

FCC TEST REPORT

(PART 22)

Applicant:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland

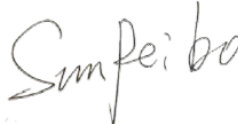
Manufacturer or Supplier:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Product:	Mobile phone
Brand Name:	HMD
Model Name:	H1702V
FCC ID	2AJOTTA-1702
Date of tests	Jan. 13, 2025~ Apr. 08, 2025

The tests have been carried out according to the requirements of the following standard:

☒ **FCC PART 22, Subpart H**
☒ **ANSI/TIA/EIA-603-D**
☒ **ANSI/TIA/EIA-603-E**

☒ **FCC Part 2**
☒ **ANSI C63.26-2015**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Hanwen Xu Engineer / Mobile Department	Approved by Peibo Sun Manager / Mobile Department
	
Date: Apr. 08, 2025	Date: Apr. 08, 2025

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1 SUMMARY OF TEST RESULTS.....	5
1.1 MEASUREMENT UNCERTAINTY	6
1.2 TEST SITE AND INSTRUMENTS	7
2 GENERAL INFORMATION	9
2.1 GENERAL DESCRIPTION OF EUT	9
2.2 CONFIGURATION OF SYSTEM UNDER TEST	12
2.3 DESCRIPTION OF SUPPORT UNITS	13
2.4 TEST ITEM AND TEST CONFIGURATION	14
2.5 EUT OPERATING CONDITIONS	18
2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS	18
3 TEST TYPES AND RESULTS.....	19
3.1 OUTPUT POWER MEASUREMENT	19
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT	19
3.1.2 TEST PROCEDURES	19
3.1.3 TEST SETUP	20
3.1.4 TEST RESULTS	20
3.2 FREQUENCY STABILITY MEASUREMENT	36
3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT	36
3.2.2 TEST PROCEDURE	36
3.2.3 TEST SETUP	36
3.2.4 TEST RESULTS	36
3.3 OCCUPIED BANDWIDTH MEASUREMENT	37
3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT	37
3.3.2 TEST SETUP	37
3.3.3 TEST PROCEDURES	37
3.3.4 TEST RESULTS	37
3.4 BAND EDGE MEASUREMENT	38
3.4.1 LIMITS OF BAND EDGE MEASUREMENT	38
3.4.2 TEST SETUP	38
3.4.3 TEST PROCEDURES	39
3.4.4 TEST RESULTS	39
3.5 CONDUCTED SPURIOUS EMISSIONS.....	40
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT	40
3.5.2 TEST PROCEDURE	40
3.5.3 TEST SETUP	40
3.5.4 TEST RESULTS	40
3.6 RADIATED EMISSION MEASUREMENT	41
3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT	41
3.6.2 TEST PROCEDURES	41
3.6.3 DEVIATION FROM TEST STANDARD	41
3.6.4 TEST SETUP	42
3.6.5 TEST RESULTS	44
3.7 PEAK TO AVERAGE RATIO	100
3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT	100
3.7.2 TEST SETUP	100
3.7.3 TEST PROCEDURES	100
3.7.4 TEST RESULTS	101
4 PHOTOGRAPHS OF THE TEST CONFIGURATION	102
5 INFORMATION ON THE TESTING LABORATORIES	103
6 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB ..	104
7 APPENDIX:.....	105
GSM850	105
PEAK-TO-AVERAGE RATIO(CCDF)	105
TEST RESULT	105
TEST GRAPHS	106
26DB BANDWIDTH AND OCCUPIED BANDWIDTH	107
TEST RESULT	107



TEST GRAPHS	108
BAND EDGE	110
TEST RESULT	110
TEST GRAPHS	110
CONDUCTED SPURIOUS EMISSION	111
TEST RESULT	111
TEST GRAPHS	112
FREQUENCY STABILITY	114
TEST RESULT	114
WCDMA B5	115
PEAK-TO-AVERAGE RATIO	115
TEST RESULT	115
TEST GRAPHS	115
26DB BANDWIDTH AND OCCUPIED BANDWIDTH	116
TEST RESULT	116
TEST GRAPHS	116
BAND EDGE	117
TEST RESULT	117
TEST GRAPHS	117
CONDUCTED SPURIOUS EMISSION	118
TEST RESULT	118
TEST GRAPHS	118
FREQUENCY STABILITY	119
TEST RESULT	119
LTE BAND 5	120
PEAK-TO-AVERAGE RATIO(CCDF)	120
TEST RESULT	120
TEST GRAPHS	122
26DB BANDWIDTH AND OCCUPIED BANDWIDTH	146
TEST RESULT	146
TEST GRAPHS	147
BAND EDGE	159
TEST RESULT	159
TEST GRAPHS	160
CONDUCTED SPURIOUS EMISSION	176
TEST RESULT	176
TEST GRAPHS	178
FREQUENCY STABILITY	214
TEST RESULT	214
CA_5B	215
26DB BANDWIDTH AND OCCUPIED BANDWIDTH	215
TEST RESULT	215
TEST GRAPHS	217
BAND EDGE	225
TEST RESULT	225
TEST GRAPHS	226
CONDUCTED SPURIOUS EMISSION	229
TEST RESULT	229
TEST GRAPHS	230



Test Report No.: PSU-NQN2412090110RF01

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-NQN2412090110RF01	Original release	Apr. 08, 2025



1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 22 & Part 2			
STANDARD SECTION	TEST TYPE	RESULT	Test lab*
§2.1046	Conducted Output Power	Compliance	A
§22.913 (a)(5)	Equivalent Isotropic Radiated Power	Compliance	A
§2.1055 §22.355	Frequency Stability	Compliance	A
§2.1049	Occupied Bandwidth	Compliance	A
§22.913 (d)	Peak to average ratio*	Compliance	A
§2.1051 §22.917(a)	Band Edge Measurements	Compliance	A
§2.1051 §22.917(a)	Conducted Spurious Emissions	Compliance	A
§2.1053 §22.917(a)	Radiated Spurious Emissions	Compliance	A

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

*Test Lab Information Reference

Lab A:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province

Accredited Test Lab Cert 6613.01

The FCC Site Registration No. is 434559; The Designation No. is CN1325.

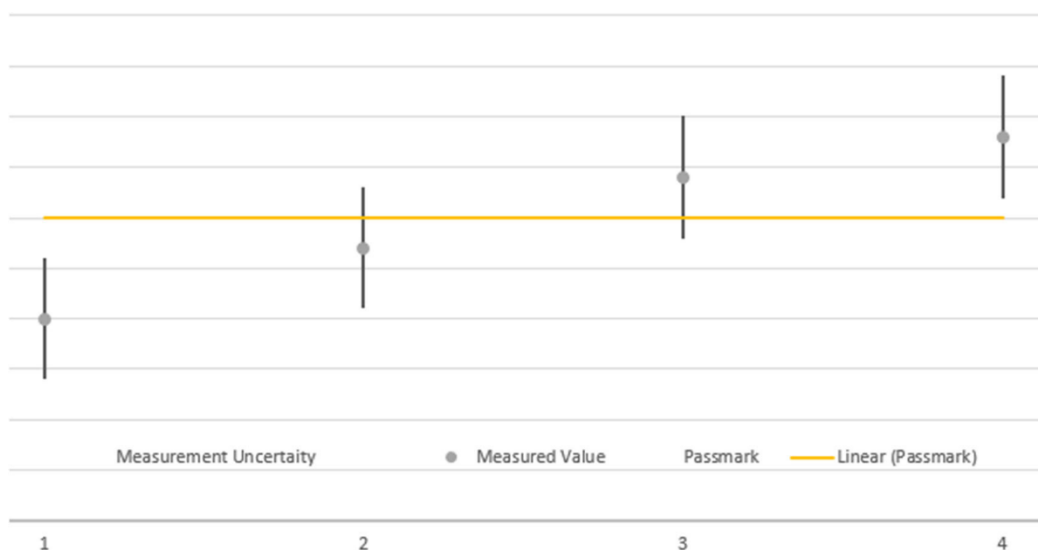


1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Maximum Peak Output Power	$\pm 2.06\text{dB}$
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions (9KHz~30MHz)	$\pm 2.68\text{dB}$
Radiated emissions (30MHz~1GHz)	$\pm 4.98\text{dB}$
Radiated emissions (1GHz ~6GHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GHz ~18GHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GHz ~40GHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Band Edge Measurements	$\pm 4.70\text{dB}$
Peak to average ratio	$\pm 0.76\text{dB}$

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.



The verdicts in this test report are given according the above diagram:

Case	Measured Value	Uncertainty Range	Verdict
1	below pass mark	below pass mark	Passed
2	below pass mark	within pass mark	Passed
3	above pass mark	within pass mark	Failed
4	above pass mark	above pass mark	Failed

That means, the laboratory applies, as decision rule (see ISO/IEC 17025:2017), the so-called shared risk principle.



1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.30,23	Aug.29,25
Pre-Amplifier	R&S	SCU08F1	101028	Jan.22,24	Jan.21,26
Vector Signal Generator	R&S	SMBV100B	102176	Mar.29,24	Mar.28,26
Signal Generator	R&S	SMB100A	182185	Mar.29,24	Mar.28,26
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-01Chamber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-02Chamber	Nov.25,22	Nov.24,25
EMI TEST Receiver	R&S	ESR26	101734	Mar.28,24	Mar.27,26
EMI TEST Receiver	R&S	ESW44	101973	Mar.28,24	Mar.27,26
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Dec.26,23	Dec.25,25
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,23	Aug.21,25
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Jul.15,24	Jul.14,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,23	Aug.21,25
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.23,23	Feb.22,25
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.22,25	Feb.21,27
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.19,24	Jun.18,26
Test Software	EMC32	EMC32	N/A	N/A	N/A
6DB attenuator	Tonscend Technology Co., Ltd	N/A	23062787	N/A	N/A
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	N/A	N/A
DC Source	HYELEC	HY3010B	551016	Aug.31,23	Aug.30,25
Hygrothermograph	DELI	20210528	SZ014	Sep.06,23	Sep.05,25
PC	LENOVO	E14	HRSW0024	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-7.00M	N/A	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-4.00M	N/A	N/A	N/A
CABLE	R&S	W13.02	N/A	Apr.27,24	Apr.26,25
CABLE	R&S	W12.14	N/A	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.27,24	Apr.26,25
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26



- NOTE:**
1. The calibration interval of the above test instruments is 12 / 24/ 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
 3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 434559; The Designation No. is CN1325.



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT*	Mobile phone	
BRAND NAME*	HMD	
MODEL NAME*	H1702V	
NOMINAL VOLTAGE*	3.87Vdc (Li-ion, battery)	
MODULATION TYPE	GSM/EDGE	GMSK,8PSK
	WCDMA	QPSK, 16QAM
	LTE	QPSK/16QAM/64QAM/256QAM
FREQUENCY RANGE	GSM/EDGE	824.2MHz ~ 848.8MHz
	WCDMA	826.4MHz ~ 846.6MHz
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 5 (Channel Bandwidth: 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 5 (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 5 (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
	CA_5B Channel Bandwidth: 3MHz+5MHz	825.6MHz ~ 846.5MHz
	CA_5B Channel Bandwidth: 5MHz+3MHz	826.5MHz ~ 847.4MHz
	CA_5B Channel Bandwidth: 5MHz+10MHz	826.8MHz ~ 844.0MHz
	CA_5B Channel Bandwidth: 10MHz+5MHz	829.0MHz ~ 846.2MHz
	CA_5B Channel Bandwidth: 10MHz+10MHz	829.0MHz ~ 844.0MHz
	LTE CA	CA_2A-5A; CA_4A-5A
MAX. ERP POWER	GSM850	595.66mW
	EDGE850	152.41mW
	WCDMA B5	80.91mW
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	77.09mW
	LTE Band 5 (Channel Bandwidth: 3MHz)	77.45mW
	LTE Band 5 (Channel Bandwidth: 5MHz)	77.45mW



	LTE Band 5 (Channel Bandwidth: 10MHz)	77.80mW
	CA_5B Channel Bandwidth: 3MHz+5MHz	88.31mW
	CA_5B Channel Bandwidth: 5MHz+3MHz	88.92mW
	CA_5B Channel Bandwidth: 5MHz+10MHz	87.70mW
	CA_5B Channel Bandwidth: 10MHz+5MHz	88.10 mW
	CA_5B Channel Bandwidth: 10MHz+10MHz	89.74mW
EMISSION DESIGNATORGOGN	GSM850	246KGXW
	EDGE850	247KG7W
	WCDMA B5	4M14F9W
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	QPSK: 1M11G7D 16QAM:1M11W7D
	LTE Band 5 (Channel Bandwidth: 3MHz)	QPSK: 2M71G7D 16QAM: 2M71W7D
	LTE Band 5 (Channel Bandwidth: 5MHz)	QPSK: 4M53G7D 16QAM: 4M52W7D
	LTE Band 5 (Channel Bandwidth: 10MHz)	QPSK: 9M01G7D 16QAM: 9M01W7D
	CA_5B Channel Bandwidth: 3MHz+5MHz	QPSK: 7M51G7D 16QAM: 7M50W7D
	CA_5B Channel Bandwidth: 5MHz+3MHz	QPSK: 7M51G7D 16QAM: 7M50W7D
	CA_5B Channel Bandwidth: 5MHz+10MHz	QPSK: 13M9G7D 16QAM: 13M9W7D
	CA_5B Channel Bandwidth: 10MHz+5MHz	QPSK: 14M0G7D 16QAM: 13M9W7D
	CA_5B Channel Bandwidth: 10MHz+10MHz	QPSK: 18M9G7D 16QAM: 18M9W7D
	GSM850	Ant 2: -3.19dBi
	WCDMA V	Ant 2: -3.19dBi
	LTE B5	Ant 2: -3.19dBi
ANTENNA GAIN*		
ANTENNA TYPE*	PIFA Antenna	
HW VERSION*	V1.0	
SW VERSION*	000T_0_310	
I/O PORTS*	Refer to user's manual	
CABLE SUPPLIED*	USB cable: non-shielded cable, with w/o ferrite core, 1.0meter	


BUREAU VERITAS Test Report No.: PSU-NQN2412090110RF01

EXTREME TEMPERATURE*	-10°C ~ 55°C
EXTREME VOLTAGE*	3.6V ~ 4.5V

NOTE:

- *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.
- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
GSM/EDGE	1TX/1RX
WCDMA	1TX/1RX
LTE	1TX/1RX

- For the test results, the EUT had been tested with all conditions. But only the worst case was shown in the test report.
- The differences between the sample 1 and sample 2 as Listings below, others are the same. And only the worst case was shown in the test report.

