

FCC TEST REPORT

(PART 27)

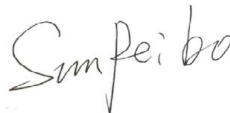
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Address:	3-4/F, Block A, Building #7, Shenzhen International Innovation Valley, Dashi 1st Road, Nanshan District, Shenzhen, Guangdong, China

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-QSZ2507090114RF04	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(d)(4) §27.50(h)(2)	Equivalent Isotropically Radiated Power (Band 4) (Band 41) (Band 66)	Compliance	A
§2.1055 §27.54	Frequency Stability	Compliance	A
§2.1049	Occupied Bandwidth	Compliance	A
§2.1051 §27.53(h) §27.53(m)(4)(6)	Conducted Band Edge Measurements (Band 4) (Band 38) (Band 41) (Band 42) (Band 66)	Compliance	A
§2.1051 §27.53(h) §27.53(m)(4)(6)	Conducted Spurious Emissions (Band 4) (Band 38) (Band 41) (Band 42) (Band 66)	Compliance	A
§2.1053 §27.53(h) §27.53(m)(4)(6)	Radiated Spurious Emissions (Band 4) (Band 38) (Band 41) (Band 42) (Band 66)	Compliance	A
§27.50(d)(5)	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.

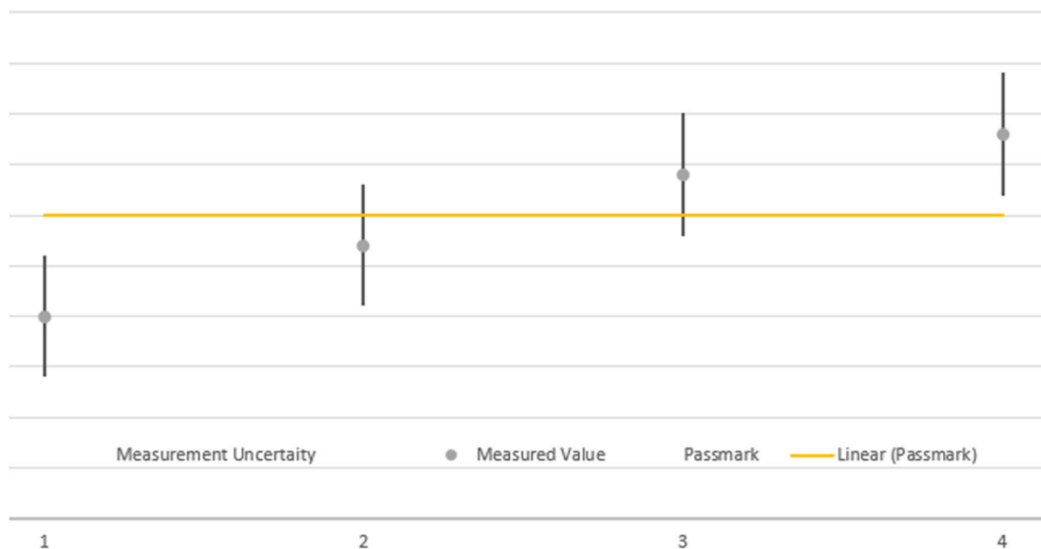


1.1 MEASUREMENT UNCERTAINTY

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	±76.97Hz
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions & Radiated Power (30MHz~1GHz)	±4.98dB
Radiated emissions & Radiated Power (1GHz ~6GHz)	±4.70dB
Radiated emissions (6GHz ~18GHz)	±4.60dB
Radiated emissions (18GHz ~40GHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Band Edge Measurements	±4.70dB

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

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*	jimiiot	
MODEL NAME*	XQ200A/ XQ200A-NA	
NOMINAL VOLTAGE*	DC 3.7V	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM
FREQUENCY RANGE	LTE Band 4 Channel Bandwidth: 1.4MHz	1710.7MHz ~ 1754.3MHz
	LTE Band 4 Channel Bandwidth: 3MHz	1711.5MHz ~ 1753.5MHz
	LTE Band 4 Channel Bandwidth: 5MHz	1712.5MHz ~ 1752.5MHz
	LTE Band 4 Channel Bandwidth: 10MHz	1715MHz ~ 1750MHz
	LTE Band 4 Channel Bandwidth: 15MHz	1717.5MHz ~ 1747.5 MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1720MHz ~ 1745MHz
	LTE Band 41 Channel Bandwidth: 5MHz	2498.5MHz ~ 2687.5MHz
	LTE Band 41 Channel Bandwidth: 10MHz	2501MHz ~ 2685MHz
	LTE Band 41 Channel Bandwidth: 15MHz	2503.5MHz ~ 2682.5MHz
	LTE Band 41 Channel Bandwidth: 20MHz	2506MHz ~ 2680MHz
	LTE Band 66 Channel Bandwidth: 1.4MHz	1710.7MHz ~ 1779.3MHz
	LTE Band 66 Channel Bandwidth: 3MHz	1711.5MHz ~ 1778.5MHz
	LTE Band 66 Channel Bandwidth: 5MHz	1712.5MHz ~ 1777.5MHz
	LTE Band 66 Channel Bandwidth: 10MHz	1715MHz ~ 1775MHz
	LTE Band 66 Channel Bandwidth: 15MHz	1717.5MHz ~ 1772.5MHz
	LTE Band 66 Channel Bandwidth: 20MHz	1720MHz ~ 1770MHz
MAX. EIRP POWER	LTE Band 4 Channel Bandwidth: 1.4MHz	515.23mW
	LTE Band 4 Channel Bandwidth: 3MHz	498.88mW
	LTE Band 4 Channel Bandwidth: 5MHz	504.66mW
	LTE Band 4 Channel Bandwidth: 10MHz	500.03mW



	LTE Band 4 Channel Bandwidth: 15MHz	516.42mW
	LTE Band 4 Channel Bandwidth: 20MHz	528.45mW
	LTE Band 41 Channel Bandwidth: 5MHz	443.61mW
	LTE Band 41 Channel Bandwidth: 10MHz	441.57mW
	LTE Band 41 Channel Bandwidth: 15MHz	452.90mW
	LTE Band 41 Channel Bandwidth: 20MHz	463.45mW
	LTE Band 66 Channel Bandwidth: 1.4MHz	505.82mW
	LTE Band 66 Channel Bandwidth: 3MHz	509.33mW
	LTE Band 66 Channel Bandwidth: 5MHz	505.82mW
	LTE Band 66 Channel Bandwidth: 10MHz	520.00mW
	LTE Band 66 Channel Bandwidth: 15MHz	520.00mW
	LTE Band 66 Channel Bandwidth: 20MHz	526.02mW
EMISSION DESIGNATOR	LTE Band 41 Channel Bandwidth: 5MHz	QPSK: 4M49G7D 16QAM: 4M49W7D
	LTE Band 41 Channel Bandwidth: 10MHz	QPSK: 8M95G7D 16QAM: 8M95W7D
	LTE Band 41 Channel Bandwidth: 15MHz	QPSK: 13M5G7D 16QAM: 13M5W7D
	LTE Band 41 Channel Bandwidth: 20MHz	QPSK: 17M9G7D 16QAM: 17M9W7D
	LTE Band 66 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D 16QAM: 1M10W7D
	LTE Band 66 Channel Bandwidth: 3MHz	QPSK: 2M70G7D 16QAM: 2M69W7D
	LTE Band 66 Channel Bandwidth: 5MHz	QPSK: 4M50G7D 16QAM: 4M49W7D
	LTE Band 66 Channel Bandwidth: 10MHz	QPSK: 8M97G7D 16QAM: 8M96W7D
	LTE Band 66 Channel Bandwidth: 15MHz	QPSK: 13M5G7D 16QAM: 13M5W7D
	LTE Band 66 Channel Bandwidth: 20MHz	QPSK: 18M0G7D 16QAM: 17M9W7D
ANTENNA GAIN*	LTE BAND 4	4.28dBi
	LTE BAND 41	3.42dBi
	LTE BAND 66	4.28dBi



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:

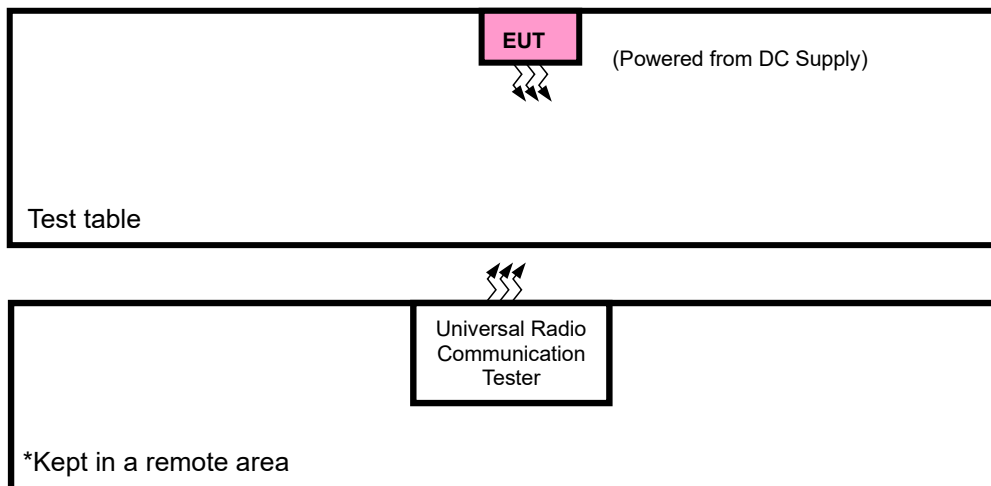
1. *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.
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
LTE	1TX/1RX

4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in 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 LTE link

LTE BAND 4 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	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 4 are covered by LTE Band 66, Because it is a subset of LTE Band 66 with the same output power and supported bandwidths, So the conducted test data and RSE test data please refer to LTE Band 66



LTE BAND 41 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	FREQUENCY STABILITY	39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
A	BAND EDGE	39675 to 41565	39675	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
			41565	5MHz	QPSK, 16QAM	1 RB / 24 RB Offset 25 RB / 0 RB Offset
		39700 to 41540	39700	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
			41540	10MHz	QPSK, 16QAM	1 RB / 49 RB Offset 50 RB / 0 RB Offset
		39725 to 41515	39725	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset 75 RB / 0 RB Offset
		39750 to 41490	39750	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset



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			41515	15MHz	QPSK, 16QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		39750 to 41490	39750	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
			41490	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
A	CONDUCTED EMISSION	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	39675 to 41565	40620	5MHz	QPSK	1 RB / 0 RB Offset
		39700 to 41540	39700, 40620, 41540	10MHz	QPSK	1 RB / 0 RB Offset
		39725 to 41515	40620	15MHz	QPSK	1 RB / 0 RB Offset
		39750 to 41490	40620	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 66 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	131979 to 132665	131979, 132322, 132665	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		131987 to 132657	131987, 132322, 132657	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		131997 to 132647	131997, 132322, 132647	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		132022 to 132622	132022, 132322, 132622	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		132047 to 132597	132047, 132322, 132597	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		132072 to 132572	132072, 132322, 132572	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	132072 to 132572	132072, 132322, 132572	20MHz	QPSK	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	131979 to 132665	131979, 132322, 132665	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		131987 to 132657	131987, 132322, 132657	3MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		131997 to 132647	131997, 132322, 132647	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		132022 to 132622	132022, 132322, 132622	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		132047 to 132597	132047, 132322, 132597	15MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		132072 to 132572	132072, 132322, 132572	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset



A	BAND EDGE	131979 to 132322	131979	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
			132322	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		131987 to 132657	131987	3MHz	QPSK, 16QAM	1 RB / 5 RB Offset
			132657	3MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		131997 to 132647	131997	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
			132647	5MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		132022 to 132622	132022	10MHz	QPSK, 16QAM	1 RB / 14 RB Offset
			132622	10MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		132047 to 132597	132047	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
			132597	15MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		132072 to 132572	132072	20MHz	QPSK, 16QAM	1 RB / 24 RB Offset
			132572	20MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		131979 to 132665	131979	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
			132665	1.4MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		131987 to 132657	131987	3MHz	QPSK, 16QAM	1 RB / 49 RB Offset
			132657	3MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		131997 to 132647	131997	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
			132647	5MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		132022 to 132622	132022	10MHz	QPSK, 16QAM	1 RB / 74 RB Offset
			132622	10MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		132047 to 132597	132047	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
			132597	15MHz	QPSK, 16QAM	100 RB / 0 RB Offset
		132072 to 132572	132072	20MHz	QPSK, 16QAM	1 RB / 99 RB Offset
			132572	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
A	CONDCUETED EMISSION	131979 to 132665	131979,132322,132665	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	131979 to 132665	131979,132322,132665	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset



		131987 to 132657	131987,132322,132657	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offset
A	RADIATED EMISSION	131979 to 132665	131979,132322,132665	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	132322	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	132322	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132322	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132322	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132322	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
EIRP	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
CONDCUDED 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): LTEB4/B66

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) : LTEB41

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.

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.

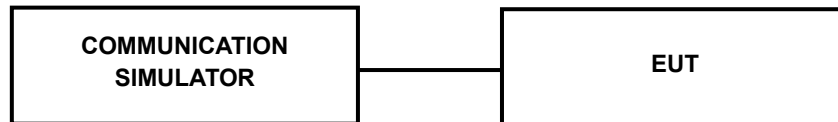
CONDUCTED POWER MEASUREMENT:

- 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)

LTE Band 4						
BW [MHz]	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20050	20175	20300
		Frequency (MHz)		1720	1732.5	1745
20	QPSK	1	0	22.52	22.39	22.33
		1	50	22.95	22.59	22.51
		1	99	22.28	22.12	22.09
		50	0	21.62	21.41	21.17
		50	25	21.93	21.57	21.42
		50	50	21.61	21.38	21.24
		100	0	21.83	21.37	21.21
	16QAM	1	0	21.81	21.80	21.71
		1	50	22.21	22.03	21.87
		1	99	21.71	21.61	21.56
		50	0	20.70	20.48	20.13
		50	25	20.95	20.53	20.35
		50	50	20.65	20.24	20.17
		100	0	20.93	20.31	20.12
BW [MHz]	Modulation	Channel		20025	20175	20325
		Frequency (MHz)		1717.5	1732.5	1747.5
15	QPSK	1	0	22.44	22.38	22.25
		1	37	22.85	22.44	22.50
		1	74	22.26	22.18	22.18
		36	0	21.51	21.38	21.04
		36	19	21.92	21.51	21.40
		36	39	21.60	21.24	21.18
		75	0	21.69	21.29	21.19
	16QAM	1	0	21.74	21.66	21.66
		1	37	22.11	21.93	21.86
		1	74	21.57	21.51	21.47
		36	0	20.59	20.47	20.01
		36	19	20.92	20.49	20.25
		36	39	20.50	20.16	20.03
		75	0	20.81	20.16	20.17



LTE Band 4						
BW [MHz]	Modulation	Channel		20000	20175	20350
		Frequency (MHz)		1715	1732.5	1750
10	QPSK	1	0	22.35	22.30	22.10
		1	24	22.71	22.30	22.40
		1	49	22.21	22.06	22.05
		25	0	21.42	21.33	21.12
		25	12	21.91	21.43	21.35
		25	25	21.46	21.21	21.13
		50	0	21.55	21.23	21.13
	16QAM	1	0	21.65	21.65	21.59
		1	24	21.99	21.82	21.74
		1	49	21.51	21.48	21.34
		25	0	20.48	20.46	20.14
		25	12	20.78	20.46	20.21
		25	25	20.40	20.04	20.07
		50	0	20.74	20.01	20.02
BW [MHz]	Modulation	Channel		19975	20175	20375
		Frequency (MHz)		1712.5	1732.5	1752.5
5	QPSK	1	0	22.32	22.36	22.23
		1	12	22.75	22.43	22.35
		1	24	22.23	22.14	22.13
		12	0	21.44	21.37	21.01
		12	6	21.91	21.38	21.35
		12	13	21.48	21.18	21.08
		25	0	21.56	21.26	21.08
	16QAM	1	0	21.66	21.56	21.55
		1	12	22.07	21.79	21.85
		1	24	21.45	21.36	21.34
		12	0	20.44	20.42	20.09
		12	6	20.81	20.46	20.12
		12	13	20.39	20.08	20.15
		25	0	20.79	20.08	20.04



LTE Band 4						
BW [MHz]	Modulation	Channel		19965	20175	20385
		Frequency (MHz)		1711.5	1732.5	1753.5
3	QPSK	1	0	22.31	22.24	22.18
		1	7	22.70	22.36	22.34
		1	14	22.14	22.11	22.01
		8	0	21.40	21.26	21.13
		8	3	21.89	21.32	21.25
		8	7	21.41	21.17	21.16
		15	0	21.41	21.17	21.17
	16QAM	1	0	21.62	21.49	21.52
		1	7	21.96	21.74	21.71
		1	14	21.44	21.26	21.33
		8	0	20.39	20.36	20.07
		8	3	20.72	20.42	20.09
		8	7	20.34	20.16	20.12
		15	0	20.78	20.17	20.29
BW [MHz]	Modulation	Channel		19957	20175	20393
		Frequency (MHz)		1710.7	1732.5	1754.3
1.4	QPSK	1	0	22.30	22.29	22.23
		1	2	22.84	22.37	22.41
		1	5	22.22	22.10	22.10
		3	0	22.31	22.08	22.02
		3	1	22.73	22.29	22.18
		3	3	22.29	22.13	22.03
		6	0	21.54	21.20	21.17
	16QAM	1	0	21.68	21.65	21.63
		1	2	22.09	21.87	21.82
		1	5	21.47	21.46	21.38
		3	0	21.40	21.16	21.11
		3	1	21.71	21.30	21.10
		3	3	21.31	21.06	21.01



LTE Band 41						
BW [MHz]	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		39750	40620	41490
		Frequency (MHz)		2506	2593	2680
20	QPSK	1	0	22.67	22.62	23.11
		1	50	22.40	22.79	23.24
		1	99	22.51	22.96	23.05
		50	0	21.44	21.37	22.08
		50	25	21.26	21.61	22.23
		50	50	21.16	21.53	22.02
		100	0	21.18	21.50	22.07
	16QAM	1	0	21.56	21.49	22.20
		1	50	21.42	21.77	22.35
		1	99	21.12	21.75	22.12
		50	0	20.09	20.35	21.07
		50	25	20.01	20.55	21.24
		50	50	20.29	20.42	21.03
		100	0	20.34	20.36	21.07
BW [MHz]	Modulation	Channel		39725	40620	41515
		Frequency (MHz)		2503.5	2593	2682.5
15	QPSK	1	0	22.57	22.55	23.06
		1	37	22.25	22.66	23.14
		1	74	22.37	22.84	22.97
		36	0	21.42	21.27	21.99
		36	19	21.15	21.58	22.15
		36	39	21.05	21.45	21.95
		75	0	21.04	21.43	22.02
	16QAM	1	0	21.48	21.38	22.16
		1	37	21.35	21.75	22.25
		1	74	21.06	21.64	22.07
		36	0	20.03	20.32	21.06
		36	19	20.41	20.48	21.12
		36	39	20.16	20.32	20.89
		75	0	20.27	20.21	20.98



