

FCC TEST REPORT

(PART 27)

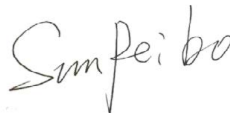
Applicant:	Shenzhen Jimi IoT Co., Ltd.
Address:	3-4/F, Block A, Building #7, Shenzhen International Innovation Valley, Dashi 1st Road, Nanshan District, Shenzhen, Guangdong, China

Manufacturer or Supplier:	Shenzhen Jimi IoT Co., Ltd.
Address:	3-4/F, Block A, Building #7, Shenzhen International Innovation Valley, Dashi 1st Road, Nanshan District, Shenzhen, Guangdong, China
Product:	M2M wireless communication module
Brand Name:	jimiiot
Model Name:	XQ200A/ XQ200A-NA
FCC ID	2AMLF-XQ200A
Date of tests	Jul. 11, 2025~ Aug. 11, 2025

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

☒ FCC Part 27	☒ ANSI/TIA/EIA-603-E
☒ ANSI/TIA/EIA-603-D	☒ ANSI C63.26-2015
☒ FCC Part 2	

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: Aug. 11, 2025	Date: Aug. 11, 2025

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSZ2507090114RF03	Original release	Aug. 11, 2025



1. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 27 & PART 2			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	TEST LAB*
§2.1046	Conducted Output Power	Compliance	A
§27.50(c)(10) §27.50(b)(10)	Effective Radiated Power (Band 12) (Band 17) (Band 71) (Band 13)	Compliance	A
§27.50(d)(4) §27.50(h)(2)	Equivalent Isotropically Radiated Power (WCMDA Band 4)(Band 7)	Compliance	A
§2.1055 §27.54	Frequency Stability	Compliance	A
§2.1049	Occupied Bandwidth	Compliance	A
§2.1051 §27.53(c)(2) §27.53(g) §27.53(h) §27.53(m)(4)	Conducted Band Edge Measurements (WCMDA Band 4) (Band 7) (Band 12) (Band 13) (Band 17) (Band 71)	Compliance	A
§2.1051 §27.53(g) §27.53(c)(2) §27.53(f) §27.53(h) §27.53(m)(4)	Conducted Spurious Emissions (WCMDA Band 4)(Band 7) (Band 12) (Band 13) (Band 17) (Band 71)	Compliance	A
§2.1053 §27.53(c)(2) §27.53(f) §27.53(g) §27.53(h) §27.53(m)(4)	Radiated Spurious Emissions (WCMDA Band 4)(Band 7) (Band 12) (Band 13) (Band 17) (Band 71)	Compliance	A
§27.50	Peak to average ratio*	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, China

Accredited Test Lab Cert 6613.01

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

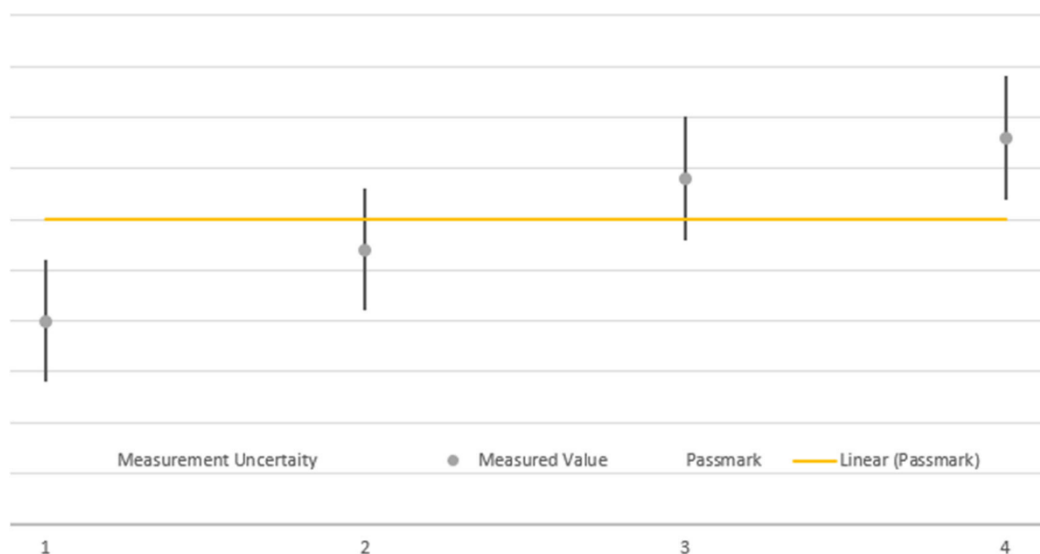


1.1 MEASUREMENT UNCERTAINTY

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
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions (9KHz~30MHz)	$\pm 2.68\text{dB}$
Radiated emissions & Radiated Power (30MHz~1GHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (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	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Band Edge Measurements	$\pm 4.70\text{dB}$

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	Jul.04,25	Jul.03,27
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	Mar.22,25	Mar.21,27
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	Mar.18,25	Mar.17,27
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.26,25	Apr.25,26
CABLE	R&S	W12.14	N/A	Apr.26,25	Apr.25,26
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.26,25	Apr.25,26
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.26,25	Apr.25,26
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26



Test Report No.: PSU-QSZ2507090114RF03

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*	M2M wireless communication module	
BRAND NAME*	jimiit	
MODEL NAME*	XQ200A/ XQ200A-NA	
NOMINAL VOLTAGE*	DC 3.7V	
MODULATION TECHNOLOGY	WCDMA IV	QPSK, 16QAM
	LTE	QPSK, 16QAM
FREQUENCY RANGE	WCDMA IV	1712.4MHz ~ 1752.6MHz
	LTE Band 7 Channel Bandwidth: 5MHz	2502.5MHz ~ 2567.5MHz
	LTE Band 7 Channel Bandwidth: 10MHz	2505MHz ~ 2565MHz
	LTE Band 7 Channel Bandwidth: 15MHz	2507.5MHz ~ 2562.5MHz
	LTE Band 7 Channel Bandwidth: 20MHz	2510MHz ~ 2560MHz
	LTE Band 12 Channel Bandwidth: 1.4MHz	699.7MHz ~ 715.3MHz
	LTE Band 12 Channel Bandwidth: 3MHz	700.5MHz ~ 714.5MHz
	LTE Band 12 Channel Bandwidth: 5MHz	701.5MHz ~ 713.5MHz
	LTE Band 12 Channel Bandwidth: 10MHz	704MHz ~ 711MHz
	LTE Band 13 Channel Bandwidth: 5MHz	779.5MHz ~ 784.5MHz
	LTE Band 13 Channel Bandwidth: 10MHz	782MHz
	LTE Band 17 Channel Bandwidth: 5MHz	706.5MHz ~ 713.5MHz
	LTE Band 17 Channel Bandwidth: 10MHz	709MHz ~ 711 MHz
	LTE Band 71 Channel Bandwidth: 5MHz	665.5MHz ~ 695.5MHz
	LTE Band 71 Channel Bandwidth: 10MHz	668MHz ~ 693MHz
	LTE Band 71 Channel Bandwidth: 15MHz	670.5MHz ~ 690.5MHz
	LTE Band 71 Channel Bandwidth: 20MHz	673MHz ~ 688MHz



MAX. EIRP/ERP POWER	WCDMA IV	688.65mW
	LTE Band 7 Channel Bandwidth: 5MHz	403.65mW
	LTE Band 7 Channel Bandwidth: 10MHz	400.87mW
	LTE Band 7 Channel Bandwidth: 15MHz	408.32mW
	LTE Band 7 Channel Bandwidth: 20MHz	417.83mW
	LTE Band 12 Channel Bandwidth: 1.4MHz	299.92mW
	LTE Band 12 Channel Bandwidth: 3MHz	299.92mW
	LTE Band 12 Channel Bandwidth: 5MHz	303.39mW
	LTE Band 12 Channel Bandwidth: 10MHz	306.90mW
	LTE Band 13 Channel Bandwidth: 5MHz	201.37mW
	LTE Band 13 Channel Bandwidth: 10MHz	201.84mW
	LTE Band 17 Channel Bandwidth: 5MHz	267.30mW
	LTE Band 17 Channel Bandwidth: 10MHz	271.64mW
	LTE Band 71 Channel Bandwidth: 5MHz	272.90mW
	LTE Band 71 Channel Bandwidth: 10MHz	273.53mW
	LTE Band 71 Channel Bandwidth: 15MHz	269.77mW
	LTE Band 71 Channel Bandwidth: 20MHz	275.42mW
EMISSION DESIGNATOR	WCDMA IV	4M15F9W
	LTE Band 7 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M49W7D
	LTE Band 7 Channel Bandwidth: 10MHz	QPSK: 8M96G7D
		16QAM: 8M95W7D
EMISSION DESIGNATOR	LTE Band 7 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
	LTE Band 7 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D



	LTE Band 12 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D
		16QAM: 1M10W7D
	LTE Band 12 Channel Bandwidth: 3MHz	QPSK: 2M70G7D
		16QAM: 2M69W7D
	LTE Band 12 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M49W7D
	LTE Band 12 Channel Bandwidth: 10MHz	QPSK: 8M96G7D
		16QAM: 8M96W7D
	LTE Band 13 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M49W7D
	LTE Band 13 Channel Bandwidth: 10MHz	QPSK: 8M95G7D
		16QAM: 8M94W7D
ANTENNA GAIN*	LTE Band 71 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M50W7D
	LTE Band 71 Channel Bandwidth: 10MHz	QPSK: 8M96G7D
		16QAM: 8M95W7D
	LTE Band 71 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
	CLTE Band 71 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
	WCDMA IV	4.28dBi
	LTE BAND7	3.14dBi
	LTE BAND12	4.11dBi
	LTE BAND13	2.08dBi
ANTENNA TYPE*	LTE BAND17	4.11dBi
	LTE BAND71	1.88dBi
ANTENNA TYPE*	Dipole Antenna, PIFA Antenna	
HW VERSION*	XQ200A_MB_V1.1	
SW VERSION*	XQ200A_XQ200A_WFBW_V1.2_250701.1631	



I/O PORTS*	Refer to user's manual
CABLE SUPPLIED*	N/A
EXTREME TEMPERATURE*	-10°C ~ 55°C
EXTREME VOLTAGE*	3.2V ~ 4.2V

NOTE:

1. *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.
2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

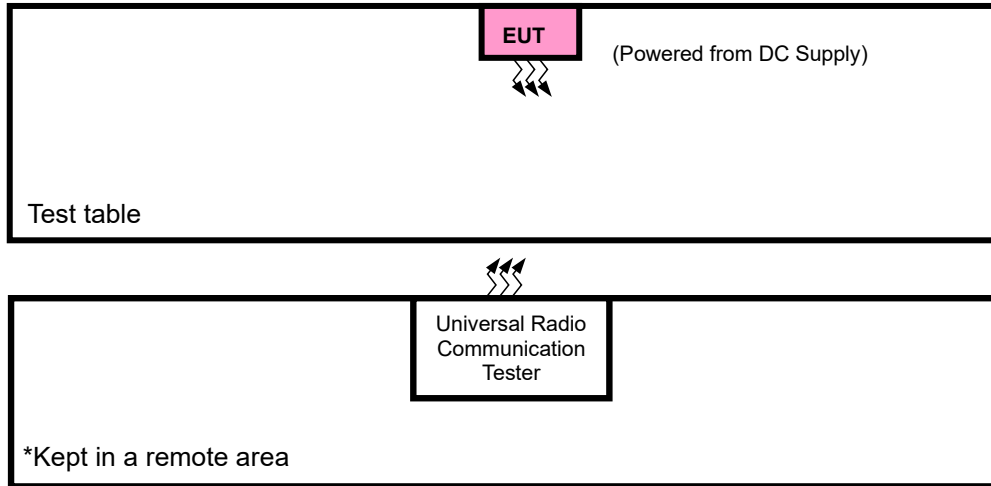
MODULATION MODE	TX FUNCTION
WCDMA	1TX/1RX
LTE	1TX/1RX

4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in the test report.
5. The product XQ200A/XQ200A-NA differences is: XQ200A is a customer variant based on XQ200A-NA. It only has the model name difference. The Specifications, hardware and RF parameters are the same.



2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST





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	DC Source	HYELEC	HY3010B	551016	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	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 was found when positioned on Y-plane for EIRP and X-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + DC Supply with WCDMA or LTE link

WCDMA MODE				
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	EIRP	1312 to 1513	1312, 1413, 1513	WCDMA
A	FREQUENCY STABILITY	1312 to 1513	1312, 1413, 1513	WCDMA
A	OCCUPIED BANDWIDTH	1312 to 1513	1312, 1413, 1513	WCDMA
A	BAND EDGE	1312 to 1513	1312, 1513	WCDMA
A	PEAK TO AVERAGE RATIO	1312 to 1513	1312, 1413, 1513	WCDMA
A	CONDUCTED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA
A	RADIATED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA

LTE BAND 7 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	1 RB / 0 RB offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	1 RB / 0 RB offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	1 RB / 0 RB offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1 RB / 0 RB offset
A	FREQUENCY STABILITY	20850 to 21350	20850, 21100, 21350	20MHz	QPSK	100 RB / 0 RB offset
A	OCCUPIED BANDWIDTH	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	25 RB / 0 RB offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	50 RB / 0 RB offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	75 RB / 0 RB offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	100 RB / 0 RB offset



A	PEAK TO AVERAGE RATIO	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
A	BAND EDGE	20775 to 21425	20775	5MHz	QPSK, 16QAM	1 RB / 0 RB offset 25 RB / 0 RB offset
			21425	5MHz	QPSK, 16QAM	1 RB / 24 RB offset 25 RB / 0 RB offset
		20800 to 21400	20800	10MHz	QPSK, 16QAM	1 RB / 0 RB offset 50 RB / 0 RB offset
			21400	10MHz	QPSK, 16QAM	1 RB / 49 RB offset 50 RB / 0 RB offset
		20825 to 21375	20825	15MHz	QPSK, 16QAM	1 RB / 0 RB offset 75 RB / 0 RB offset
			21375	15MHz	QPSK, 16QAM	1 RB / 74 RB offset 75 RB / 0 RB offset
		20850 to 21350	20850	20MHz	QPSK, 16QAM	1 RB / 0 RB offset 100 RB / 0 RB offset
			21350	20MHz	QPSK, 16QAM	1 RB / 99 RB offset 100 RB / 0 RB offset
A	CONDCUDETED EMISSION	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	1 RB / 0 RB offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	1 RB / 0RB offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	1 RB / 0 RB offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1 RB / 0 RB offset
A	RADIATED EMISSION	20775 to 21425	21100	5MHz	QPSK	1 RB / 0 RB offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK	1 RB / 0 RB offset
		20825 to 21375	21100	15MHz	QPSK	1 RB / 0 RB offset
		20850 to 21350	21100	20MHz	QPSK	1 RB / 0 RB offset

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



LTE BAND 12 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK, 16QAM	1 RB / 0 RB offset
		23025 to 23165	23025, 23095 ,23165	3MHz	QPSK, 16QAM	1 RB / 0 RB offset
		23035 to 23155	23035, 23095 ,23155	5MHz	QPSK, 16QAM	1 RB / 0 RB offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK, 16QAM	1 RB / 0 RB offset
A	FREQUENCY STABILITY	23060 to 23130	23060, 23095 ,23130	10MHz	QPSK	50 RB / 0 RB offset
A	OCCUPIED BANDWIDTH	23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK, 16QAM	6 RB / 0 RB offset
		23025 to 23165	23025, 23095 ,23165	3MHz	QPSK, 16QAM	15 RB / 0 RB offset
		23035 to 23155	23035, 23095 ,23155	5MHz	QPSK, 16QAM	25 RB / 0 RB offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK, 16QAM	50 RB / 0 RB offset
A	PEAK TO AVERAGE RATIO	23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		23025 to 23165	23025, 23095 ,23165	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		23035 to 23155	23035, 23095 ,23155	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
A	BAND EDGE	23017 to 23173	23017	1.4MHz	QPSK, 16QAM	1 RB / 0 RB offset 6 RB / 0 RB offset
			23173	1.4MHz	QPSK, 16QAM	1 RB / 5 RB offset 6 RB / 0 RB offset
		23025 to 23165	23025	3MHz	QPSK, 16QAM	1 RB / 0 RB offset 15 RB / 0 RB offset
			23165	3MHz	QPSK, 16QAM	1 RB / 14 RB offset 15 RB / 0 RB offset
		23035 to 23155	23035	5MHz	QPSK, 16QAM	1 RB / 0 RB offset 25 RB / 0 RB offset
			23155	5MHz	QPSK, 16QAM	1 RB / 24 RB offset 25 RB / 0 RB offset
		23060 to 23130	23060	10MHz	QPSK, 16QAM	1 RB / 0 RB offset 50 RB / 0 RB offset
			23130	10MHz	QPSK, 16QAM	1 RB / 49 RB offset 50 RB / 0 RB offset
A	CONDCUDED EMISSION	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	1 RB / 0 RB offset
		23025 to 23165	23025, 23095 ,23165	3MHz	QPSK, 16QAM	1 RB / 0 RB offset
		23035 to 23155	23035, 23095 ,23155	5MHz	QPSK, 16QAM	1 RB / 0 RB offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK, 16QAM	1 RB / 0 RB offset
A	RADIATED EMISSION	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK	1 RB / 0 RB offset
		23025 to 23165	23095	3MHz	QPSK	1 RB / 0 RB offset
		23035 to 23155	23095	5MHz	QPSK	1 RB / 0 RB offset
		23060 to 23130	23095	10MHz	QPSK	1 RB / 0 RB offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst



case was found in QPSK modulation.

LTE BAND 13 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB / 0 RB offset
		23230	23230	10MHz	QPSK, 16QAM	1 RB / 0 RB offset
AA	FREQUENCY STABILITY	23230	23230	10MHz	QPSK	50 RB / 0 RB offset
A	OCCUPIED BANDWIDTH	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	25 RB / 0 RB offset
		23230	23230	10MHz	QPSK, 16QAM	50 RB / 0 RB offset
A	PEAK TO AVERAGE RATIO	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB / 0 RB offset 25RB / 0 RB offset
		23230	23230	10MHz	QPSK, 16QAM	1 RB / 0 RB offset 50 RB / 0 RB offset
A	BAND EDGE	23205 to 23255	23205	5MHz	QPSK, 16QAM	1 RB / 0 RB offset 25 RB / 0 RB offset
			23255	5MHz	QPSK, 16QAM	1 RB / 24 RB offset 25 RB / 0 RB offset
		23230	23230	10MHz	QPSK, 16QAM	1 RB / 0 RB offset 1 RB / 49 RB offset 50 RB / 0 RB offset
A	CONDCUDED EMISSION	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB / 0 RB offset
		23230	23230	10MHz	QPSK, 16QAM	1 RB / 0 RB offset
A	RADIATED EMISSION	23205 to 23255	23205, 23230, 23255	5MHz	QPSK	1 RB / 0 RB offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB offset

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



LTE BAND 17 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	23755 to 23825	23755, 23790, 23825	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB offset
		23780 to 23800	23780, 23790, 23800	10MHz	QPSK,16QAM,64QAM	1 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.
2. LTE Band 17 are covered by LTE Band 12, Because it is a subset of LTE Band 12 with the same output power and supported bandwidths, So the conducted test data and RSE test data please refer to LTE Band 12.