Raptor 5G(H1702V)

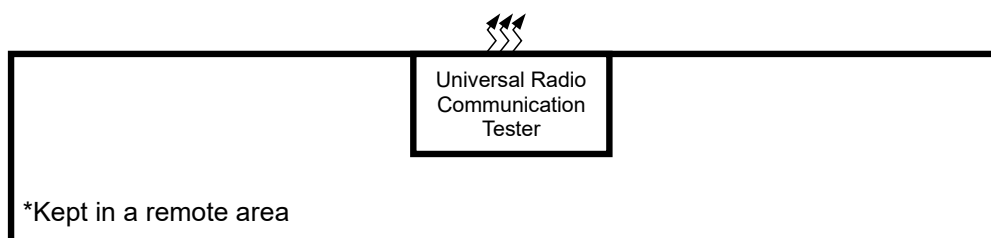
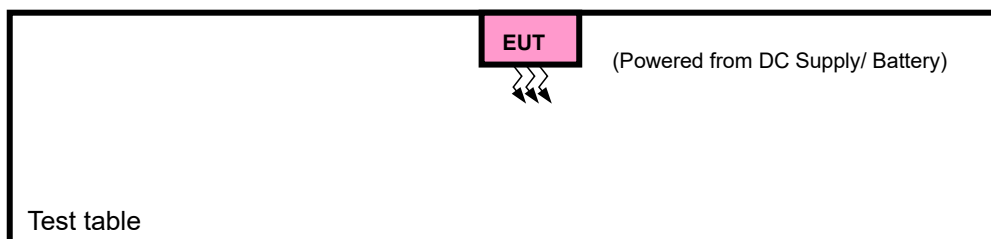
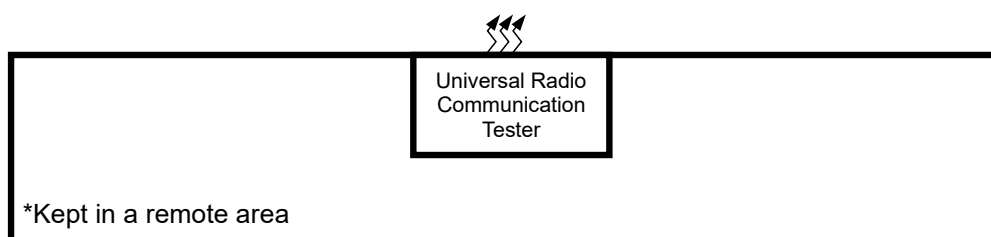
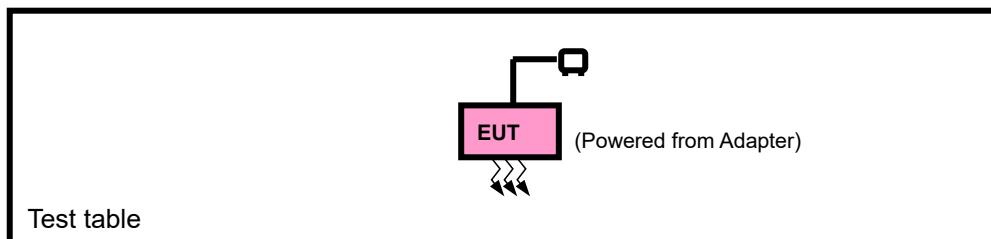
Object	Sample 1 1 st source		Sample 2 2 nd source	
	Specifications	Supplier	Specifications	Supplier
Display	Y92232	DZX	TD-TCHJ6615-5D	CDOT
Memory	LPDDR4X 6GB FLXC4006G-49	Longsys	BWCC4X32N2A-48G-X	Biwin
	128GB eMMC5.1 MEMDNN128G-M1D03	Longsys	MEMDNN128G-M1D03	Biwin
Motor	C0830H-C138ZN-021	KunWang	CY0830-05-FPC-182	Chaoying
Mic	SM2718B381YR2-01	Rayking	S150B381-155	Goertek
Charger IC	UPM6720	Unisemi	SC8541CFFR	Southchip

6. List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Battery	HMD	HuiZhou GanFeng LiEnergy Battery Technology Co., Ltd.	HBA-5033AA	Capacity: 3.87Vdc, 4900mAh
USB Cable	Saibao	Saibao (Jiangxi) Industry Co.,Ltd.	SZN-A047A	Signal Line,1.0meter

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION





2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Adapter	N/A	N/A	N/A	N/A
2	DC Source	HYELEC	HY3010B	551016	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB Line: Shielded, Detachable 1.0m;
2	DC Line: Unshielded, Detachable, 1.0m;

2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case in ERP and radiated emission was found when positioned on X/Y/Z-plane for GSM /EDGE /WCDMA /LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter with GSM or WCDMA or LTE link
B	EUT + DC Supply / Battery with GSM or WCDMA or LTE link

GSM MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	MODE
A	ERP	128 to 251	128, 189, 251	GSM,EDGE
B	FREQUENCY STABILITY	128 to 251	128, 189, 251	GSM,EDGE
A	OCCUPIED BANDWIDTH	128 to 251	128, 189, 251	GSM,EDGE
A	BAND EDGE	128 to 251	128, 251	GSM,EDGE
A	CONDUCTED EMISSION	128 to 251	128, 189, 251	GSM,EDGE
A	RADIATED EMISSION	128 to 251	128, 189, 251	GSM,EDGE
A	PEAK TO AVERAGE RATIO	128 to 251	128, 189, 251	GSM,EDGE

WCDMA MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	ERP	4132 to 4233	4132, 4182, 4233	WCDMA
B	FREQUENCY STABILITY	4132 to 4233	4132, 4182, 4233	WCDMA
A	OCCUPIED BANDWIDTH	4132 to 4233	4132, 4182, 4233	WCDMA
A	BAND EDGE	4132 to 4233	4132, 4233	WCDMA
A	CONDCUDED EMISSION	4132 to 4233	4132, 4182, 4233	WCDMA
A	RADIATED EMISSION	4132 to 4233	4132, 4182, 4233	WCDMA
A	PEAK TO AVERAGE RATIO	4132 to 4233	4132, 4182, 4233	WCDMA



LTE BAND 5 MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
A	ERP	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	20407 to 20643	20407, 20525, 20643	10MHz	QPSK	Full RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM	Full RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM	Full RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM	Full RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM	Full RB / 0 RB Offset
A	BAND EDGE	20407 to 20643	20407	1.4 MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
		20407 to 20643	20643	1.4 MHz	QPSK,16QAM	1 RB / 5 RB Offset
						Full RB / 0 RB Offset
		20415 to 20635	20415	3 MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
		20415 to 20635	20635	3 MHz	QPSK,16QAM	1 RB / 14 RB Offset
						Full RB / 0 RB Offset
		20425 to 20625	20425	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
		20425 to 20625	20625	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						Full RB / 0 RB Offset
		20450 to 20600	20450	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
		20450 to 20600	20600	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						Full RB / 0 RB Offset
A	CONDCUDED EMISSION	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM	1 RB / 0 RB Offset



A	RADIATED EMISSION	20407 to 20643	20525	1.4MHz	QPSK	1 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK	1 RB / 0 RB Offset
		20425 to 20625	20525	5MHz	QPSK	1 RB / 0 RB Offset
		20450 to 20600	20525	10MHz	QPSK	1 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset

Note: 1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

CA_5B MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABL E PCC CHANNEL	AVAILABL E SCC CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(PCC)	MODE(SCC)
A	ERP	20450 to 21501	20549 to 20600	Low, Middle, High	10MHz+10MHz	QPSK, 16QAM, 64QAM, 256QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
		20450 to 20550	20522 to 20622	Low, Middle, High	10MHz+5MHz	QPSK, 16QAM, 64QAM, 256QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
		20428 to 20528	20500 to 20600	Low, Middle, High	5MHz+10MHz	QPSK, 16QAM, 64QAM, 256QAM	1RB/ 24RB Offset	1RB/ 0RB Offset
		20425 to 20595	20464 to 20634	Low, Middle, High	5MHz+3MHz	QPSK, 16QAM, 64QAM, 256QAM	1RB/ 24RB Offset	1RB/ 0RB Offset
		20416o 20586	20455 to 20625	Low, Middle, High	3MHz+5MHz	QPSK, 16QAM, 64QAM, 256QAM	1RB/ 14RB Offset	1RB/ 0RB Offset
A	OCCUPIED BANDWIDTH	20450 to 21501	20549 to 20600	Low, Middle, High	10MHz+10MHz	QPSK, 16QAM	50RB/ 0RB Offset	50RB/ 0RB Offset
		20450 to 20550	20522 to 20622	Low, Middle, High	10MHz+5MHz	QPSK, 16QAM	25RB/ 0RB Offset	25RB/ 0RB Offset
		20428 to 20528	20500 to 20600	Low, Middle, High	5MHz+10MHz	QPSK, 16QAM	25RB/ 0RB Offset	50RB/ 0RB Offset
		20425 to 20595	20464 to 20634	Low, Middle, High	5MHz+3MHz	QPSK, 16QAM	25RB/ 0RB Offset	15RB/ 0RB Offset
		20416o 20586	20455 to 20625	Low, Middle, High	3MHz+5MHz	QPSK, 16QAM	15RB/ 0RB Offset	25RB/ 0RB Offset
A	BAND EDGE	20450 to 21501	20549 to 20600	Low	10MHz+10MHz	QPSK, 16QAM	1RB/ 0RB Offset	1RB/ 50RB Offset
							1RB/ 49RB Offset	50RB/ 0RB Offset
							50RB/ 0RB Offset	50RB/ 0RB Offset
				High	10MHz+10MHz	QPSK, 16QAM	1RB/ 0RB Offset	1RB/ 50RB Offset
							1RB/ 49RB Offset	50RB/ 0RB Offset
							50RB/ 0RB Offset	50RB/ 0RB Offset



A	CONDUCTED EMISSION	20850 to 21152	21048 to 21350	Low, Middle, High	10MHz+10MHz	QPSK, 16QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
A	RADIATED EMISSION	20428 to 20528	20500 to 20600	Low, Middle, High	5MHz+10MHz	QPSK	1RB/ 99RB Offset	1RB/ 0RB Offset
		20416 to 20586	20455 to 20625	Middle	3MHz+5MHz	QPSK	1RB/ 99RB Offset	1RB/ 0RB Offset
		20450 to 20550	20522 to 20622	Middle	10MHz+5MHz	QPSK	1RB/ 99RB Offset	1RB/ 0RB Offset
		20850 to 21152	21048 to 21350	Middle	10MHz+10MHz	QPSK	1RB/ 99RB Offset	1RB/ 0RB Offset

Note: 1.This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

TEST CONDITION			
TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	23deg. C, 70%RH	DC 5V By Adapter	Hanwen Xu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.6V/ 3.87V/ 4.45V By DC Source	Hanwen Xu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 5V By Adapter	Hanwen Xu
BAND EDGE	23deg. C, 70%RH	DC 5V By Adapter	Hanwen Xu
CONDUCTED EMISSION	23deg. C, 70%RH	DC 5V By Adapter	Hanwen Xu
RADIATED EMISSION	23deg. C, 70%RH	DC 5V By Adapter	Hanwen Xu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 5V By Adapter	Hanwen Xu

2.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 22

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile / Portable station are limited to 7 watts e.r.p.

3.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_T - L_C$$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as P_{Meas} , typically dBW or dBm);

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

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

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

CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with WCDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



3.1.3 TEST SETUP

EIRP / ERP Measurement:

CONDUCTED POWER MEASUREMENT:



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm):

Band	GSM850(ANT2)		
Channel	128	189	251
Frequency	824.2	836.4	848.8
GSM	32.94	32.46	32.98
GPRS 1Tx Slot	32.97	32.51	33.09
GPRS 2Tx Slot	29.96	30.56	31.06
GPRS 3Tx Slot	28.71	28.47	28.99
GPRS 4Tx Slot	27.69	27.24	27.62
EDGE 1Tx Slot	27.13	27.17	27.10
EDGE 2Tx Slot	24.65	24.35	25.63
EDGE 3Tx Slot	22.57	22.31	23.53
EDGE 4Tx Slot	21.30	21.15	22.25

Band	WCDMA V(ANT2)		
TX Channel	4132	4182	4233
Rx Channel	4357	4407	4458
Frequency	826.4	836.4	846.6
RMC 12.2K	24.40	24.42	24.33
HSDPA Subtest-1	23.25	23.28	23.23
HSDPA Subtest-2	23.33	23.34	23.27
HSDPA Subtest-3	22.71	22.72	22.70
HSDPA Subtest-4	22.69	22.74	22.65
DC-HSDPA Subtest-1	23.24	23.24	23.11
DC-HSDPA Subtest-2	23.19	23.30	23.15
DC-HSDPA Subtest-3	22.65	22.65	22.66
DC-HSDPA Subtest-4	22.63	22.59	22.51
HSUPA Subtest-1	23.22	23.24	23.22
HSUPA Subtest-2	22.73	22.78	22.75
HSUPA Subtest-3	23.20	23.21	23.19
HSUPA Subtest-4	23.18	23.20	23.21
HSUPA Subtest-5	23.21	23.23	23.22



LTE Band 5

Band/BW	Modulation	RB Size	RB offset	Low CH20407	Mid CH20525	High CH20643
				Frequency 824.7 MHz	Frequency 836.5 MHz	Frequency 848.3 MHz
5/ 1.4	QPSK	1	0	24.21	24.12	24.12
		1	2	24.08	24.05	24.13
		1	5	24.02	24.10	23.84
		3	0	23.96	23.88	24.02
		3	1	23.95	23.98	24.05
		3	3	24.01	24.07	24.02
		6	0	23.24	22.99	23.17
	16QAM	1	0	23.31	23.35	23.44
		1	2	23.26	23.38	23.37
		1	5	23.23	23.31	23.06
		3	0	22.91	23.01	23.00
		3	1	23.05	22.97	23.04
		3	3	23.08	22.90	22.97
		6	0	22.25	22.08	22.22
	64QAM	1	0	22.40	22.21	22.25
		1	2	22.42	22.26	22.45
		1	5	22.35	22.23	22.20
		3	0	21.91	21.90	21.95
		3	1	22.09	22.09	22.17
		3	3	21.99	22.01	22.02
		6	0	21.12	21.17	21.29
	256QAM	1	0	19.30	19.23	19.28
		1	2	19.23	19.17	19.36
		1	5	19.27	19.26	19.21
		3	0	19.14	19.12	19.22
		3	1	19.20	19.31	19.22
		3	3	19.25	19.15	19.25
		6	0	19.26	19.08	19.29



