RF Test Report

For

Applicant Name:	**SHENZHEN AMS COMMUNICATIONS COMPANY LIMITED**
Address:	5F, Unit B, Building 1#, Hongfa Industrial Park, Lezhujiao, JiuweiCommunity, Hangcheng Street, Baoan District
EUT Name:	Mobile Phone
Brand Name:	MAZE SPEED, SOHO STYLE, TRUE SLIM
Model Number:	M55
Series Model Number:	S55, T55

Issued By

Company Name:	**BTF Testing Lab (Shenzhen) Co., Ltd.**
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Report Number:	BTF240401R00304
Test Standards:	FCC CFR Title 47 Part 2 FCC CFR Title 47 Part22 FCC CFR Title 47 Part24 FCC CFR Title 47 Part27
FCC ID:	2A55S-M55
Test Conclusion:	Pass
Test Date:	2024-04-01 to 2024-04-22
Date of Issue:	2024-04-23

Prepared By: Chris Liu / Project Engineer

Date: 2024-04-23

Approved By: Ryan.CJ / EMC Manager

Date: 2024-04-23

Note: All the test results in this report only related to the testing samples. Which can be duplicated completely for the legal use with approval of applicant; it shall not be reproduced except in full without the written approval of BTF Testing Lab (Shenzhen) Co., Ltd., All the objections should be raised within thirty days from the date of issue. To validate the report, you can contact us.

Revision History		
Version	Issue Date	Revisions Content
R_V0	2024-04-23	Original
Note:	*Once the revision has been made, then previous versions reports are invalid.*	

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

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BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

1. Introduction

1.1 Identification of Testing Laboratory

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130

1.2 Identification of the Responsible Testing Location

Test Location:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Description:	All measurement facilities used to collect the measurement data are located at F101,201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
FCC Registration Number:	518915
Designation Number:	CN1330

1.3 Laboratory Condition

Ambient Temperature:	20℃ to 35℃
Ambient Relative Humidity:	45% to 55%
Ambient Pressure:	100 kPa to 102 kPa

1.4 Announcement

(1) The test report reference to the report template version v0.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.

(5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

(6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2. Product Information

2.1 Application Information

Company Name:	SHENZHEN AMS COMMUNICATIONS COMPANY LIMITED
Address:	5F, Unit B, Building 1#, Hongfa Industrial Park, Lezhujiao, Jiuwei Community, Hangcheng Street, Baoan District

2.2 Manufacturer Information

Company Name:	SHENZHEN AMS COMMUNICATIONS COMPANY LIMITED
Address:	5F, Unit B, Building 1#, Hongfa Industrial Park, Lezhujiao, Jiuwei Community, Hangcheng Street, Baoan District

2.3 Factory Information

Company Name:	SHENZHEN AMS COMMUNICATIONS COMPANY LIMITED
Address:	5F, Unit B, Building 1#, Hongfa Industrial Park, Lezhujiao, Jiuwei Community, Hangcheng Street, Baoan District

2.4 General Description of Equipment under Test (EUT)

EUT Name	Mobile Phone
Under Test Model Name	M55
Series Model Number:	S55, T55
Description of Model name differentiation:	Only the model name is different, everything else is the same
Hardware Version	N/A
Software and Firmware Version	N/A

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2.5 Technical Information

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

Operating Bands	GSM/GPRS/EGPRS 850/1900 MHz WCDMA/HSDPA/HSUPA Band 2/4/5 FDD LTE Band 2/4/5/12/13/17/25/26/41/66/71	
Modulation Type	GPRS	GMSK
	EGPRS	8PSK
	WCDMA	QPSK
	HSDPA/HSUPA	QPSK
		16QAM
	LTE	QPSK
		16QAM
TX Frequency Range	GPRS/EGPRS 850: 824.2 MHz ~ 848.8 MHz GPRS/EGPRS 1900: 1850.2 MHz ~ 1909.8 MHz WCDMA/HSDPA/HSUPA Band 2: 1852.4 MHz ~ 1907.6 MHz WCDMA/HSDPA/HSUPA Band 4: 1712.4 MHz ~ 1752.6 MHz WCDMA/HSDPA/HSUPA Band 5: 826.4 MHz ~ 846.6 MHz FDD LTE Band 2: 1850.7 MHz ~ 1909.3 MHz FDD LTE Band 4: 1710.7 MHz ~ 1754.3 MHz FDD LTE Band 5: 824.7 MHz ~ 848.3 MHz FDD LTE Band 12: 699.7 MHz ~ 715.3 MHz FDD LTE Band 17:706.5 MHz ~ 713.5 MHz FDD LTE Band 30: 2307.5 MHz ~2312.5 MHz TDD LTE Band 41:2498.5 MHz ~2687.5 MHz FDD LTE Band 66: 1710.7 MHz ~ 1779.3 MHz FDD LTE Band 71:665.5 MHz ~ 695.5 MHz	
Rx Frequency Range	GPRS/EGPRS 850: 869.2 MHz ~ 893.8 MHz GPRS/EGPRS 1900: 1930.2 MHz ~ 1989.8 MHz WCDMA/HSDPA/HSUPA Band 2: 1932.4 MHz ~ 1987.6 MHz WCDMA/HSDPA/HSUPA Band 4: 2112.4 MHz ~ 2152.6 MHz WCDMA/HSDPA/HSUPA Band 5: 871.4 MHz ~ 891.6 MHz FDD LTE Band 2: 1930.7 MHz ~ 1989.3 MHz FDD LTE Band 4: 2110.7 MHz ~ 2154.3 MHz FDD LTE Band 5: 869.7 MHz ~ 893.3 MHz FDD LTE Band 12: 729.7 MHz ~ 745.3 MHz FDD LTE Band 17:736.5 MHz ~ 743.5 MHz FDD LTE Band 30: 2352.5 MHz ~2357.5MHz TDD LTE Band 41: 2498.5 MHz ~2687.5 MHz	

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	FDD LTE Band 66: 2110.7 MHz ~ 2179.3 MHz FDD LTE Band 71:706.5 MHz ~ 713.5 MHz
Power Class	GPRS 850: 4 GPRS 1900: 1 EGPRS 850/1900: E2 WCDMA/HSDPA/HSUPA Band 2: 3 WCDMA/HSDPA/HSUPA Band 4: 3 WCDMA/HSDPA/HSUPA Band 5: 3 FDD LTE Band 2: 3 FDD LTE Band 4: 3 FDD LTE Band 5: 3 FDD LTE Band 7: 3 FDD LTE Band 12: 3 FDD LTE Band 17: 3 FDD LTE Band 30: 3 FDD LTE Band 41: 3 FDD LTE Band 66: 3 FDD LTE Band 71:3
Multislot Class	GPRS/EGPRS: 12
Antenna Type	PIFA Antenna

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Antenna Gain	GSM850 -0.68dBi	GSM1900 0.82dBi	WCDMA B2 0.77dBi	WCDMA B4 0.89dBi
	WCDMA B5 -0.78dBi	LTE B2 0.83dBi	LTE B4 0.89dBi	LTE B5 -0.74dBi
	LTE B12 -1.35dBi	LTE B17 -1.38dBi	LTE B30 1.21dBi	LTE B41 1.22dBi
	LTE B66 0.92dBi	LTE B71 -4.22dBi		
The Max RF Output Power (EIRP/ERP)	GSM850: 28.00dBm GSM1900: 27.24dBm WCDMA Band II:20.42dBm WCDMA Band IV: 19.94dBm WCDMA Band V: 19.11dBm LTE Band 2: 22.16dBm LTE Band 4: 22.43dBm LTE Band 5: 19.47 dBm FDD LTE Band 12: 19.2dBm FDD LTE Band 17: 19.01dBm FDD LTE Band 30: 24.43dBm FDD LTE Band 41: 23.13dBm FDD LTE Band 66: 21.59dBm FDD LTE Band 71: 14.38dBm			

Note: The EUT information are declared by manufacturer. For more detailed features description, please refer to the manufacturer's specifications or user's manual.

