

FCC TEST REPORT

(PART 27)

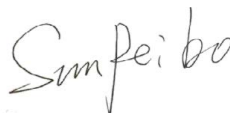
Applicant:	Shenzhen Jimi IoT Co., Ltd.
Address:	3-4/F, Block A, Building #7, Shenzhen International Innovation Valley, Dashi 1st Road, Nanshan District, Shenzhen, Guangdong, China

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:	Global container monitoring terminal
Brand Name:	JimiloT
Model Name:	LL306R LL306Pro
FCC ID	2AMLF-LL306R
Date of tests	Mar. 10, 2025 ~ Apr. 03, 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: Apr. 03, 2025	Date: Apr. 03, 2025

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSZ2503050113RF04	Original release	Apr. 03, 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(k)(3) §27.50(h)(2)	Equivalent Isotropically Radiated Power (Band 4) (Band 38) (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(n)(2) §27.53(m)(4)(6)	Conducted Band Edge Measurements (Band 4) (Band 38) (Band 41)(Band 66)	Compliance	A
§2.1051 §27.53(h) §27.53(n)(2) §27.53(m)(4)(6)	Conducted Spurious Emissions (Band 4) (Band 38) (Band 41)(Band 66)	Compliance	A
§2.1053 §27.53(h) §27.53(n)(2) §27.53(m)(4)(6)	Radiated Spurious Emissions (Band 4) (Band 38) (Band 41)(Band 66)	Compliance	A
§27.50(d)(5) §27.50(k)(4)	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.

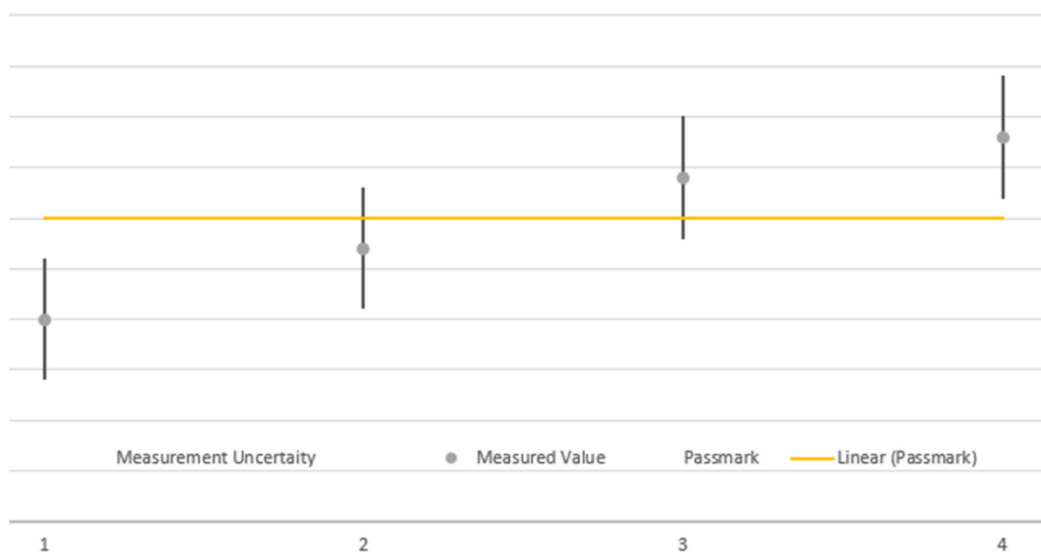


1.1 MEASUREMENT UNCERTAINTY

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.29,24	Aug.28,26
Pre-Amplifier	R&S	SCU08F1	101028	Sep.15,24	Sep.14,26
Vector Signal Generator	R&S	SMBV100B	102176	Feb.15,24	Feb.14,26
Signal Generator	R&S	SMB100A	182185	Feb.15,24	Feb.14,26
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	Feb.24,24	Feb.23,26
EMI TEST Receiver	R&S	ESW44	101973	Feb.24,24	Feb.23,26
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.27,24	Feb.26,26
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.21,24	Aug.20,26
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.22,24	Feb.21,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.21,24	Aug.20,26
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.22,24	Feb.21,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.26,24	Jun.25,26
Test Software	EMC32	EMC32	N/A	N/A	N/A
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	Sep.30,24	Sep.29,26
DC Source	HYELEC	HY3010B	551016	Aug.30,24	Aug.29,26
Hygrothermograph	DELI	20210528	SZ014	Sep.05,24	Sep.04,26
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	Oct.26,24	Apr.25,25
CABLE	R&S	W12.14	N/A	Oct.26,24	Apr.25,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Oct.26,24	Apr.25,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Oct.26,24	Apr.25,25
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26

NOTE:

1. The calibration interval of the above test instruments is 6 months or 12 months or 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*	Global container monitoring terminal	
BRAND NAME*	JimiloT	
MODEL NAME*	LL306R LL306Pro	
NOMINAL VOLTAGE*	3.7Vdc(Battery) 5Vdc(Adapter)	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM, 64QAM
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 38 Channel Bandwidth: 5MHz	2572.5MHz ~ 2617.5MHz
	LTE Band 38 Channel Bandwidth: 10MHz	2575MHz ~ 2615MHz
	LTE Band 38 Channel Bandwidth: 15MHz	2577.5MHz ~ 2612.5MHz
	LTE Band 38 Channel Bandwidth: 20MHz	2580MHz ~ 2610MHz
	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	249.48mW
	LTE Band 4 Channel Bandwidth: 3MHz	250.03mW
	LTE Band 4 Channel Bandwidth: 5MHz	251.77mW
	LTE Band 4 Channel Bandwidth: 10MHz	251.19mW
	LTE Band 4 Channel Bandwidth: 15MHz	243.78mW
	LTE Band 4 Channel Bandwidth: 20MHz	253.51mW
	LTE Band 38 Channel Bandwidth: 5MHz	176.20mW
	LTE Band 38 Channel Bandwidth: 10MHz	172.58mW
	LTE Band 38 Channel Bandwidth: 15MHz	174.58mW
	LTE Band 38 Channel Bandwidth: 20MHz	187.50mW
	LTE Band 41 Channel Bandwidth: 5MHz	257.04mW
	LTE Band 41 Channel Bandwidth: 10MHz	260.02mW
	LTE Band 41 Channel Bandwidth: 15MHz	255.86mW
	LTE Band 41 Channel Bandwidth: 20MHz	261.22mW
	LTE Band 66 Channel Bandwidth: 1.4MHz	240.99mW
	LTE Band 66 Channel Bandwidth: 3MHz	245.47mW
	LTE Band 66 Channel Bandwidth: 5MHz	240.44mW
	LTE Band 66 Channel Bandwidth: 10MHz	247.17mW
	LTE Band 66 Channel Bandwidth: 15MHz	250.03mW
	LTE Band 66 Channel Bandwidth: 20MHz	275.42mW
	LTE Band 41 Channel Bandwidth: 5MHz	QPSK: 4M48G7D 16QAM: 4M48W7D
	LTE Band 41 Channel Bandwidth: 10MHz	QPSK: 8M93G7D 16QAM: 5M23W7D
	LTE Band 41 Channel Bandwidth: 15MHz	QPSK: 13M5G7D 16QAM: 7M49W7D
	LTE Band 41 Channel Bandwidth: 20MHz	QPSK: 18M0G7D 16QAM: 10M1W7D
	LTE Band 66 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D 16QAM: 1M11W7D
	LTE Band 66	QPSK: 2M69G7D



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	Channel Bandwidth: 3MHz	16QAM: 2M69W7D
	LTE Band 66	QPSK: 4M49G7D
	Channel Bandwidth: 5MHz	16QAM: 4M49W7D
	LTE Band 66	QPSK: 8M94G7D
	Channel Bandwidth: 10MHz	16QAM: 5M27W7D
	LTE Band 66	QPSK: 13M6G7D
	Channel Bandwidth: 15MHz	16QAM: 5M03W7D
	LTE Band 66	QPSK: 18M0G7D
	Channel Bandwidth: 20MHz	16QAM: 5M07W7D
ANTENNA TYPE*	PIFA Antenna with 1.13dBi gain for LTE4 <E 66 PIFA Antenna with 1.32dBi gain for LTE 38 & LTE 41	
HW VERSION*	CT10R_MB_V1.0	
SW VERSION*	LL306_LL306_WAAP_XQGL_V1.0_240517.1101	
I/O PORTS*	Refer to user's manual	
CABLE SUPPLIED*	N/A	
EXTREME TEMPERATURE*	High Temperature:60℃ Low Temperature :-30℃	
EXTREME VOLTAGE*	High Voltage: 4.2V Low Voltage: 3.4V	

NOTE:

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

MODULATION MODE	TX FUNCTION
LTE 4/38/41/66	1TX/1RX

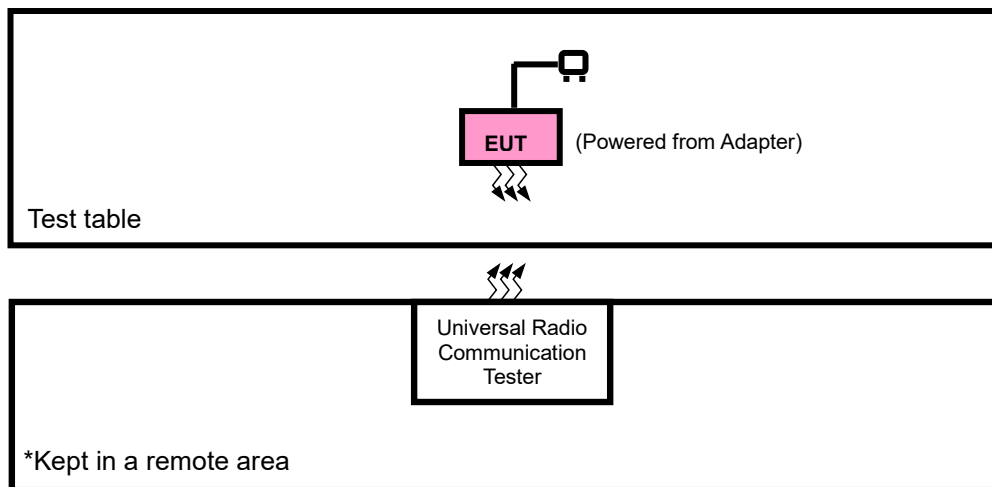
- For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
- To meet different market demands, LL306R and LL306Pro differ only in model names, with all other aspects being identical.
- List of Accessory:**

ACCESSORIES	Brand	MODEL / SPECIFICATION
Internal battery	N/A	Modle Name : 122960L Power Rating: 5Vdc, 2Ah
External battery	N/A	KR301_S_GO01_F010 Power Rating: 5Vdc, 2Ah



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	Laptop	Lenovo	ThinkPad E14	HRSW00024	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

**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 + Adapter with LTE link
B	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 38 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	37775 to 38225	37775, 38000, 38225	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		37850 to 38150	37850, 38000, 38150	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 38 are covered by LTE Band 41, Because it is a subset of LTE Band 41 with the



same output power and supported bandwidths, So the conducted test data and RSE test data please refer to LTE Band 41

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
B	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	39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset 100 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
			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
						100 RB / 0 RB Offset
			41490	20MHz	QPSK, 16QAM	1 RB / 99 RB Offset



						100 RB / 0 RB Offset
A	CONDCUETED EMISSION	39675 to 41565	39675, 40620, 41565	5MHz	QPSK	1 RB / 0 RB Offset
		39700 to 41540	39700, 40620, 41540	10MHz	QPSK	1 RB / 0RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK	1 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	39675 to 41565	40620	5MHz	QPSK	1 RB / 0 RB Offset
		39700 to 41540	40620	10MHz	QPSK	1 RB / 0RB Offset
		39725 to 41515	40620	15MHz	QPSK	1 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	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, 16QAM	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
						6 RB / 0 RB Offset
		132322	132322	1.4MHz	QPSK, 16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		131987 to 132657	131987	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset



			132657	3MHz	QPSK, 16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		131997 to 132647	131997	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			132647	5MHz	QPSK, 16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		132022 to 132622	132022	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			132622	10MHz	QPSK, 16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		132047 to 132597	132047	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			132597	15MHz	QPSK, 16QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
A	CONDCUDED EMISSION	131979 to 132665	131979,132322,132665	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK	1 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	132072 to 132572	132072,132322,132572	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset
A	RADIATED EMISSION	131979 to 132665	132322	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	132022,132322,132622	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 Battery	Hanwen Xu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.4V/ 3.7V/ 4.2V By DC Source	Hanwen Xu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 3.7V By Battery	Hanwen Xu
BAND EDGE	23deg. C, 70%RH	DC 3.7V By Battery	Hanwen Xu
CONDCUDED EMISSION	23deg. C, 70%RH	DC 3.7V By Battery	Hanwen Xu
RADIATED EMISSION	23deg. C, 70%RH	AC 120V/60Hz	Hanwen Xu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 3.7V By Battery	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

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.”

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.

According to the specific rule Part 27.50 (k)(3) Mobile devices are limited to 1Watt (30 dBm) EIRP, Mobile devices operating inl these bands must employ a means for limiting power to the minimum necessary for successful communications

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 determing the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_{\text{T}} - L_{\text{C}}$$

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.

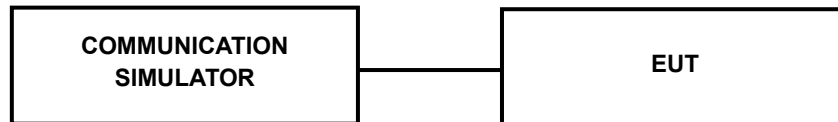
CONDUCTED POWER MEASUREMENT:

- 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						
Band/BW	Modulation	RB Size	RB Offset	Low CH 19957	Mid CH 20175	High CH 20393
				Frequency 1710.7 MHz	Frequency 1732.5 MHz	Frequency 1754.3 MHz
4/ 1.4	QPSK	1	0	22.02	21.92	21.62
		1	2	22.84	22.49	22.38
		1	5	21.29	21.11	20.92
		3	0	22.06	21.86	21.87
		3	1	22.00	21.99	21.90
		3	3	21.05	20.91	20.79
		6	0	21.24	21.16	21.05
	16QAM	1	0	21.27	20.93	20.90
		1	2	21.83	21.52	21.53
		1	5	20.36	20.19	20.13
		3	0	21.37	21.34	21.26
		3	1	21.85	21.48	21.30
		3	3	21.28	20.97	20.84
		6	0	21.42	21.08	21.00



LTE Band 4						
Band/BW	Modulation	RB Size	RB Offset	Low CH 19965	Mid CH 20175	High CH 20385
				Frequency 1711.5 MHz	Frequency 1732.5 MHz	Frequency 1753.5 MHz
4/ 3	QPSK	1	0	22.10	21.94	21.64
		1	7	22.85	22.42	22.32
		1	14	21.45	21.09	20.89
		8	0	21.74	21.30	21.37
		8	3	20.69	20.42	20.37
		8	7	21.12	21.04	20.78
		15	0	21.17	21.16	21.03
	16QAM	1	0	21.24	21.04	20.77
		1	7	22.01	21.73	21.51
		1	14	20.27	20.24	20.12
		8	0	21.46	21.41	21.38
		8	3	21.54	21.33	21.25
		8	7	21.24	20.92	20.75
		15	0	21.38	21.13	21.07
Band/BW	Modulation	RB Size	RB Offset	Low CH 19975	Mid CH 20175	High CH 20375
				Frequency 1712.5 MHz	Frequency 1732.5 MHz	Frequency 1752.5 MHz
4/ 5	QPSK	1	0	22.07	21.87	21.67
		1	12	22.88	22.61	22.35
		1	24	21.30	21.20	20.95
		12	0	21.73	21.27	21.34
		12	6	20.60	20.58	20.45
		12	13	21.05	21.09	20.93
		25	0	21.36	21.20	21.02
	16QAM	1	0	21.24	20.86	20.73
		1	12	22.00	21.64	21.33
		1	24	20.42	20.27	20.22
		12	0	21.42	21.42	21.21
		12	6	21.47	21.26	21.08
		12	13	21.32	20.85	20.75
		25	0	21.37	21.03	21.08



LTE Band 4						
Band/BW	Modulation	RB Size	RB Offset	Low CH 20000	Mid CH 20175	High CH 20350
				Frequency 1715 MHz	Frequency 1732.5 MHz	Frequency 1750 MHz
4/ 10	QPSK	1	0	21.98	21.79	21.53
		1	24	22.87	22.58	22.41
		1	49	21.31	21.20	21.07
		25	0	21.59	21.29	21.37
		25	12	20.61	20.47	20.30
		25	25	20.99	21.05	20.96
		50	0	21.33	21.17	21.09
	16QAM	1	0	21.08	20.89	20.75
		1	24	21.86	21.65	21.52
		1	49	20.34	20.07	20.25
		12	0	21.35	21.26	21.33
		12	18	21.53	21.26	21.11
		12	37	21.36	20.84	20.93
		27	0	21.54	21.02	20.87
Band/BW	Modulation	RB Size	RB Offset	Low CH 20025	Mid CH 20175	High CH 20325
				Frequency 1717.5 MHz	Frequency 1732.5 MHz	Frequency 1747.5 MHz
4/ 15	QPSK	1	0	21.91	21.90	21.61
		1	37	22.74	22.46	22.36
		1	74	21.29	21.23	21.05
		36	0	21.56	21.29	21.23
		36	19	20.57	20.43	20.50
		36	39	21.07	21.08	20.78
		75	0	21.16	21.27	21.07
	16QAM	1	0	21.25	21.03	20.73
		1	37	22.05	21.54	21.34
		1	74	20.33	20.10	20.18
		12	0	21.51	21.27	21.32
		12	31	21.67	21.31	21.10
		12	62	21.35	20.88	20.93
		27	0	21.55	21.08	21.00



LTE Band 4						
Band/BW	Modulation	RB Size	RB Offset	Low CH 20050	Mid CH 20175	High CH 20300
				Frequency 1720 MHz	Frequency 1732.5 MHz	Frequency 1745 MHz
4/ 20	QPSK	1	0	22.11	21.95	21.70
		1	50	22.91	22.61	22.42
		1	99	21.50	21.28	21.08
		50	0	21.74	21.45	21.40
		50	25	20.71	20.60	20.49
		50	50	21.19	21.08	20.98
		100	0	21.37	21.26	21.21
	16QAM	1	0	21.29	21.04	20.94
		1	50	22.04	21.73	21.52
		1	99	20.45	20.28	20.28
		12	0	21.53	21.44	21.42
		12	43	21.67	21.47	21.28
		12	87	21.36	21.05	20.93
		27	0	21.54	21.23	21.08



LTE Band 38						
Band/BW	Modulation	RB Size	RB Offset	Low CH (37775)	Low Mid CH (38000)	Mid CH (38225)
				Frequency (2572.5)MHz	Frequency (2595)MHz	Frequency (2617.5)MHz
38/ 5	QPSK	1	0	20.85	20.92	20.51
		1	12	20.76	21.14	20.65
		1	24	19.10	19.36	18.90
		12	0	19.32	19.40	19.03
		12	6	19.01	19.34	19.02
		12	13	19.14	19.32	18.89
		25	0	19.50	19.62	19.33
	16QAM	1	0	20.02	20.11	19.81
		1	12	20.04	20.19	19.86
		1	24	18.13	18.42	17.93
		12	0	19.29	19.45	18.84
		12	6	19.14	19.31	18.90
		12	13	19.01	19.14	18.89
		25	0	19.22	19.49	19.35
Band/BW	Modulation	RB Size	RB Offset	Low CH (37800)	Low Mid CH (38000)	Mid CH (38200)
				Frequency (2575)MHz	Frequency (2595)MHz	Frequency (2615)MHz
38/ 10	QPSK	1	0	20.74	20.87	20.61
		1	24	20.94	21.05	20.63
		1	49	19.23	19.37	18.79
		25	0	19.14	19.31	19.07
		25	12	18.95	19.30	18.97
		25	25	19.06	19.41	18.92
		50	0	19.60	19.66	19.38
	16QAM	1	0	19.94	20.22	19.79
		1	24	20.08	20.21	19.93
		1	49	18.19	18.35	18.04
		12	0	19.14	19.38	18.89
		12	18	19.07	19.21	18.97
		12	37	19.03	19.13	18.92
		27	0	19.25	19.60	19.29



LTE Band 38						
Band/BW	Modulation	RB Size	RB Offset	Low CH (37825)	Low Mid CH (38000)	Mid CH (38175)
				Frequency (2577.5)MHz	Frequency (2595)MHz	Frequency (2612.5)MHz
38/ 15	QPSK	1	0	20.74	21.06	20.73
		1	37	20.81	21.10	20.84
		1	74	19.11	19.22	18.94
		36	0	19.29	19.49	19.04
		36	19	19.14	19.33	18.84
		36	39	19.09	19.30	18.98
		75	0	19.39	19.70	19.26
	16QAM	1	0	19.98	20.17	19.84
		1	37	20.10	20.20	19.80
		1	74	18.02	18.32	17.83
		12	0	19.27	19.41	18.83
		12	31	19.18	19.20	18.97
		12	62	19.10	19.29	19.05
		27	0	19.20	19.66	19.25
Band/BW	Modulation	RB Size	RB Offset	Low CH (37850)	Low Mid CH (38000)	Mid CH (38150)
				Frequency (2580)MHz	Frequency (2595)MHz	Frequency (2610)MHz
38/ 20	QPSK	1	0	21.19	21.32	20.97
		1	50	21.22	21.41	21.08
		1	99	19.52	19.66	19.22
		50	0	19.56	19.74	19.52
		50	25	19.39	19.68	19.27
		50	50	19.52	19.65	19.29
		100	0	19.84	19.99	19.71
	16QAM	1	0	20.36	20.52	20.09
		1	50	20.38	20.64	20.23
		1	99	18.48	18.68	18.28
		12	0	19.59	19.70	19.29
		12	43	19.44	19.62	19.33
		12	87	19.46	19.58	19.32
		27	0	19.65	19.94	19.67

LTE Band 41						
Band/BW	Modulation	RB Size	RB Offset	Low CH (39675)	Mid CH (40620)	High CH (41565)
				Frequency (2498.5)MHz	Frequency (2593)MHz	Frequency (2687.5)MHz
41/ 5	QPSK	1	0	21.77	20.42	20.37
		1	12	22.78	21.63	21.55
		1	24	21.85	20.85	20.83
		12	0	21.95	20.93	20.70
		12	6	21.93	20.86	20.75
		12	13	21.10	19.95	19.82
		25	0	21.20	20.25	20.17
	16QAM	1	0	20.64	19.59	19.51
		1	12	21.77	20.97	20.82



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		1	24	20.95	19.92	19.80
		12	0	21.95	20.95	20.75
		12	6	22.14	20.96	20.79
		12	13	20.78	19.84	19.86
		25	0	21.37	20.43	20.16
Band/BW	Modulation	RB Size	RB Offset	Low CH (39700) Frequency (2501)MHz	Mid CH (40620) Frequency (2593)MHz	High CH (41540) Frequency (2685)MHz
41/ 10	QPSK	1	0	21.58	20.49	20.46
		1	24	22.83	21.76	21.51
		1	49	21.76	20.80	20.81
		25	0	21.92	20.94	20.85
		25	12	21.85	20.96	20.73
		25	25	20.93	20.01	19.65
		50	0	21.33	20.35	20.11
	16QAM	1	0	20.50	19.62	19.57
		1	24	21.77	20.77	20.75
		1	49	20.94	19.94	19.72
		12	0	21.95	21.12	20.93
		12	18	22.07	20.94	20.86
		12	37	20.85	19.87	19.80
		27	0	21.26	20.36	20.03

LTE Band 41						
Band/BW	Modulation	RB Size	RB Offset	Low CH (39725)	Mid CH (40620)	High CH(41515)
				Frequency (2503.5)MHz	Frequency (2593)MHz	Frequency (2682.5)MHz
41/ 15	QPSK	1	0	21.75	20.45	20.46
		1	37	22.76	21.69	21.42
		1	74	21.84	20.90	20.66
		36	0	22.08	20.99	20.79
		36	19	21.84	20.85	20.78
		36	39	20.91	19.99	19.66
		75	0	21.38	20.38	20.03
	16QAM	1	0	20.65	19.62	19.54
		1	37	21.67	20.83	20.77
		1	74	21.03	19.92	19.64
		12	0	21.83	21.15	20.82
		12	31	22.11	20.92	20.76
		12	62	20.97	19.93	19.84
		27	0	21.30	20.29	20.07