Band/BW	Modulation	RB Size	RB offset	Low CH20415	Mid CH20525	High CH20635
				Frequency 825.5 MHz	Frequency 836.5 MHz	Frequency 847.5 MHz
5/ 3	QPSK	1	0	24.09	24.17	24.17
		1	7	24.17	24.09	24.23
		1	14	24.02	24.12	23.79
		8	0	23.14	23.07	23.13
		8	3	23.16	23.14	23.21
		8	7	23.18	23.16	23.19
		15	0	23.16	23.05	23.19
	16QAM	1	0	23.29	23.27	23.39
		1	7	23.27	23.27	23.29
		1	14	23.25	23.24	23.01
		8	0	22.17	22.11	22.17
		8	3	22.25	22.13	22.14
		8	7	22.23	22.20	22.20
		15	0	22.24	22.21	22.23
	64QAM	1	0	22.36	22.18	22.32
		1	7	22.33	22.31	22.35
		1	14	22.33	22.26	22.09
		8	0	21.11	21.15	21.13
		8	3	21.26	21.25	21.37
		8	7	21.11	21.22	21.17
		15	0	21.21	21.14	21.23
	256QAM	1	0	19.28	19.17	19.41
		1	7	19.27	19.24	19.26
		1	14	19.21	19.16	19.27
		8	0	19.12	19.18	19.25
		8	3	19.27	19.32	19.23
		8	7	19.13	19.22	19.24
		15	0	19.29	19.06	19.34



Band/BW	Modulation	RB Size	RB offset	Low CH20425	Mid CH20525	High CH20625
				Frequency 826.5 MHz	Frequency 836.5 MHz	Frequency 846.5 MHz
5/ 5	QPSK	1	0	24.21	24.13	24.23
		1	12	24.18	24.17	24.16
		1	24	24.08	24.12	23.82
		12	0	23.11	23.13	23.18
		12	6	23.11	23.09	23.23
		12	13	23.26	23.24	23.27
		25	0	23.22	23.03	23.27
	16QAM	1	0	23.21	23.31	23.43
		1	12	23.28	23.36	23.40
		1	24	23.32	23.20	22.99
		12	0	22.14	22.19	22.11
		12	6	22.29	22.17	22.23
		12	13	22.16	22.14	22.23
		25	0	22.27	22.18	22.14
	64QAM	1	0	22.30	22.19	22.31
		1	12	22.43	22.34	22.44
		1	24	22.29	22.23	22.07
		12	0	21.21	21.14	21.09
		12	6	21.18	21.22	21.33
		12	13	21.20	21.13	21.20
		25	0	21.13	21.11	21.29
	256QAM	1	0	19.29	19.21	19.41
		1	12	19.19	19.19	19.35
		1	24	19.34	19.21	19.34
		12	0	19.14	19.22	19.27
		12	6	19.16	19.32	19.24
		12	13	19.15	19.24	19.20
		25	0	19.18	19.07	19.25



Band/BW	Modulation	RB Size	RB offset	Low CH20450	Mid CH20525	High CH20600
				Frequency 829 MHz	Frequency 836.5 MHz	Frequency 844 MHz
5/ 10	QPSK	1	0	24.24	24.21	24.25
		1	24	24.22	24.20	24.24
		1	49	24.17	24.14	23.91
		25	0	23.20	23.20	23.24
		25	12	23.25	23.21	23.26
		25	25	23.27	23.26	23.30
		50	0	23.28	23.13	23.29
	16QAM	1	0	23.36	23.36	23.45
		1	24	23.39	23.39	23.44
		1	49	23.37	23.35	23.12
		25	0	22.23	22.20	22.26
		25	12	22.30	22.27	22.28
		25	25	22.30	22.21	22.29
		50	0	22.29	22.22	22.27
	64QAM	1	0	22.44	22.25	22.39
		1	24	22.46	22.39	22.46
		1	49	22.39	22.38	22.21
		25	0	21.24	21.17	21.22
		25	12	21.29	21.32	21.38
		25	25	21.23	21.23	21.29
		50	0	21.24	21.19	21.32
	256QAM	1	0	19.35	19.26	19.42
		1	24	19.34	19.32	19.40
		1	49	19.36	19.28	19.35
		25	0	19.24	19.25	19.31
		25	12	19.29	19.33	19.37
		25	25	19.28	19.28	19.34
		50	0	19.33	19.18	19.35



CA_5B

CA_5B (Ant2)									
Combination 10MHz+10MHz (50RB+50RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
20450	829	20549	838.9	QPSK	1	49	1	0	24.87
				16QAM	1	49	1	0	23.97
				64QAM	1	49	1	0	21.35
				256QAM	1	49	1	0	19.93
20476	831.6	20575	841.5	QPSK	1	49	1	0	24.81
				16QAM	1	49	1	0	23.02
				64QAM	1	49	1	0	21.30
				256QAM	1	49	1	0	19.99
20501	834.1	20600	844	QPSK	1	49	1	0	24.74
				16QAM	1	49	1	0	23.91
				64QAM	1	49	1	0	21.37
				256QAM	1	49	1	0	19.96
Combination 10MHz+5MHz (50RB+25RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
20450	829	20522	836.2	QPSK	1	49	1	0	24.79
				16QAM	1	49	1	0	23.91
				64QAM	1	49	1	0	21.21
				256QAM	1	49	1	0	19.81
20500	834	20572	841.2	QPSK	1	49	1	0	24.62
				16QAM	1	49	1	0	22.96
				64QAM	1	49	1	0	21.08
				256QAM	1	49	1	0	19.90
20550	839	20622	846.2	QPSK	1	49	1	0	24.65
				16QAM	1	49	1	0	23.85
				64QAM	1	49	1	0	21.28
				256QAM	1	49	1	0	19.66



CA_5B (Ant2)									
Combination 5MHz+10MHz (25RB+50RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
20428	826.8	20500	834	QPSK	1	24	1	0	24.77
				16QAM	1	24	1	0	23.93
				64QAM	1	24	1	0	21.15
				256QAM	1	24	1	0	19.79
20478	831.8	20550	839	QPSK	1	24	1	0	24.65
				16QAM	1	24	1	0	22.94
				64QAM	1	24	1	0	21.11
				256QAM	1	24	1	0	19.89
20528	836.8	20600	844	QPSK	1	24	1	0	24.60
				16QAM	1	24	1	0	23.79
				64QAM	1	24	1	0	21.25
				256QAM	1	24	1	0	19.69
Combination 5MHz+3MHz (25RB+15RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
20425	826.5	20464	830.4	QPSK	1	24	1	0	24.83
				16QAM	1	24	1	0	23.94
				64QAM	1	24	1	0	21.26
				256QAM	1	24	1	0	19.73
20510	835	20549	838.9	QPSK	1	24	1	0	24.63
				16QAM	1	24	1	0	22.95
				64QAM	1	24	1	0	21.10
				256QAM	1	24	1	0	19.93
20595	843.5	20634	847.4	QPSK	1	24	1	0	24.59
				16QAM	1	24	1	0	23.87
				64QAM	1	24	1	0	21.20
				256QAM	1	24	1	0	19.74



CA 5B (Ant2)									
Combination 3MHz+5MHz (15RB+25RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
20416	825.6	20455	829.5	QPSK	1	14	1	0	24.80
				16QAM	1	14	1	0	23.89
				64QAM	1	14	1	0	21.15
				256QAM	1	14	1	0	19.87
20501	834.1	20540	838	QPSK	1	14	1	0	24.58
				16QAM	1	14	1	0	22.86
				64QAM	1	14	1	0	21.01
				256QAM	1	14	1	0	19.82
20586	842.6	20625	846.5	QPSK	1	14	1	0	24.57
				16QAM	1	14	1	0	23.73
				64QAM	1	14	1	0	21.25
				256QAM	1	14	1	0	19.66



ERP POWER (dBm)

GSM 850(Ant2)						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
128	824.2	32.97	-3.19	27.63	579.43	7
189	836.4	32.51	-3.19	27.17	521.19	7
251	848.8	33.09	-3.19	27.75	595.66	7

EDGE 850(Ant2)						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
128	824.2	27.13	-3.19	21.79	151.01	7
189	836.4	27.17	-3.19	21.83	152.41	7
251	848.8	27.10	-3.19	21.76	149.97	7

WCDMA B5(Ant2)						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
4132	826.4	24.40	-3.19	19.06	80.54	7
4182	836.4	24.42	-3.19	19.08	80.91	7
4233	846.6	24.33	-3.19	18.99	79.25	7



LTE BAND 5(Ant2)

CHANNEL BANDWIDTH: 1.4MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	24.21	-3.19	18.87	77.09	7
20525	836.5	24.12	-3.19	18.78	75.51	7
20643	848.3	24.13	-3.19	18.79	75.68	7

CHANNEL BANDWIDTH: 1.4MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	23.31	-3.19	17.97	62.66	7
20525	836.5	23.38	-3.19	18.04	63.68	7
20643	848.3	23.44	-3.19	18.10	64.57	7

CHANNEL BANDWIDTH: 1.4MHz 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	22.42	-3.19	17.08	51.05	7
20525	836.5	22.26	-3.19	16.92	49.20	7
20643	848.3	22.45	-3.19	17.11	51.40	7

CHANNEL BANDWIDTH: 1.4MHz 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	19.30	-3.19	13.96	24.89	7
20525	836.5	19.31	-3.19	13.97	24.95	7
20643	848.3	19.36	-3.19	14.02	25.23	7



CHANNEL BANDWIDTH: 3MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	24.17	-3.19	18.83	76.38	7
20525	836.5	24.17	-3.19	18.83	76.38	7
20635	847.5	24.23	-3.19	18.89	77.45	7

CHANNEL BANDWIDTH: 3MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	23.29	-3.19	17.95	62.37	7
20525	836.5	23.27	-3.19	17.93	62.09	7
20635	847.5	23.39	-3.19	18.05	63.83	7

CHANNEL BANDWIDTH: 3MHz 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	22.36	-3.19	17.02	50.35	7
20525	836.5	22.31	-3.19	16.97	49.77	7
20635	847.5	22.35	-3.19	17.01	50.23	7

CHANNEL BANDWIDTH: 3MHz 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	19.29	-3.19	13.95	24.83	7
20525	836.5	19.32	-3.19	13.98	25.00	7
20635	847.5	19.41	-3.19	14.07	25.53	7



CHANNEL BANDWIDTH: 5MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	24.21	-3.19	18.87	77.09	7
20525	836.5	24.17	-3.19	18.83	76.38	7
20625	846.5	24.23	-3.19	18.89	77.45	7

CHANNEL BANDWIDTH: 5MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	23.32	-3.19	17.98	62.81	7
20525	836.5	23.36	-3.19	18.02	63.39	7
20625	846.5	23.43	-3.19	18.09	64.42	7

CHANNEL BANDWIDTH: 5MHz 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	22.43	-3.19	17.09	51.17	7
20525	836.5	22.34	-3.19	17.00	50.12	7
20625	846.5	22.44	-3.19	17.10	51.29	7

CHANNEL BANDWIDTH: 5MHz 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	19.34	-3.19	14.00	25.12	7
20525	836.5	19.32	-3.19	13.98	25.00	7
20625	846.5	19.41	-3.19	14.07	25.53	7



CHANNEL BANDWIDTH: 10MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829	24.24	-3.19	18.90	77.62	7
20525	836.5	24.21	-3.19	18.87	77.09	7
20600	844	24.25	-3.19	18.91	77.80	7

CHANNEL BANDWIDTH: 10MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829	23.39	-3.19	18.05	63.83	7
20525	836.5	23.39	-3.19	18.05	63.83	7
20600	844	23.45	-3.19	18.11	64.71	7

CHANNEL BANDWIDTH: 10MHz 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829	22.46	-3.19	17.12	51.52	7
20525	836.5	22.39	-3.19	17.05	50.70	7
20600	844	22.46	-3.19	17.12	51.52	7

CHANNEL BANDWIDTH: 10MHz 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829	19.36	-3.19	14.02	25.23	7
20525	836.5	19.33	-3.19	13.99	25.06	7
20600	844	19.42	-3.19	14.08	25.59	7

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).



CA -5B

CA 5B Ant2													
Combination 10MHz+10MHz (50RB+50RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	FCC Limit (W)
					RB Size	RB offset	RB Size	RB offset					
20450	829	20549	838.9	QPSK	1	49	1	0	24.87	-3.19	19.53	89.74	7
				16QAM	1	49	1	0	23.97	-3.19	18.63	72.95	7
				64QAM	1	49	1	0	21.35	-3.19	16.01	39.90	7
				256QAM	1	49	1	0	19.93	-3.19	14.59	28.77	7
20476	831.6	20575	841.5	QPSK	1	49	1	0	24.81	-3.19	19.47	88.51	7
				16QAM	1	49	1	0	23.02	-3.19	17.68	58.61	7
				64QAM	1	49	1	0	21.30	-3.19	15.96	39.45	7
				256QAM	1	49	1	0	19.99	-3.19	14.65	29.17	7
20501	834.1	20600	844	QPSK	1	49	1	0	24.74	-3.19	19.40	87.10	7
				16QAM	1	49	1	0	23.91	-3.19	18.57	71.94	7
				64QAM	1	49	1	0	21.37	-3.19	16.03	40.09	7
				256QAM	1	49	1	0	19.96	-3.19	14.62	28.97	7
Combination 10MHz+5MHz (50RB+25RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	FCC Limit (W)
					RB Size	RB offset	RB Size	RB offset					
20450	829	20522	836.2	QPSK	1	49	1	0	24.79	-3.19	19.45	88.10	7
				16QAM	1	49	1	0	23.91	-3.19	18.57	71.94	7
				64QAM	1	49	1	0	21.21	-3.19	15.87	38.64	7
				256QAM	1	49	1	0	19.81	-3.19	14.47	27.99	7
20500	834	20572	841.2	QPSK	1	49	1	0	24.62	-3.19	19.28	84.72	7
				16QAM	1	49	1	0	22.96	-3.19	17.62	57.81	7
				64QAM	1	49	1	0	21.08	-3.19	15.74	37.50	7
				256QAM	1	49	1	0	19.90	-3.19	14.56	28.58	7
20550	839	20622	846.2	QPSK	1	49	1	0	24.65	-3.19	19.31	85.31	7
				16QAM	1	49	1	0	23.85	-3.19	18.51	70.96	7
				64QAM	1	49	1	0	21.28	-3.19	15.94	39.26	7
				256QAM	1	49	1	0	19.66	-3.19	14.32	27.04	7