LTE BAND 71 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	133147 to 133447	133147, 133297, 133447	5MHz	QPSK,16QAM	1 RB / 0 RB offset
		133172 to 133422	133172, 133297 133422	10MHz	QPSK,16QAM	1 RB / 0 RB offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM	1 RB / 0 RB offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM	1 RB / 0 RB offset
A	FREQUENCY STABILITY	133222 to 133372	133222, 133322, 133372	20MHz	QPSK	100 RB / 0 RB offset
A	OCCUPIED BANDWIDTH	133147 to 133447	133147, 133297, 133447	5MHz	QPSK,16QAM	25 RB / 0 RB offset
		133172 to 133422	133172, 133297 133422	10MHz	QPSK,16QAM	50 RB / 0 RB offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM	75 RB / 0 RB offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM	100 RB / 0 RB offset
A	PEAK TO AVERAGE RATIO	133147 to 133447	133147, 133297, 133447	5MHz	QPSK,16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		133172 to 133422	133172, 133297 133422	10MHz	QPSK,16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
A	BAND EDGE	133147 to 133447	133147	5MHz	QPSK,16QAM	1 RB / 0 RB offset



						25 RB / 0 RB offset
			133447	5MHz	QPSK,16QAM	1 RB / 24 RB offset
		133172 to 133422	133172	10MHz	QPSK,16QAM	25 RB / 0 RB offset
						1 RB / 0 RB offset
			133422	10MHz	QPSK,16QAM	50 RB / 0 RB offset
						1 RB / 49 RB offset
		133197 to 133397	133197	15MHz	QPSK,16QAM	50 RB / 0 RB offset
						1 RB / 0 RB offset
			133397	15MHz	QPSK,16QAM	75 RB / 0 RB offset
						1 RB / 74 RB offset
		133222 to 133372	133222	20MHz	QPSK,16QAM	75 RB / 0 RB offset
						1 RB / 0 RB offset
A	CONDCUDED EMISSION	133147 to 133447	133147, 133297, 133447	5MHz	QPSK,16QAM	100 RB / 0 RB offset
		133172 to 133422	133172, 133297 133422	10MHz	QPSK,16QAM	1 RB / 99 RB offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM	100 RB / 0 RB offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM	1 RB / 0 RB offset
A	RADIATED EMISSION	133147 to 133447	133147, 133297, 133447	5MHz	QPSK	1 RB / 0 RB offset
		133172 to 133422	133297	10MHz	QPSK	1 RB / 0 RB offset
		133197 to 133397	133297	15MHz	QPSK	1 RB / 0 RB offset
		133222 to 133372	133322	20MHz	QPSK	1 RB / 0 RB offset

Note: 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 3.7V By DC Source	Hanwen Xu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.2V/ 3.7V/ 4.2V By DC Source	Hanwen Xu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 3.7V By DC Source	Hanwen Xu
BAND EDGE	23deg. C, 70%RH	DC 3.7V By DC Source	Hanwen Xu
CONDCUDETED EMISSION	23deg. C, 70%RH	DC 3.7V By DC Source	Hanwen Xu
RADIATED EMISSION	23deg. C, 70%RH	DC 3.7V By DC Source	Hanwen Xu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 3.7V By DC Source	Hanwen Xu



2.5 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 27

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

§27.50(d)(4): WCMDAB4

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.

§27.50(h)(2) : LTEB7

The radiated peak output power shall be according to the specific rule Part 27.50(h)(2) that “User stations are limited to 2 watts” and 27.50(i) specific that “Peak transmit power must be measure over any interval of continuous transmission using instrumentation calibration in terms of rms-equivalent voltage.

§27.50(c)(10): LTE B12/71/17

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

§27.50(b)(10): LTEB13

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

3.1.2 TEST PROCEDURES

EIRP 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);

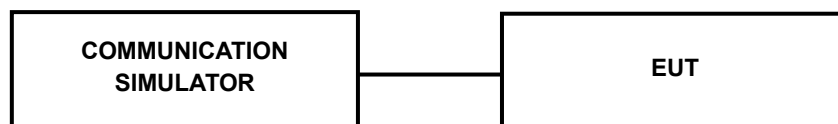
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

CONDUCTED POWER MEASUREMENT:

- The EUT was set up for the maximum power with LTE 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

CONDUCTED POWER MEASUREMENT:



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



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA IV		
TX Channel	1312	1413	1513
Rx Channel	1537	1638	1738
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	24.10	23.76	23.45
HSDPA Subtest-1	23.95	23.66	23.42
HSDPA Subtest-2	24.05	23.62	23.30
HSDPA Subtest-3	23.62	23.69	22.96
HSDPA Subtest-4	23.55	23.62	22.82
DC-HSDPA Subtest-1	23.95	23.65	23.36
DC-HSDPA Subtest-2	24.00	23.63	23.42
DC-HSDPA Subtest-3	23.57	23.60	22.81
DC-HSDPA Subtest-4	23.56	23.63	22.81
HSUPA Subtest-1	24.04	23.71	23.43
HSUPA Subtest-2	22.15	21.77	21.49
HSUPA Subtest-3	22.09	22.74	22.42
HSUPA Subtest-4	22.08	21.68	21.36
HSUPA Subtest-5	24.03	23.73	23.35
HSPA+ Subtest-1	21.61	21.22	20.85



LTE Band 7						
BW [MHz]	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20850	21100	21350
		Frequency (MHz)		2510	2535	2560
20	QPSK	1	0	22.62	22.64	22.67
		1	50	22.64	23.07	22.61
		1	99	22.43	22.76	22.03
		50	0	21.73	21.82	21.79
		50	25	21.60	22.02	21.78
		50	50	21.65	21.82	21.48
		100	0	21.30	21.88	21.68
	16QAM	1	0	21.97	21.93	22.09
		1	50	21.92	22.30	22.07
		1	99	21.76	22.06	21.42
		50	0	20.74	20.95	20.96
		50	25	20.72	21.13	20.87
		50	50	20.69	21.01	20.65
		100	0	20.42	20.98	20.75
BW [MHz]	Modulation	Channel		20825	21100	21375
		Frequency (MHz)		2507.5	2535	2562.5
15	QPSK	1	0	22.60	22.51	22.59
		1	37	22.62	22.97	22.46
		1	74	22.30	22.75	22.28
		36	0	21.70	21.81	21.74
		36	19	21.56	21.87	21.66
		36	39	21.50	21.80	21.46
		75	0	21.21	21.74	21.67
	16QAM	1	0	21.94	21.79	21.96
		1	37	21.87	22.15	21.92
		1	74	21.65	22.01	21.41
		36	0	20.72	20.82	20.85
		36	19	20.60	20.98	20.86
		36	39	20.59	20.90	20.53
		75	0	20.36	20.89	20.63



LTE Band 7						
BW [MHz]	Modulation	Channel		20800	21100	21400
		Frequency (MHz)		2505	2535	2565
10	QPSK	1	0	22.45	22.40	22.52
		1	24	22.58	22.89	22.39
		1	49	22.28	22.61	22.18
		25	0	21.58	21.74	21.63
		25	12	21.46	21.73	21.51
		25	25	21.44	21.78	21.31
		50	0	21.14	21.70	21.54
	16QAM	1	0	21.93	21.71	21.95
		1	24	21.78	22.05	21.90
		1	49	21.52	21.91	21.34
		25	0	20.63	20.71	20.72
		25	12	20.59	20.95	20.75
		25	25	20.44	20.82	20.40
		50	0	20.23	20.85	20.56
BW [MHz]	Modulation	Channel		20775	21100	21425
		Frequency (MHz)		2502.5	2535	2567.5
5	QPSK	1	0	22.59	22.50	22.54
		1	12	22.54	22.92	22.42
		1	24	22.21	22.61	22.21
		12	0	21.67	21.66	21.66
		12	6	21.47	21.82	21.62
		12	13	21.45	21.66	21.37
		25	0	21.12	21.72	21.55
	16QAM	1	0	21.79	21.72	21.81
		1	12	21.85	22.13	21.82
		1	24	21.51	21.94	21.32
		12	0	20.62	20.79	20.73
		12	6	20.45	20.88	20.79
		12	13	20.44	20.86	20.39
		25	0	20.23	20.79	20.61



LTE Band 12						
BW [MHz]	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		23060	23095	23130
		Frequency (MHz)		704	707.5	711
10	QPSK	1	0	22.16	22.69	22.45
		1	24	22.91	22.53	22.26
		1	49	22.15	22.46	22.43
		25	0	21.51	21.68	21.21
		25	12	21.88	21.62	21.10
		25	25	21.62	21.13	21.42
		50	0	21.58	21.39	21.65
	16QAM	1	0	21.42	22.02	21.74
		1	24	22.26	21.85	21.56
		1	49	21.55	21.08	21.05
		25	0	20.60	20.77	20.31
		25	12	20.97	20.73	20.21
		25	25	20.72	20.25	20.53
		50	0	20.67	20.50	20.06
BW [MHz]	Modulation	Channel		23035	23095	23155
		Frequency (MHz)		701.5	707.5	713.5
5	QPSK	1	0	22.10	22.56	22.36
		1	12	22.86	22.39	22.21
		1	24	22.13	22.43	22.32
		12	0	21.37	21.60	21.08
		12	6	21.86	21.56	21.03
		12	13	21.57	21.70	21.33
		25	0	21.52	21.28	21.60
	16QAM	1	0	21.29	21.98	21.71
		1	12	22.17	21.71	21.54
		1	24	21.47	21.01	21.60
		12	0	20.50	20.67	20.17
		12	6	20.83	20.64	20.17
		12	13	20.63	20.16	20.46
		25	0	20.58	20.49	20.70



LTE Band 12						
BW [MHz]	Modulation	Channel		23025	23095	23165
		Frequency (MHz)		700.5	707.5	714.5
3	QPSK	1	0	22.03	22.43	22.35
		1	7	22.81	22.34	22.13
		1	14	22.02	22.40	22.22
		8	0	21.35	21.47	21.02
		8	3	21.75	21.47	21.01
		8	7	21.50	21.67	21.23
		15	0	21.39	21.21	21.51
	16QAM	1	0	21.14	21.89	21.62
		1	7	22.13	21.59	21.41
		1	14	21.46	21.57	21.52
		8	0	20.46	20.55	20.12
		8	3	20.74	20.50	20.13
		8	7	20.49	20.13	20.35
		15	0	20.55	20.44	20.68
BW [MHz]	Modulation	Channel		23017	23095	23173
		Frequency (MHz)		699.7	707.5	715.3
1.4	QPSK	1	0	22.66	22.43	22.26
		1	2	22.81	22.17	22.09
		1	5	22.57	22.24	22.13
		3	0	22.01	22.28	22.43
		3	1	22.48	22.24	22.40
		3	3	22.21	22.38	22.13
		6	0	21.41	21.15	21.41
	16QAM	1	0	21.19	21.84	21.52
		1	2	21.95	21.55	21.31
		1	5	21.27	21.57	21.50
		3	0	21.26	21.36	21.52
		3	1	21.58	21.30	21.49
		3	3	21.32	21.62	21.04
		6	0	20.44	20.24	20.45



LTE Band 13						
BW [MHz]	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel			23230	
		Frequency (MHz)			782	
10	QPSK	1	0	/	23.12	/
		1	24	/	22.53	/
		1	49	/	22.66	/
		25	0	/	21.97	/
		25	12	/	21.61	/
		25	25	/	21.59	/
		50	0	/	21.44	/
	16QAM	1	0	/	22.23	/
		1	24	/	21.82	/
		1	49	/	21.94	/
		25	0	/	21.06	/
		25	12	/	20.52	/
		25	25	/	20.50	/
		50	0	/	20.35	/
BW [MHz]	Modulation	Channel		23205	23230	23255
		Frequency (MHz)		779.5	782	784.5
5	QPSK	1	0	23.02	23.11	23.10
		1	12	22.39	22.42	22.44
		1	24	22.65	22.57	22.56
		12	0	21.95	21.82	21.83
		12	6	21.51	21.57	21.51
		12	13	21.57	21.46	21.50
		25	0	21.39	21.35	21.36
	16QAM	1	0	22.17	22.22	22.20
		1	12	21.76	21.75	21.71
		1	24	21.80	21.88	21.83
		12	0	21.00	20.94	21.03
		12	6	20.38	20.46	20.37
		12	13	20.38	20.44	20.42
		25	0	20.30	20.30	20.31



LTE Band 17						
BW [MHz]	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		23780	23790	23800
		Frequency (MHz)		709	710	711
10	QPSK	1	0	22.37	22.29	22.14
		1	24	22.09	22.33	22.38
		1	49	22.13	22.21	22.16
		25	0	21.21	21.11	21.45
		25	12	21.06	21.39	21.26
		25	25	21.08	21.03	21.05
		50	0	21.33	21.18	21.14
	16QAM	1	0	21.63	21.65	21.59
		1	24	21.50	21.32	21.19
		1	49	21.13	21.01	21.05
		25	0	20.23	20.18	20.04
		25	12	20.15	20.47	20.36
		25	25	20.20	20.16	20.07
		50	0	20.43	20.23	20.21
BW [MHz]	Modulation	Channel		23755	23790	23825
		Frequency (MHz)		706.5	710	713.5
5	QPSK	1	0	22.22	22.20	22.23
		1	12	22.02	22.23	22.25
		1	24	22.31	22.09	22.01
		12	0	21.07	21.01	21.35
		12	6	21.42	21.31	21.14
		12	13	21.43	21.01	21.47
		25	0	21.25	21.10	21.06
	16QAM	1	0	21.58	21.50	21.54
		1	12	21.35	21.30	21.08
		1	24	21.07	21.40	21.02
		12	0	20.09	20.06	20.48
		12	6	20.08	20.36	20.35
		12	13	20.06	20.02	20.47
		25	0	20.28	20.19	20.14



LTE Band 71						
BW [MHz]	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		133222	133322	133372
		Frequency (MHz)		673	683	688
20	QPSK	1	0	22.04	22.34	22.05
		1	50	22.09	22.48	22.52
		1	99	22.30	22.28	22.19
		50	0	21.13	21.05	21.23
		50	25	21.03	21.33	21.41
		50	50	21.12	21.25	21.35
		100	0	21.24	21.10	21.27
	16QAM	1	0	21.34	21.25	21.39
		1	50	21.18	21.73	21.76
		1	99	21.58	21.57	21.45
		50	0	20.06	20.12	20.39
		50	25	20.32	20.47	20.57
		50	50	20.11	20.41	20.52
		100	0	20.07	20.23	20.42
BW [MHz]	Modulation	Channel		133197	133297	133397
		Frequency (MHz)		670.5	680.5	690.5
15	QPSK	1	0	22.12	22.05	22.01
		1	37	22.08	22.43	22.40
		1	74	22.29	22.17	22.10
		36	0	21.12	21.17	21.20
		36	19	21.07	21.18	21.39
		36	39	21.15	21.13	21.22
		75	0	21.03	21.16	21.15
	16QAM	1	0	21.28	21.06	21.37
		1	37	21.24	21.61	21.65
		1	74	21.57	21.55	21.30
		36	0	20.02	20.14	20.31
		36	19	20.08	20.44	20.56
		36	39	20.13	20.28	20.47
		75	0	20.11	20.11	20.37



LTE Band 71						
BW [MHz]	Modulation	Channel		133172	133297	133422
		Frequency (MHz)		668	680.5	693
10	QPSK	1	0	22.01	22.15	22.04
		1	24	22.09	22.40	22.49
		1	49	22.21	22.22	22.14
		25	0	21.18	21.13	21.21
		25	12	21.05	21.23	21.29
		25	25	21.11	21.13	21.21
		50	0	21.14	21.03	21.16
	16QAM	1	0	21.26	21.18	21.27
		1	24	21.13	21.71	21.63
		1	49	21.49	21.46	21.40
		25	0	20.05	20.10	20.38
		25	12	20.13	20.37	20.51
		25	25	20.07	20.32	20.49
		50	0	20.11	20.17	20.27
BW [MHz]	Modulation	Channel		133147	133297	133447
		Frequency (MHz)		665.5	680.5	695.5
5	QPSK	1	0	22.16	22.08	22.19
		1	12	22.03	22.29	22.48
		1	24	22.09	22.13	22.09
		12	0	21.18	21.07	21.09
		12	6	21.16	21.11	21.26
		12	13	21.17	21.03	21.18
		25	0	21.12	21.05	21.09
	16QAM	1	0	21.13	21.06	21.17
		1	12	21.25	21.63	21.51
		1	24	21.41	21.35	21.32
		12	0	20.17	20.04	20.36
		12	6	20.14	20.23	20.41
		12	13	20.08	20.17	20.35
		25	0	20.27	20.03	20.22



ERP/EIRP

WCDMA IV						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
1312	1712.4	24.10	4.28	28.38	688.65	1
1413	1732.6	23.76	4.28	28.04	636.80	1
1513	1752.6	23.45	4.28	27.73	592.93	1



LTE Band 7							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-QPSK	20850	2510	22.64	3.14	25.78	378.44	2
	21100	2535	23.07	3.14	26.21	417.83	2
	21350	2560	22.67	3.14	25.81	381.07	2
20M- 16QAM	20850	2510	21.97	3.14	25.11	324.34	2
	21100	2535	22.30	3.14	25.44	349.95	2
	21350	2560	22.09	3.14	25.23	333.43	2
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	20825	2507.5	22.62	3.14	25.76	376.70	2
	21100	2535	22.97	3.14	26.11	408.32	2
	21375	2562.5	22.59	3.14	25.73	374.11	2
15M- 16QAM	20825	2507.5	21.94	3.14	25.08	322.11	2
	21100	2535	22.15	3.14	25.29	338.06	2
	21375	2562.5	21.96	3.14	25.10	323.59	2
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	20800	2505	22.58	3.14	25.72	373.25	2
	21100	2535	22.89	3.14	26.03	400.87	2
	21400	2565	22.52	3.14	25.66	368.13	2
10M- 16QAM	20800	2505	21.93	3.14	25.07	321.37	2
	21100	2535	22.05	3.14	25.19	330.37	2
	21400	2565	21.95	3.14	25.09	322.85	2
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
5M-QPSK	20775	2502.5	22.59	3.14	25.73	374.11	2
	21100	2535	22.92	3.14	26.06	403.65	2
	21425	2567.5	22.54	3.14	25.68	369.83	2
5M-16QAM	20775	2502.5	21.85	3.14	24.99	315.50	2
	21100	2535	22.13	3.14	25.27	336.51	2
	21425	2567.5	21.82	3.14	24.96	313.33	2