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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	ANSI/TIA-603-E-2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
6	KDB 971168 D01 v03r01	Measurement Guidance for Certification of Licensed Digital Transmitters
7	ANSI C63.26:2015	IEEE/ANSI Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

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3.2 Summary of Test Result

No.	Description	FCC Part No.	Test Verdict	Remark
1	Conducted RF Output Power	2.1046	Pass	--
2	Effective (Isotropic) Radiated Power	2.1046 22.913(a) 24.232(c) 27.50	Pass	--
3	Peak to Average Radio	2.1046 22.913(d) 24.232(d) 27.50(d)	Pass	--
4	Occupied Bandwidth	2.1049 22.917(b) 24.238(b) 27.53	Pass	--
5	Frequency Stability	2.1055 22.355 24.235 27.54	Pass	--
6	Spurious Emission at Antenna Terminals	2.1051 22.917 24.238 27.53	Pass	--
7	Band Edge	2.1051 22.917 24.238 27.53	Pass	--
8	Field Strength of Spurious Radiation	2.1053 22.917 24.238 27.53	Pass	--

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3.3 Uncertainty of Test

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2 and TR100 028-1/-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
RF output power, conducted	0.63 dB
Conducted spurious emissions	0.94 dB
Radiated emissions (＜1 GHz)	4.12 dB
Radiated emissions (＞1 GHz)	4.16 dB
Occupied Channel Bandwidth	69 KHz
Frequency Stability	0.4 KHz
Temperature	0.82 °C
Humidity	4.1 %

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4. Test Configuration

4.1 Environment Condition

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

Test Voltage of the EUT	NV (Normal Voltage)	3.70V
	LV (Low Voltage)	3.33 V
	HV (High Voltage)	4.07 V
Test Temperature of the EUT	NT (Normal Temperature)	+25 °C
	LT (Low Temperature)	-30 °C
	HT (High Temperature)	+50 °C

4.2 Test Equipment List

Conducted Method Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2023.11.16	2024.11.15	☒
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2023.11.16	2024.11.15	☒
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2023.11.16	2024.11.15	☒
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2023.11.16	2024.11.15	☒
RF Sensor Unit	Techy	TR1029-2	/	2023.11.16	2024.11.15	☒
RF Control Unit	Techy	TR1029-1	/	2023.11.16	2024.11.15	☒
RFTest software	/	V1.00	/	/	/	☒

Radiated Method Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2023.11.16	2024.11.15	☒
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2023.11.16	2024.11.15	☒
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2023.11.16	2024.11.15	☒
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2023.11.16	2024.11.15	☒
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/	☒
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2023.11.16	2024.11.15	☒

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RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2023.11.16	2024.11.15	☒
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2023.11.16	2024.11.15	☒
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2023.11.16	2024.11.15	☒
RE Cable	REBES Talent	UF1-SMASMAM-1m	21101568	2023.11.16	2024.11.15	☒
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2023.11.16	2024.11.15	☒
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2023.11.16	2024.11.15	☒
Preamplifier	SCHWARZBECK	BBV9744	00246	2023.11.16	2024.11.15	☒
Low Noise Pre-amplifier	Sket	LNPA_1840G-50	SK2022032902	2023.11.16	2024.11.15	☒
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023.11.16	2024.11.15	☒
Broadband Preamplilifier	Schwarzbeck	BBV9718D	00008	2023.11.16	2024.11.15	☒
Signal Generator	Schwarzbeck	SMR20	1008100050	2023.11.16	2024.11.15	☒
Horn Antenna	Schwarzbeck	BBHA9120D	2597	2023.11.16	2024.11.15	☒
Log periodic antenna	SCHWARZBECK	VUBA9117	359	2023.11.16	2024.11.15	

4.3 Test Auxiliary Equipment

Description	Manufacturer	Model	Serial No.	Length	Description	Use
/	/	/	/	/	/	☒

4.4 Test Configurations

Test Items	Test Mode	Test Channel		
		LCH	MCH	HCH
Effective (Isotropic) Radiated Power	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v
	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			
	HSDPA Band 5	v	v	v
	HSUPA Band 2	v	v	v
	HSUPA Band 4	v	v	v
	HSUPA Band 5	v	v	v
Spurious Emission at Antenna Terminals	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v
	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	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v
	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

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	HSDPA Band 5	v	v	v
	HSUPA Band 2	v	v	v
	HSUPA Band 4	v	v	v
	HSUPA 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)
GPRS/EGPRS 850	Low Channel	128	824.2
	Middle Channel	190	836.6
	High Channel	251	848.8
GPRS/EGPRS 1900	Low Channel	512	1850.2
	Middle Channel	661	1880.0
	High Channel	810	1909.8
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	1732.6
	High Channel	1513	1752.6
WCDMA Band 5	Low Channel	4132	826.4
	Middle Channel	4182	836.4
	High Channel	4233	846.6

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LTE	Bandwidth (MHz)						Modulation Type		RB#			Test Channel		
Band	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
17	n	n	v	v	n	n	v	v	v	v	v	v	v	v
30	n	n	v	v	n	n	v	v	v	v	v	v	v	v
41	n	n	v	v	v	n	v	v	v	v	v	v	v	v
66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
71	n	n	v	v	v	v	v	v	v	v	v	v	v	v
Peak to Average Ratio														
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
17	n	n	v	v	n	n	v	v	v	v	v	v	v	v
30	n	n	v	v	n	n	v	v	v	v	v	v	v	v
41	n	n	v	v	v	n	v	v	v	v	v	v	v	v
66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
71	n	n	v	v	v	v	v	v	v	v	v	v	v	v
Occupied Bandwidth														
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
17	n	n	v	v	n	n	v	v	v	v	v	v	v	v
30	n	n	v	v	n	n	v	v	v	v	v	v	v	v
41	n	n	v	v	v	n	v	v	v	v	v	v	v	v
66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
71	n	n	v	v	v	v	v	v	v	v	v	v	v	v

Frequency Stability														
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

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17	n	n	v	v	n	n	v	v	v	v	v	v	v	v
30	n	n	v	v	n	n	v	v	v	v	v	v	v	v
41	n	n	v	v	v	n	v	v	v	v	v	v	v	v
66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
71	n	n	v	v	v	v	v	v	v	v	v	v	v	v
Spurious Emission at Antenna Terminals														
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
17	n	n	v	v	n	n	v	v	v	v	v	v	v	v
30	n	n	v	v	n	n	v	v	v	v	v	v	v	v
41	n	n	v	v	v	n	v	v	v	v	v	v	v	v
66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
71	n	n	v	v	v	v	v	v	v	v	v	v	v	v
Band Edge														
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
17	n	n	v	v	n	n	v	v	v	v	v	v	v	v
30	n	n	v	v	n	n	v	v	v	v	v	v	v	v
41	n	n	v	v	v	n	v	v	v	v	v	v	v	v
66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
71	n	n	v	v	v	v	v	v	v	v	v	v	v	v

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Field Strength of Spurious Radiation														
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
17	n	n	v	v	n	n	v	v	v	v	v	v	v	v
30	n	n	v	v	n	n	v	v	v	v	v	v	v	v
41	n	n	v	v	v	n	v	v	v	v	v	v	v	v
66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
71	n	n	v	v	v	v	v	v	v	v	v	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.														

Band 2

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	18607	1850.7	607	1930.7
	3	18615	1851.5	615	1931.5
	5	18625	1852.5	625	1932.5
	10	18650	1855	650	1935
	15 [1]	18675	1857.5	675	1937.5
	20 [1]	18700	1860	700	1940
Mid Range	1.4/3/5/10 15 [1]/20 [1]	18900	1880	900	1960
High Range	1.4	19193	1909.3	1193	1989.3
	3	19185	1908.5	1185	1988.5
	5	19175	1907.5	1175	1987.5
	10	19150	1905	1150	1985
	15 [1]	19125	1902.5	1125	1982.5
	20 [1]	19100	1900	1100	1980
NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.					

Band 4

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	19957	1710.7	1957	2110.7
	3	19965	1711.5	1965	2111.5
	5	19975	1712.5	1975	2112.5
	10	20000	1715	2000	2115
	15	20025	1717.5	2025	2117.5
	20	20050	1720	2050	2120
Mid Range	1.4/3/5/10/15/20	20175	1732.5	2175	2132.5
High Range	1.4	20393	1754.3	2393	2154.3
	3	20385	1753.5	2385	2153.5
	5	20375	1752.5	2375	2152.5
	10	20350	1750	2350	2150
	15	20325	1747.5	2325	2147.5
	20	20300	1745	2300	2145

Band 5

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	20407	824.7	2407	869.7
	3	20415	825.5	2415	870.5
	5	20425	826.5	2425	871.5
	10 [1]	20450	829	2450	874
Mid Range	1.4/3/5 10 [1]	20525	836.5	2525	881.5
High Range	1.4	20643	848.3	2643	893.3
	3	20635	847.5	2635	892.5
	5	20625	846.5	2625	891.5
	10 [1]	20600	844	2600	889
NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.					