CA_5B_Ant2													
Combination 5MHz+10MHz (25RB+50RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	FCC Limit (W)
					RB Size	RB offset	RB Size	RB offset					
20428	826.8	20500	834	QPSK	1	24	1	0	24.77	-3.19	19.43	87.70	7
				16QAM	1	24	1	0	23.93	-3.19	18.59	72.28	7
				64QAM	1	24	1	0	21.15	-3.19	15.81	38.11	7
				256QAM	1	24	1	0	19.79	-3.19	14.45	27.86	7
20478	831.8	20550	839	QPSK	1	24	1	0	24.65	-3.19	19.31	85.31	7
				16QAM	1	24	1	0	22.94	-3.19	17.60	57.54	7
				64QAM	1	24	1	0	21.11	-3.19	15.77	37.76	7
				256QAM	1	24	1	0	19.89	-3.19	14.55	28.51	7
20528	836.8	20600	844	QPSK	1	24	1	0	24.60	-3.19	19.26	84.33	7
				16QAM	1	24	1	0	23.79	-3.19	18.45	69.98	7
				64QAM	1	24	1	0	21.25	-3.19	15.91	38.99	7
				256QAM	1	24	1	0	19.69	-3.19	14.35	27.23	7
Combination 5MHz+3MHz (25RB+15RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	FCC Limit (W)
					RB Size	RB offset	RB Size	RB offset					
20425	826.5	20464	830.4	QPSK	1	24	1	0	24.83	-3.19	19.49	88.92	7
				16QAM	1	24	1	0	23.94	-3.19	18.60	72.44	7
				64QAM	1	24	1	0	21.26	-3.19	15.92	39.08	7
				256QAM	1	24	1	0	19.73	-3.19	14.39	27.48	7
20510	835	20549	838.9	QPSK	1	24	1	0	24.63	-3.19	19.29	84.92	7
				16QAM	1	24	1	0	22.95	-3.19	17.61	57.68	7
				64QAM	1	24	1	0	21.10	-3.19	15.76	37.67	7
				256QAM	1	24	1	0	19.93	-3.19	14.59	28.77	7
20595	843.5	20634	847.4	QPSK	1	24	1	0	24.59	-3.19	19.25	84.14	7
				16QAM	1	24	1	0	23.87	-3.19	18.53	71.29	7
				64QAM	1	24	1	0	21.20	-3.19	15.86	38.55	7
				256QAM	1	24	1	0	19.74	-3.19	14.40	27.54	7



CA_5B_Ant2													
Combination 3MHz+5MHz (15RB+25RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	FCC Limit (W)
					RB Size	RB offset	RB Size	RB offset					
20416	825.6	20455	829.5	QPSK	1	14	1	0	24.80	-3.19	19.46	88.31	7
				16QAM	1	14	1	0	23.89	-3.19	18.55	71.61	7
				64QAM	1	14	1	0	21.15	-3.19	15.81	38.11	7
				256QAM	1	14	1	0	19.87	-3.19	14.53	28.38	7
20501	834.1	20540	838	QPSK	1	14	1	0	24.58	-3.19	19.24	83.95	7
				16QAM	1	14	1	0	22.86	-3.19	17.52	56.49	7
				64QAM	1	14	1	0	21.01	-3.19	15.67	36.90	7
				256QAM	1	14	1	0	19.82	-3.19	14.48	28.05	7
20586	842.6	20625	846.5	QPSK	1	14	1	0	24.57	-3.19	19.23	83.75	7
				16QAM	1	14	1	0	23.73	-3.19	18.39	69.02	7
				64QAM	1	14	1	0	21.25	-3.19	15.91	38.99	7
				256QAM	1	14	1	0	19.66	-3.19	14.32	27.04	7

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

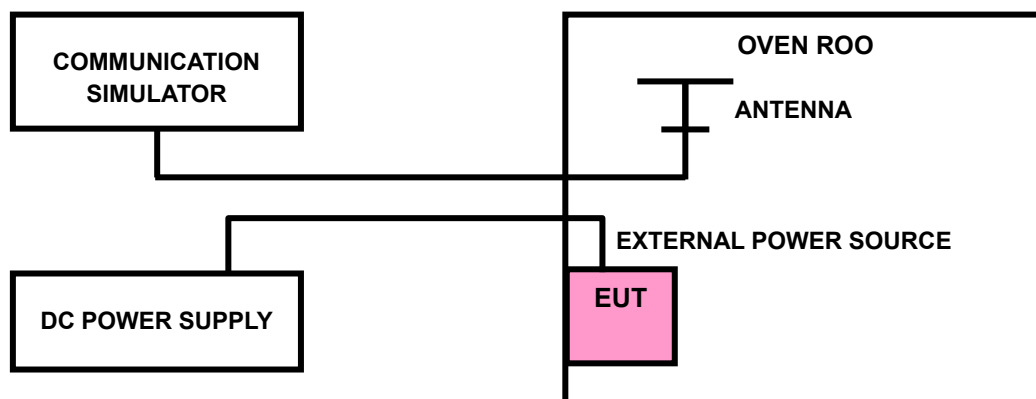
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

3.2.2 TEST PROCEDURE

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

3.2.3 TEST SETUP



3.2.4 TEST RESULTS

Please Refer to Appendix of this test report.

Note: VL = Low voltage(3.6V); VN/NV = Normal voltage(3.87V); VH = High voltage(4.45V);
NT = Normal temperature (25°C)

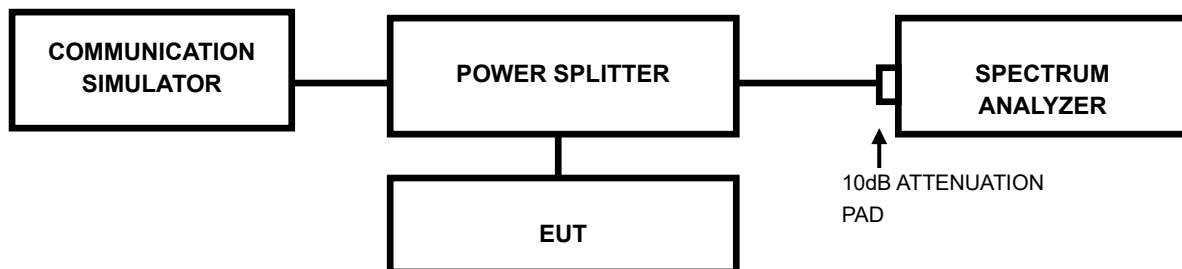


3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

3.3.4 TEST RESULTS

Please Refer to Appendix of this test report.

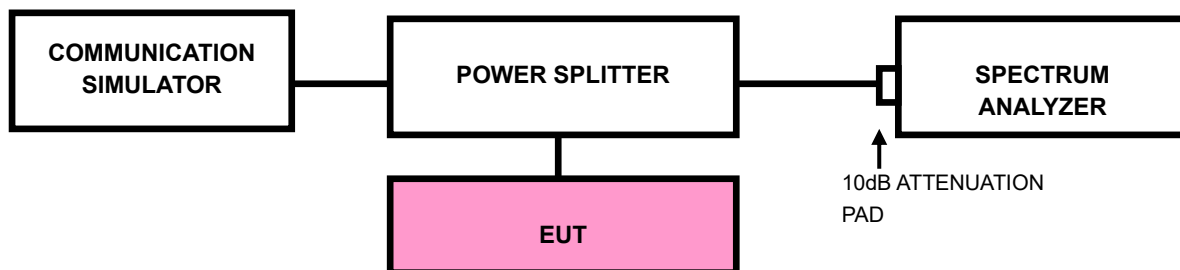


3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

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. 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.

3.4.2 TEST SETUP





3.4.3 TEST PROCEDURES

- a) All measurements were done at low and high operational frequency range
- b) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
- c) Tune the analyzer to the nominal center frequency of the emission bandwidth

(EBW)
- d) .Set the resolution bandwidth (RBW) $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
- e) Beyond the 1MHz band from the band edge, RBW=1MHz was used.
- f) Set the video bandwidth (VBW) to $\geq 3 \times$ RBW.
- g) Select the average power (RMS) display detector.
- h) Set the number of measurement points to ≥ 1001 .
- i) Use auto-coupled sweep time.
- j) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.
- k) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.
- l) Record the max trace plot into the test report.

3.4.4 TEST RESULTS

Please Refer to Appendix of this test report.



3.5 CONDUCTED SPURIOUS EMISSIONS

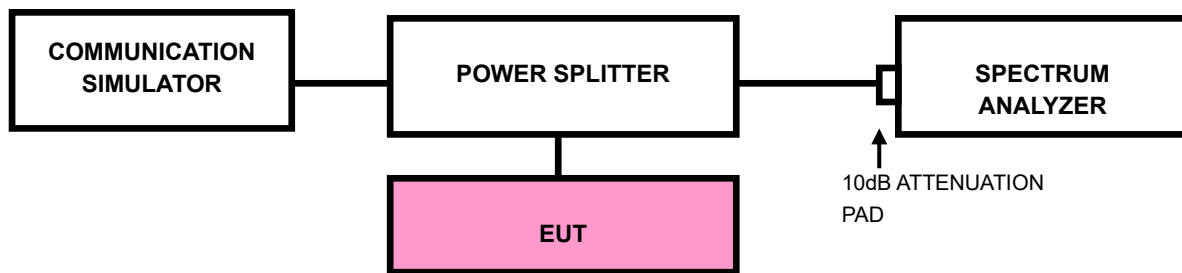
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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. The emission limit equal to -13dBm .

3.5.2 TEST PROCEDURE

- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9kHz up to a frequency including its 10th harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP



3.5.4 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

Please Refer to Appendix of this test report.



3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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. The emission limit equal to -13dBm .

3.6.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G
- c. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,
 $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}.$

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

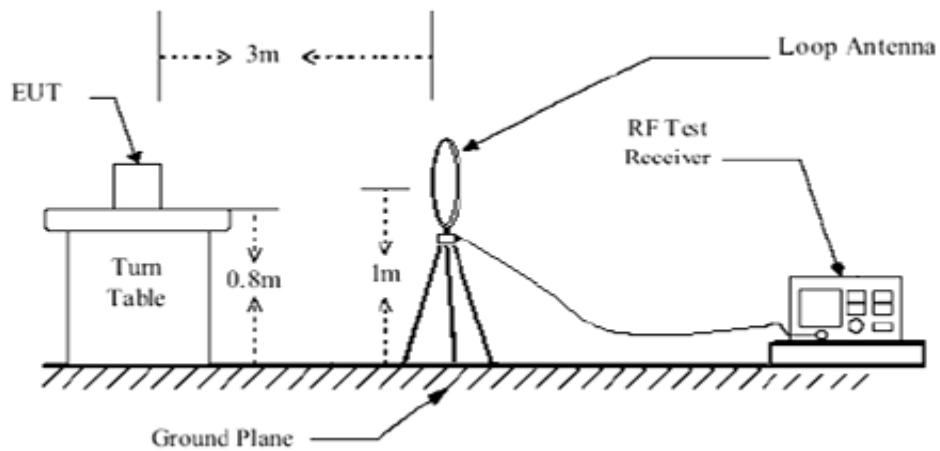
3.6.3 DEVIATION FROM TEST STANDARD

No deviation

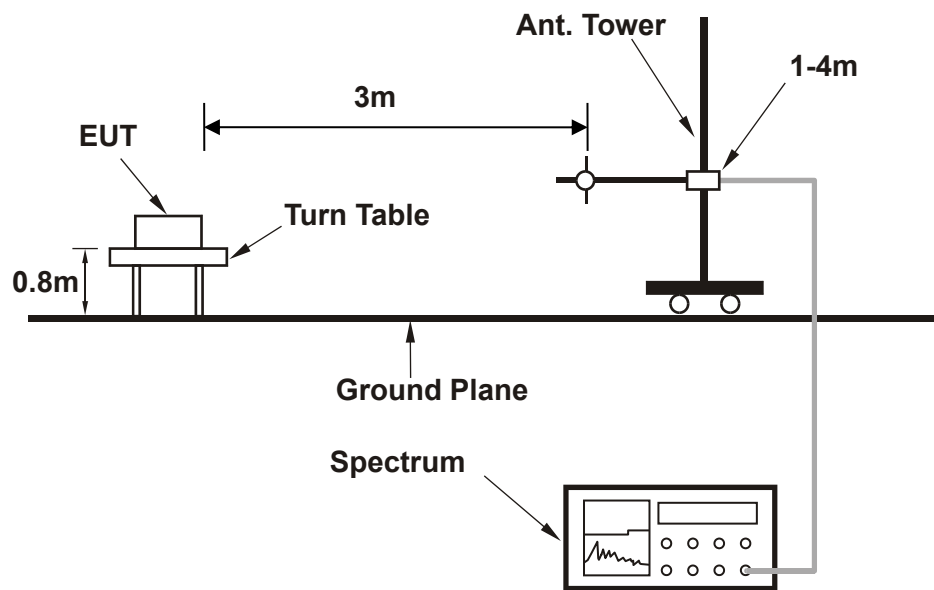


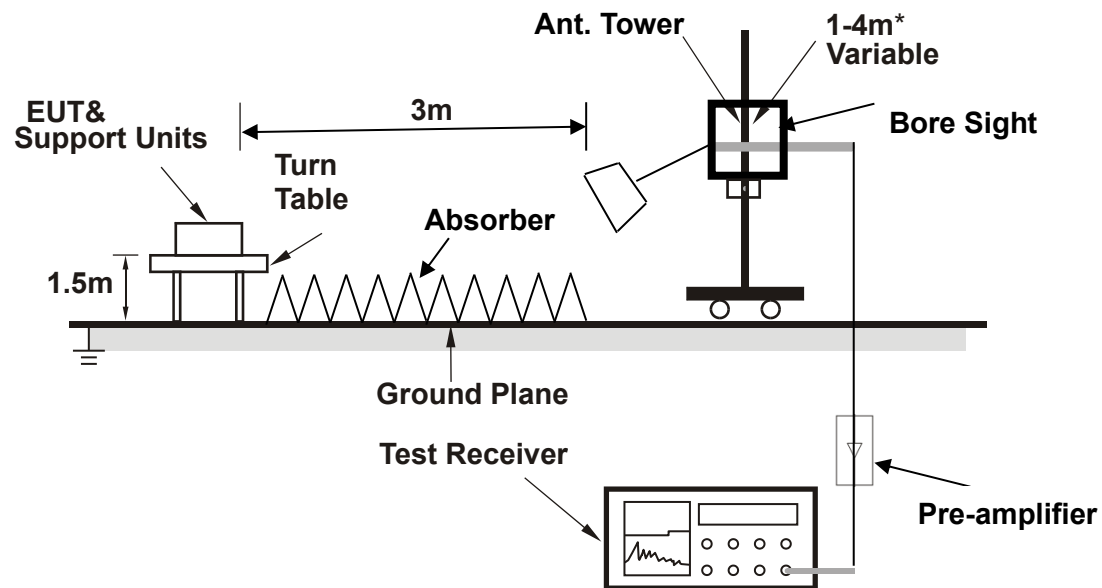
3.6.4 TEST SETUP

< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >





Note: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).