LTE Band 41						
Band/BW	Modulation	RB Size	RB Offset	Low CH(39750)	Mid CH(40620)	High CH(41490)
				Frequency (2506)MHz	Frequency (2593)MHz	Frequency (2680)MHz
41/ 20	QPSK	1	0	21.76	20.60	20.45
		1	50	22.85	21.79	21.60
		1	99	21.95	20.92	20.82
		50	0	22.07	21.10	20.90
		50	25	21.98	21.03	20.86
		50	50	21.09	20.03	19.82
		100	0	21.38	20.37	20.18
	16QAM	1	0	20.67	19.76	19.56
		1	50	21.87	20.98	20.91
		1	99	21.11	20.05	19.80
		12	0	22.04	21.14	20.96
		12	43	22.14	21.06	20.95
		12	87	20.96	20.05	20.00
		27	0	21.38	20.43	20.18

LTE Band 66						
Band/BW	Modulation	RB Size	RB Offset	Low CH 131979	Mid CH 132322	High CH 132665
				Frequency 1710.7MHz	Frequency 1745MHz	Frequency 1779.3MHz
66/ 1.4	QPSK	1	0	21.75	20.51	20.29
		1	2	22.65	21.65	21.47
		1	5	21.80	20.72	20.71
		3	0	21.99	21.08	20.67
		3	1	22.69	21.81	21.59
		3	3	21.65	20.61	20.34
		6	0	21.34	20.28	20.03
	16QAM	1	0	20.52	19.69	19.50
		1	2	21.71	20.82	20.77
		1	5	21.05	19.89	19.69
		3	0	21.82	21.05	20.85
		3	1	22.00	20.90	20.85
		3	3	20.77	19.88	20.01
		6	0	21.36	20.23	20.18
Band/BW	Modulation	RB Size	RB Offset	Low CH 131987	Mid CH 132322	High CH 132657
				Frequency 1711.5MHz	Frequency 1745MHz	Frequency 1778.5MHz
66/ 3	QPSK	1	0	21.70	20.50	20.41
		1	7	22.77	21.60	21.42
		1	14	21.91	20.87	20.80
		8	0	22.05	21.08	20.86
		8	3	21.85	20.85	20.80
		8	7	20.93	19.92	19.62
		15	0	21.20	20.24	20.00
	16QAM	1	0	20.54	19.77	19.41



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		1	7	21.80	20.80	20.75
		1	14	20.94	20.01	19.76
		8	0	22.00	21.11	20.91
		8	3	21.94	20.90	20.76
		8	7	20.89	19.84	19.97
		15	0	21.19	20.43	19.97
LTE Band 66						
Band/BW	Modulation	RB Size	RB Offset	Low CH 131997 Frequency 1712.5MHz	Mid CH 132322 Frequency 1745MHz	High CH 132647 Frequency 1777.5MHz
66/ 5	QPSK	1	0	21.76	20.54	20.34
		1	12	22.68	21.79	21.52
		1	24	21.84	20.80	20.68
		12	0	22.07	21.06	20.72
		12	6	21.98	21.02	20.88
		12	13	21.07	20.00	19.64
		25	0	21.22	20.27	20.00
	16QAM	1	0	20.50	19.69	19.57
		1	12	21.71	20.77	20.82
		1	24	20.97	19.87	19.73
		12	0	21.83	21.15	20.81
		12	6	22.14	21.06	20.96
		12	13	20.76	19.91	20.01
		25	0	21.32	20.42	20.17
Band/BW	Modulation	RB Size	RB Offset	Low CH 132022 Frequency 1715MHz	Mid CH 132322 Frequency 1745MHz	High CH 132622 Frequency 1775MHz
66/ 10	QPSK	1	0	21.64	20.43	20.45
		1	24	22.80	21.59	21.42
		1	49	21.91	20.83	20.64
		25	0	22.06	20.90	20.79
		25	12	21.92	20.87	20.85
		25	25	20.97	19.92	19.80
		50	0	21.20	20.27	20.01
	16QAM	1	0	20.66	19.64	19.41
		1	24	21.87	20.78	20.87
		1	49	21.08	19.90	19.77
		12	0	21.94	21.10	20.85
		12	18	22.15	20.89	20.92
		12	37	20.77	20.05	19.92
		27	0	21.22	20.39	20.12
LTE Band 66						
Band/BW	Modulation	RB Size	RB Offset	Low CH 132047 Frequency 1717.5 MHz	Mid CH 132322 Frequency 1745MHz	High CH 132597 Frequency 1772.5 MHz
66/ 15	QPSK	1	0	21.76	20.55	20.35
		1	37	22.85	21.66	21.55



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		1	74	21.95	20.73	20.69
		36	0	22.00	20.90	20.82
		36	19	21.81	20.98	20.77
		36	39	20.97	19.89	19.61
		75	0	21.20	20.23	20.06
	16QAM	1	0	20.68	19.75	19.54
		1	37	21.80	20.80	20.83
		1	74	21.05	19.88	19.74
		12	0	21.86	20.94	20.87
		12	31	22.01	20.97	20.76
		12	62	20.82	19.95	19.91
		27	0	21.25	20.38	20.06
Band/BW	Modulation	RB Size	RB Offset	Low CH 132072	Mid CH 132322	High CH 132572
				Frequency 1720MHz	Frequency 1745MHz	Frequency 1770MHz
66/ 20	QPSK	1	0	22.16	21.86	22.48
		1	50	22.91	22.73	23.27
		1	99	21.48	21.25	21.74
		50	0	21.37	21.19	21.64
		50	25	21.66	21.40	21.92
		50	50	21.29	21.07	21.62
		100	0	21.48	21.14	21.65
	16QAM	1	0	21.13	20.90	21.30
		1	50	21.91	21.73	22.32
		1	99	20.70	20.51	21.04
		12	0	21.55	21.20	21.60
		12	43	21.67	21.40	21.93
		12	87	21.25	21.05	21.56
		27	0	21.38	21.14	21.68

**EIRP****LTE BAND 4****1.4MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19957	1710.7	22.84	1.13	23.97	249.46	1
20175	1732.5	22.49	1.13	23.62	230.14	1
20393	1754.3	22.38	1.13	23.51	224.39	1

1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19957	1710.7	21.85	1.13	22.98	198.61	1
20175	1732.5	21.52	1.13	22.65	184.08	1
20393	1754.3	21.53	1.13	22.66	184.50	1

3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19965	1711.5	22.85	1.13	23.98	250.03	1
20175	1732.5	22.42	1.13	23.55	226.46	1
20385	1753.5	22.32	1.13	23.45	221.31	1

3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19965	1711.5	22.01	1.13	23.14	206.06	1
20175	1732.5	21.73	1.13	22.86	193.20	1
20385	1753.5	21.51	1.13	22.64	183.65	1

5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19975	1712.5	22.88	1.13	24.01	251.77	1
20175	1732.5	22.61	1.13	23.74	236.59	1
20375	1752.5	22.35	1.13	23.48	222.84	1

5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19975	1712.5	22.00	1.13	23.13	205.59	1
20175	1732.5	21.64	1.13	22.77	189.23	1
20375	1752.5	21.33	1.13	22.46	176.20	1

**10MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	22.87	1.13	24.00	251.19	1
20175	1732.5	22.58	1.13	23.71	234.96	1
20350	1750	22.41	1.13	23.54	225.94	1

10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	21.86	1.13	22.99	199.07	1
20175	1732.5	21.65	1.13	22.78	189.67	1
20350	1750	21.52	1.13	22.65	184.08	1

15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20025	1717.5	22.74	1.13	23.87	243.78	1
20175	1732.5	22.46	1.13	23.59	228.56	1
20325	1747.5	22.36	1.13	23.49	223.36	1

15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20025	1717.5	22.05	1.13	23.18	207.97	1
20175	1732.5	21.54	1.13	22.67	184.93	1
20325	1747.5	21.34	1.13	22.47	176.60	1

20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	22.91	1.13	24.04	253.51	1
20175	1732.5	22.61	1.13	23.74	236.59	1
20300	1745	22.42	1.13	23.55	226.46	1

20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	22.04	1.13	23.17	207.49	1
20175	1732.5	21.73	1.13	22.86	193.20	1
20300	1745	21.52	1.13	22.65	184.08	1



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5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37775	2572.5	20.85	1.32	22.17	164.82	2
38000	2595.0	21.14	1.32	22.46	176.20	2
38225	2617.5	20.65	1.32	21.97	157.40	2

5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37775	2572.5	20.04	1.32	21.36	136.77	2
38000	2595.0	20.19	1.32	21.51	141.58	2
38225	2617.5	19.86	1.32	21.18	131.22	2

10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37800	2575.0	20.94	1.32	22.26	168.27	2
38000	2595.0	21.05	1.32	22.37	172.58	2
38200	2615.0	20.63	1.32	21.95	156.68	2

10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37800	2575.0	20.08	1.32	21.40	138.04	2
38000	2595.0	20.22	1.32	21.54	142.56	2
38200	2615.0	19.93	1.32	21.25	133.35	2

15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37825	2577.5	20.81	1.32	22.13	163.31	2
38000	2595.0	21.10	1.32	22.42	174.58	2
38175	2612.5	20.84	1.32	22.16	164.44	2

15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37825	2577.5	20.10	1.32	21.42	138.68	2
38000	2595.0	20.20	1.32	21.52	141.91	2
38175	2612.5	19.84	1.32	21.16	130.62	2



20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37850	2580.0	21.22	1.32	22.54	179.47	2
38000	2595.0	21.41	1.32	22.73	187.50	2
38150	2610.0	21.08	1.32	22.40	173.78	2

20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37850	2580.0	20.38	1.32	21.70	147.91	2
38000	2595.0	20.64	1.32	21.96	157.04	2
38150	2610.0	20.23	1.32	21.55	142.89	2

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5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39675	2498.5	22.78	1.32	24.10	257.04	2
40620	2593	21.63	1.32	22.95	197.24	2
41565	2687.5	21.55	1.32	22.87	193.64	2

5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39675	2498.5	22.14	1.32	23.46	221.82	2
40620	2593	20.97	1.32	22.29	169.43	2
41565	2687.5	20.82	1.32	22.14	163.68	2

10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39700	2501	22.83	1.32	24.15	260.02	2
40620	2593	21.76	1.32	23.08	203.24	2
41540	2685	21.51	1.32	22.83	191.87	2

10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39700	2501	22.07	1.32	23.39	218.27	2
40620	2593	21.12	1.32	22.44	175.39	2
41540	2685	20.93	1.32	22.25	167.88	2

**15MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G _{T-LC} (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39725	2503.5	22.76	1.32	24.08	255.86	2
40620	2593	21.69	1.32	23.01	199.99	2
41515	2682.5	21.42	1.32	22.74	187.93	2

15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _{T-LC} (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39725	2503.5	22.11	1.32	23.43	220.29	2
40620	2593	21.15	1.32	22.47	176.60	2
41515	2682.5	20.82	1.32	22.14	163.68	2

20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _{T-LC} (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39750	2506	22.85	1.32	24.17	261.22	2
40620	2593	21.79	1.32	23.11	204.64	2
41490	2680	21.60	1.32	22.92	195.88	2

20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _{T-LC} (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39750	2506	22.14	1.32	23.46	221.82	2
40620	2593	21.14	1.32	22.46	176.20	2
41490	2680	20.96	1.32	22.28	169.04	2



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1.4MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131979	1710.7	22.69	1.13	23.82	240.99	1
132322	1745	21.81	1.13	22.94	196.79	1
132665	1779.3	21.59	1.13	22.72	187.07	1

1.4MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131979	1710.7	22.00	1.13	23.13	205.59	1
132322	1745	21.05	1.13	22.18	165.20	1
132665	1779.3	20.85	1.13	21.98	157.76	1

3MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131987	1711.5	22.77	1.13	23.90	245.47	1
132322	1745	21.60	1.13	22.73	187.50	1
132657	1778.5	21.42	1.13	22.55	179.89	1

3MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131987	1711.5	22.00	1.13	23.13	205.59	1
132322	1745	21.11	1.13	22.24	167.49	1
132657	1778.5	20.91	1.13	22.04	159.96	1

**5MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131997	1712.5	22.68	1.13	23.81	240.44	1
132322	1745	21.79	1.13	22.92	195.88	1
132647	1777.5	21.52	1.13	22.65	184.08	1

5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131997	1712.5	22.14	1.13	23.27	212.32	1
132322	1745	21.15	1.13	22.28	169.04	1
132647	1777.5	20.96	1.13	22.09	161.81	1

10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132022	1715	22.80	1.13	23.93	247.17	1
132322	1745	21.59	1.13	22.72	187.07	1
132622	1775	21.42	1.13	22.55	179.89	1

10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132022	1715	22.15	1.13	23.28	212.81	1
132322	1745	21.10	1.13	22.23	167.11	1
132622	1775	20.92	1.13	22.05	160.32	1

15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132047	1717.5	22.85	1.13	23.98	250.03	1
132322	1745	21.66	1.13	22.79	190.11	1
132597	1772.5	21.55	1.13	22.68	185.35	1

15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132047	1717.5	22.01	1.13	23.14	206.06	1
132322	1745	20.97	1.13	22.10	162.18	1
132597	1772.5	20.87	1.13	22.00	158.49	1



20MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	22.91	1.13	24.04	253.51	1
132322	1745	22.73	1.13	23.86	243.22	1
132572	1770	23.27	1.13	24.40	275.42	1

20MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	21.91	1.13	23.04	201.37	1
132322	1745	21.73	1.13	22.86	193.20	1
132572	1770	22.32	1.13	23.45	221.31	1

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



3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

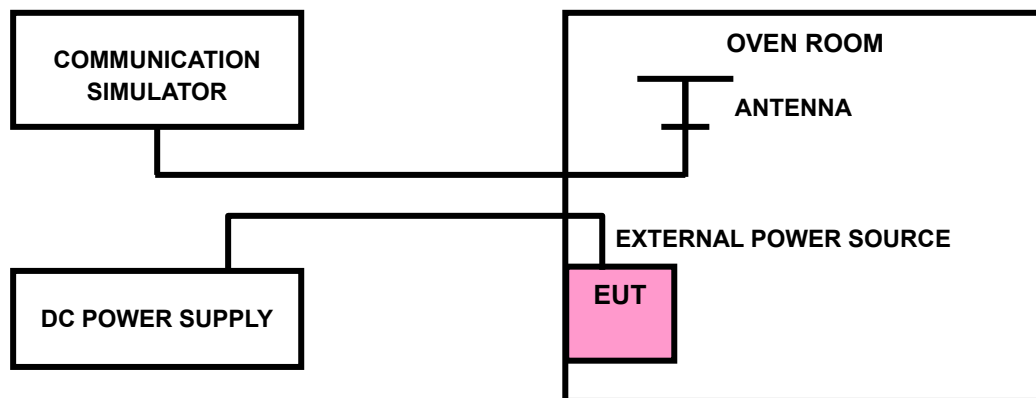
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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.

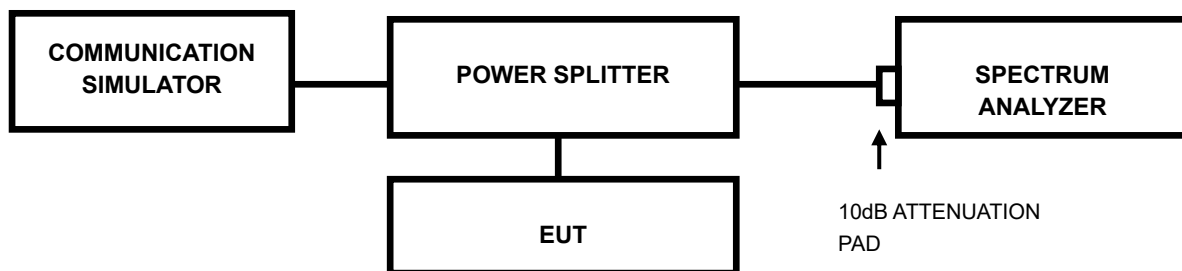


3.3 OCCUPIED BANDWIDTH MEASUREMENT

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

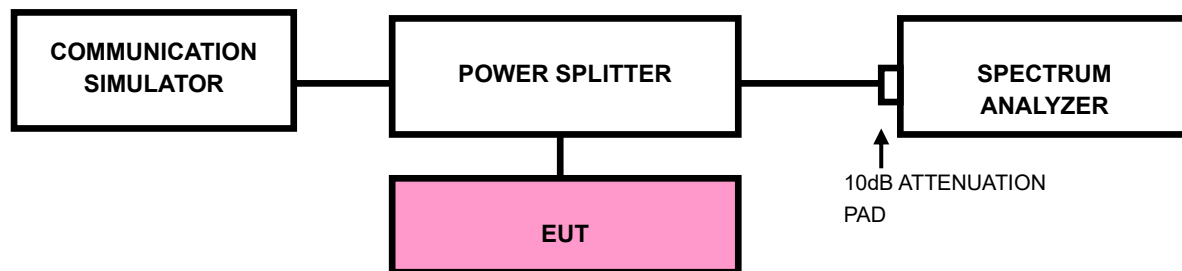
According to FCC Part 27.53(h) specified that For operations in the 1710-1755 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ 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 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.

According to FCC Part 27.53 (n)(2) For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. 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, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.



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 Band42

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

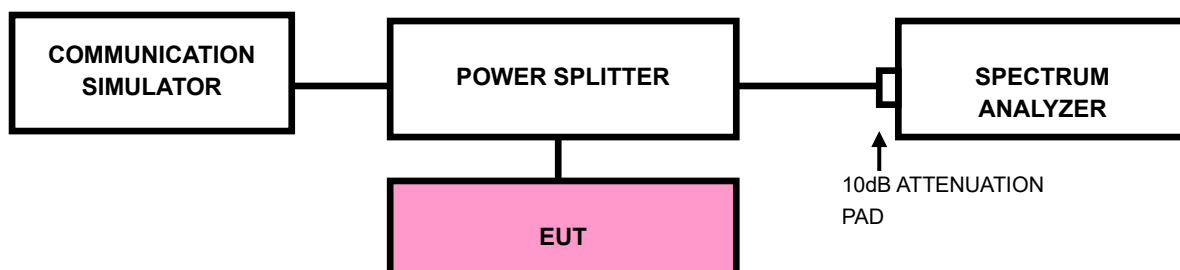
For LTE Band38/41

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 Band42

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

For LTE Band38/41

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. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$.
- 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.

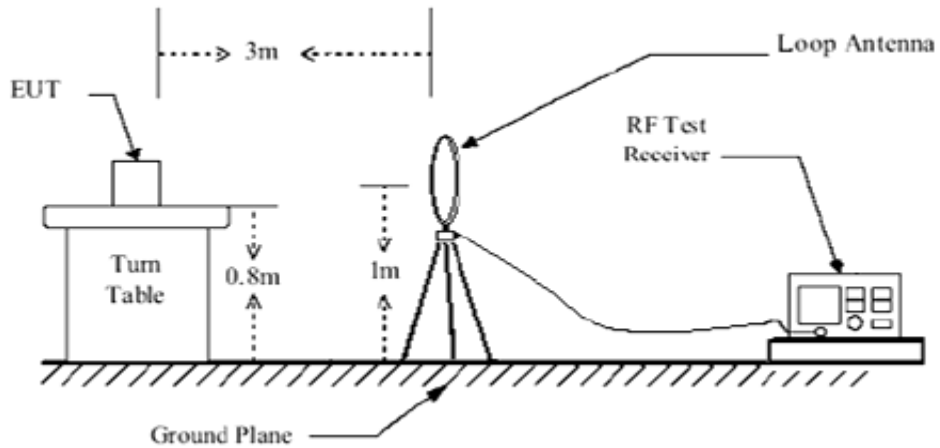
3.6.3 DEVIATION FROM TEST STANDARD

No deviation

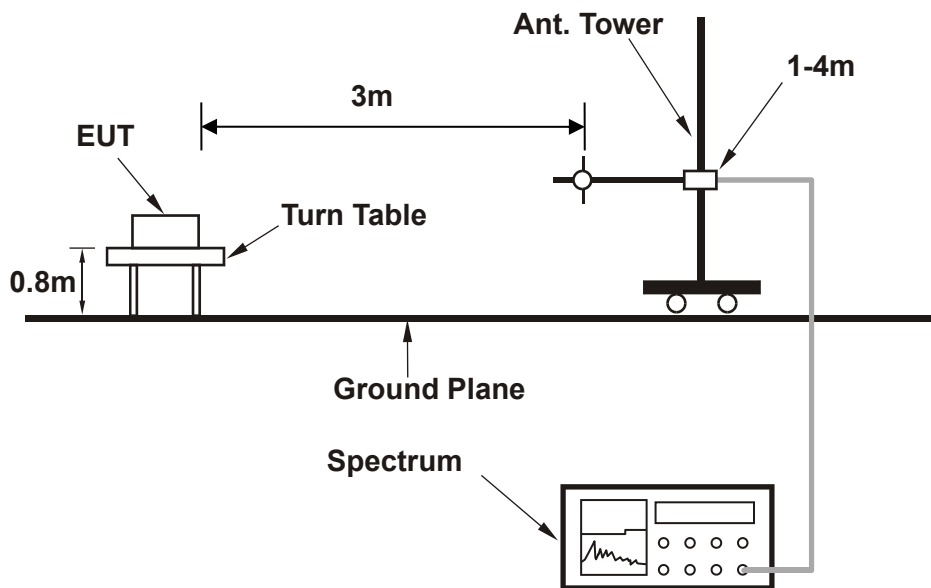


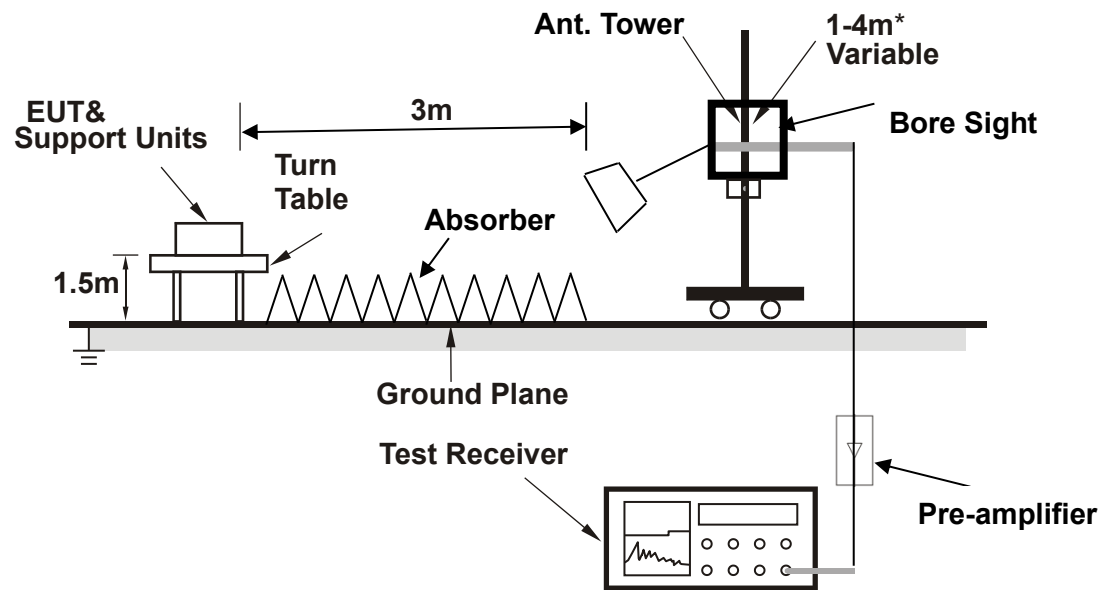
3.6.4 TEST SETUP

< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >





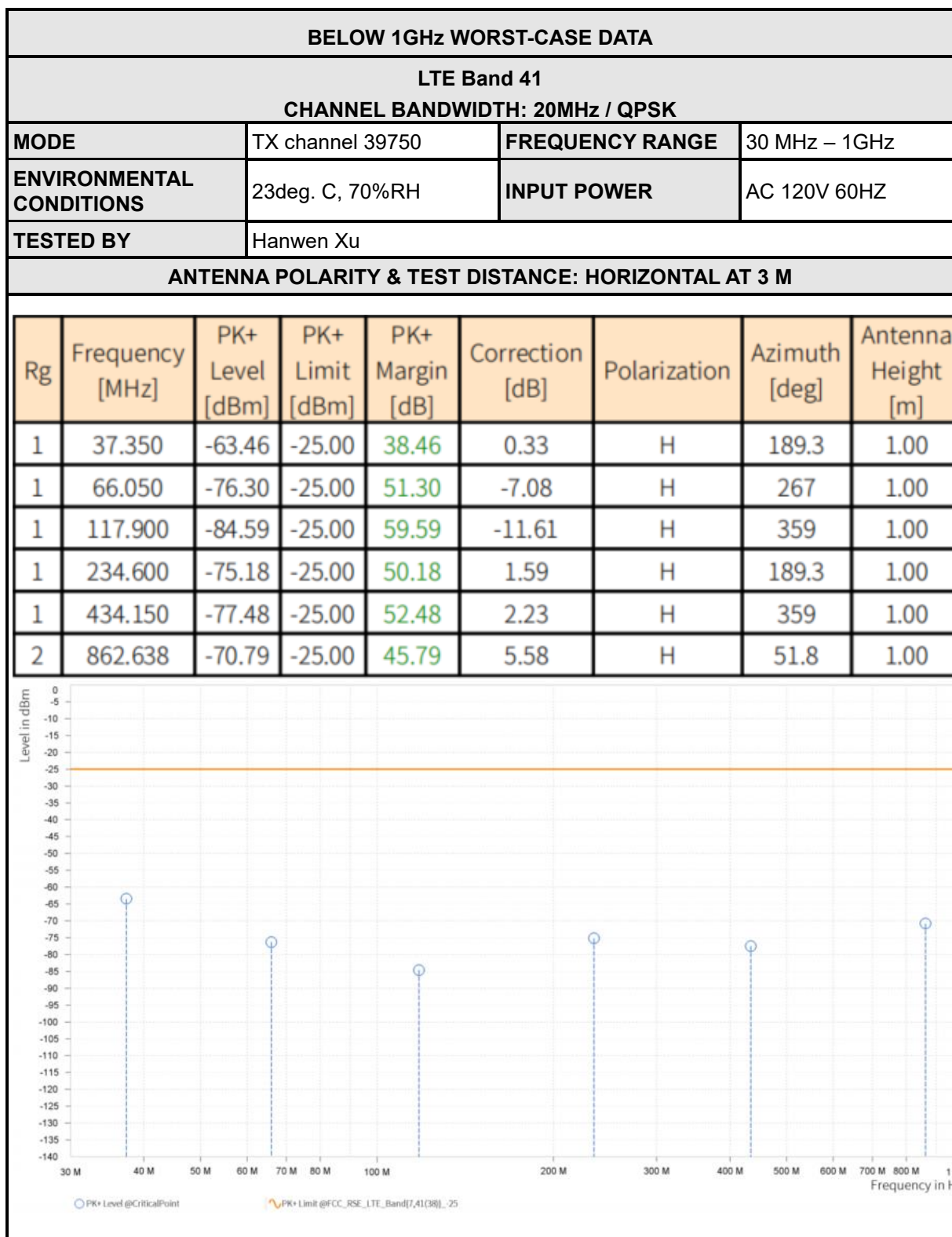
Note: Above 1G is a directional antenna depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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.

