5	0.35	21.61	0.145	3.000	Pass
			RB25#0	20.98	2.5	0.35	21.33	0.136	3.000	Pass
			RB25#13	20.92	2.5	0.35	21.27	0.134	3.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND12										
			RB25#25	20.85	2.5	0.35	21.20	0.132	3.000	Pass
	HCH	QPSK	RB1#0	23.01	2.5	0.35	23.36	0.217	3.000	Pass
			RB1#25	23.23	2.5	0.35	23.58	0.228	3.000	Pass
			RB1#49	22.57	2.5	0.35	22.92	0.196	3.000	Pass
			RB25#0	22.1	2.5	0.35	22.45	0.176	3.000	Pass
			RB25#13	22.05	2.5	0.35	22.40	0.174	3.000	Pass
			RB25#25	22.07	2.5	0.35	22.42	0.175	3.000	Pass
			RB50#0	22.05	2.5	0.35	22.40	0.174	3.000	Pass
		16-QAM	RB1#0	21.79	2.5	0.35	22.14	0.164	3.000	Pass
			RB1#25	21.97	2.5	0.35	22.32	0.171	3.000	Pass
			RB1#49	21.69	2.5	0.35	22.04	0.160	3.000	Pass
			RB25#0	21.16	2.5	0.35	21.51	0.142	3.000	Pass
			RB25#13	21.2	2.5	0.35	21.55	0.143	3.000	Pass
			RB25#25	21.12	2.5	0.35	21.47	0.140	3.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND13										
5 MHz	LCH	QPSK	RB1#0	23.23	2.5	0.35	23.58	0.228	3.000	Pass
			RB1#13	23.01	2.5	0.35	23.36	0.217	3.000	Pass
			RB1#24	23.2	2.5	0.35	23.55	0.226	3.000	Pass
			RB12#0	22.2	2.5	0.35	22.55	0.180	3.000	Pass
			RB12#6	22.05	2.5	0.35	22.40	0.174	3.000	Pass
			RB12#13	22.16	2.5	0.35	22.51	0.178	3.000	Pass
			RB25#0	22.2	2.5	0.35	22.55	0.180	3.000	Pass
		16-QAM	RB1#0	22.01	2.5	0.35	22.36	0.172	3.000	Pass
			RB1#13	21.39	2.5	0.35	21.74	0.149	3.000	Pass
			RB1#24	21.66	2.5	0.35	22.01	0.159	3.000	Pass
			RB12#0	21.14	2.5	0.35	21.49	0.141	3.000	Pass
			RB12#6	21.07	2.5	0.35	21.42	0.139	3.000	Pass
			RB12#13	21.36	2.5	0.35	21.71	0.148	3.000	Pass
			RB25#0	21.22	2.5	0.35	21.57	0.144	3.000	Pass
	MCH	QPSK	RB1#0	22.95	2.5	0.35	23.30	0.214	3.000	Pass
			RB1#13	23.19	2.5	0.35	23.54	0.226	3.000	Pass
			RB1#24	23.26	2.5	0.35	23.61	0.230	3.000	Pass
			RB12#0	22.13	2.5	0.35	22.48	0.177	3.000	Pass
			RB12#6	22.33	2.5	0.35	22.68	0.185	3.000	Pass
			RB12#13	22.27	2.5	0.35	22.62	0.183	3.000	Pass
			RB25#0	22.21	2.5	0.35	22.56	0.180	3.000	Pass
		16-QAM	RB1#0	22.25	2.5	0.35	22.60	0.182	3.000	Pass
			RB1#13	22.31	2.5	0.35	22.66	0.185	3.000	Pass
			RB1#24	22.29	2.5	0.35	22.64	0.184	3.000	Pass
			RB12#0	21.04	2.5	0.35	21.39	0.138	3.000	Pass
			RB12#6	21.23	2.5	0.35	21.58	0.144	3.000	Pass
			RB12#13	21.26	2.5	0.35	21.61	0.145	3.000	Pass
			RB25#0	21.22	2.5	0.35	21.57	0.144	3.000	Pass
	HCH	QPSK	RB1#0	23.26	2.5	0.35	23.61	0.230	3.000	Pass
			RB1#13	23.23	2.5	0.35	23.58	0.228	3.000	Pass
			RB1#24	23.14	2.5	0.35	23.49	0.223	3.000	Pass
			RB12#0	22.31	2.5	0.35	22.66	0.185	3.000	Pass
			RB12#6	22.35	2.5	0.35	22.70	0.186	3.000	Pass
			RB12#13	22.17	2.5	0.35	22.52	0.179	3.000	Pass
			RB25#0	22.35	2.5	0.35	22.70	0.186	3.000	Pass
		16-QAM	RB1#0	22.09	2.5	0.35	22.44	0.175	3.000	Pass
			RB1#13	22.02	2.5	0.35	22.37	0.173	3.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND13										
			RB1#24	21.62	2.5	0.35	21.97	0.157	3.000	Pass
			RB12#0	21.11	2.5	0.35	21.46	0.140	3.000	Pass
			RB12#6	21.2	2.5	0.35	21.55	0.143	3.000	Pass
			RB12#13	21.19	2.5	0.35	21.54	0.143	3.000	Pass
			RB25#0	21.29	2.5	0.35	21.64	0.146	3.000	Pass
10 MHz	MCH	QPSK	RB1#0	23.23	2.5	0.35	23.58	0.228	3.000	Pass
			RB1#25	23.29	2.5	0.35	23.64	0.231	3.000	Pass
			RB1#49	23.1	2.5	0.35	23.45	0.221	3.000	Pass
			RB25#0	22.14	2.5	0.35	22.49	0.177	3.000	Pass
			RB25#13	22.34	2.5	0.35	22.69	0.186	3.000	Pass
			RB25#25	22.35	2.5	0.35	22.70	0.186	3.000	Pass
			RB50#0	22.27	2.5	0.35	22.62	0.183	3.000	Pass
		16-QAM	RB1#0	22.26	2.5	0.35	22.61	0.182	3.000	Pass
			RB1#25	22.05	2.5	0.35	22.40	0.174	3.000	Pass
			RB1#49	21.99	2.5	0.35	22.34	0.171	3.000	Pass
			RB25#0	21.12	2.5	0.35	21.47	0.140	3.000	Pass
			RB25#13	21.3	2.5	0.35	21.65	0.146	3.000	Pass
			RB25#25	21.42	2.5	0.35	21.77	0.150	3.000	Pass