LTE Band 41						
BW [MHz]	Modulation	Channel		39700	40620	41540
		Frequency (MHz)		2501	2593	2685
10	QPSK	1	0	22.55	22.46	22.95
		1	24	22.20	22.58	23.03
		1	49	22.31	22.78	22.86
		25	0	21.33	21.13	21.88
		25	12	21.05	21.50	22.04
		25	25	21.03	21.32	21.88
		50	0	21.43	21.33	21.98
	16QAM	1	0	21.38	21.37	22.13
		1	24	21.20	21.67	22.20
		1	49	21.02	21.49	22.00
		25	0	20.38	20.22	20.97
		25	12	20.37	20.39	21.06
		25	25	20.18	20.28	20.86
		50	0	20.31	20.12	20.83
BW [MHz]	Modulation	Channel		39675	40620	41565
		Frequency (MHz)		2498.5	2593	2687.5
5	QPSK	1	0	22.44	22.46	22.91
		1	12	22.07	22.48	23.05
		1	24	22.26	22.64	22.74
		12	0	21.32	21.07	21.83
		12	6	21.40	21.50	21.97
		12	13	21.42	21.24	21.73
		25	0	21.36	21.21	21.95
	16QAM	1	0	21.28	21.21	21.93
		1	12	21.10	21.51	22.16
		1	24	21.42	21.57	21.89
		12	0	20.37	20.21	20.87
		12	6	20.21	20.23	20.94
		12	13	20.01	20.08	20.63
		25	0	20.19	20.13	20.80



LTE Band 66						
BW [MHz]	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		132072	132322	132572
		Frequency (MHz)		1720	1745	1770
20	QPSK	1	0	22.56	22.52	22.13
		1	50	22.93	22.63	22.51
		1	99	22.61	22.18	22.33
		50	0	21.62	21.47	21.25
		50	25	21.96	21.66	21.56
		50	50	21.72	21.37	21.53
		100	0	21.87	21.43	21.58
	16QAM	1	0	21.87	21.82	21.49
		1	50	22.23	22.02	21.92
		1	99	21.97	21.63	21.57
		50	0	20.75	20.46	20.20
		50	25	20.98	20.62	20.67
		50	50	20.80	20.35	20.50
		100	0	20.87	20.39	20.61
BW [MHz]	Modulation	Channel		132047	132322	132597
		Frequency (MHz)		1717.5	1745	1772.5
15	QPSK	1	0	22.43	22.50	22.13
		1	37	22.88	22.56	22.39
		1	74	22.51	22.14	22.28
		36	0	21.55	21.39	21.16
		36	19	21.91	21.57	21.46
		36	39	21.68	21.35	21.52
		75	0	21.77	21.31	21.44
	16QAM	1	0	21.85	21.70	21.42
		1	37	22.14	21.92	21.79
		1	74	21.92	21.59	21.49
		36	0	20.71	20.33	20.13
		36	19	20.94	20.54	20.65
		36	39	20.78	20.26	20.45
		75	0	20.76	20.26	20.52



LTE Band 66						
BW [MHz]	Modulation	Channel		132022	132322	132622
		Frequency (MHz)		1715	1745	1775
10	QPSK	1	0	22.50	22.39	22.09
		1	24	22.88	22.59	22.45
		1	49	22.48	22.12	22.31
		25	0	21.48	21.35	21.24
		25	12	21.81	21.51	21.51
		25	25	21.67	21.25	21.52
		50	0	21.73	21.41	21.53
	16QAM	1	0	21.79	21.74	21.40
		1	24	22.19	22.01	21.85
		1	49	21.95	21.55	21.56
		25	0	20.65	20.45	20.15
		25	12	20.95	20.50	20.57
		25	25	20.74	20.30	20.43
		50	0	20.75	20.27	20.60
BW [MHz]	Modulation	Channel		131997	132322	132647
		Frequency (MHz)		1712.5	1745	1777.5
5	QPSK	1	0	22.39	22.41	22.25
		1	12	22.76	22.46	22.38
		1	24	22.43	22.10	22.21
		12	0	21.51	21.29	21.04
		12	6	21.78	21.44	21.37
		12	13	21.66	21.31	21.42
		25	0	21.70	21.28	21.37
	16QAM	1	0	21.80	21.67	21.33
		1	12	21.99	21.81	21.75
		1	24	21.78	21.48	21.43
		12	0	20.66	20.27	20.06
		12	6	20.88	20.43	20.56
		12	13	20.67	20.13	20.34
		25	0	20.61	20.14	20.47



LTE Band 66						
BW [MHz]	Modulation	Channel		131987	132322	132657
		Frequency (MHz)		1711.5	1745	1778.5
3	QPSK	1	0	22.26	22.32	22.23
		1	7	22.79	22.44	22.23
		1	14	22.27	22.39	22.12
		8	0	21.37	21.21	21.40
		8	3	21.64	21.51	21.29
		8	7	21.57	21.31	21.41
		15	0	21.51	21.13	21.22
	16QAM	1	0	21.63	21.48	21.17
		1	7	21.98	21.84	21.61
		1	14	21.73	21.40	21.33
		8	0	20.62	20.25	20.32
		8	3	20.83	20.33	20.49
		8	7	20.68	20.13	20.32
		15	0	20.54	20.04	20.34
BW [MHz]	Modulation	Channel		131979	132322	132665
		Frequency (MHz)		1710.7	1745	1779.3
1.4	QPSK	1	0	22.41	22.49	22.40
		1	2	22.76	22.48	22.38
		1	5	22.48	22.12	22.27
		3	0	22.23	22.09	22.35
		3	1	22.67	22.37	22.25
		3	3	22.40	22.06	22.23
		6	0	21.71	21.23	21.33
	16QAM	1	0	21.76	21.67	21.33
		1	2	22.04	21.80	21.76
		1	5	21.87	21.45	21.43
		3	0	21.38	21.07	21.35
		3	1	21.63	21.26	21.41
		3	3	21.60	21.31	21.40



EIRP

LTE Band 4							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-QPSK	20050	1720	22.95	4.28	27.23	528.45	1
	20175	1732.5	22.59	4.28	26.87	486.41	1
	20300	1745	22.51	4.28	26.79	477.53	1
20M- 16QAM	20050	1720	22.21	4.28	26.49	445.66	1
	20175	1732.5	22.03	4.28	26.31	427.56	1
	20300	1745	21.87	4.28	26.15	412.10	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	20025	1717.5	22.85	4.28	27.13	516.42	1
	20175	1732.5	22.44	4.28	26.72	469.89	1
	20325	1747.5	22.50	4.28	26.78	476.43	1
15M- 16QAM	20025	1717.5	22.11	4.28	26.39	435.51	1
	20175	1732.5	21.93	4.28	26.21	417.83	1
	20325	1747.5	21.86	4.28	26.14	411.15	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	20000	1715	22.71	4.28	26.99	500.03	1
	20175	1732.5	22.30	4.28	26.58	454.99	1
	20350	1750	22.40	4.28	26.68	465.59	1
10M- 16QAM	20000	1715	21.99	4.28	26.27	423.64	1
	20175	1732.5	21.82	4.28	26.10	407.38	1
	20350	1750	21.74	4.28	26.02	399.94	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
5M-QPSK	19975	1712.5	22.75	4.28	27.03	504.66	1
	20175	1732.5	22.43	4.28	26.71	468.81	1
	20375	1752.5	22.35	4.28	26.63	460.26	1
5M-16QAM	19975	1712.5	22.07	4.28	26.35	431.52	1
	20175	1732.5	21.79	4.28	26.07	404.58	1
	20375	1752.5	21.85	4.28	26.13	410.20	1



LTE Band 4							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
3M-QPSK	19965	1711.5	22.70	4.28	26.98	498.88	1
	20175	1732.5	22.36	4.28	26.64	461.32	1
	20385	1753.5	22.34	4.28	26.62	459.20	1
3M-16QAM	19965	1711.5	21.96	4.28	26.24	420.73	1
	20175	1732.5	21.74	4.28	26.02	399.94	1
	20385	1753.5	21.71	4.28	25.99	397.19	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
1.4M- QPSK	19957	1710.7	22.84	4.28	27.12	515.23	1
	20175	1732.5	22.37	4.28	26.65	462.38	1
	20393	1754.3	22.41	4.28	26.69	466.66	1
1.4M- 16QAM	19957	1710.7	22.09	4.28	26.37	433.51	1
	20175	1732.5	21.87	4.28	26.15	412.10	1
	20393	1754.3	21.82	4.28	26.10	407.38	1



LTE Band 41							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-QPSK	39750	2506	22.67	3.42	26.09	406.44	2
	40620	2593	22.96	3.42	26.38	434.51	2
	41490	2680	23.24	3.42	26.66	463.45	2
20M- 16QAM	39750	2506	21.56	3.42	24.98	314.77	2
	40620	2593	21.77	3.42	25.19	330.37	2
	41490	2680	22.35	3.42	25.77	377.57	2
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	39725	2503.5	22.57	3.42	25.99	397.19	2
	40620	2593	22.84	3.42	26.26	422.67	2
	41515	2682.5	23.14	3.42	26.56	452.90	2
15M- 16QAM	39725	2503.5	21.48	3.42	24.90	309.03	2
	40620	2593	21.75	3.42	25.17	328.85	2
	41515	2682.5	22.25	3.42	25.67	368.98	2
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	39700	2501	22.55	3.42	25.97	395.37	2
	40620	2593	22.78	3.42	26.20	416.87	2
	41540	2685	23.03	3.42	26.45	441.57	2
10M- 16QAM	39700	2501	21.38	3.42	24.80	302.00	2
	40620	2593	21.67	3.42	25.09	322.85	2
	41540	2685	22.20	3.42	25.62	364.75	2
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
5M-QPSK	39675	2498.5	22.44	3.42	25.86	385.48	2
	40620	2593	22.64	3.42	26.06	403.65	2
	41565	2687.5	23.05	3.42	26.47	443.61	2
5M-16QAM	39675	2498.5	21.42	3.42	24.84	304.79	2
	40620	2593	21.57	3.42	24.99	315.50	2
	41565	2687.5	22.16	3.42	25.58	361.41	2



LTE Band 66							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-QPSK	132072	1720	22.93	4.28	27.21	526.02	1
	132322	1745	22.63	4.28	26.91	490.91	1
	132572	1770	22.51	4.28	26.79	477.53	1
20M- 16QAM	132072	1720	22.23	4.28	26.51	447.71	1
	132322	1745	22.02	4.28	26.30	426.58	1
	132572	1770	21.92	4.28	26.20	416.87	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	132047	1717.5	22.88	4.28	27.16	520.00	1
	132322	1745	22.56	4.28	26.84	483.06	1
	132597	1772.5	22.39	4.28	26.67	464.52	1
15M- 16QAM	132047	1717.5	22.14	4.28	26.42	438.53	1
	132322	1745	21.92	4.28	26.20	416.87	1
	132597	1772.5	21.79	4.28	26.07	404.58	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	132022	1715	22.88	4.28	27.16	520.00	1
	132322	1745	22.59	4.28	26.87	486.41	1
	132622	1775	22.45	4.28	26.73	470.98	1
10M- 16QAM	132022	1715	22.19	4.28	26.47	443.61	1
	132322	1745	22.01	4.28	26.29	425.60	1
	132622	1775	21.85	4.28	26.13	410.20	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
5M-QPSK	131997	1712.5	22.76	4.28	27.04	505.82	1
	132322	1745	22.46	4.28	26.74	472.06	1
	132647	1777.5	22.38	4.28	26.66	463.45	1
5M-16QAM	131997	1712.5	21.99	4.28	26.27	423.64	1
	132322	1745	21.81	4.28	26.09	406.44	1
	132647	1777.5	21.75	4.28	26.03	400.87	1



LTE Band 66							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
3M-QPSK	131987	1711.5	22.79	4.28	27.07	509.33	1
	132322	1745	22.44	4.28	26.72	469.89	1
	132657	1778.5	22.23	4.28	26.51	447.71	1
3M-16QAM	131987	1711.5	21.98	4.28	26.26	422.67	1
	132322	1745	21.84	4.28	26.12	409.26	1
	132657	1778.5	21.61	4.28	25.89	388.15	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
1.4M- QPSK	131979	1710.7	22.76	4.28	27.04	505.82	1
	132322	1745	22.49	4.28	26.77	475.34	1
	132665	1779.3	22.40	4.28	26.68	465.59	1
1.4M- 16QAM	131979	1710.7	22.04	4.28	26.32	428.55	1
	132322	1745	21.80	4.28	26.08	405.51	1
	132665	1779.3	21.76	4.28	26.04	401.79	1

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



3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

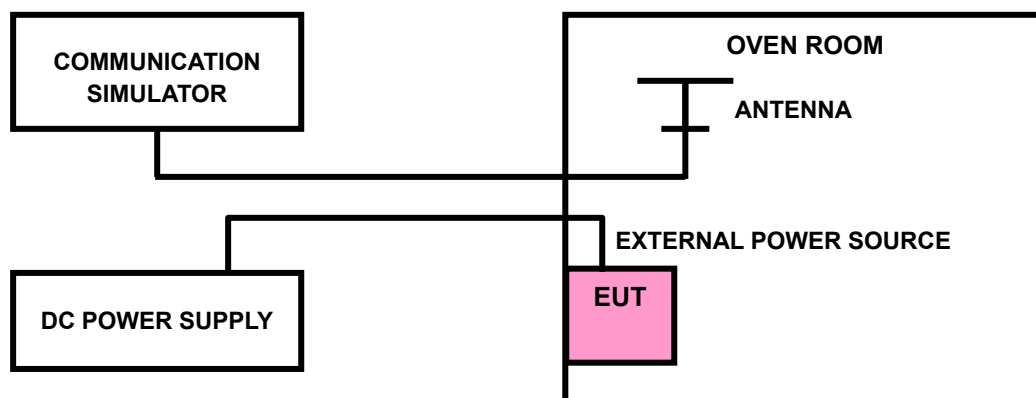
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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.

3.2.3 TEST SETUP



3.2.4 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)

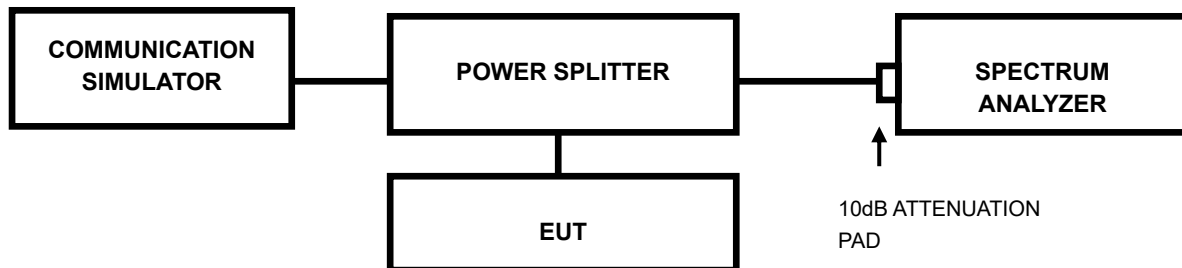


3.3 OCCUPIED BANDWIDTH MEASUREMENT

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.



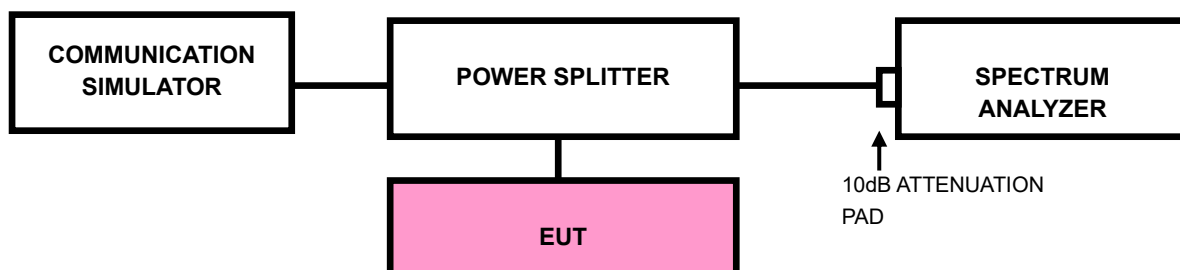
3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

According to FCC Part 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 Part 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 that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. 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.

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

- a) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
- b) Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW).
- c) Set the resolution bandwidth (RBW) $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
- d) Beyond the 1MHz band from the band edge, RBW=1MHz was used.
- e) Set the video bandwidth (VBW) to $\geq 3 \times$ RBW.
- f) Select the average power (RMS) display detector.
- g) Set the number of measurement points to ≥ 1001 .
- h) Use auto-coupled sweep time.
- i) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.
- j) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.
- k) 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

For LTE Band4/66

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 is equal to -13dBm .

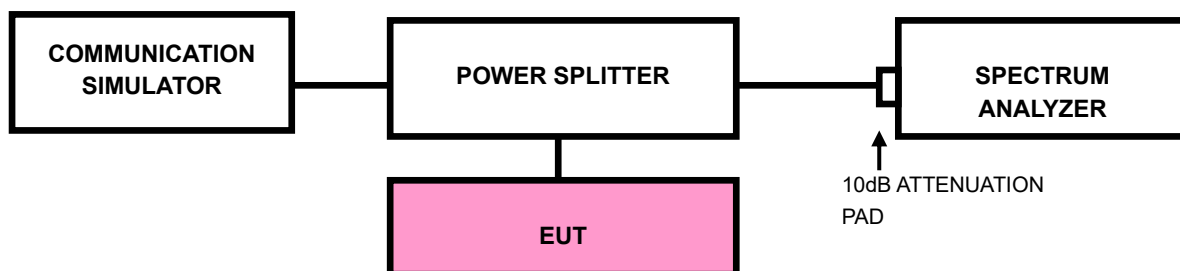
For LTE Band 41

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

- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- b. 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

For LTE Band4/66

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 is equal to -13dBm .

For LTE Band 41

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. EIRP = Output power level of S.G – TX cable loss + 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.