LTE Band 12							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
10M-QPSK	23060	704	22.91	4.11	24.87	306.90	3
	23095	707.5	22.69	4.11	24.65	291.74	3
	23130	711	22.45	4.11	24.41	276.06	3
10M- 16QAM	23060	704	22.26	4.11	24.22	264.24	3
	23095	707.5	22.02	4.11	23.98	250.03	3
	23130	711	21.74	4.11	23.70	234.42	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
5M-QPSK	23035	701.5	22.86	4.11	24.82	303.39	3
	23095	707.5	22.56	4.11	24.52	283.14	3
	23155	713.5	22.36	4.11	24.32	270.40	3
5M-16QAM	23035	701.5	22.17	4.11	24.13	258.82	3
	23095	707.5	21.98	4.11	23.94	247.74	3
	23155	713.5	21.71	4.11	23.67	232.81	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
3M-QPSK	23025	700.5	22.81	4.11	24.77	299.92	3
	23095	707.5	22.43	4.11	24.39	274.79	3
	23165	714.5	22.35	4.11	24.31	269.77	3
3M-16QAM	23025	700.5	22.13	4.11	24.09	256.45	3
	23095	707.5	21.89	4.11	23.85	242.66	3
	23165	714.5	21.62	4.11	23.58	228.03	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
1.4M- QPSK	23017	699.7	22.81	4.11	24.77	299.92	3
	23095	707.5	22.43	4.11	24.39	274.79	3
	23173	715.3	22.43	4.11	24.39	274.79	3
1.4M- 16QAM	23017	699.7	21.95	4.11	23.91	246.04	3
	23095	707.5	21.84	4.11	23.80	239.88	3
	23173	715.3	21.52	4.11	23.48	222.84	3



LTE Band 13							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
10M-QPSK	23230	782	23.12	2.08	23.05	201.84	3
10M- 16QAM	23230	782	22.23	2.08	22.16	164.44	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
5M-QPSK	23205	779.5	23.02	2.08	22.95	197.24	3
	23230	782	23.11	2.08	23.04	201.37	3
	23255	784.5	23.10	2.08	23.03	200.91	3
5M-16QAM	23205	779.5	22.17	2.08	22.10	162.18	3
	23230	782	22.22	2.08	22.15	164.06	3
	23255	784.5	22.20	2.08	22.13	163.31	3

LTE Band 17							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
10M-QPSK	23780	709	22.37	4.11	24.33	271.02	3
	23790	710	22.33	4.11	24.29	268.53	3
	23800	711	22.38	4.11	24.34	271.64	3
10M- 16QAM	23780	709	21.63	4.11	23.59	228.56	3
	23790	710	21.65	4.11	23.61	229.61	3
	23800	711	21.59	4.11	23.55	226.46	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
5M-QPSK	23755	706.5	22.31	4.11	24.27	267.30	3
	23790	710	22.23	4.11	24.19	262.42	3
	23825	713.5	22.25	4.11	24.21	263.63	3
5M-16QAM	23755	706.5	21.58	4.11	23.54	225.94	3
	23790	710	21.50	4.11	23.46	221.82	3
	23825	713.5	21.54	4.11	23.50	223.87	3



LTE Band 71							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-QPSK	133222	673	22.30	1.88	24.18	261.82	3
	133322	683	22.48	1.88	24.36	272.90	3
	133372	688	22.52	1.88	24.40	275.42	3
20M- 16QAM	133222	673	21.58	1.88	23.46	221.82	3
	133322	683	21.73	1.88	23.61	229.61	3
	133372	688	21.76	1.88	23.64	231.21	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	133197	670.5	22.29	1.88	24.17	261.22	3
	133297	680.5	22.43	1.88	24.31	269.77	3
	133397	690.5	22.40	1.88	24.28	267.92	3
15M- 16QAM	133197	670.5	21.57	1.88	23.45	221.31	3
	133297	680.5	21.61	1.88	23.49	223.36	3
	133397	690.5	21.65	1.88	23.53	225.42	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	133172	668	22.21	1.88	24.09	256.45	3
	133297	680.5	22.40	1.88	24.28	267.92	3
	133422	693	22.49	1.88	24.37	273.53	3
10M- 16QAM	133172	668	21.49	1.88	23.37	217.27	3
	133297	680.5	21.71	1.88	23.59	228.56	3
	133422	693	21.63	1.88	23.51	224.39	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
5M-QPSK	133147	665.5	22.16	1.88	24.04	253.51	3
	133297	680.5	22.29	1.88	24.17	261.22	3
	133447	695.5	22.48	1.88	24.36	272.90	3
5M-16QAM	133147	665.5	21.41	1.88	23.29	213.30	3
	133297	680.5	21.63	1.88	23.51	224.39	3
	133447	695.5	21.51	1.88	23.39	218.27	3

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



3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

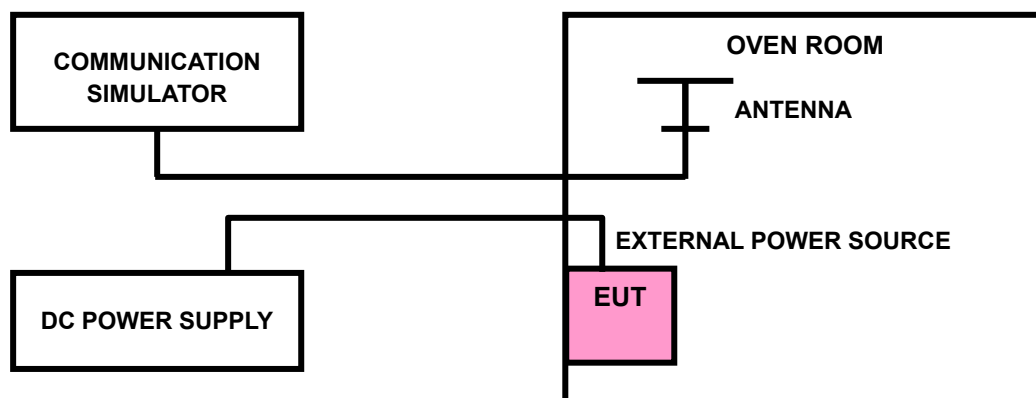
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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.

3.3.3 TEST SETUP



3.2.3 TEST RESULTS

Please Refer to Appendix of this test report.

Note: VL = Low voltage(3.2V); VN/NV = Normal voltage(3.7V); VH = High voltage(4.2V); NT = Normal temperature (25°C)

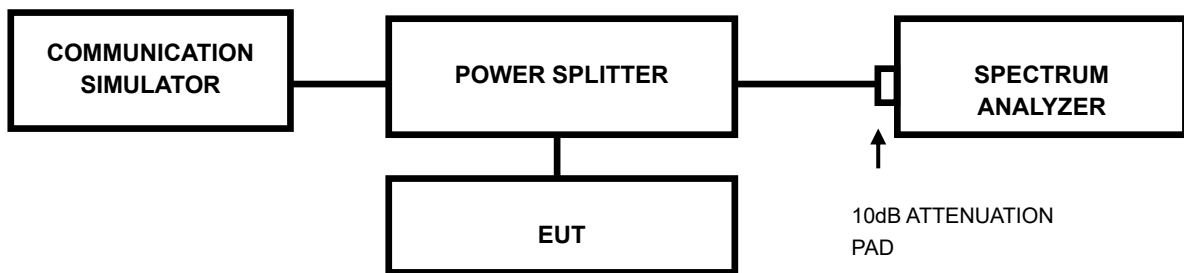


3.3 OCCUPIED BANDWIDTH MEASUREMENT

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

According to FCC 27.53(g) specified that For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

According to FCC 27.53(h) specified that For operations in the 1710-1755 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

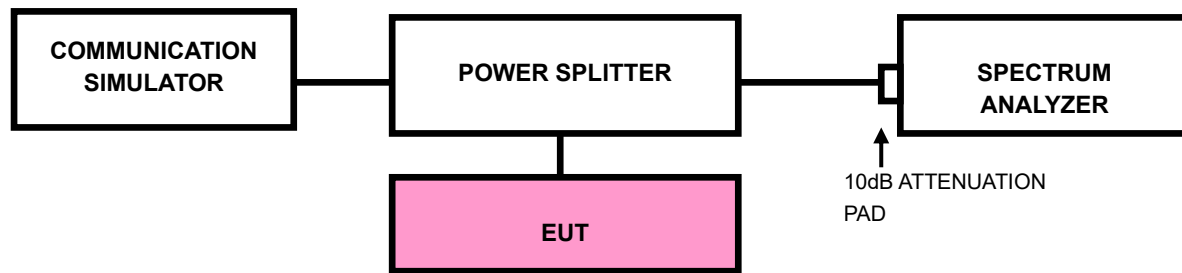
According to FCC 27.53(m)(4) specified that For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. For mobile digital stations, in the 1-megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed.

47 CFR 27.53(c)(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;

47 CFR 27.53(f) : For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.



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.



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 .

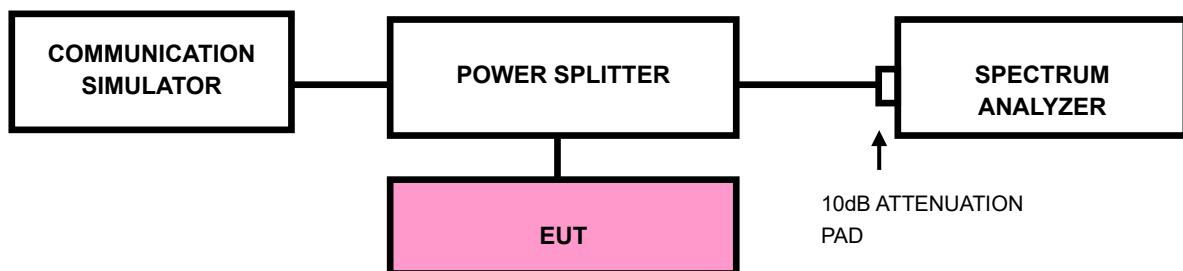
For: LTE Band7

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $55 + 10 \log_{10}(P)$ dB. The limit of emission is equal to -25dBm .

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 10^{th} 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 .

For: LTE Band7

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $55 + 10 \log_{10}(P)$ dB. The limit of emission is equal to -25dBm .

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 of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

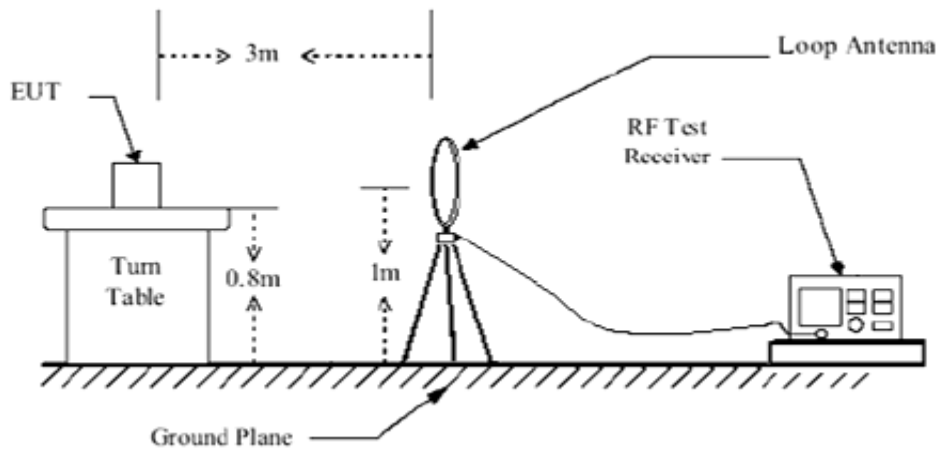
3.6.3 DEVIATION FROM TEST STANDARD

No deviation

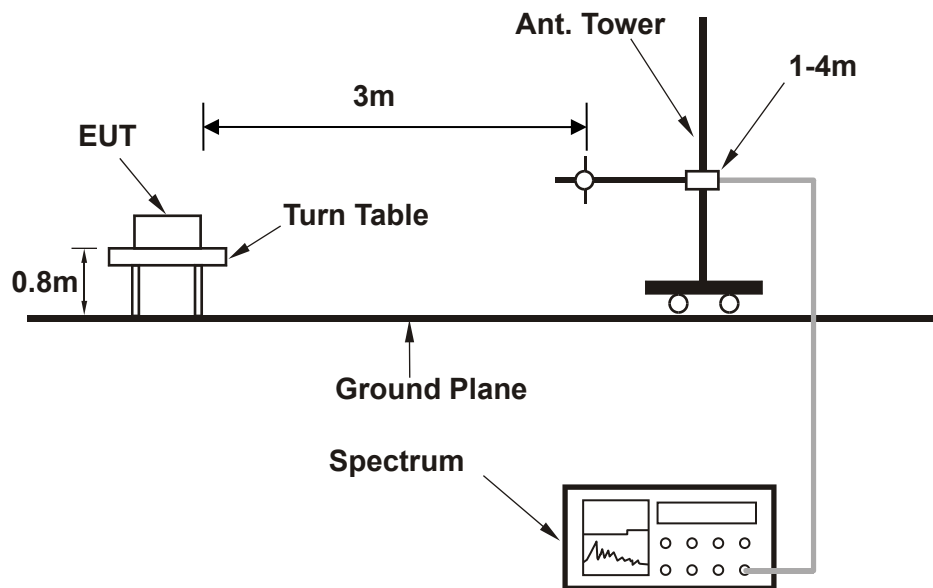


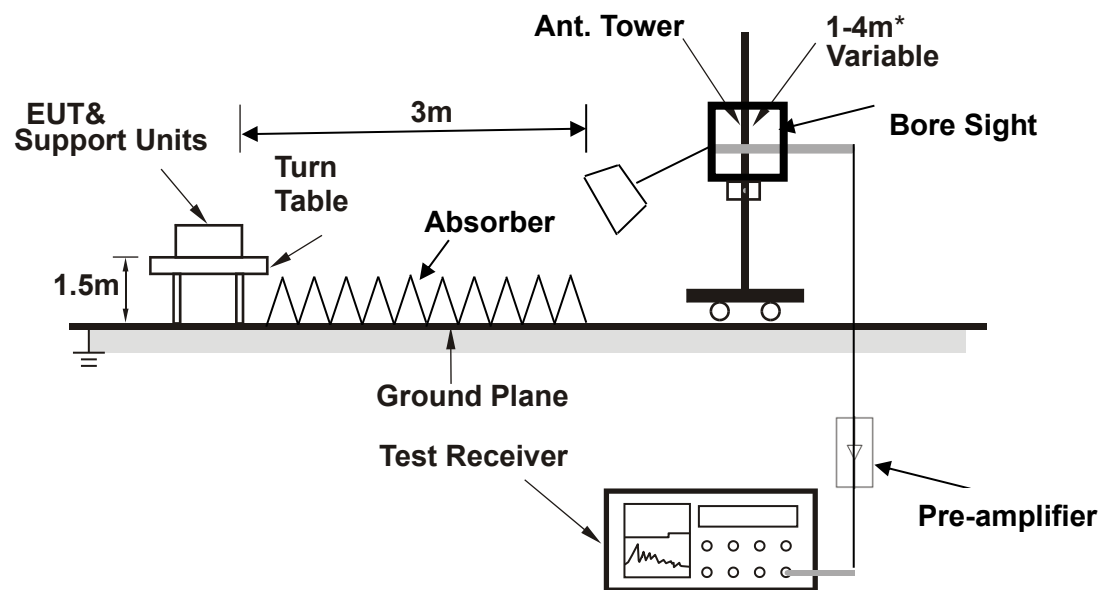
3.6.4 TEST SETUP

< 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.

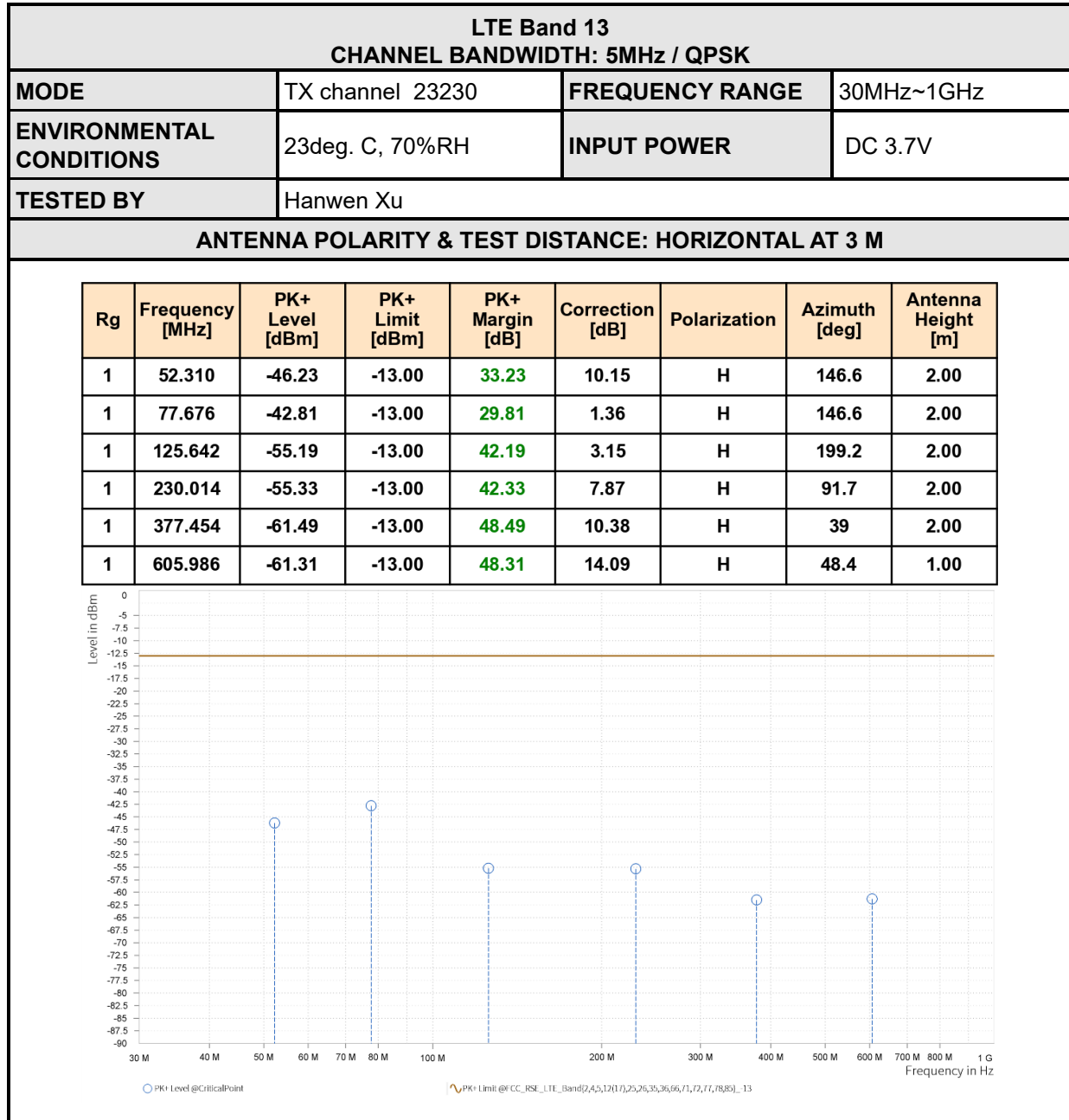
For the actual test configuration, please refer to the attached file (Test Setup Photo).