A.2 Peak to Average Ratio

Note: The Peak to Average Ratio please refer to the FCC Report No. R1805A0250-R1, R1805A0250-R2, R1805A0250-R3 (FCC ID: XMR201807EG91NA) which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018, **Section 5.5 Peak-to-Average Power Ratio (PAPR).**
IC Report No. R1805A0250-R4V1, R1805A0250-R5V1, R1805A0250-R6V1 (ISED Number: 10224A-2018EG91NA), which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018, **Section 5.5 Peak-to-Average Power Ratio (PAPR).**

A.3 Occupied Bandwidth

Note: The Occupied Bandwidth please refer to the FCC Report No. R1805A0250-R1, R1805A0250-R2, R1805A0250-R3 (FCC ID: XMR201807EG91NA), which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018, **Section 5.3 Occupied Bandwidth.**
IC Report No. R1805A0250-R4V1, R1805A0250-R5V1, R1805A0250-R6V1 (ISED Number: 10224A-2018EG91NA), which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018, **Section 5.3 Occupied Bandwidth.**

A.4 Frequency Stability

Note: The Frequency Stability please refer to the FCC Report No. R1805A0250-R1, R1805A0250-R2, R1805A0250-R3 (FCC ID: XMR201807EG91NA), which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018, **Section 5.6 Frequency Stability.**
IC Report No. R1805A0250-R4V1, R1805A0250-R5V1, R1805A0250-R6V1 (ISED Number: 10224A-2018EG91NA), which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018, **Section 5.6 Frequency Stability.**

A.5 Spurious Emission at Antenna Terminals

Note: The Spurious Emission at Antenna Terminals please refer to the FCC Report No. R1805A0250-R1, R1805A0250-R2, R1805A0250-R3 (FCC ID: XMR201807EG91NA), which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018, **Section 5.7 Spurious Emission at Antenna Terminals**.
IC Report No. R1805A0250-R4V1, R1805A0250-R5V1, R1805A0250-R6V1 (ISED Number: 10224A-2018EG91NA), which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018, **Section 5.7 Spurious Emission at Antenna Terminals**.

A.6 Band Edge

Note: The Band Edge please refer to the FCC Report No. R1805A0250-R1, R1805A0250-R2, R1805A0250-R3 (FCC ID: XMR201807EG91NA), which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018, **Section 5.4 Band Edge Compliance.**
IC Report No. R1805A0250-R4V1, R1805A0250-R5V1, R1805A0250-R6V1 (ISED Number: 10224A-2018EG91NA), which issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018, **Section 5.4 Band Edge Compliance**.