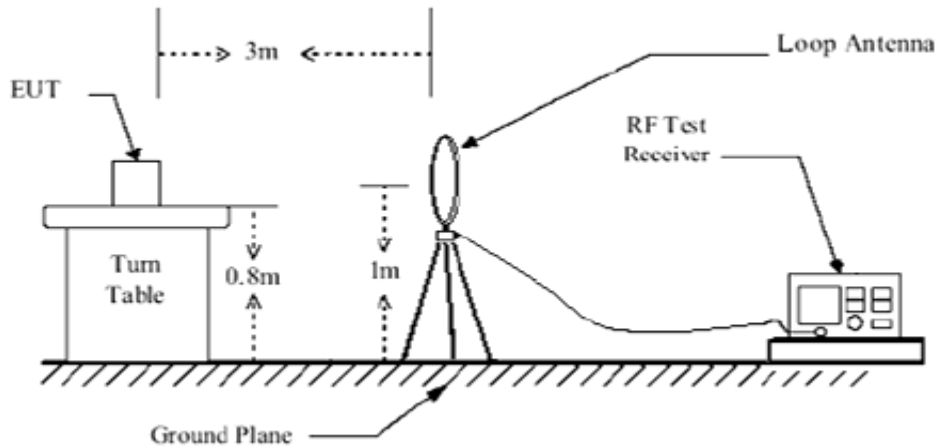
3.6.3 DEVIATION FROM TEST STANDARD

No deviation

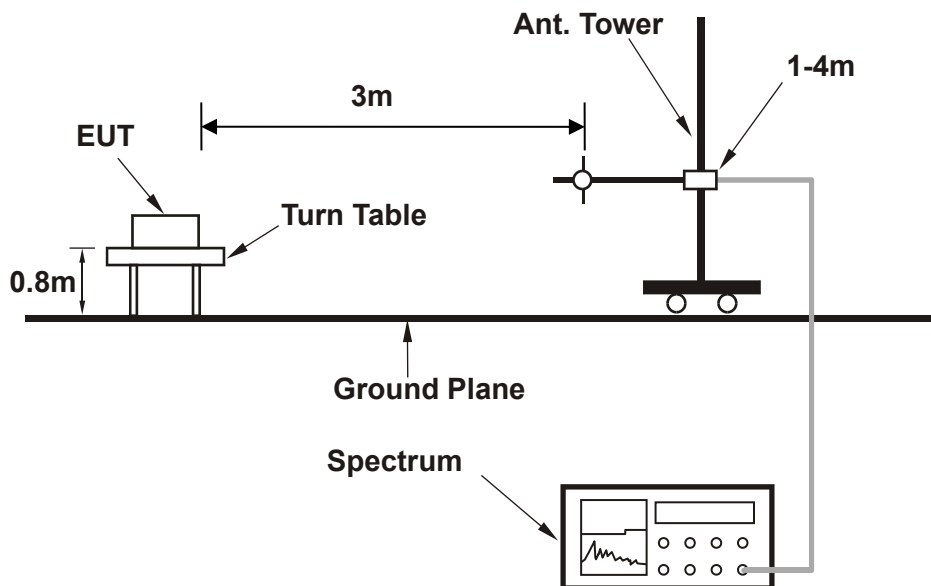


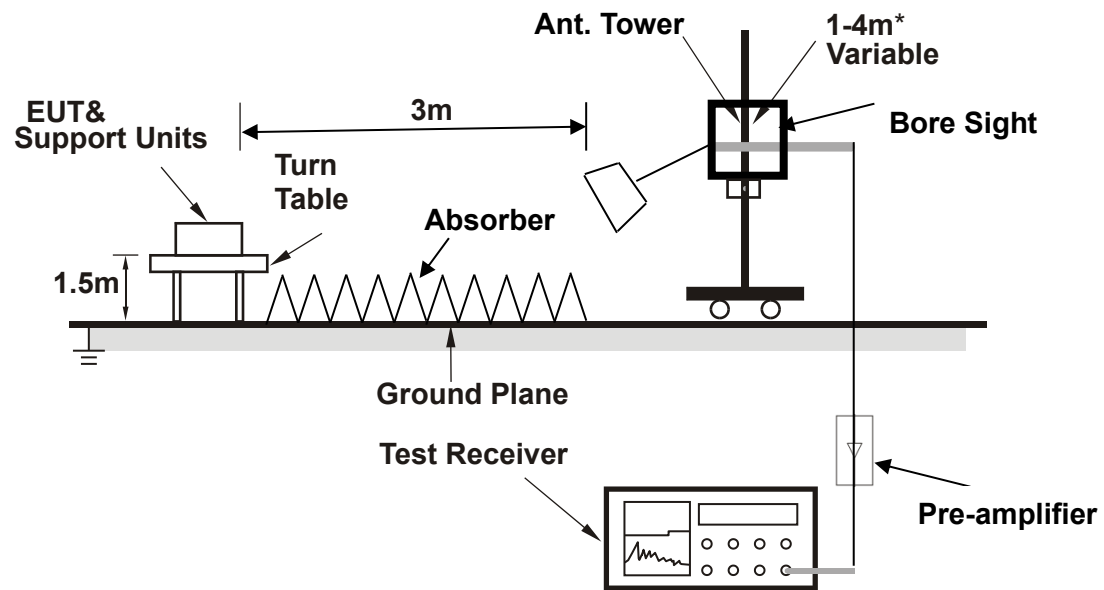
3.6.4 TEST SETUP

< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >





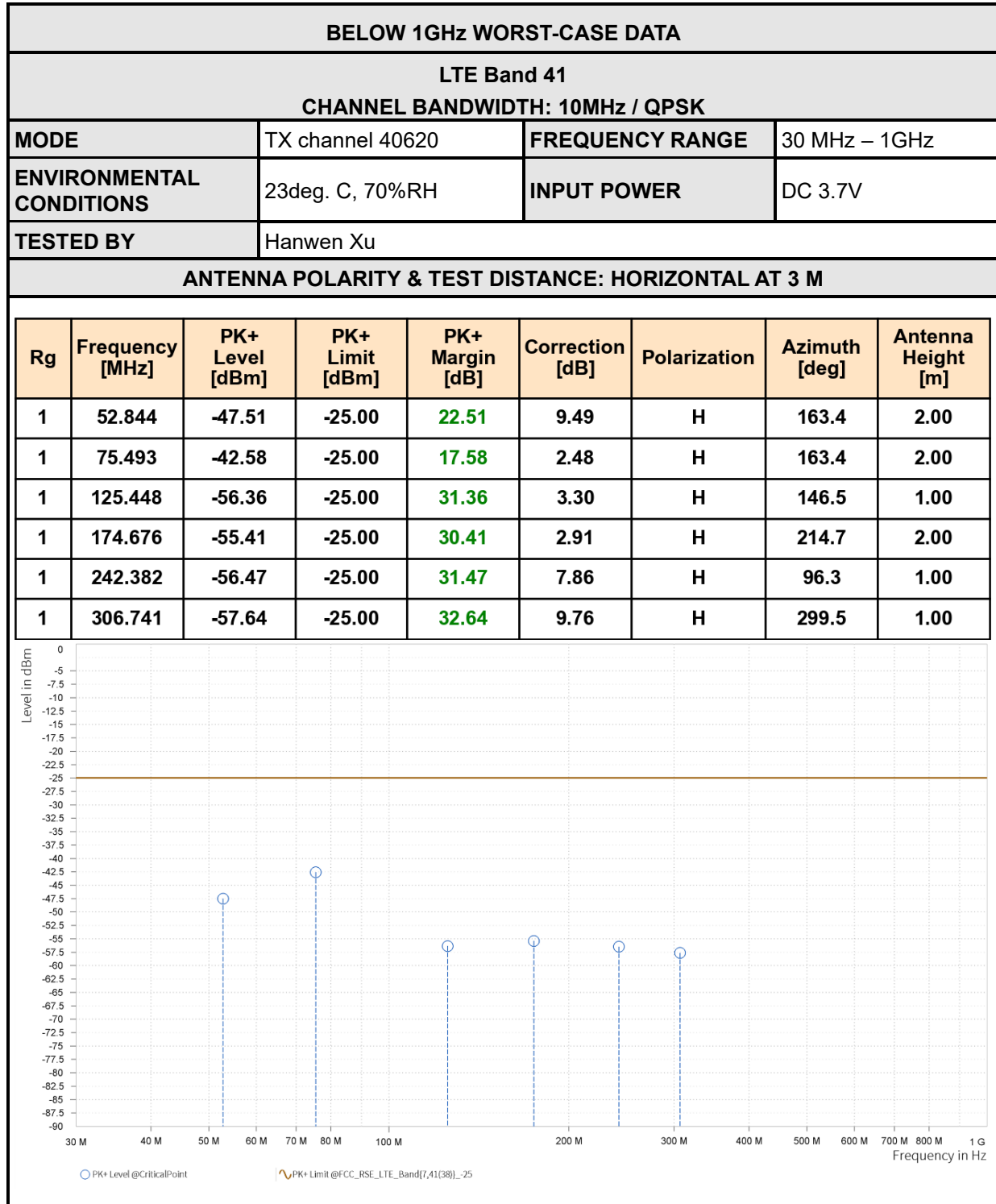
Note: Above 1G is a directional antenna depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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.

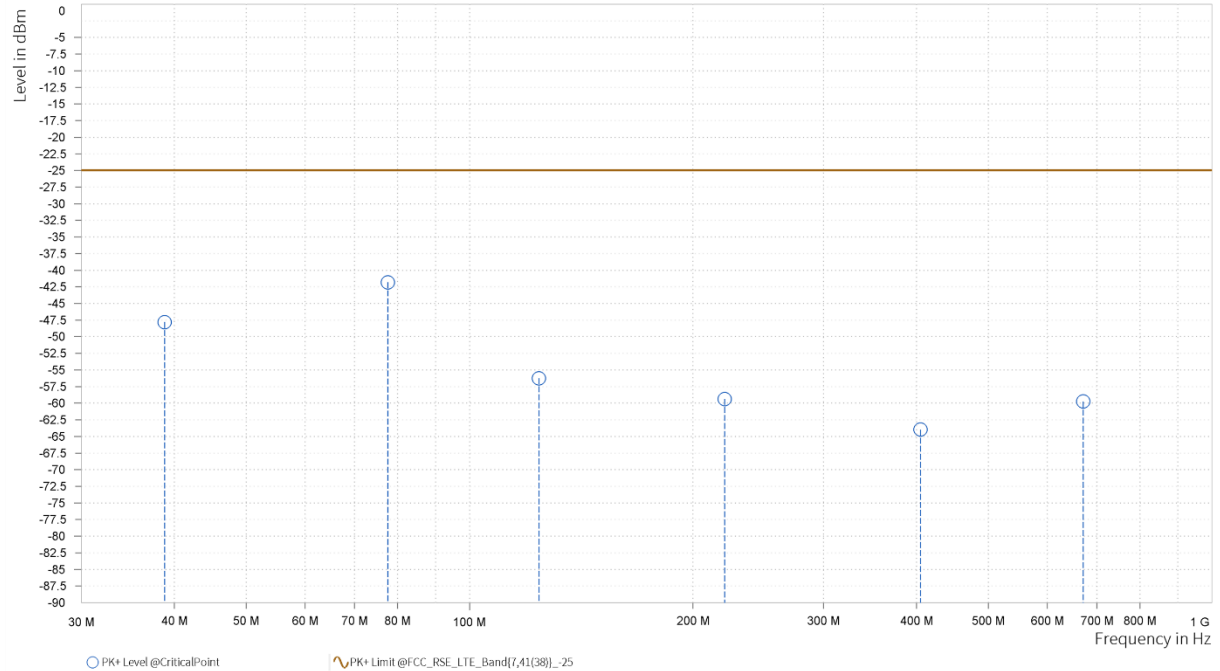




MODE	TX channel 40620	FREQUENCY RANGE	30 MHz – 1GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 3.7V
TESTED BY	Hanwen Xu		

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	38.827	-47.81	-25.00	22.81	8.36	V	359.1	1.00
1	77.579	-41.82	-25.00	16.82	3.87	V	213.5	2.00
1	123.945	-56.26	-25.00	31.26	6.21	V	145.3	1.00
1	220.557	-59.36	-25.00	34.36	7.02	V	163.4	2.00
1	405.099	-63.97	-25.00	38.97	10.74	V	359.1	1.00
1	670.685	-59.75	-25.00	34.75	14.78	V	95.1	1.00





ABOVE 1GHz

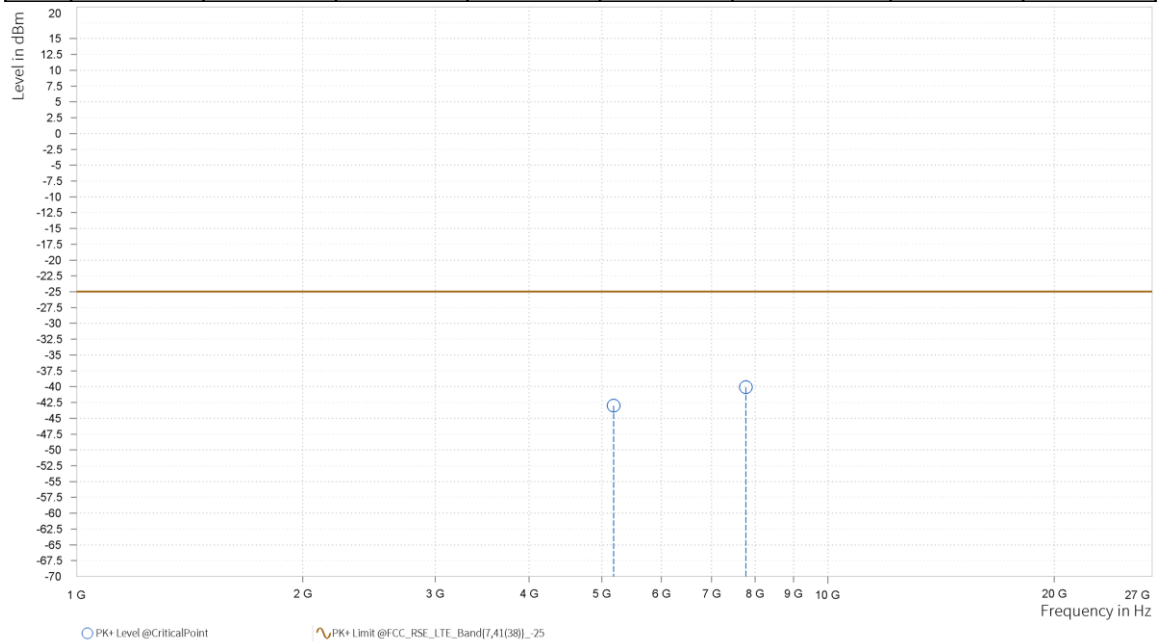
Note: For higher frequency, the emission is too low to be detected.

LTE BAND 41

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 40620
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	5,181.500	-43.02	-25.00	18.02	31.73	H	0.9	2.00
4	7,772.250	-40.11	-25.00	15.11	36.49	H	249.3	1.00

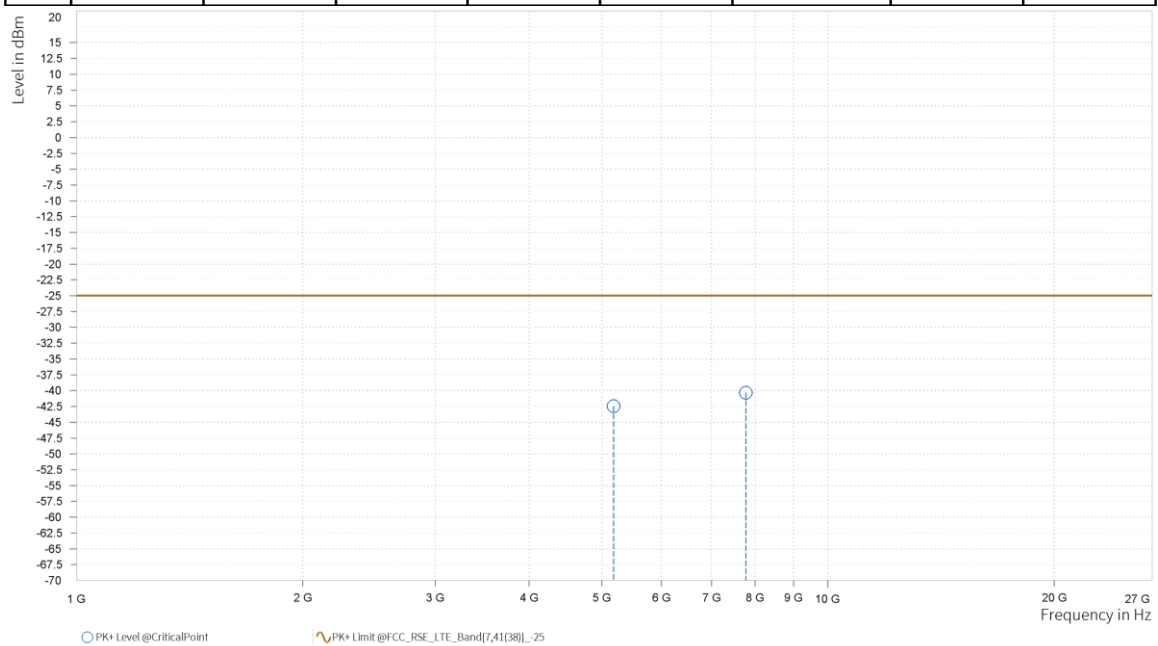




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	5,181.500	-42.44	-25.00	17.44	31.67	V	359	2.00
4	7,772.250	-40.33	-25.00	15.33	36.54	V	1	1.00



