

FCC TEST REPORT

(PART 27)

Applicant:	FOXX Development Inc
Address:	3480 Preston Ridge Road Suite 500, Alpharetta, GA 30005

Manufacturer or Supplier:	FOXX Development Inc
Address:	3480 Preston Ridge Road Suite 500, Alpharetta, GA 30005
Product:	Redcap Module
Brand Name:	FOXX
Model Name:	IQ50
FCC ID	2AQRM-IQ50
Date of tests	Dec. 05, 2025 ~Dec. 31, 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 Luke Lu Manager / Mobile Department
	
Date: Jan. 12, 2026	Date: Jan. 12, 2026

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QBJ2512030110RF09	Original release	Jan. 12, 2026



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 30) (NR BAND 30) (NR BAND 77) (NR BAND 78)	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 30) (NR BAND 30) (NR BAND 77) (NR BAND 78)	Compliance	A
§2.1051 §27.53(h) §27.53(n)(2) §27.53(m)(4)(6)	Conducted Spurious Emissions (Band 30) (NR BAND 30) (NR BAND 77) (NR BAND 78)	Compliance	A
§2.1053 §27.53(h) §27.53(n)(2) §27.53(m)(4)(6)	Radiated Spurious Emissions (Band 30) (NR BAND 30) (NR BAND 77) (NR BAND 78)	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

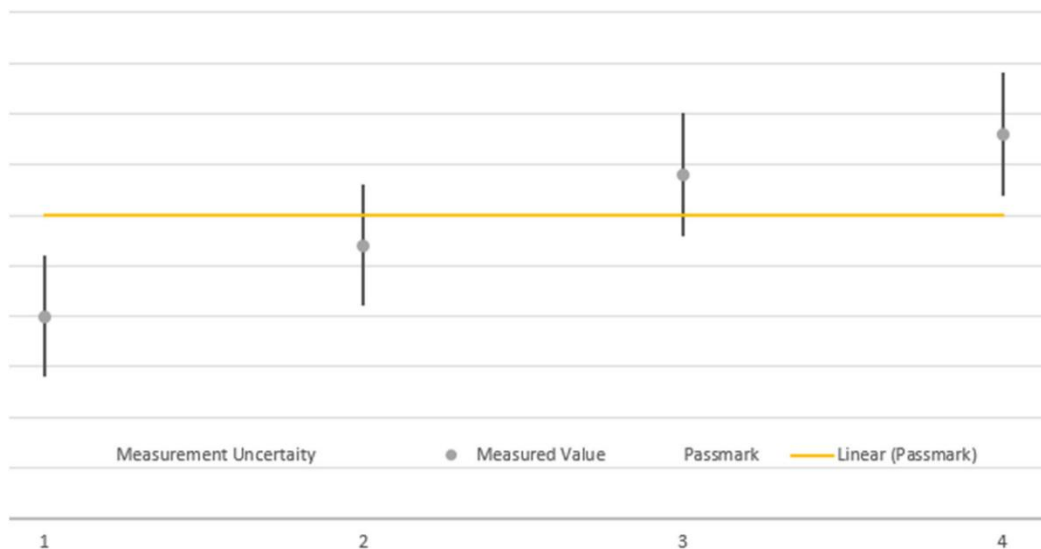
The FCC Site Registration No. is 434559; The Designation No. is CN1325.

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	±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	Aug.20,25	Aug.19,28
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.20,25	Aug.19,27
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
Radio Communication Tester	Rohde&Schwarz	CMX500	101446	Mar.21,25	Mar.20,27
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, GREGT/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*	Redcap Module	
BRAND NAME*	FOXX	
MODEL NAME*	IQ50	
NOMINAL VOLTAGE*	3.8Vdc	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM, 64QAM
	5G NR	DFT-s-OFDM(Pi/2BPSK,QPSK,16QAM,64QAM,256QAM); CP-OFDM(QPSK,16QAM,64QAM,256QAM);
FREQUENCY RANGE	LTE Band 30 Channel Bandwidth: 5MHz	2307.5MHz ~ 2312.5MHz
	LTE Band 30 Channel Bandwidth: 10MHz	2310MHz
	NR Band n30 Channel Bandwidth: 5MHz	2307.5MHz ~ 2312.5MHz
	NR Band n30 Channel Bandwidth: 10MHz	2310MHz
	NR Band n70 Channel Bandwidth: 5MHz	1697.5 MHz ~ 1707.5 MHz
	NR Band n70 Channel Bandwidth: 10MHz	1700 MHz ~ 1705 MHz
	NR Band n70 Channel Bandwidth: 15MHz	1702.5 MHz
	NR Band n77(Part27Q)	3455.01MHz ~ 3544.98MHz
	NR Band n77(Part27O)	3705MHz ~ 3974.97MHz
	NR Band n78(Part27Q)	3455.01MHz ~ 3544.98MHz
	NR Band n78(Part27O)	3705MHz ~ 3794.97MHz
MAX. EIRP POWER	LTE Band 30 Channel Bandwidth: 5MHz	169.82mW
	LTE Band 30 Channel Bandwidth: 10MHz	175.39mW
	NR Band n30 Channel Bandwidth: 5MHz	178.65mW
	NR Band n30 Channel Bandwidth: 10MHz	179.47mW



	NR Band n70 Channel Bandwidth: 5MHz	300.61mW
	NR Band n70 Channel Bandwidth: 10MHz	299.23mW
	NR Band n70 Channel Bandwidth: 15MHz	306.90mW
	NR Band 77(Part27Q) _PC3 Channel Bandwidth:10MHz	349.14mW
	NR Band 77(Part27Q) _PC3 Channel Bandwidth: 15MHz	340.41mW
	NR Band 77(Part27Q) _PC3 Channel Bandwidth: 20MHz	334.97mW
	NR Band 77(Part27O) _PC3 Channel Bandwidth: 10MHz	518.80mW
	NR Band 77(Part27O) _PC3 Channel Bandwidth: 15MHz	515.23mW
	NR Band 77(Part27O) _PC3 Channel Bandwidth: 20MHz	523.60mW
	NR Band 77(Part27Q) _PC2 Channel Bandwidth:10MHz	563.64mW
	NR Band 77(Part27Q) _PC2 Channel Bandwidth: 15MHz	548.28mW
	NR Band 77(Part27Q) _PC2 Channel Bandwidth: 20MHz	540.75mW
	NR Band 77(Part27O) _PC2 Channel Bandwidth: 10MHz	787.05mW
	NR Band 77(Part27O) _PC2 Channel Bandwidth: 15MHz	822.24mW
	NR Band 77(Part27O) _PC2 Channel Bandwidth: 20MHz	826.04mW



	NR Band 78(Part27Q) _PC3 Channel Bandwidth: 10MHz	296.48mW
	NR Band 78(Part27Q) _PC3 Channel Bandwidth: 15MHz	293.76mW
	NR Band 78(Part27Q) _PC3 Channel Bandwidth: 20MHz	274.16mW
	NR Band 78(Part27Q) _PC2 Channel Bandwidth: 10MHz	460.26mW
	NR Band 78(Part27Q) _PC2 Channel Bandwidth: 15MHz	458.14mW
	NR Band 78(Part27Q) _PC2 Channel Bandwidth: 20MHz	438.53mW
EMISSION DESIGNATOR	LTE Band 30 Channel Bandwidth: 5MHz	QPSK: 4M53G7D
		16QAM: 4M53W7D
		64QAM: 4M54W7D
	LTE Band 30 Channel Bandwidth: 10MHz	QPSK: 9M02G7D
		16QAM: 9M02W7D
		64QAM: 9M00W7D
	NR Band 30 Channel Bandwidth: 5MHz	Pi/2BPSK: 4M55G7D
		QPSK: 4M55G7D
		16QAM: 4M55W7D
		64QAM: 4M55W7D
	NR Band 30 Channel Bandwidth: 10MHz	256QAM:4M55G7D
		Pi/2BPSK: 8M97G7D
		QPSK: 8M97G7D
		16QAM: 8M97W7D
	NR Band 70 Channel Bandwidth: 5MHz	64QAM: 8M96W7D
		256QAM:9M00G7D
		Pi/2BPSK: 4M56G7D
		QPSK: 4M55G7D
	NR Band 70 Channel Bandwidth: 10MHz	16QAM: 4M58W7D
		64QAM: 4M52W7D
		256QAM:4M56G7D
		Pi/2BPSK: 8M99G7D
	NR Band 70 Channel Bandwidth: 10MHz	QPSK: 8M99G7D
		16QAM: 8M99W7D
		64QAM: 9M00W7D
		256QAM:8M97G7D



	NR Band 70 Channel Bandwidth: 15MHz	Pi/2BPSK: 13M4G7D QPSK: 13M5G7D 16QAM: 13M4W7D 64QAM: 13M4W7D 256QAM:13M4G7D
	NR Band 77(3450-3550)&78 Channel Bandwidth: 10MHz	QPSK: 8M68G7D 16QAM: 8M68W7D 64QAM: 8M64W7D 256QAM:8M66G7D
	NR Band 77(3450-3550)&78 Channel Bandwidth: 15MHz	Pi/2BPSK: 12M9G7D QPSK: 12M9G7D 16QAM: 13M0W7D 64QAM: 13M0W7D 256QAM:12M9G7D
	NR Band 77(3450-3550)&78 Channel Bandwidth: 20MHz	Pi/2BPSK: 17M9G7D QPSK: 17M9G7D 16QAM: 17M9W7D 64QAM: 17M9W7D 256QAM:17M9G7D
	NR Band 77(3700-3980) Channel Bandwidth: 10MHz	Pi/2BPSK: 8M68G7D QPSK: 8M68G7D 16QAM: 8M68W7D 64QAM: 8M64W7D 256QAM:8M65G7D
	NR Band 77(3700-3980) Channel Bandwidth: 15MHz	Pi/2BPSK: 13M0G7D QPSK: 13M0G7D 16QAM: 13M0W7D 64QAM: 12M9W7D 256QAM:12M9G7D
	NR Band 77(3700-3980) Channel Bandwidth: 20MHz	Pi/2BPSK: 17M8G7D QPSK: 17M8G7D 16QAM: 17M9W7D 64QAM: 17M9W7D 256QAM:17M9G7D
ANTENNA GAIN*	☒ Provided by client	
	LTE B30	-0.41 dBi
	NR BAND N30	-0.41 dBi
	NR BAND N70	1.69 dBi
	NR BAND N77	2.32 dBi
	NR BAND N78	1.4 dBi
ANTENNA TYPE*	External Antenna	
HW VERSION*	SRM813Q-NA_MB_V1.00	



SW VERSION*	SRM813Q-NA_2.0.2_EQ100
I/O PORTS*	Refer to user's manual
CABLE SUPPLIED*	N/A
EXTREME TEMPERATURE*	-40°C~85°C
EXTREME VOLTAGE*	3.3V~4.35V

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 receivers.