A.7 Field Strength of Spurious Radiation

Note 1: All modes have been tested, and only the worst case data are shown here.

Note 2: The frequencies of verdict which are marked by "N/A" should be ignored because they are UE carrier frequency.

Note 3: Test plots please refer to the document “Annex No.: BL-SZ2320838-501 Data Part 1.pdf”.

WCDMA Mode Test Verdict

Test Band	Test Channel	Refer to Plot[Note3]	Verdict
WCDMA Band 2	LCH	1.1	Pass
	MCH	1.2	Pass
	HCH	1.3	Pass
WCDMA Band 4	LCH	2.1	Pass
	MCH	2.2	Pass
	HCH	2.3	Pass
WCDMA Band 5	LCH	3.1	Pass
	MCH	3.2	Pass
	HCH	3.3	Pass

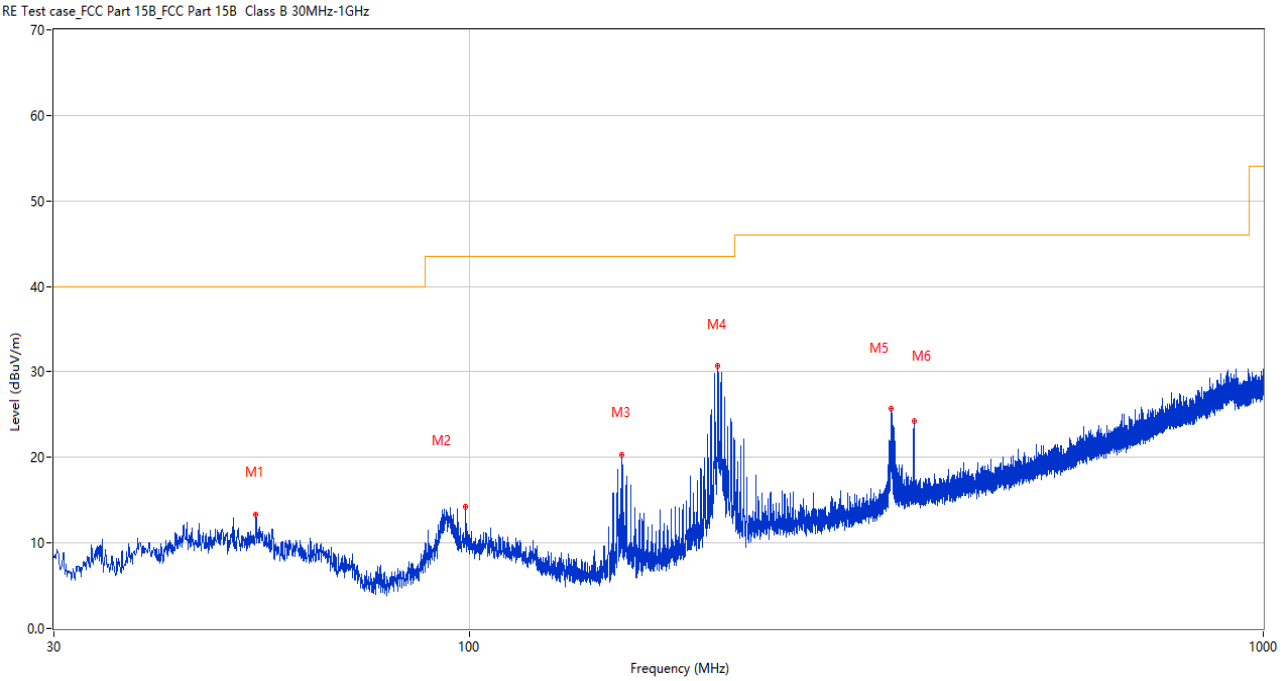
LTE Mode Test Verdict

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot[Note3]	Verdict
Band 2	1.4 MHz	MCH	QPSK	RB1#0	4.1	Pass
	3 MHz	MCH	QPSK	RB1#0	4.2	Pass