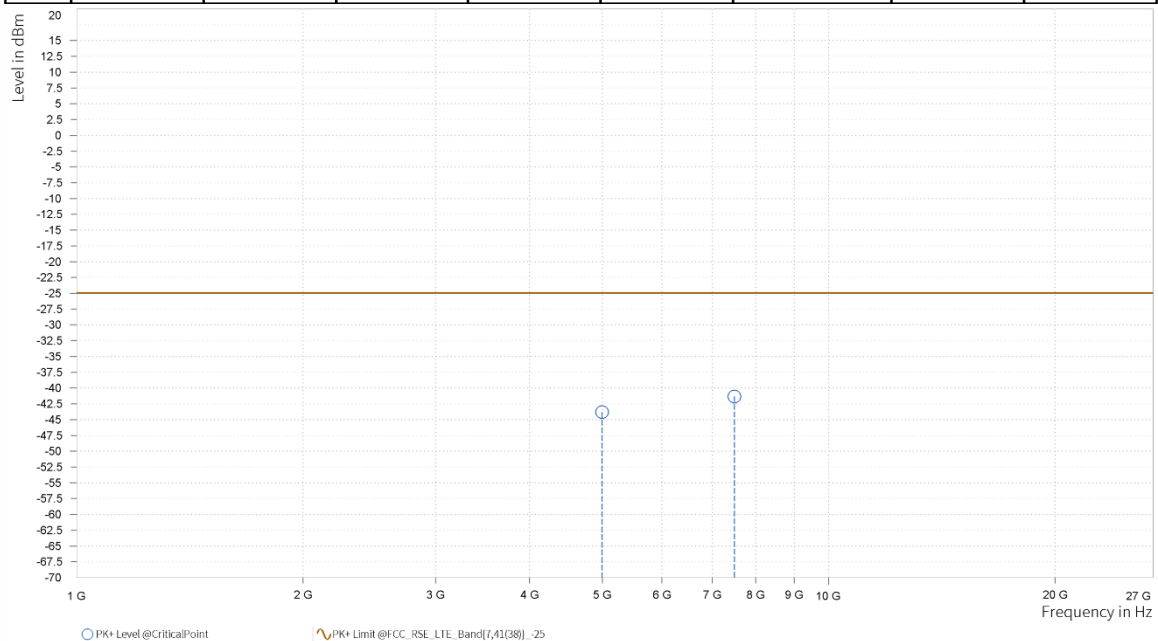


CH39700

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 39700
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	4,993.000	-43.83	-25.00	18.83	30.11	H	1	2.00
4	7,489.500	-41.34	-25.00	16.34	35.13	H	359	1.00

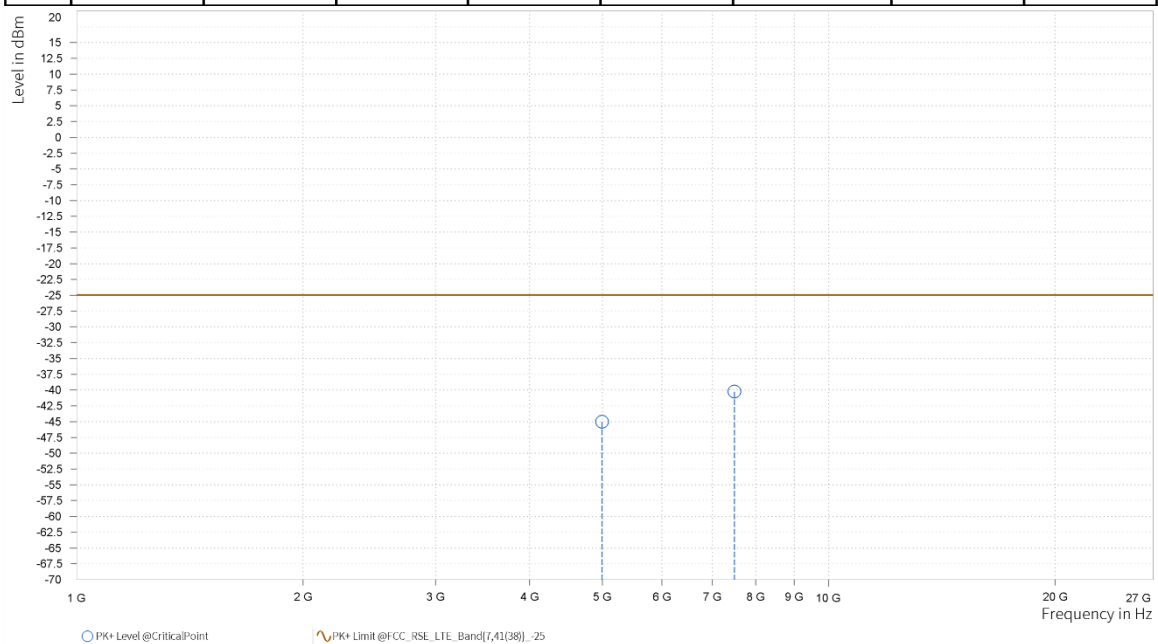




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 39700
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	4,993.000	-45.03	-25.00	20.03	29.97	V	1	1.00
4	7,489.500	-40.26	-25.00	15.26	35.32	V	359.1	1.00



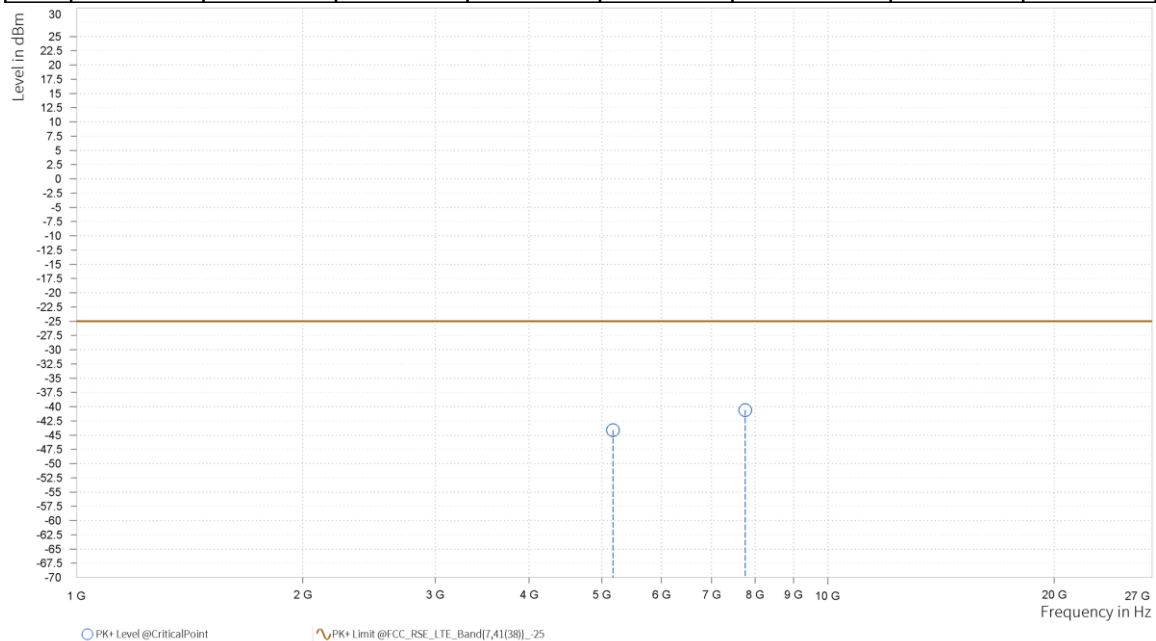


CH40620

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 40620
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	5,172.500	-44.16	-25.00	19.16	31.90	H	359.2	1.00
4	7,758.750	-40.60	-25.00	15.60	37.06	H	359	2.00

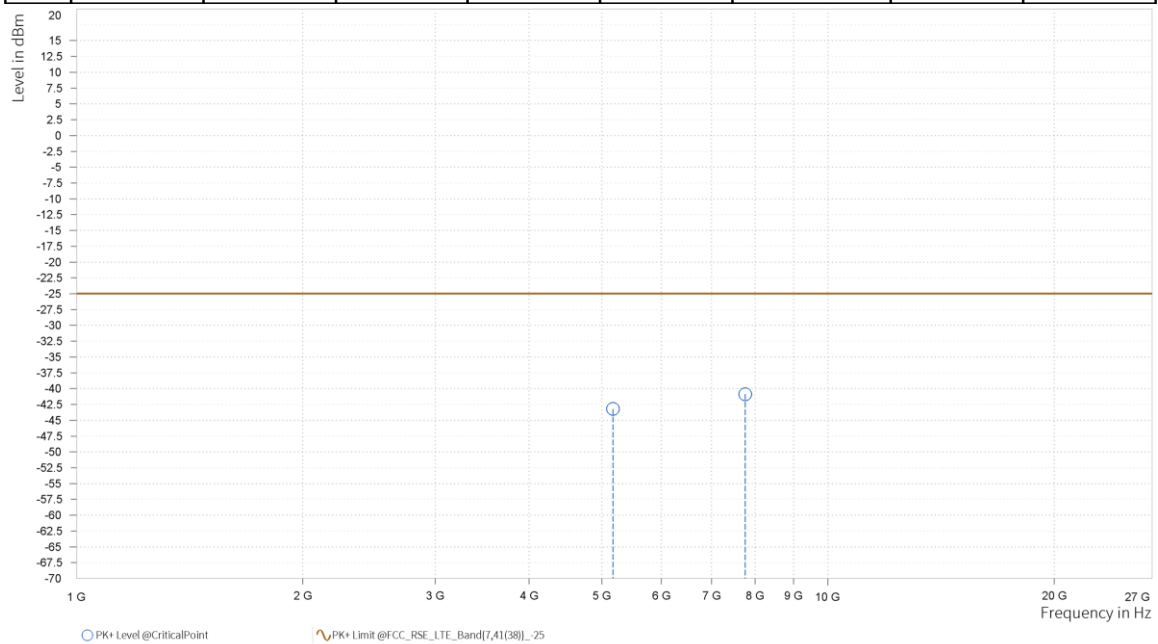




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	5,172.500	-43.22	-25.00	18.22	31.82	V	359	1.00
4	7,758.750	-40.87	-25.00	15.87	37.09	V	119	2.00



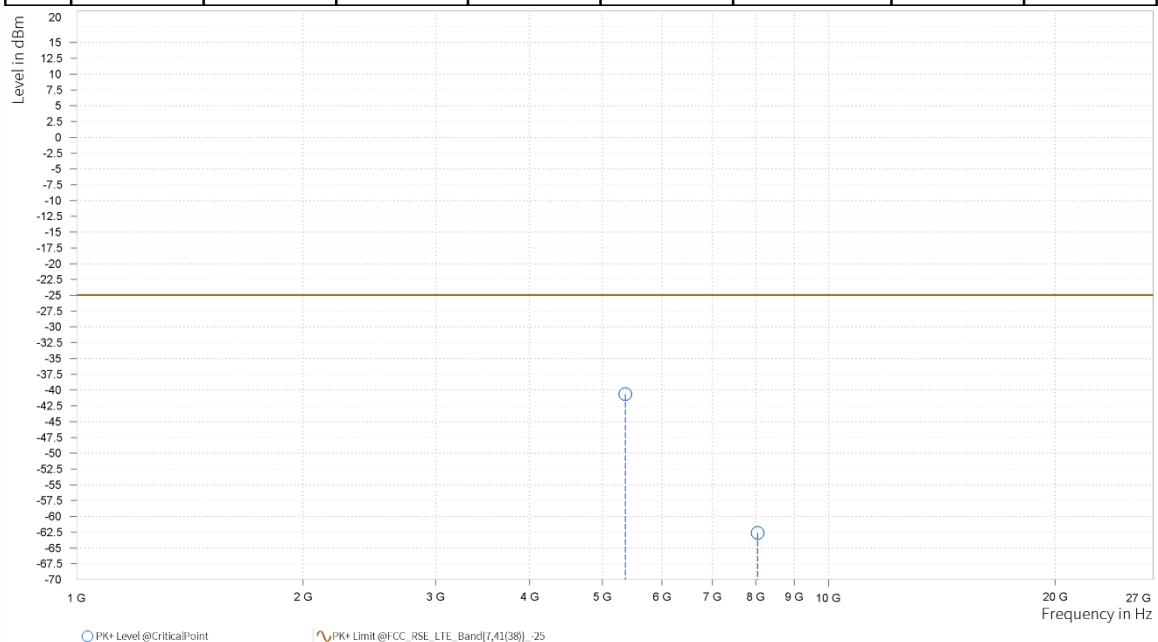


CH 41540

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 41540
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	5,361.000	-40.65	-25.00	15.65	32.93	H	1	1.00
6	8,041.500	-62.61	-25.00	37.61	21.49	H	359	2.00

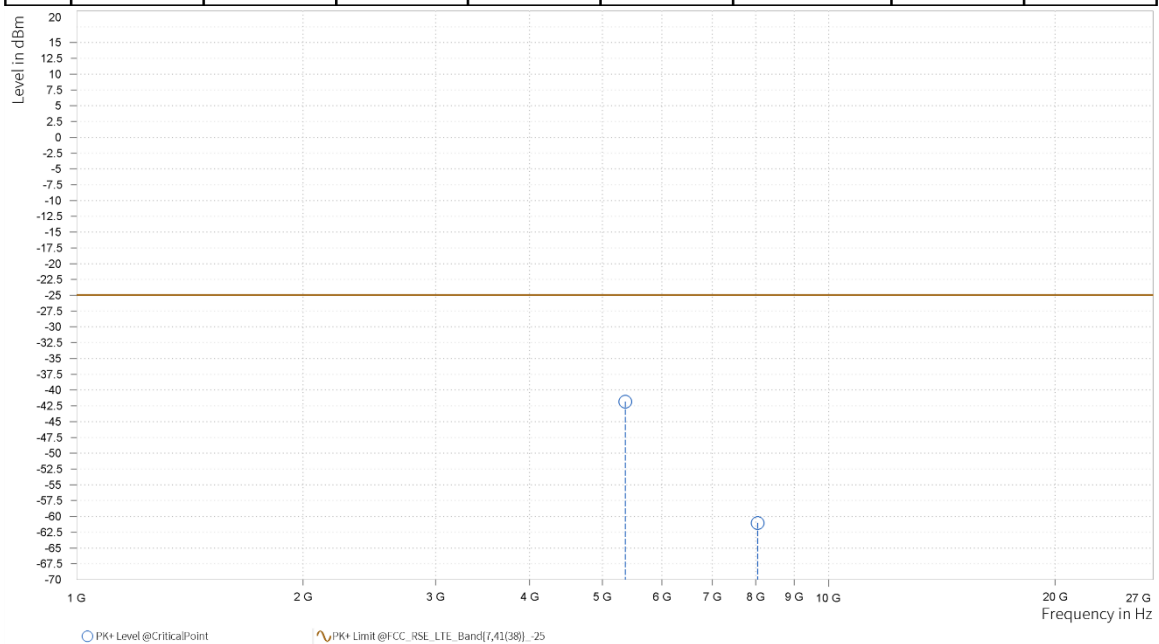




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 41540
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	5,361.000	-41.84	-25.00	16.84	32.75	V	1	1.00
6	8,041.500	-61.03	-25.00	36.03	21.46	V	16.4	2.00

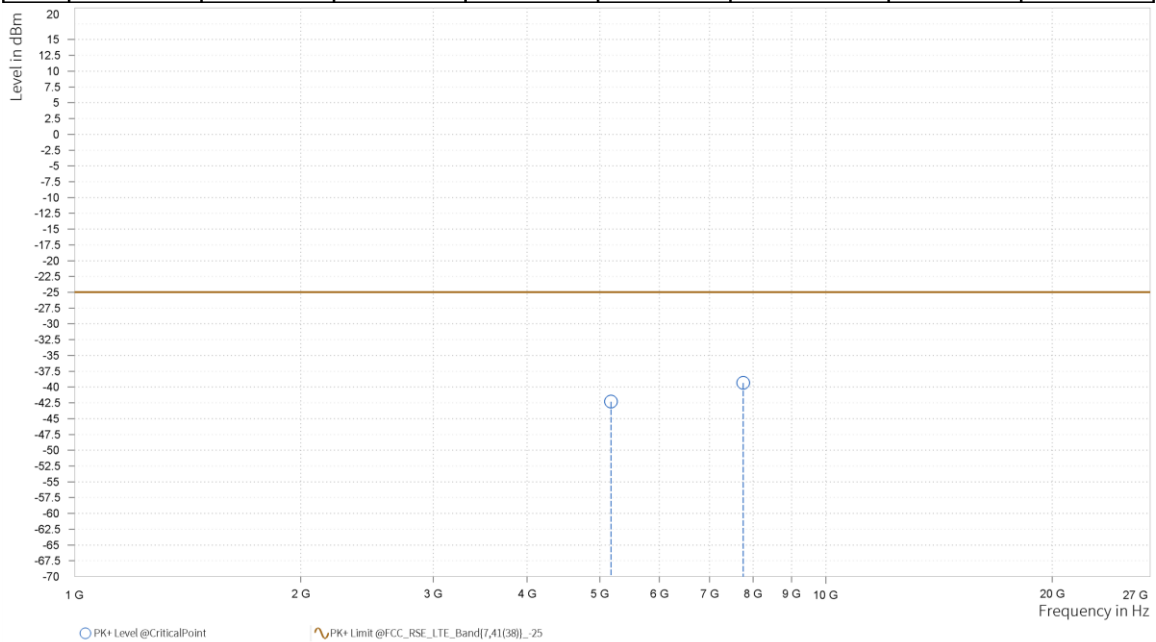




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	5,172.500	-42.30	-25.00	17.30	31.90	H	359.1	1.00
4	7,758.750	-39.34	-25.00	14.34	37.06	H	359.1	1.00

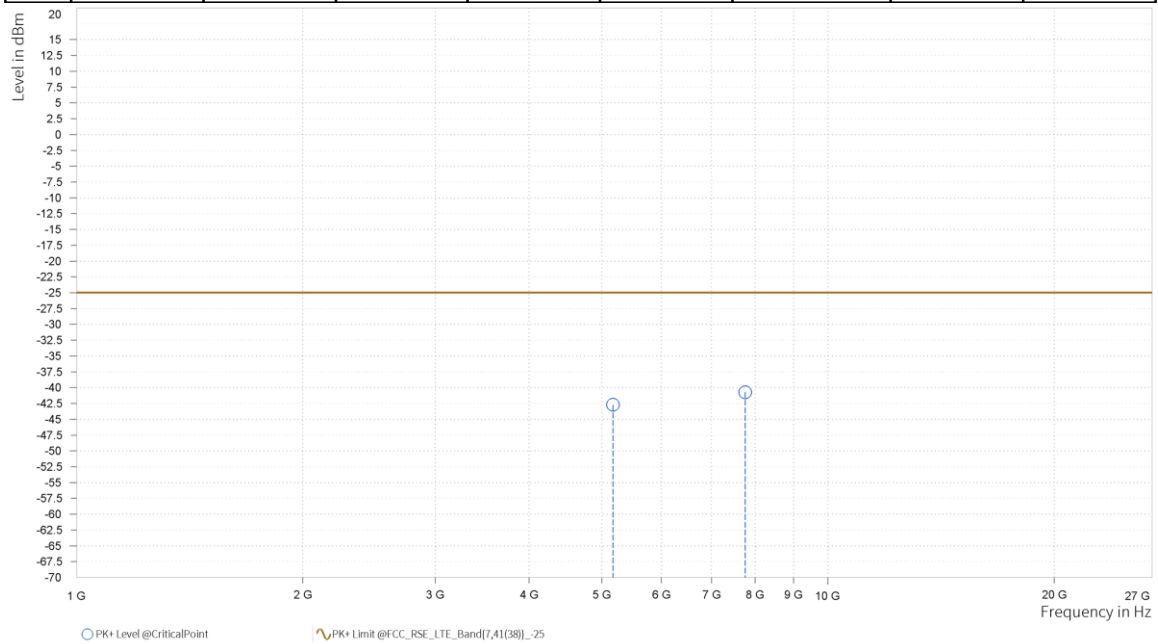




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	5,172.500	-42.71	-25.00	17.71	31.82	V	1	1.00
4	7,758.750	-40.72	-25.00	15.72	37.09	V	359	1.00