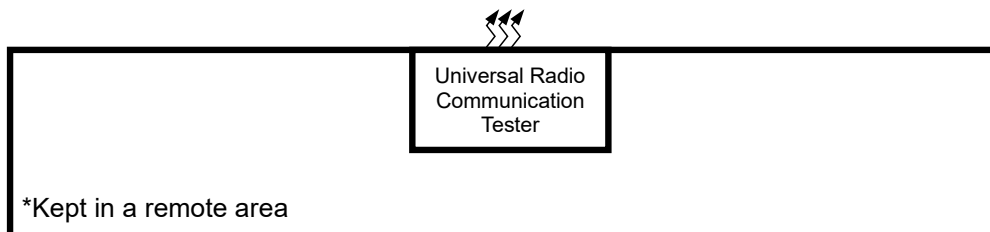
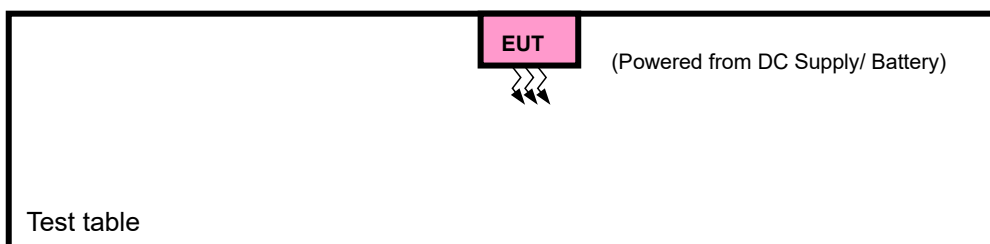
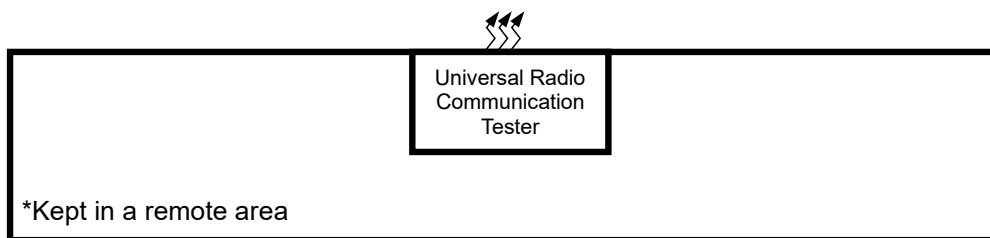
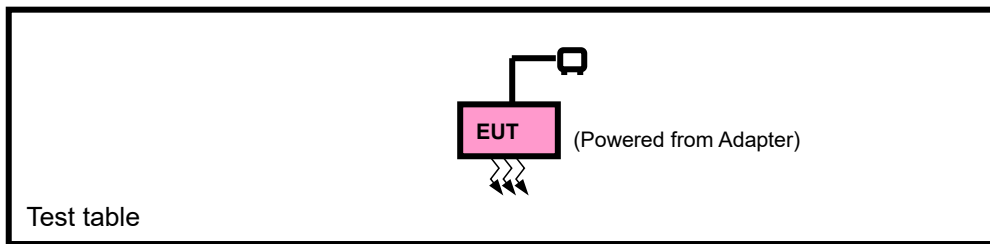
MODULATION MODE	TX FUNCTION
LTE	1TX/2RX
5G NR	1TX/2RX

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



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
2	DC Source	HYELEC	HY3010B	551016	N/A
3	Adapter	N/A	N/A	N/A	N/A
4	USB Cable	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable, 1.0m;
2	USB 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 + Adapter with LTE or 5G NR link
B	EUT + DC Supply with LTE or 5G NR link

LTE BAND 30						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	27685 to 27735	27685,27710,27735	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		27710	27710	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	27685 to 27735	27685, ,27735	5MHz	QPSK	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	27685 to 27735	27685,27710,27735	5MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		27710	27710	10MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	27685 to 27735	27685,27710,27735	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
		27710	27710	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
A	BAND EDGE	27685 to 27735	27685	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
			27735	5MHz	QPSK, 16QAM, 64QAM	1 RB / 24 RB Offset 25 RB / 0 RB Offset
		27710	27710	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
			27710	10MHz	QPSK, 16QAM, 64QAM	1 RB / 49 RB Offset
		27710	27710	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
			27710	10MHz	QPSK, 16QAM, 64QAM	1 RB / 49 RB Offset



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						50 RB / 0 RB Offset
						100 RB / 0 RB Offset
A	CONDCUETED EMISSION	27685 to 27735	27685,27710,27735	5MHz	QPSK	1 RB / 0 RB Offset
		27710	27710	10MHz	QPSK	1 RB / 0RB Offset
A	RADIATED EMISSION	27685 to 27735	27685,27710,27735	5MHz	QPSK	1 RB / 0 RB Offset
		27710	27710	10MHz	QPSK	1 RB / 0RB Offset

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



NR BAND N30 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CP-OFDM CHANNEL	AVAILABLE DFT-S-OFDM CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(DFT-S-OFDM) (INCLUDE CP-OFDM)
A	ERP	461500 to 462500	461500,462000, 462500	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		462000	462000	Low, Middle, High	10MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	1RB/ 0RB Offset
B	FREQUENCY STABILITY	461500 to 462500	46150, 462500	Low, High	5MHz	QPSK	Outer_ Full
A	PEAK TO AVERAGE RATIO	461500 to 462500	461500,462000, 462500	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		462000	462000	Middle	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
A	OCCUPIED BANDWIDTH	461500 to 462500	461500,462000, 462500	Middle	5MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		462000	462000	Middle	10MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
A	BAND EDGE	461500 to 462500	461500,462000, 462500	Low	5MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	5MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		462000	462000	Middle	10MHz	QPSK	1RB/ 0RB Offset Outer_ Full
A	CONDUCTED EMISSION	461500 to 462500	461500,462000, 462500	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		462000	462000	Middle	10MHz	QPSK	1RB/ 0RB Offset
A	RADIATED EMISSION	461500 to 462500	461500,462000, 462500	Middle	5MHz	QPSK	1RB/ 0RB Offset
		462000	462000	Middle	10MHz	QPSK	1RB/ 0RB Offset

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

2. The test data presented in the report from worst SA_n30



NR BAND N70 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CP-OFDM CHANNEL	AVAILABLE DFT-S-OFDM CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(DFT- S-OFDM) (INCLUDE CP-OFDM)
A	ERP	339500 to 341500	339500,340500, 341500	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		340000 to 341000	340000,340500, 341000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		340500	340500	Middle	15MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	1RB/ 0RB Offset
B	FREQUENCY STABILITY	340000 to 341000	340000,340500, 341000	Low, Middle, High	10MHz	QPSK	Outer_ Full
A	PEAK TO AVERAGE RATIO	339500 to 341500	339500,340500, 341500	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		340000 to 341000	340000,340500, 341000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		340500	340500	Low, Middle, High	15MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
Outer_ Full							
A	OCCUPIED BANDWIDTH	339500 to 341500	339500,340500, 341500	Low, Middle, High	5MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		340000 to 341000	340000,340500, 341000	Low, Middle, High	10MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		340500	340500	Low, Middle, High	15MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
A	BAND EDGE	339500 to 341500	339500,340500, 341500	Low	5MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	5MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		340000 to 341000	340000,340500, 341000	Low	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		340500	340500	Low	15MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	15MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
Outer_ Full							



A	CONDUCTED EMISSION	339500 to 341500	339500,340500, 341500	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		340000 to 341000	340000,340500, 341000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		340500	340500	Low, Middle, High	15MHz	QPSK	1RB/ 0RB Offset
A	RADIATED EMISSION	339500 to 341500	339500,340500, 341500	Middle	5MHz	QPSK	1RB/ 0RB Offset
		340000 to 341000	340000,340500, 341000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		340500	340500	Middle	15MHz	QPSK	1RB/ 0RB Offset

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

2. The test data presented in the report from worst SA_n70.



NR BAND N77(3700-3900) MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CP-OFDM CHANNEL	AVAILABLE DFT-S-OFDM CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(DFT-S-OFDM) (INCLUDE CP-OFDM)
A	ERP	647000 to 665000	647000,656000, 665000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		647168 to 664832	647168,656000, 664832	Low, Middle, High	15MHz	QPSK	1RB/ 0RB Offset
		647334 to 664666	647334,656000, 664666	Low, Middle, High	20MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	1RB/ 0RB Offset
B	FREQUENCY STABILITY	647000 to 665000	647000,656000, 665000	Low, Middle, High	10MHz	QPSK	Outer_ Full
A	PEAK TO AVERAGE RATIO	647000 to 665000	647000,656000, 665000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
							Outer_ Full
		647168 to 664832	647168,656000, 664832	Low, Middle, High	15MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		647334 to 664666	647334,656000, 664666	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
A	OCCUPIED BANDWIDTH	647000 to 665000	647000,656000, 665000	Low, Middle, High	10MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		647168 to 664832	647168,656000, 664832	Low, Middle, High	15MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		647334 to 664666	647334,656000, 664666	Low, Middle, High	20MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
A	BAND EDGE	647000 to 665000	647000, 665000	Low	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		647168 to 664832	647168, 664832	Low	15MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	15MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		647334 to 664666	647334, 664666	Low	20MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	20MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full



A	CONDUCTED EMISSION	647000 to 665000	647000,656000, 665000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		647168 to 664832	647168,656000, 664832	Low, Middle, High	15MHz	QPSK	1RB/ 0RB Offset
		647334 to 664666	647334,656000, 664666	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset
A	RADIATED EMISSION	647000 to 665000	647000,656000, 665000	Middle	10MHz	QPSK	1RB/ 0RB Offset
		647168 to 664832	647168,656000, 664832	Middle	15MHz	QPSK	1RB/ 0RB Offset
		647334 to 664666	647334,656000, 664666	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset

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

2. The test data presented in the report from worst SA_n77(3700-3900).



NR BAND N78 MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
A	ERP	630334 to 636332	630334, 633332, 636332	10MHz	QPSK	1 RB / 0 RB offset
		630500 to 636166	630500, 633332, 636166	15MHz	QPSK	1 RB / 0 RB offset
		633332	633332	20MHz	Pi/2BPSK, QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
A	RADIATED EMISSION	630334 to 636332	633332	10MHz	QPSK	1 RB / 0 RB offset
		630500 to 636166	633332	15MHz	QPSK	1 RB / 0 RB offset
		633332	633332	20MHz	QPSK	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. NR SA N78 are covered by NR SA N77(3450-3550), Because it is a subset of NR SA N77(3450-3550) with the same output power and supported bandwidths, So the test data please refer to NR SA N77(3450-3550).