	5 MHz	MCH	QPSK	RB1#0	4.3	Pass
	10 MHz	MCH	QPSK	RB1#0	4.4	Pass
	15 MHz	MCH	QPSK	RB1#0	4.5	Pass
	20 MHz	MCH	QPSK	RB1#0	4.6	Pass
Band 4	1.4 MHz	MCH	QPSK	RB1#0	5.1	Pass
	3 MHz	MCH	QPSK	RB1#0	5.2	Pass
	5 MHz	MCH	QPSK	RB1#0	5.3	Pass
	10 MHz	MCH	QPSK	RB1#0	5.4	Pass
	15 MHz	MCH	QPSK	RB1#0	5.5	Pass
	20 MHz	MCH	QPSK	RB1#0	5.6	Pass
Band 5	1.4 MHz	MCH	QPSK	RB1#0	6.1	Pass
	3 MHz	MCH	QPSK	RB1#0	6.2	Pass
	5 MHz	MCH	QPSK	RB1#0	6.3	Pass
	10 MHz	MCH	QPSK	RB1#0	6.4	Pass
Band 12	1.4 MHz	MCH	QPSK	RB1#0	7.1	Pass
	3 MHz	MCH	QPSK	RB1#0	7.2	Pass
	5 MHz	MCH	QPSK	RB1#0	7.3	Pass
	10 MHz	MCH	QPSK	RB1#0	7.4	Pass
Band 13	5 MHz	MCH	QPSK	RB1#0	8.1	Pass
	10 MHz	MCH	QPSK	RB1#0	8.2	Pass

A.8 Receiver Spurious Emissions

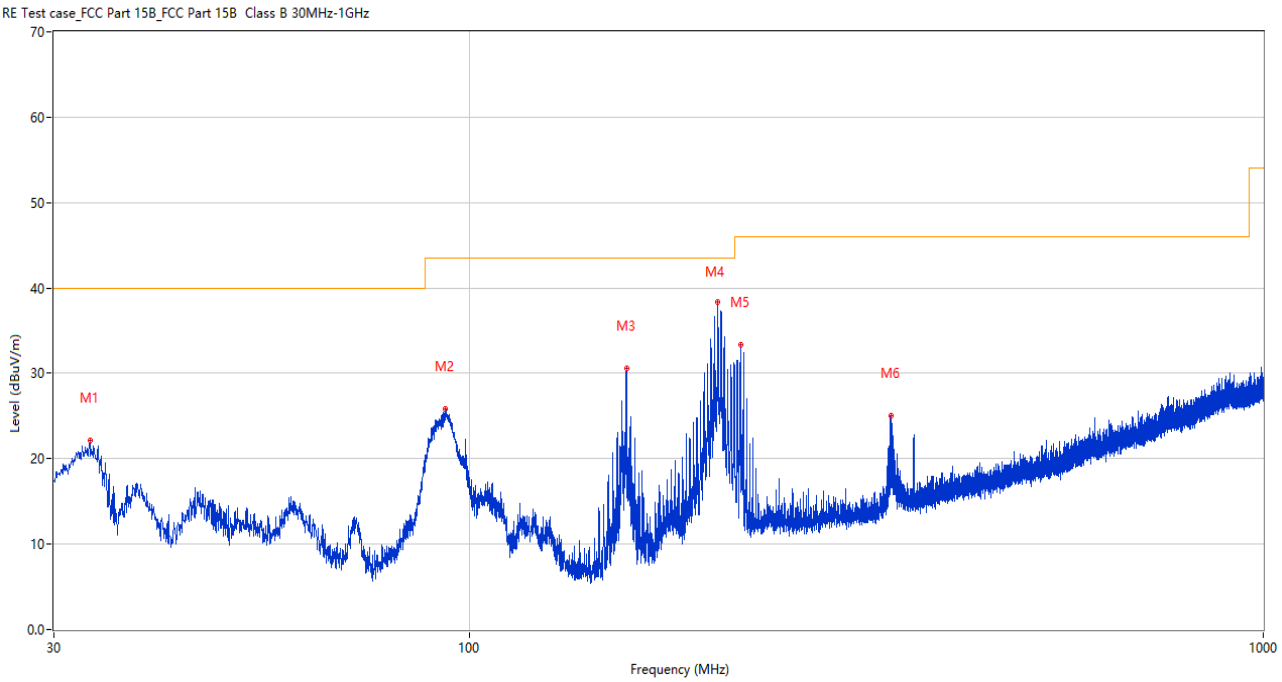
Note: Only the worst test results were recorded in this report.