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

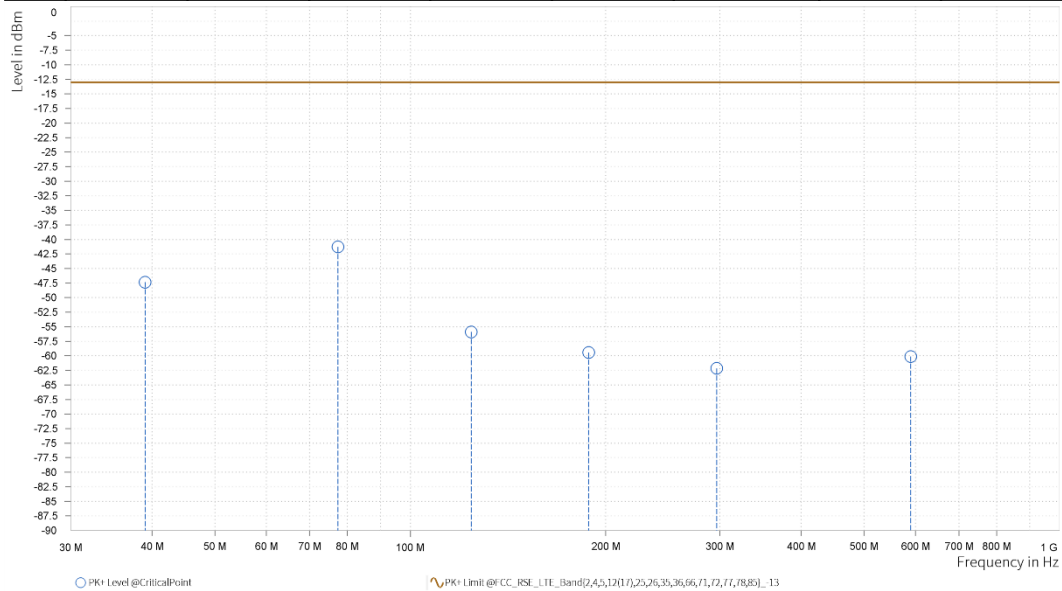




MODE	TX channel 23230	FREQUENCY RANGE	30MHz~1GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.7V
TESTED BY	Hanwen Xu		

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	39.021	-47.34	-13.00	34.34	8.55	V	359	1.00
1	77.385	-41.29	-13.00	28.29	3.86	V	202.7	2.00
1	124.139	-55.89	-13.00	42.89	6.07	V	202.7	2.00
1	188.304	-59.45	-13.00	46.45	5.74	V	145.4	2.00
1	296.605	-62.15	-13.00	49.15	9.17	V	2.6	2.00
1	590.175	-60.11	-13.00	47.11	13.75	V	0.9	2.00





ABOVE 1GHz

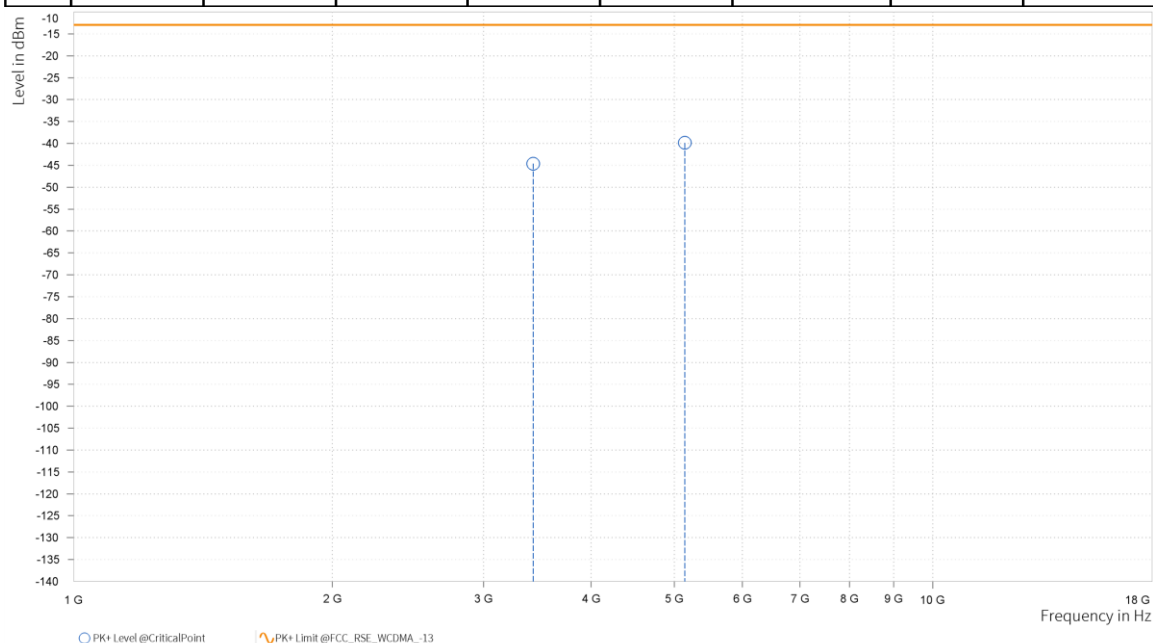
Note: For higher frequency, the emission is too low to be detected.

WCDMA Band IV

MODE	TX channel 1312	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.7V
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]
4	3,426.000	-44.62	-13.00	31.62	20.49	H	201.7	1.00
4	5,141.500	-39.86	-13.00	26.86	23.60	H	96.9	1.00

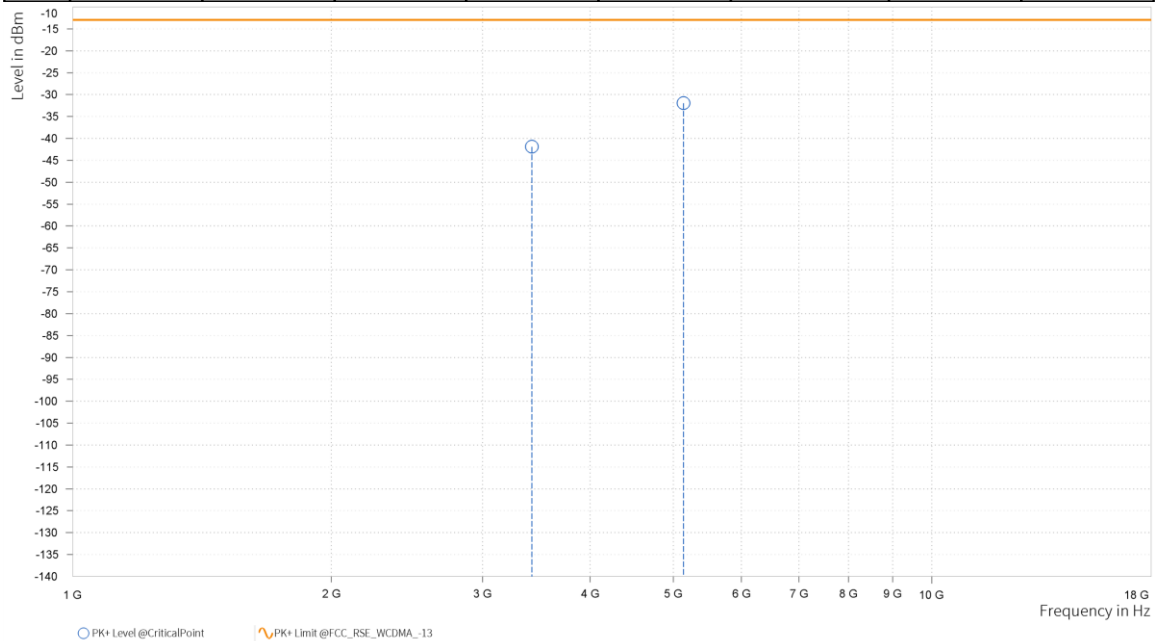




MODE	TX channel 1312	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.7V
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

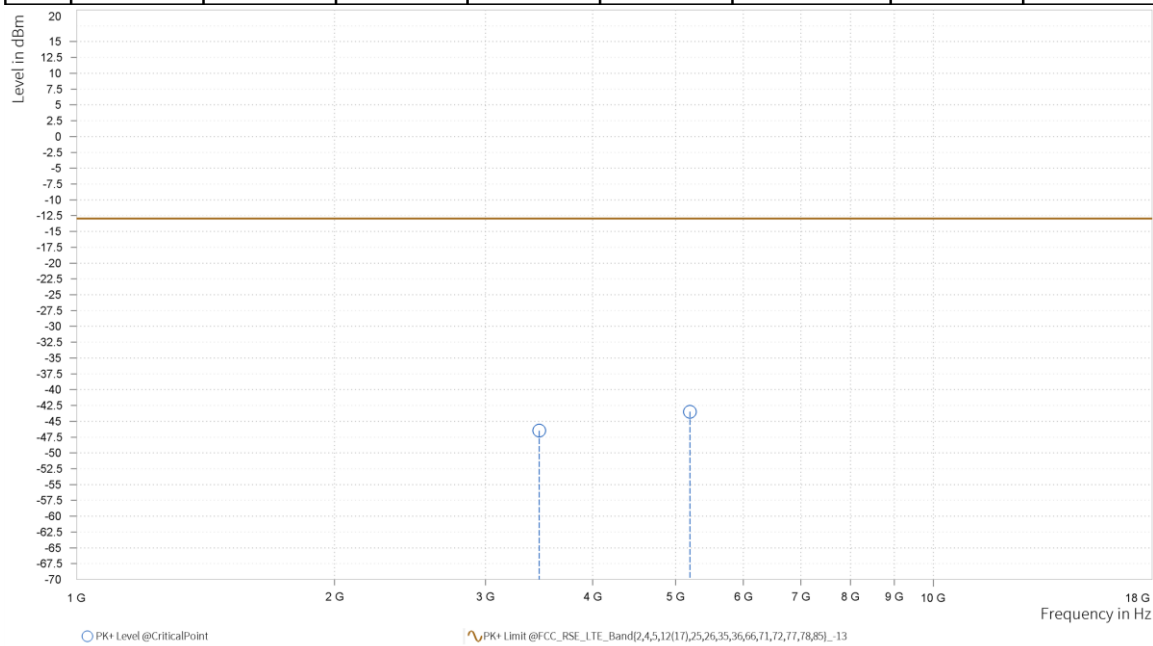
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,423.000	-41.91	-13.00	28.91	20.88	V	205.8	1.00
4	5,139.500	-31.95	-13.00	18.95	23.86	V	101.8	1.00





MODE	TX channel 1413	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.7V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

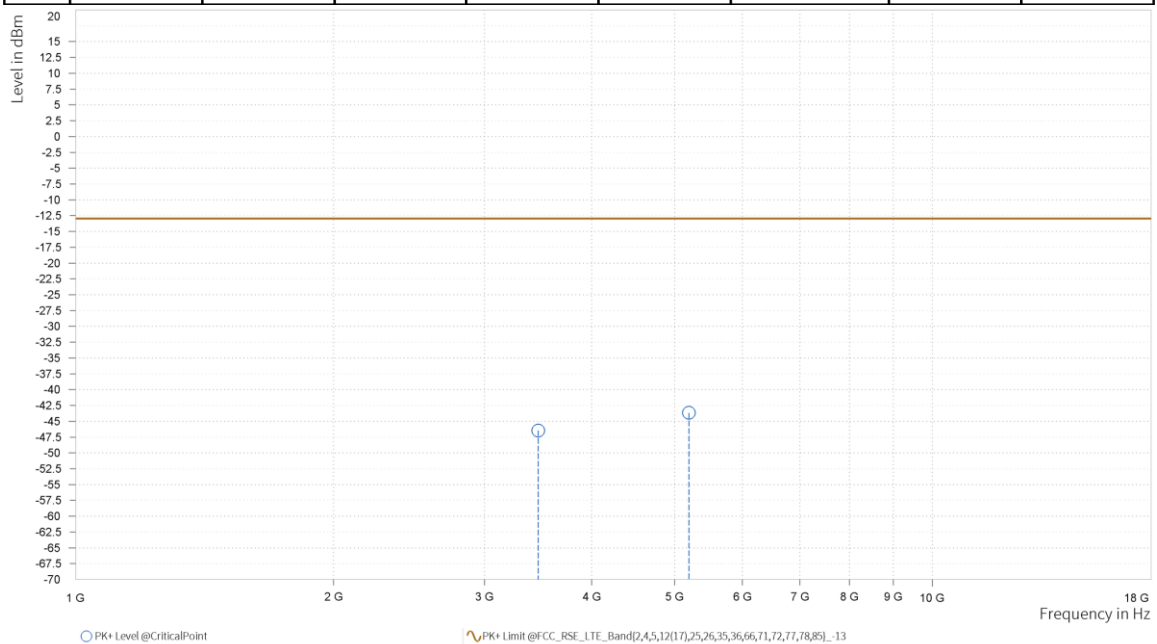
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,465.200	-46.47	-13.00	33.47	26.80	H	114.3	2.00
4	5,197.800	-43.48	-13.00	30.48	32.06	H	359	2.00





MODE	TX channel 1413	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.7V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

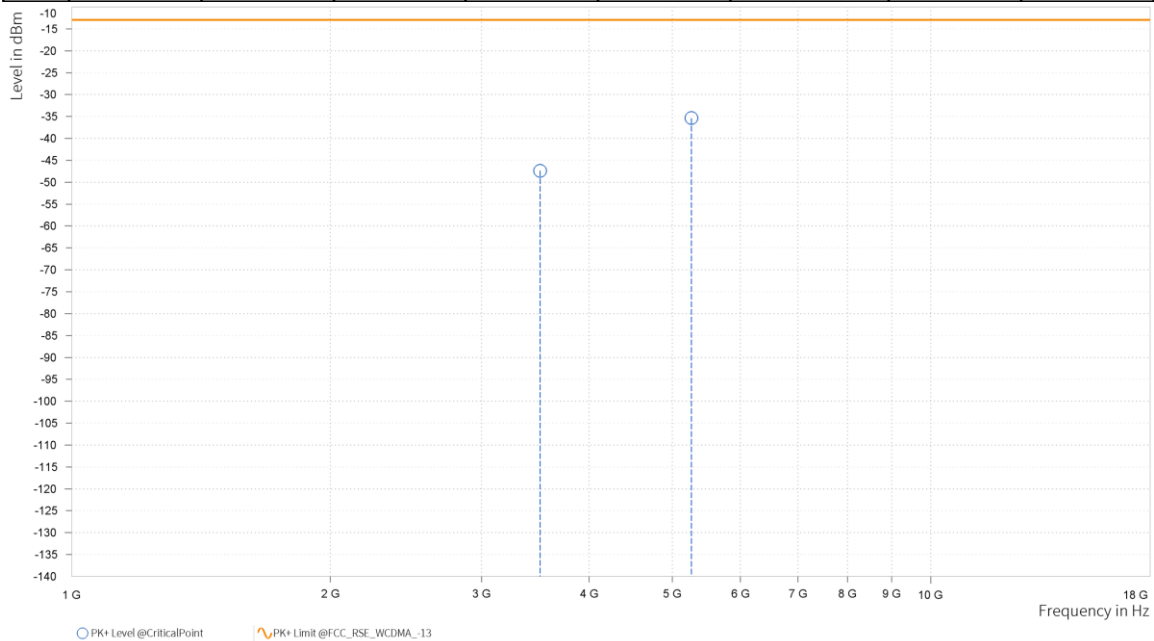
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,465.200	-46.44	-13.00	33.44	26.52	V	359	2.00
4	5,197.800	-43.66	-13.00	30.66	32.02	V	1	1.00





MODE	TX channel 1513	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.7V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

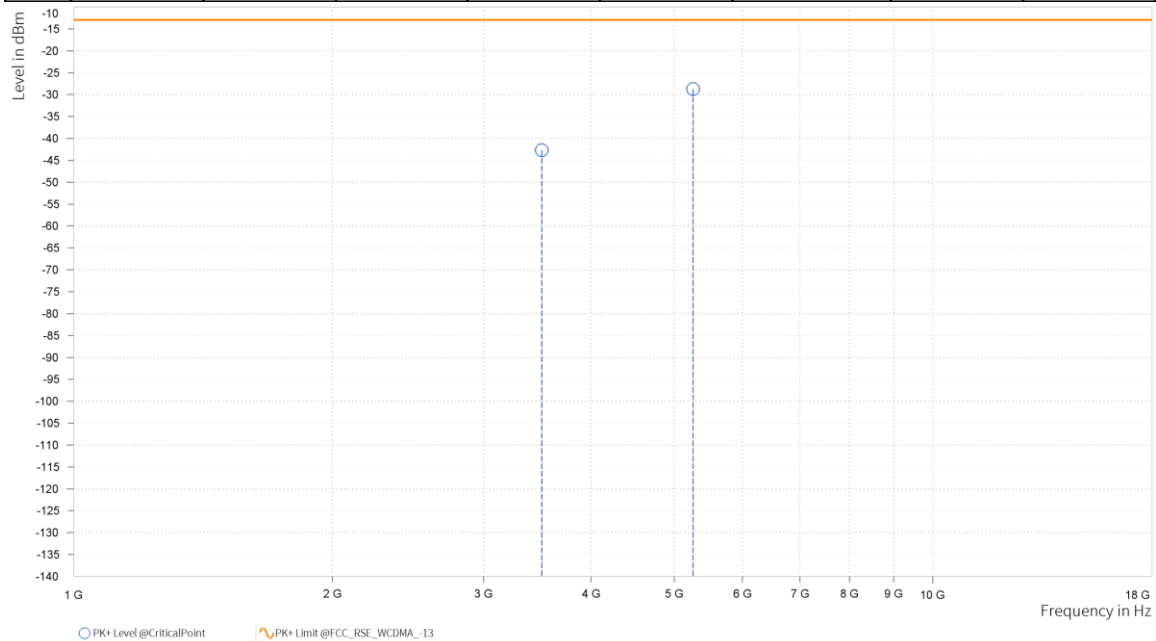
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,507.500	-47.38	-13.00	34.38	20.60	H	33.8	2.00
4	5,261.500	-35.35	-13.00	22.35	24.14	H	202.3	1.00