Band 12

Table 4.3.1.1.12-1: Test frequencies for E-UTRA channel bandwidth for operating band 12

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	23017	699.7	5017	729.7
	3	23025	700.5	5025	730.5
	5 [1]	23035	701.5	5035	731.5
	10 [1]	23060	704	5060	734
Mid Range	1.4/3 5 [1]/10 [1]	23095	707.5	5095	737.5
High Range	1.4	23173	715.3	5173	745.3
	3	23165	714.5	5165	744.5
	5 [1]	23155	713.5	5155	743.5
	10 [1]	23130	711	5130	741
NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.					

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Band17

Table 4.3.1.1.17-1: Test frequencies for E-UTRA channel bandwidth for operating band 17

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	5 [1]	23755	706.5	5755	736.5
	10 [1]	23780	709	5780	739
Mid Range	5 [1]/10 [1]	23790	710	5790	740
High Range	5 [1]	23825	713.5	5825	743.5
	10 [1]	23800	711	5800	741

Band30

Table 4.3.1.1.30-1: Test frequencies for E-UTRA channel bandwidth for operating band 30

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	5	27685	2307.5	9795	2352.5
	10	27710	2310	9820	2355
Mid Range	5/10	27710	2310	9820	2355
High Range	5	27735	2312.5	9845	2357.5
	10	27710	2310	9820	2355

Note 1: The uplink transmission is not allowed at this band for the UE with the externally vehicle-mounted antennas.

Band 41

Table 4.3.1.2.9-1: Test frequencies for E-UTRA channel bandwidth for operating band 41

Test Frequency ID	Bandwidth [MHz]	EARFCN	Frequency (UL and DL) [MHz]
Low Range	5	39675	2498.5
	10	39700	2501
	15	39725	2503.5
	20	39750	2506
Mid Range	5/10/15/20	40620	2593
High Range	5	41565	2687.5
	10	41540	2685
	15	41515	2682.5
	20	41490	2680

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Band 66

Table 4.3.1.1.66-1: Test frequencies for E-UTRA channel bandwidth for operating band 66

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	131979	1710.7	66443	2110.7
	3	131987	1711.5	66451	2111.5
	5	131997	1712.5	66461	2112.5
	10	132022	1715	66486	2115
	15	132047	1717.5	66511	2117.5
	20	132072	1720	66536	2120
Mid Range Tx[1]	1.4/3/5/10/15/20	132322	1745	66786	2145
Mid Range	1.4/3/5/10/15/20	132422	1755	66886	2155
Paired High Range[2]	1.4	132665	1779.3	67129	2179.3
	3	132657	1778.5	67121	2178.5
	5	132647	1777.5	67111	2177.5
	10	132622	1775	67086	2175
	15	132597	1772.5	67061	2172.5
	20	132572	1770	67036	2170
High Range[3]	1.4	NA	NA	67329	2199.3
	3	NA	NA	67321	2198.5
	5	NA	NA	67311	2197.5
	10	NA	NA	67286	2195
	15	NA	NA	67261	2192.5
	20	NA	NA	67236	2190

Band 71

Table 4.3.1.1.71-1: Test frequencies for E-UTRA channel bandwidth for operating band 71

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	5	133147	665.5	68611	619.5
	10	133172	668	68636	622
	15	133197	670.5	68661	624.5
	20	133222	673	68686	627
Mid Range	5/10/15	133297	680.5	68761	634.5
	20	133322	683	68786	637
High Range	5	133447	695.5	68911	649.5
	10	133422	693	68886	647
	15	133397	690.5	68861	644.5
	20	133372	688	68836	642

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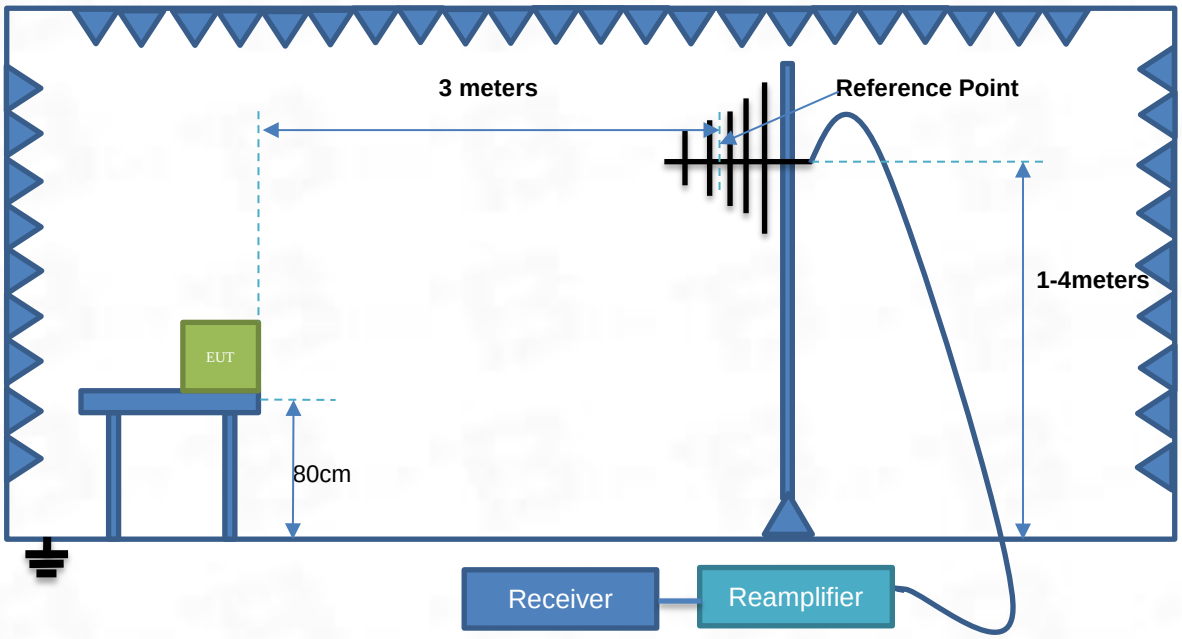
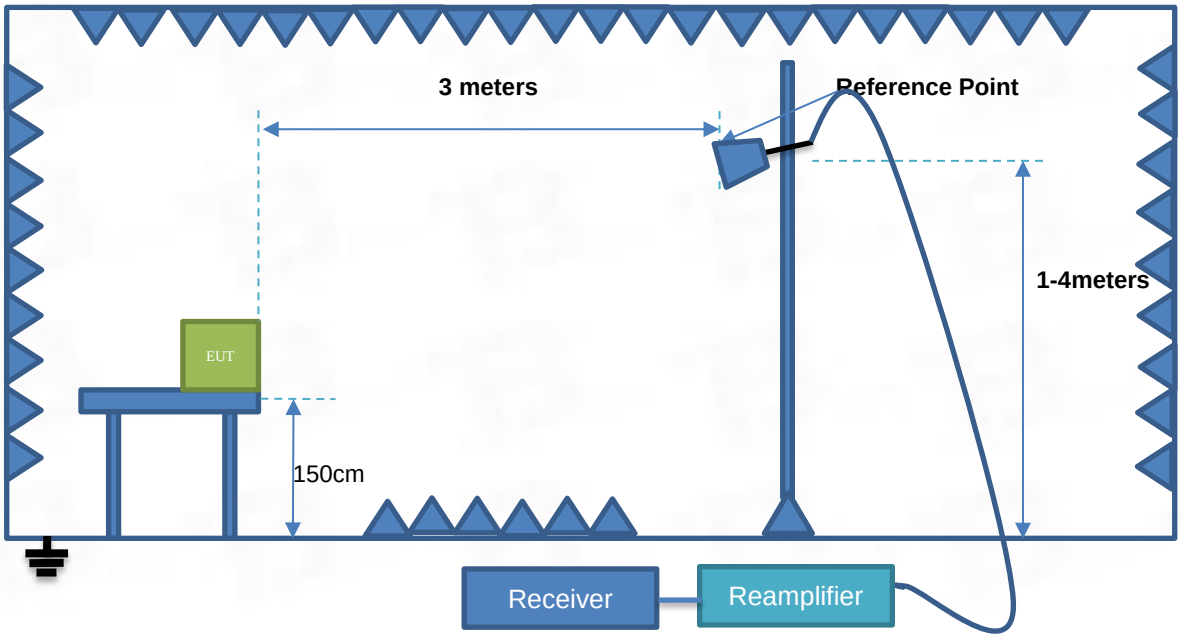
4.5 Test Setup