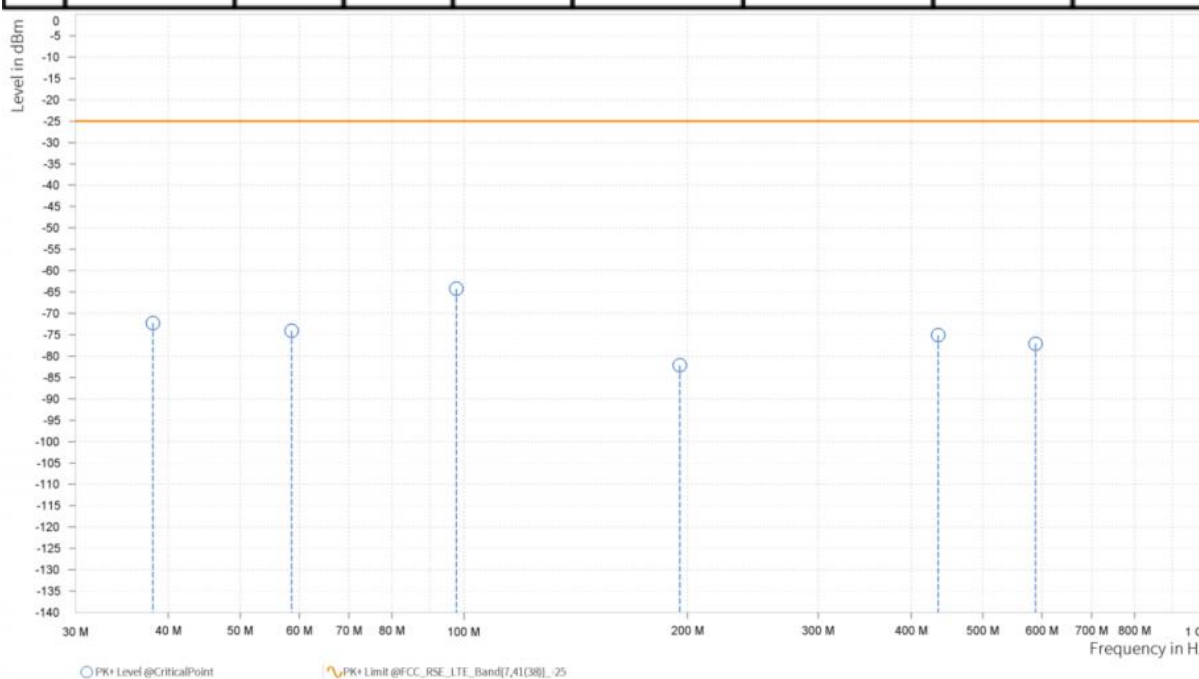




MODE	TX channel 39750	FREQUENCY RANGE	30 MHz – 1GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	38.150	-72.27	-25.00	47.27	-8.30	V	302.8	1.00
1	58.650	-74.03	-25.00	49.03	-3.55	V	354.5	1.00
1	97.700	-64.22	-25.00	39.22	2.63	V	234.7	1.00
1	195.200	-82.16	-25.00	57.16	-6.69	V	55.9	2.00
1	435.150	-75.10	-25.00	50.10	1.36	V	193.4	2.00
2	588.463	-77.10	-25.00	52.10	0.58	V	1	1.00





ABOVE 1GHz

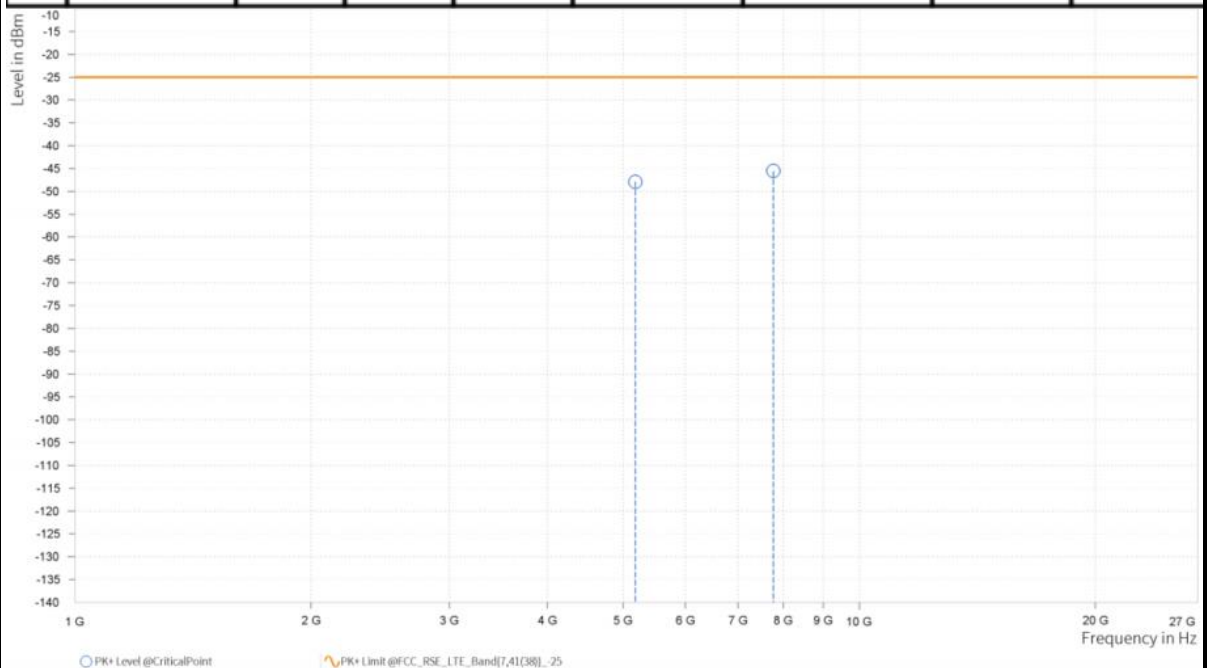
Note: For higher frequency, the emission is too low to be detected.

LTE BAND 41

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,181.500	-47.89	-25.00	22.89	23.77	H	1	2.00
5	7,772.300	-45.55	-25.00	20.55	28.09	H	359.1	1.00

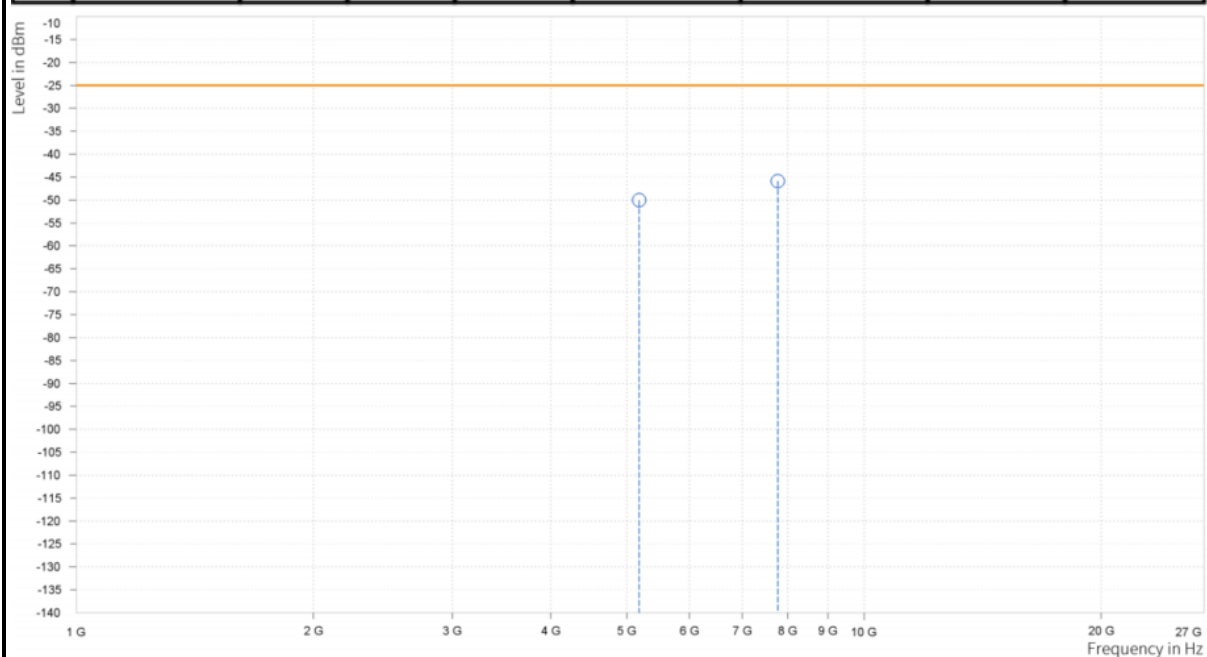




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,181.500	-50.02	-25.00	25.02	24.23	V	26.7	2.00
5	7,772.300	-45.86	-25.00	20.86	27.86	V	1	1.00

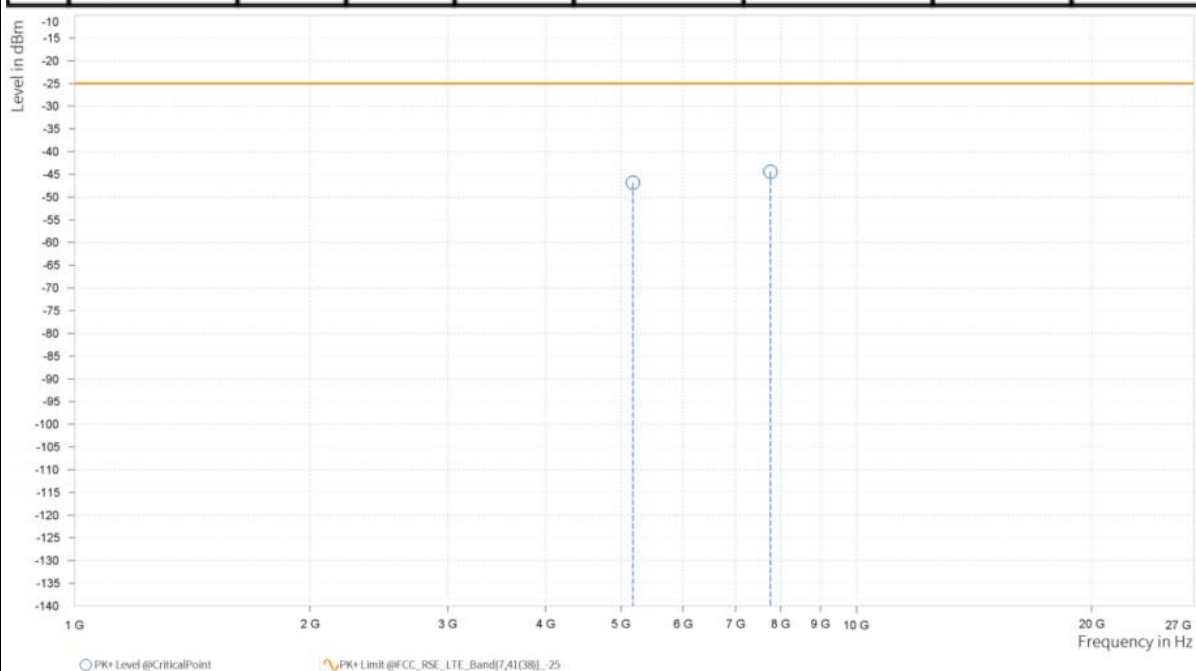




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,177.000	-46.81	-25.00	21.81	23.75	H	24.6	2.00
5	7,765.500	-44.40	-25.00	19.40	28.11	H	149.8	2.00

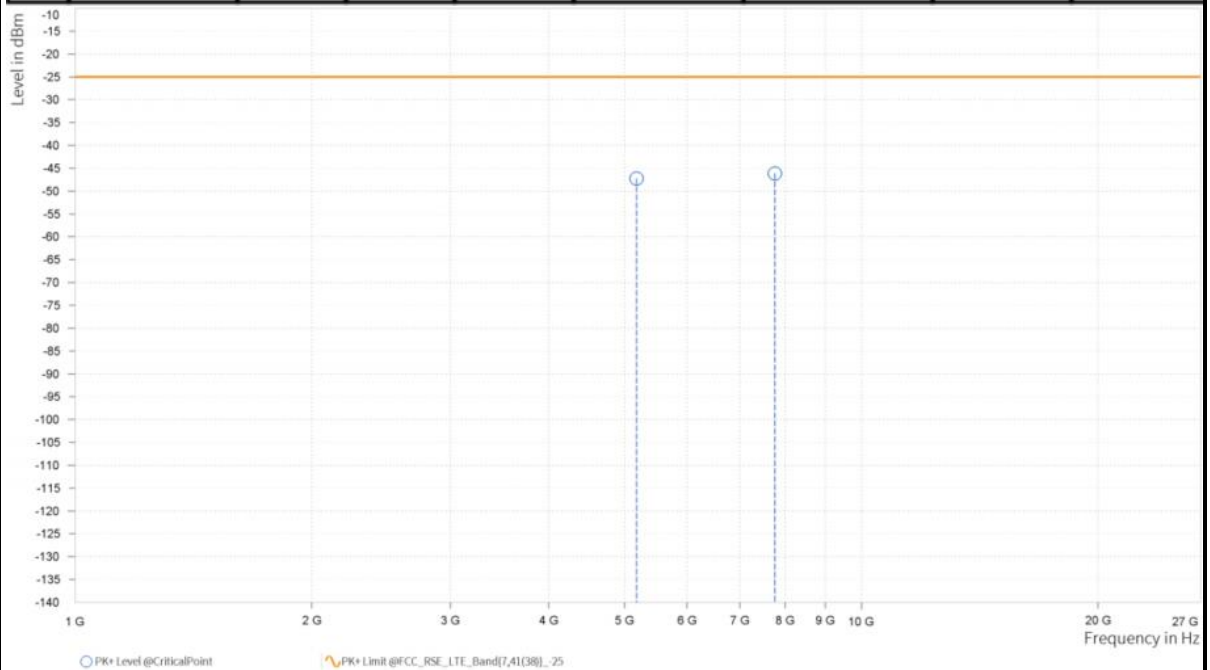




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,177.000	-47.23	-25.00	22.23	24.18	V	203	1.00
5	7,765.500	-46.16	-25.00	21.16	27.88	V	211.4	1.00

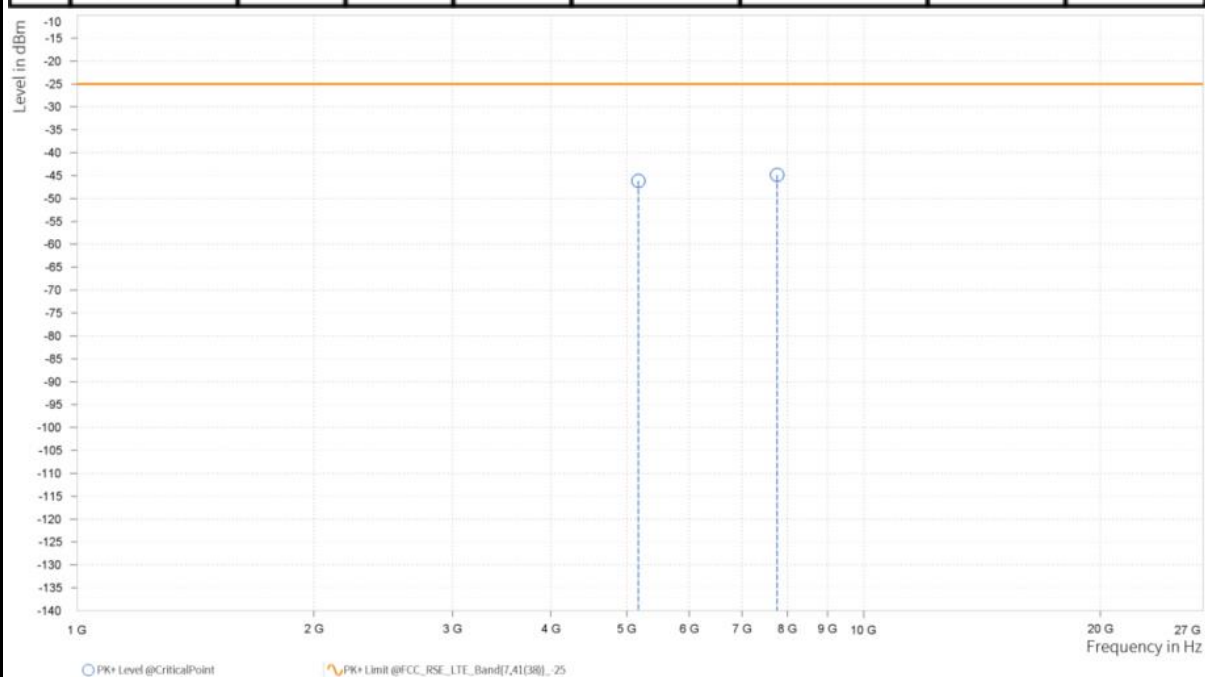




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,172.500	-46.14	-25.00	21.14	23.73	H	0.9	2.00
5	7,758.800	-44.89	-25.00	19.89	28.14	H	81.3	2.00

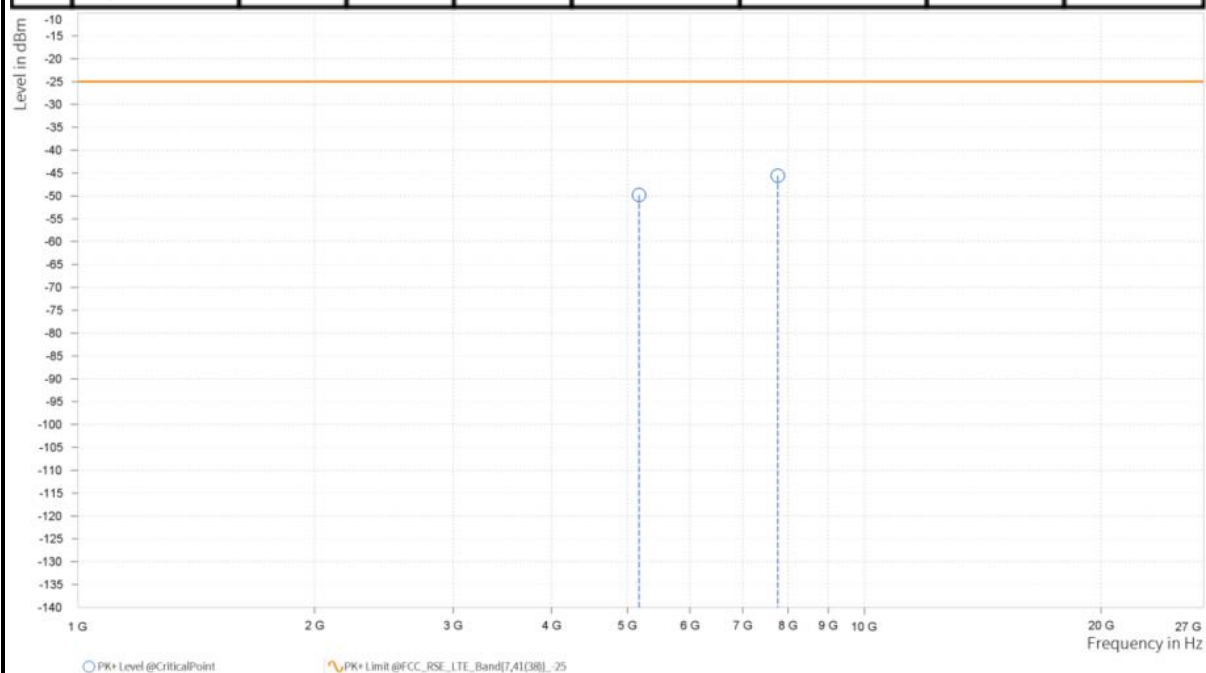




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,172.500	-49.81	-25.00	24.81	24.12	V	24.6	2.00
5	7,758.800	-45.57	-25.00	20.57	27.89	V	82.6	2.00

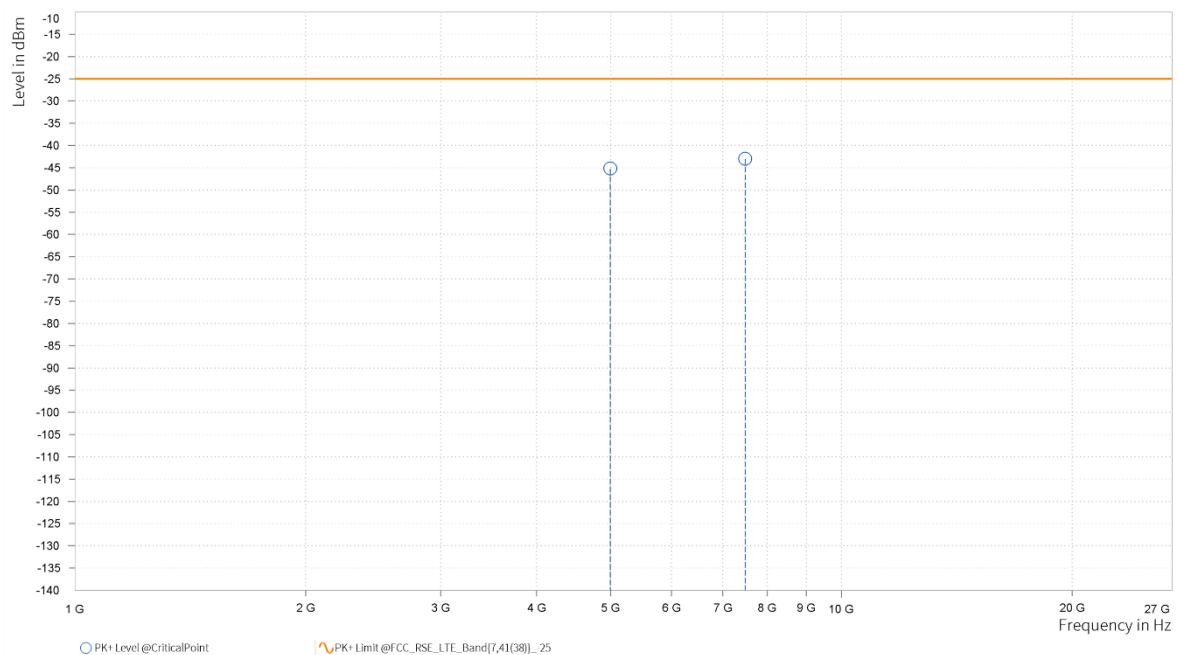




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 39750
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	4,994.000	-45.17	-25.00	20.17	23.61	H	359.1	1.00
5	7,491.000	-42.99	-25.00	17.99	27.41	H	149.2	2.00