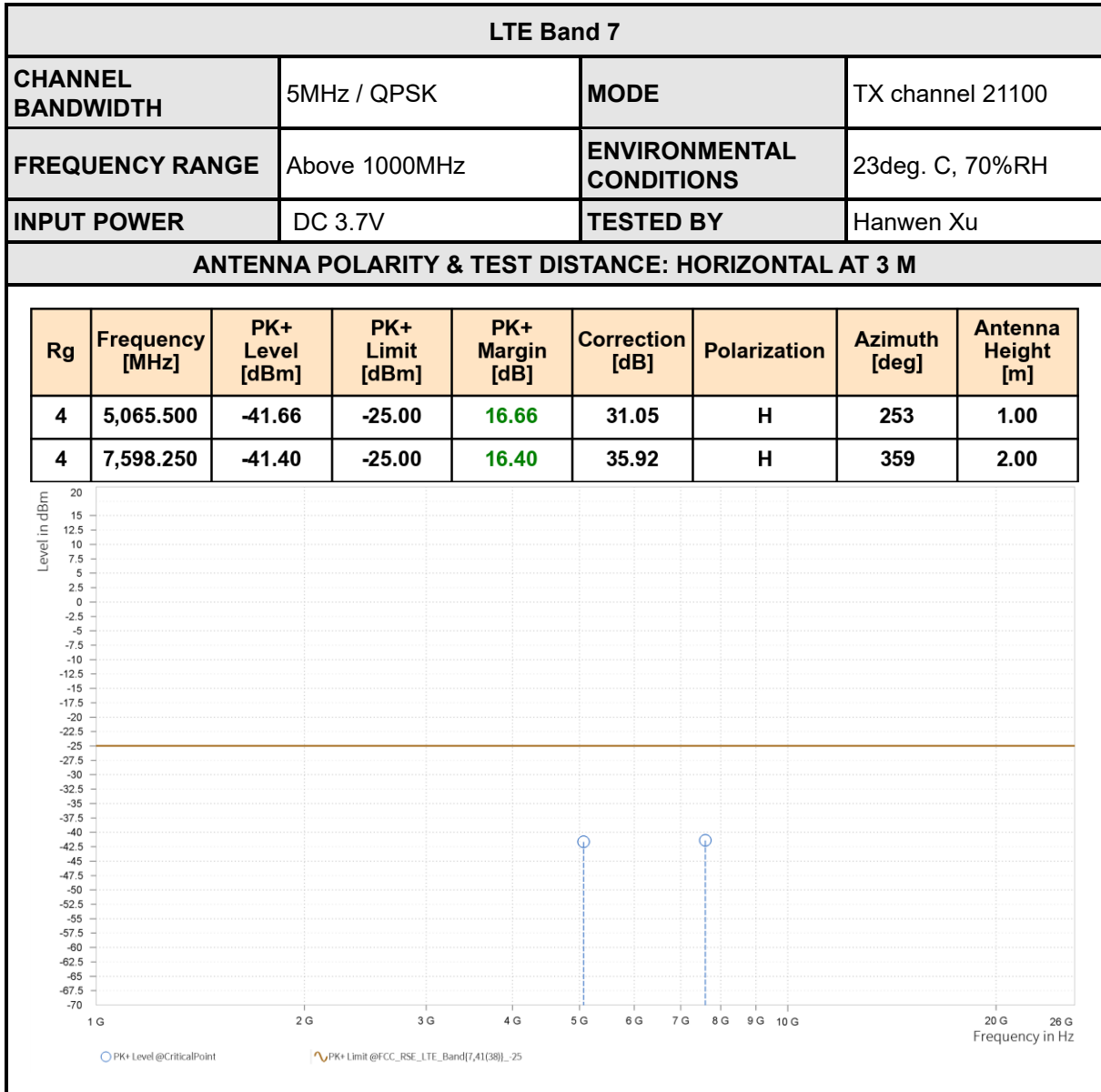




MODE	TX channel 1513	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.7V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,506.500	-42.70	-13.00	29.70	21.31	V	101	1.00
4	5,260.000	-28.76	-13.00	15.76	24.62	V	359	2.00



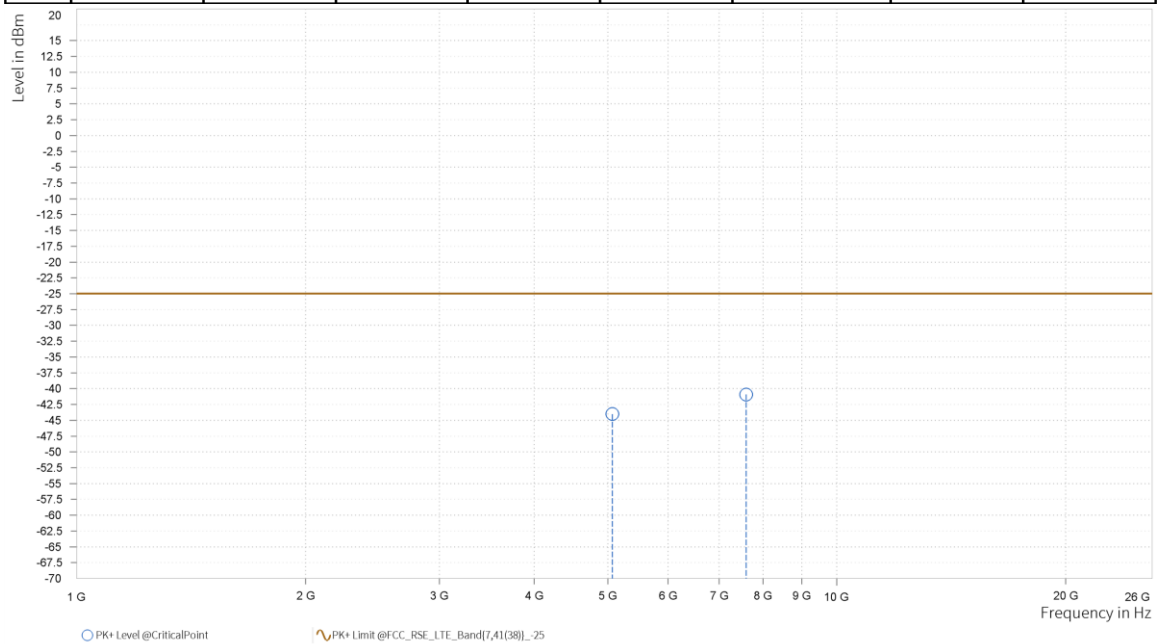




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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]
4	5,065.500	-44.01	-25.00	19.01	30.82	V	1	1.00
4	7,598.250	-40.92	-25.00	15.92	35.94	V	104.7	2.00



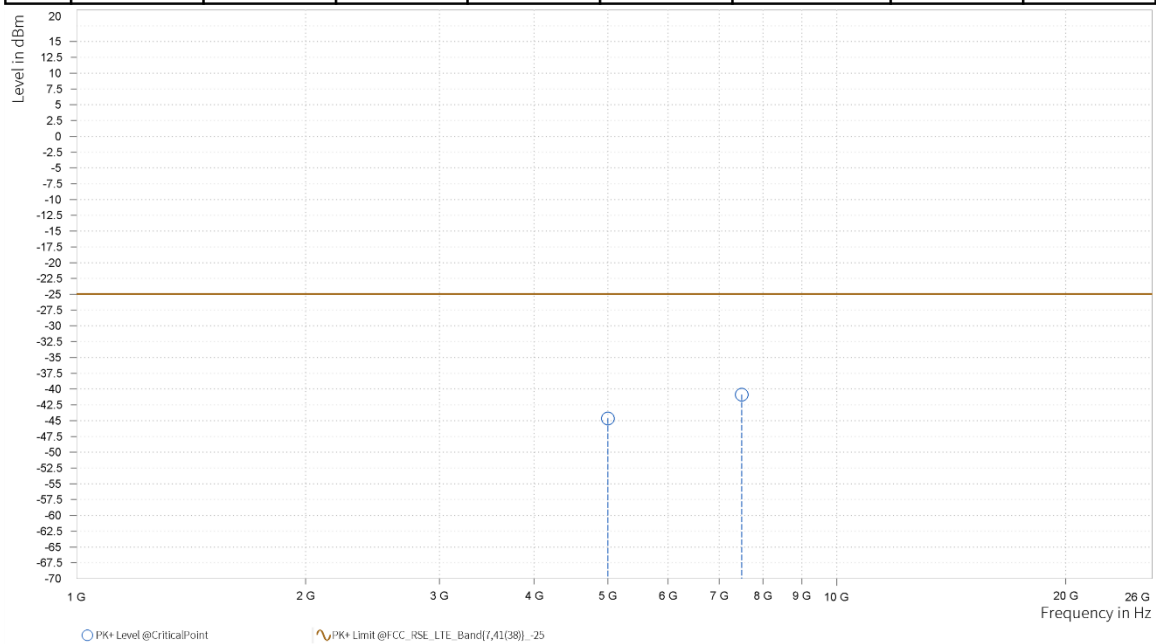


CH20800

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 20800
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	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]
4	5,001.000	-44.64	-25.00	19.64	29.99	H	127.4	2.00
4	7,501.500	-40.88	-25.00	15.88	35.66	H	235	1.00

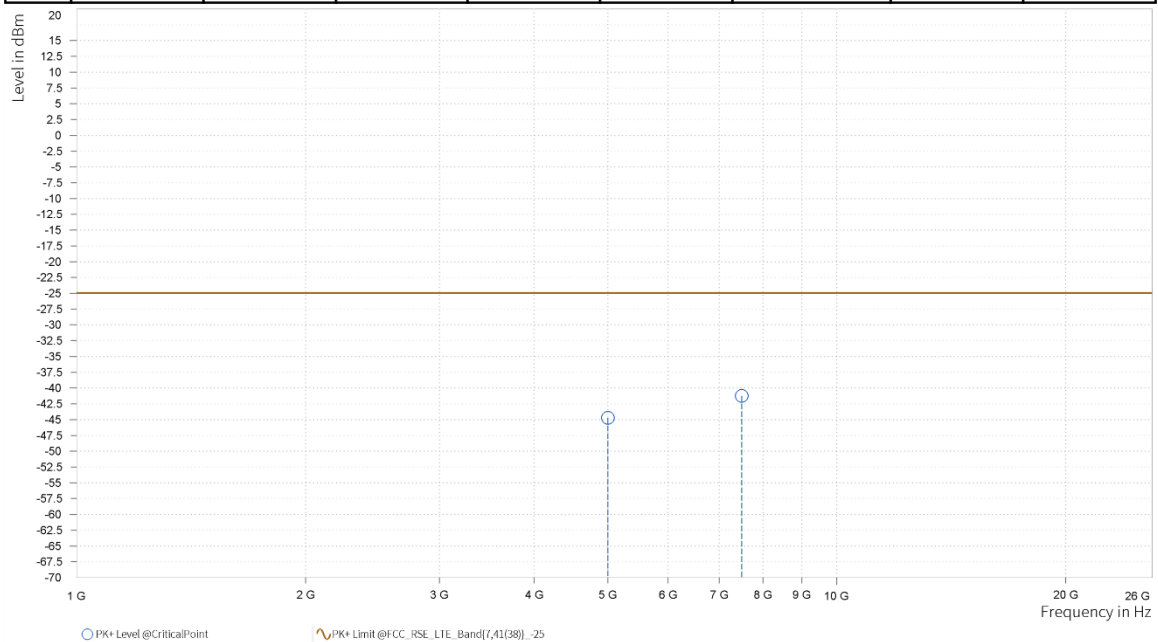




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 20800
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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]
4	5,001.000	-44.71	-25.00	19.71	29.84	V	1	1.00
4	7,501.500	-41.26	-25.00	16.26	35.83	V	127.4	2.00



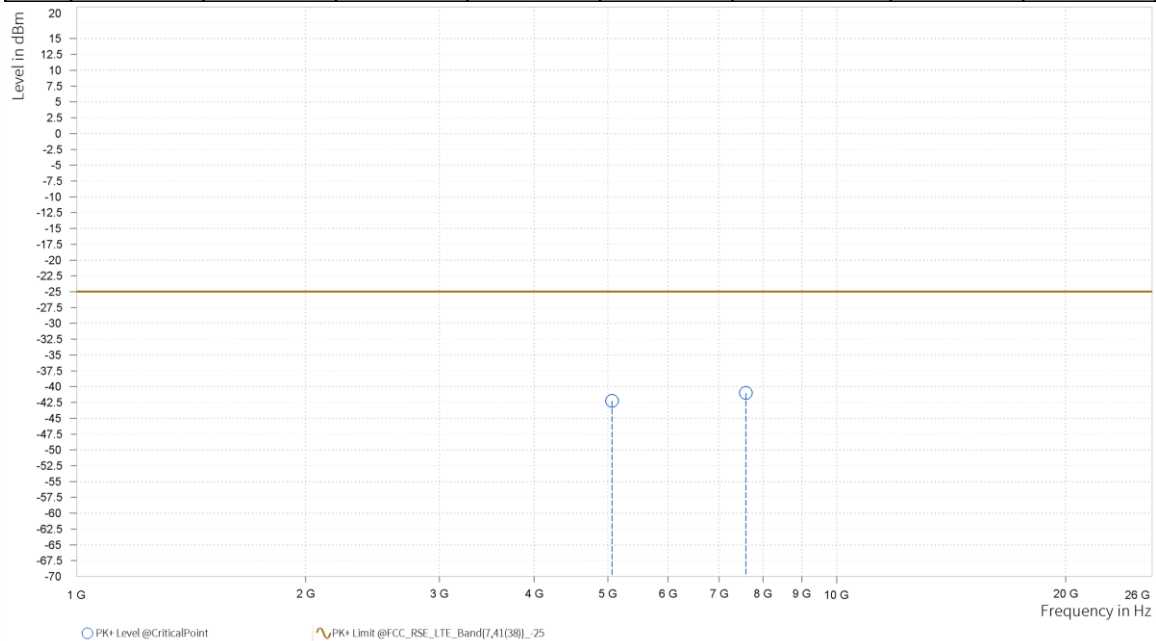


CH21100

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	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]
4	5,061.000	-42.26	-25.00	17.26	31.50	H	244.6	1.00
4	7,591.500	-41.00	-25.00	16.00	36.45	H	359.1	1.00

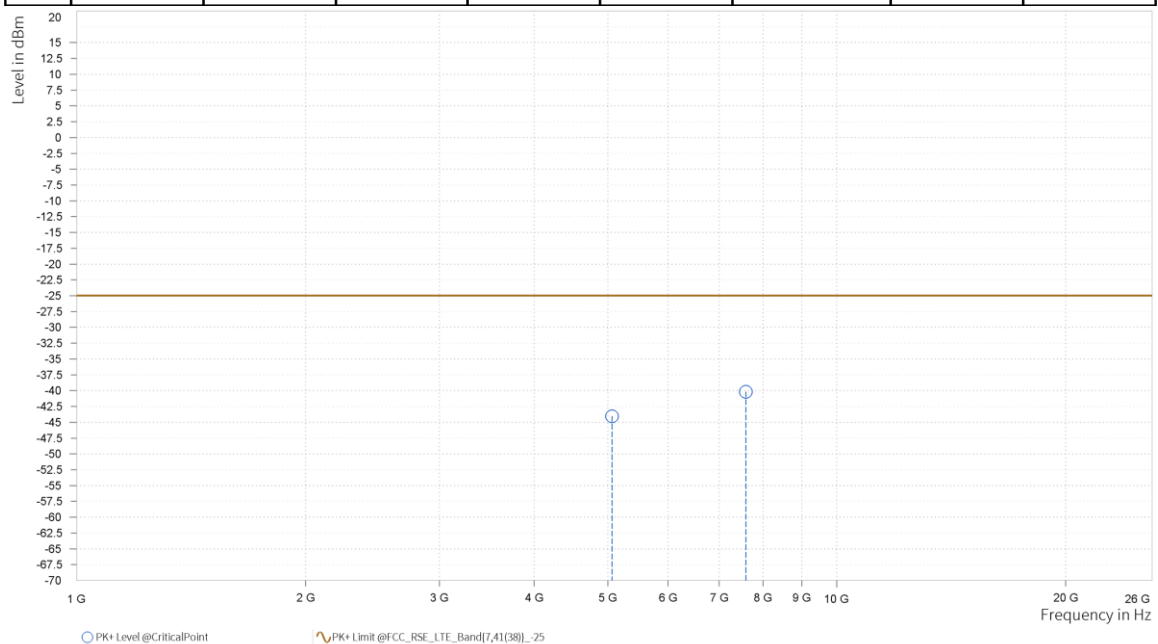




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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]
4	5,061.000	-44.03	-25.00	19.03	31.27	V	237.4	1.00
4	7,591.500	-40.16	-25.00	15.16	36.48	V	359	2.00



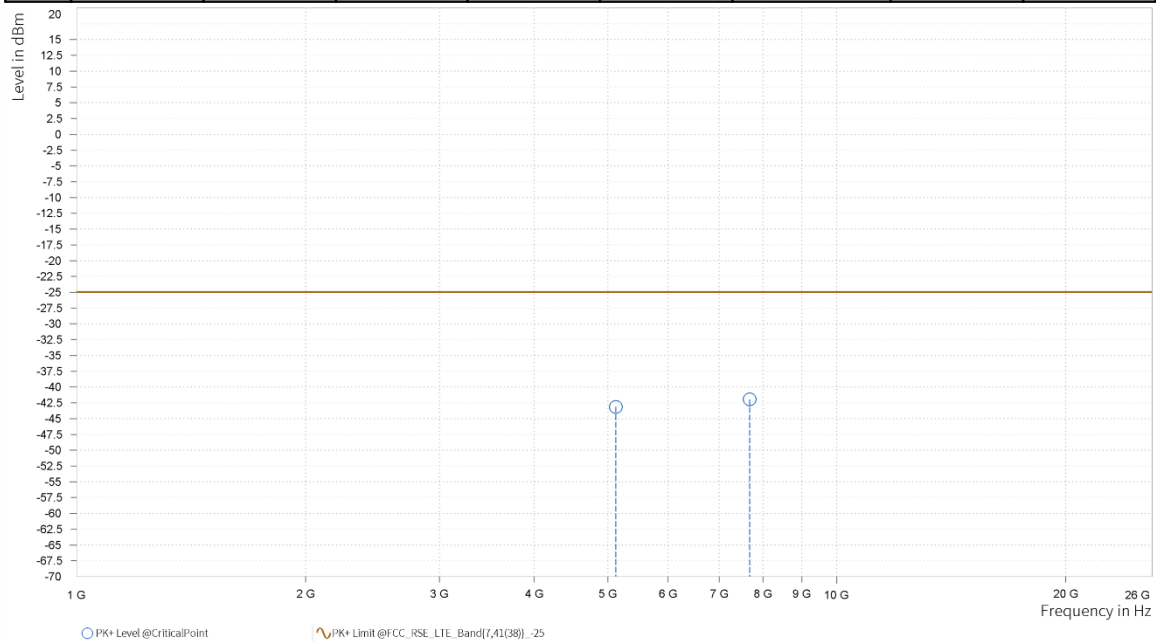


CH21400

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 21400
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	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]
4	5,121.000	-43.13	-25.00	18.13	31.30	H	232.6	1.00
4	7,681.500	-41.95	-25.00	16.95	35.84	H	232.6	1.00