30MHz to 1GHz, ANT H



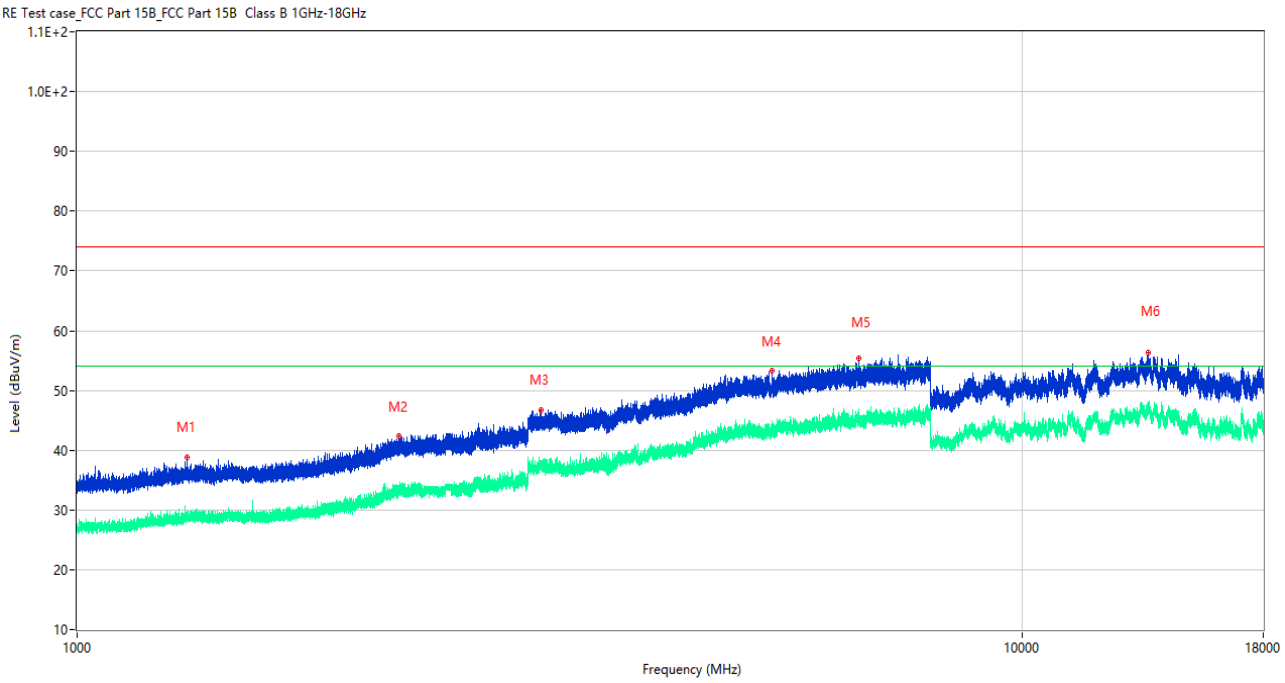
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	53.910	13.31	-25.55	40.0	26.69	Peak	133.00	200	Horizontal	Pass
2	99.016	14.19	-26.90	43.5	29.31	Peak	152.00	200	Horizontal	Pass
3	155.809	20.28	-29.80	43.5	23.22	Peak	167.00	200	Horizontal	Pass
4	205.812	30.65	-26.66	43.5	12.85	Peak	59.00	200	Horizontal	Pass
5	339.721	25.68	-22.34	46.0	20.32	Peak	324.00	100	Horizontal	Pass
6	363.001	24.31	-21.90	46.0	21.69	Peak	152.00	200	Horizontal	Pass