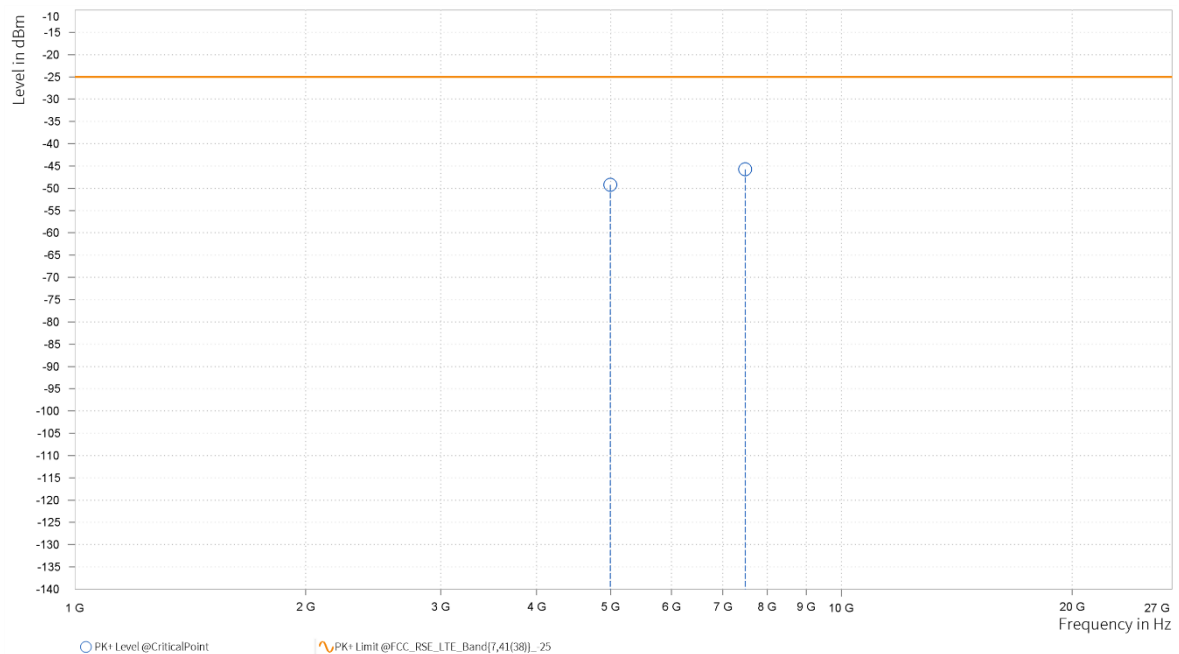




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 39750
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	4,994.000	-49.24	-25.00	24.24	23.84	V	94	1.00
5	7,491.000	-45.75	-25.00	20.75	27.39	V	147.8	2.00



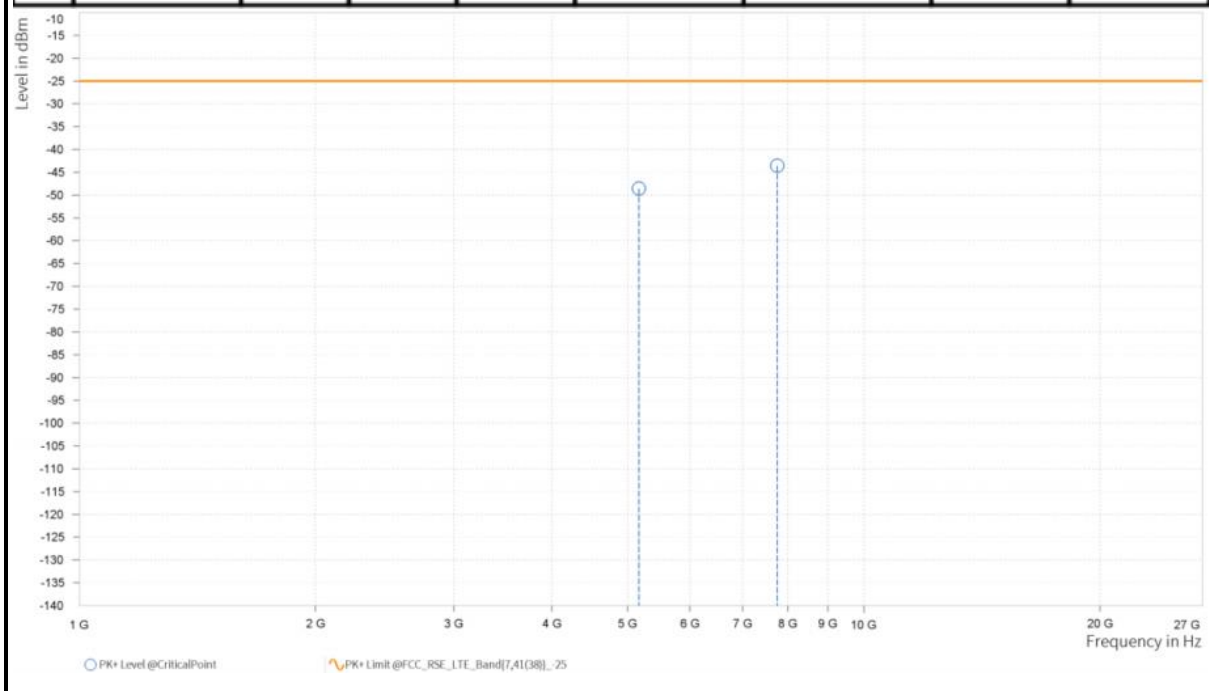


BUREAU VERITAS Test Report No.: PSU-QSZ2503050113RF04

CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,168.000	-48.58	-25.00	23.58	23.72	H	273.1	1.00
5	7,752.000	-43.58	-25.00	18.58	28.17	H	359	2.00

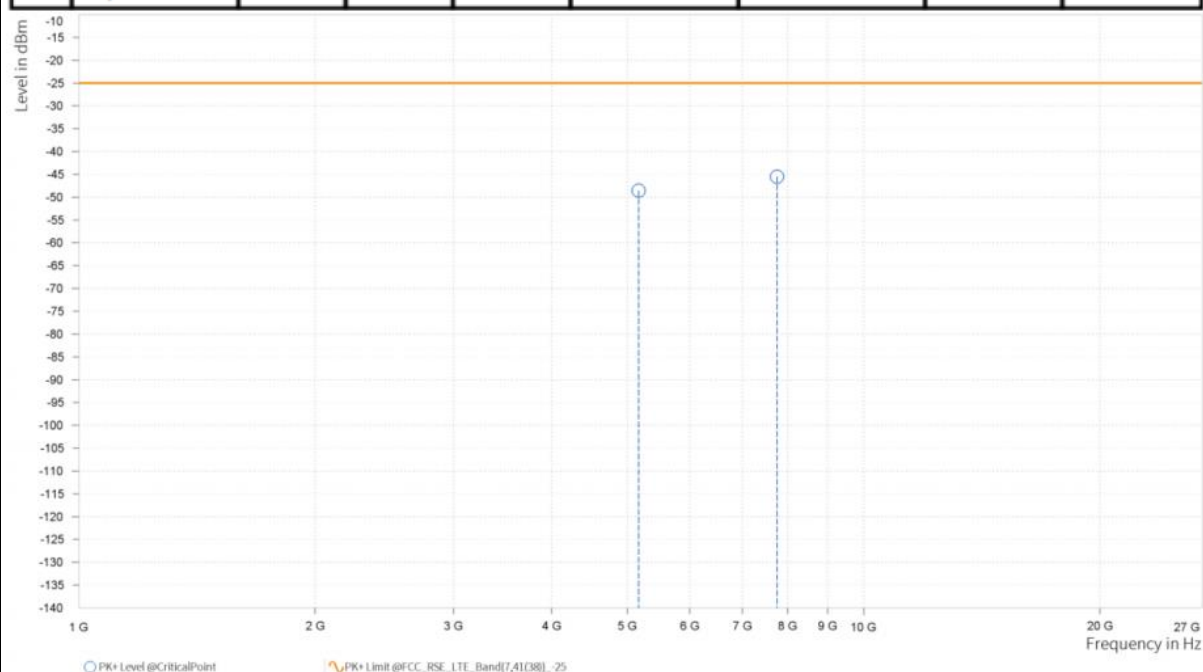




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 40620
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,168.000	-48.58	-25.00	23.58	24.07	V	359.1	1.00
5	7,752.000	-45.49	-25.00	20.49	27.90	V	81.3	2.00

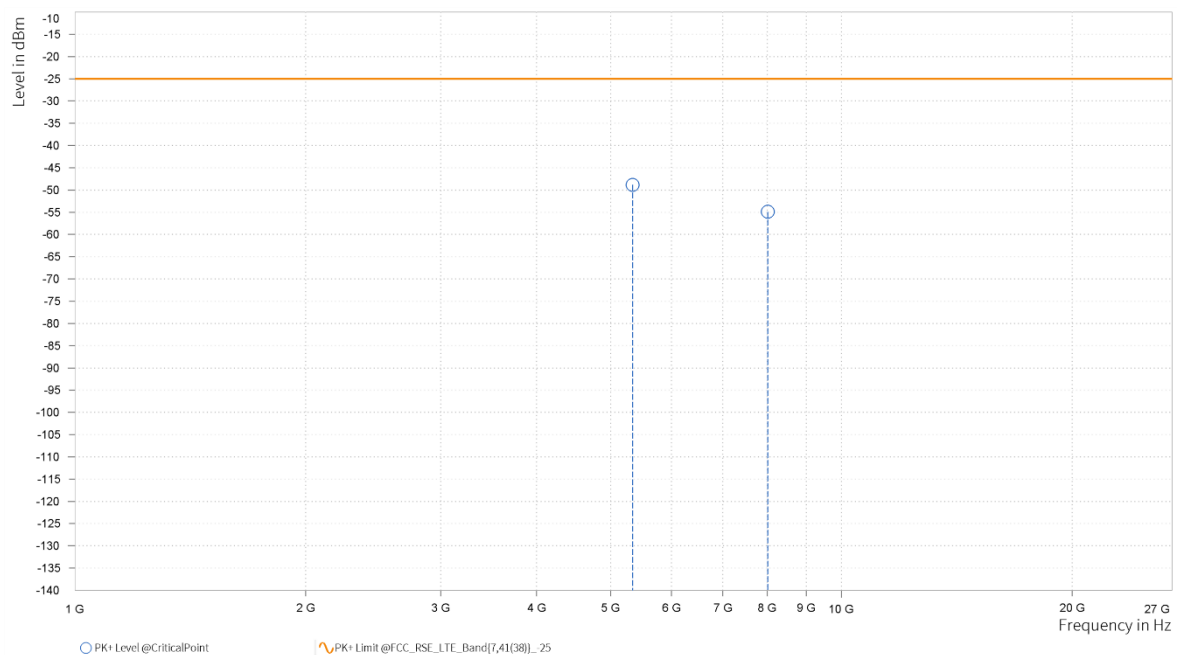




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 41490
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,342.000	-48.85	-25.00	23.85	24.25	H	359.1	1.00
6	8,013.000	-54.88	-25.00	29.88	16.95	H	157	1.00

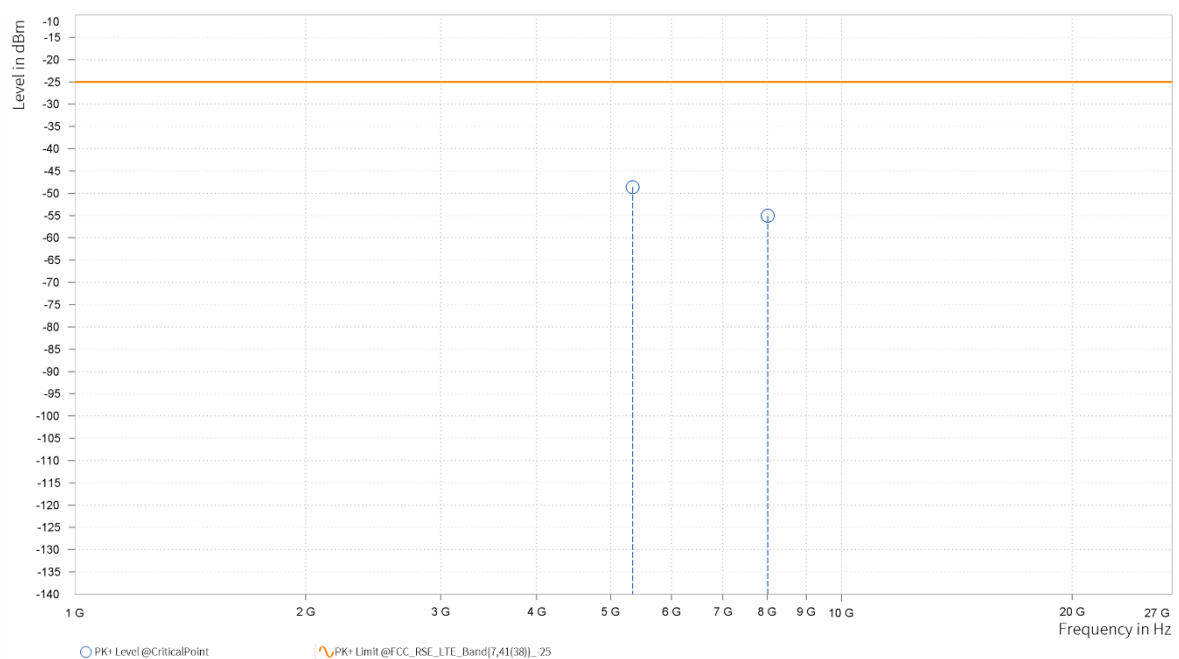




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 41490
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,342.000	-48.61	-25.00	23.61	24.71	V	359	2.00
6	8,013.000	-55.04	-25.00	30.04	16.76	V	354	1.00



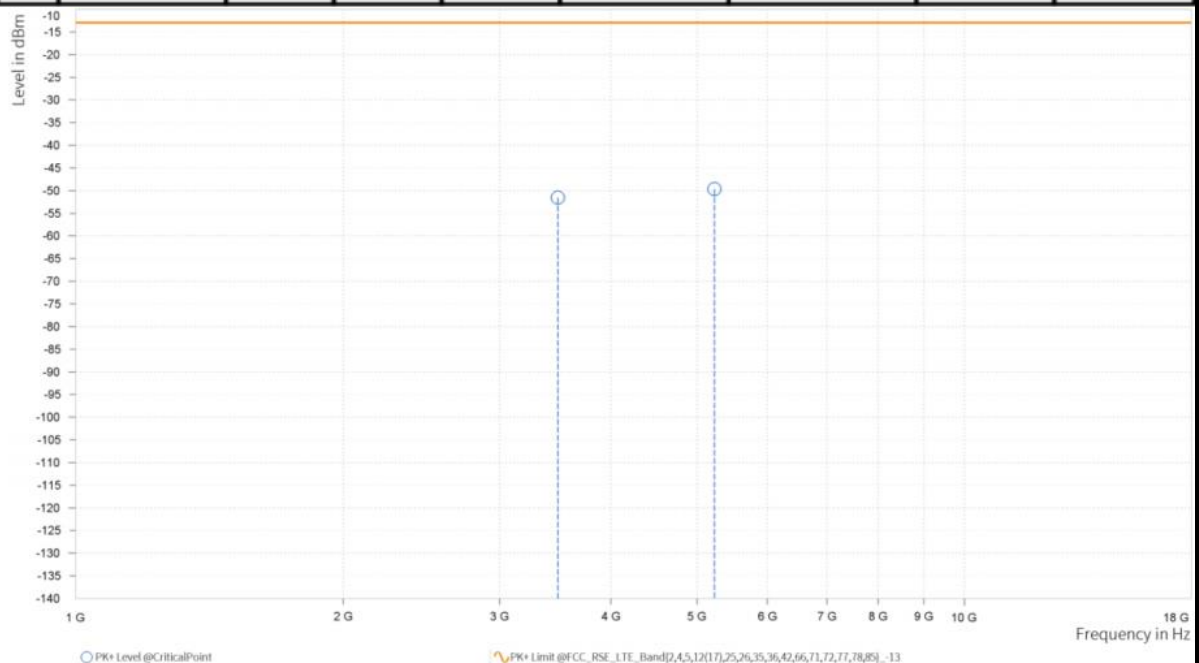


LTE Band66

CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,488.740	-51.57	-13.00	38.57	20.48	H	359	2.00
4	5,233.110	-49.68	-13.00	36.68	24.03	H	264.5	2.00

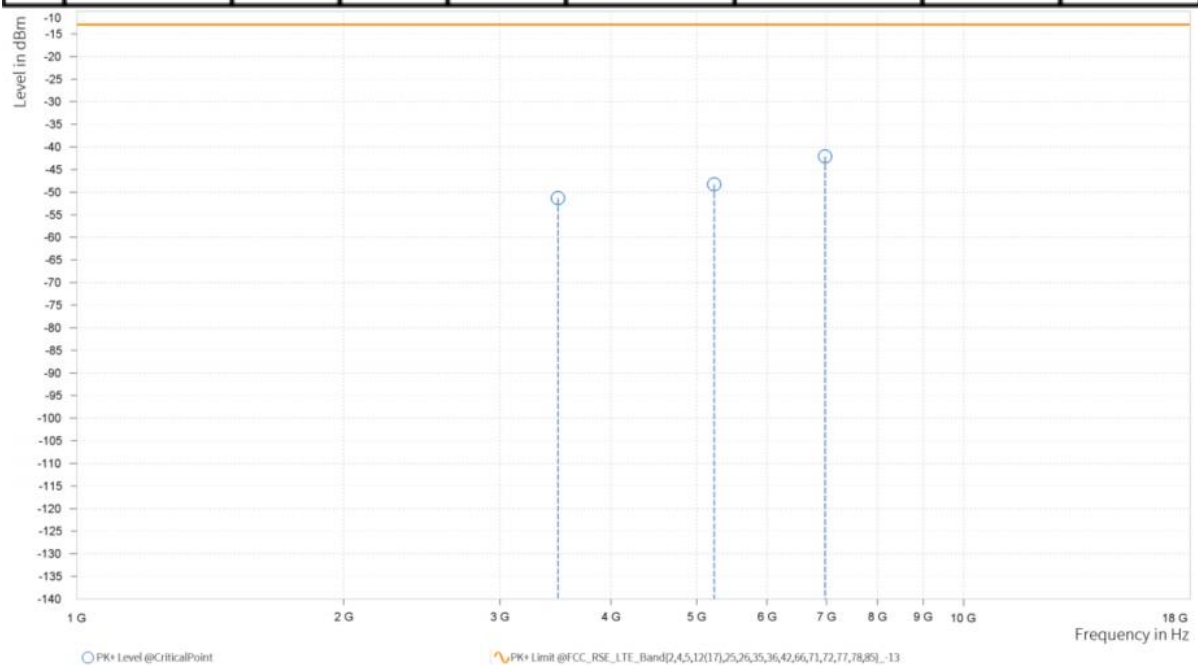




CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,488.740	-51.35	-13.00	38.35	21.27	V	1	1.00
4	5,233.110	-48.27	-13.00	35.27	24.56	V	1	1.00
5	6,978.000	-42.11	-13.00	29.11	26.48	V	200.2	1.00

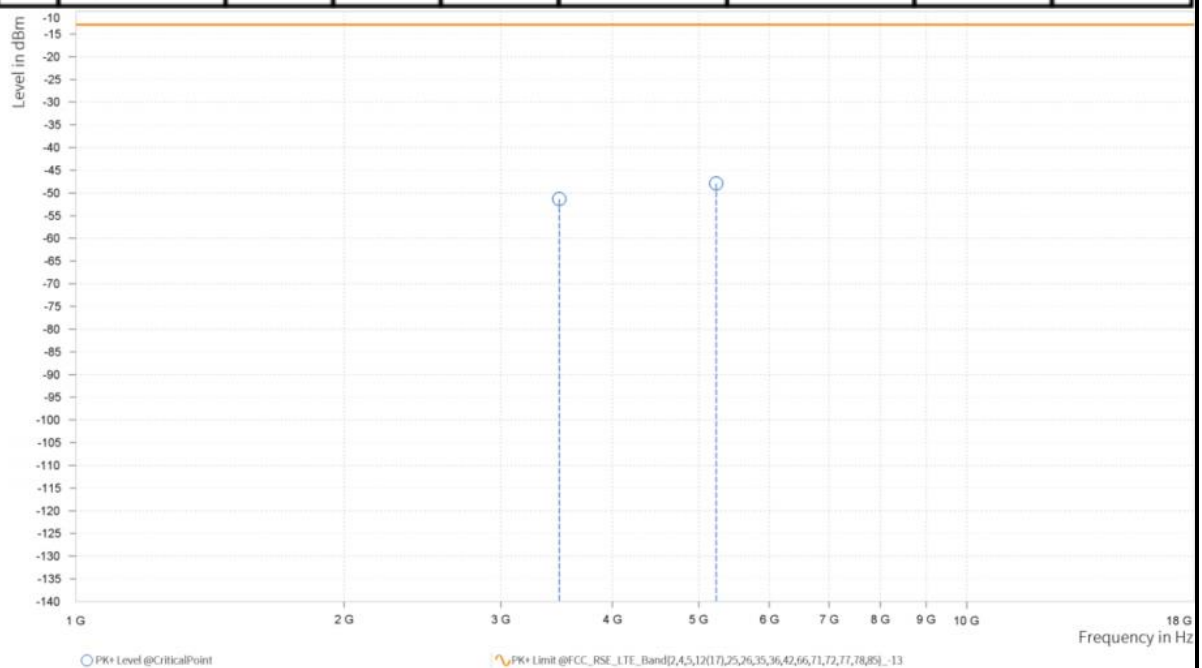




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,487.300	-51.35	-13.00	38.35	20.48	H	0.9	2.00
4	5,230.950	-47.92	-13.00	34.92	24.02	H	35.8	2.00

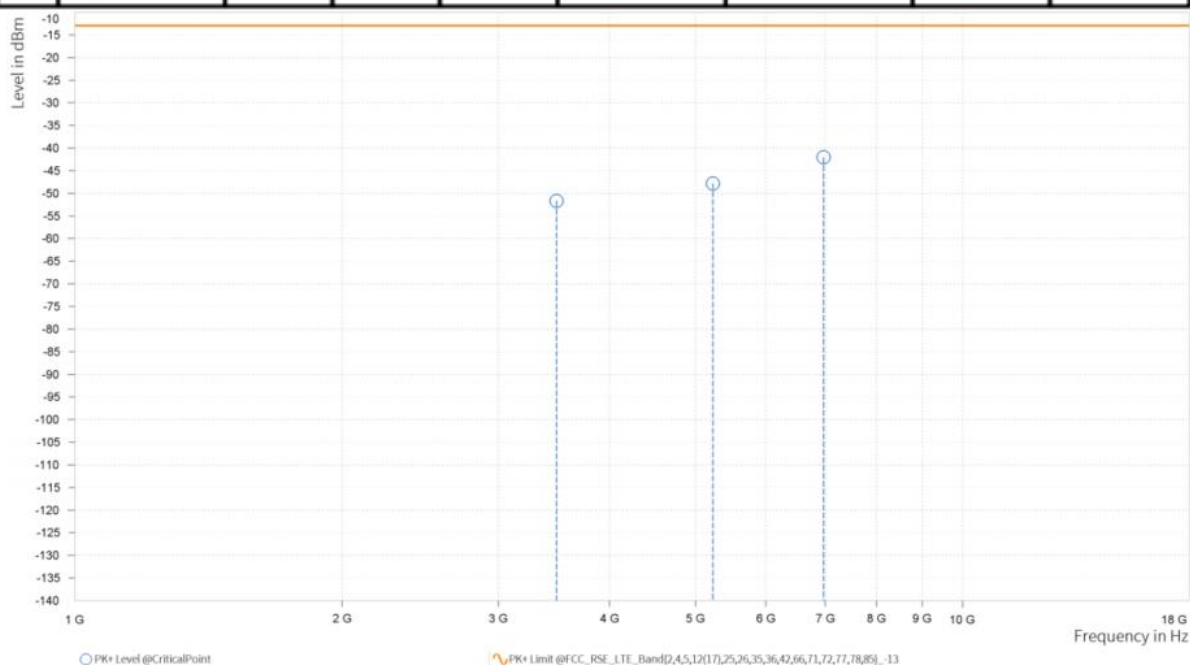




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,487.300	-51.65	-13.00	38.65	21.26	V	1	2.00
4	5,230.950	-47.82	-13.00	34.82	24.55	V	266	2.00
5	6,974.500	-42.05	-13.00	29.05	26.43	V	200.9	1.00