NR SA N77(3450-3550) MODE

EUT CONFIGUR E MODE	TEST ITEM	AVAILABL E CP- OFDM CHANNEL	AVAILABLE DFT-S- OFDM CHANNEL	TESTED CHANNE L	CHANNEL BANDWIDT H	MODULATION	MODE(DF T-S-OFDM) (INCLUDE CP-OFDM)
A	ERP	630334 to 636332	630334,633332,63633 2	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		630500 to 636166	630500, 633332,636166	Low, Middle, High	15MHz	QPSK	1RB/ 0RB Offset
		633332	633332	Low, Middle, High	20MHz	Pi/2BPSK,QPSK,16QA M, 64QAM, 256QAM	1RB/ 0RB Offset
B	FREQUENC Y STABILITY	630334 to 636332	630334,633332,63633 2	Low, Middle, High	10MHz	QPSK	Outer_ Full
A	PEAK TO AVERAGE RATIO	630334 to 636332	630334,633332,63633 2	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
							Outer_ Full
		630500 to 636166	630500, 633332,636166	Low, Middle, High	15MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		633332	633332	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset
A	OCCUPIED BANDWIDTH	630334 to 636332	630334,633332,63633 2	Middle	10MHz	Pi/2BPSK,QPSK,16QA M, 64QAM, 256QAM	Outer_ Full
		630500 to 636166	630500, 633332,636166	Middle	15MHz	Pi/2BPSK,QPSK,16QA M, 64QAM, 256QAM	Outer_ Full
		633332	633332	Middle	20MHz	Pi/2BPSK,QPSK,16QA M, 64QAM, 256QAM	Outer_ Full
A	BAND EDGE	630334 to 636332	630334,636332	Low	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		630500 to 636166	630500,636166	Low	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
		633332	633332	Middle	20MHz	QPSK	1RB/ 0RB Offset
				Middle	20MHz	QPSK	Outer_ Full
							Outer_ Full



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A	CONDUCTED EMISSION	630334 to 636332	630334,633332,636332	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		630500 to 636166	630500, 633332,636166	Low, Middle, High	15MHz	QPSK	1RB/ 0RB Offset
		633332	633332	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset
A	RADIATED EMISSION	630334 to 636332	630334,633332,636332	Middle	10MHz	QPSK	1RB/ 0RB Offset
		630500 to 636166	630500, 633332,636166	Middle	15MHz	QPSK	1RB/ 0RB Offset
		633332	633332	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset

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

2. The test data presented in the report from worst SA_n77(3450-3550).

TEST CONDITION			
TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	23deg. C, 70%RH	DC 3.8V By Battery	Hanwen Xu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.3V/ 3.8V/ 4.35V By DC Source	Hanwen Xu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 3.8V By Battery	Hanwen Xu
BAND EDGE	23deg. C, 70%RH	DC 3.8V By Battery	Hanwen Xu
CONDUCTED EMISSION	23deg. C, 70%RH	DC 3.8V By Battery	Hanwen Xu
RADIATED EMISSION	23deg. C, 70%RH	AC 120V/60Hz	Hanwen Xu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 3.8V 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 average 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.

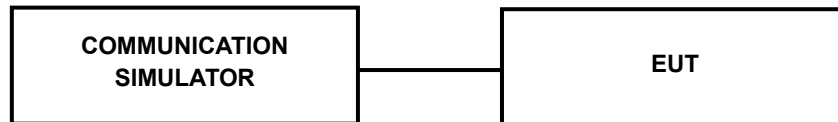
CONDUCTED POWER MEASUREMENT:

- 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 30						
Band/BW	Modulation	RB Size	RB Offset	Low CH 27685	Mid CH 27710	High CH 27735
				Frequency 2307.5 MHz	Frequency 2310 MHz	Frequency 2312.5 MHz
30/ 5	QPSK	1	0	22.57	22.69	22.53
		1	12	22.71	22.66	22.67
		1	24	22.65	22.70	22.65
		12	0	21.72	21.55	21.69
		12	6	21.68	21.74	21.64
		12	13	21.71	21.58	21.60
		25	0	21.84	21.83	21.85
	16QAM	1	0	21.96	21.92	21.88
		1	12	21.85	21.83	21.96
		1	24	21.85	21.96	22.02
		12	0	20.66	20.71	20.60
		12	6	20.68	20.70	20.78
		12	13	20.65	20.69	20.73
		25	0	20.67	20.71	20.64
	64QAM	1	0	20.77	20.84	20.86
		1	12	20.91	20.87	20.74
		1	24	20.87	20.87	20.77
		12	0	19.64	19.78	19.74
		12	6	19.65	19.58	19.65
		12	13	19.63	19.66	19.74
		25	0	19.65	19.66	19.64



LTE Band 30						
Band/BW	Modulation	RB Size	RB Offset	/	Mid CH 27710	/
				/	Frequency 2310 MHz	/
30/ 10	QPSK	1	0	/	22.70	/
		1	24	/	22.82	/
		1	49	/	22.85	/
		25	0	/	21.75	/
		25	12	/	21.82	/
		25	25	/	21.74	/
		50	0	/	21.91	/
	16QAM	1	0	/	21.96	/
		1	24	/	21.98	/
		1	49	/	22.01	/
		25	0	/	20.81	/
		25	12	/	20.82	/
		25	25	/	20.85	/
		50	0	/	20.82	/
	64QAM	1	0	/	20.91	/
		1	24	/	20.93	/
		1	49	/	20.97	/
		25	0	/	19.78	/
		25	12	/	19.79	/
		25	25	/	19.83	/
		50	0	/	19.85	/



Redcap mode

NR band N30

n30 (SCS 15kHz)								
BW [MHz]	DFT-s-OFDM	RB Size	RB Offset	Low	Mid	High	MPR (dB)	Max. Tune-up (dBm)
		Channel			462000			
		Frequency (MHz)			2310			
10	Pi/2 BPSK	1	1		22.92		0	25.7
		1	26		22.88		0	25.7
		1	50		22.86		0	25.7
		25	0		22.32		0.5	25.2
		25	14		22.62		0	25.7
		25	27		22.28		0.5	25.2
		50	0		22.28		0.5	25.2
	QPSK	1	1		22.95		0	25.7
		1	26		22.90		0	25.7
		1	50		22.93		0	25.7
		25	0		21.85		1	24.7
		25	14		22.80		0	25.7
		25	27		21.85		1	24.7
		50	0		21.97		1	24.7
	16QAM	1	1		21.81		1	24.7
	64QAM	1	1		20.36		2.5	23.2
	256QAM	1	1		18.69		4.5	21.2
BW [MHz]	DFT-s-OFDM	Channel		461500	462000	462500	MPR (dB)	Max. Tune-up
		Frequency (MHz)		2307.5	2310	2312.5		
5	QPSK	1	1	22.93	22.90	22.91	0	25.7



n70 (SCS 15kHz)								
BW [MHz]	DFT-s-OFDM	RB Size	RB Offset	Low	Mid	High	MPR (dB)	Max. Tune-up (dBm)
		Channel			340500			
		Frequency (MHz)			1702.5			
15	Pi/2 BPSK	1	1		23.15		0	25.7
		1	40		22.96		0	25.7
		1	77		23.07		0	25.7
		36	0		22.59		0.5	25.2
		36	22		22.97		0	25.7
		36	43		22.56		0.5	25.2
		75	0		22.71		0.5	25.2
	QPSK	1	1		23.18		0	25.7
		1	40		23.15		0	25.7
		1	77		23.13		0	25.7
		36	0		22.22		1	24.7
		36	22		23.07		0	25.7
		36	43		22.16		1	24.7
		75	0		22.26		1	24.7
	16QAM	1	1		22.59		1	24.7
	64QAM	1	1		20.87		2.5	23.2
	256QAM	1	1		18.97		4.5	21.2
BW [MHz]	DFT-s-OFDM	Channel		340000	340500	341000	MPR (dB)	Max. Tune-up
		Frequency (MHz)		1700	1702.5	1705		
10	QPSK	1	1	23.05	23.00	23.07	0	25.7
BW [MHz]	DFT-s-OFDM	Channel		339500	340500	341500	MPR (dB)	Max. Tune-up
		Frequency (MHz)		1697.5	1702.5	1707.5		
5	QPSK	1	1	23.01	22.98	23.09	0	25.7



Part27Q_n77 (SCS 30kHz)_PC3								
BW [MHz]	DFT-s-OFDM	RB Size	RB Offset	Low	Mid	High	MPR (dB)	Max. Tune-up (dBm)
		Channel		630668	633332	636000		
		Frequency (MHz)		3460.02	3499.98	3540		
20	Pi/2 BPSK	1	1	22.60	22.88	23.10	0	25.7
		1	26	22.51	22.76	22.93	0	25.7
		1	49	22.56	22.86	23.07	0	25.7
		25	0	22.06	22.45	22.68	0.5	25.2
		25	13	22.57	22.90	23.13	0	25.7
		25	26	22.16	22.42	22.65	0.5	25.2
		50	0	22.22	22.41	22.65	0.5	25.2
	QPSK	1	1	22.62	22.93	23.14	0	25.7
		1	26	22.55	22.86	22.95	0	25.7
		1	49	22.60	22.88	23.10	0	25.7
		25	0	21.64	21.96	22.15	1	24.7
		25	13	22.67	22.91	23.12	0	25.7
		25	26	21.54	21.92	22.09	1	24.7
		50	0	21.65	21.94	22.07	1	24.7
	16QAM	1	1	21.52	21.72	21.91	1	24.7
	64QAM	1	1	20.04	20.38	20.60	2.5	23.2
	256QAM	1	1	18.37	18.72	18.97	4.5	21.2
BW [MHz]	DFT-s-OFDM	Channel		630500	633332	636166	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3457.5	3499.98	3542.49		
15	QPSK	1	1	22.54	22.91	23.00	0	25.7
BW [MHz]	DFT-s-OFDM	Channel		630334	633332	636332	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3455.01	3499.98	3544.98		
10	QPSK	1	1	22.58	22.84	23.11	0	25.7