Test Setup 1

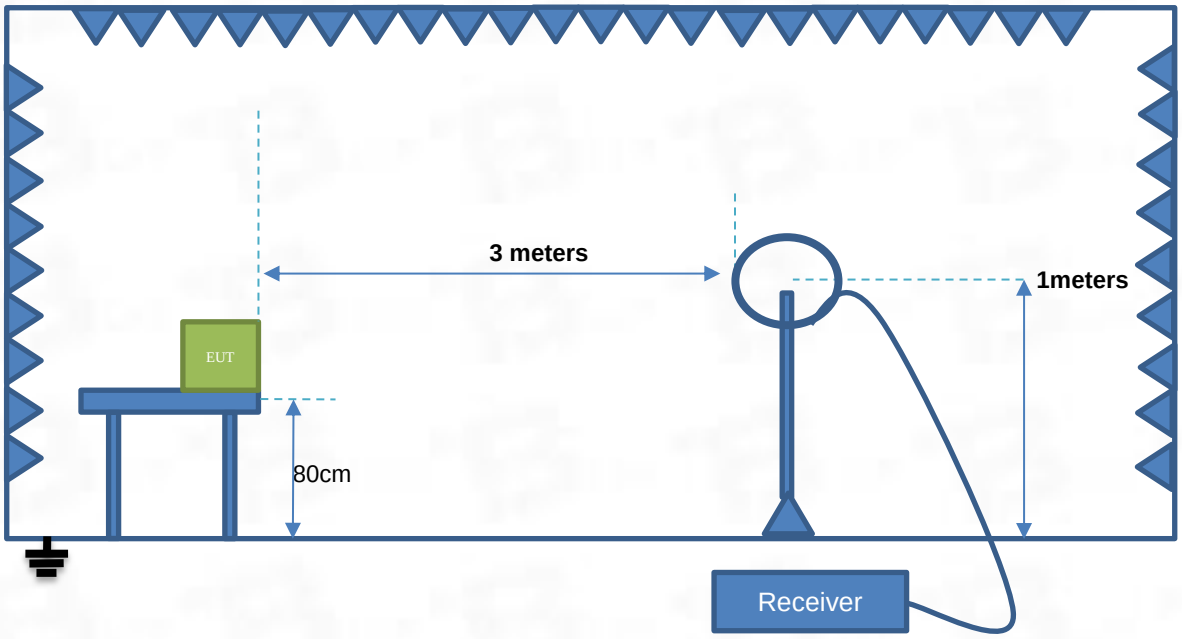


Radiation Test (30MHz – 1GHz)



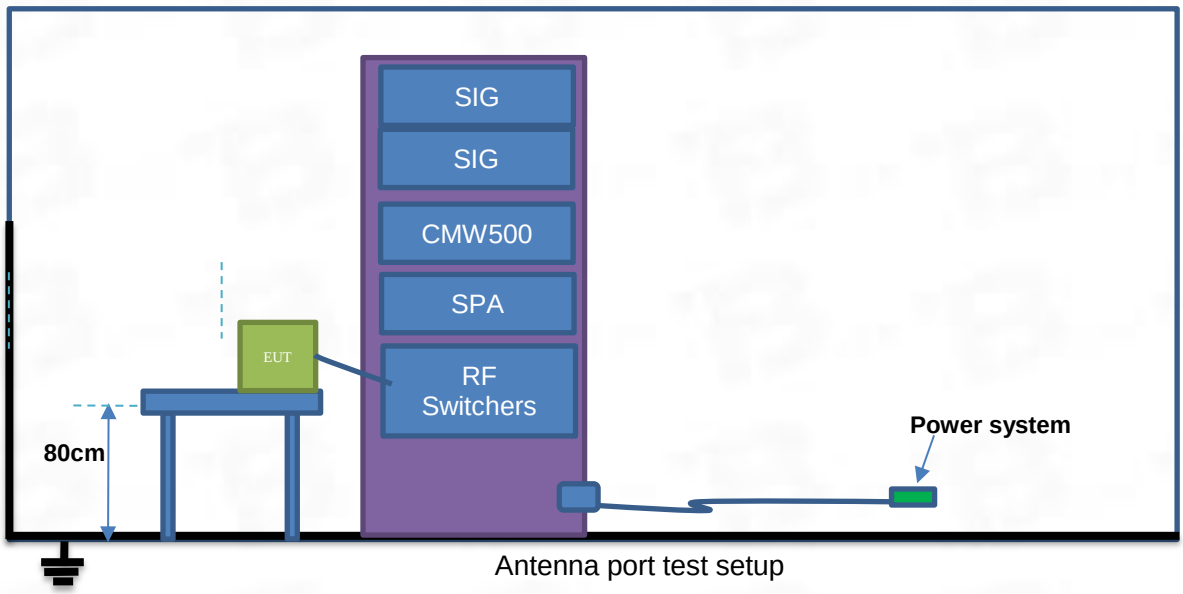
Radiation Test (Above 1GHz)

Test Setup 2



Radiation Test (9k - 30MHz)

Test Setup 3



Antenna port test setup

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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) & 90.635(b) & 90.542(a); RSS-103 4.6; RSS-132 5.4, RSS-133 6.4, RSS-139 6.5, RSS199 4.4

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.

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.

5.1.2 Test Setup

The section 4.4 test setup 4 description is used for conducted test, and the 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 = PMeas + GT − LC
where:
ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW; GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP); 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 PMeas 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 the appendix report

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5.2 Peak to Average Ratio

5.2.1 Limit

FCC § 2.1046 & 24.232(d) & 27.50(d); RSS-130 4.6.1, RSS-133 6.4, RSS-139 6.5, RSS199 4.4

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); RSS-133 6.4, 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)); RSS-133 6.4,, 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); RSS-139 6.5, in measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

According to RSS-19 4.4, In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

5.2.2 Test Setup

The section 4.5 test setup 5 description is used for conducted test, and the test setup description is used for radiated 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 PPk. Use one of the applicable procedures presented 4.2 to measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

PAPR (dB) = PPk (dBm) - PAvg (dBm).

5.2.4 Test Result

Please refer to the appendix report

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 4.5 test setup 5 description is used for conducted test, and the test setup description is used for radiated 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).

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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 the appendix report

5.4 Frequency Stability

5.4.1 Limit

FCC § 2.1055 & 22.355 & 24.235 & 27.54 & 90.213; RSS-130 4.5, RSS-132 5.3, RSS-133 6.3, RSS-139 6.4, RSS199 4.3

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, RSS-132 5.3

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, RSS-133 6.3

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

FCC § 27.54, RSS-139 6.4

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

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FCC § 90.213, RSS199 4.3

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

5.4.2 Test Setup

The section 4.5 test setup 6 description is used for conducted test, and the test setup description is used for radiated 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 the appendix report

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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(m) & 90.691 & 90.543; RSS-130 4.7, RSS-132 5.5, RSS-133 6.5, RSS-139 6.6, RSS199 4.5

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), RSS-139 6.6

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), RSS-139 6.6

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;

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(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) , RSS-139 6.6

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) , RSS-139 6.6

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 log10 (P) dB.

FCC § 27.53(m) (4) , RSS-139 6.6
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 § 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 Log10(f/6.1) decibels or 50 + 10 Log10(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 + 10Log10(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.

RSS199 4.5

(a) for base station and fixed subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least 43 + 10 log10 p.
(b) for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least:
(i) 40 + 10 log10 p from the channel edges to 5 MHz away
(ii) 43 + 10 log10 p between 5 MHz and X MHz from the channel edges, and
(iii) 55 + 10 log10 p at X MHz and beyond from the channel edges

In addition, the attenuation shall not be less than 43 + 10 log10 p on all frequencies between 2490.5 MHz and 2496 MHz, and 55 + 10 log10 p at or below 2490.5 MHz.

In (a) and (b), p is the transmitter power measured in watts and X is 6 MHz or the equipment occupied bandwidth, whichever is greater.

5.5.2 Test Setup

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The section 4.5 test setup 5 description is used for conducted test, and the test setup description is used for radiated 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.
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.

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

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

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

Record the frequencies and levels of spurious emissions.

5.5.4 Test Result

Please refer to the appendix report

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5.6 Band Edge Emission

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(m) & 90.691& 90.543; RSS-130 4.7, RSS-132 5.5, RSS-133 6.5, RSS-139 6.6, RSS199 4.5

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), RSS-139 6.6

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), RSS-139 6.6

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 6.25Hz band segment, for base and fixed stations;

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(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 6.25kHz 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), RSS-139 6.6

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 log10 (P) dB.

FCC § 27.53(m) (4), RSS-139 6.6

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 § 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 Log10(f/6.1) decibels

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or 50 + 10 Log10(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 + 10Log10(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.