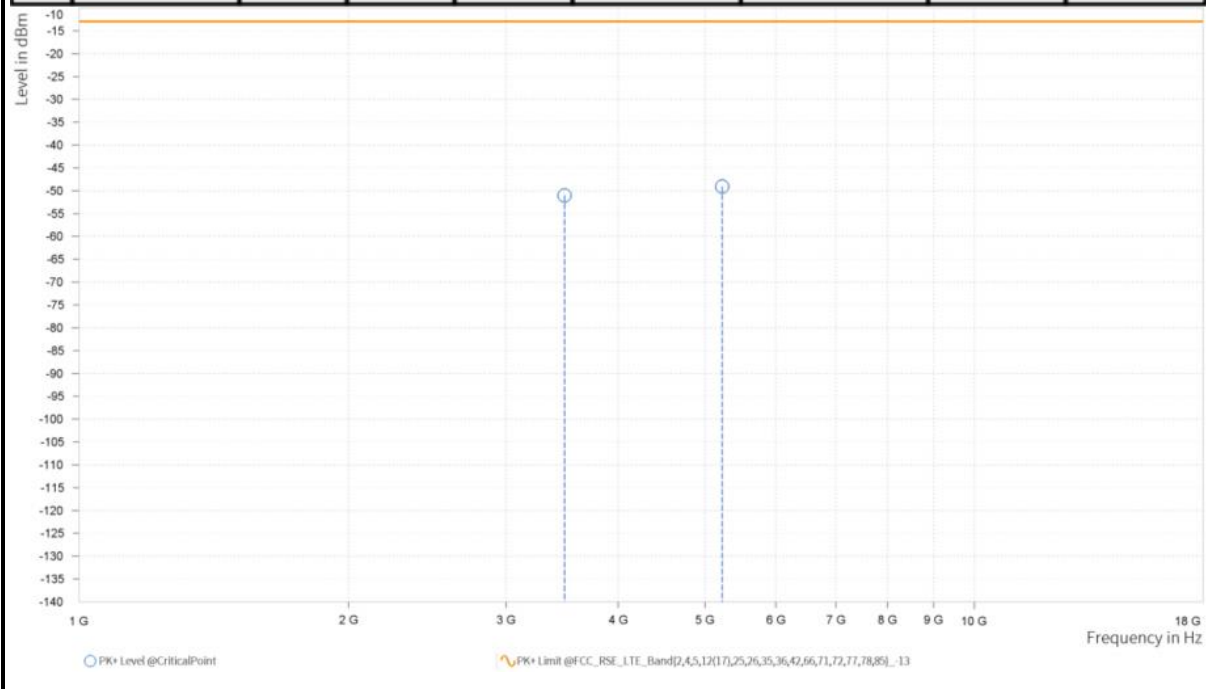




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu
TESTED BY	Hanwen Xu		

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	-51.01	-13.00	38.01	20.46	H	324.7	1.00
4	5,228.250	-49.05	-13.00	36.05	24.00	H	359	2.00

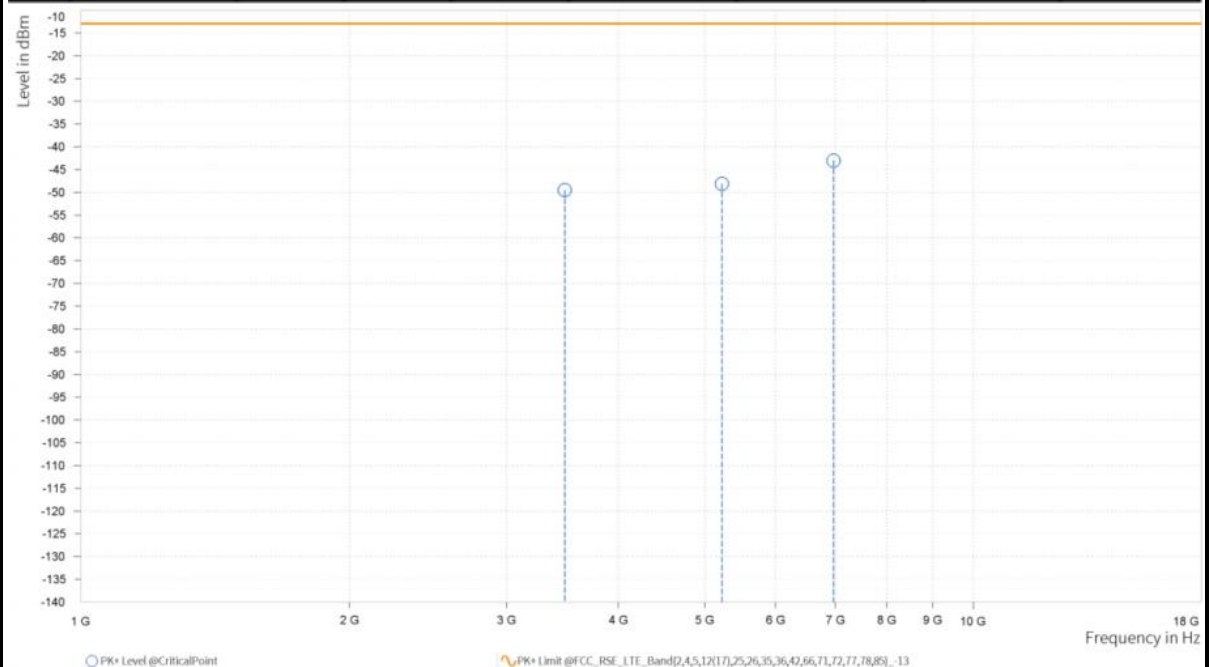




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,485.500	-49.54	-13.00	36.54	21.24	V	163.3	2.00
4	5,228.250	-48.12	-13.00	35.12	24.54	V	320.5	1.00
5	6,971.500	-43.04	-13.00	30.04	26.42	V	205.8	1.00

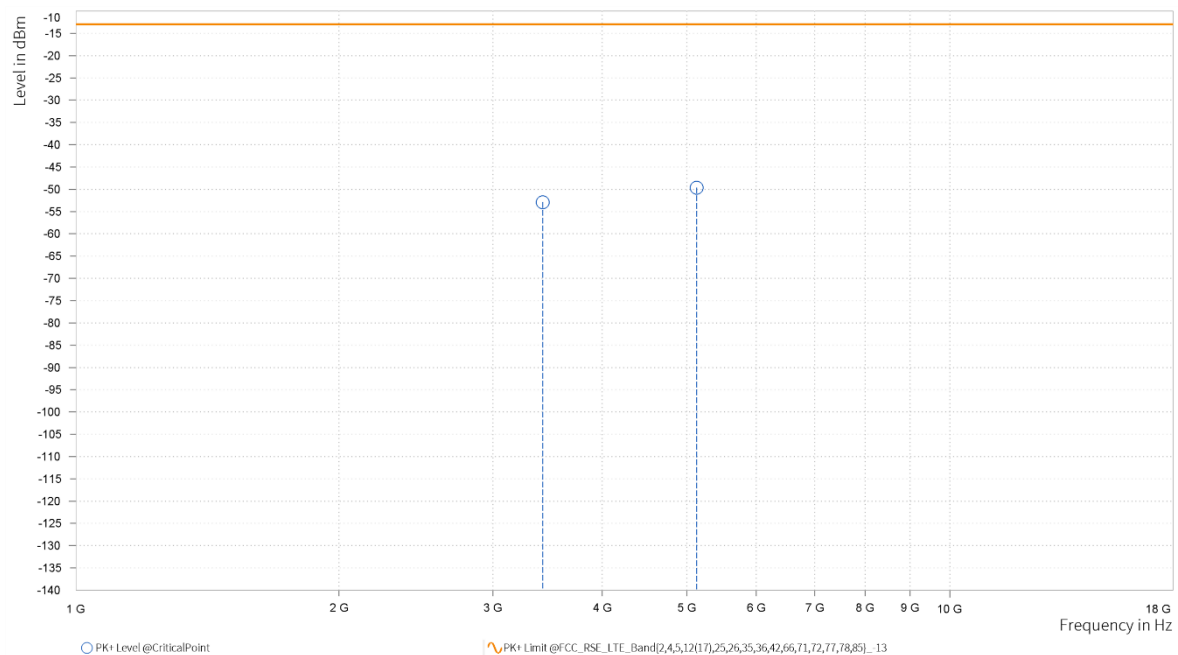




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132022
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,421.000	-52.91	-13.00	39.91	20.53	H	265.3	1.00
4	5,131.500	-49.63	-13.00	36.63	23.56	H	203.7	1.00

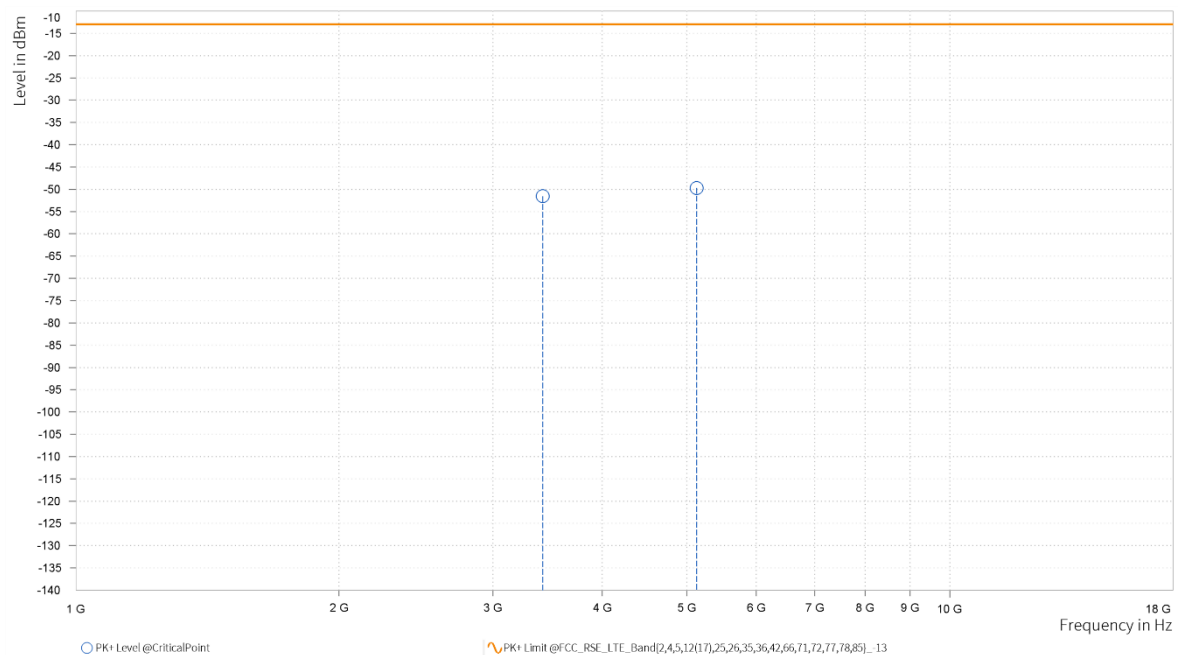




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132022
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,421.000	-51.56	-13.00	38.56	20.87	V	264.6	2.00
4	5,131.500	-49.69	-13.00	36.69	23.88	V	31.8	2.00



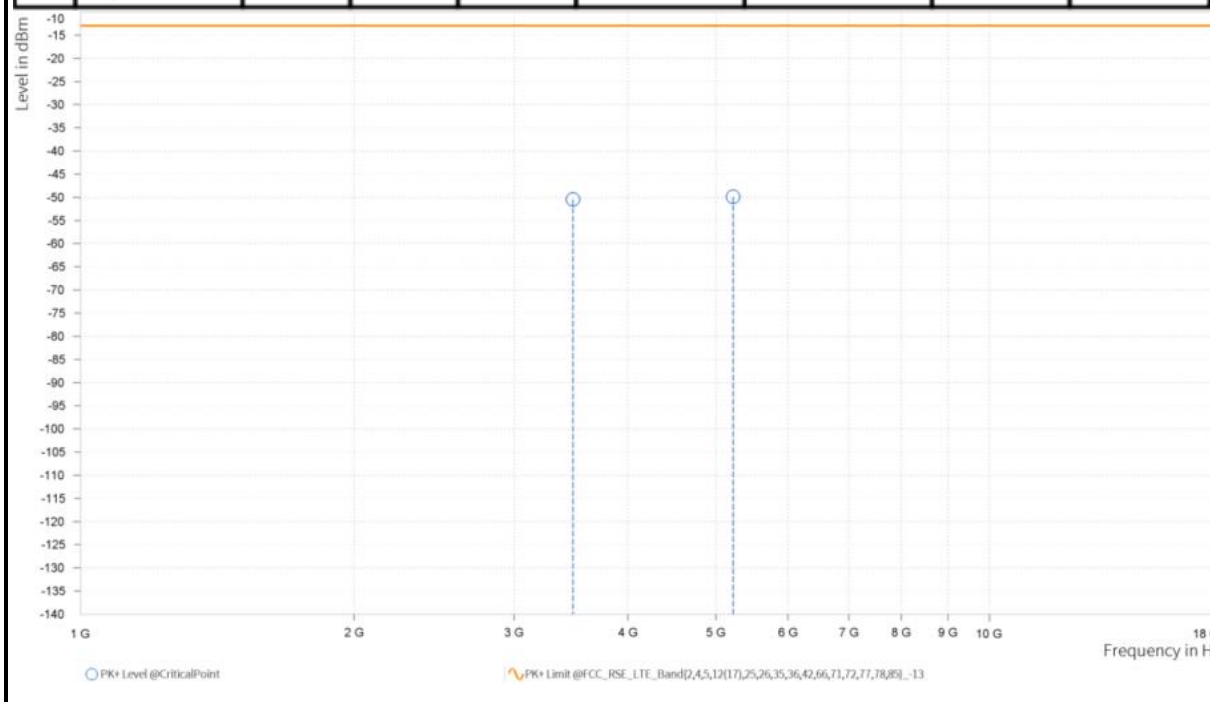


BUREAU VERITAS Test Report No.: PSU-QSZ2503050113RF04

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,481.000	-50.47	-13.00	37.47	20.42	H	320.5	1.00
4	5,221.500	-49.90	-13.00	36.90	23.97	H	265.9	2.00

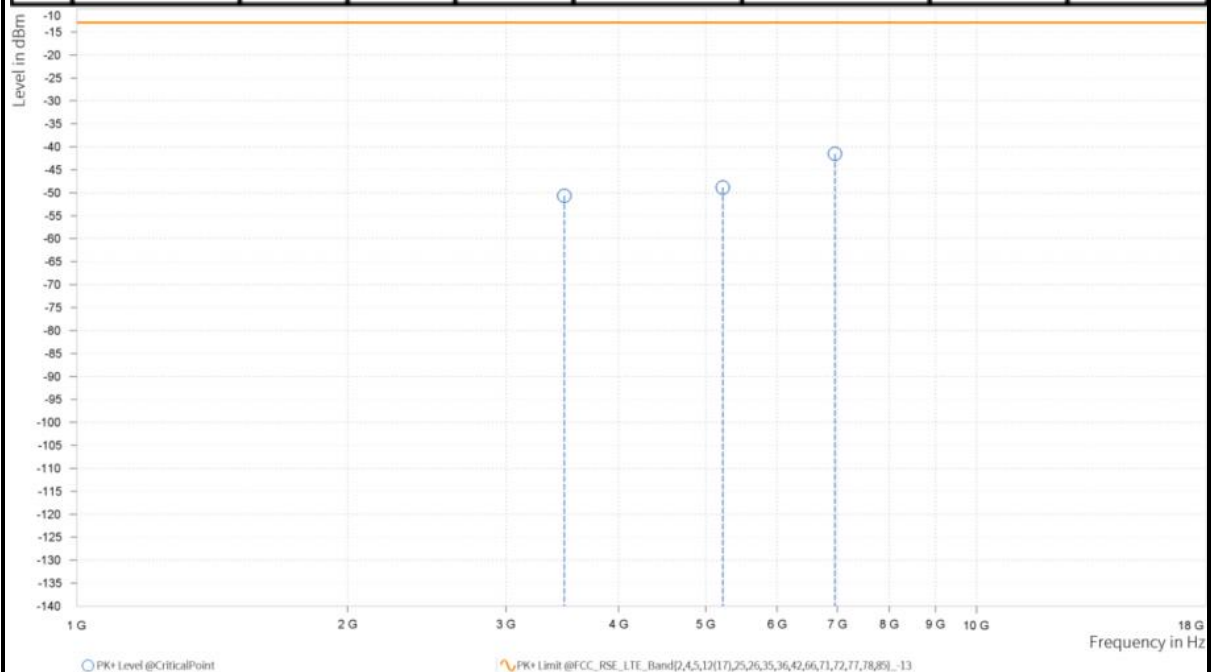




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,481.000	-50.66	-13.00	37.66	21.18	V	101.8	2.00
4	5,221.500	-48.84	-13.00	35.84	24.53	V	160.5	2.00
5	6,962.000	-41.55	-13.00	28.55	26.40	V	153.4	2.00

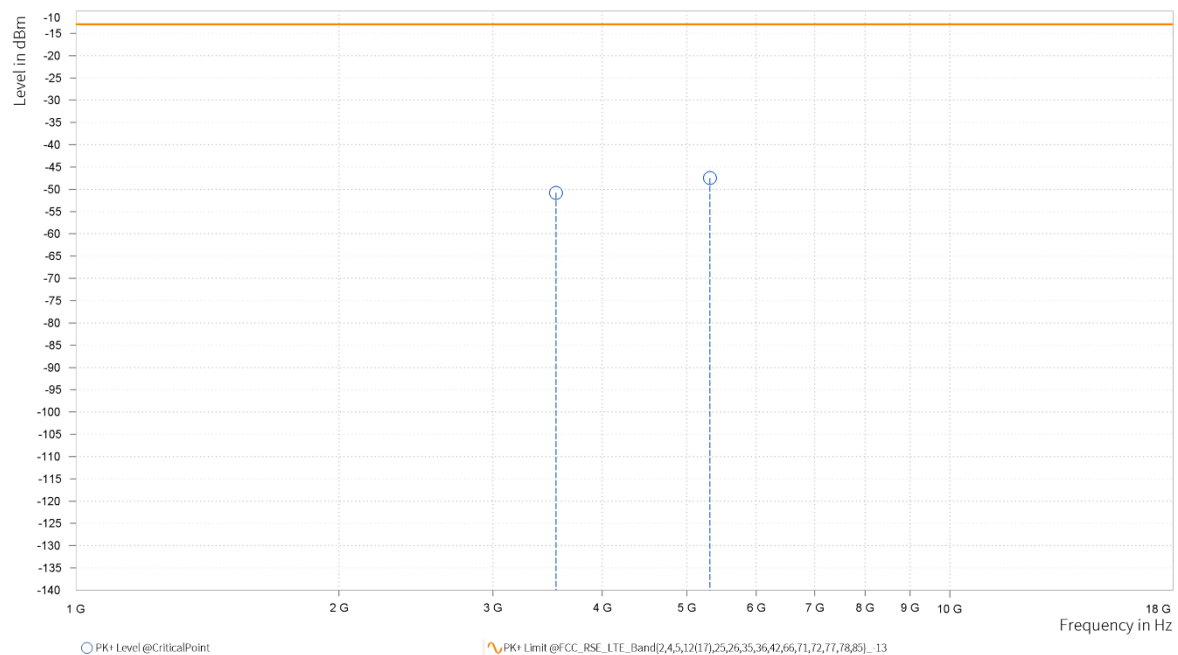




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132622
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,541.000	-50.80	-13.00	37.80	20.70	H	204.5	1.00
4	5,311.500	-47.49	-13.00	34.49	24.17	H	204.5	1.00

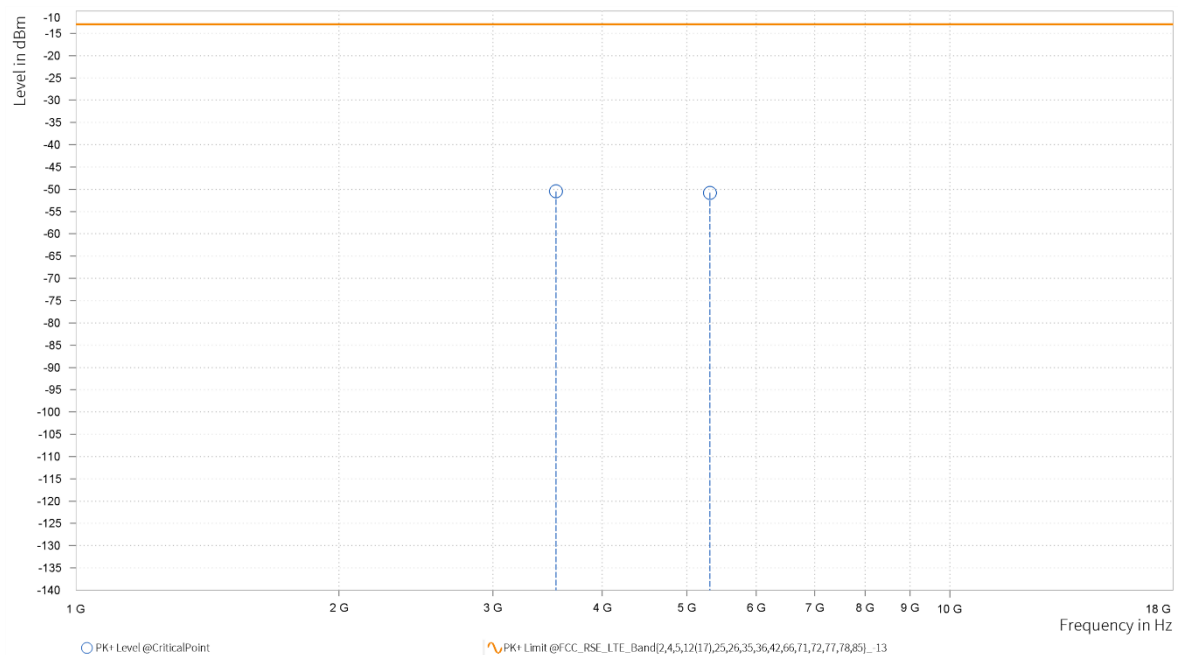




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 132622
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,541.000	-50.48	-13.00	37.48	21.22	V	358.8	1.00
4	5,311.500	-50.79	-13.00	37.79	24.69	V	359.1	1.00

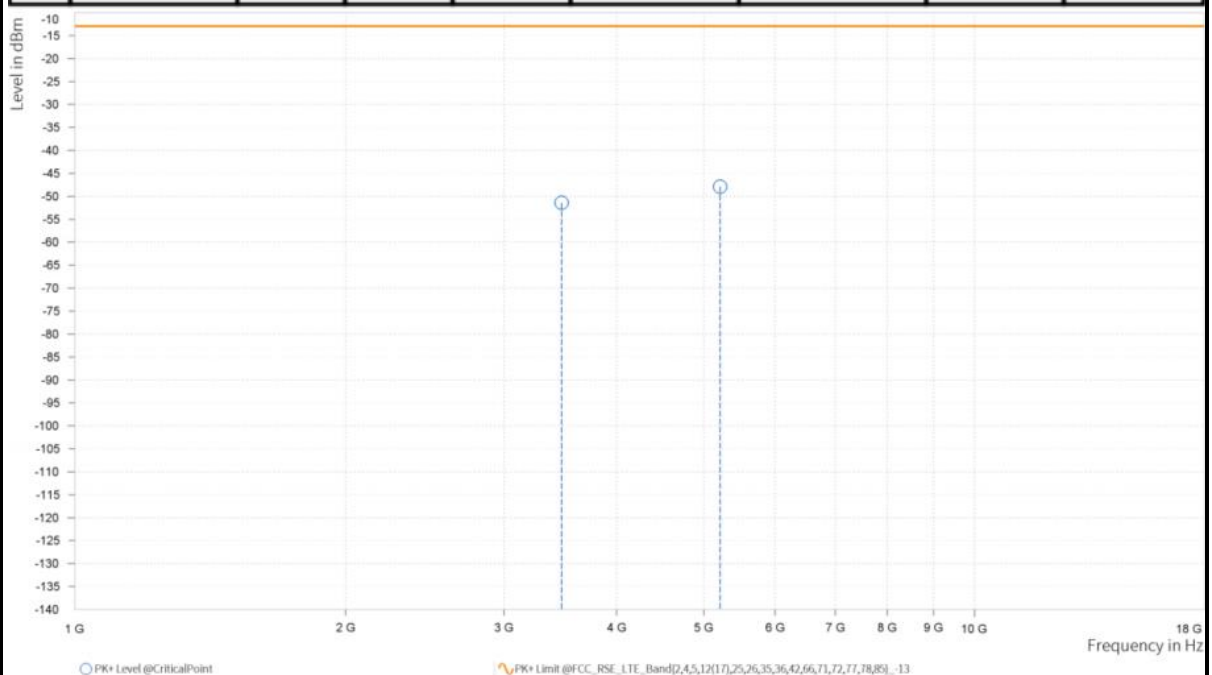




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,476.500	-51.43	-13.00	38.43	20.39	H	99	1.00
4	5,214.750	-47.90	-13.00	34.90	23.93	H	96.7	2.00