Part27O_n77 (SCS 30kHz)_PC3

BW [MHz]	DFT-s-OFDM	RB Size	RB Offset	Low	Mid	High	MPR (dB)	Max. Tune-up (dBm)
		Channel		647334	656000	664666		
		Frequency (MHz)		3710.01	3840	3969.99		
20	Pi/2 BPSK	1	1	22.56	22.74	24.80	0	29.0
		1	26	22.52	22.57	24.63	0	29.0
		1	49	22.53	22.70	24.61	0	29.0
		25	0	22.10	22.14	24.20	0.5	28.5
		25	13	22.53	22.61	24.71	0	29.0
		25	26	22.04	22.22	24.13	0.5	28.5
		50	0	22.02	22.08	24.10	0.5	28.5
	QPSK	1	1	22.63	22.78	24.87	0	29.0
		1	26	22.51	22.72	24.82	0	29.0
		1	49	22.60	22.75	24.80	0	29.0
		25	0	21.64	21.77	23.88	1	28.0
		25	13	22.60	22.75	24.85	0	29.0
		25	26	21.67	21.76	23.83	1	28.0
		50	0	21.56	21.72	23.81	1	28.0
	16QAM	1	1	21.56	21.67	23.78	1	28.0
	64QAM	1	1	20.12	20.30	22.36	2.5	26.5
	256QAM	1	1	18.42	18.61	20.65	4.5	24.5
BW [MHz]	DFT-s-OFDM	Channel		647168	656000	664832	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3707.52	3840	3972.48		
15	QPSK	1	1	22.61	22.58	24.80	0	29.0
BW [MHz]	DFT-s-OFDM	Channel		647000	656000	665000	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3705	3840	3975		
10	QPSK	1	1	22.55	22.75	24.83	0	29.0



Part27Q_n77 (SCS 30kHz)_PC2								
BW [MHz]	DFT-s-OFDM	RB Size	RB Offset	Low	Mid	High	MPR (dB)	Max. Tune-up (dBm)
		Channel		630668	633332	636000		
		Frequency (MHz)		3460.02	3499.98	3540		
20	Pi/2 BPSK	1	1	24.62	24.94	25.20	0	25.7
		1	26	24.46	24.87	25.15	0	25.7
		1	49	24.58	24.91	25.11	0	25.7
		25	0	24.05	24.37	24.64	0.5	25.2
		25	13	24.55	24.88	25.19	0	25.7
		25	26	24.07	24.38	24.63	0.5	25.2
		50	0	24.13	24.44	24.68	0.5	25.2
	QPSK	1	1	24.66	25.01	25.24	0	25.7
		1	26	24.65	24.95	25.15	0	25.7
		1	49	24.57	24.98	25.14	0	25.7
		25	0	23.59	23.94	24.17	1	24.7
		25	13	24.63	24.98	25.18	0	25.7
		25	26	23.57	24.08	24.29	1	24.7
		50	0	23.64	24.09	24.25	1	24.7
	16QAM	1	1	23.81	24.04	24.14	1	24.7
	64QAM	1	1	22.11	22.40	22.53	2.5	23.2
	256QAM	1	1	20.56	20.75	20.91	4.5	21.2
BW [MHz]	DFT-s-OFDM	Channel		630500	633332	636166	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3457.5	3499.98	3542.49		
15	QPSK	1	1	24.46	24.91	25.07	0	25.7
BW [MHz]	DFT-s-OFDM	Channel		630334	633332	636332	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3455.01	3499.98	3544.98		
10	QPSK	1	1	24.50	24.95	25.19	0	25.7



Part270_n77 (SCS 30kHz)_PC2								
BW [MHz]	DFT-s-OFDM	RB Size	RB Offset	Low	Mid	High	MPR (dB)	Max. Tune-up (dBm)
		Channel		647334	656000	664666		
		Frequency (MHz)		3710.01	3840	3969.99		
20	Pi/2 BPSK	1	1	24.52	24.73	26.82	0	29.0
		1	26	24.42	24.70	26.74	0	29.0
		1	49	24.38	24.67	26.80	0	29.0
		25	0	23.98	24.15	26.23	0.5	28.5
		25	13	24.50	24.70	26.80	0	29.0
		25	26	23.92	24.16	26.20	0.5	28.5
		50	0	23.99	24.20	26.24	0.5	28.5
	QPSK	1	1	24.58	24.77	26.85	0	29.0
		1	26	24.52	24.71	26.82	0	29.0
		1	49	24.47	24.73	26.84	0	29.0
		25	0	23.57	23.72	25.85	1	28.0
		25	13	24.50	24.74	26.82	0	29.0
		25	26	23.59	23.68	25.87	1	28.0
		50	0	23.56	23.71	25.83	1	28.0
	16QAM	1	1	23.43	23.54	25.74	1	28.0
	64QAM	1	1	22.03	22.13	24.31	2.5	26.5
	256QAM	1	1	20.42	20.55	22.42	4.5	24.5
BW [MHz]	DFT-s-OFDM	Channel		647168	656000	664832	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3707.52	3840	3972.48		
15	QPSK	1	1	24.52	24.63	26.83	0	29.0
BW [MHz]	DFT-s-OFDM	Channel		647000	656000	665000	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3705	3840	3975		
10	QPSK	1	1	24.42	24.76	26.64	0	29.0



Part27Q_n78 (SCS 30kHz)_PC3								
BW [MHz]	DFT-s-OFDM	RB Size	RB Offset	Low	Mid	High	MPR (dB)	Max. Tune-up (dBm)
		Channel		630668	633332	636000		
		Frequency (MHz)		3460.02	3499.98	3540		
20	Pi/2 BPSK	1	1	22.57	22.95	23.37	0	25.7
		1	26	22.54	22.74	23.18	0	25.7
		1	49	22.51	22.94	23.22	0	25.7
		25	0	22.03	22.44	22.82	0.5	25.2
		25	13	22.52	22.90	23.25	0	25.7
		25	26	22.09	22.42	22.80	0.5	25.2
		50	0	22.12	22.50	22.72	0.5	25.2
	QPSK	1	1	22.63	22.98	23.39	0	25.7
		1	26	22.60	22.88	23.23	0	25.7
		1	49	22.56	22.94	23.26	0	25.7
		25	0	21.60	22.02	22.36	1	24.7
		25	13	22.61	22.96	23.35	0	25.7
		25	26	21.65	22.05	22.30	1	24.7
		50	0	21.68	22.03	22.40	1	24.7
	16QAM	1	1	21.63	21.97	22.26	1	24.7
	64QAM	1	1	20.33	20.52	20.81	2.5	23.2
	256QAM	1	1	18.69	18.99	19.37	4.5	21.2
BW [MHz]	DFT-s-OFDM	Channel		630500	633332	636166	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3457.5	3499.98	3542.49		
15	QPSK	1	1	22.54	22.97	23.28	0	25.7
BW [MHz]	DFT-s-OFDM	Channel		630334	633332	636332	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3455.01	3499.98	3544.98		
10	QPSK	1	1	22.57	22.97	23.32	0	25.7



Part27Q_n78 (SCS 30kHz)_PC2

BW [MHz]	DFT-s-OFDM	RB Size	RB Offset	Low	Mid	High	MPR (dB)	Max. Tune-up (dBm)
		Channel		630668	633332	636000		
		Frequency (MHz)		3460.02	3499.98	3540		
20	Pi/2 BPSK	1	1	24.63	24.96	25.30	0	29.0
		1	26	24.35	24.87	25.20	0	29.0
		1	49	24.44	24.92	25.25	0	29.0
		25	0	24.13	24.45	24.75	0.5	28.5
		25	13	24.61	24.95	25.21	0	29.0
		25	26	24.18	24.48	24.77	0.5	28.5
		50	0	24.24	24.56	24.85	0.5	28.5
	QPSK	1	1	24.67	25.02	25.31	0	29.0
		1	26	24.56	24.96	25.24	0	29.0
		1	49	24.63	24.98	25.29	0	29.0
		25	0	23.74	24.07	24.33	1	28.0
		25	13	24.65	25.00	25.27	0	29.0
		25	26	23.71	24.11	24.31	1	28.0
		50	0	23.77	24.08	24.34	1	28.0
	16QAM	1	1	23.83	24.12	24.40	1	28.0
	64QAM	1	1	22.22	22.52	22.75	2.5	26.5
	256QAM	1	1	20.56	20.96	21.17	4.5	24.5
BW [MHz]	DFT-s-OFDM	Channel		630500	633332	636166	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3457.5	3499.98	3542.49		
15	QPSK	1	1	24.68	24.91	25.21	0	29.0
BW [MHz]	DFT-s-OFDM	Channel		630334	633332	636332	MPR (dB)	Max. Tune-up
		Frequency (MHz)		3455.01	3499.98	3544.98		
10	QPSK	1	1	24.67	24.95	25.23	0	29.0

**EIRP****LTE BAND 30****5MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
27685	2307.5	22.71	-0.41	22.30	169.82	0.25
27710	2310	22.70	-0.41	22.29	169.43	0.25
27735	2312.5	22.67	-0.41	22.26	168.27	0.25

5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
27685	2307.5	21.96	-0.41	21.55	142.89	0.25
27710	2310	21.96	-0.41	21.55	142.89	0.25
27735	2312.5	22.02	-0.41	21.61	144.88	0.25

5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
27685	2307.5	20.91	-0.41	20.50	112.20	0.25
27710	2310	20.87	-0.41	20.46	111.17	0.25
27735	2312.5	20.86	-0.41	20.45	110.92	0.25

10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
27710	2310	22.85	-0.41	22.44	175.39	0.25

10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
27710	2310	22.01	-0.41	21.60	144.54	0.25

10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
27710	2310	20.97	-0.41	20.56	113.76	0.25



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Redcap mode

NR BAND N30

n30 (SCS 15kHz)							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-Pi/2 BPSK	462000	2310	22.92	-0.41	22.51	178.24	0.25
10M-QPSK	462000	2310	22.95	-0.41	22.54	179.47	0.25
10M- 16QAM	462000	2310	21.81	-0.41	21.40	138.04	0.25
10M- 64QAM	462000	2310	20.36	-0.41	19.95	98.86	0.25
10M- 256QAM	462000	2310	18.69	-0.41	18.28	67.30	0.25
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
5M-QPSK	461500	2307.5	22.93	-0.41	22.52	178.65	0.25
	462000	2310	22.90	-0.41	22.49	177.42	0.25
	462500	2312.5	22.91	-0.41	22.50	177.83	0.25