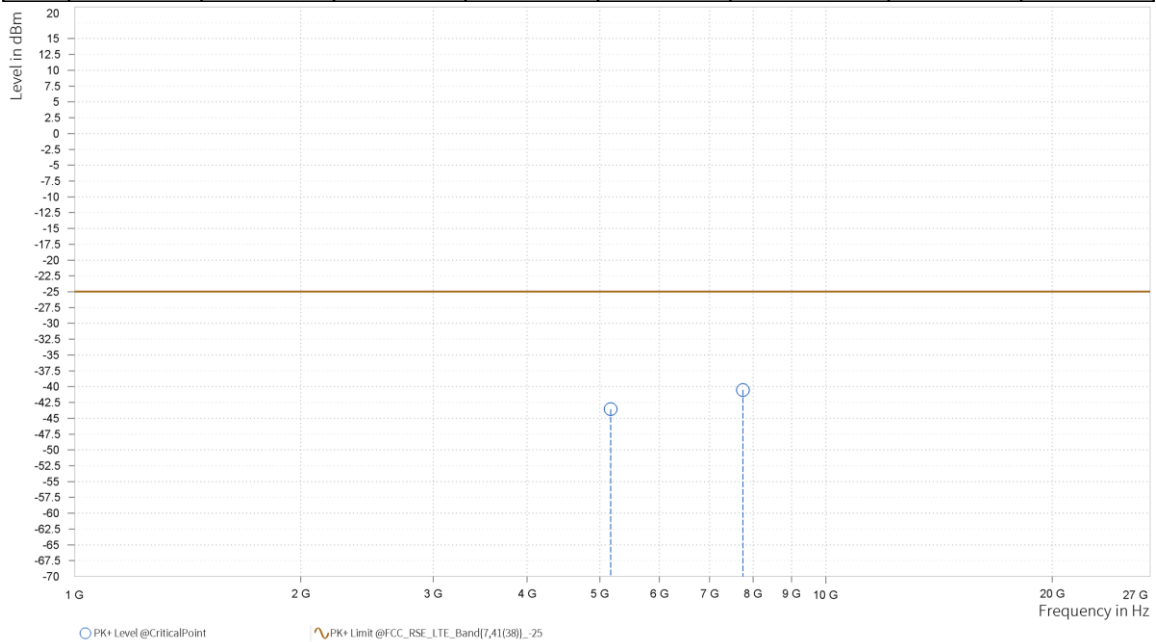




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	5,168.000	-43.56	-25.00	18.56	31.98	H	1	2.00
4	7,752.000	-40.53	-25.00	15.53	36.47	H	1	2.00

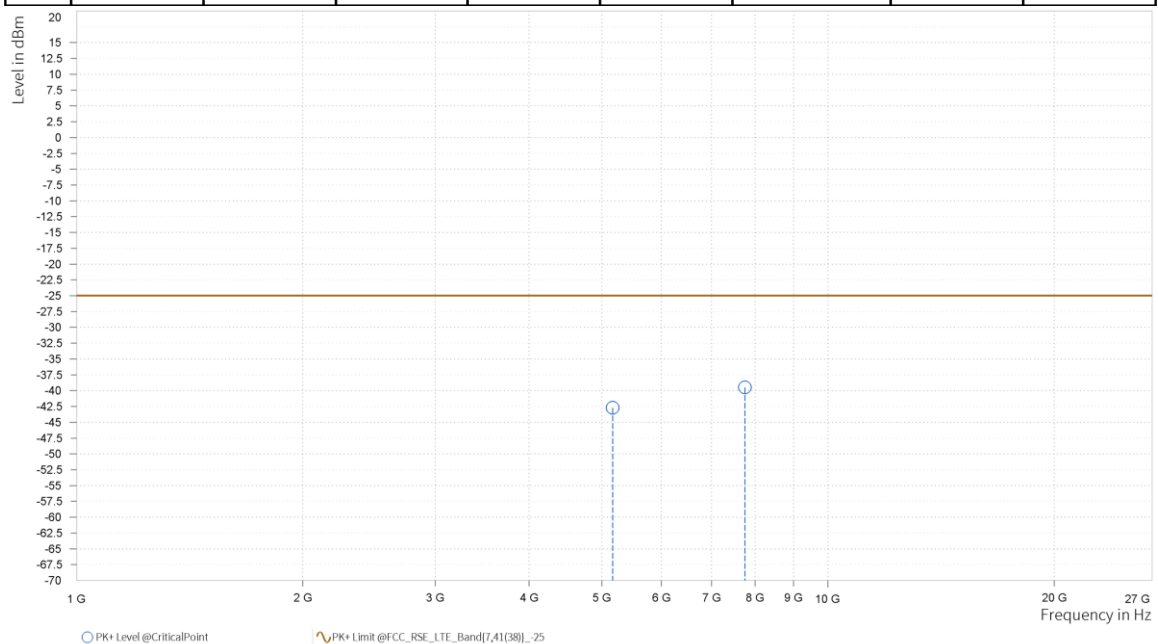




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	5,168.000	-42.72	-25.00	17.72	31.90	V	113.1	2.00
4	7,752.000	-39.49	-25.00	14.49	36.50	V	113.1	2.00



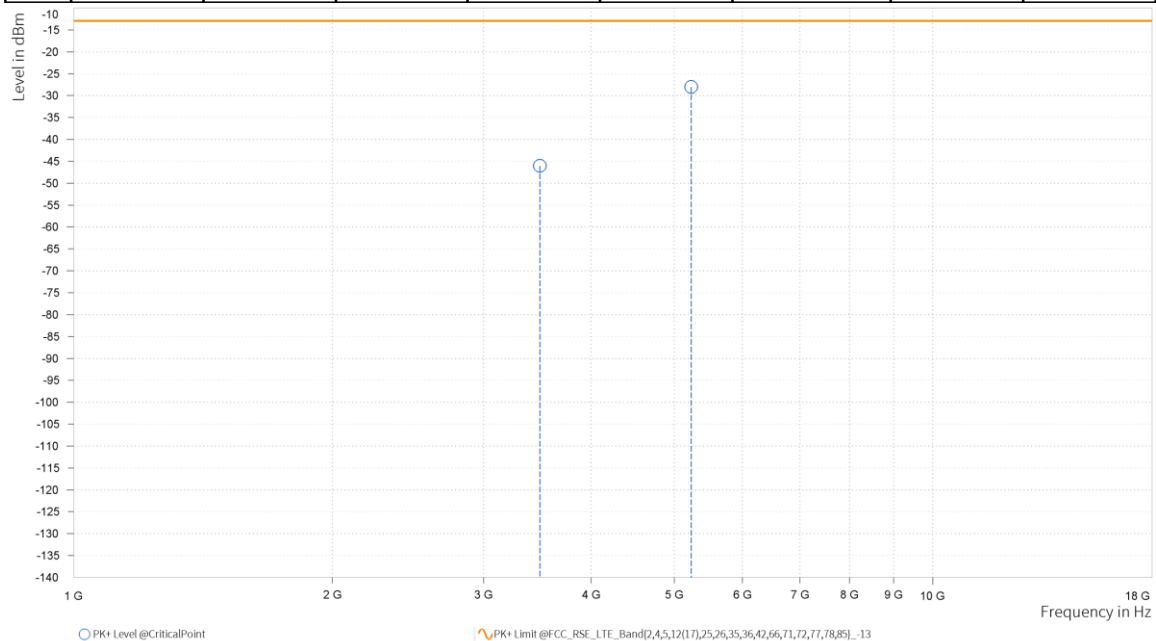


LTE Band66

CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 132322
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	3,489.000	-46.02	-13.00	33.02	20.49	H	210.7	1.00
4	5,234.000	-28.04	-13.00	15.04	24.03	H	153.5	2.00

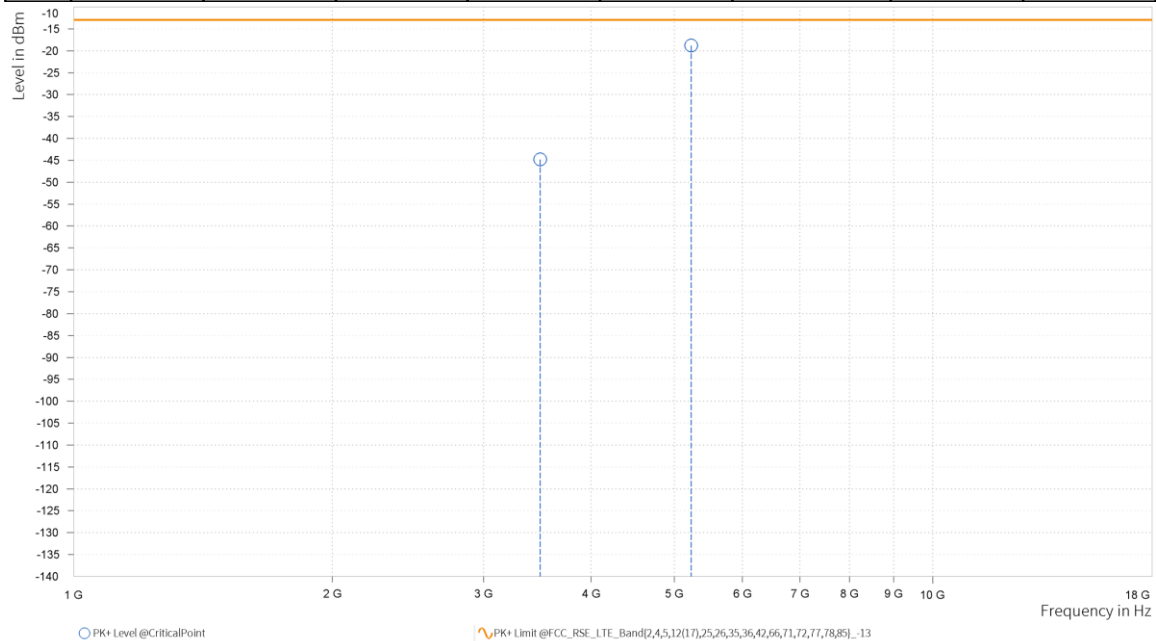




CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	3,489.500	-44.82	-13.00	31.82	21.29	V	217.1	1.00
4	5,234.000	-18.80	-13.00	5.80	24.56	V	283.6	1.00



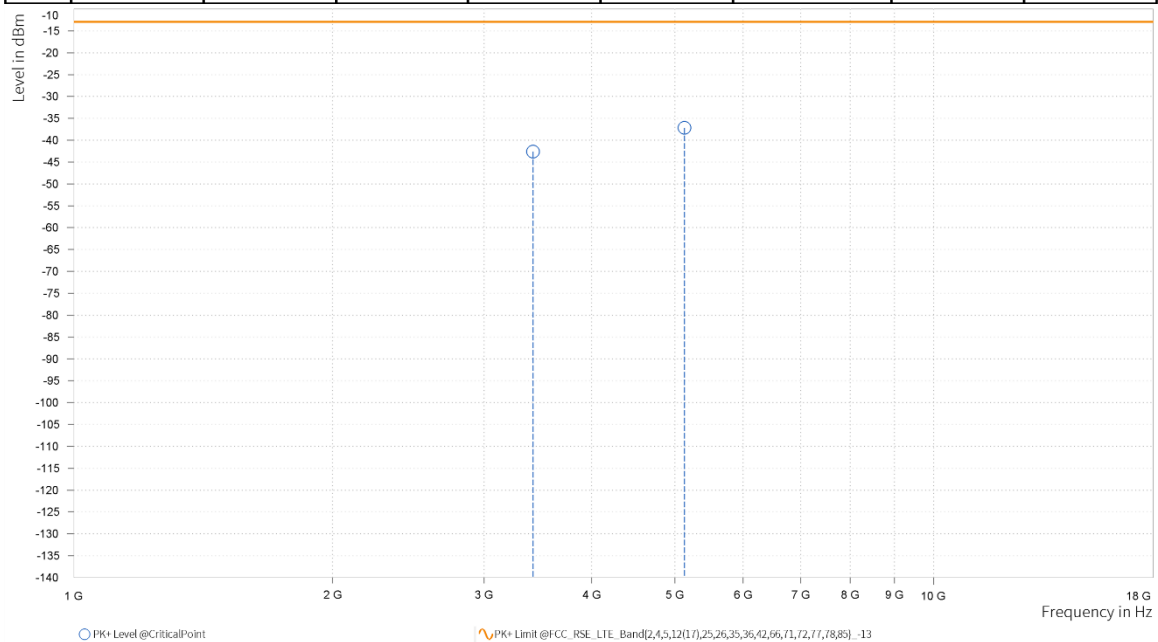


CH 131987

CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 131987
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	3,420.500	-42.64	-13.00	29.64	20.53	H	213.6	1.00
4	5,130.500	-37.20	-13.00	24.20	23.56	H	213.6	1.00

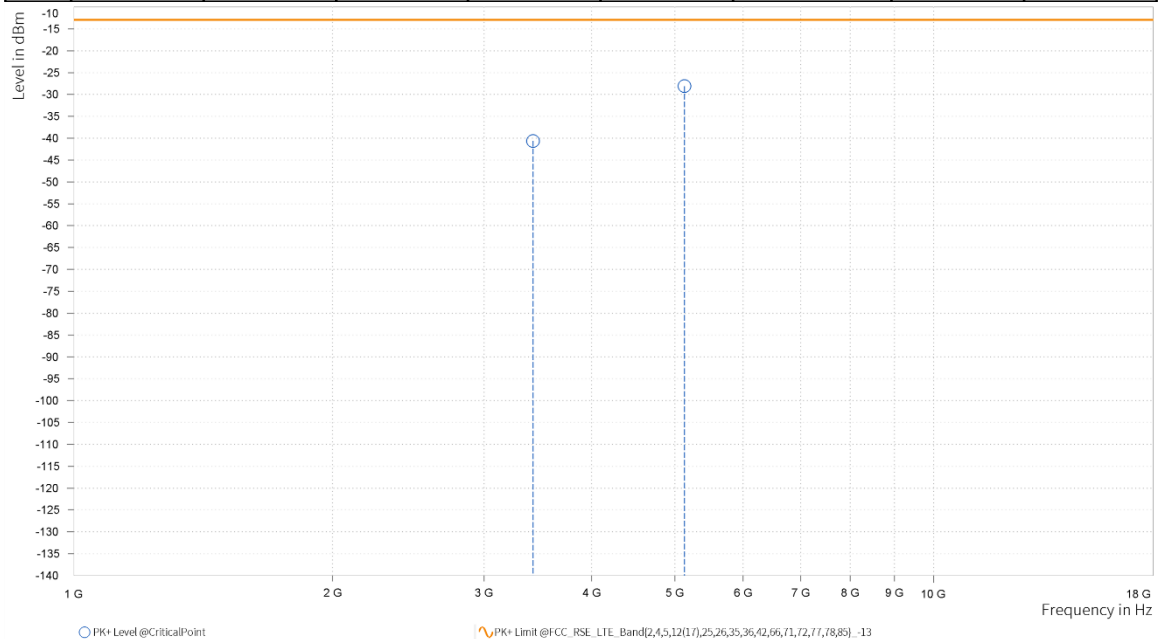




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 131987
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	3,420.500	-40.64	-13.00	27.64	20.87	V	77	2.00
4	5,131.000	-28.12	-13.00	15.12	23.88	V	1	2.00



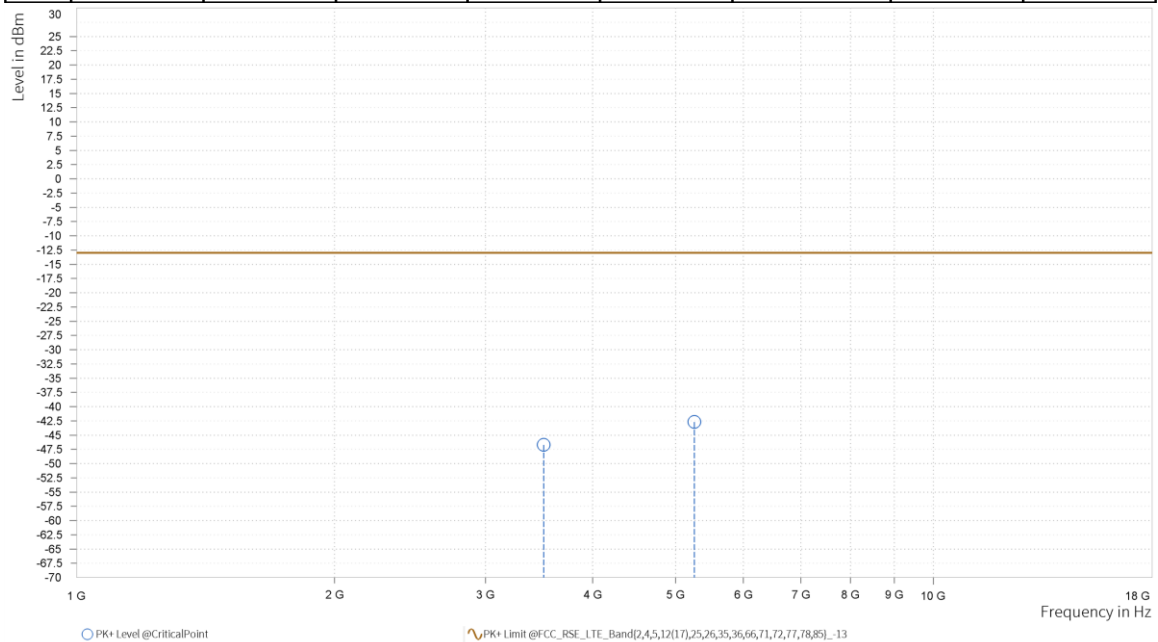


CH132322

CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 132322
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	3,507.300	-46.72	-13.00	33.72	27.21	H	120.2	2.00
4	5,260.950	-42.68	-13.00	29.68	31.89	H	359	2.00