30MHz to 1GHz, ANT V



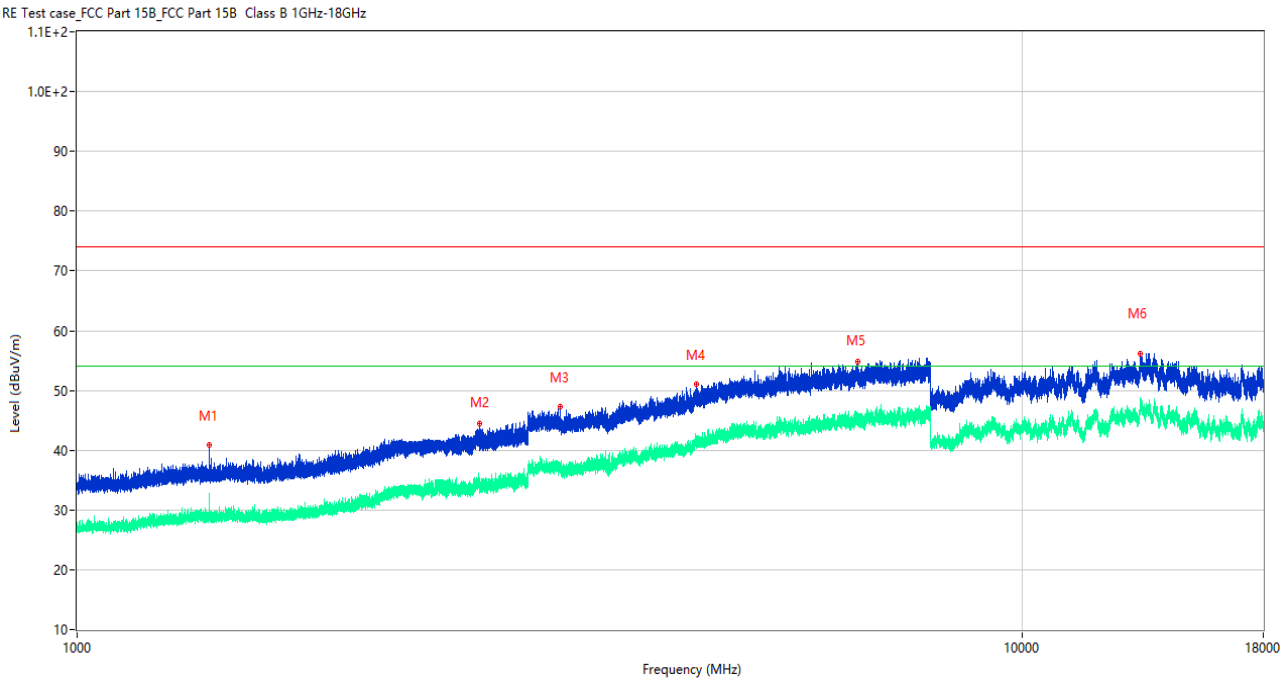
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	33.298	22.18	-28.91	40.0	17.82	Peak	281.00	100	Vertical	Pass
2	93.341	25.84	-27.80	43.5	17.66	Peak	349.00	100	Vertical	Pass
3	157.749	30.58	-29.72	43.5	12.92	Peak	269.00	100	Vertical	Pass
4	205.667	38.43	-26.66	43.5	5.07	Peak	219.00	100	Vertical	Pass
5	219.684	33.33	-26.20	46.0	12.67	Peak	269.00	100	Vertical	Pass
6	339.430	25.11	-22.32	46.0	20.89	Peak	313.00	200	Vertical	Pass

1GHz to 18GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1307.300	38.72	-16.33	74.0	35.28	Peak	288.00	100	Horizontal	Pass
1**	1307.300	28.78	-16.33	54.0	25.22	AV	288.00	100	Horizontal	Pass
2	2192.700	42.35	-12.15	74.0	31.65	Peak	119.00	100	Horizontal	Pass
2**	2192.700	32.35	-12.15	54.0	21.65	AV	119.00	100	Horizontal	Pass
3	3099.750	46.78	-6.23	74.0	27.22	Peak	116.00	100	Horizontal	Pass
3**	3099.750	36.68	-6.23	54.0	17.32	AV	116.00	100	Horizontal	Pass
4	5433.000	53.28	0.85	74.0	20.72	Peak	177.00	100	Horizontal	Pass
4**	5433.000	43.57	0.85	54.0	10.43	AV	177.00	100	Horizontal	Pass
5	6722.500	55.42	1.46	74.0	18.58	Peak	116.00	100	Horizontal	Pass
5**	6722.500	46.90	1.46	54.0	7.10	AV	116.00	100	Horizontal	Pass
6	13588.500	56.42	4.72	74.0	17.58	Peak	51.00	100	Horizontal	Pass
6**	13588.500	47.98	4.72	54.0	6.02	AV	51.00	100	Horizontal	Pass