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NR BAND N70

n70 (SCS 15kHz)							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-Pi/2 BPSK	340500	1702.5	23.15	1.69	24.84	304.79	1
15M-QPSK	340500	1702.5	23.18	1.69	24.87	306.90	1
15M- 16QAM	340500	1702.5	22.59	1.69	24.28	267.92	1
15M- 64QAM	340500	1702.5	20.87	1.69	22.56	180.30	1
15M- 256QAM	340500	1702.5	18.97	1.69	20.66	116.41	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	340000	1700	23.05	1.69	24.74	297.85	1
	340500	1702.5	23.00	1.69	24.69	294.44	1
	341000	1705	23.07	1.69	24.76	299.23	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
5M-QPSK	339500	1697.5	23.01	1.69	24.70	295.12	1
	340500	1702.5	22.98	1.69	24.67	293.09	1
	341500	1707.5	23.09	1.69	24.78	300.61	1



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NR band N77

Part27Q_n77 (SCS 30kHz)_PC3							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-Pi/2 BPSK	633332	3499.98	22.90	2.32	25.22	332.66	1
20M-QPSK	633332	3499.98	22.93	2.32	25.25	334.97	1
20M- 16QAM	633332	3499.98	21.72	2.32	24.04	253.51	1
20M- 64QAM	633332	3499.98	20.38	2.32	22.70	186.21	1
20M- 256QAM	633332	3499.98	18.72	2.32	21.04	127.06	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	630500	3457.5	22.54	2.32	24.86	306.20	1
	633332	3499.98	22.91	2.32	25.23	333.43	1
	636166	3542.49	23.00	2.32	25.32	340.41	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	630334	3455.01	22.58	2.32	24.90	309.03	1
	633332	3499.98	22.84	2.32	25.16	328.10	1
	636332	3544.98	23.11	2.32	25.43	349.14	1



Part27O_n77 (SCS 30kHz)_PC3

BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-Pi/2 BPSK	647334	3710.01	22.56	2.32	24.88	307.61	1
	656000	3840	22.74	2.32	25.06	320.63	1
	664666	3969.99	24.80	2.32	27.12	515.23	1
20M-QPSK	647334	3710.01	22.63	2.32	24.95	312.61	1
	656000	3840	22.78	2.32	25.10	323.59	1
	664666	3969.99	24.87	2.32	27.19	523.60	1
20M- 16QAM	647334	3710.01	21.56	2.32	23.88	244.34	1
	656000	3840	21.67	2.32	23.99	250.61	1
	664666	3969.99	23.78	2.32	26.10	407.38	1
20M- 64QAM	647334	3710.01	20.12	2.32	22.44	175.39	1
	656000	3840	20.30	2.32	22.62	182.81	1
	664666	3969.99	22.36	2.32	24.68	293.76	1
20M- 256QAM	647334	3710.01	18.42	2.32	20.74	118.58	1
	656000	3840	18.61	2.32	20.93	123.88	1
	664666	3969.99	20.65	2.32	22.97	198.15	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	647168	3707.52	22.61	2.32	24.93	311.17	1
	656000	3840	22.58	2.32	24.90	309.03	1
	664832	3972.48	24.80	2.32	27.12	515.23	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	647000	3705	22.55	2.32	24.87	306.90	1
	656000	3840	22.75	2.32	25.07	321.37	1
	665000	3975	24.83	2.32	27.15	518.80	1



Part27Q_n77 (SCS 30kHz)_PC2							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-Pi/2 BPSK	633332	3499.98	24.94	2.32	27.26	532.11	1
20M-QPSK	633332	3499.98	25.01	2.32	27.33	540.75	1
20M- 16QAM	633332	3499.98	24.04	2.32	26.36	432.51	1
20M- 64QAM	633332	3499.98	22.40	2.32	24.72	296.48	1
20M- 256QAM	633332	3499.98	20.75	2.32	23.07	202.77	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	630500	3457.5	24.46	2.32	26.78	476.43	1
	633332	3499.98	24.91	2.32	27.23	528.45	1
	636166	3542.49	25.07	2.32	27.39	548.28	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	630334	3455.01	24.50	2.32	26.82	480.84	1
	633332	3499.98	24.95	2.32	27.27	533.33	1
	636332	3544.98	25.19	2.32	27.51	563.64	1



Part27O_n77 (SCS 30kHz)_PC2

BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-Pi/2 BPSK	647334	3710.01	24.52	2.32	26.84	483.06	1
	656000	3840	24.73	2.32	27.05	506.99	1
	664666	3969.99	26.82	2.32	29.14	820.35	1
20M-QPSK	647334	3710.01	24.58	2.32	26.90	489.78	1
	656000	3840	24.77	2.32	27.09	511.68	1
	664666	3969.99	26.85	2.32	29.17	826.04	1
20M- 16QAM	647334	3710.01	23.43	2.32	25.75	375.84	1
	656000	3840	23.54	2.32	25.86	385.48	1
	664666	3969.99	25.74	2.32	28.06	639.73	1
20M- 64QAM	647334	3710.01	22.03	2.32	24.35	272.27	1
	656000	3840	22.13	2.32	24.45	278.61	1
	664666	3969.99	24.31	2.32	26.63	460.26	1
20M- 256QAM	647334	3710.01	20.42	2.32	22.74	187.93	1
	656000	3840	20.55	2.32	22.87	193.64	1
	664666	3969.99	22.42	2.32	24.74	297.85	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	647168	3707.52	24.52	2.32	26.84	483.06	1
	656000	3840	24.63	2.32	26.95	495.45	1
	664832	3972.48	26.83	2.32	29.15	822.24	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	647000	3705	24.42	2.32	26.74	472.06	1
	656000	3840	24.76	2.32	27.08	510.50	1
	665000	3975	26.64	2.32	28.96	787.05	1



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NR BAND N78

Part27Q_n78 (SCS 30kHz)_PC3							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-Pi/2 BPSK	633332	3499.98	22.95	1.4	24.35	272.27	1
20M-QPSK	633332	3499.98	22.98	1.4	24.38	274.16	1
20M- 16QAM	633332	3499.98	21.97	1.4	23.37	217.27	1
20M- 64QAM	633332	3499.98	20.52	1.4	21.92	155.60	1
20M- 256QAM	633332	3499.98	18.99	1.4	20.39	109.40	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	630500	3457.5	22.54	1.4	23.94	247.74	1
	633332	3499.98	22.97	1.4	24.37	273.53	1
	636166	3542.49	23.28	1.4	24.68	293.76	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	630334	3455.01	22.57	1.4	23.97	249.46	1
	633332	3499.98	22.97	1.4	24.37	273.53	1
	636332	3544.98	23.32	1.4	24.72	296.48	1



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Part27Q_n78 (SCS 30kHz)_PC2							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-Pi/2 BPSK	633332	3499.98	24.96	1.4	26.36	432.51	1
20M-QPSK	633332	3499.98	25.02	1.4	26.42	438.53	1
20M- 16QAM	633332	3499.98	24.12	1.4	25.52	356.45	1
20M- 64QAM	633332	3499.98	22.52	1.4	23.92	246.60	1
20M- 256QAM	633332	3499.98	20.96	1.4	22.36	172.19	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	630500	3457.5	24.68	1.4	26.08	405.51	1
	633332	3499.98	24.91	1.4	26.31	427.56	1
	636166	3542.49	25.21	1.4	26.61	458.14	1
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	630334	3455.01	24.67	1.4	26.07	404.58	1
	633332	3499.98	24.95	1.4	26.35	431.52	1
	636332	3544.98	25.23	1.4	26.63	460.26	1

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



3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

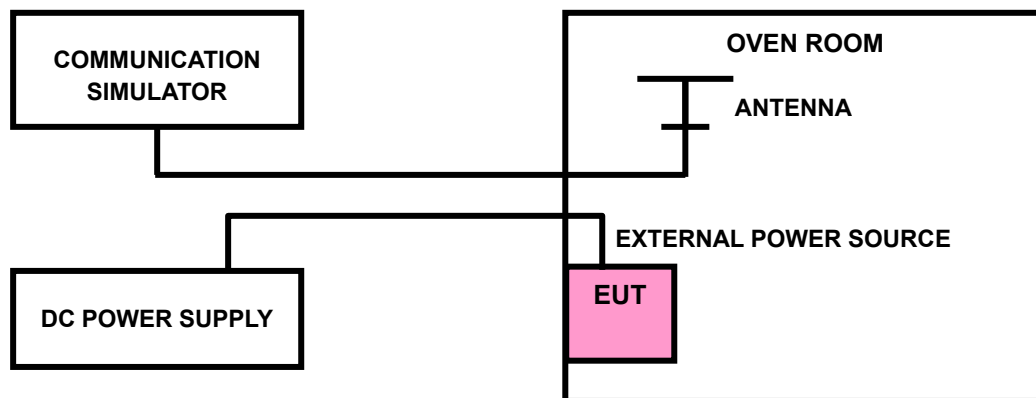
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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

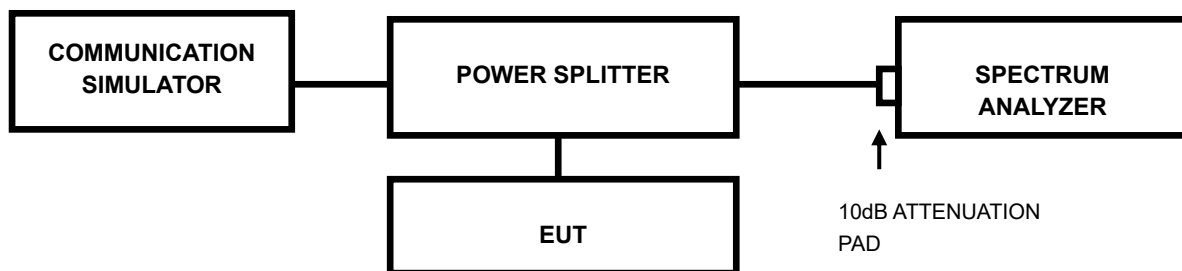


3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

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

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

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

3.3.4 TEST RESULTS

Please Refer to Appendix Of this test report.

3.4 BAND EDGE MEASUREMENT

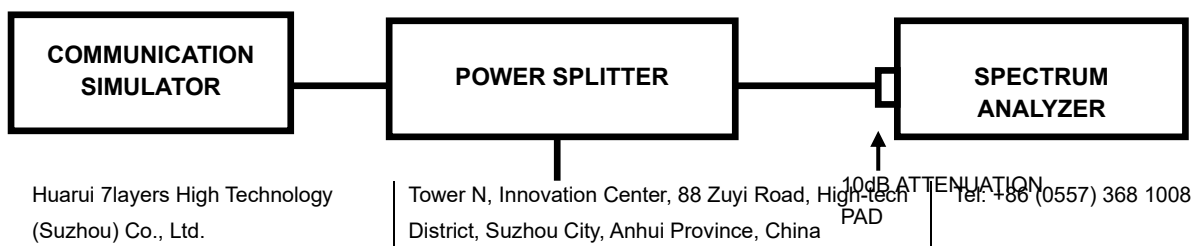
3.4.1 LIMITS OF BAND EDGE MEASUREMENT

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.