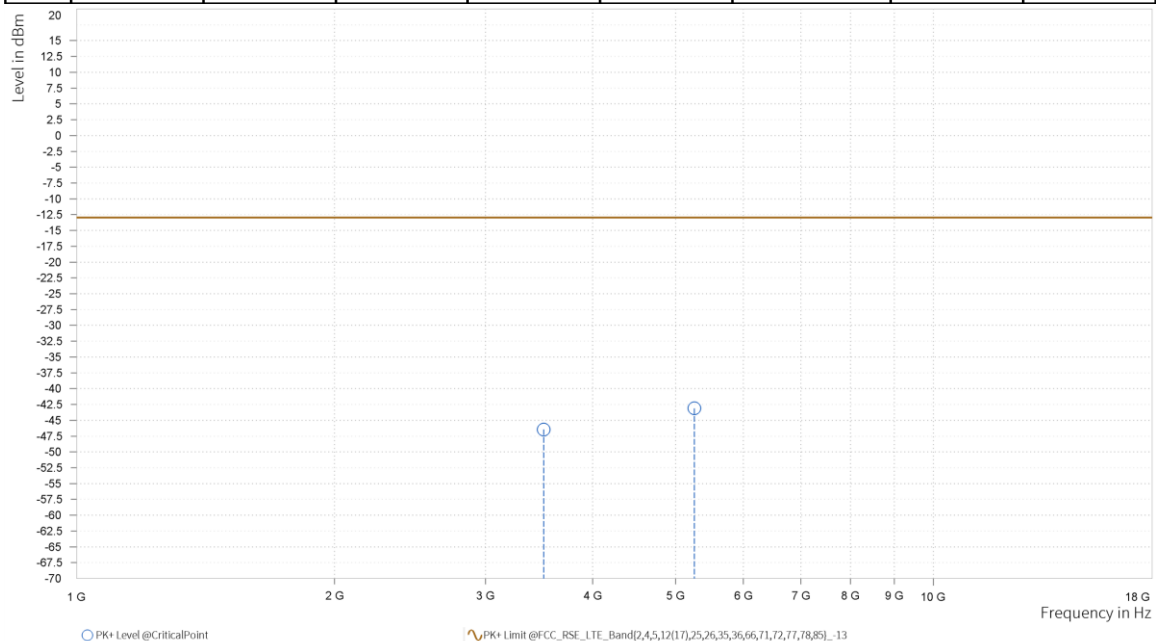




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	3,507.300	-46.46	-13.00	33.46	27.03	V	239.8	1.00
4	5,260.950	-43.11	-13.00	30.11	31.83	V	1	2.00



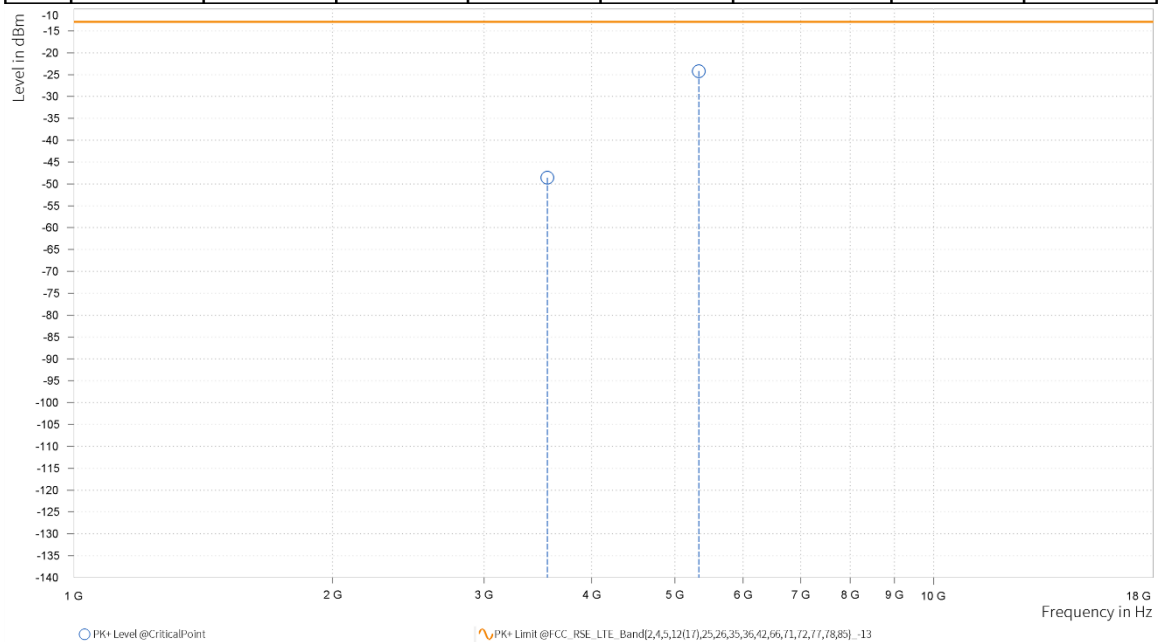


CH 132657

CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 132657
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	3,554.300	-48.57	-13.00	35.57	20.69	H	96.2	1.00
4	5,332.500	-24.23	-13.00	11.23	24.22	H	149.2	2.00

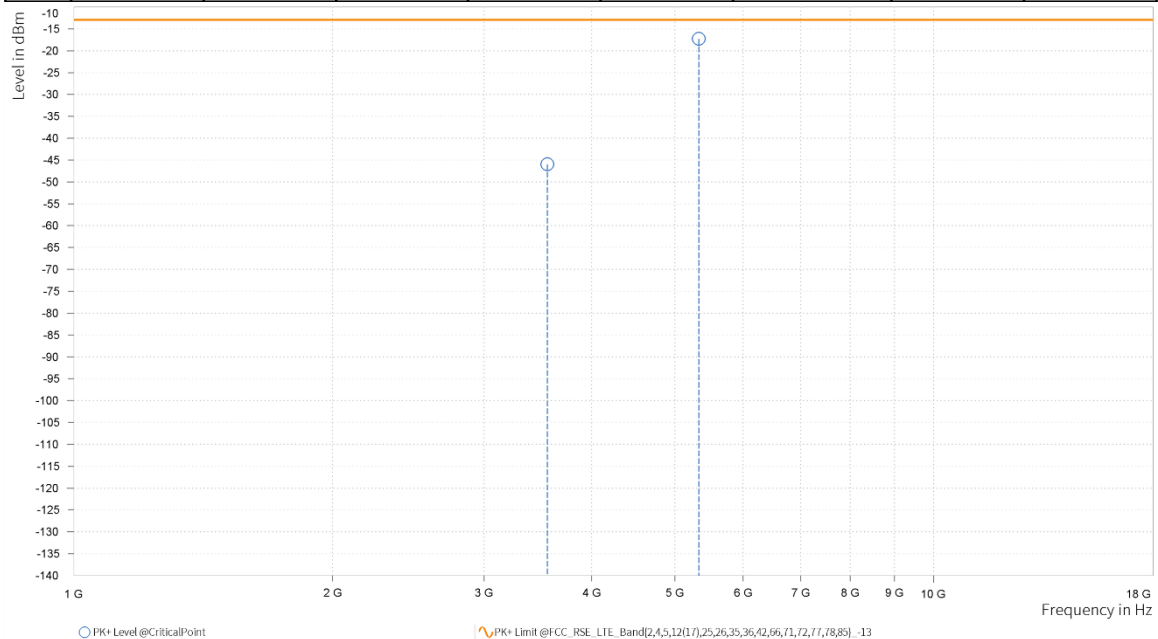




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 132657
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	3,554.000	-45.97	-13.00	32.97	21.23	V	1	1.00
4	5,332.000	-17.28	-13.00	4.28	24.70	V	0.9	2.00

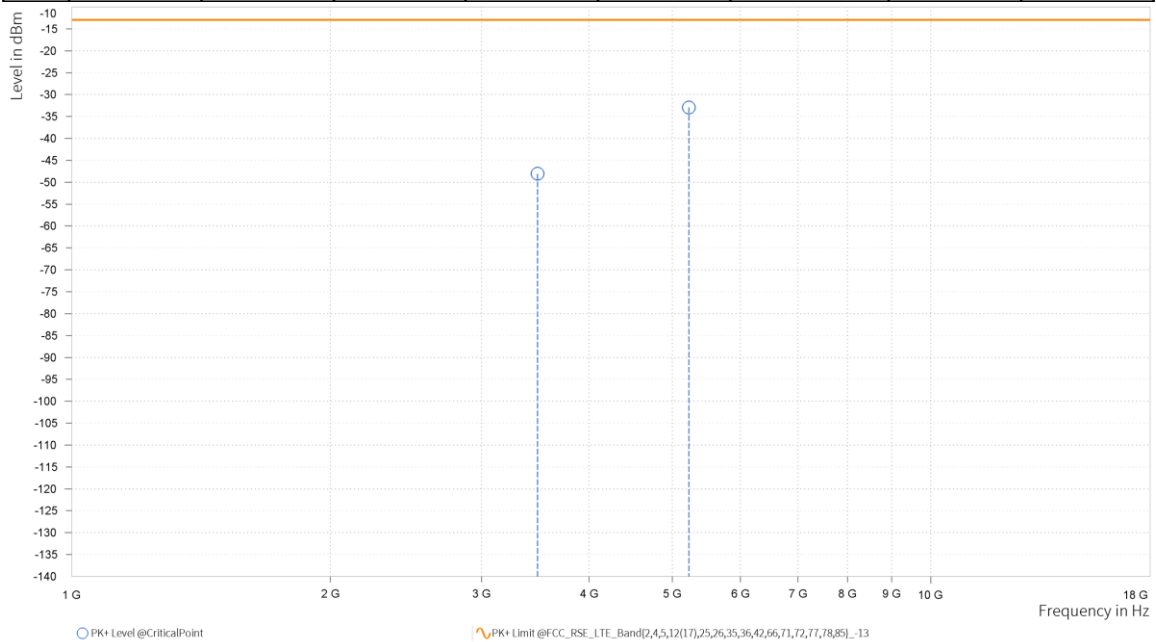




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu
TESTED BY	Hanwen Xu		

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	3,485.500	-48.08	-13.00	35.08	20.46	H	212.2	1.00
4	5,229.000	-32.93	-13.00	19.93	24.01	H	86.2	2.00

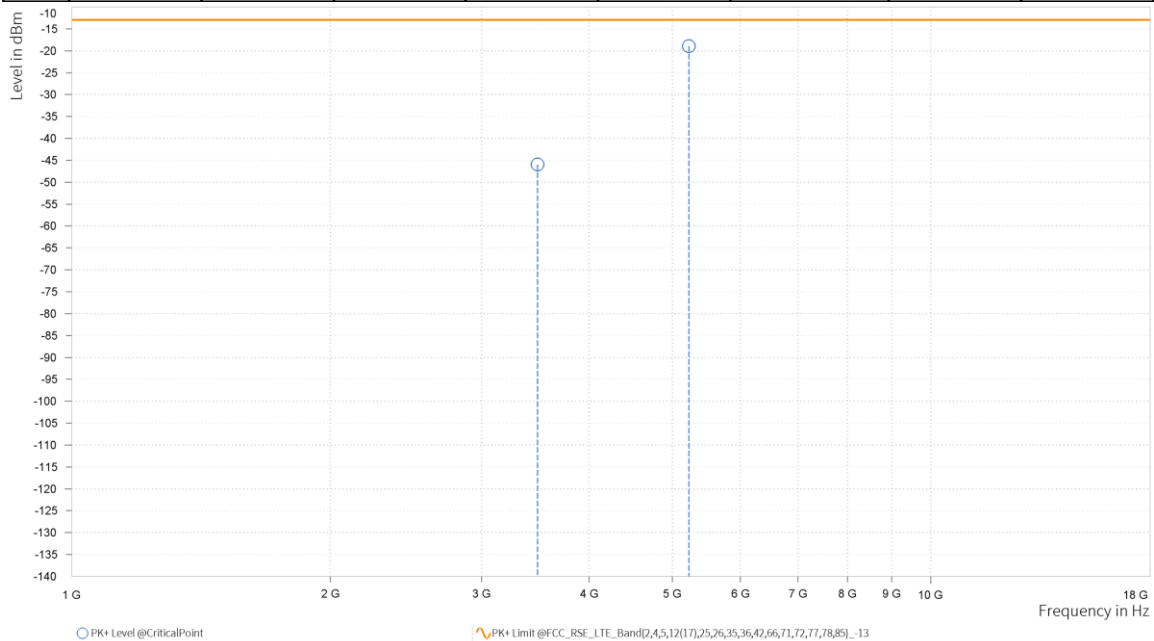




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	3,485.500	-45.97	-13.00	32.97	21.24	V	229.9	2.00
4	5,229.000	-18.92	-13.00	5.92	24.55	V	359.1	1.00

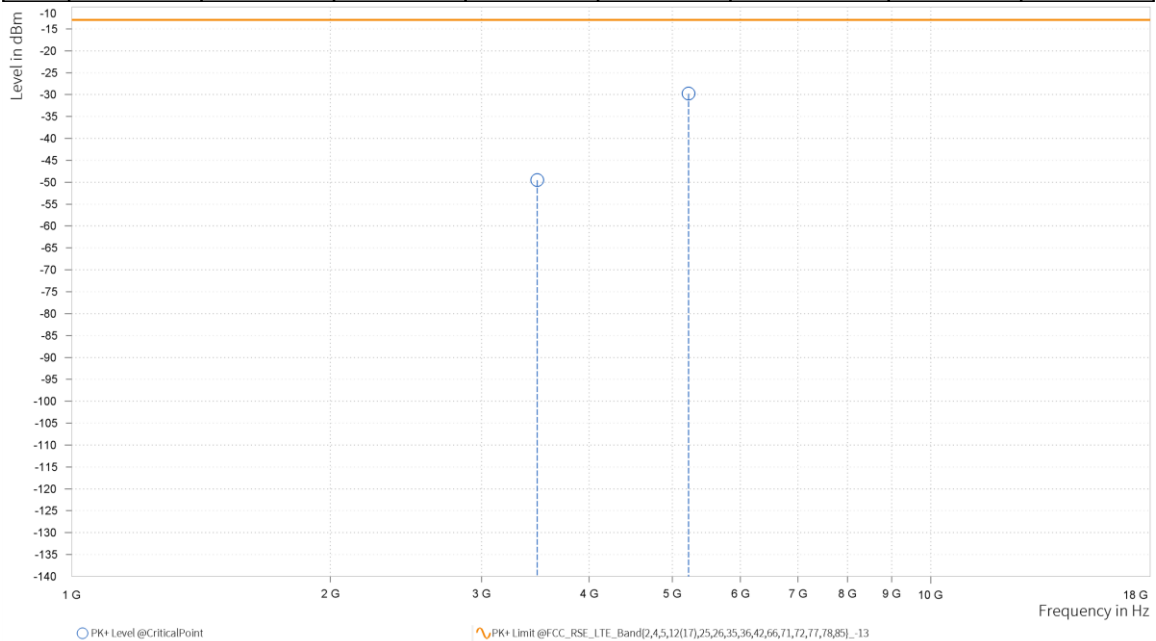




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	3,481.000	-49.53	-13.00	36.53	20.42	H	104.6	1.00
4	5,222.500	-29.77	-13.00	16.77	23.97	H	76.3	2.00

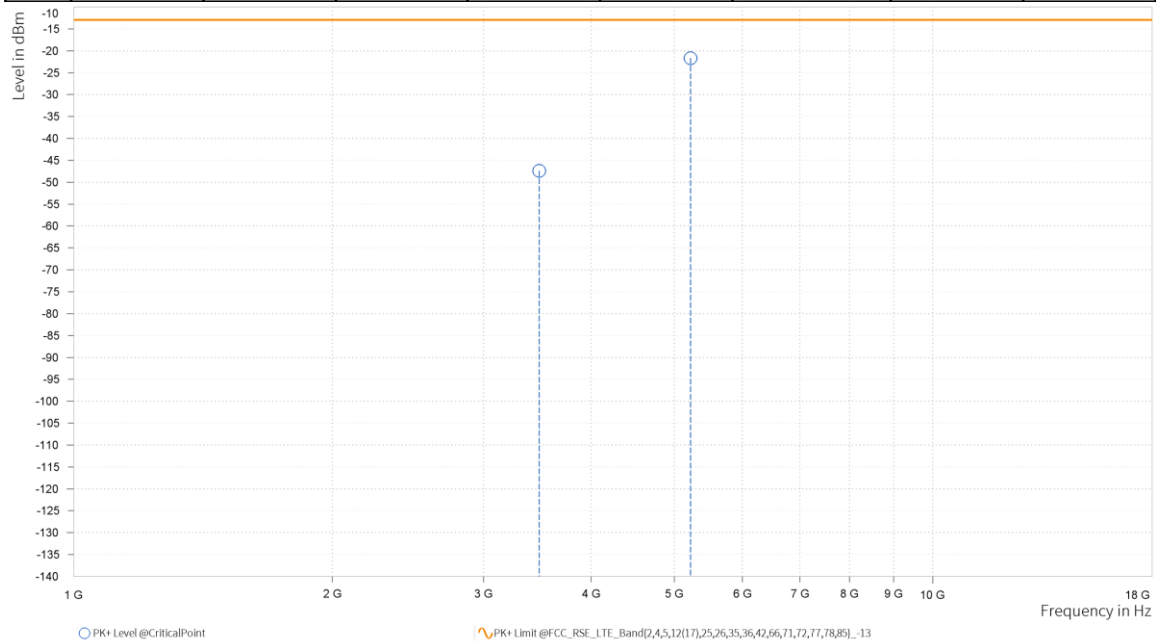




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	3,481.000	-47.40	-13.00	34.40	21.18	V	261.8	2.00
4	5,222.500	-21.68	-13.00	8.68	24.53	V	152.1	2.00