RSS199 4.5

(a) for base station and fixed subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least 43 + 10 log10 p.
(b) for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least:
(i) 40 + 10 log10 p from the channel edges to 5 MHz away
(ii) 43 + 10 log10 p between 5 MHz and X MHz from the channel edges, and
(iii) 55 + 10 log10 p at X MHz and beyond from the channel edges

In addition, the attenuation shall not be less than 43 + 10 log10 p on all frequencies between 2490.5 MHz and 2496 MHz, and 55 + 10 log10 p at or below 2490.5 MHz.

In (a) and (b), p is the transmitter power measured in watts and X is 6 MHz or the equipment occupied bandwidth, whichever is greater.

5.6.2 Test Setup

The section 4.5 test setup 5 description is used for conducted test, and the test setup description is used for radiated 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 the appendix report

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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(m) & 90.691& 90.543 ; RSS-130 4.7, RSS-132 5.5, RSS-133 6.5, RSS-139 6.6, RSS199 4.5

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), RSS-139 6.6

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), RSS-139 6.6

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

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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), RSS-139 6.6

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), RSS-139 6.6

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 log10 (P) dB. 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 § 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 Log10(f/6.1) decibels or 50 + 10 Log10(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 + 10Log10(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.

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(a) for base station and fixed subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least 43 + 10 log10 p.
(b) for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least:
(i) 40 + 10 log10 p from the channel edges to 5 MHz away
(ii) 43 + 10 log10 p between 5 MHz and X MHz from the channel edges, and
(iii) 55 + 10 log10 p at X MHz and beyond from the channel edges

In addition, the attenuation shall not be less than 43 + 10 log10 p on all frequencies between 2490.5 MHz and 2496 MHz, and 55 + 10 log10 p at or below 2490.5 MHz.

In (a) and (b), p is the transmitter power measured in watts and X is 6 MHz or the equipment occupied bandwidth, whichever is greater.

5.7.2 Test Setup

The section 4.5 test setup 4 description is used for conducted test, and the test setup description is used for radiated 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.

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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

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5.7.4 Test Result

Please refer to ANNEX A.7

2G Part

Note:1.It was found that the emission value below 1GHz and above 18GHz was below the limit of 20dB, so it was recorded in the report.

2.All mode are tested, and the report only shows the worst mode ofGSM(Voice) .

Band:	GSM850	Test channel:	Lowest	Test mode:	GSM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1648.400	-42.82	-31.00	-73.82	-13.00	-60.82	peak	P
2	2472.600	-40.76	-30.97	-71.73	-13.00	-58.73	peak	P
3	3296.800	-37.09	-30.06	-67.15	-13.00	-54.15	peak	P

Band:	GSM850	Test channel:	Lowest	Test mode:	GSM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1648.400	-45.37	-31.00	-76.37	-13.00	-63.37	peak	P
2	2472.600	-41.10	-30.97	-72.07	-13.00	-59.07	peak	P
3	3296.800	-37.54	-30.06	-67.60	-13.00	-54.60	peak	P

Band:	GSM850	Test channel:	Middle	Test mode:	GSM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1673.200	-43.68	-30.89	-74.57	-13.00	-61.57	peak	P
2	2509.800	-41.62	-30.86	-72.48	-13.00	-59.48	peak	P
3	3346.400	-37.95	-29.95	-67.90	-13.00	-54.90	peak	P

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Band:	GSM850	Test channel:	Middle	Test mode:	GSM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1673.200	-44.95	-30.89	-75.84	-13.00	-62.84	peak	P
2	2509.800	-40.68	-30.86	-71.54	-13.00	-58.54	peak	P
3	3346.400	-37.12	-29.95	-67.07	-13.00	-54.07	peak	P

Band:	GSM850	Test channel:	Highest	Test mode:	GSM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1697.600	-44.33	-30.78	-75.11	-13.00	-62.11	peak	P
2	2546.400	-42.27	-30.75	-73.02	-13.00	-60.02	peak	P
3	3395.200	-38.60	-29.84	-68.44	-13.00	-55.44	peak	P

Band:	GSM850	Test channel:	Highest	Test mode:	GSM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1697.600	-44.27	-30.78	-75.05	-13.00	-62.05	peak	P
2	2546.400	-40.00	-30.75	-70.75	-13.00	-57.75	peak	P
3	3395.200	-36.44	-29.84	-66.28	-13.00	-53.28	peak	P

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Band:	GSM1900	Test channel:	Lowest	Test mode:	GSM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3700.400	-41.83	-30.23	-72.06	-13.00	-59.06	peak	P
2	5550.600	-39.46	-30.40	-69.86	-13.00	-56.86	peak	P
3	7400.800	-36.09	-29.79	-65.88	-13.00	-52.88	peak	P

Band:	GSM1900	Test channel:	Lowest	Test mode:	GSM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3700.400	-44.10	-30.23	-74.33	-13.00	-61.33	peak	P
2	5550.600	-40.11	-30.40	-70.51	-13.00	-57.51	peak	P
3	7400.800	-38.68	-29.79	-68.47	-13.00	-55.47	peak	P

Band:	GSM1900	Test channel:	Middle	Test mode:	GSM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3760.000	-42.69	-30.12	-72.81	-13.00	-59.81	peak	P
2	5640.000	-40.32	-30.29	-70.61	-13.00	-57.61	peak	P
3	7520.000	-36.95	-29.68	-66.63	-13.00	-53.63	peak	P

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Band:	GSM1900	Test channel:	Middle	Test mode:	GSM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3760.000	-43.68	-30.12	-73.80	-13.00	-60.80	peak	P
2	5640.000	-39.69	-30.29	-69.98	-13.00	-56.98	peak	P
3	7520.000	-38.26	-29.68	-67.94	-13.00	-54.94	peak	P

Band:	GSM1900	Test channel:	Highest	Test mode:	GSM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3819.600	-43.34	-30.01	-73.35	-13.00	-60.35	peak	P
2	5729.400	-40.97	-30.18	-71.15	-13.00	-58.15	peak	P
3	7639.200	-37.60	-29.57	-67.17	-13.00	-54.17	peak	P

Band:	GSM1900	Test channel:	Highest	Test mode:	GSM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3819.600	-43.00	-30.01	-73.01	-13.00	-60.01	peak	P
2	5729.400	-39.01	-30.18	-69.19	-13.00	-56.19	peak	P
3	7639.200	-37.58	-29.57	-67.15	-13.00	-54.15	peak	P

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3G Part

Note:1.It was found that the emission value below 1GHz and above 18GHz was below the limit of 20dB, so it was recorded in the report.

2.All mode are tested, and the report only shows the worst mode of RMC

Band:	WCDMA Band II	Test channel:	Lowest	Test mode:	RCM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3704.800	-43.10	-30.67	-73.77	-13.00	-60.77	peak	P
2	5557.200	-40.46	-30.47	-70.93	-13.00	-57.93	peak	P
3	7409.600	-38.40	-30.23	-68.63	-13.00	-55.63	peak	P

Band:	WCDMA Band II	Test channel:	Lowest	Test mode:	RCM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3704.800	-44.68	-30.67	-75.35	-13.00	-62.35	peak	P
2	5557.200	-42.78	-30.47	-73.25	-13.00	-60.25	peak	P
3	7409.600	-37.40	-30.23	-67.63	-13.00	-54.63	peak	P

Band:	WCDMA Band II	Test channel:	Middle	Test mode:	RCM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3760.000	-43.96	-30.56	-74.52	-13.00	-61.52	peak	P
2	5640.000	-41.32	-30.36	-71.68	-13.00	-58.68	peak	P
3	7520.000	-39.26	-30.12	-69.38	-13.00	-56.38	peak	P

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Band:	WCDMA Band II	Test channel:	Middle	Test mode:	RCM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3760.000	-44.26	-30.56	-74.82	-13.00	-61.82	peak	P
2	5640.000	-42.36	-30.36	-72.72	-13.00	-59.72	peak	P
3	7520.000	-36.98	-30.12	-67.10	-13.00	-54.10	peak	P

Band:	WCDMA Band II	Test channel:	Highest	Test mode:	RCM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3815.200	-44.61	-30.45	-75.06	-13.00	-62.06	peak	P
2	5722.800	-41.97	-30.25	-72.22	-13.00	-59.22	peak	P
3	7630.400	-39.91	-30.01	-69.92	-13.00	-56.92	peak	P

Band:	WCDMA Band II	Test channel:	Highest	Test mode:	RCM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3815.200	-43.58	-30.45	-74.03	-13.00	-61.03	peak	P
2	5722.800	-41.68	-30.25	-71.93	-13.00	-58.93	peak	P
3	7630.400	-36.30	-30.01	-66.31	-13.00	-53.31	peak	P