1GHz to 18GHz, ANT V

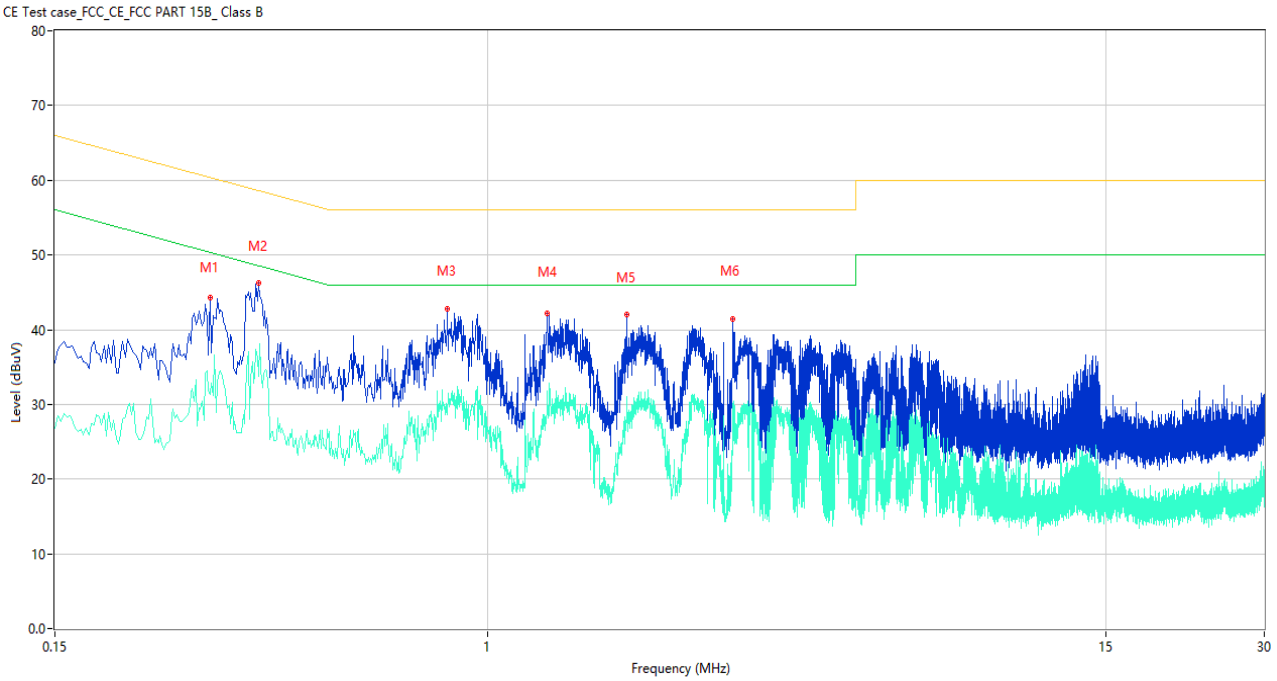


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1379.300	40.88	-16.80	74.0	33.12	Peak	351.00	100	Vertical	Pass
1**	1379.300	28.90	-16.80	54.0	25.10	AV	351.00	100	Vertical	Pass
2	2663.000	44.53	-9.33	74.0	29.47	Peak	0.00	100	Vertical	Pass
2**	2663.000	35.36	-9.33	54.0	18.64	AV	0.00	100	Vertical	Pass
3	3247.500	47.27	-6.08	74.0	26.73	Peak	9.00	100	Vertical	Pass
3**	3247.500	37.44	-6.08	54.0	16.56	AV	9.00	100	Vertical	Pass
4	4522.000	51.09	-1.23	74.0	22.91	Peak	322.00	100	Vertical	Pass
4**	4522.000	40.83	-1.23	54.0	13.17	AV	322.00	100	Vertical	Pass
5	6694.250	54.83	1.62	74.0	19.17	Peak	297.00	100	Vertical	Pass
5**	6694.250	45.22	1.62	54.0	8.78	AV	297.00	100	Vertical	Pass
6	13347.000	56.16	5.13	74.0	17.84	Peak	0.00	100	Vertical	Pass
6**	13347.000	46.99	5.13	54.0	7.01	AV	0.00	100	Vertical	Pass