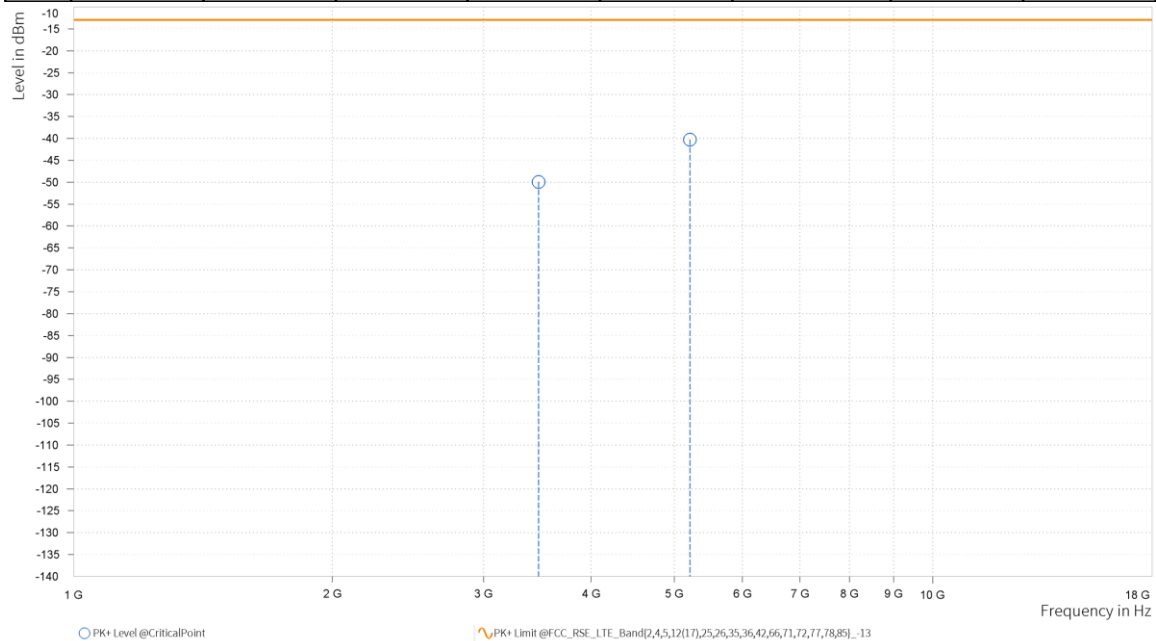




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	3,476.500	-49.92	-13.00	36.92	20.39	H	359	2.00
4	5,215.500	-40.25	-13.00	27.25	23.94	H	82	2.00

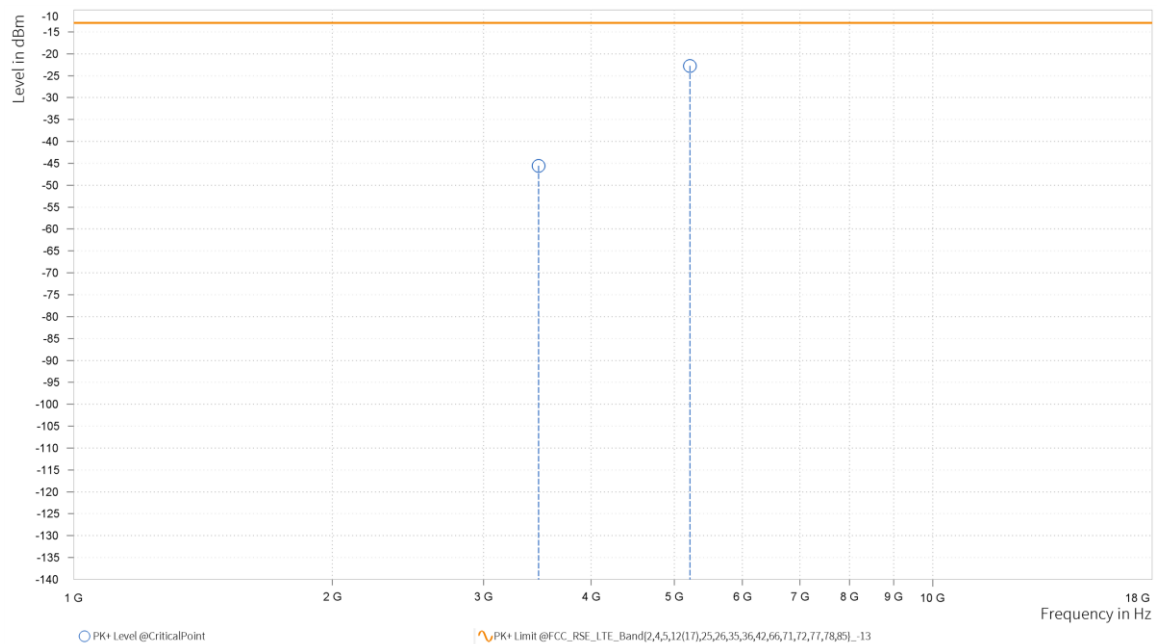




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	3,476.500	-45.57	-13.00	32.57	21.13	V	97.5	1.00
4	5,215.000	-22.76	-13.00	9.76	24.51	V	97.5	1.00

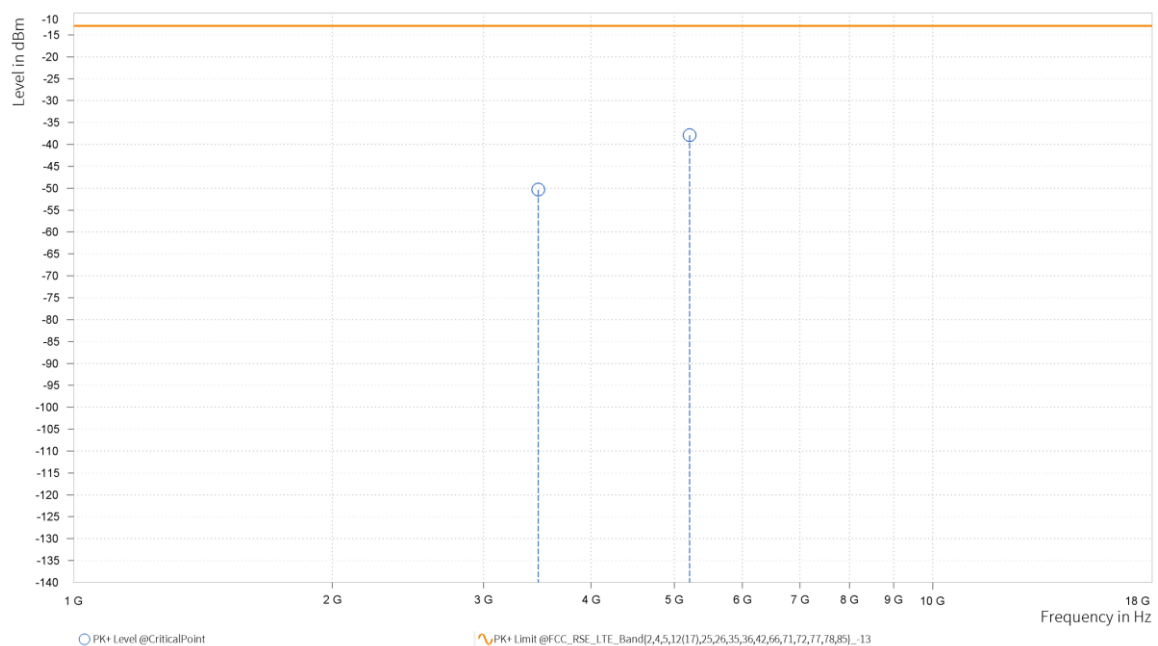




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	3,472.000	-50.34	-13.00	37.34	20.35	H	116.6	1.00
4	5,209.000	-37.91	-13.00	24.91	23.90	H	36	2.00

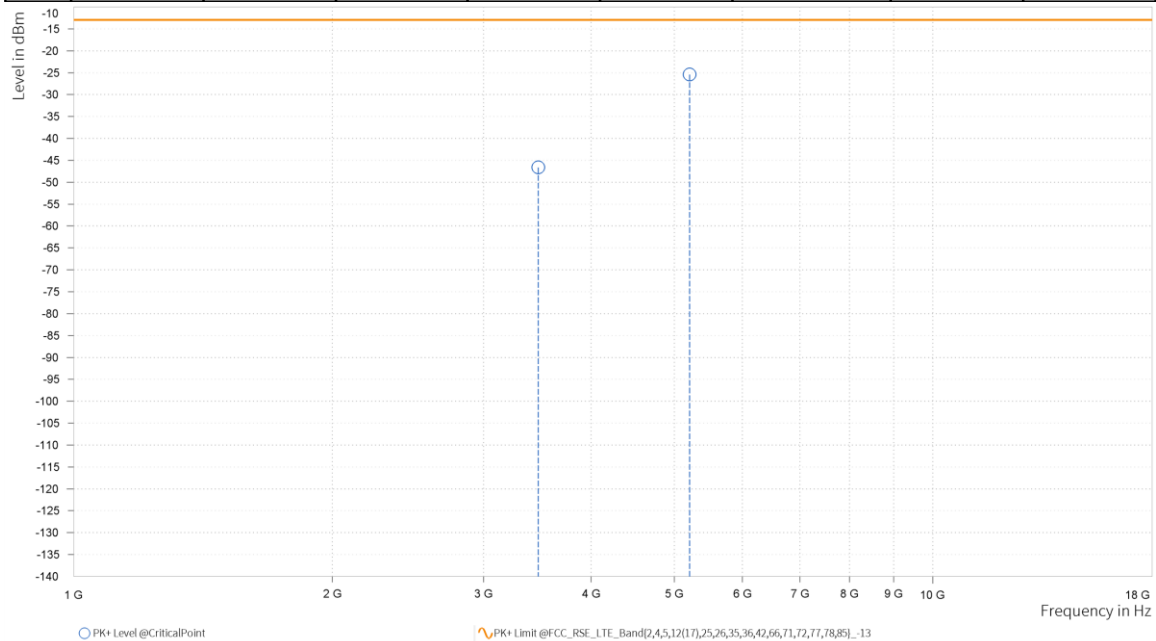




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 3.7V	TESTED BY	Hanwen Xu

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	3,472.000	-46.63	-13.00	33.63	21.07	V	77.8	2.00
4	5,208.000	-25.43	-13.00	12.43	24.49	V	1	2.00

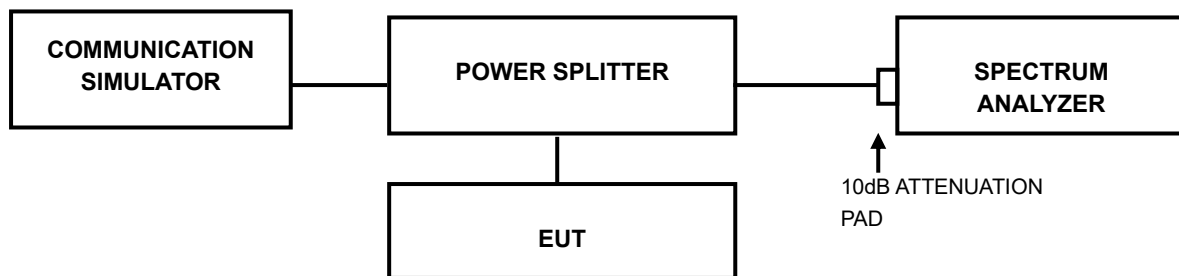


3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

3.7.4 TEST RESULTS

Please Refer to Appendix Of this test report.



4 INFORMATION ON THE TESTING LABORATORIES

We, Huarui 7layers High Technology (Suzhou) Co., Ltd. ,were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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

If you have any comments, please feel free to contact us at the following:

Suzhou EMC/RF Lab:

Tel: +86 (0557) 368 1008



5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.



6 Appendix

LTE BAND41

Peak to Average Ratio Results

Test Result

Bandwidth	Modulation	Channel	RB Configuration	Result (dB)	Limit (dB)	Verdict
5MHz	QPSK	39675	1RB Low	3.62	13	PASS
5MHz	QPSK	39675	Full RB	3.44	13	PASS
5MHz	16QAM	39675	1RB Low	5.36	13	PASS
5MHz	16QAM	39675	Full RB	6.08	13	PASS
5MHz	QPSK	40620	1RB Low	3.94	13	PASS
5MHz	QPSK	40620	Full RB	4.94	13	PASS
5MHz	16QAM	40620	1RB Low	4.60	13	PASS
5MHz	16QAM	40620	Full RB	7.20	13	PASS
5MHz	QPSK	41565	1RB Low	4.96	13	PASS
5MHz	QPSK	41565	Full RB	6.16	13	PASS
5MHz	16QAM	41565	1RB Low	3.90	13	PASS
5MHz	16QAM	41565	Full RB	5.04	13	PASS
10MHz	QPSK	39700	1RB Low	2.44	13	PASS
10MHz	QPSK	39700	Full RB	5.50	13	PASS
10MHz	16QAM	39700	1RB Low	4.96	13	PASS
10MHz	16QAM	39700	Full RB	7.68	13	PASS
10MHz	QPSK	40620	1RB Low	3.10	13	PASS
10MHz	QPSK	40620	Full RB	6.46	13	PASS
10MHz	16QAM	40620	1RB Low	5.04	13	PASS
10MHz	16QAM	40620	Full RB	6.46	13	PASS
10MHz	QPSK	41540	1RB Low	3.16	13	PASS
10MHz	QPSK	41540	Full RB	5.90	13	PASS
10MHz	16QAM	41540	1RB Low	2.46	13	PASS
10MHz	16QAM	41540	Full RB	7.10	13	PASS
15MHz	QPSK	39725	1RB Low	3.90	13	PASS
15MHz	QPSK	39725	Full RB	5.70	13	PASS
15MHz	16QAM	39725	1RB Low	2.16	13	PASS
15MHz	16QAM	39725	Full RB	7.48	13	PASS
15MHz	QPSK	40620	1RB Low	3.06	13	PASS
15MHz	QPSK	40620	Full RB	5.80	13	PASS
15MHz	16QAM	40620	1RB Low	3.96	13	PASS
15MHz	16QAM	40620	Full RB	5.50	13	PASS
15MHz	QPSK	41515	1RB Low	5.08	13	PASS
15MHz	QPSK	41515	Full RB	5.50	13	PASS
15MHz	16QAM	41515	1RB Low	3.48	13	PASS
15MHz	16QAM	41515	Full RB	6.08	13	PASS
20MHz	QPSK	39750	1RB Low	4.14	13	PASS
20MHz	QPSK	39750	Full RB	5.70	13	PASS
20MHz	16QAM	39750	1RB Low	3.68	13	PASS
20MHz	16QAM	39750	Full RB	3.82	13	PASS
20MHz	QPSK	40620	1RB Low	3.64	13	PASS
20MHz	QPSK	40620	Full RB	5.32	13	PASS
20MHz	16QAM	40620	1RB Low	2.50	13	PASS



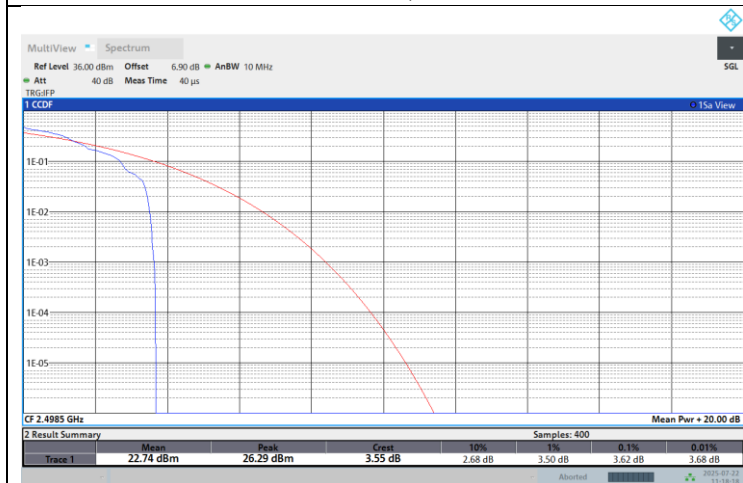
BUREAU VERITAS Test Report No.: PSU-QSZ2507090114RF04

20MHz	16QAM	40620	Full RB	7.48	13	PASS
20MHz	QPSK	41490	1RB Low	2.70	13	PASS
20MHz	QPSK	41490	Full RB	4.94	13	PASS
20MHz	16QAM	41490	1RB Low	4.78	13	PASS
20MHz	16QAM	41490	Full RB	5.42	13	PASS