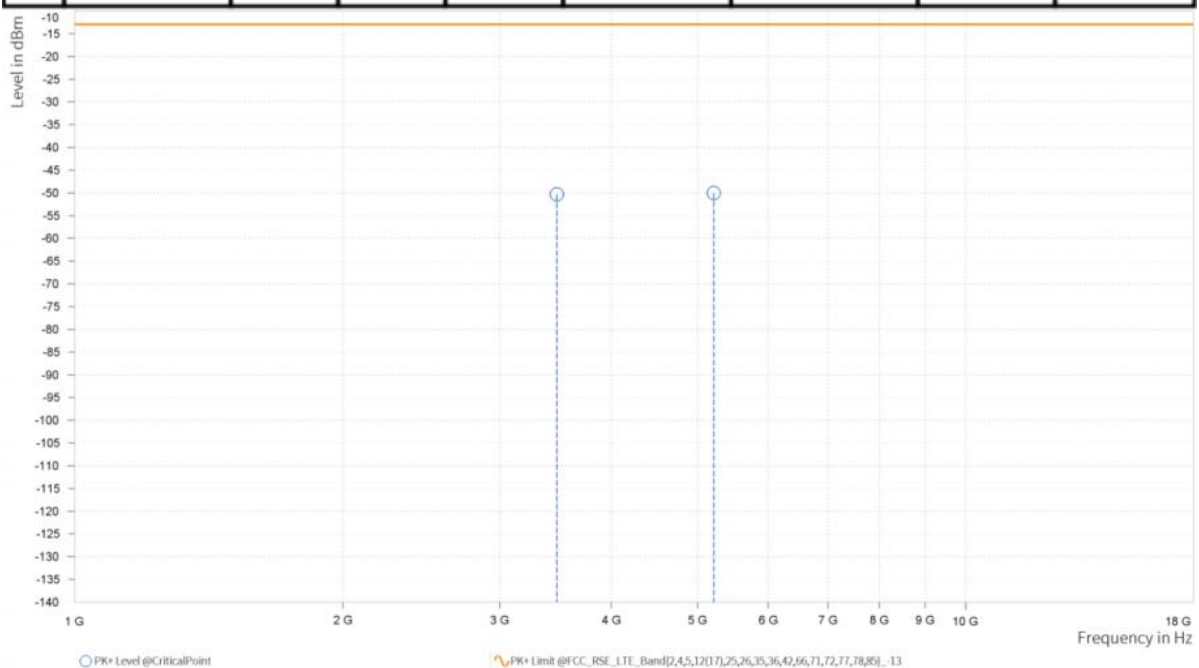




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,476.500	-50.32	-13.00	37.32	21.13	V	1	2.00
4	5,214.750	-50.04	-13.00	37.04	24.51	V	1	2.00

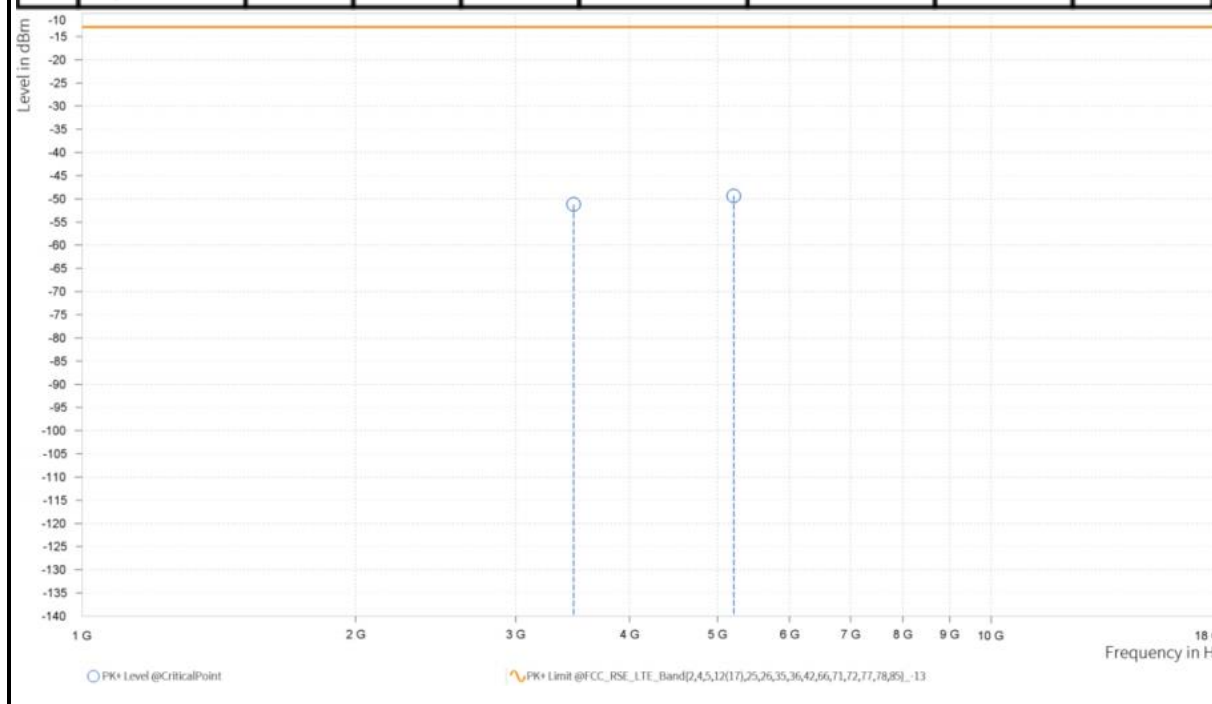




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,472.000	-51.20	-13.00	38.20	20.35	H	113.8	1.00
4	5,208.000	-49.36	-13.00	36.36	23.90	H	1	2.00

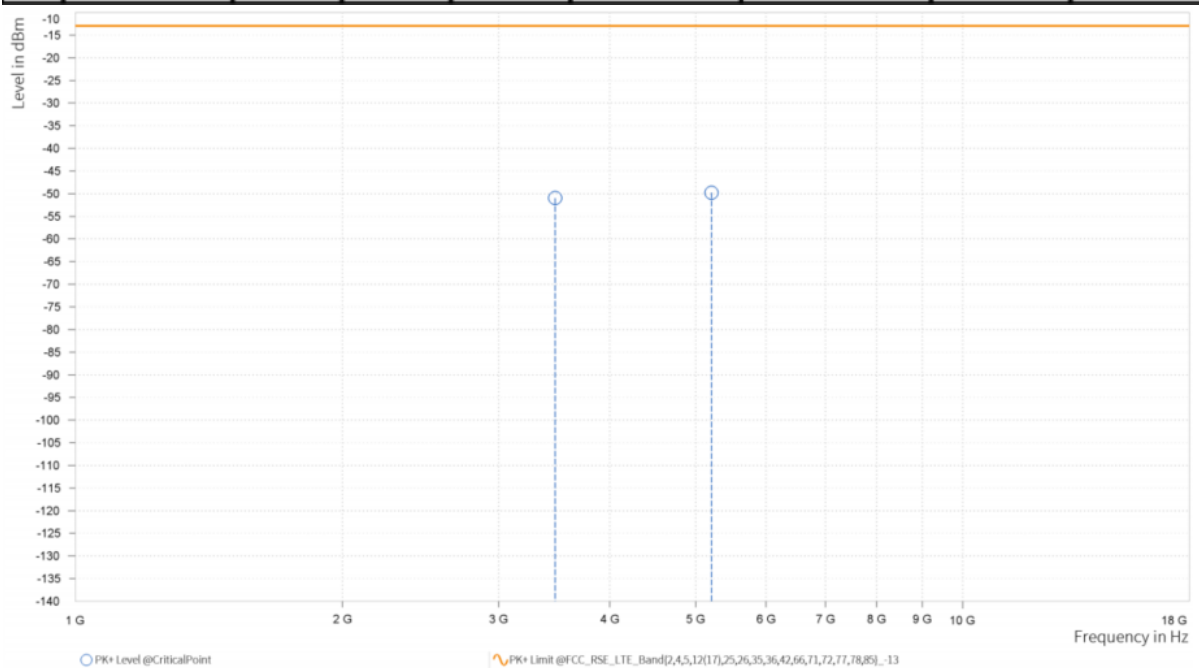




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 132322
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,472.000	-50.98	-13.00	37.98	21.07	V	264.5	2.00
4	5,208.000	-49.77	-13.00	36.77	24.49	V	264.5	2.00

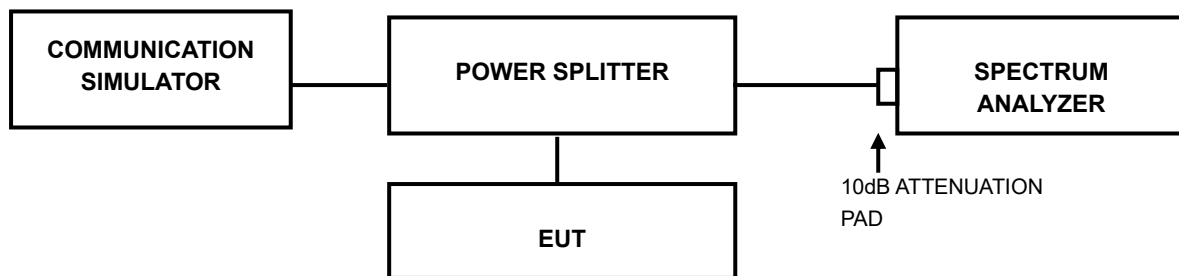


3.7 PEAK TO AVERAGE RATIO

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

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

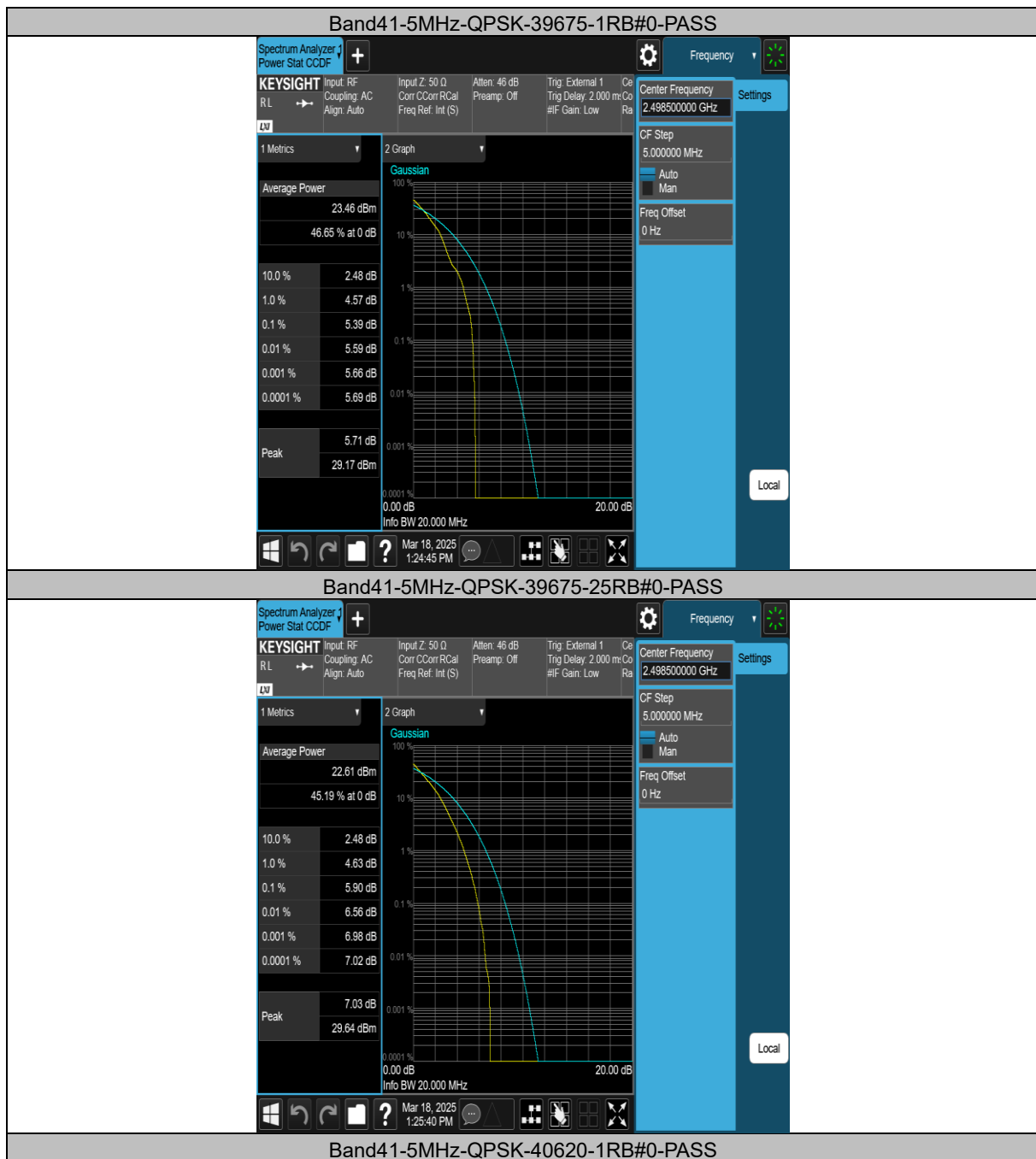
LTE B41(INCLUDING B38) Peak-to-Average Ratio(CCDF)

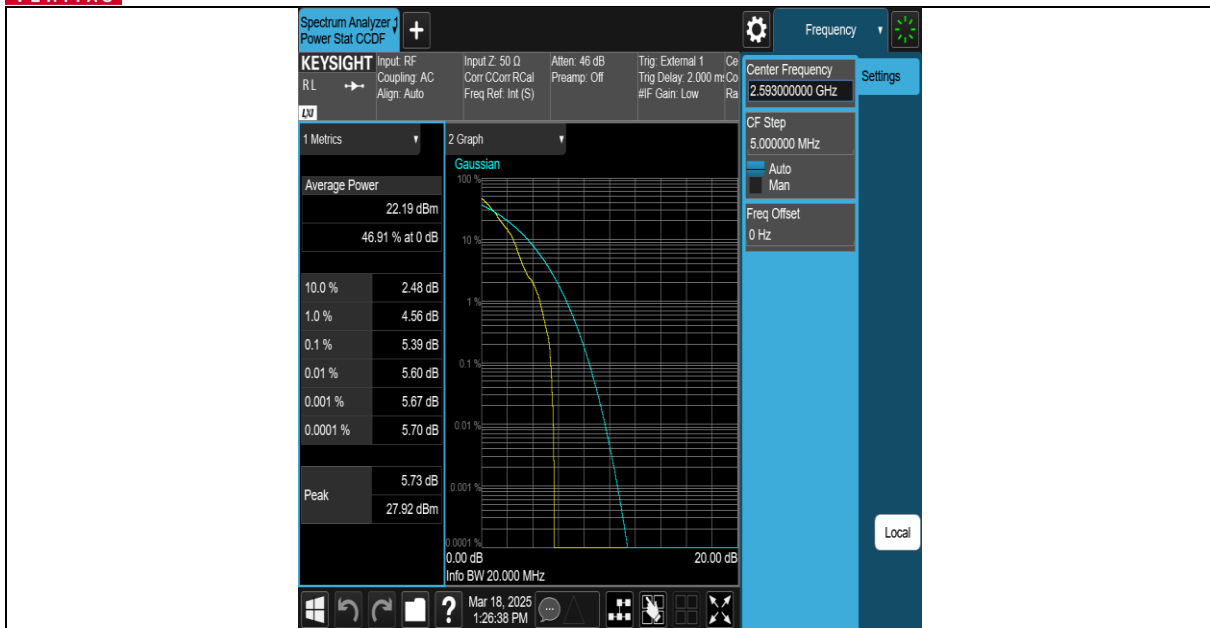
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band41	20MHz	QPSK	39750	1RB#0	6.59	13	PASS
Band41	20MHz	QPSK	39750	100RB#0	5.79	13	PASS
Band41	20MHz	QPSK	40620	1RB#0	6.73	13	PASS
Band41	20MHz	QPSK	40620	100RB#0	5.75	13	PASS
Band41	20MHz	QPSK	41490	1RB#0	6.61	13	PASS
Band41	20MHz	QPSK	41490	100RB#0	5.81	13	PASS
Band41	20MHz	16QAM	39750	1RB#0	7.10	13	PASS
Band41	20MHz	16QAM	39750	27RB#0	6.57	13	PASS
Band41	20MHz	16QAM	40620	1RB#0	7.22	13	PASS
Band41	20MHz	16QAM	40620	27RB#0	6.48	13	PASS
Band41	20MHz	16QAM	41490	1RB#0	7.13	13	PASS
Band41	20MHz	16QAM	41490	27RB#0	6.63	13	PASS

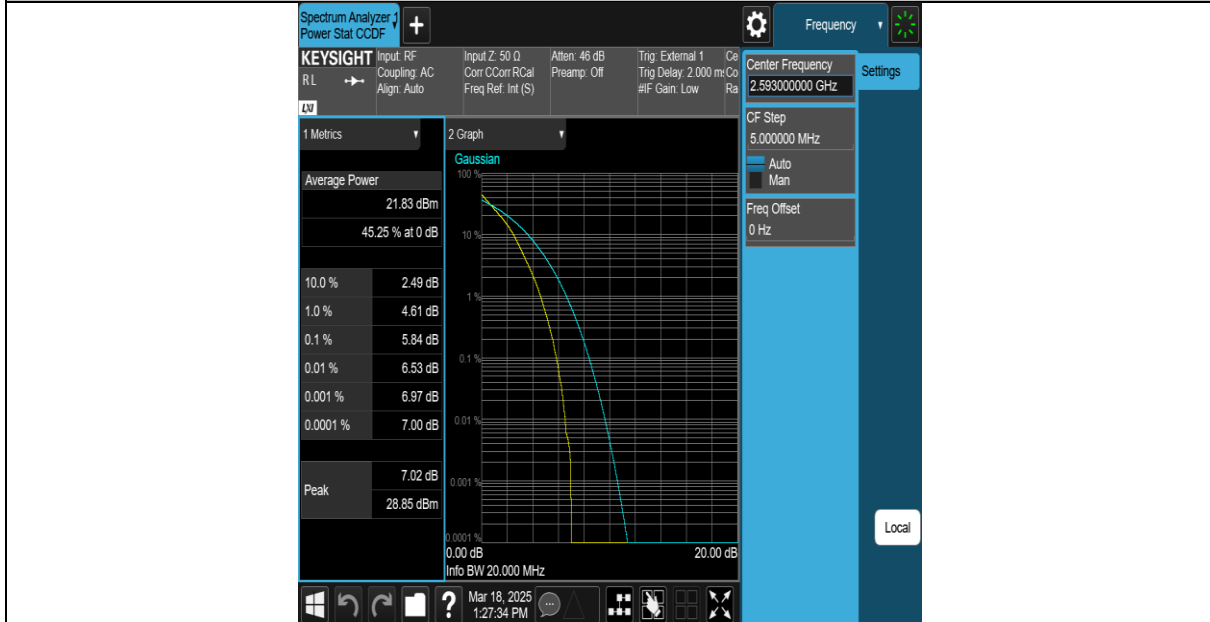


Test Graphs





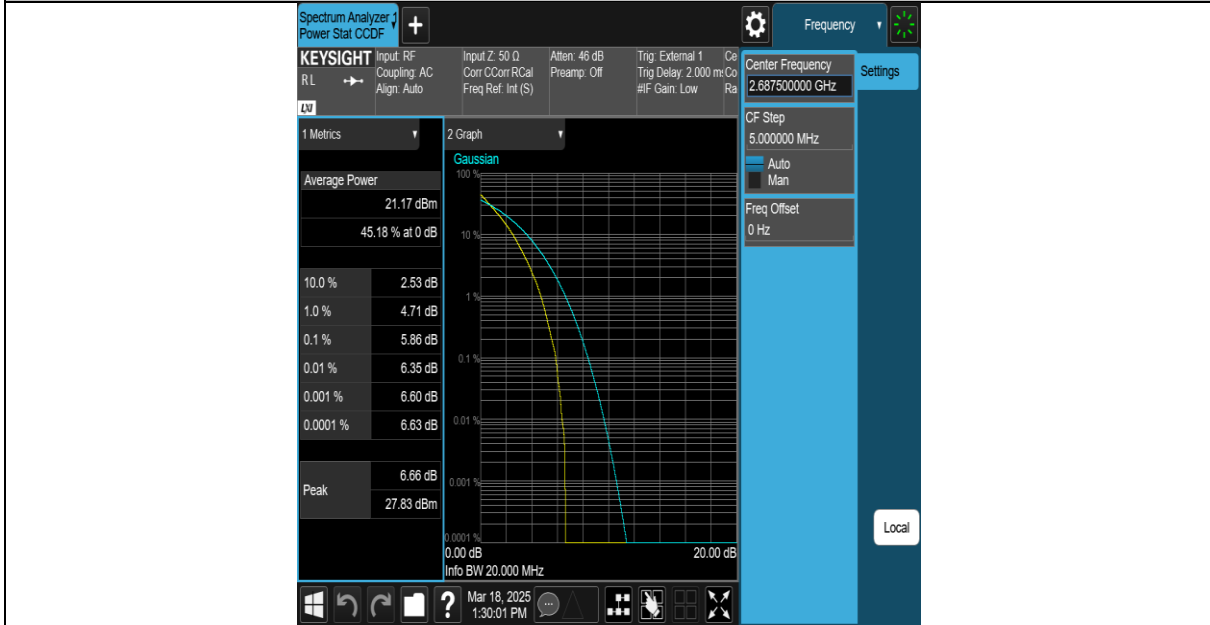
Band41-5MHz-QPSK-40620-25RB#0-PASS



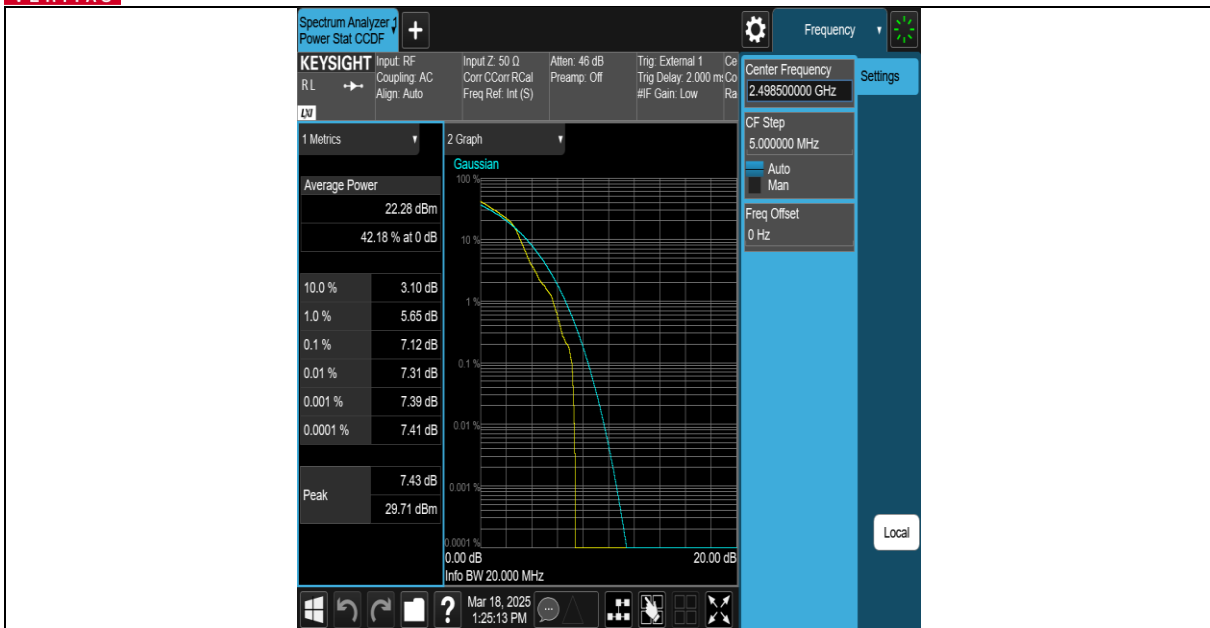
Band41-5MHz-QPSK-41565-1RB#0-PASS



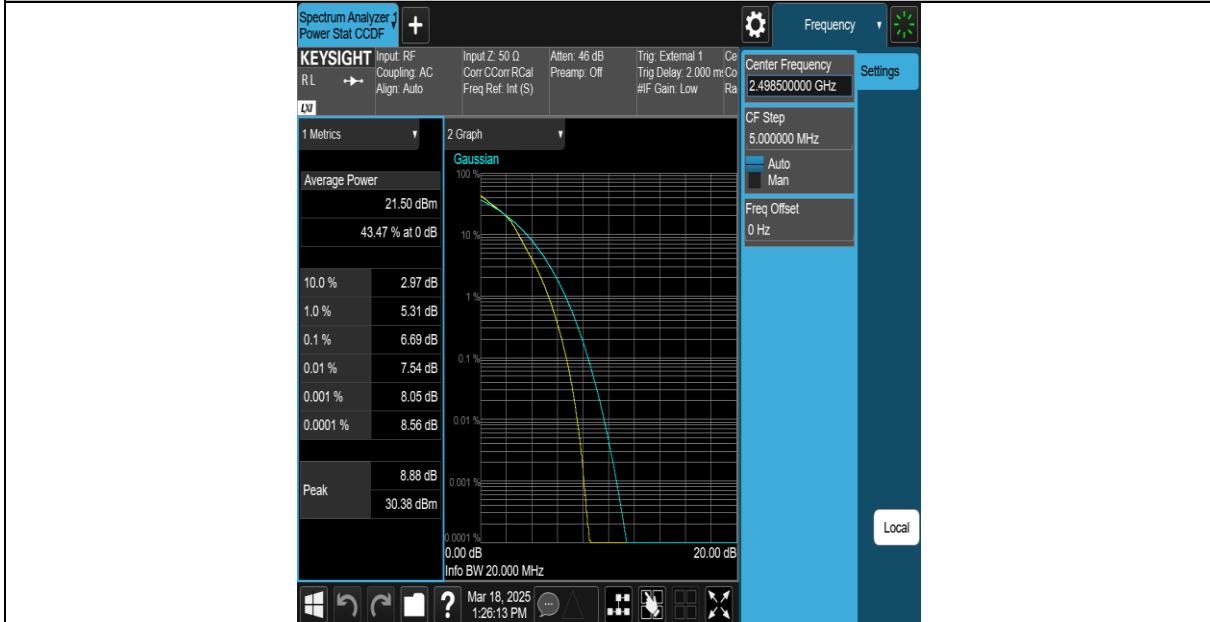
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Band41-5MHz-16QAM-39675-1RB#0-PASS