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Band:	WCDMA Band IV	Test channel:	Lowest	Test mode:	RCM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3424.800	-41.50	-30.59	-72.09	-13.00	-59.09	peak	P
2	5137.200	-39.40	-30.54	-69.94	-13.00	-56.94	peak	P
3	6849.600	-37.83	-30.42	-68.25	-13.00	-55.25	peak	P

Band:	WCDMA Band IV	Test channel:	Lowest	Test mode:	RCM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3424.800	-44.11	-30.59	-74.70	-13.00	-61.70	peak	P
2	5137.200	-43.68	-30.54	-74.22	-13.00	-61.22	peak	P
3	6849.600	-37.57	-30.42	-67.99	-13.00	-54.99	peak	P

Band:	WCDMA Band IV	Test channel:	Middle	Test mode:	RCM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3465.200	-42.36	-30.48	-72.84	-13.00	-59.84	peak	P
2	5197.800	-40.26	-30.43	-70.69	-13.00	-57.69	peak	P
3	6930.400	-38.69	-30.31	-69.00	-13.00	-56.00	peak	P

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Band:	WCDMA Band IV	Test channel:	Middle	Test mode:	RCM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3465.200	-43.69	-30.48	-74.17	-13.00	-61.17	peak	P
2	5197.800	-43.26	-30.43	-73.69	-13.00	-60.69	peak	P
3	6930.400	-37.15	-30.31	-67.46	-13.00	-54.46	peak	P

Band:	WCDMA Band IV	Test channel:	Highest	Test mode:	RCM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3505.200	-43.01	-30.37	-73.38	-13.00	-60.38	peak	P
2	5257.800	-40.91	-30.32	-71.23	-13.00	-58.23	peak	P
3	7010.400	-39.34	-30.20	-69.54	-13.00	-56.54	peak	P

Band:	WCDMA Band IV	Test channel:	Highest	Test mode:	RCM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3505.200	-43.01	-30.37	-73.38	-13.00	-60.38	peak	P
2	5257.800	-42.58	-30.32	-72.90	-13.00	-59.90	peak	P
3	7010.400	-36.47	-30.20	-66.67	-13.00	-53.67	peak	P

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Band:	WCDMA Band V	Test channel:	Lowest	Test mode:	RCM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3424.800	-44.50	-30.37	-74.87	-13.00	-61.87	peak	P
2	5137.200	-41.50	-30.43	-71.93	-13.00	-58.93	peak	P
3	6849.600	-38.26	-30.53	-68.79	-13.00	-55.79	peak	P

Band:	WCDMA Band V	Test channel:	Lowest	Test mode:	RCM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3424.800	-44.65	-30.37	-75.02	-13.00	-62.02	peak	P
2	5137.200	-42.68	-30.43	-73.11	-13.00	-60.11	peak	P
3	6849.600	-39.11	-30.53	-69.64	-13.00	-56.64	peak	P

Band:	WCDMA Band V	Test channel:	Middle	Test mode:	RCM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3465.200	-45.36	-30.26	-75.62	-13.00	-62.62	peak	P
2	5197.800	-42.36	-30.32	-72.68	-13.00	-59.68	peak	P
3	6930.400	-39.12	-30.42	-69.54	-13.00	-56.54	peak	P

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Band:	WCDMA Band V	Test channel:	Middle	Test mode:	RCM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3465.200	-44.23	-30.26	-74.49	-13.00	-61.49	peak	P
2	5197.800	-42.26	-30.32	-72.58	-13.00	-59.58	peak	P
3	6930.400	-38.69	-30.42	-69.11	-13.00	-56.11	peak	P

Band:	WCDMA Band V	Test channel:	Highest	Test mode:	RCM	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3505.200	-46.01	-30.15	-76.16	-13.00	-63.16	peak	P
2	5257.800	-43.01	-30.21	-73.22	-13.00	-60.22	peak	P
3	7010.400	-39.77	-30.31	-70.08	-13.00	-57.08	peak	P

Band:	WCDMA Band V	Test channel:	Highest	Test mode:	RCM	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3505.200	-43.55	-30.15	-73.70	-13.00	-60.70	peak	P
2	5257.800	-41.58	-30.21	-71.79	-13.00	-58.79	peak	P
3	7010.400	-38.01	-30.31	-68.32	-13.00	-55.32	peak	P

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4G Part

Note: 1.It was found that the emission value below 1GHz and above 18GHz was below the limit of 20dB, so it was recorded in the report.

2.All mode are tested, and the report only shows the worst mode.of GPSK & 5M bandwidth

Band:	2	Test channel:	Lowest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3701.400	-32.40	-21.37	-53.77	-13.00	-40.77	peak	P
2	5552.100	-31.13	-22.47	-53.60	-13.00	-40.60	peak	P
3	7402.800	-27.35	-23.73	-51.08	-13.00	-38.08	peak	P

Band:	2	Test channel:	Lowest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3701.400	-33.11	-21.37	-54.48	-13.00	-41.48	peak	P
2	5552.100	-30.63	-22.47	-53.10	-13.00	-40.10	peak	P
3	7402.800	-29.78	-23.73	-53.51	-13.00	-40.51	peak	P

Band:	2	Test channel:	Middle	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3760.000	-33.26	-21.26	-54.52	-13.00	-41.52	peak	P
2	5640.000	-31.99	-22.36	-54.35	-13.00	-41.35	peak	P
3	7520.000	-28.21	-23.62	-51.83	-13.00	-38.83	peak	P

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Band:	2	Test channel:	Middle	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3760.000	-32.69	-21.26	-53.95	-13.00	-40.95	peak	P
2	5640.000	-30.21	-22.36	-52.57	-13.00	-39.57	peak	P
3	7520.000	-29.36	-23.62	-52.98	-13.00	-39.98	peak	P

Band:	2	Test channel:	Highest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3818.600	-33.91	-21.15	-55.06	-13.00	-42.06	peak	P
2	5727.900	-32.64	-22.25	-54.89	-13.00	-41.89	peak	P
3	7637.200	-28.86	-23.51	-52.37	-13.00	-39.37	peak	P

Band:	2	Test channel:	Highest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3818.600	-32.01	-21.15	-53.16	-13.00	-40.16	peak	P
2	5727.900	-29.53	-22.25	-51.78	-13.00	-38.78	peak	P
3	7637.200	-28.68	-23.51	-52.19	-13.00	-39.19	peak	P

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Band:	4	Test channel:	Lowest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3701.400	-31.40	-21.47	-52.87	-13.00	-39.87	peak	P
2	5552.100	-28.50	-22.37	-50.87	-13.00	-37.87	peak	P
3	7402.800	-26.50	-23.09	-49.59	-13.00	-36.59	peak	P

Band:	4	Test channel:	Lowest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3701.400	-33.11	-21.47	-54.58	-13.00	-41.58	peak	P
2	5552.100	-30.63	-22.37	-53.00	-13.00	-40.00	peak	P
3	7402.800	-29.78	-23.09	-52.87	-13.00	-39.87	peak	P

Band:	4	Test channel:	Middle	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3760.000	-32.26	-21.36	-53.62	-13.00	-40.62	peak	P
2	5640.000	-29.36	-22.26	-51.62	-13.00	-38.62	peak	P
3	7520.000	-27.36	-22.98	-50.34	-13.00	-37.34	peak	P

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Band:	4	Test channel:	Middle	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3760.000	-32.69	-21.36	-54.05	-13.00	-41.05	peak	P
2	5640.000	-30.21	-22.26	-52.47	-13.00	-39.47	peak	P
3	7520.000	-29.36	-22.98	-52.34	-13.00	-39.34	peak	P

Band:	4	Test channel:	Highest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3818.600	-32.91	-21.25	-54.16	-13.00	-41.16	peak	P
2	5727.900	-30.01	-22.15	-52.16	-13.00	-39.16	peak	P
3	7637.200	-28.01	-22.87	-50.88	-13.00	-37.88	peak	P

Band:	4	Test channel:	Highest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3818.600	-32.01	-21.25	-53.26	-13.00	-40.26	peak	P
2	5727.900	-29.53	-22.15	-51.68	-13.00	-38.68	peak	P
3	7637.200	-28.68	-22.87	-51.55	-13.00	-38.55	peak	P

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Band:	5	Test channel:	Lowest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1649.400	-32.40	-22.47	-54.87	-13.00	-41.87	peak	P
2	2474.100	-28.46	-22.00	-50.46	-13.00	-37.46	peak	P
3	3298.800	-27.40	-21.79	-49.19	-13.00	-36.19	peak	P