3.6.5 TEST RESULTS

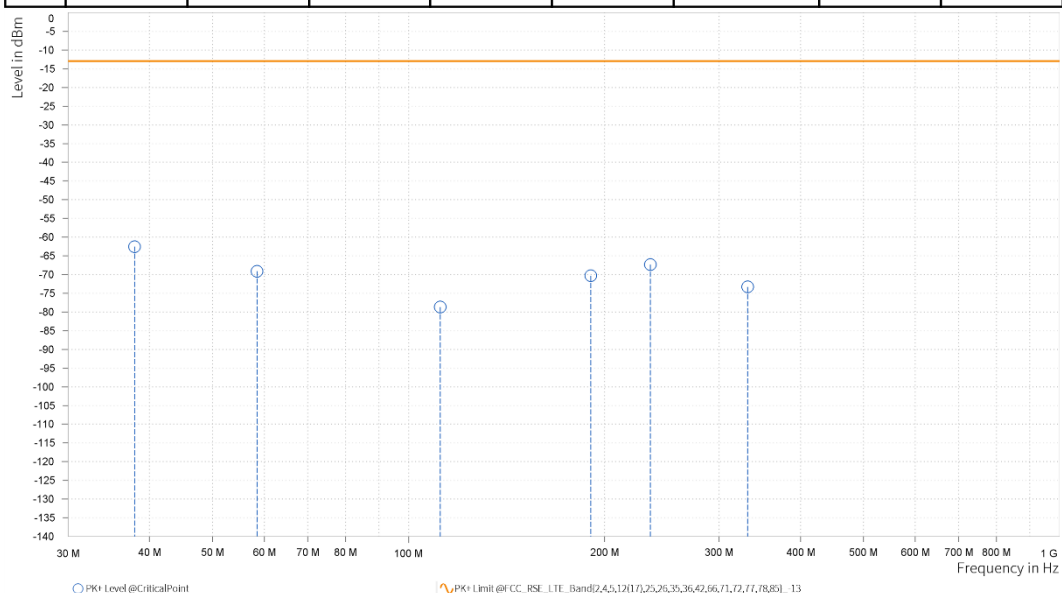
NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

BELOW 1GHz WORST-CASE DATA

LTE BAND 5			
CHANNEL BANDWIDTH: 3MHz/QPSK			
MODE	TX channel 20635	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	37.950	-62.55	-13.00	49.55	6.03	H	238.7	2.00
1	58.500	-69.11	-13.00	56.11	2.28	H	359	2.00
1	111.900	-78.70	-13.00	65.70	-5.16	H	0.9	2.00
1	190.400	-70.32	-13.00	57.32	0.89	H	291	1.00
1	235.250	-67.37	-13.00	54.37	7.24	H	78.6	2.00
1	331.950	-73.30	-13.00	60.30	3.27	H	209.7	1.00

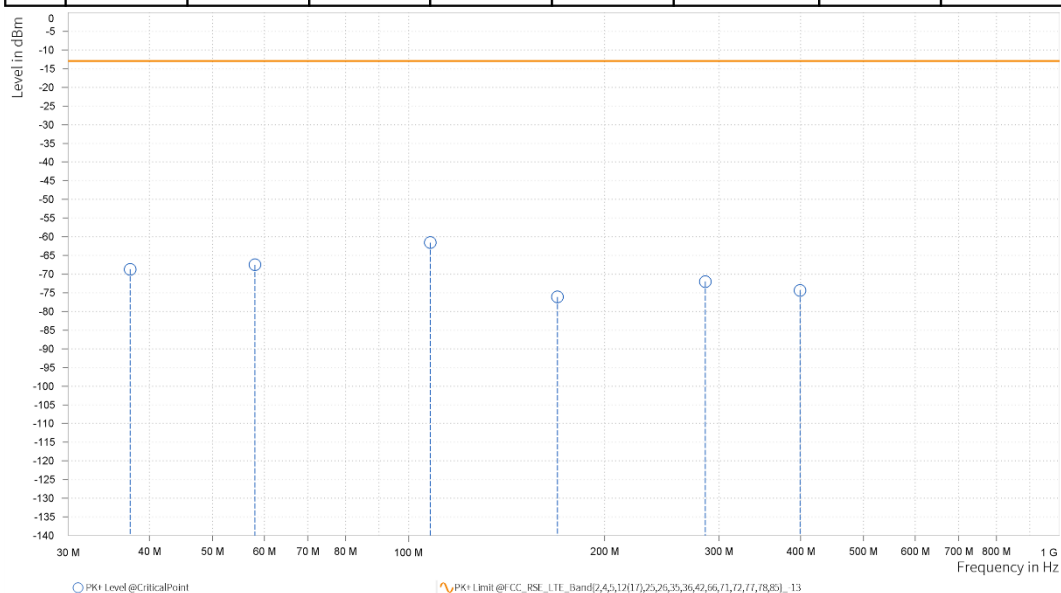




MODE	TX channel 20635	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	37.350	-68.74	-13.00	55.74	-2.24	V	8.2	2.00
1	58.100	-67.52	-13.00	54.52	2.18	V	116.4	1.00
1	108.000	-61.58	-13.00	48.58	7.89	V	359	2.00
1	169.300	-76.11	-13.00	63.11	-4.04	V	116.4	1.00
1	285.700	-72.01	-13.00	59.01	4.87	V	274.2	1.00
1	399.450	-74.38	-13.00	61.38	6.09	V	274.2	1.00





ABOVE 1GHz DATA

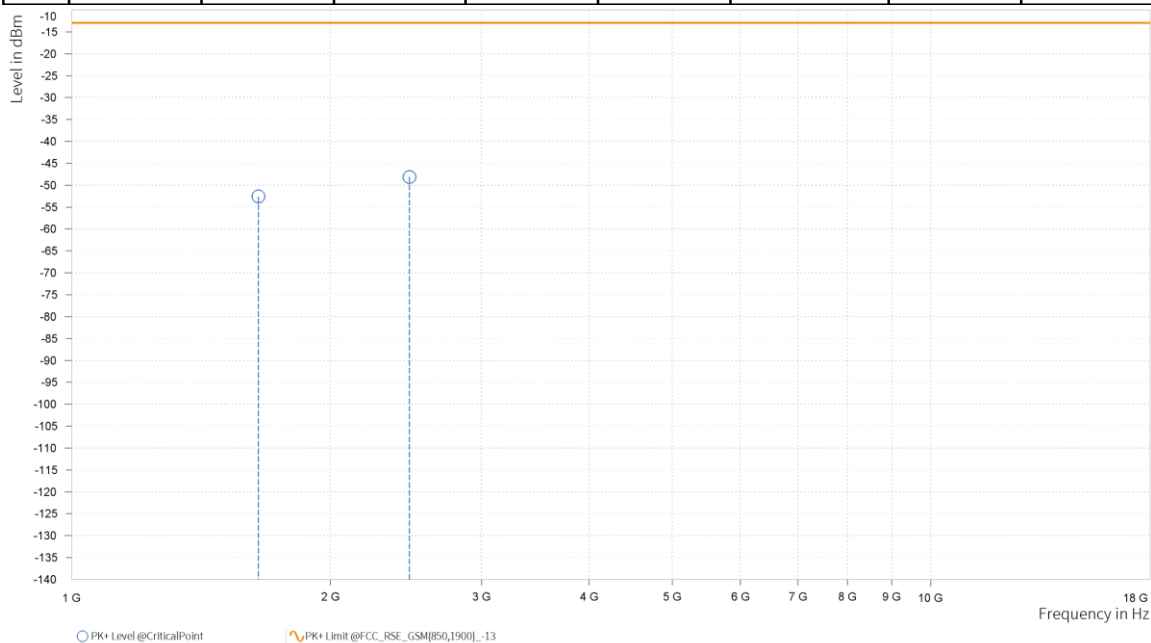
Note: For higher frequency, the emission is too low to be detected.

GSM 850

MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,648.400	-52.57	-13.00	39.57	16.68	H	87.7	1.00
3	2,472.600	-48.11	-13.00	35.11	21.67	H	0.9	2.00

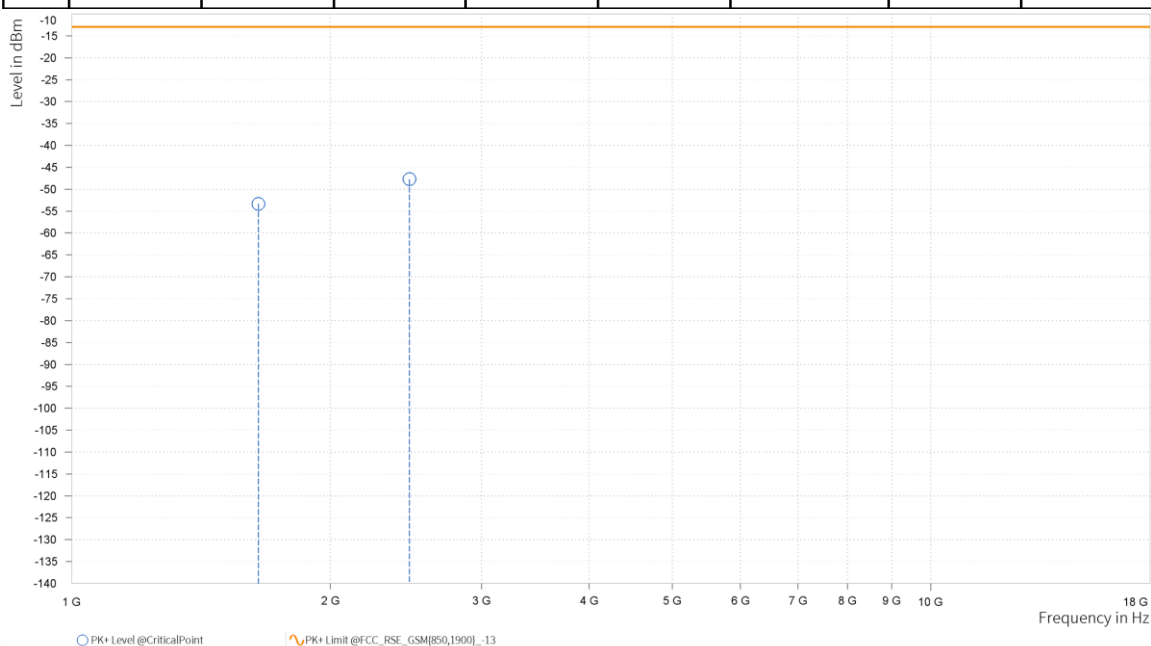




MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,648.400	-53.35	-13.00	40.35	16.26	V	1	1.00
3	2,472.600	-47.70	-13.00	34.70	21.92	V	359.1	1.00

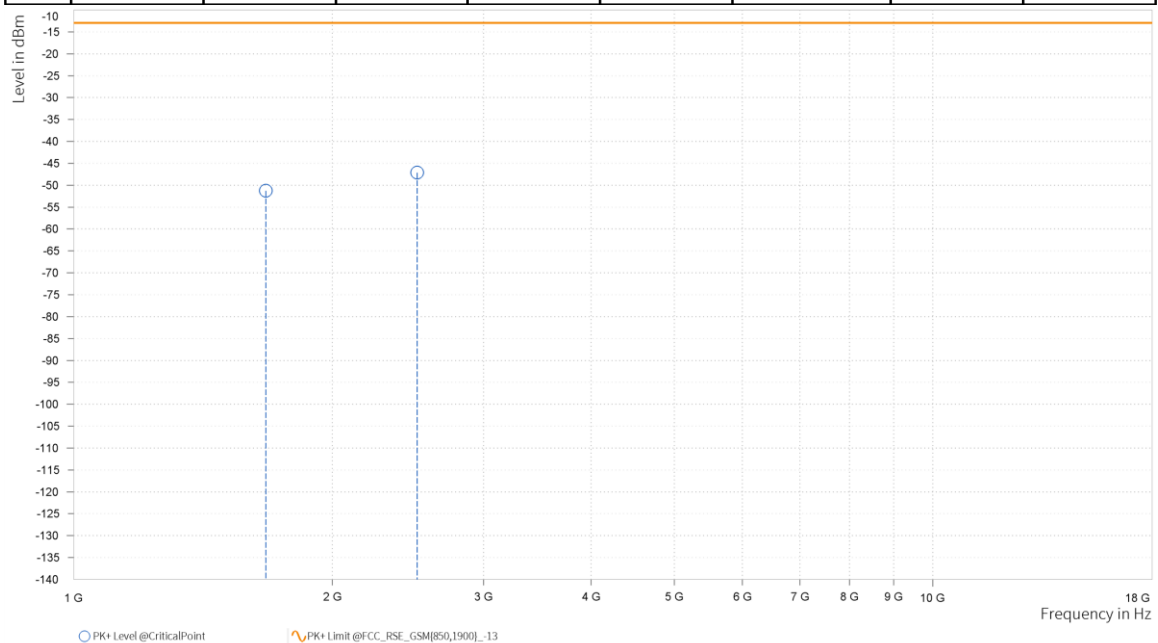




MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,672.800	-51.26	-13.00	38.26	17.47	H	1.9	2.00
3	2,509.200	-47.14	-13.00	34.14	21.81	H	198.2	2.00

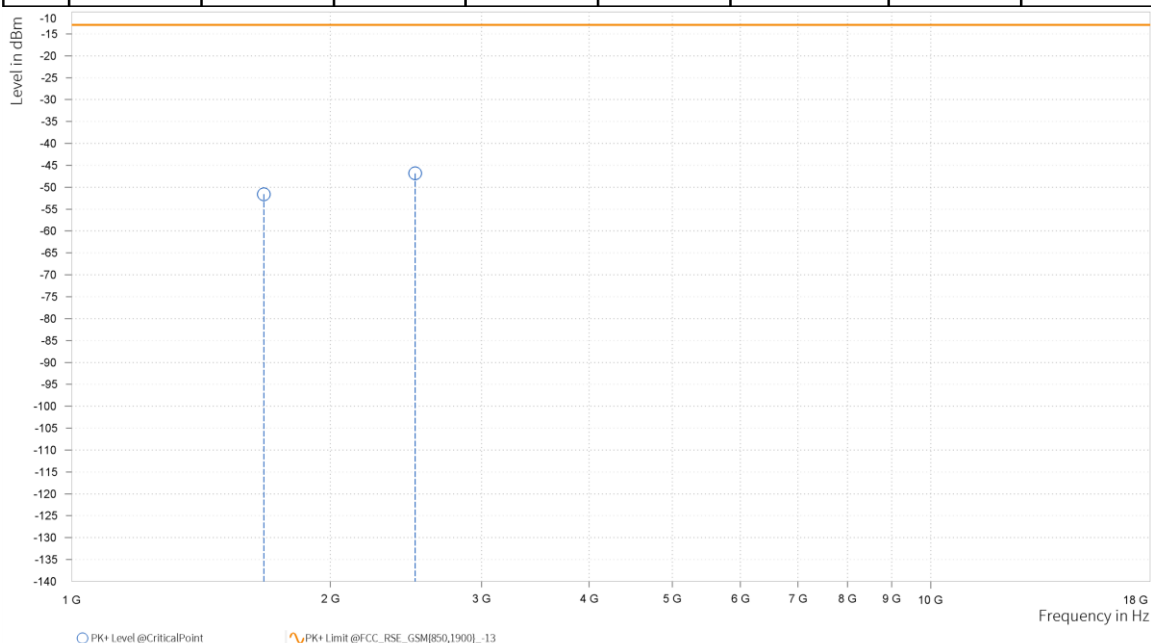




MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,672.800	-51.61	-13.00	38.61	16.36	V	1	1.00
3	2,509.200	-46.83	-13.00	33.83	22.42	V	1	1.00