A.9 AC Power-line Conducted Emissions

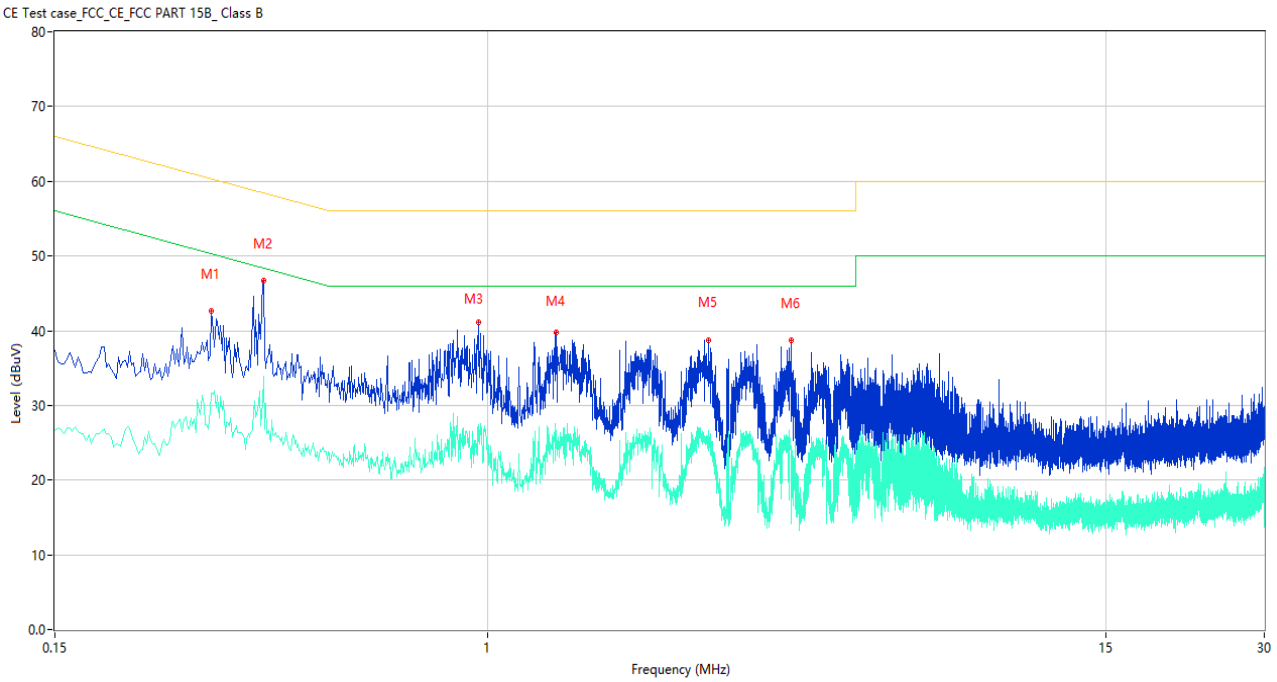
Note: Only the worst test results were recorded in this report.

L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.296	44.30	10.05	60.35	16.05	Peak	L	Pass
1**	0.296	31.35	10.05	50.35	19.00	AV	L	Pass
2	0.366	46.27	10.16	58.59	12.32	Peak	L	Pass
2**	0.366	33.77	10.16	48.59	14.82	AV	L	Pass
3	0.838	42.85	10.34	56.00	13.15	Peak	L	Pass
3**	0.838	28.64	10.34	46.00	17.36	AV	L	Pass
4	1.298	42.11	10.34	56.00	13.89	Peak	L	Pass
4**	1.298	31.82	10.34	46.00	14.18	AV	L	Pass
5	1.838	41.97	10.08	56.00	14.03	Peak	L	Pass
5**	1.838	31.04	10.08	46.00	14.96	AV	L	Pass
6	2.918	41.42	10.28	56.00	14.58	Peak	L	Pass
6**	2.918	29.30	10.28	46.00	16.70	AV	L	Pass

N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.298	42.69	10.05	60.30	17.61	Peak	N	Pass
1**	0.298	31.71	10.05	50.30	18.59	AV	N	Pass
2	0.374	46.70	10.27	58.41	11.71	Peak	N	Pass
2**	0.374	33.92	10.27	48.41	14.49	AV	N	Pass
3	0.958	41.14	10.75	56.00	14.86	Peak	N	Pass
3**	0.958	27.45	10.75	46.00	18.55	AV	N	Pass
4	1.350	39.74	10.35	56.00	16.26	Peak	N	Pass
4**	1.350	26.68	10.35	46.00	19.32	AV	N	Pass
5	2.626	38.78	10.17	56.00	17.22	Peak	N	Pass
5**	2.626	25.67	10.17	46.00	20.33	AV	N	Pass
6	3.772	38.76	10.34	56.00	17.24	Peak	N	Pass
6**	3.772	23.38	10.34	46.00	22.62	AV	N	Pass

ANNEX B TEST SETUP PHOTOS

Please refer to the document “BL-SZ2320838-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer to the document “BL-SZ2320838-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer to the document “BL-SZ2320838-AI.PDF”.

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--END OF REPORT--