Band:	5	Test channel:	Lowest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1649.400	-33.11	-22.47	-55.58	-13.00	-42.58	peak	P
2	2474.100	-30.63	-22.00	-52.63	-13.00	-39.63	peak	P
3	3298.800	-29.78	-21.79	-51.57	-13.00	-38.57	peak	P

Band:	5	Test channel:	Middle	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1673.000	-33.26	-22.36	-55.62	-13.00	-42.62	peak	P
2	2509.500	-29.32	-21.89	-51.21	-13.00	-38.21	peak	P
3	3346.000	-28.26	-21.68	-49.94	-13.00	-36.94	peak	P

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Band:	5	Test channel:	Middle	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1673.000	-32.69	-22.36	-55.05	-13.00	-42.05	peak	P
2	2509.500	-30.21	-21.89	-52.10	-13.00	-39.10	peak	P
3	3346.000	-29.36	-21.68	-51.04	-13.00	-38.04	peak	P

Band:	5	Test channel:	Highest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1673.000	-32.69	-22.36	-55.05	-13.00	-42.05	peak	P
2	2509.500	-30.21	-21.89	-52.10	-13.00	-39.10	peak	P
3	3346.000	-29.36	-21.68	-51.04	-13.00	-38.04	peak	P

Band:	5	Test channel:	Highest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1696.600	-32.01	-22.25	-54.26	-13.00	-41.26	peak	P
2	2544.900	-29.53	-21.78	-51.31	-13.00	-38.31	peak	P
3	3393.200	-28.68	-21.57	-50.25	-13.00	-37.25	peak	P

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Band:	12	Test channel:	Lowest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1399.400	-30.39	-22.27	-52.66	-13.00	-39.66	peak	P
2	2099.100	-27.83	-21.79	-49.62	-13.00	-36.62	peak	P
3	2798.800	-26.83	-21.67	-48.50	-13.00	-35.50	peak	P

Band:	12	Test channel:	Lowest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1399.400	-33.11	-22.27	-55.38	-13.00	-42.38	peak	P
2	2099.100	-30.63	-21.79	-52.42	-13.00	-39.42	peak	P
3	2798.800	-29.78	-21.67	-51.45	-13.00	-38.45	peak	P

Band:	12	Test channel:	Middle	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1415.000	-31.25	-22.16	-53.41	-13.00	-40.41	peak	P
2	2122.500	-28.69	-21.68	-50.37	-13.00	-37.37	peak	P
3	2830.000	-27.69	-21.56	-49.25	-13.00	-36.25	peak	P

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Band:	12	Test channel:	Middle	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1415.000	-32.69	-22.16	-54.85	-13.00	-41.85	peak	P
2	2122.500	-30.21	-21.68	-51.89	-13.00	-38.89	peak	P
3	2830.000	-29.36	-21.56	-50.92	-13.00	-37.92	peak	P

Band:	12	Test channel:	Highest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1430.600	-31.90	-22.05	-53.95	-13.00	-40.95	peak	P
2	2145.900	-29.34	-21.57	-50.91	-13.00	-37.91	peak	P
3	2861.200	-28.34	-21.45	-49.79	-13.00	-36.79	peak	P

Band:	12	Test channel:	Highest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1430.600	-32.01	-22.05	-54.06	-13.00	-41.06	peak	P
2	2145.900	-29.53	-21.57	-51.10	-13.00	-38.10	peak	P
3	2861.200	-28.68	-21.45	-50.13	-13.00	-37.13	peak	P

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Band:	17	Test channel:	Lowest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1413.000	-31.40	-22.33	-53.73	-13.00	-40.73	peak	P
2	2119.500	-28.82	-21.67	-50.49	-13.00	-37.49	peak	P
3	2826.000	-27.76	-21.59	-49.35	-13.00	-36.35	peak	P

Band:	17	Test channel:	Lowest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1413.000	-33.11	-22.33	-55.44	-13.00	-42.44	peak	P
2	2119.500	-30.63	-21.67	-52.30	-13.00	-39.30	peak	P
3	2826.000	-29.78	-21.59	-51.37	-13.00	-38.37	peak	P

Band:	17	Test channel:	Middle	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1420.000	-32.26	-22.22	-54.48	-13.00	-41.48	peak	P
2	2130.000	-29.68	-21.56	-51.24	-13.00	-38.24	peak	P
3	2722.000	-28.62	-21.48	-50.10	-13.00	-37.10	peak	P

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Band:	17	Test channel:	Middle	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1420.000	-32.69	-22.22	-54.91	-13.00	-41.91	peak	P
2	2130.000	-30.21	-21.56	-51.77	-13.00	-38.77	peak	P
3	2722.000	-29.36	-21.48	-50.84	-13.00	-37.84	peak	P

Band:	17	Test channel:	Highest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1427.000	-32.91	-22.11	-55.02	-13.00	-42.02	peak	P
2	2140.500	-30.33	-21.45	-51.78	-13.00	-38.78	peak	P
3	2742.000	-29.27	-21.37	-50.64	-13.00	-37.64	peak	P

Band:	17	Test channel:	Highest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	1427.000	-32.01	-22.11	-54.12	-13.00	-41.12	peak	P
2	2140.500	-29.53	-21.45	-50.98	-13.00	-37.98	peak	P
3	2742.000	-28.68	-21.37	-50.05	-13.00	-37.05	peak	P

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Band:	30	Test channel:	Lowest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	4615.000	-27.50	-37.76	-65.26	-13.00	-52.26	peak	P
2	6922.500	-21.50	-34.94	-56.44	-13.00	-43.44	peak	P
3	9230.000	-20.50	-37.04	-57.54	-13.00	-44.54	peak	P

Band:	30	Test channel:	Lowest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	4615.000	-27.50	-37.76	-65.26	-13.00	-52.26	peak	P
2	6922.500	-21.50	-34.94	-56.44	-13.00	-43.44	peak	P
3	9230.000	-20.50	-37.04	-57.54	-13.00	-44.54	peak	P

Band:	30	Test channel:	Middle	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	4620.000	-28.36	-37.65	-66.01	-13.00	-53.01	peak	P
2	6930.000	-22.36	-34.83	-57.19	-13.00	-44.19	peak	P
3	9240.000	-21.36	-36.93	-58.29	-13.00	-45.29	peak	P

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Band:	30	Test channel:	Middle	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	4620.000	-26.39	-37.65	-64.04	-13.00	-51.04	peak	P
2	6930.000	-24.26	-34.83	-59.09	-13.00	-46.09	peak	P
3	9240.000	-19.36	-36.93	-56.29	-13.00	-43.29	peak	P

Band:	30	Test channel:	Highest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	4625.000	-29.01	-37.54	-66.55	-13.00	-53.55	peak	P
2	6937.500	-23.01	-34.72	-57.73	-13.00	-44.73	peak	P
3	9250.000	-22.01	-36.82	-58.83	-13.00	-45.83	peak	P

Band:	30	Test channel:	Highest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	4625.000	-25.71	-37.54	-63.25	-13.00	-50.25	peak	P
2	6937.500	-23.58	-34.72	-58.30	-13.00	-45.30	peak	P
3	9250.000	-18.68	-36.82	-55.50	-13.00	-42.50	peak	P

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Band:	41	Test channel:	Lowest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	4997.000	-31.56	-27.21	-58.77	-25.00	-33.77	peak	P
2	7495.500	-29.36	-25.20	-54.56	-25.00	-29.56	peak	P
3	9994.000	-26.65	-24.46	-51.11	-25.00	-26.11	peak	P

Band:	41	Test channel:	Lowest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	4997.000	-30.26	-27.21	-57.47	-25.00	-32.47	peak	P
2	7495.500	-28.69	-25.20	-53.89	-25.00	-28.89	peak	P
3	9994.000	-27.36	-24.46	-51.82	-25.00	-26.82	peak	P

Band:	41	Test channel:	Middle	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	5186.000	-32.77	-27.10	-59.87	-25.00	-34.87	peak	P
2	7779.000	-30.57	-25.09	-55.66	-25.00	-30.66	peak	P
3	10372.000	-27.86	-24.35	-52.21	-25.00	-27.21	peak	P

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Band:	41	Test channel:	Middle	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	5186.000	-30.77	-27.10	-57.87	-25.00	-32.87	peak	P
2	7779.000	-29.20	-25.09	-54.29	-25.00	-29.29	peak	P
3	10372.000	-27.87	-24.35	-52.22	-25.00	-27.22	peak	P

Band:	41	Test channel:	Highest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	5375.000	-33.02	-27.00	-60.02	-25.00	-35.02	peak	P
2	8062.500	-30.82	-24.99	-55.81	-25.00	-30.81	peak	P
3	10750.000	-28.11	-24.25	-52.36	-25.00	-27.36	peak	P