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 lresolution 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





Test Report No.: PSU-QBJ2512030110RF07

EUT



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 .

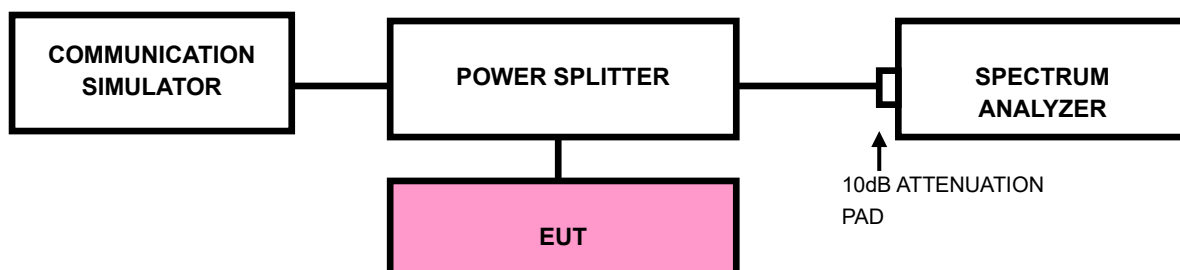
For LTE Band38/41

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.

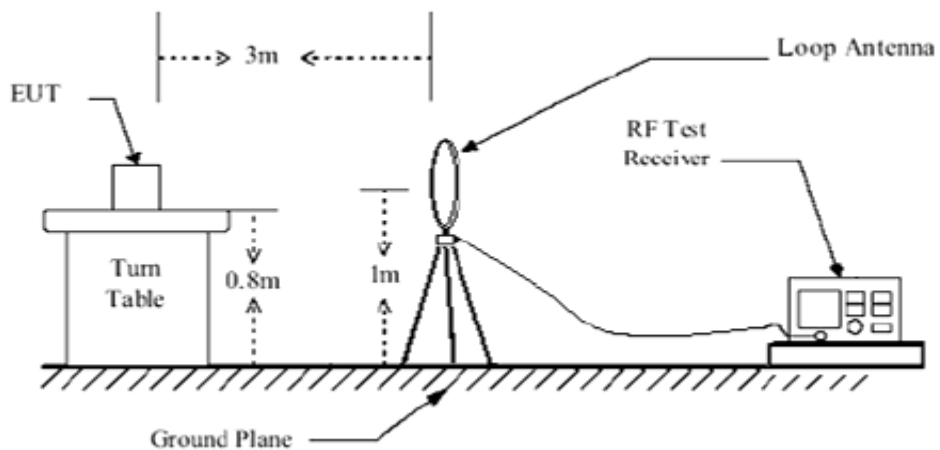
3.6.3 DEVIATION FROM TEST STANDARD

No deviation

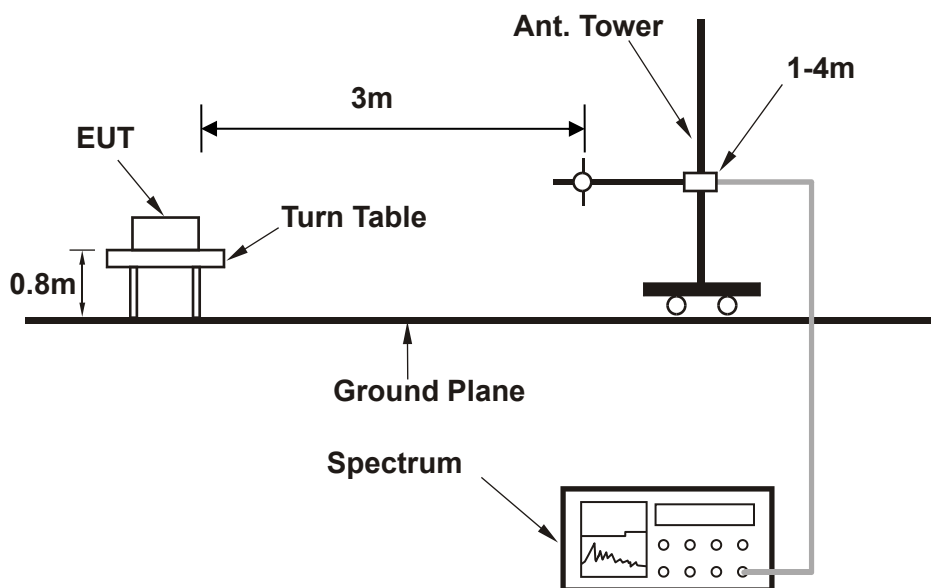


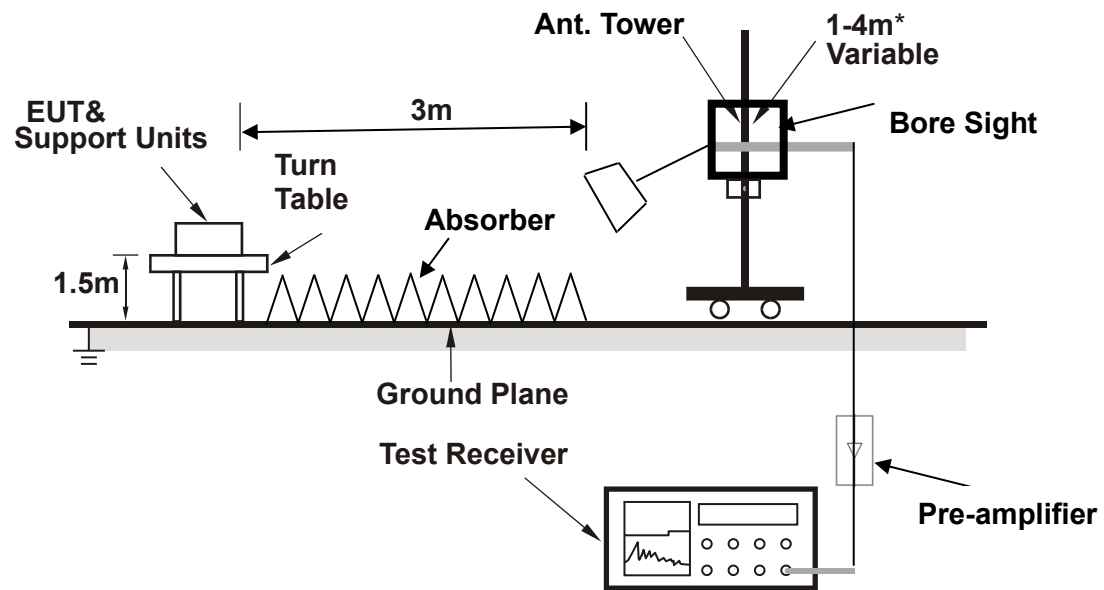
3.6.4 TEST SETUP

< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >





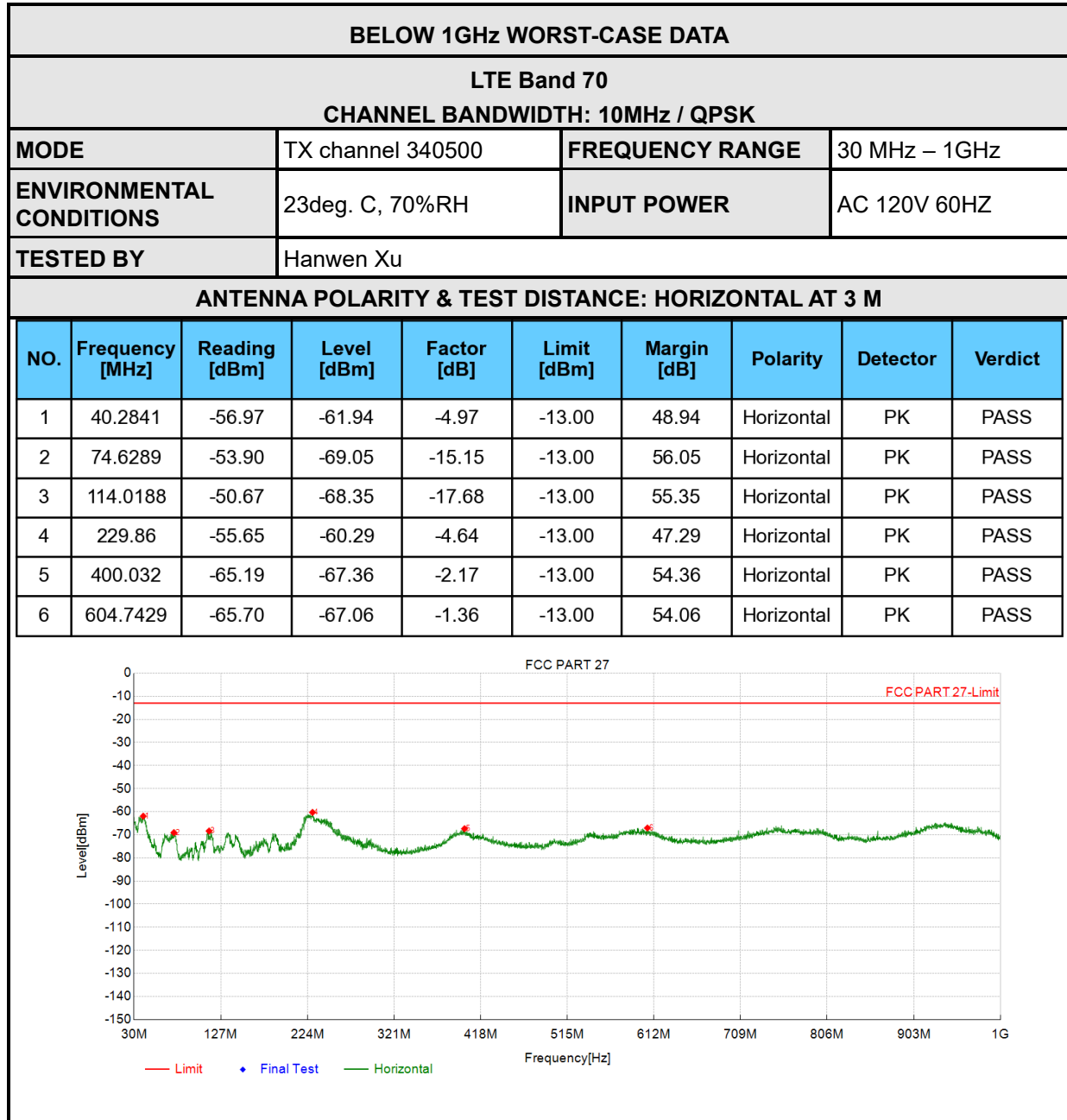
Note: Above 1G is a directional antenna depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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.