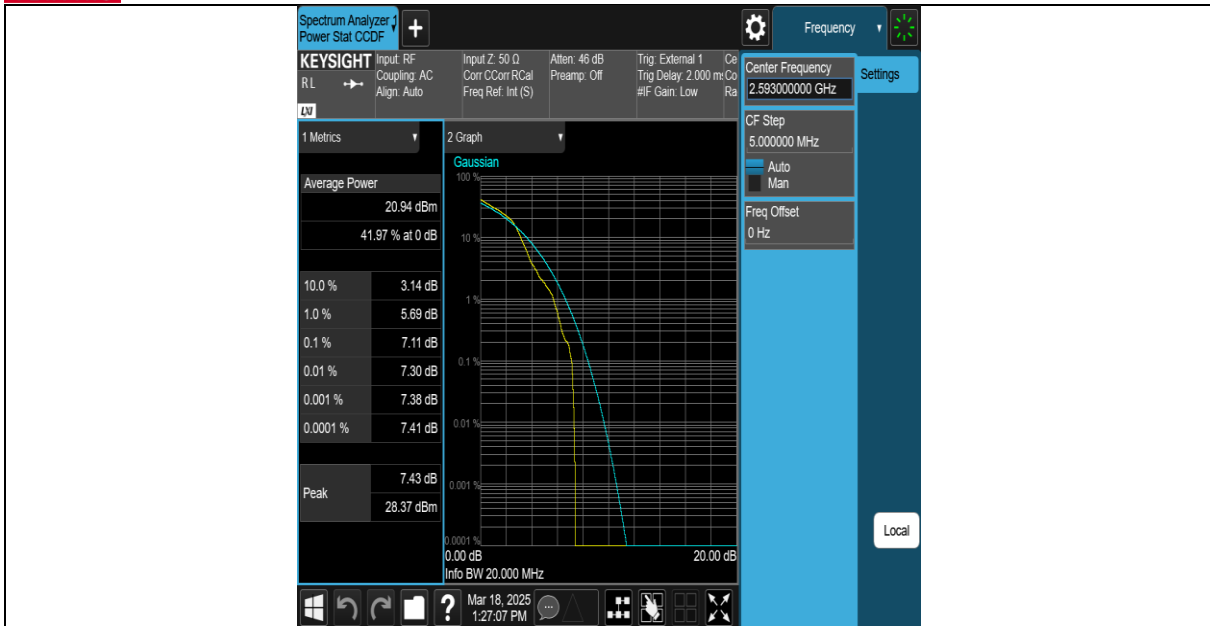
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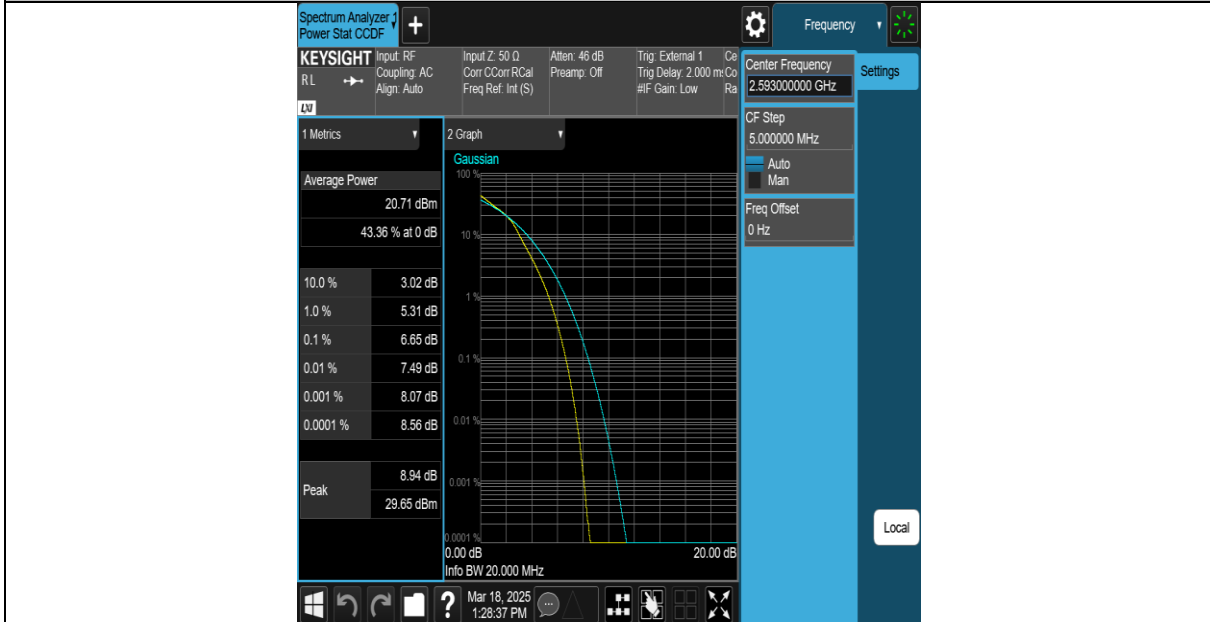
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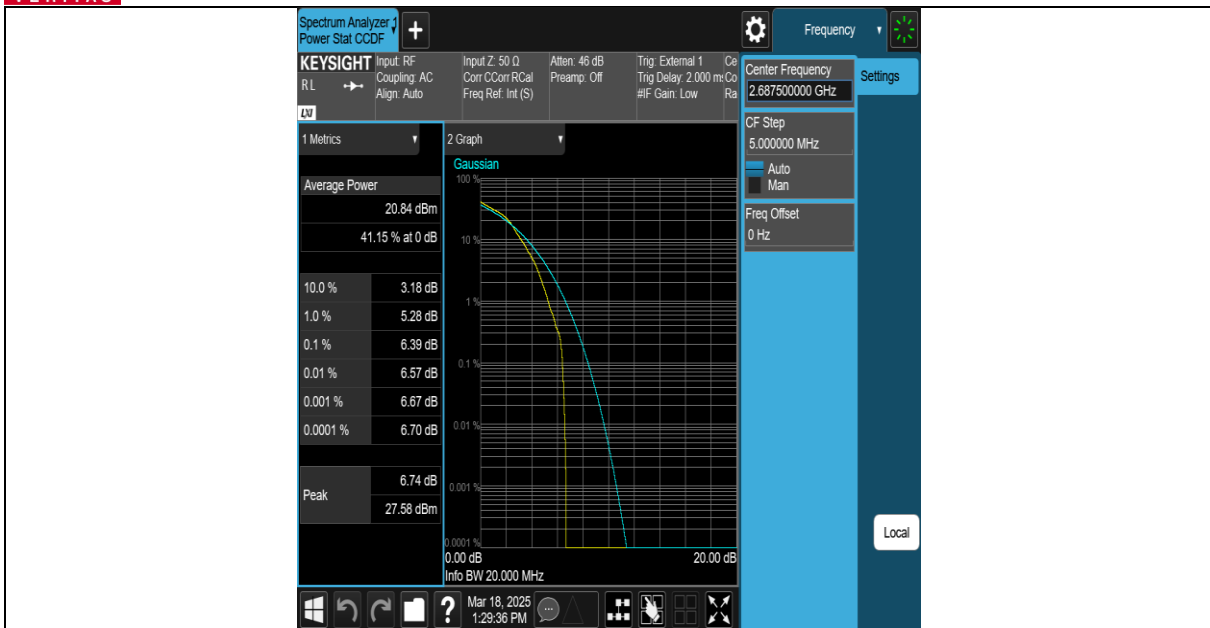
BUREAU VERITAS Test Report No.: PSU-QSZ2503050113RF04



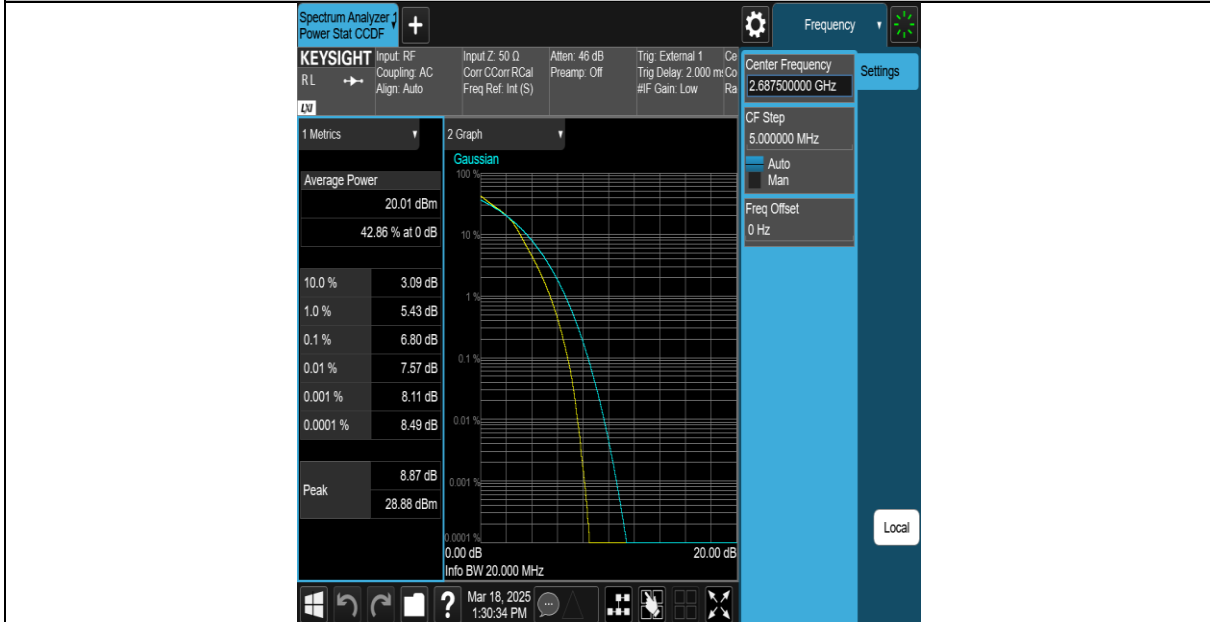
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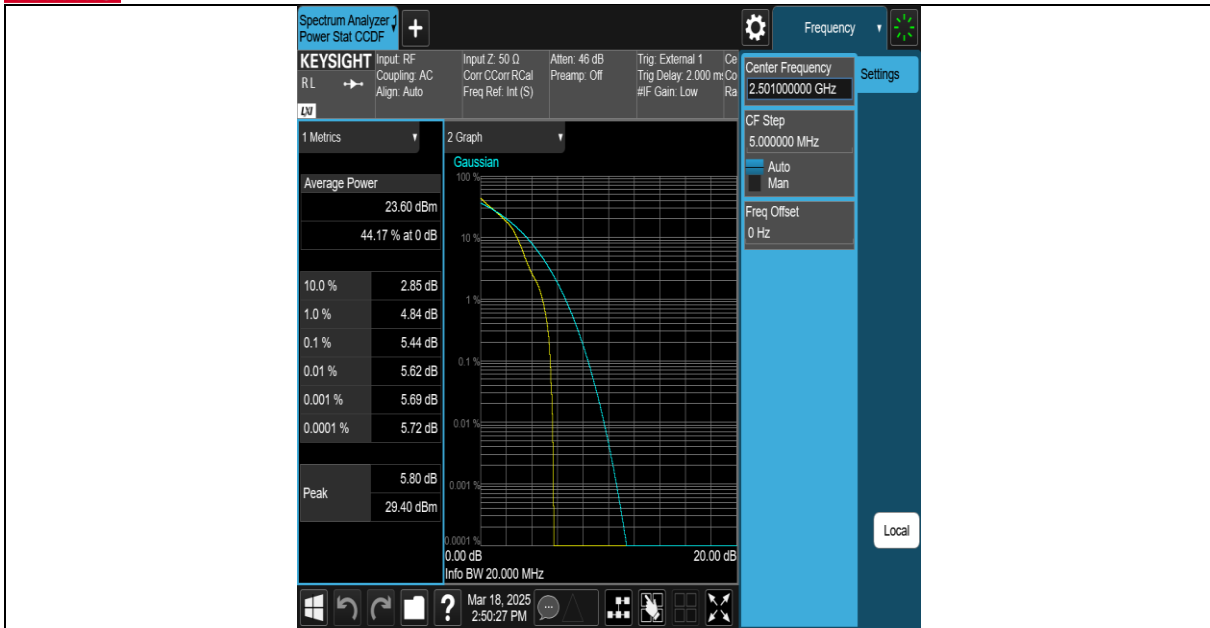
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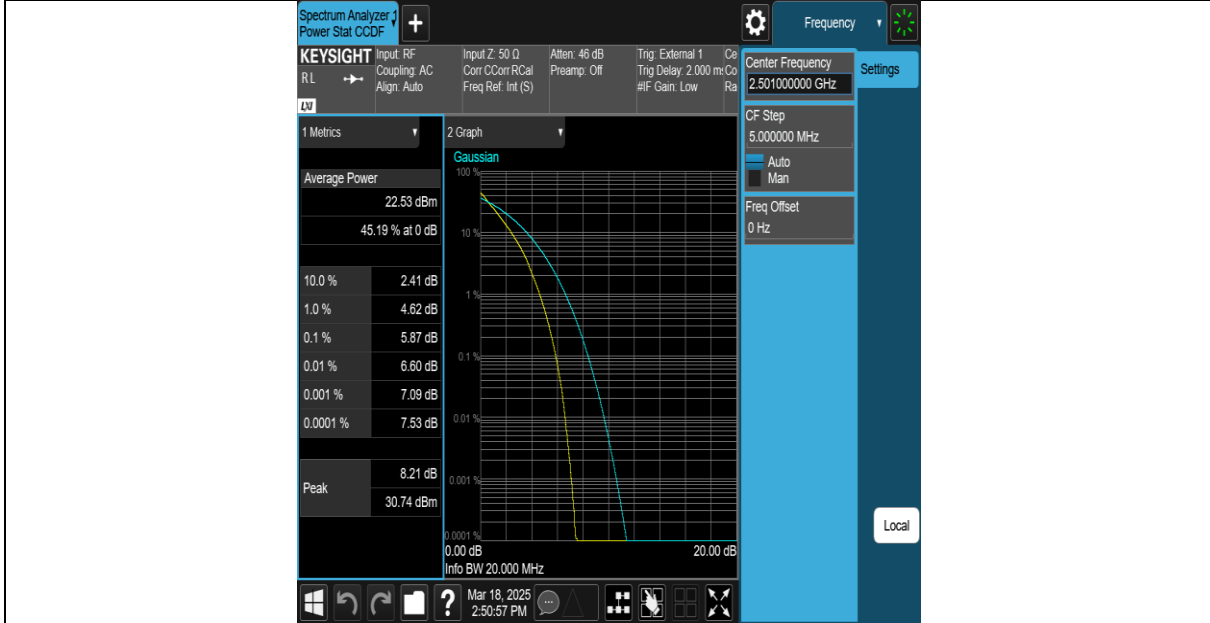
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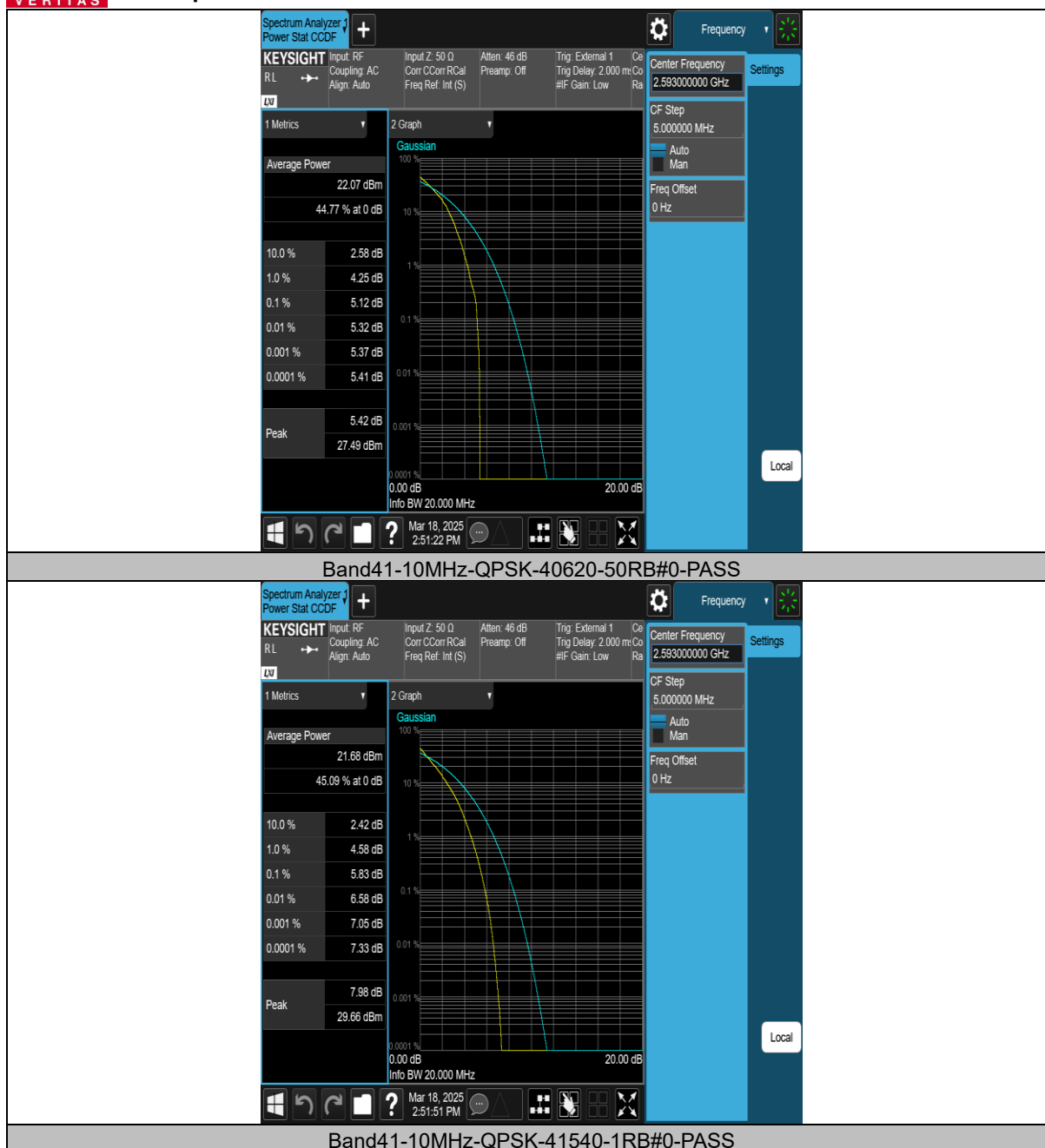
Band41-10MHz-QPSK-39700-1RB#0-PASS

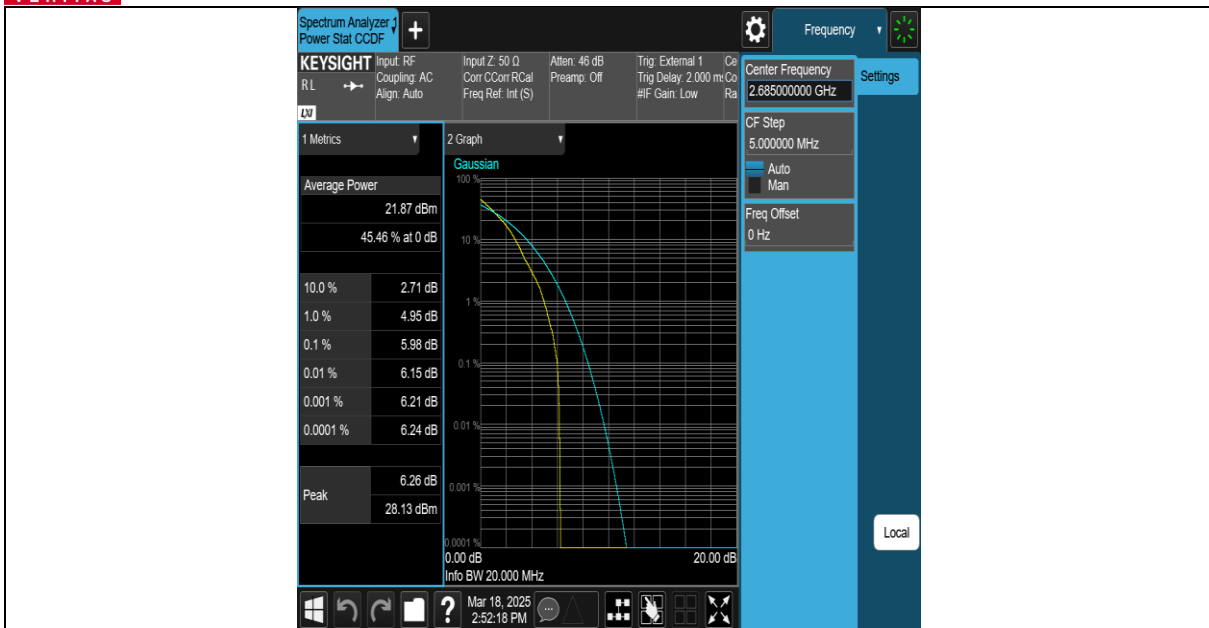


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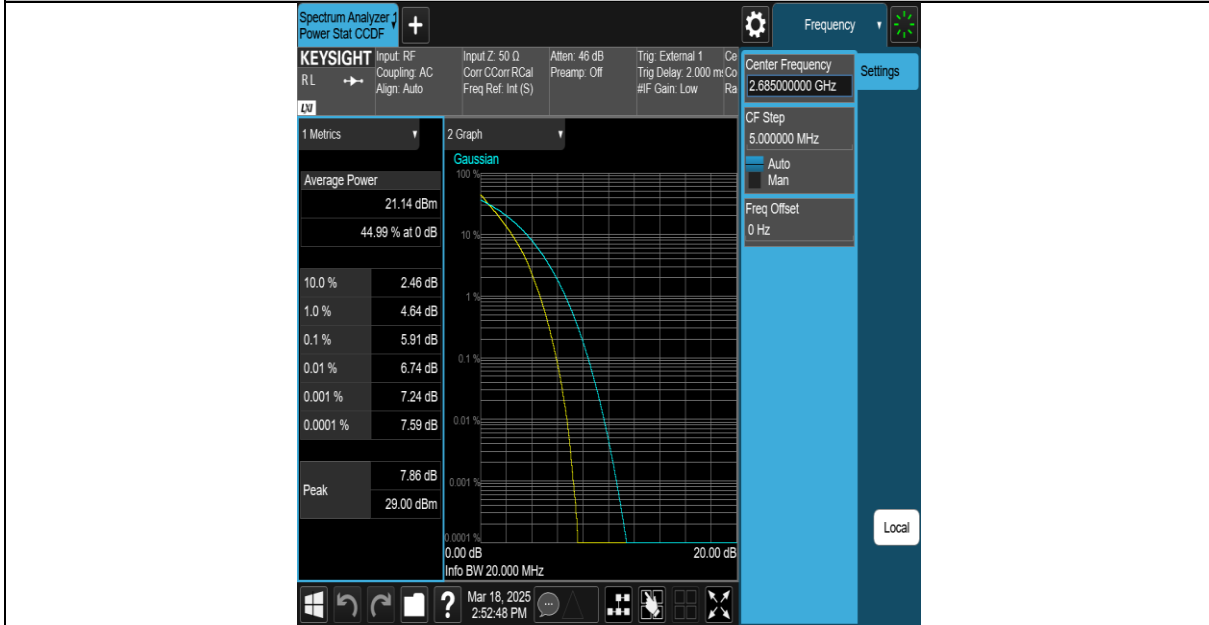