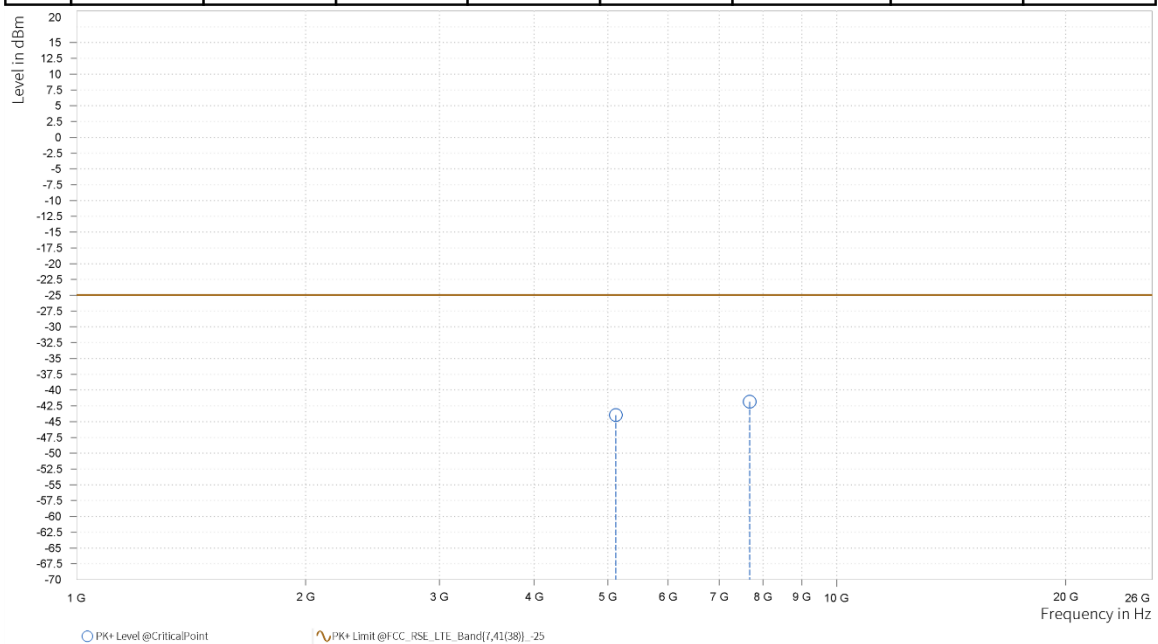




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 21400
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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]
4	5,121.000	-43.96	-25.00	18.96	31.15	V	359	1.00
4	7,681.500	-41.85	-25.00	16.85	35.80	V	0.9	2.00

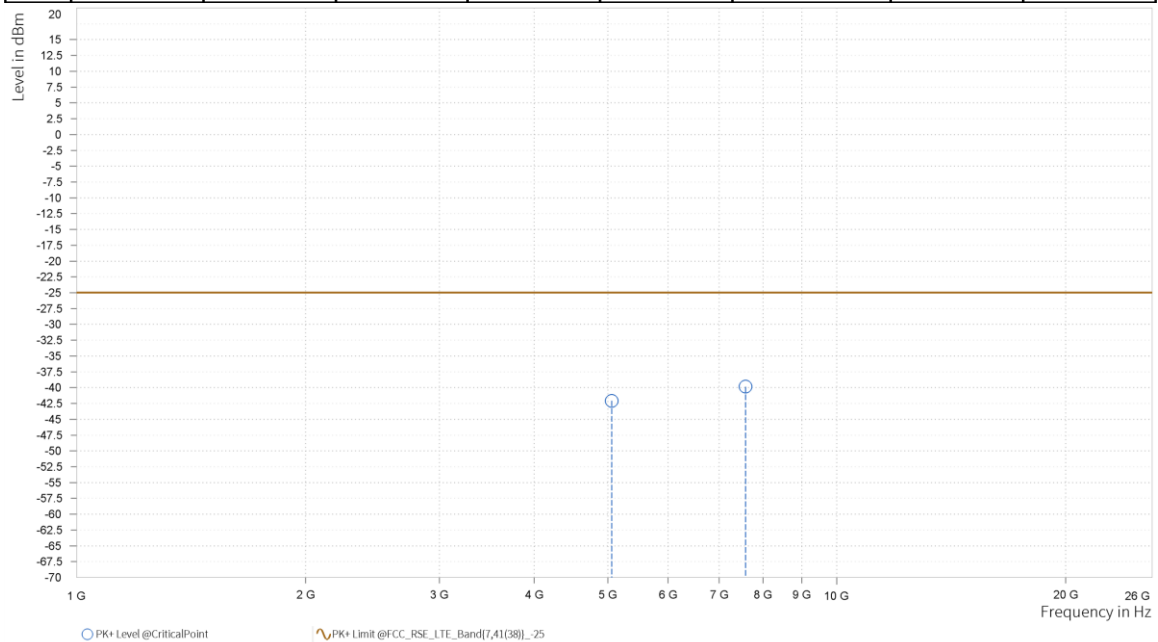




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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]
4	5,056.500	-42.08	-25.00	17.08	31.91	H	359.1	1.00
4	7,584.750	-39.84	-25.00	14.84	36.76	H	359.1	1.00

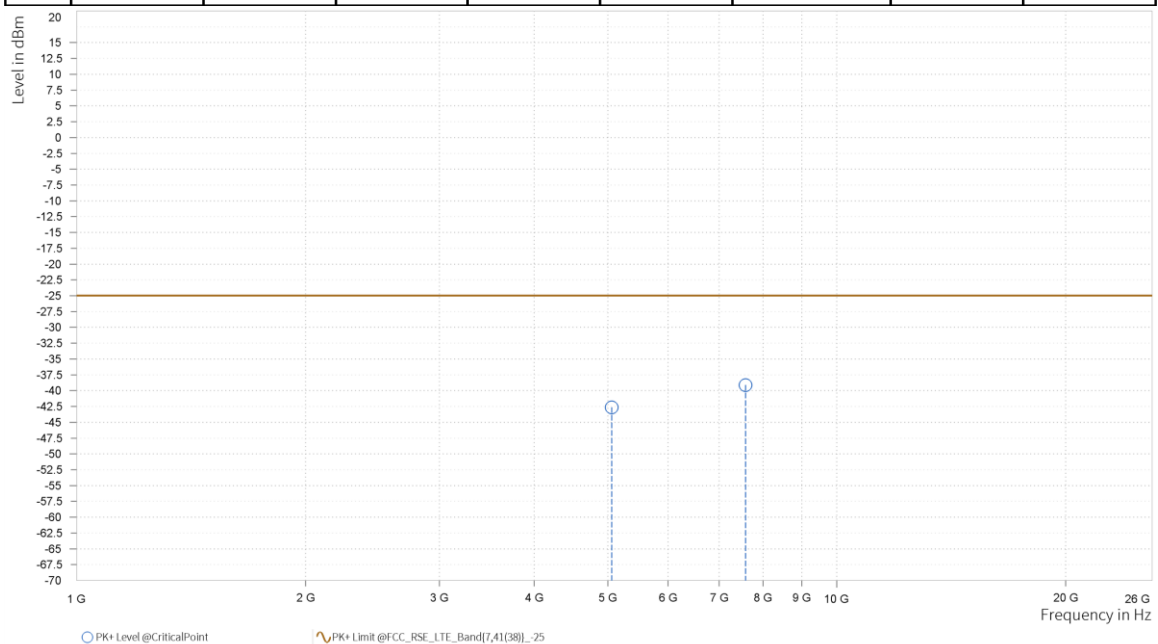




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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]
4	5,056.500	-42.63	-25.00	17.63	31.69	V	1	1.00
4	7,584.750	-39.11	-25.00	14.11	36.80	V	359	1.00

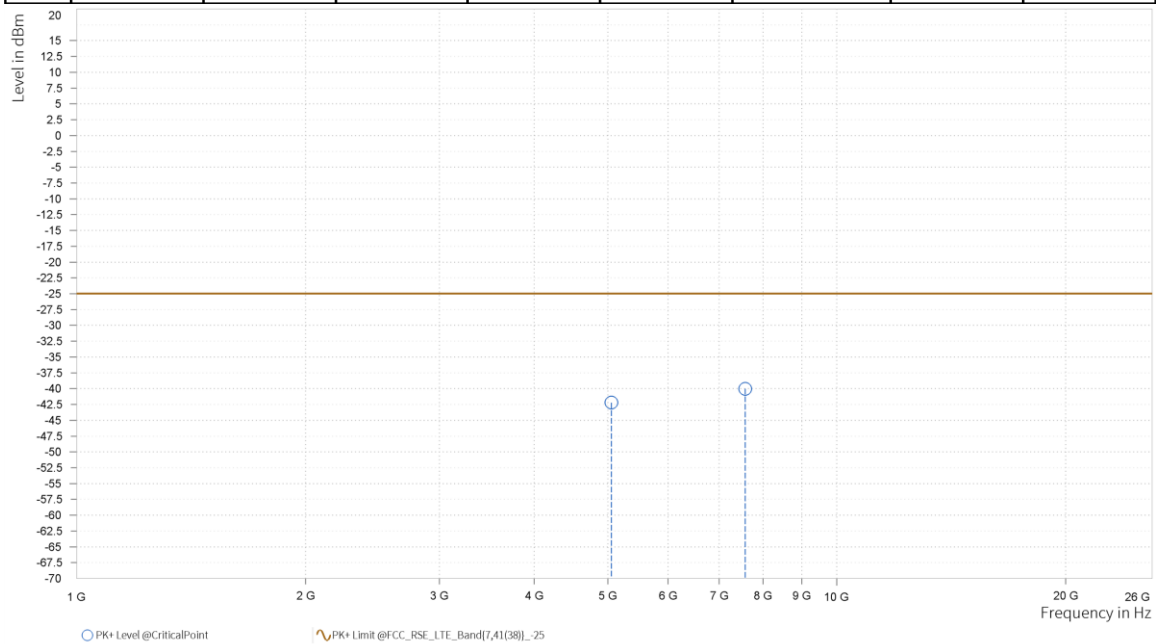




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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]
4	5,052.000	-42.20	-25.00	17.20	32.31	H	109.5	2.00
4	7,578.000	-40.01	-25.00	15.01	36.69	H	359	2.00

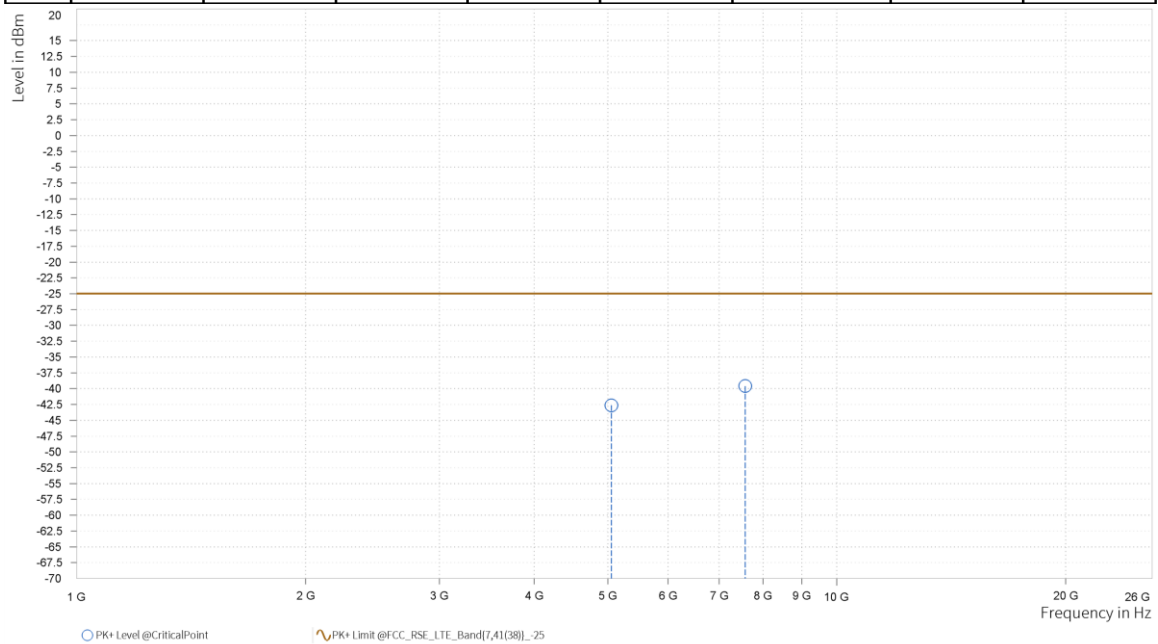




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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]
4	5,052.000	-42.64	-25.00	17.64	32.10	V	108.4	2.00
4	7,578.000	-39.59	-25.00	14.59	36.74	V	254.1	1.00





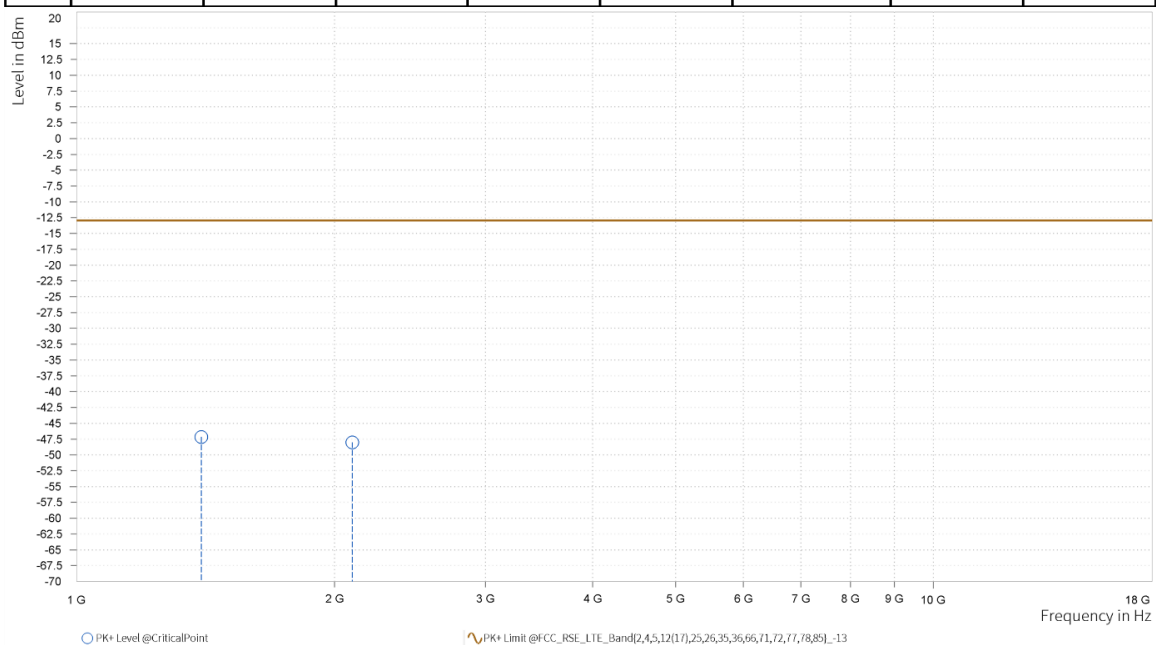
LTE BAND 12

CH23017

CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 23017
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	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	1,398.140	-47.16	-13.00	34.16	17.25	H	288.9	2.00
2	2,097.210	-48.03	-13.00	35.03	21.43	H	288.9	2.00

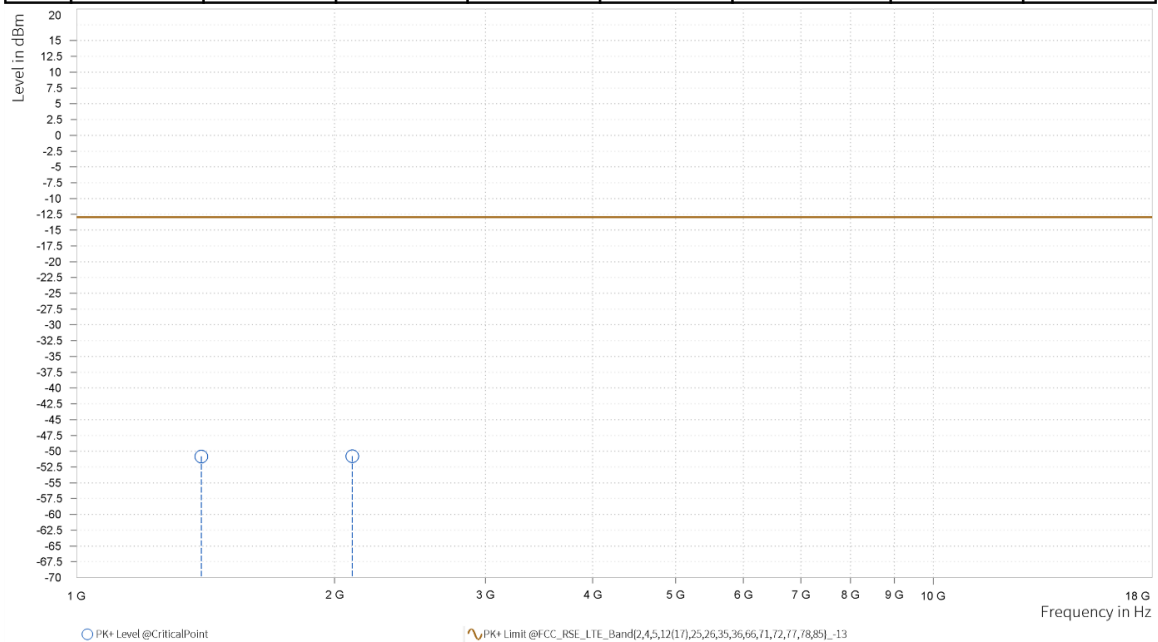




CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 23017
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	1,398.140	-50.84	-13.00	37.84	17.25	V	1	1.00
2	2,097.210	-50.78	-13.00	37.78	21.35	V	288.9	2.00