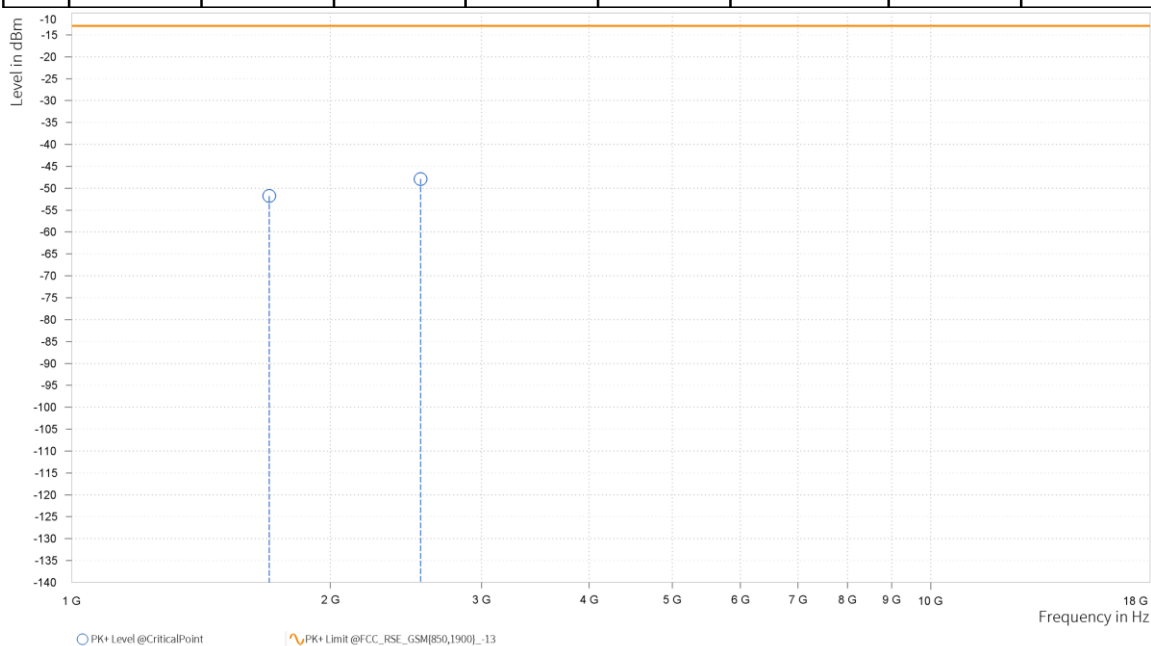




MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,697.600	-51.79	-13.00	38.79	17.92	H	1	1.00
3	2,546.400	-47.90	-13.00	34.90	21.95	H	359	2.00

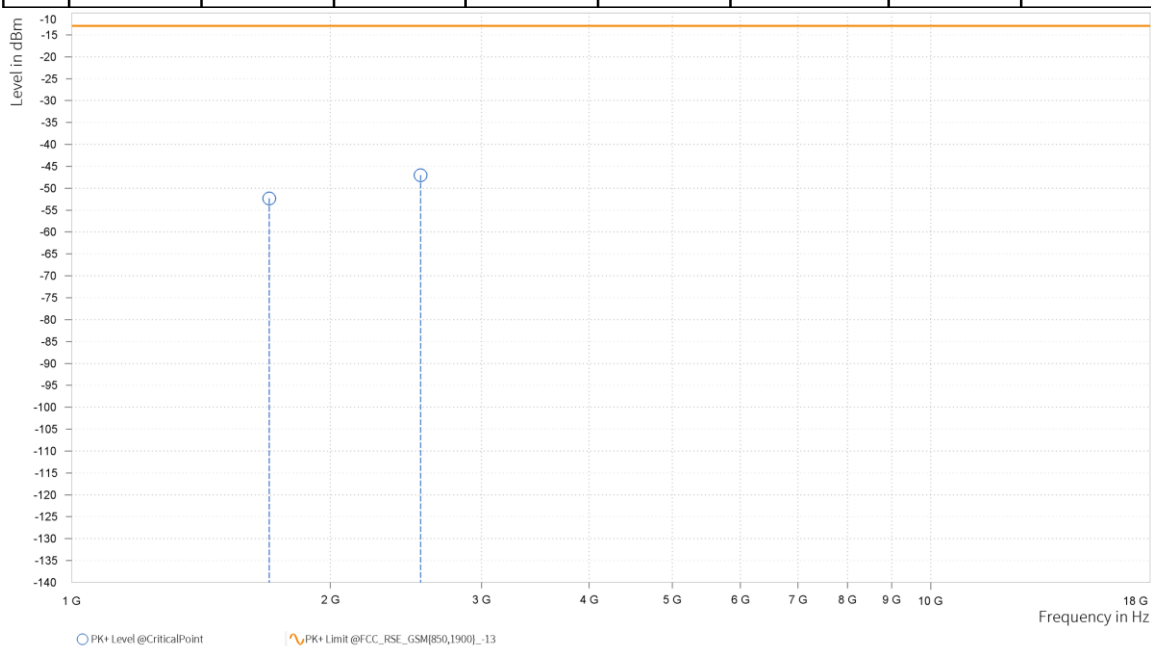


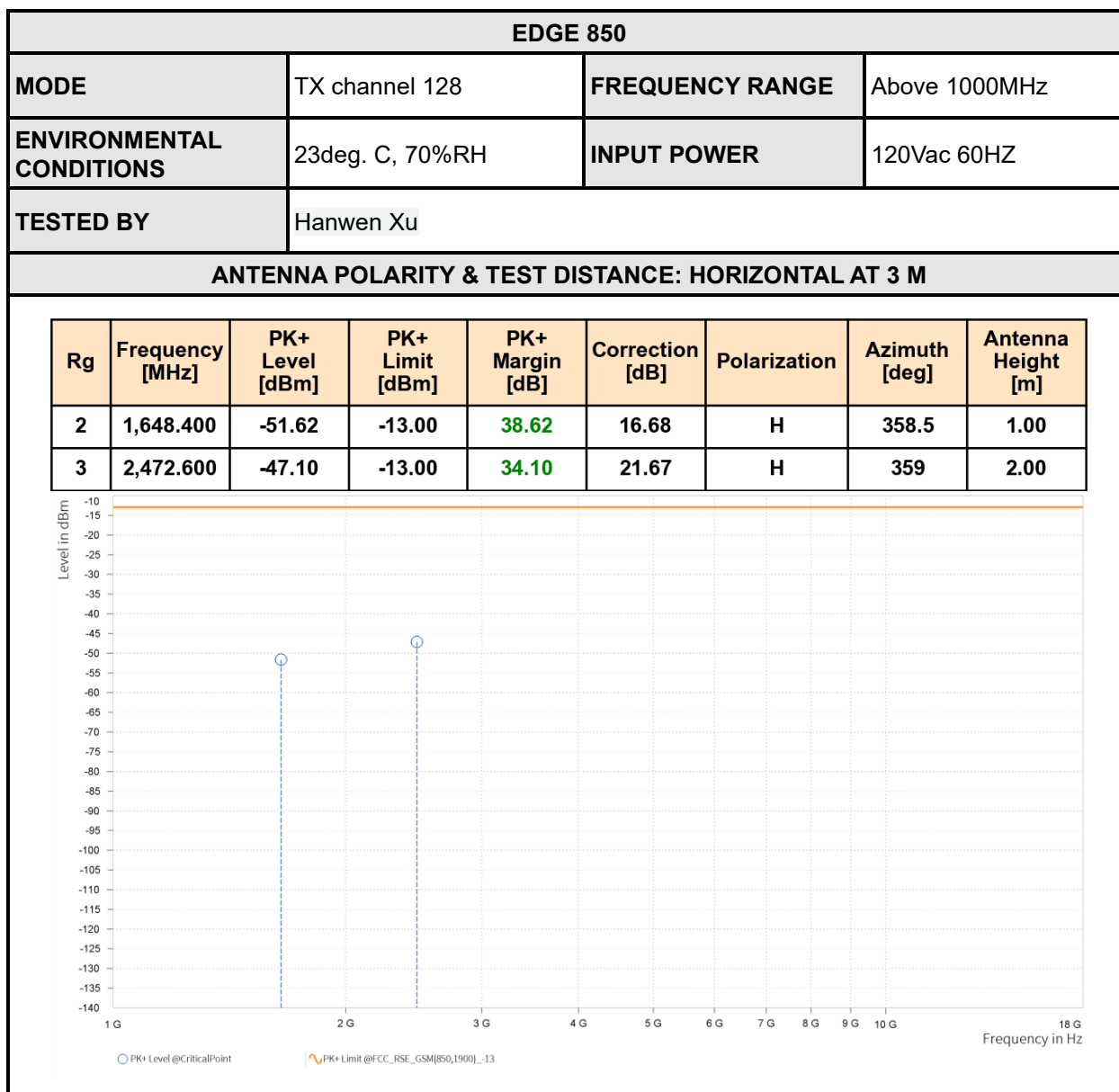


MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,697.600	-52.30	-13.00	39.30	17.14	V	271	2.00
3	2,546.400	-47.00	-13.00	34.00	22.57	V	359	1.00



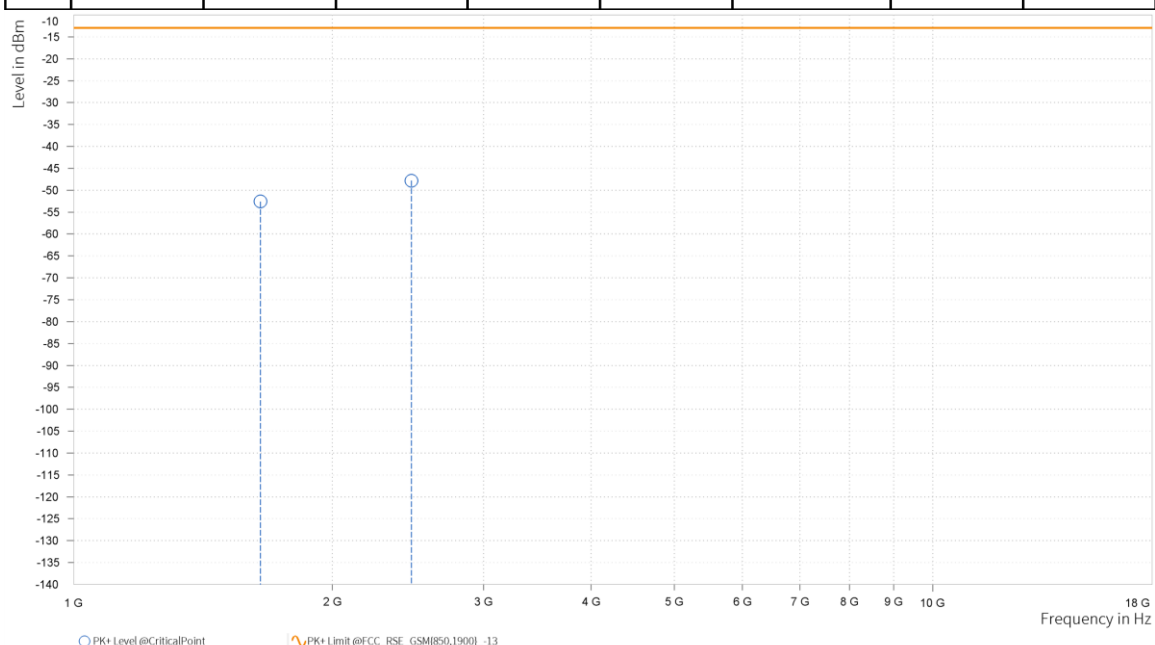




MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,648.400	-52.57	-13.00	39.57	16.26	V	1.8	2.00
3	2,472.600	-47.83	-13.00	34.83	21.92	V	198.1	2.00

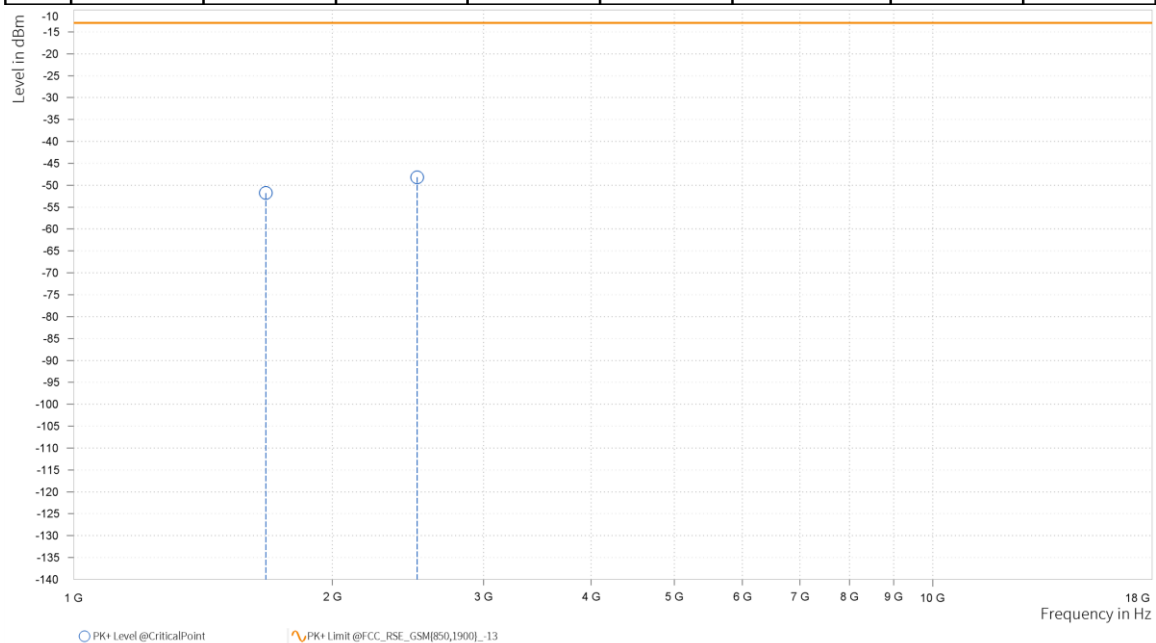




MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,672.800	-51.76	-13.00	38.76	17.47	H	359	2.00
3	2,509.200	-48.19	-13.00	35.19	21.81	H	1	1.00