Band41-10MHz-QPSK-40620-1RB#0-PASS

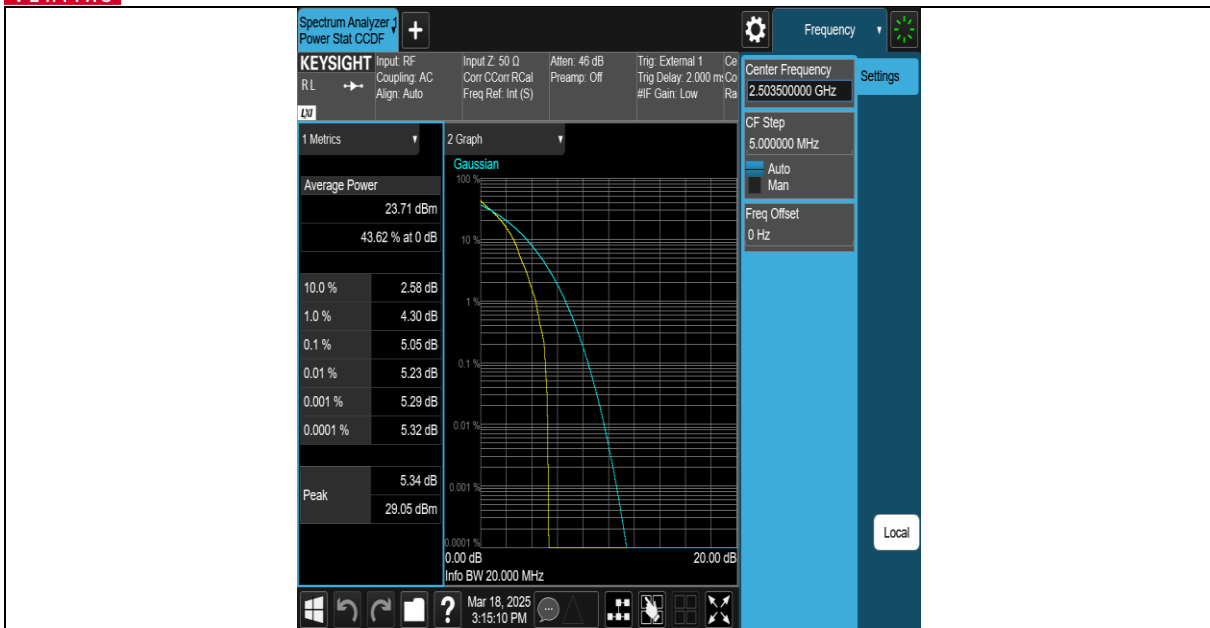




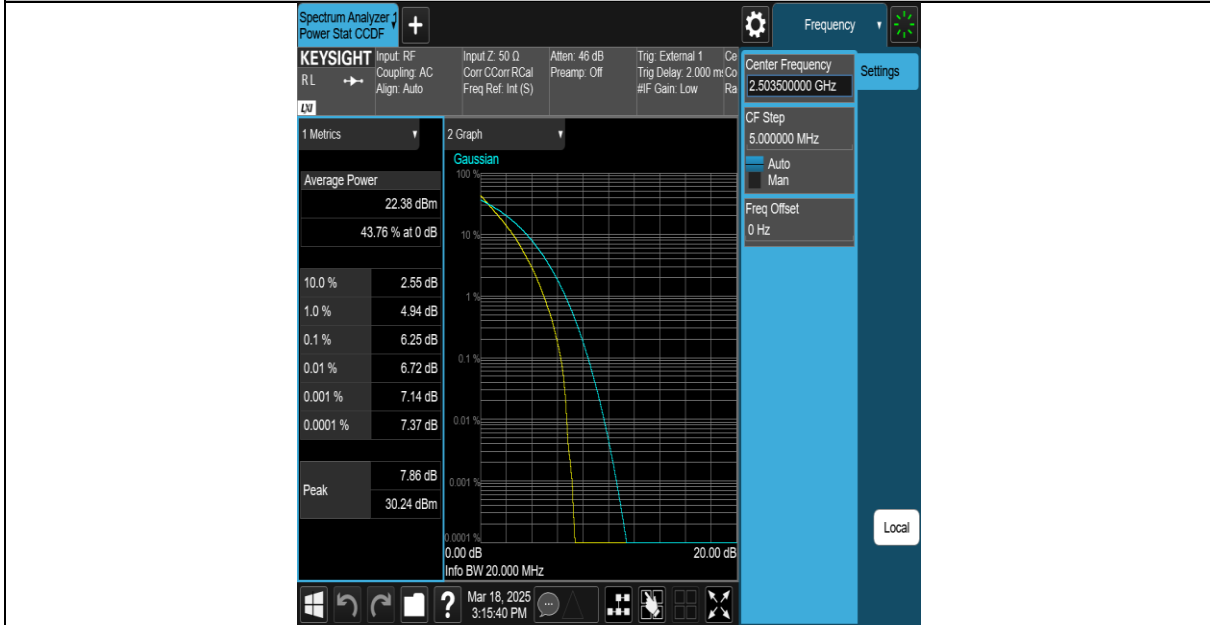
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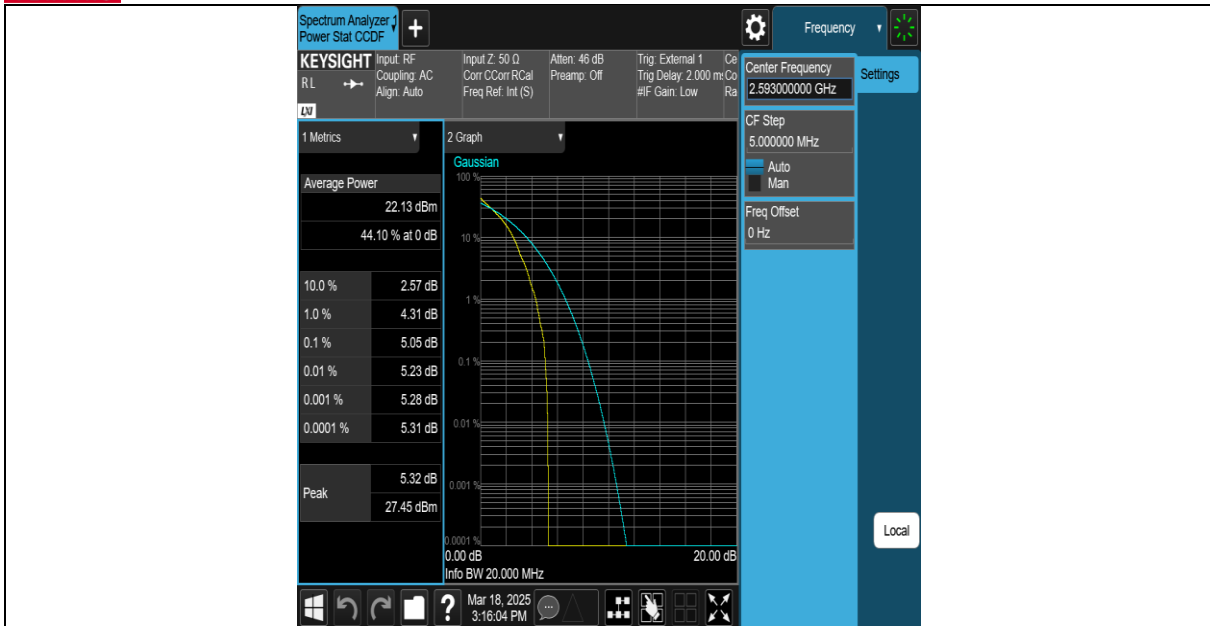
Band41-15MHz-QPSK-39725-1RB#0-PASS



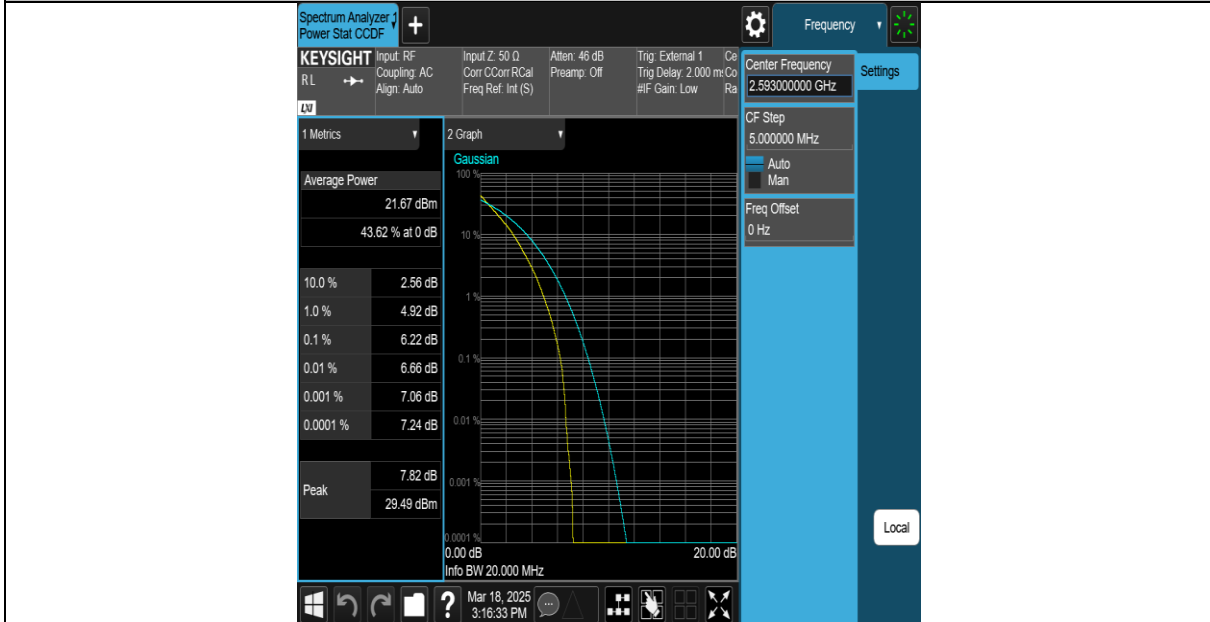
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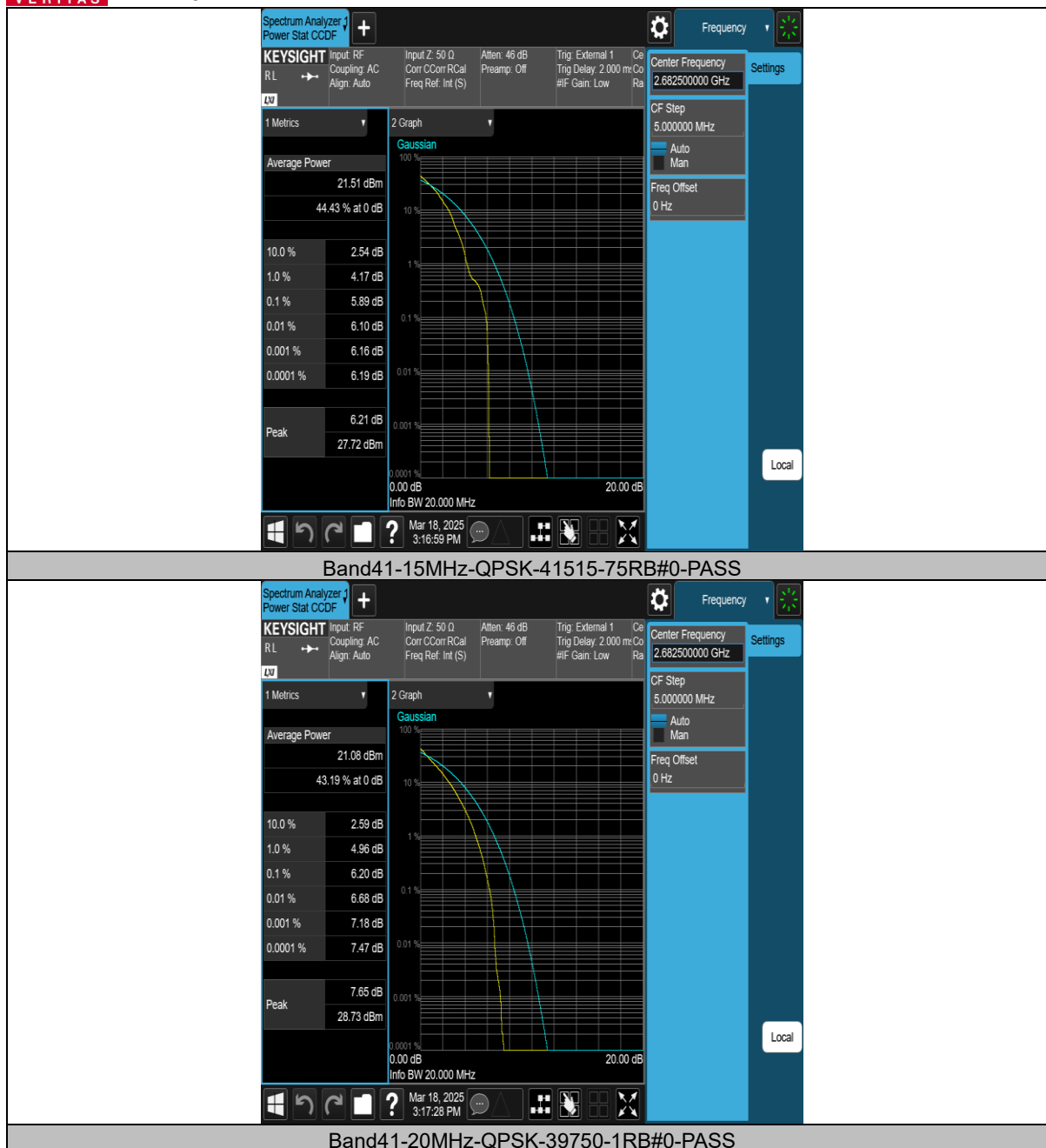
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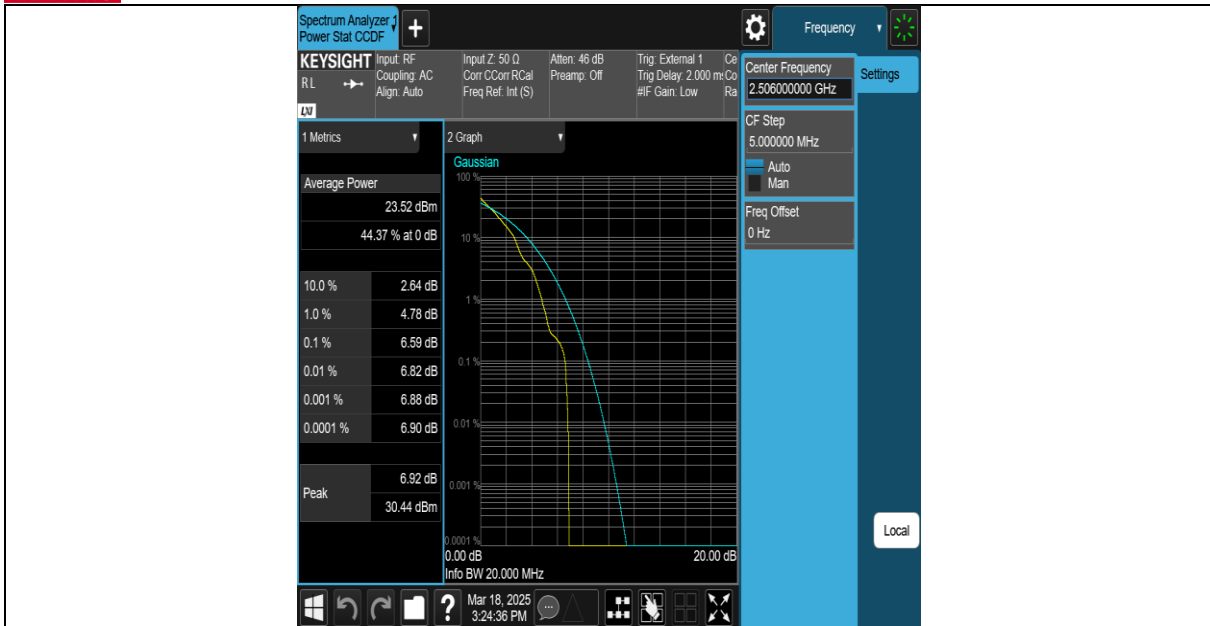


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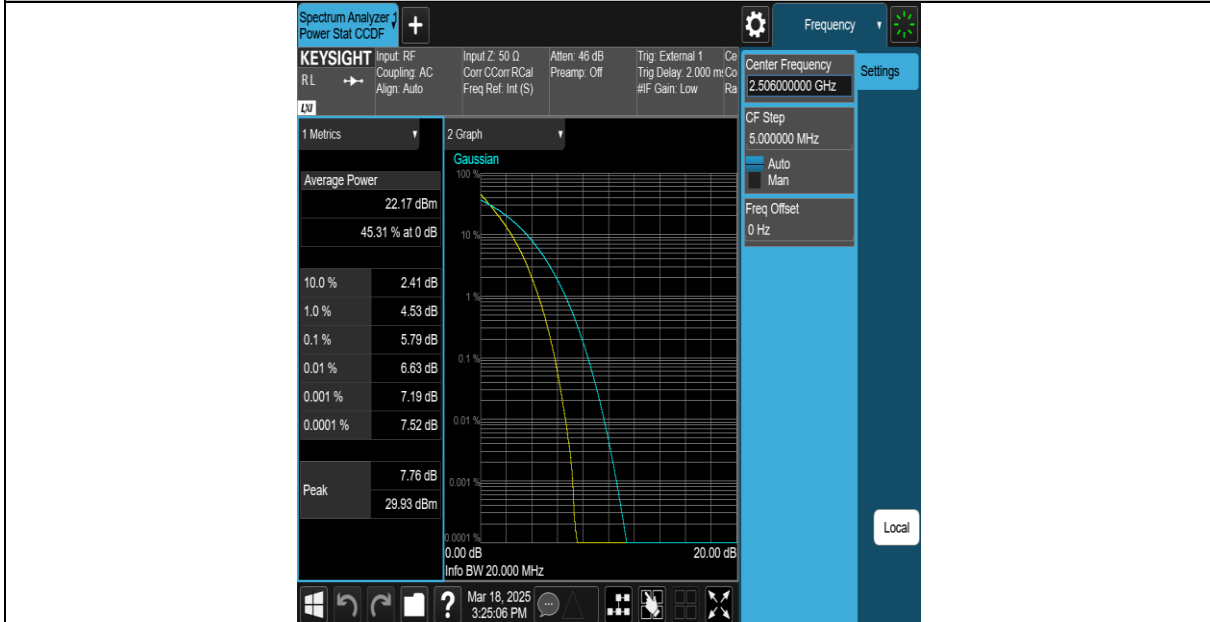


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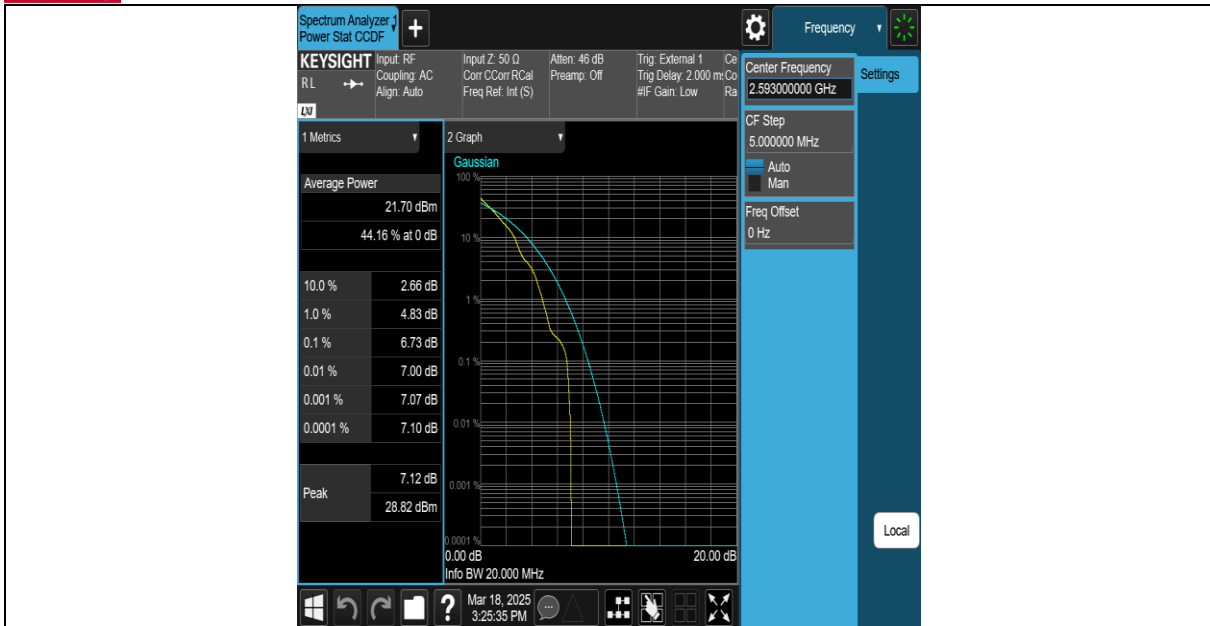




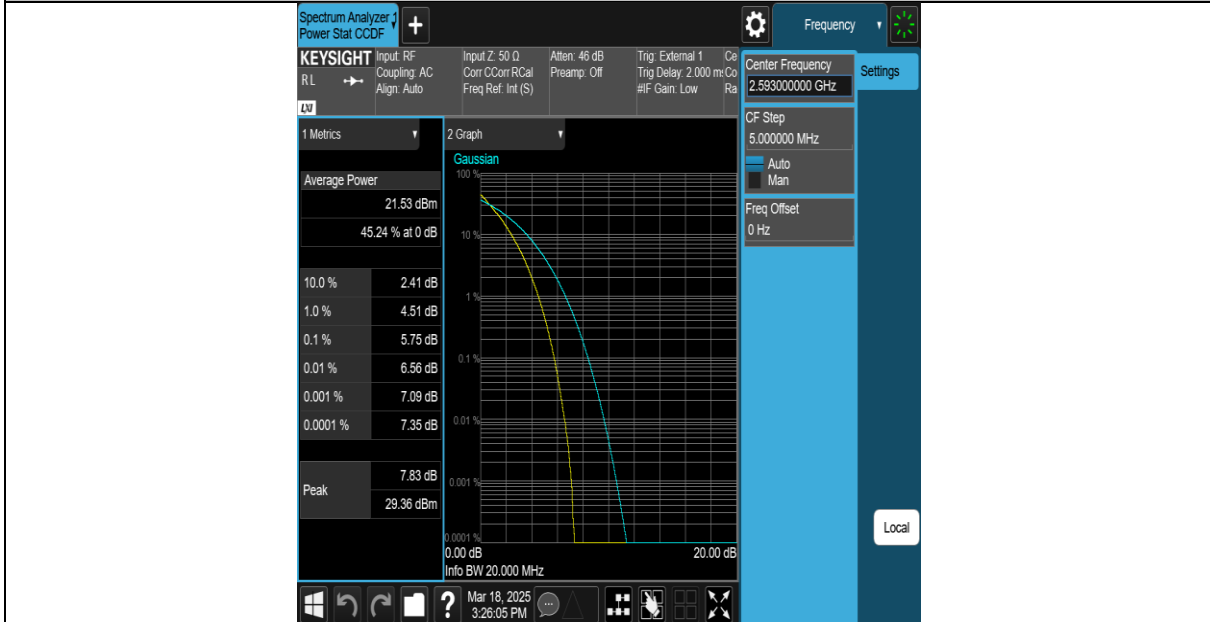
Band41-20MHz-QPSK-39750-100RB#0-PASS



Band41-20MHz-QPSK-40620-1RB#0-PASS



Band41-20MHz-QPSK-40620-100RB#0-PASS



Band41-20MHz-QPSK-41490-1RB#0-PASS