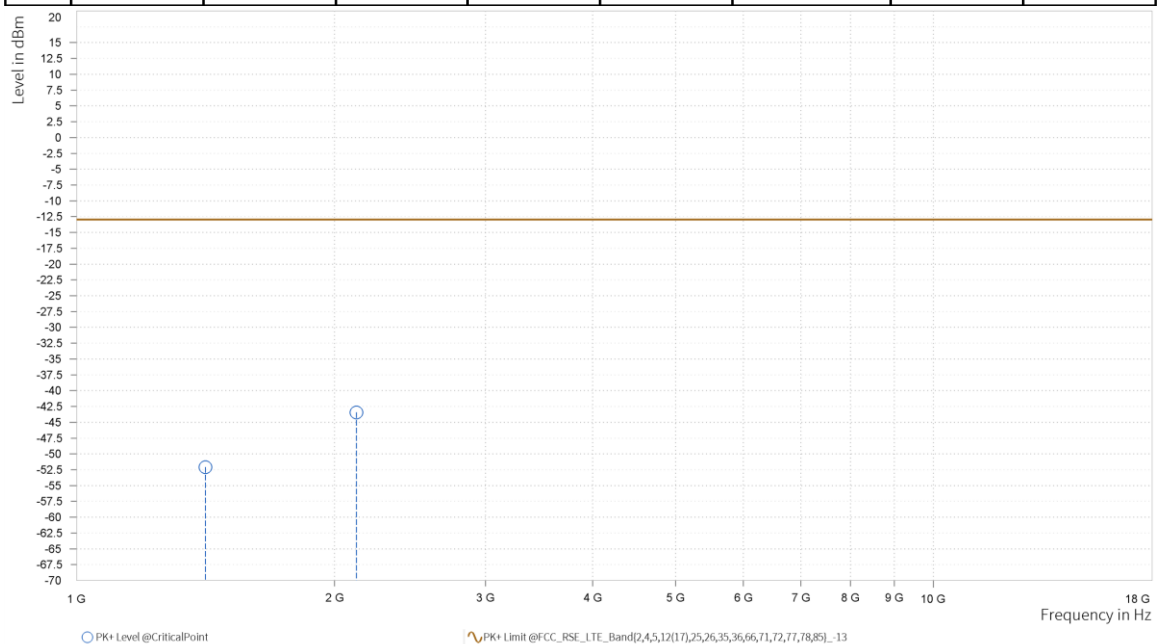


CH23095

CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	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	1,414.000	-52.10	-13.00	39.10	15.04	H	1	1.00
2	2,121.000	-43.44	-13.00	30.44	22.27	H	291.2	2.00

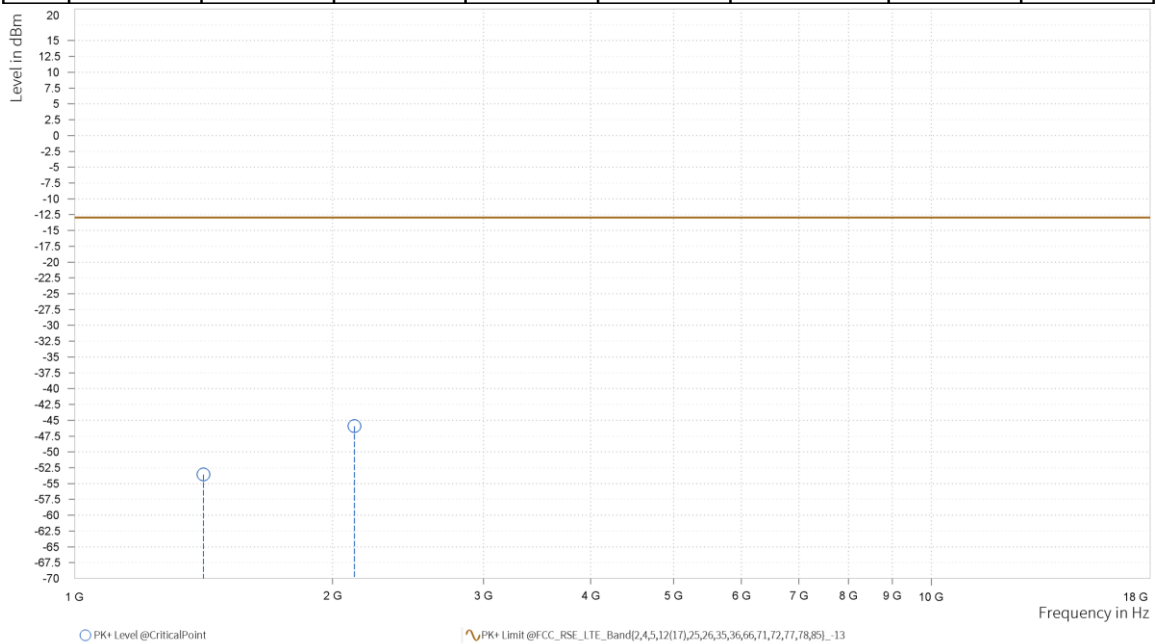




CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	1,413.500	-53.58	-13.00	40.58	15.03	V	1	1.00
2	2,121.000	-45.92	-13.00	32.92	21.91	V	68.8	1.00



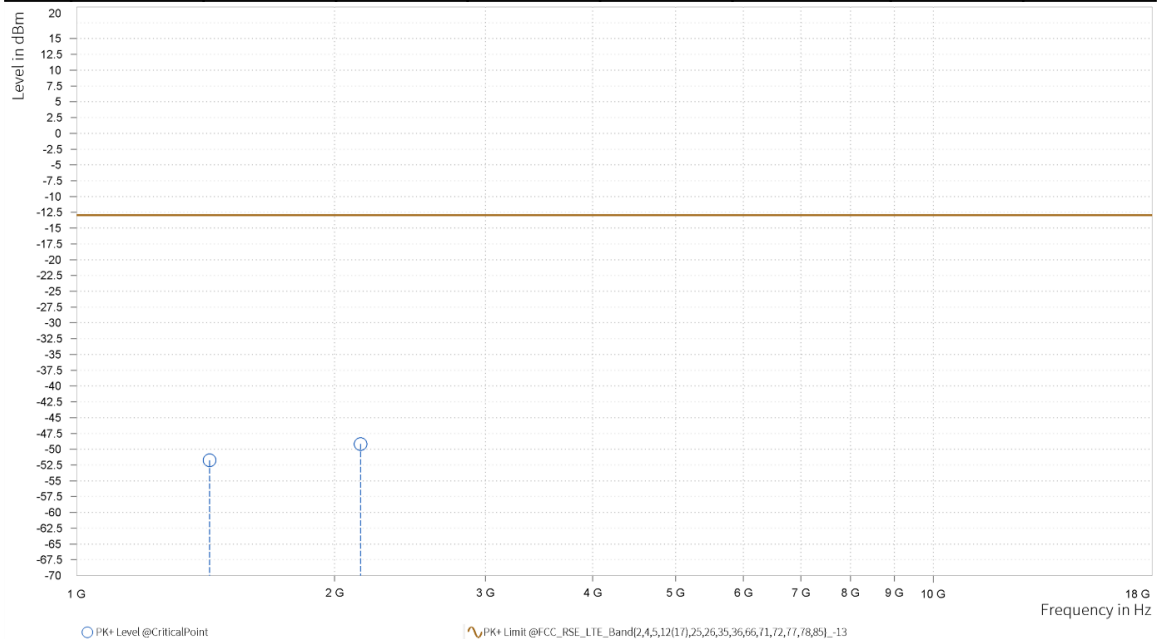


CH23173

CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 23173
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	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	1,429.340	-51.77	-13.00	38.77	14.11	H	1	1.00
2	2,144.010	-49.17	-13.00	36.17	23.21	H	359	2.00

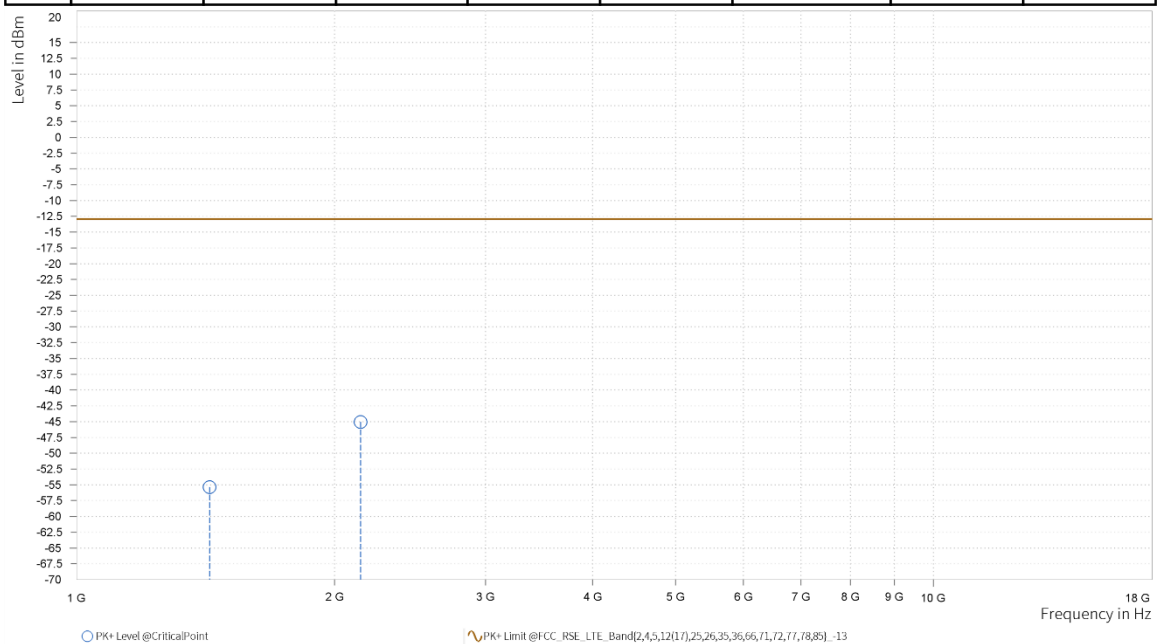




CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 23173
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	1,429.340	-55.36	-13.00	42.36	13.97	V	359	1.00
2	2,144.500	-45.04	-13.00	32.04	22.60	V	359	1.00

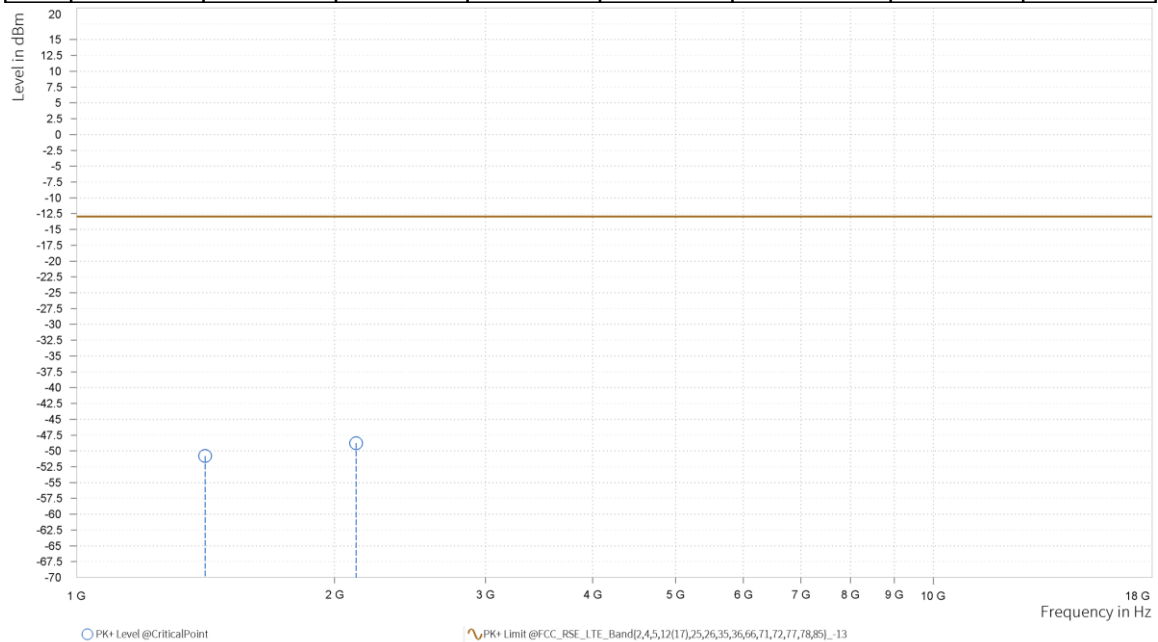




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	1,412.300	-50.82	-13.00	37.82	15.31	H	1.6	2.00
2	2,118.450	-48.77	-13.00	35.77	22.12	H	1	1.00

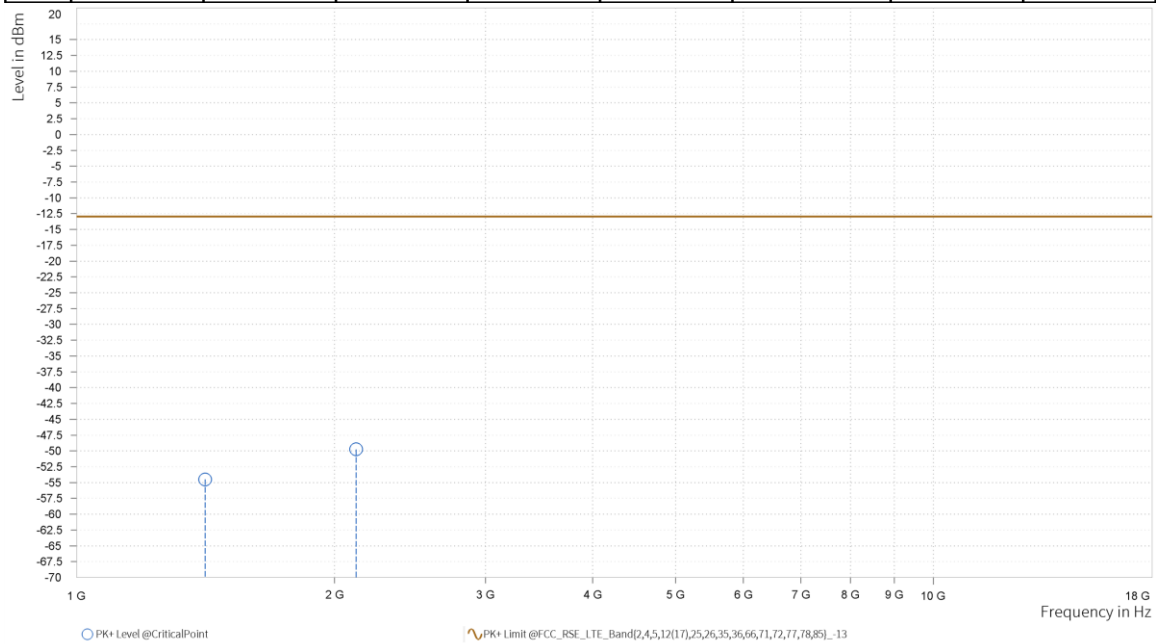




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	1,412.300	-54.49	-13.00	41.49	15.21	V	1	1.00
2	2,118.450	-49.74	-13.00	36.74	21.78	V	359	2.00

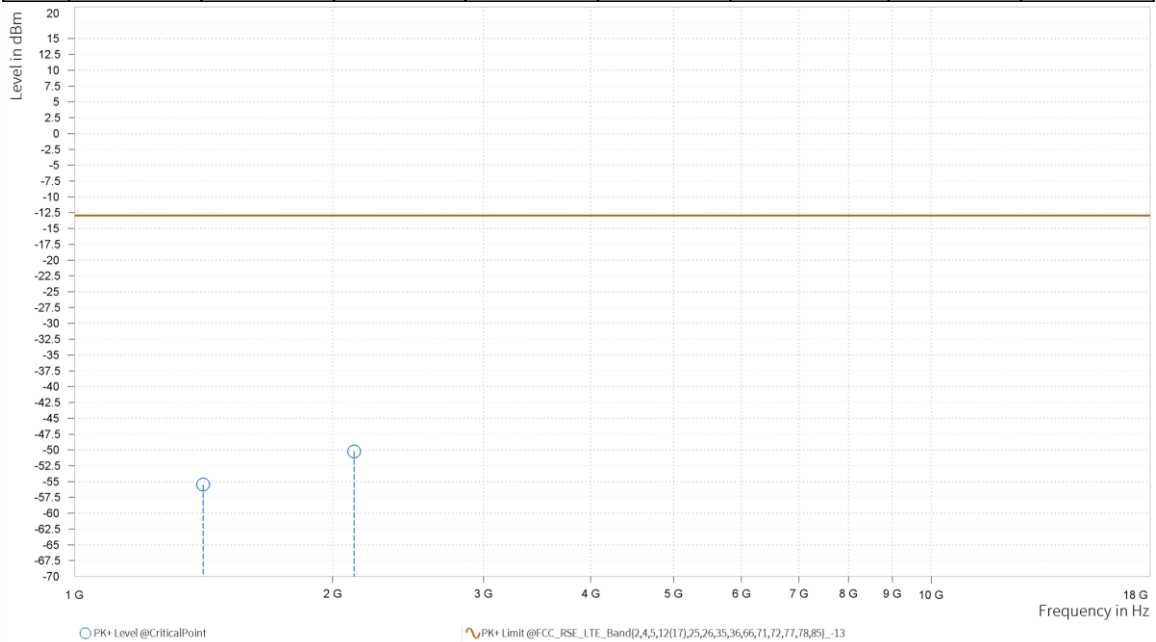




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	1,412.300	-55.47	-13.00	42.47	15.31	H	359	1.00
2	2,118.450	-50.22	-13.00	37.22	22.12	H	359	1.00

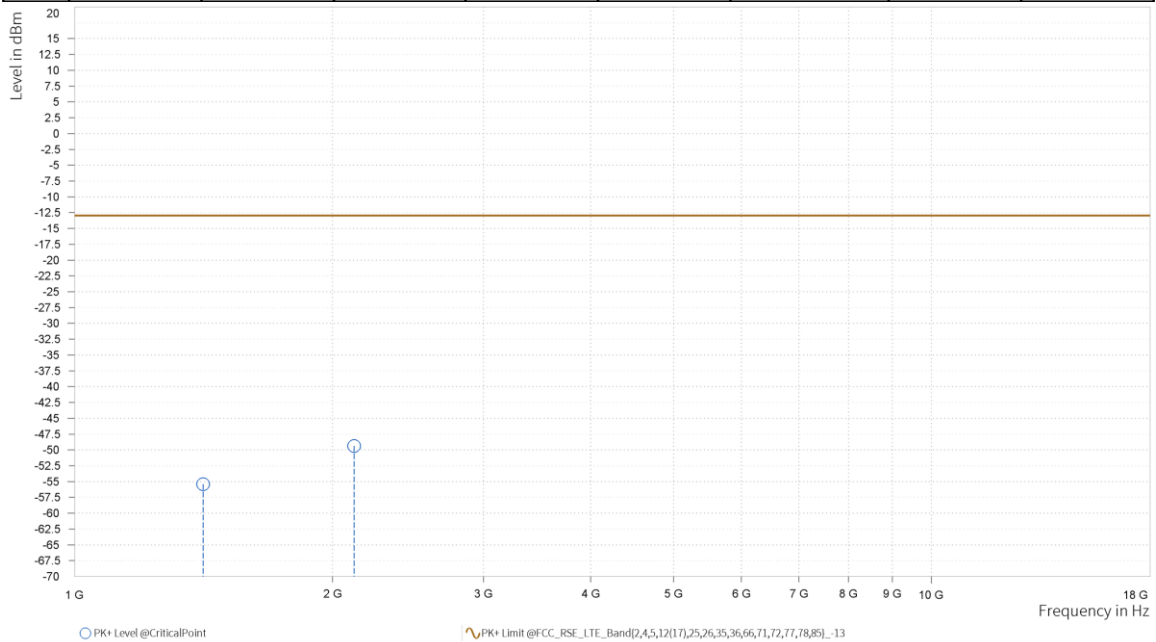




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	1,412.300	-55.41	-13.00	42.41	15.21	V	70.1	1.00
2	2,118.450	-49.38	-13.00	36.38	21.78	V	359	1.00