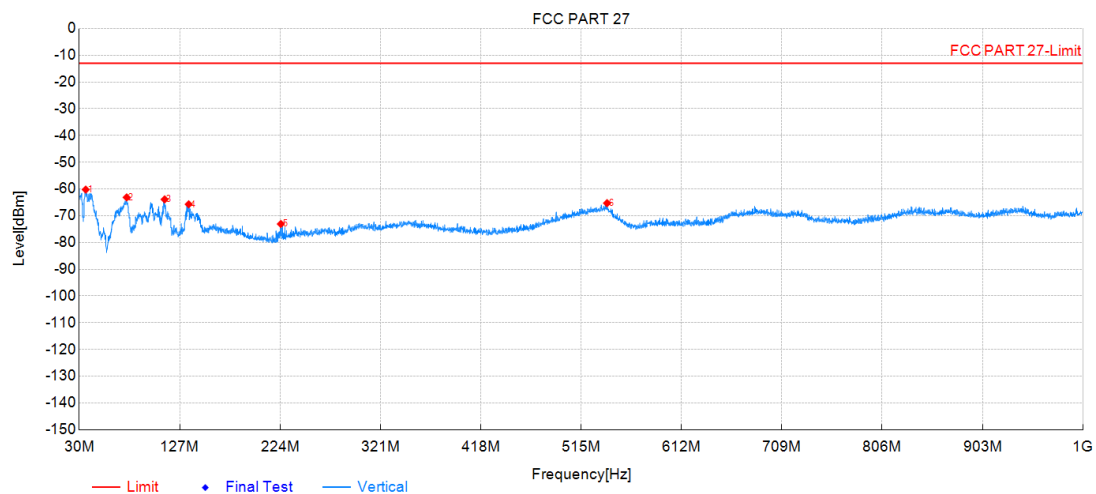




MODE	TX channel 340500	FREQUENCY RANGE	30 MHz – 1GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	36.2092	-46.59	-60.23	-13.64	-13.00	47.23	Vertical	PK	PASS
2	75.7932	-46.25	-63.14	-16.89	-13.00	50.14	Vertical	PK	PASS
3	112.4665	-52.68	-63.89	-11.21	-13.00	50.89	Vertical	PK	PASS
4	135.7512	-56.66	-65.72	-9.06	-13.00	52.72	Vertical	PK	PASS
5	224.815	-59.30	-73.07	-13.77	-13.00	60.07	Vertical	PK	PASS
6	540.128	-65.64	-65.29	0.35	-13.00	52.29	Vertical	PK	PASS





ABOVE 1GHz

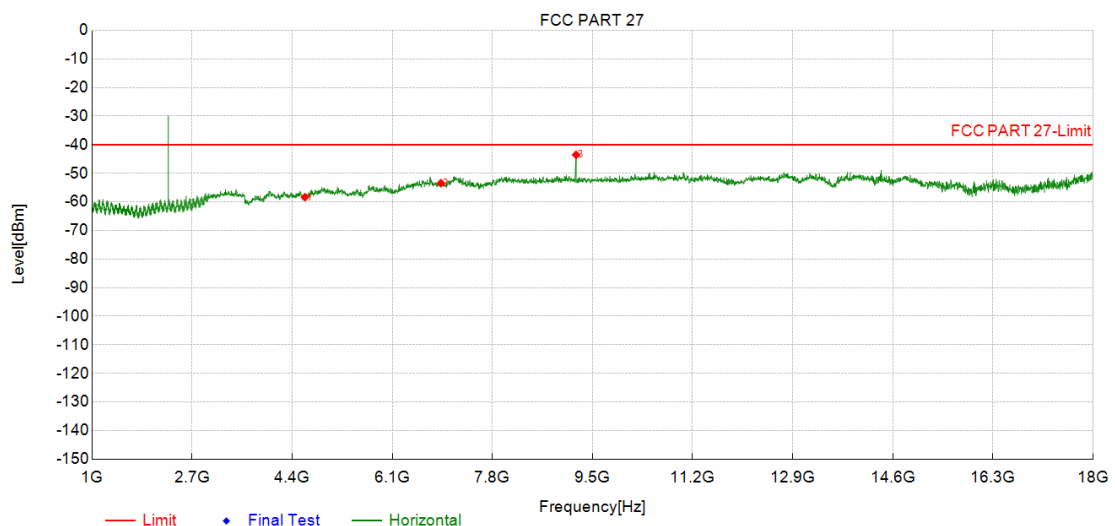
Note: For higher frequency, the emission is too low to be detected.

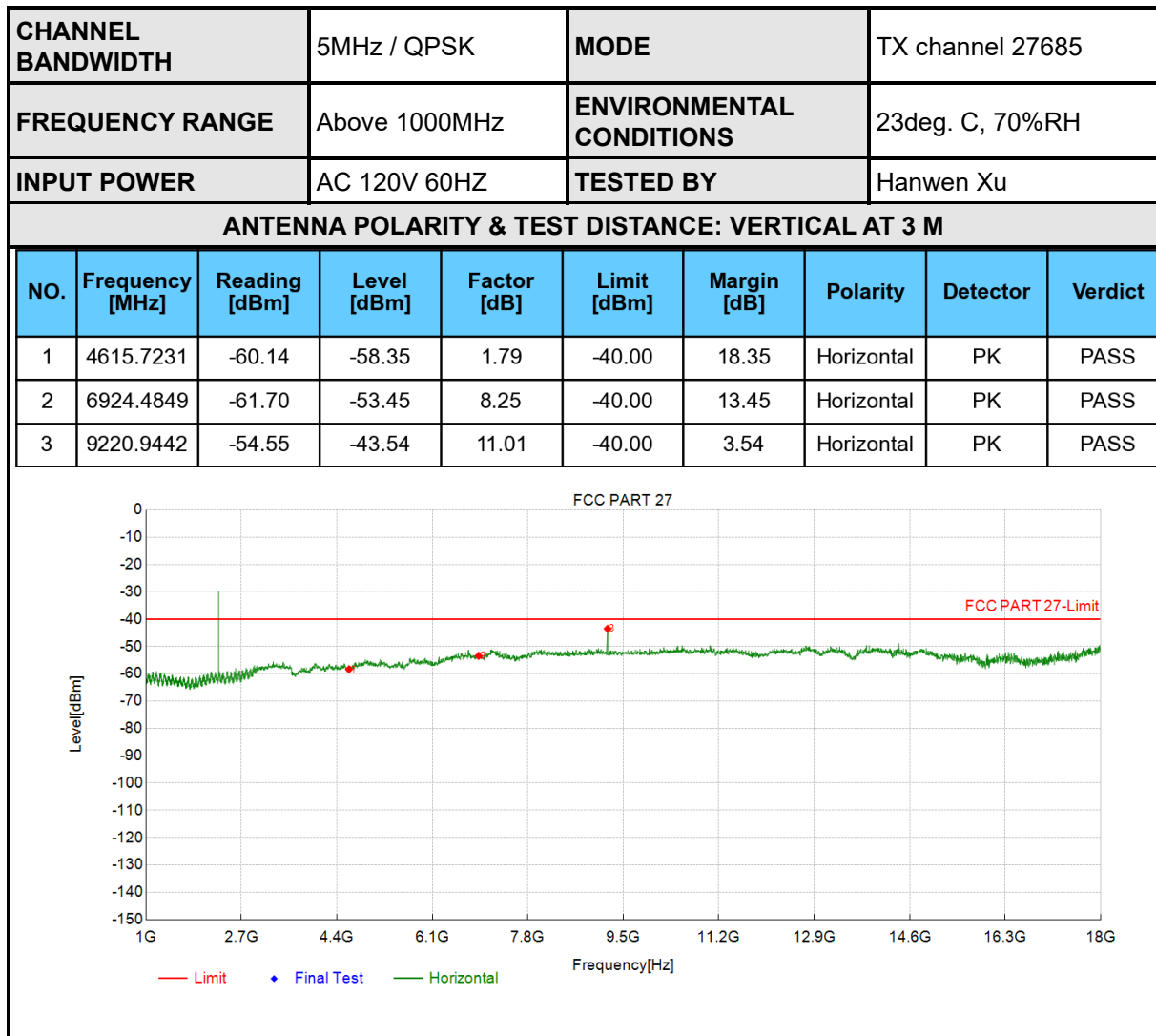
LTE BAND 30

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 27685
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	4615.7231	-60.14	-58.35	1.79	-40.00	18.35	Horizontal	PK	PASS
2	6924.4849	-61.70	-53.45	8.25	-40.00	13.45	Horizontal	PK	PASS
3	9220.9442	-54.55	-43.54	11.01	-40.00	3.54	Horizontal	PK	PASS