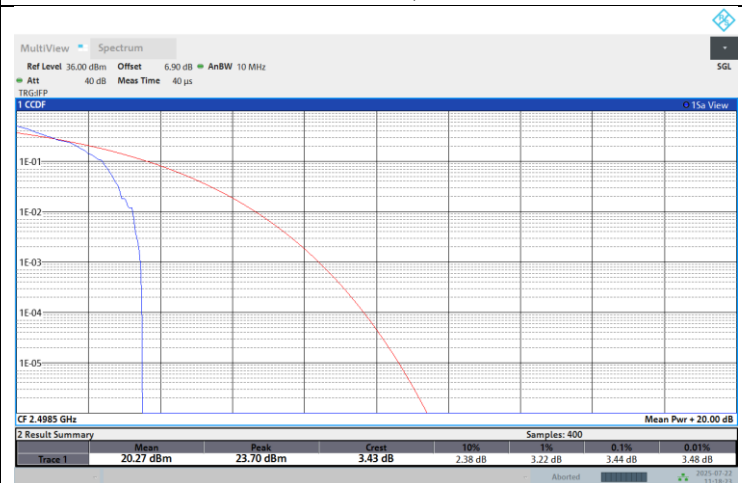


Test Graphs

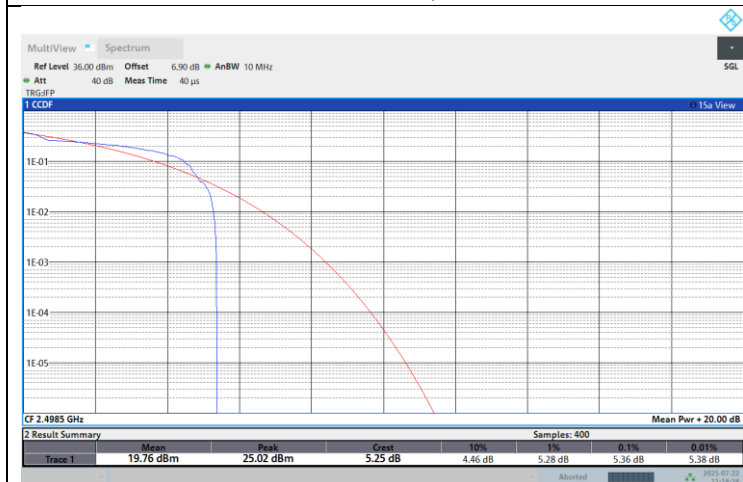
Band41-5M-Low-QPSK-1RB Low



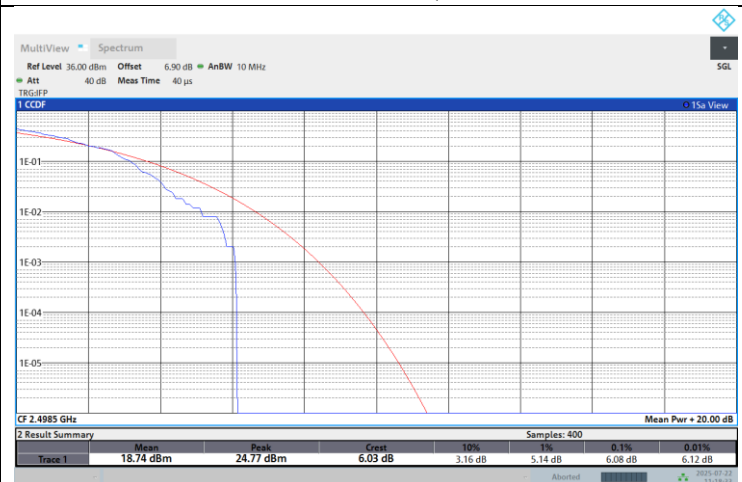
Band41-5M-Low-QPSK-Full RB



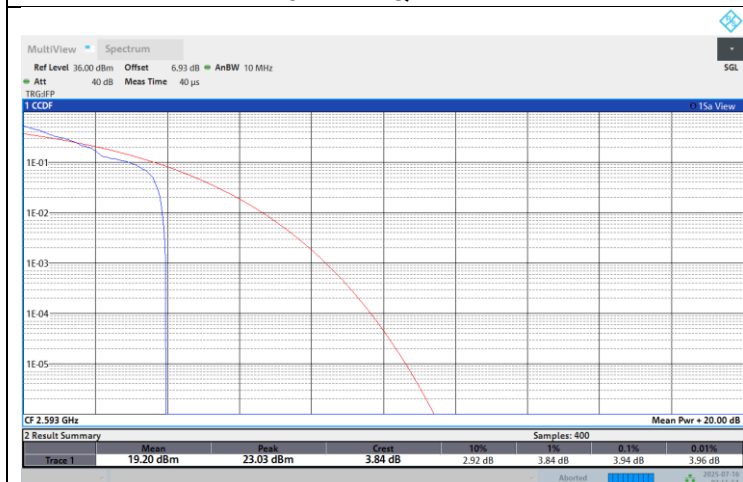
Band41-5M-Low-16QAM-1RB Low



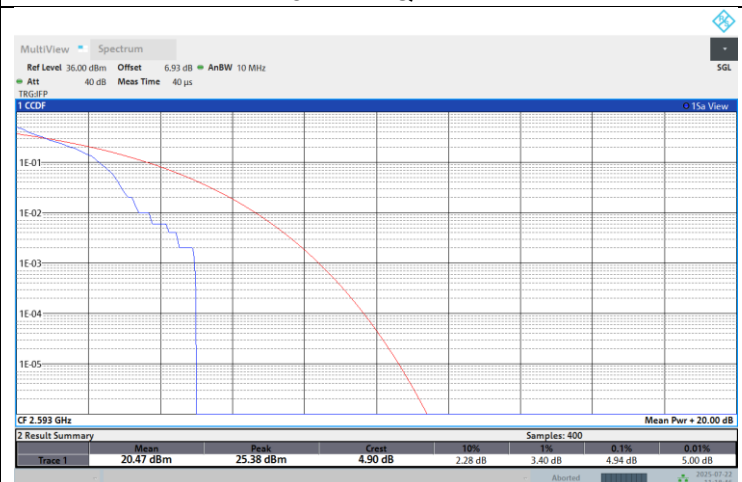
Band41-5M-Low-16QAM-Full RB



Band41-5M-Mid-QPSK-1RB Low

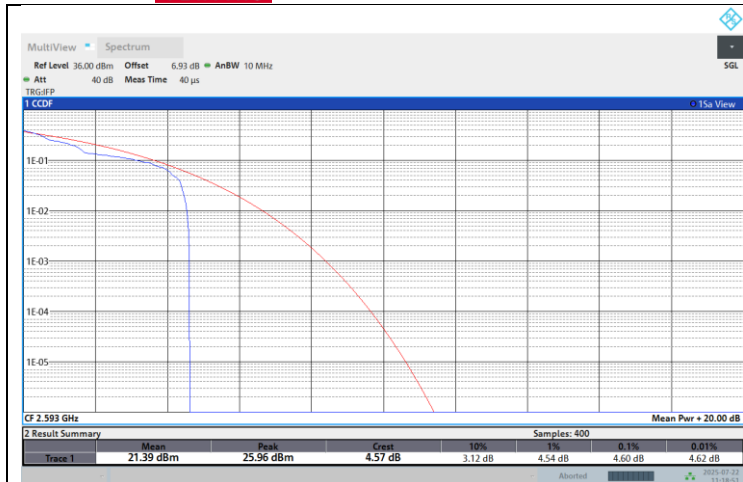


Band41-5M-Mid-QPSK-Full RB

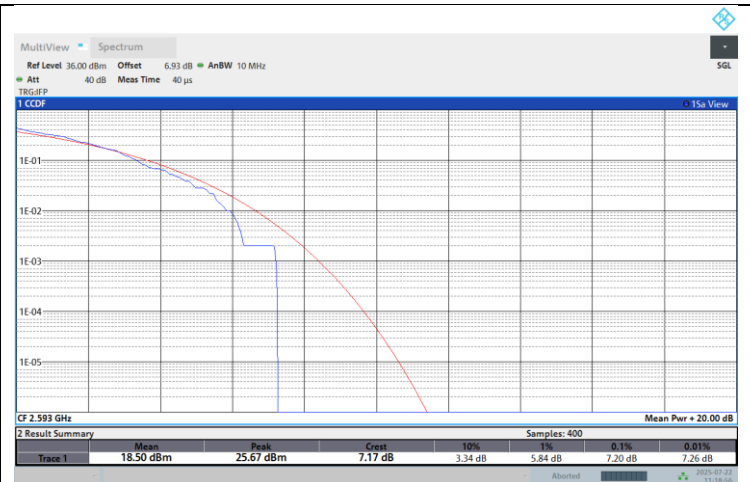


Band41-5M-Mid-16QAM-1RB Low

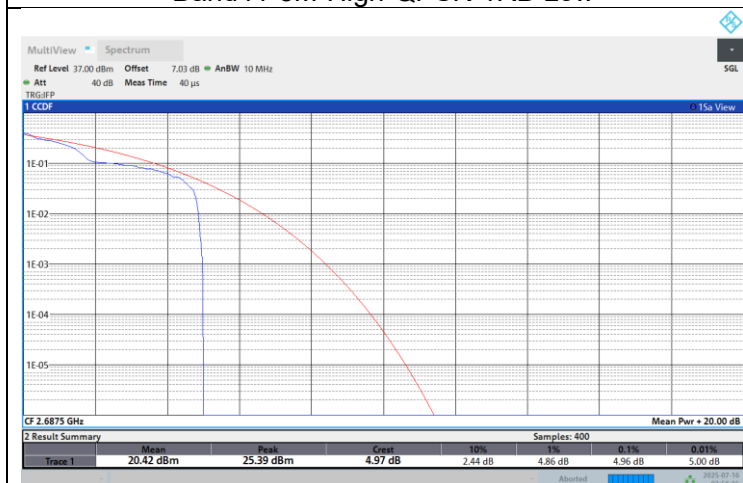
Band41-5M-Mid-16QAM-Full RB



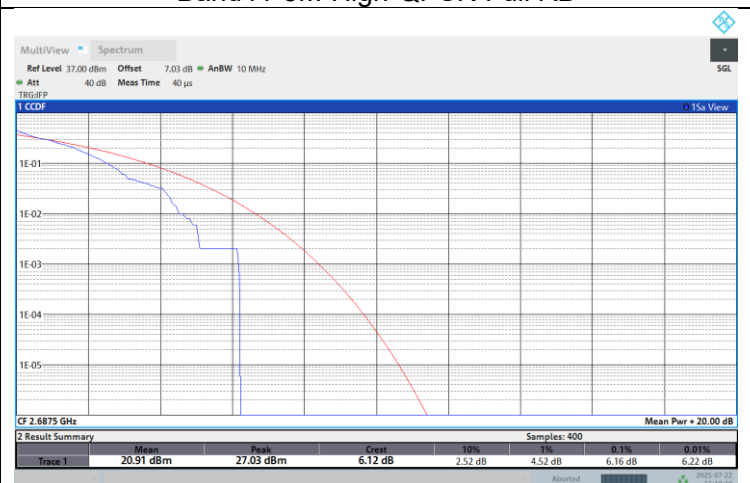
Band41-5M-High-QPSK-1RB Low



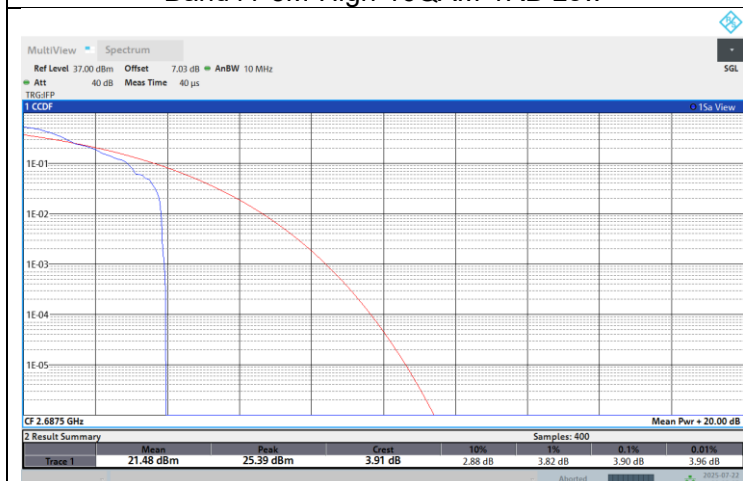
Band41-5M-High-QPSK-Full RB



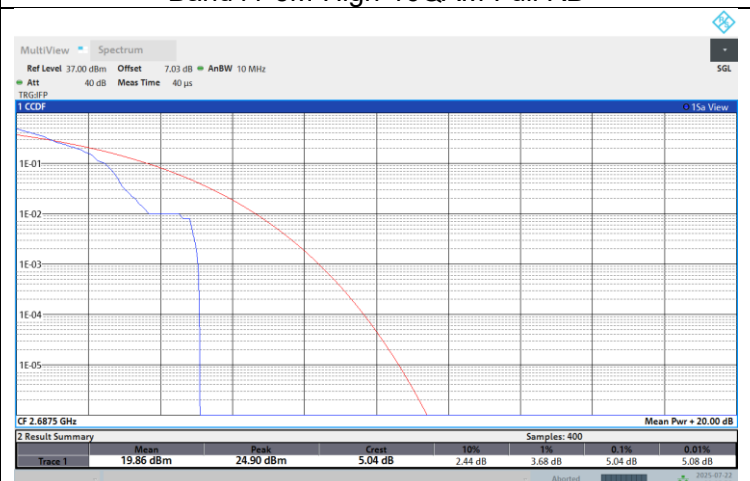
Band41-5M-High-16QAM-1RB Low



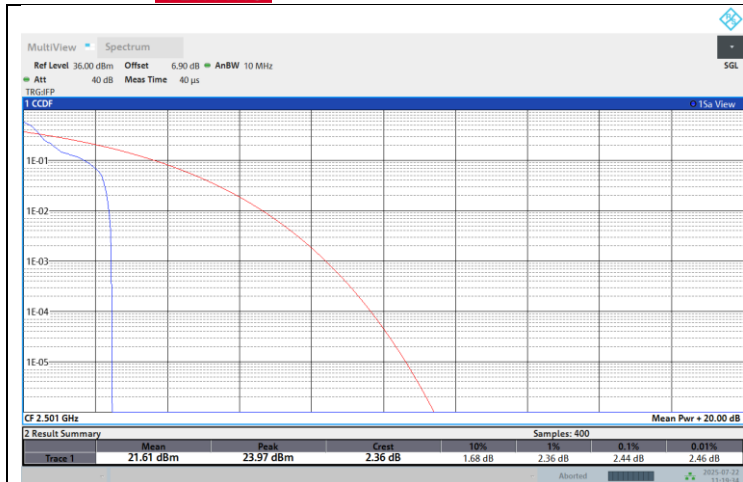
Band41-5M-High-16QAM-Full RB



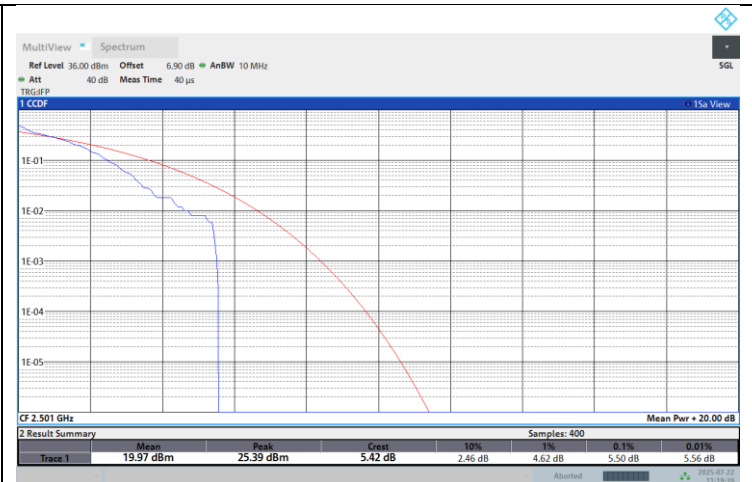
Band41-10M-Low-QPSK-1RB Low



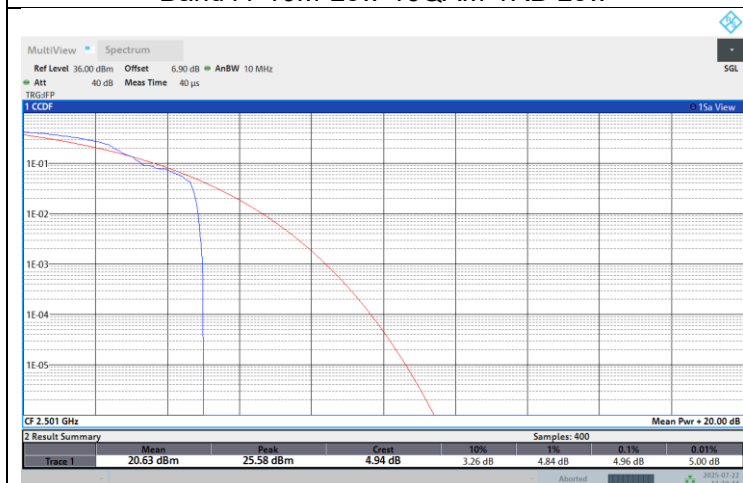
Band41-10M-Low-QPSK-Full RB



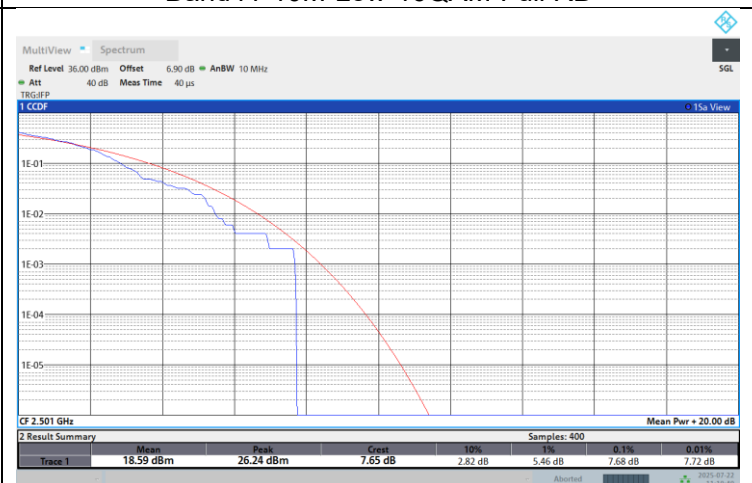
Band41-10M-Low-16QAM-1RB Low



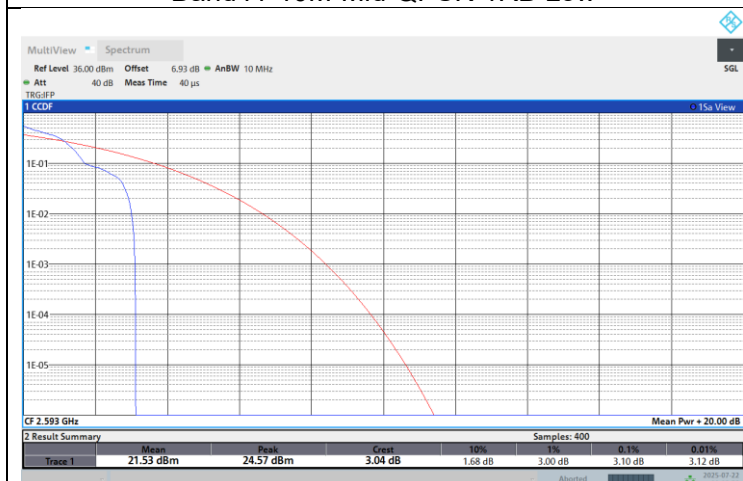
Band41-10M-Low-16QAM-Full RB



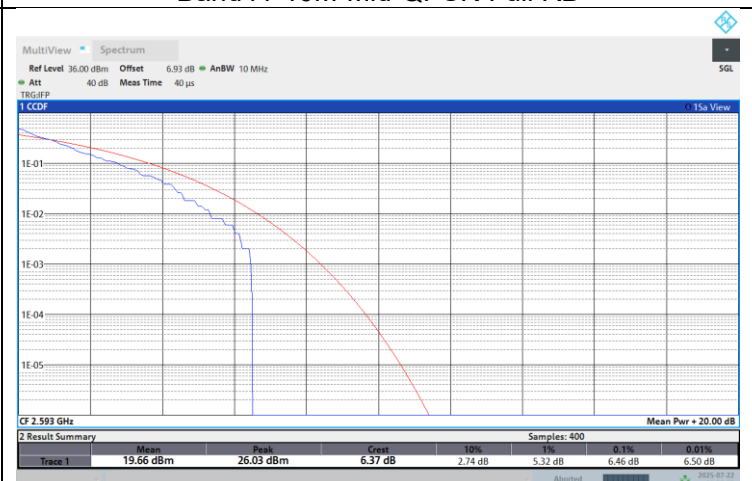
Band41-10M-Mid-QPSK-1RB Low



Band41-10M-Mid-QPSK-Full RB



Band41-10M-Mid-16QAM-1RB Low



Band41-10M-Mid-16QAM-Full RB