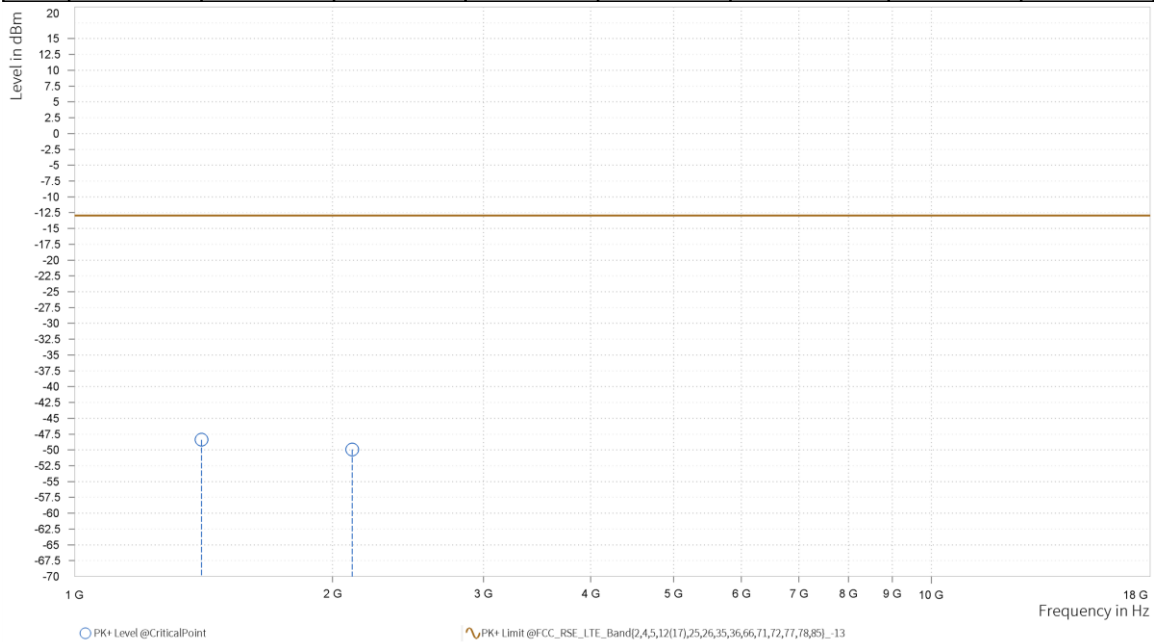




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	1,406.500	-48.39	-13.00	35.39	16.18	H	292.4	2.00
2	2,109.000	-49.92	-13.00	36.92	21.73	H	66.4	1.00

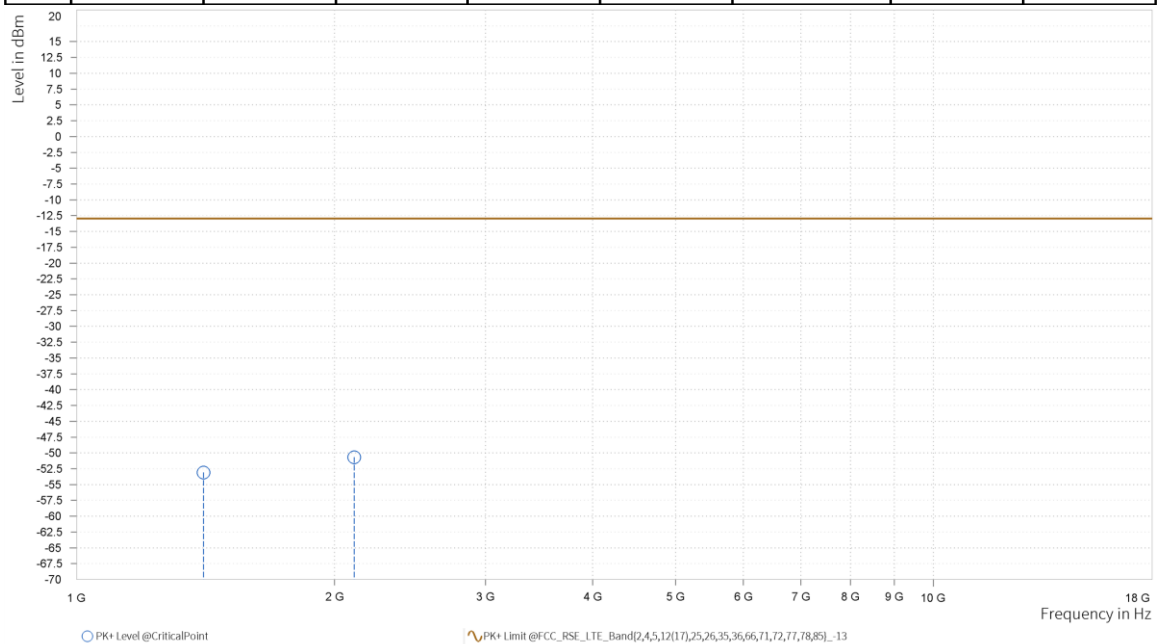




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	1,406.000	-53.09	-13.00	40.09	16.19	V	359	2.00
2	2,109.000	-50.69	-13.00	37.69	21.51	V	71.3	1.00





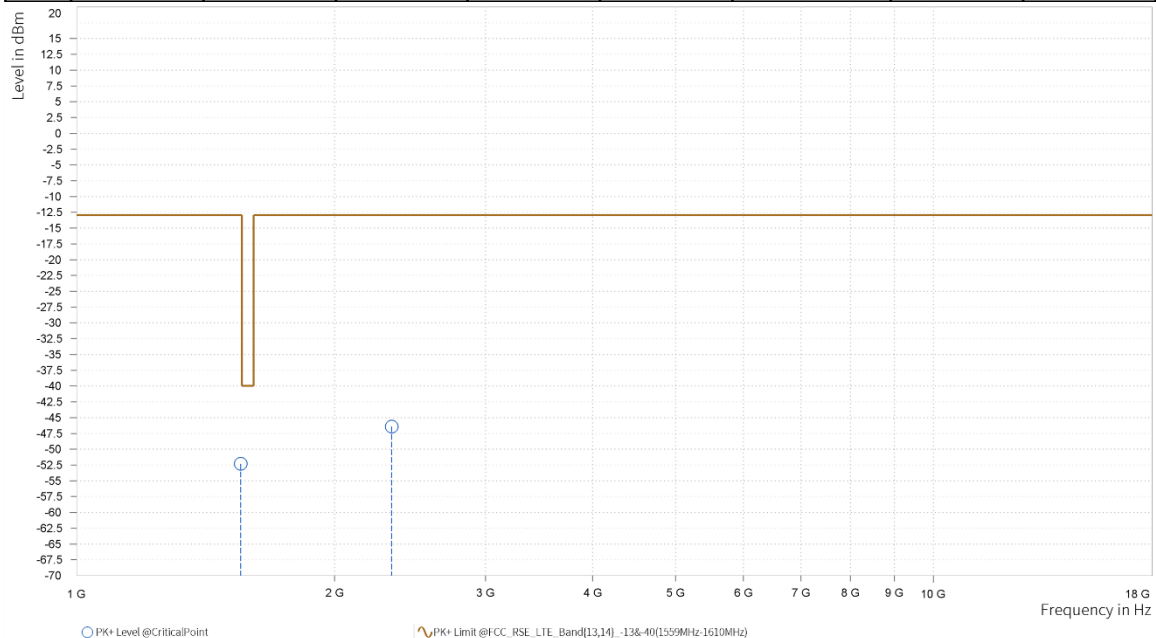
LTE B13

CH23205

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23205
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	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	1,554.500	-52.32	-13.00	39.32	17.15	H	66.4	1.00
3	2,331.750	-46.41	-13.00	33.41	24.26	H	358.8	1.00

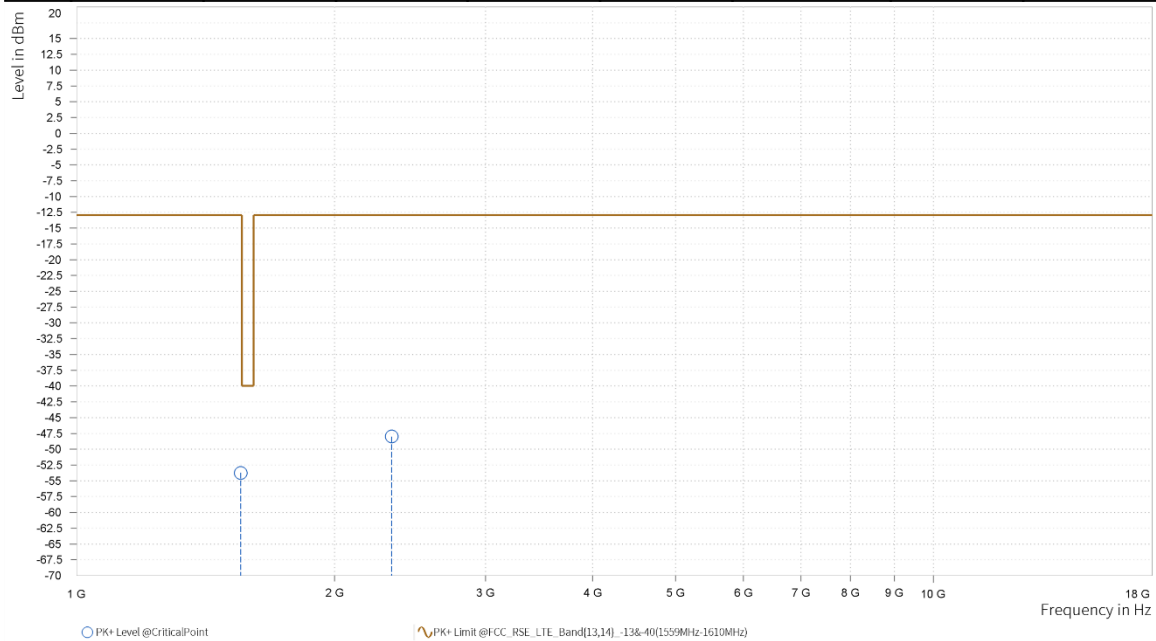




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23205
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	1,554.500	-53.74	-13.00	40.74	16.78	V	2.4	2.00
3	2,331.750	-47.98	-13.00	34.98	23.77	V	1	2.00



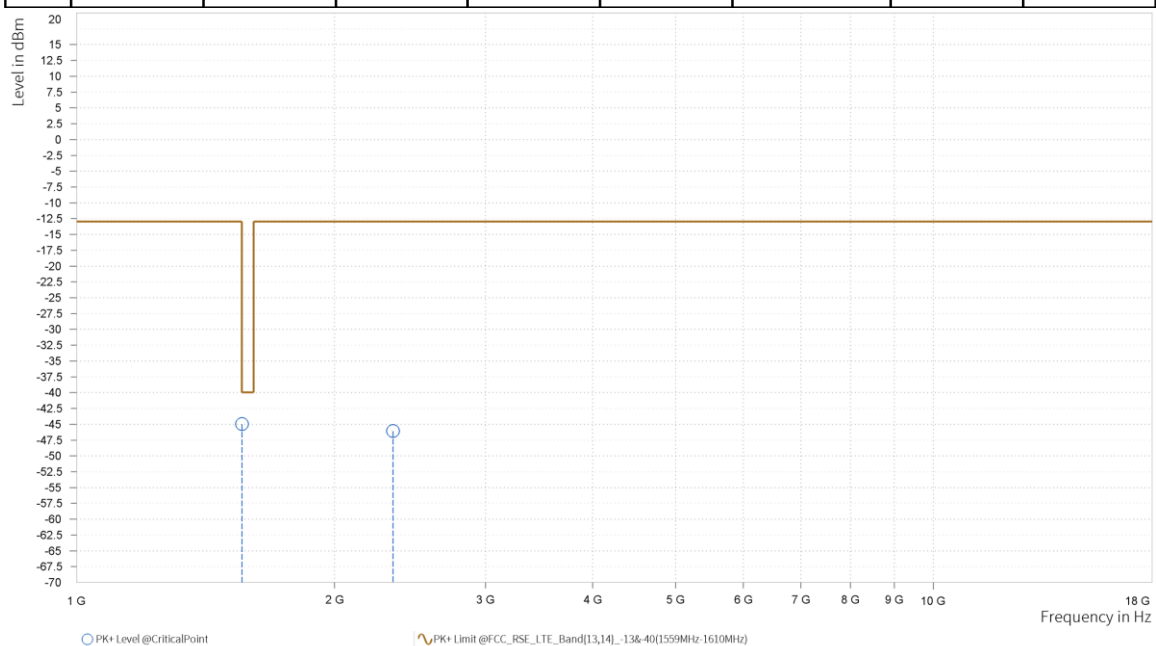


CH23230

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	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	1,560.000	-44.97	-40.00	4.97	17.19	H	294.8	2.00
3	2,339.250	-46.08	-13.00	33.08	24.41	H	1	1.00

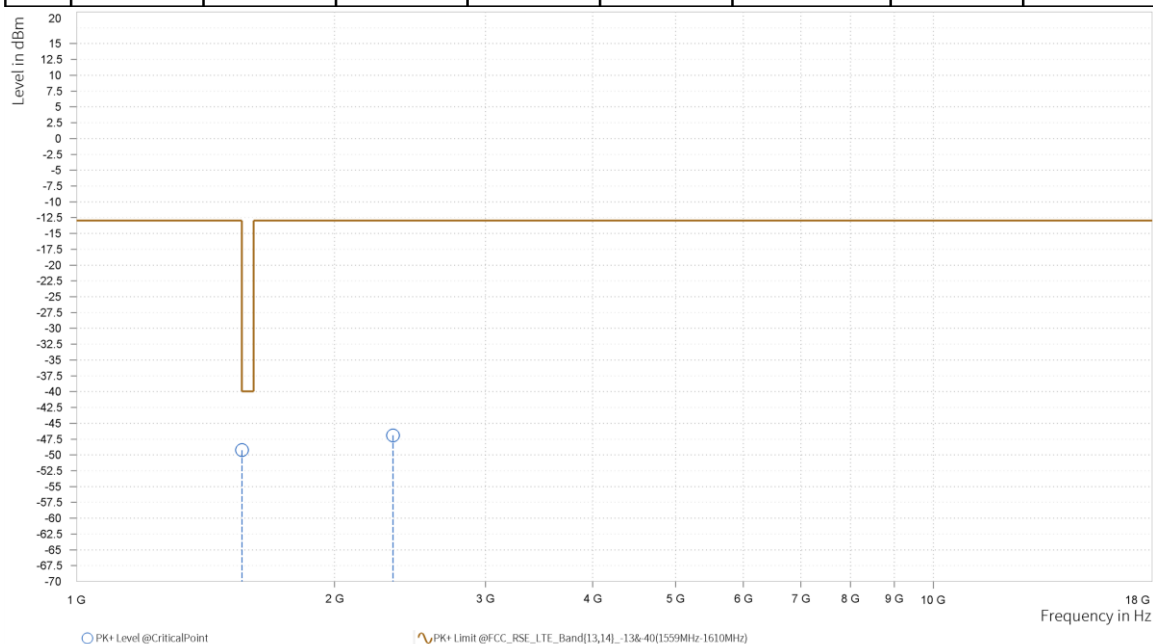




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	1,559.500	-49.24	-40.00	9.24	16.86	V	359	2.00
3	2,339.250	-46.90	-13.00	33.90	23.96	V	1	2.00



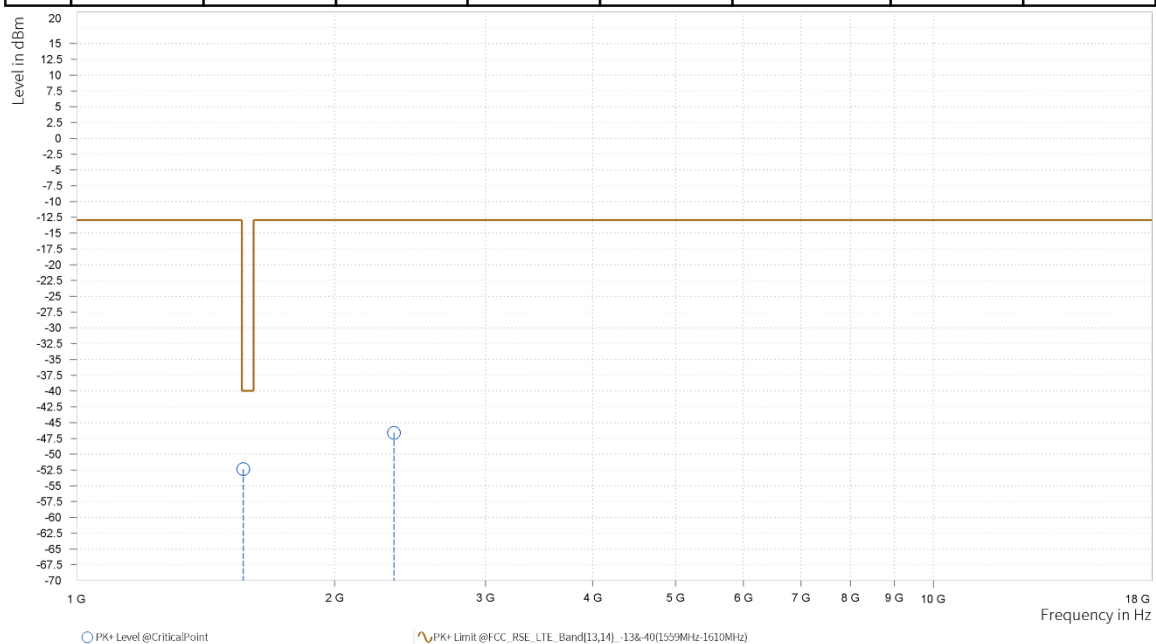


CH23255

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	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	1,564.500	-52.37	-40.00	12.37	17.15	H	2.4	2.00
3	2,346.750	-46.60	-13.00	33.60	24.45	H	359	2.00





CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	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	1,564.500	-52.10	-40.00	12.10	16.86	V	357.2	1.00
3	2,346.750	-47.53	-13.00	34.53	24.05	V	129.8	1.00