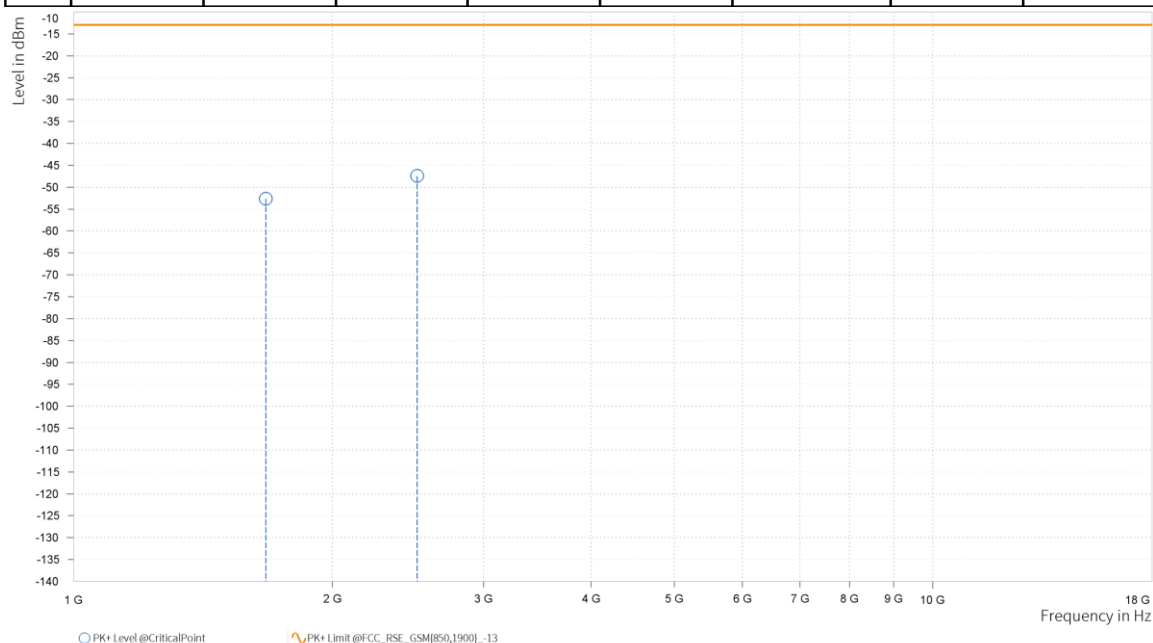




MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,672.800	-52.65	-13.00	39.65	16.36	V	1.8	2.00
3	2,509.200	-47.43	-13.00	34.43	22.42	V	359	2.00

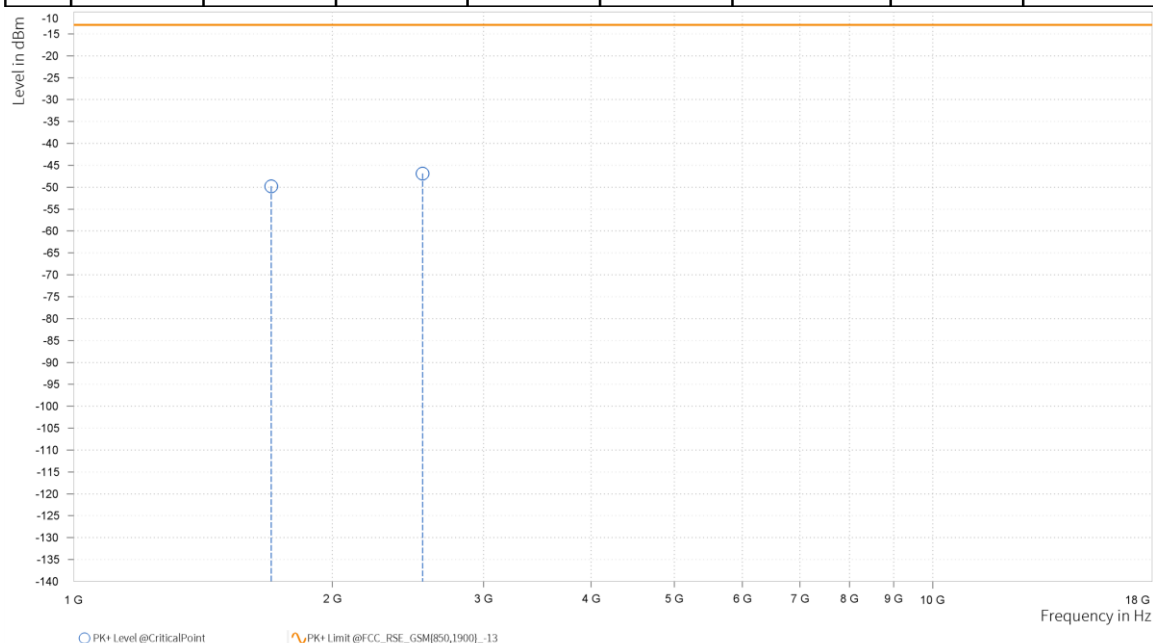




MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,697.600	-49.78	-13.00	36.78	17.92	H	1	1.00
3	2,546.400	-46.88	-13.00	33.88	21.95	H	1	1.00

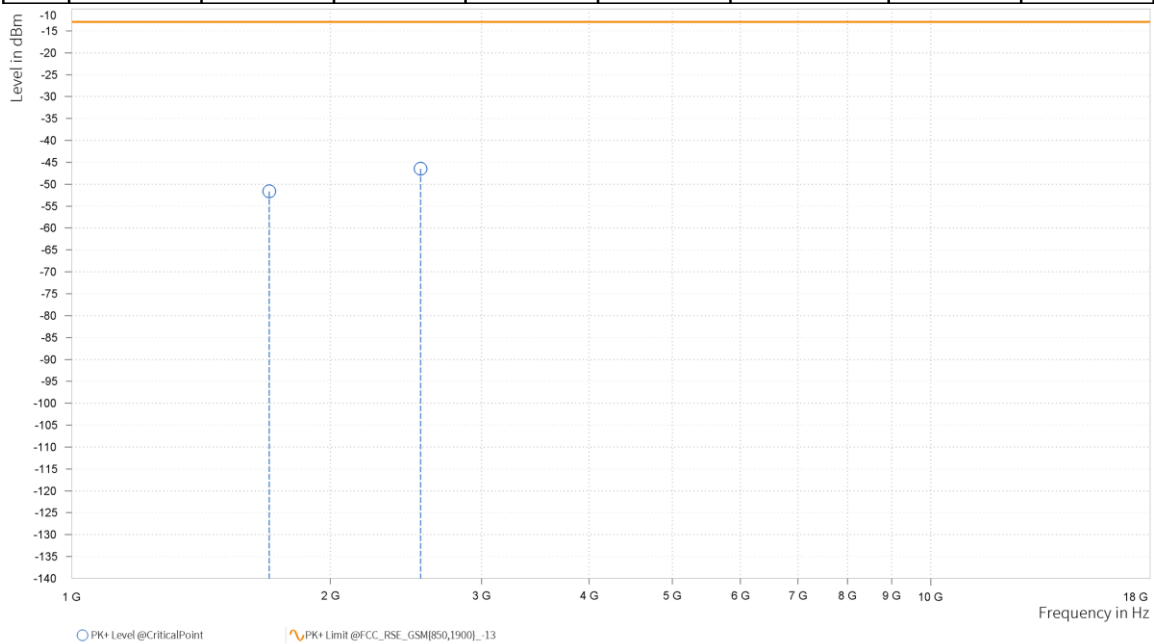




MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,697.600	-51.64	-13.00	38.64	17.14	V	1.6	2.00
3	2,546.400	-46.49	-13.00	33.49	22.57	V	1	1.00



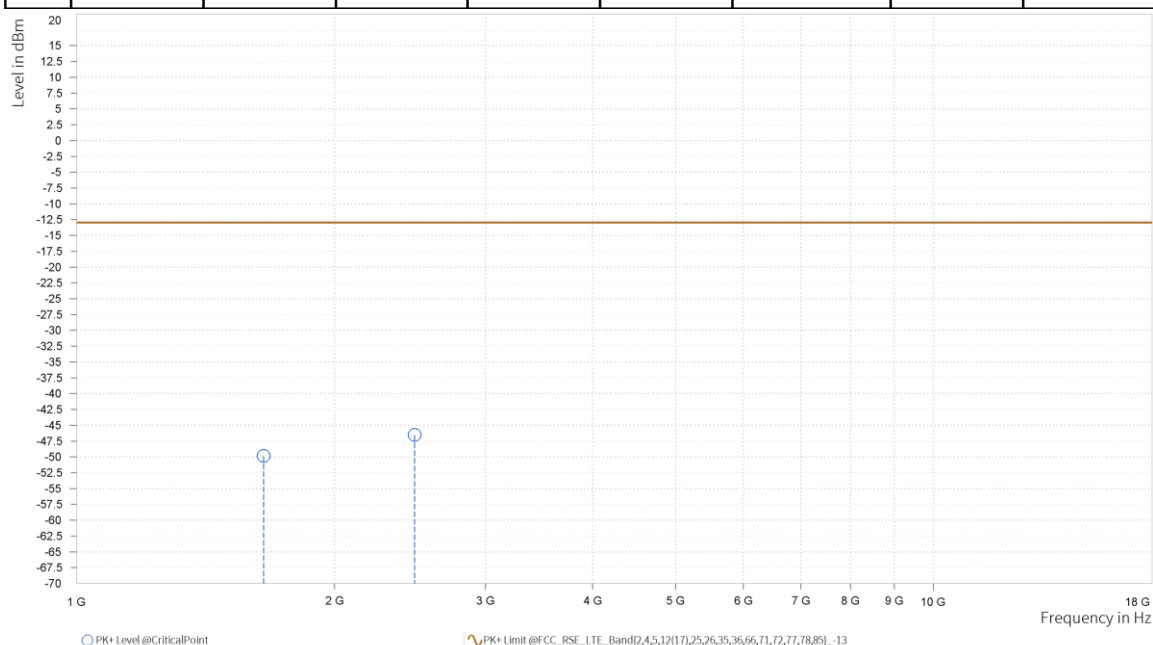


WCDMA Band V

MODE	TX channel 4132	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,652.800	-49.86	-13.00	36.86	18.89	H	1	1.00
3	2,479.200	-46.53	-13.00	33.53	24.36	H	0.9	2.00

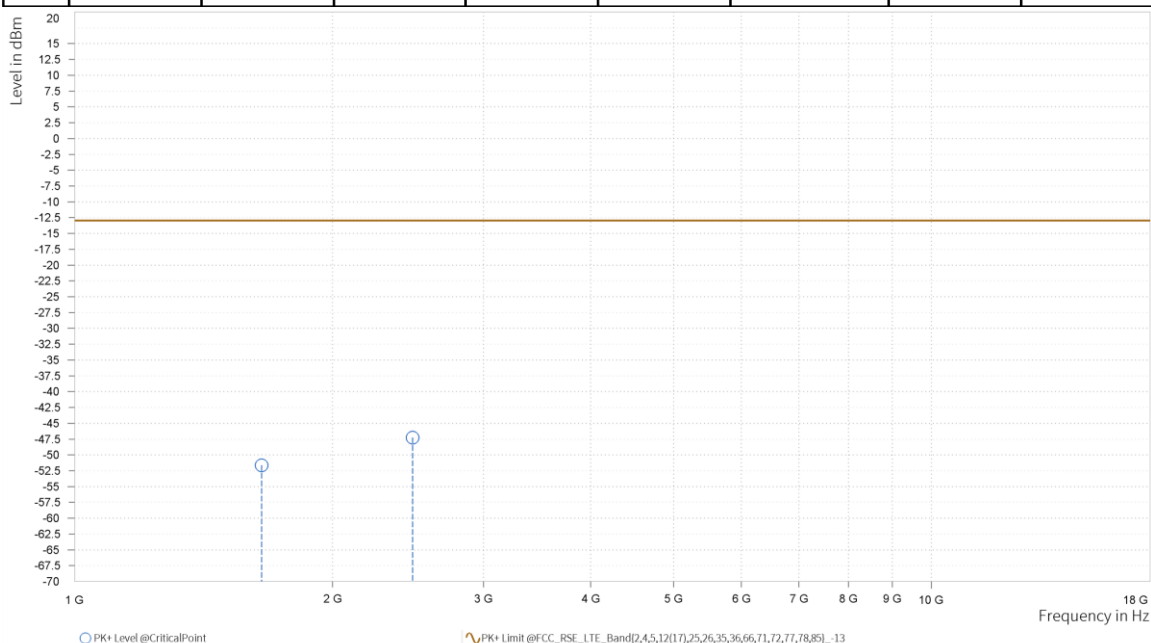




MODE	TX channel 4132	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,652.800	-51.63	-13.00	38.63	18.37	V	358.2	1.00
3	2,479.200	-47.25	-13.00	34.25	24.04	V	0.9	2.00

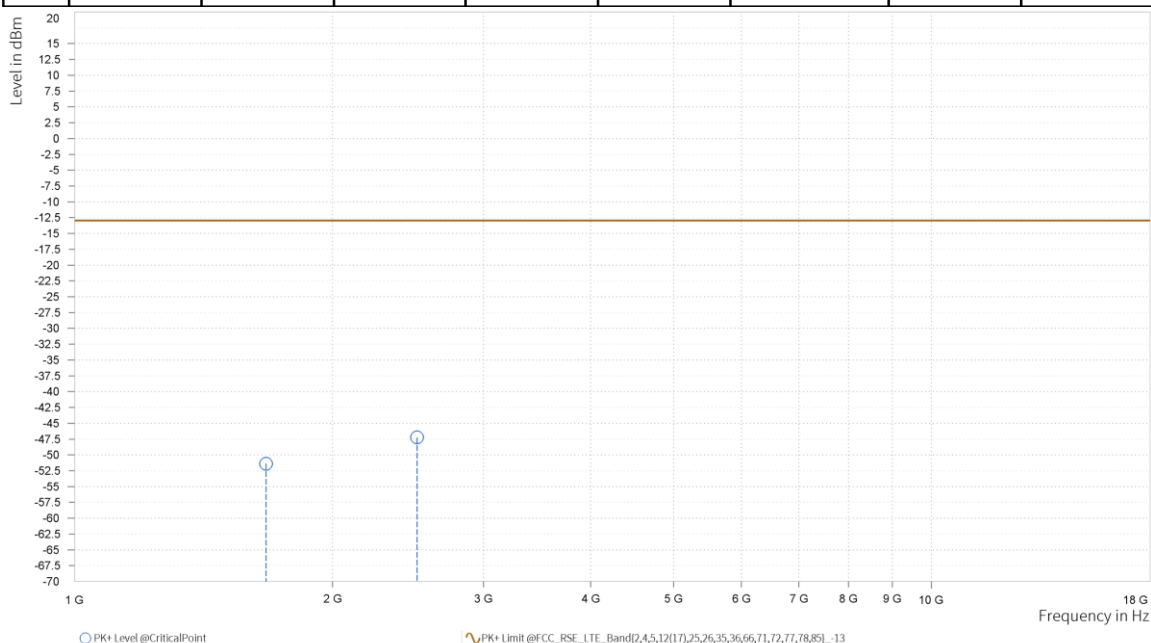




MODE	TX channel 4182	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,672.800	-51.39	-13.00	38.39	19.90	H	70.1	1.00
3	2,509.200	-47.24	-13.00	34.24	23.80	H	134.6	1.00