Band:	41	Test channel:	Highest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	5375.000	-31.12	-27.00	-58.12	-25.00	-33.12	peak	P
2	8062.500	-29.55	-24.99	-54.54	-25.00	-29.54	peak	P
3	10750.000	-28.22	-24.25	-52.47	-25.00	-27.47	peak	P

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Band:	66	Test channel:	Lowest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3421.400	-30.43	-21.80	-52.23	-13.00	-39.23	peak	P
2	5132.100	-28.83	-21.43	-50.26	-13.00	-37.26	peak	P
3	6842.800	-25.47	-21.23	-46.70	-13.00	-33.70	peak	P

Band:	66	Test channel:	Lowest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3421.400	-30.68	-21.80	-52.48	-13.00	-39.48	peak	P
2	5132.100	-31.68	-21.43	-53.11	-13.00	-40.11	peak	P
3	6842.800	-29.11	-21.23	-50.34	-13.00	-37.34	peak	P

Band:	66	Test channel:	Middle	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3490.000	-31.29	-21.69	-52.98	-13.00	-39.98	peak	P
2	5235.000	-29.69	-21.32	-51.01	-13.00	-38.01	peak	P
3	6980.000	-26.33	-21.12	-47.45	-13.00	-34.45	peak	P

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Band:	66	Test channel:	Middle	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3490.000	-30.26	-21.69	-51.95	-13.00	-38.95	peak	P
2	5235.000	-31.26	-21.32	-52.58	-13.00	-39.58	peak	P
3	6980.000	-28.69	-21.12	-49.81	-13.00	-36.81	peak	P

Band:	66	Test channel:	Highest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3558.600	-31.94	-21.58	-53.52	-13.00	-40.52	peak	P
2	5337.900	-30.34	-21.21	-51.55	-13.00	-38.55	peak	P
3	7117.200	-26.98	-21.01	-47.99	-13.00	-34.99	peak	P

Band:	66	Test channel:	Highest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3558.600	-29.58	-21.58	-51.16	-13.00	-38.16	peak	P
2	5337.900	-30.58	-21.21	-51.79	-13.00	-38.79	peak	P
3	7117.200	-28.01	-21.01	-49.02	-13.00	-36.02	peak	P

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Band:	71	Test channel:	Lowest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3421.400	-29.40	-22.34	-51.74	-13.00	-38.74	peak	P
2	5132.100	-27.83	-22.23	-50.06	-13.00	-37.06	peak	P
3	6842.800	-26.70	-22.16	-48.86	-13.00	-35.86	peak	P

Band:	71	Test channel:	Lowest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3421.400	-30.68	-22.34	-53.02	-13.00	-40.02	peak	P
2	5132.100	-31.68	-22.23	-53.91	-13.00	-40.91	peak	P
3	6842.800	-29.11	-22.16	-51.27	-13.00	-38.27	peak	P

Band:	71	Test channel:	Middle	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3490.000	-30.26	-22.23	-52.49	-13.00	-39.49	peak	P
2	5235.000	-28.69	-22.12	-50.81	-13.00	-37.81	peak	P
3	6980.000	-27.56	-22.05	-49.61	-13.00	-36.61	peak	P

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Band:	71	Test channel:	Middle	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3490.000	-30.26	-22.23	-52.49	-13.00	-39.49	peak	P
2	5235.000	-31.26	-22.12	-53.38	-13.00	-40.38	peak	P
3	6980.000	-28.69	-22.05	-50.74	-13.00	-37.74	peak	P

Band:	71	Test channel:	Highest	Test mode:	5M	Polarization:	H

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3558.600	-30.91	-22.12	-53.03	-13.00	-40.03	peak	P
2	5337.900	-29.34	-22.01	-51.35	-13.00	-38.35	peak	P
3	7117.200	-28.21	-21.94	-50.15	-13.00	-37.15	peak	P

Band:	71	Test channel:	Highest	Test mode:	5M	Polarization:	V

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	3558.600	-29.58	-22.12	-51.70	-13.00	-38.70	peak	P
2	5337.900	-30.58	-22.01	-52.59	-13.00	-39.59	peak	P
3	7117.200	-28.01	-21.94	-49.95	-13.00	-36.95	peak	P

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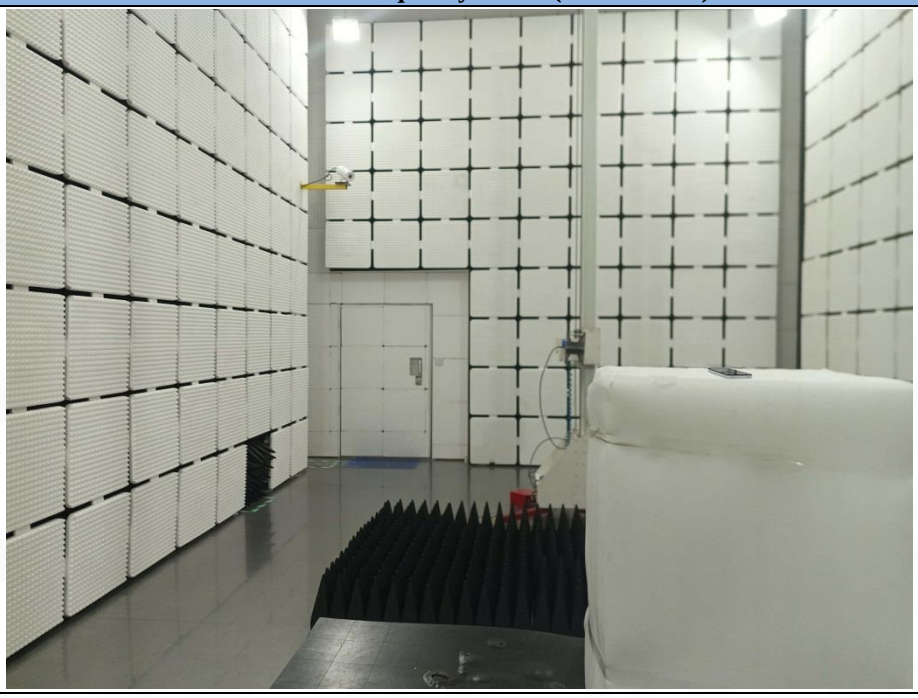
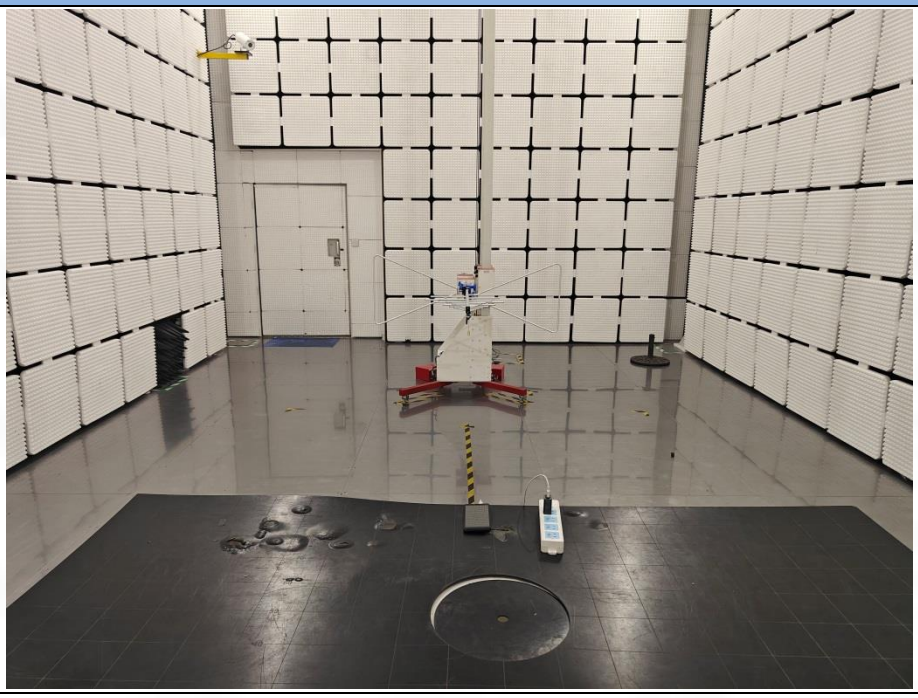
ANNEX A TEST SETUP PHOTOS

Band edge emissions (Radiated)
Emissions in frequency bands (above 1GHz)



Emissions in frequency bands (below 1GHz)



ANNEX B EUT PHOTOS

Please refer to the test report NO. BTF240401R00301

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