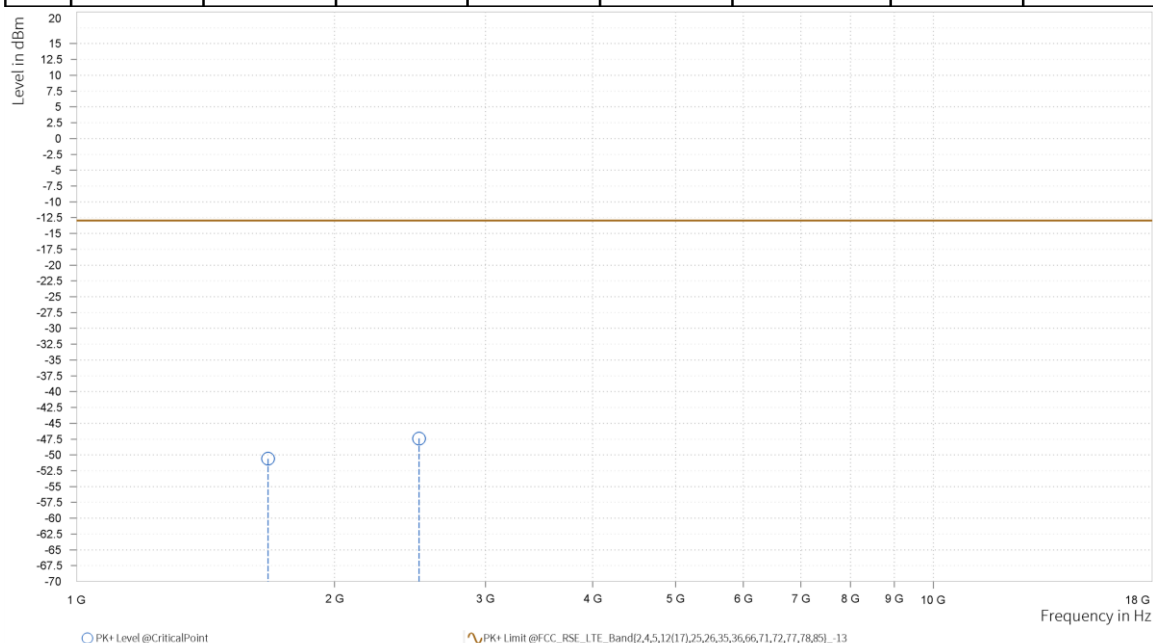




MODE	TX channel 4182	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,672.800	-50.60	-13.00	37.60	19.71	V	291.1	2.00
3	2,509.200	-47.40	-13.00	34.40	23.47	V	0.9	2.00

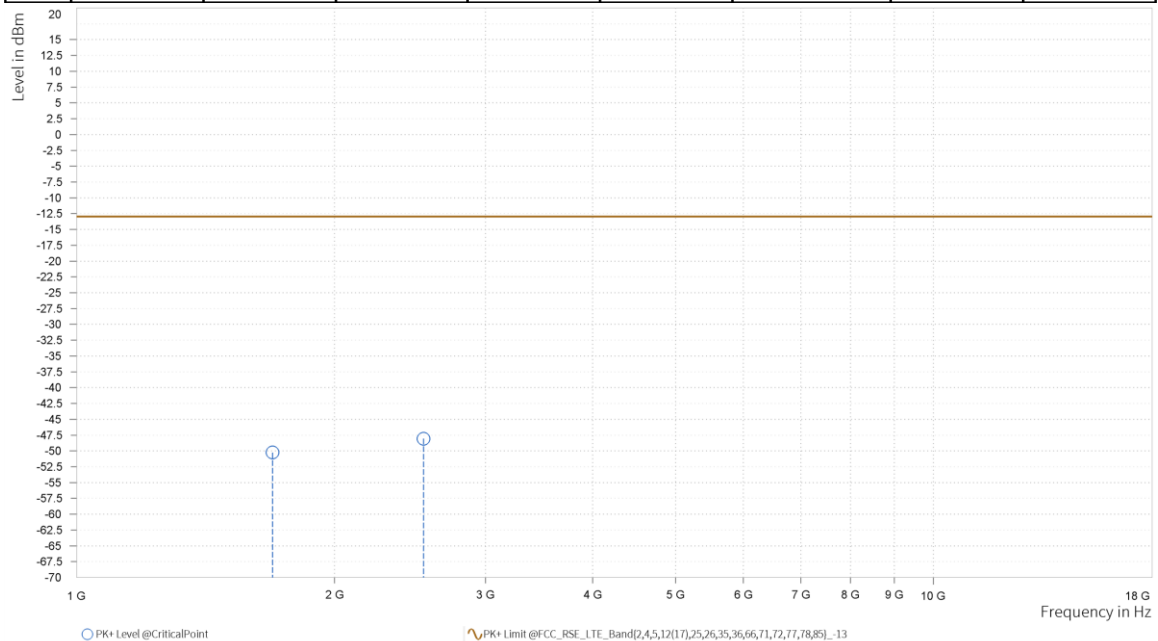




MODE	TX channel 4233	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,693.200	-50.25	-13.00	37.25	20.47	H	359	2.00
3	2,539.800	-48.06	-13.00	35.06	23.38	H	0.9	2.00

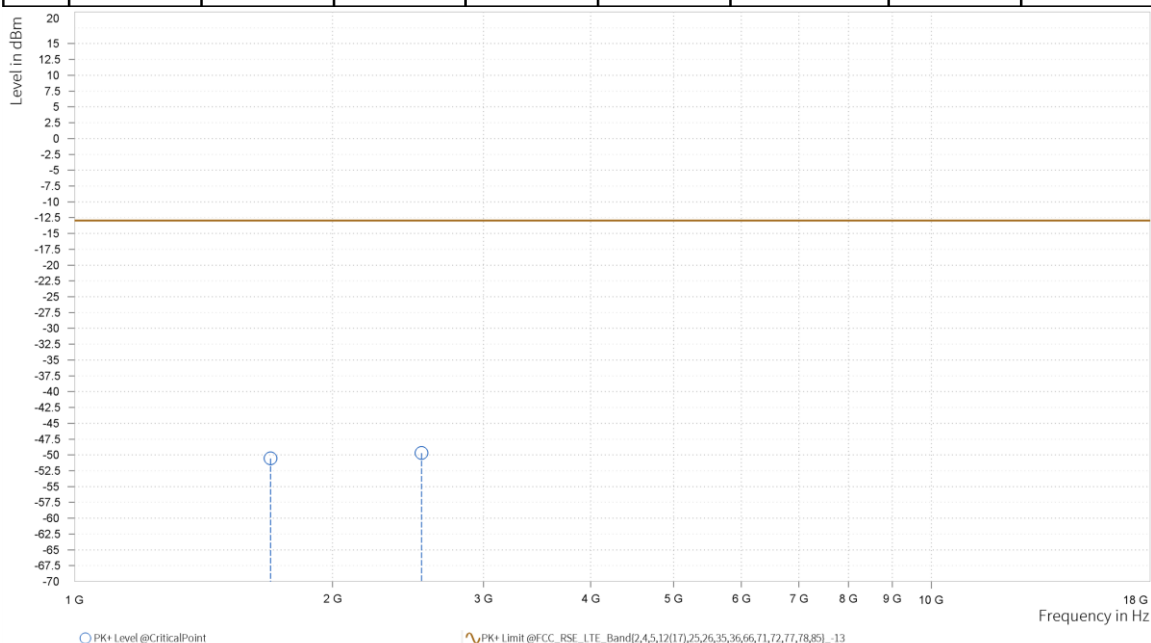




MODE	TX channel 4233	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,693.200	-50.55	-13.00	37.55	20.61	V	291.1	2.00
3	2,539.800	-49.71	-13.00	36.71	23.15	V	359	2.00



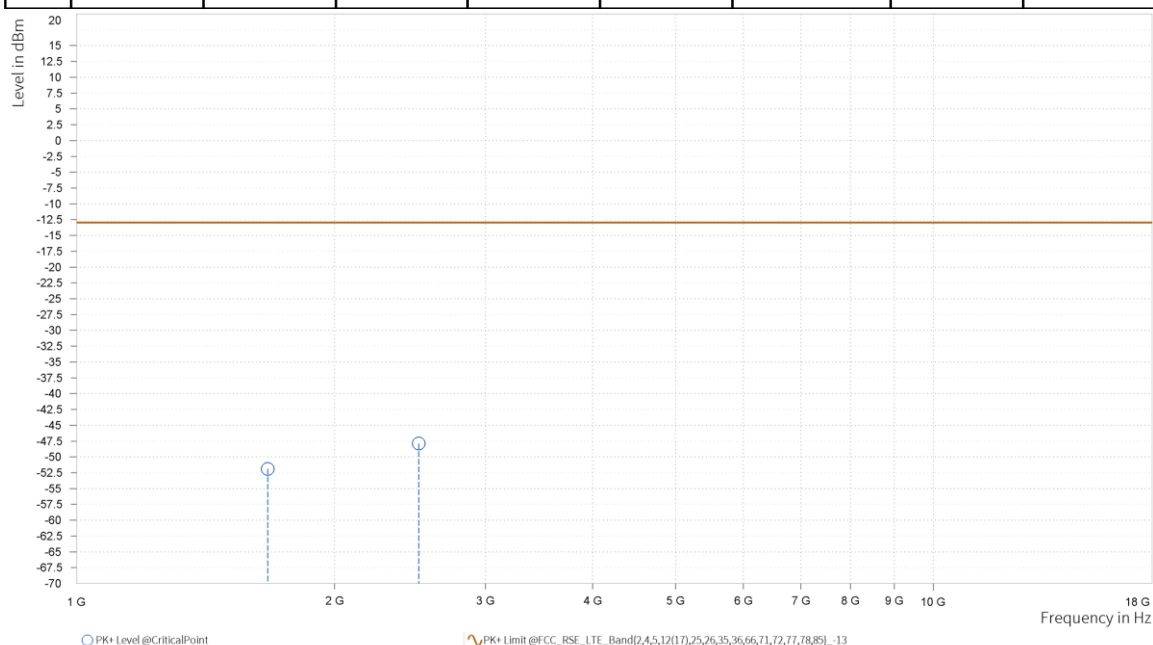


LTE Band 5

CHANNEL BANDWIDTH	1.4MHz/QPSK	MODE	TX channel 20525
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,671.740	-51.88	-13.00	38.88	19.83	H	1	1.00
3	2,507.610	-47.89	-13.00	34.89	23.81	H	227.8	2.00

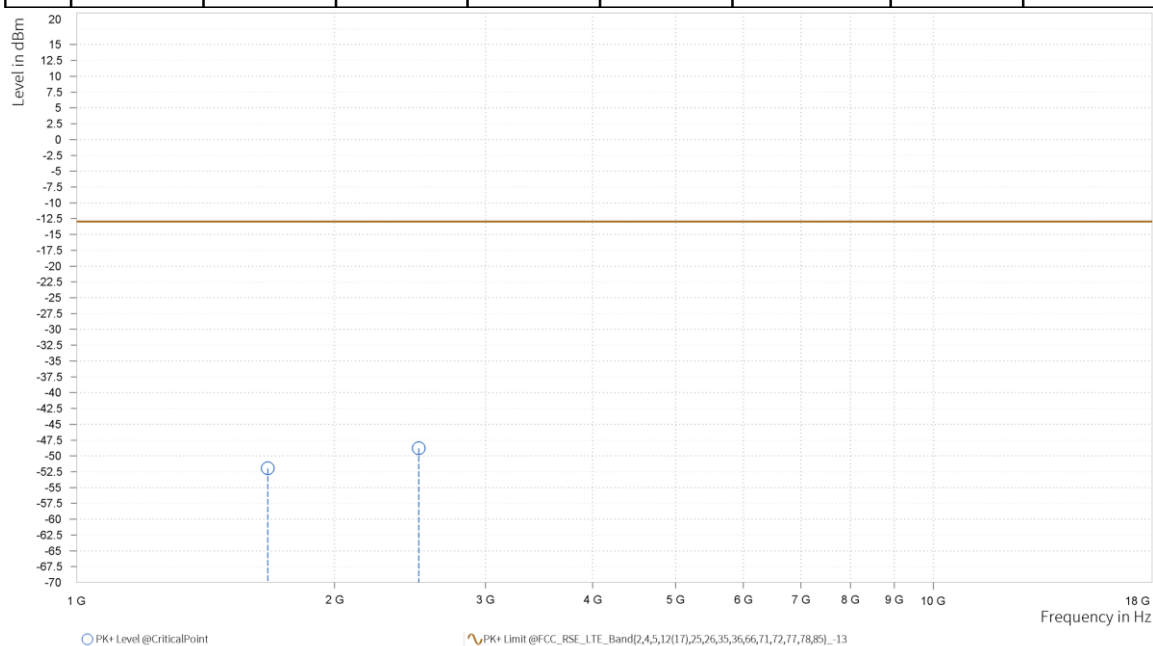




CHANNEL BANDWIDTH	1.4MHz/QPSK	MODE	TX channel 20525
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,671.740	-51.96	-13.00	38.96	19.62	V	0.9	2.00
3	2,507.610	-48.78	-13.00	35.78	23.47	V	137	1.00





CHANNEL BANDWIDTH	3MHz/QPSK	MODE	TX channel 20415
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,648.300	-52.49	-13.00	39.49	18.64	H	290	2.00
3	2,472.450	-47.44	-13.00	34.44	24.40	H	141.8	1.00