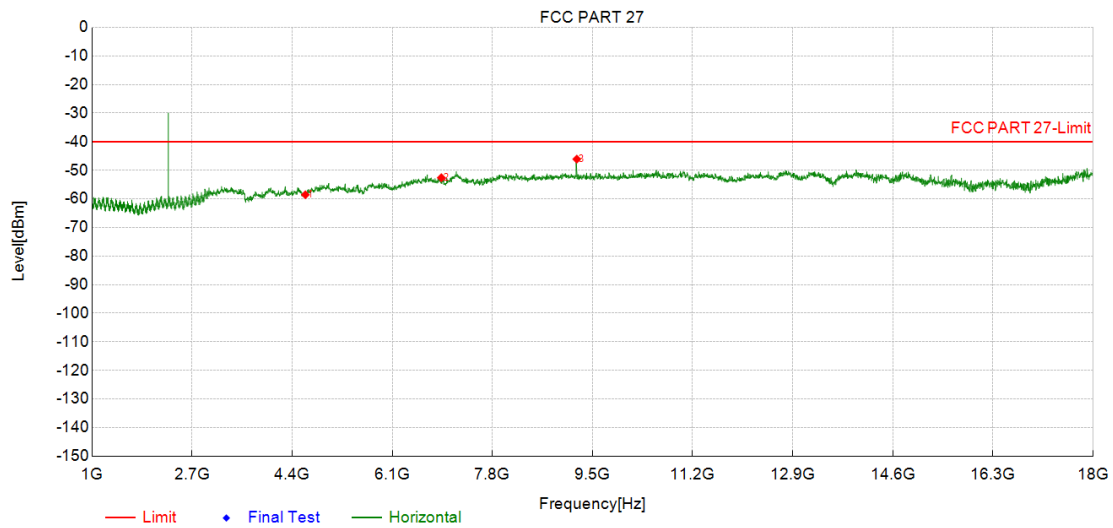


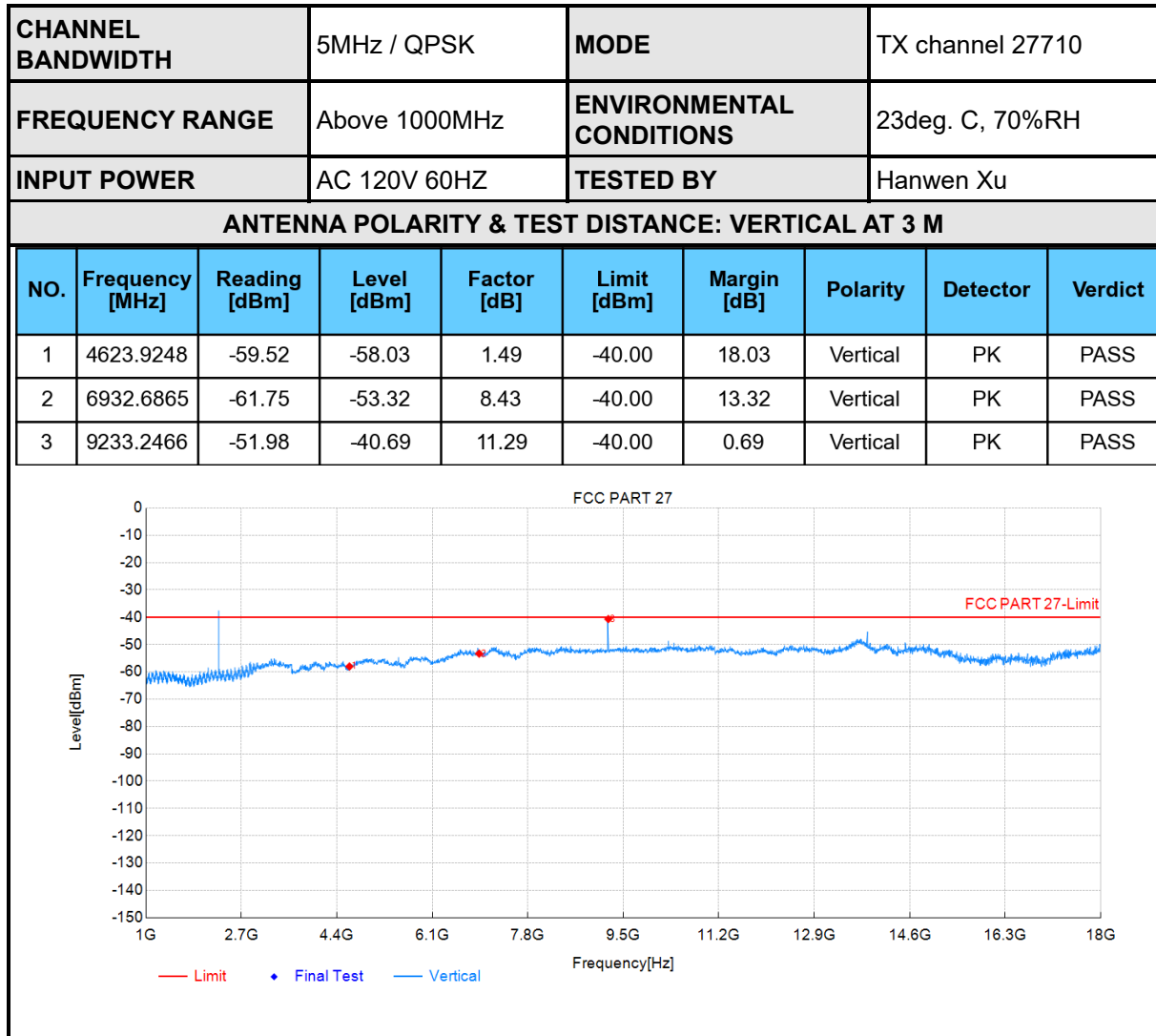
BUREAU VERITAS Test Report No.: PSU-QBJ2512030110RF07

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 27710
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	4623.9248	-60.37	-58.55	1.82	-40.00	18.55	Horizontal	PK	PASS
2	6932.6865	-60.83	-52.59	8.24	-40.00	12.59	Horizontal	PK	PASS
3	9233.2466	-57.17	-46.10	11.07	-40.00	6.10	Horizontal	PK	PASS





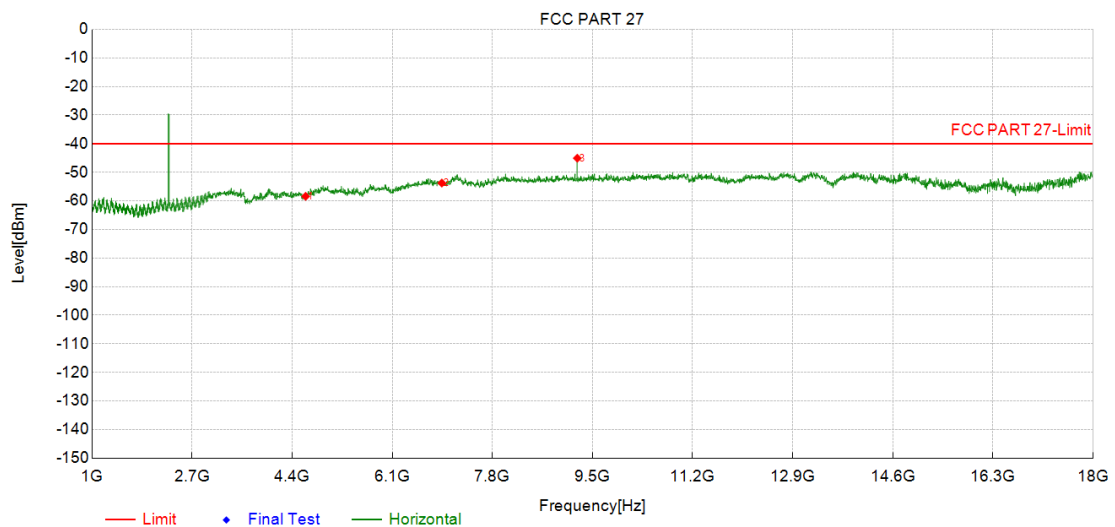


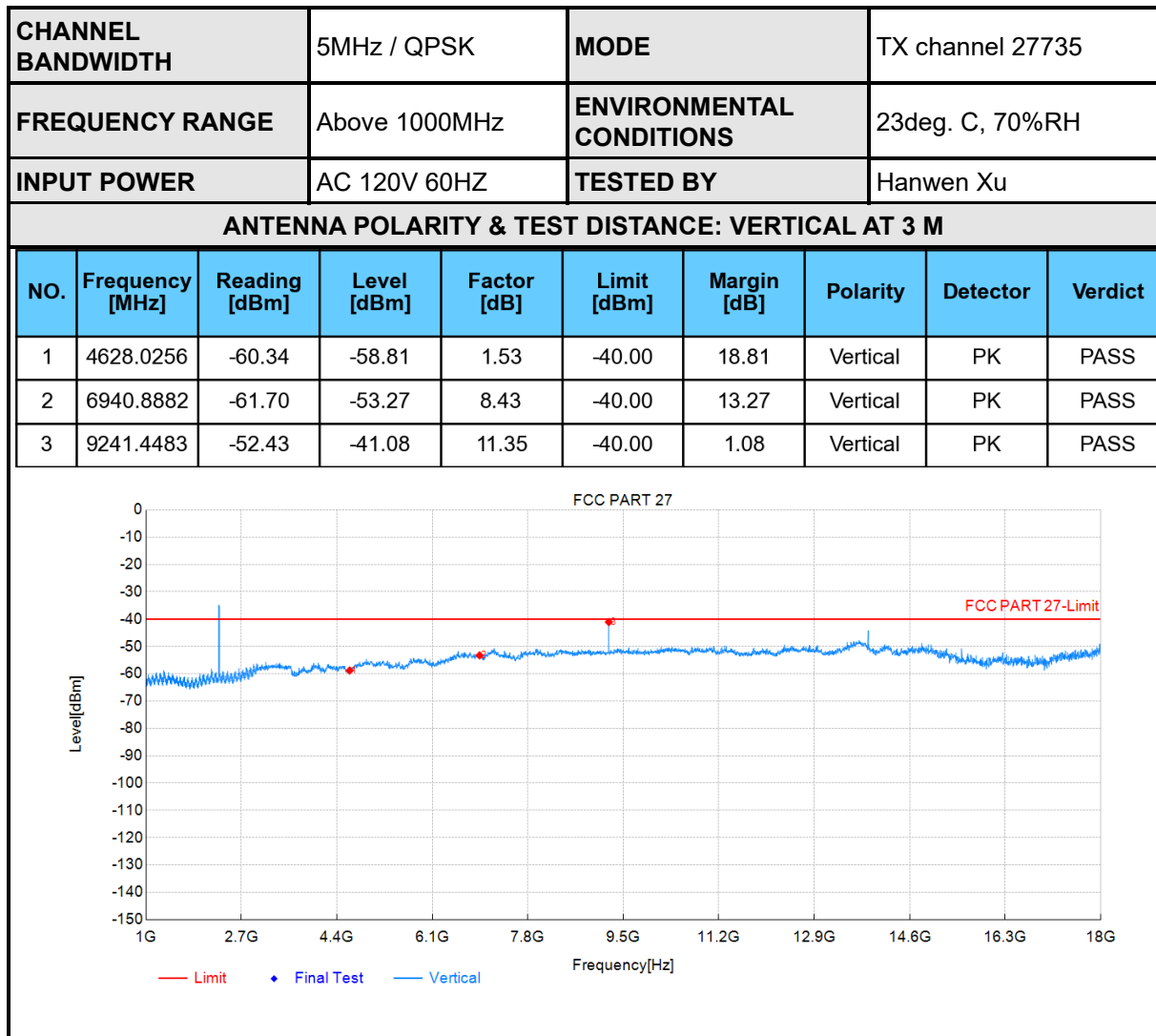
BUREAU VERITAS Test Report No.: PSU-QBJ2512030110RF07

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 27735
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	4628.0256	-60.26	-58.41	1.85	-40.00	18.41	Horizontal	PK	PASS
2	6940.8882	-61.99	-53.75	8.24	-40.00	13.75	Horizontal	PK	PASS
3	9241.4483	-56.18	-45.07	11.11	-40.00	5.07	Horizontal	PK	PASS





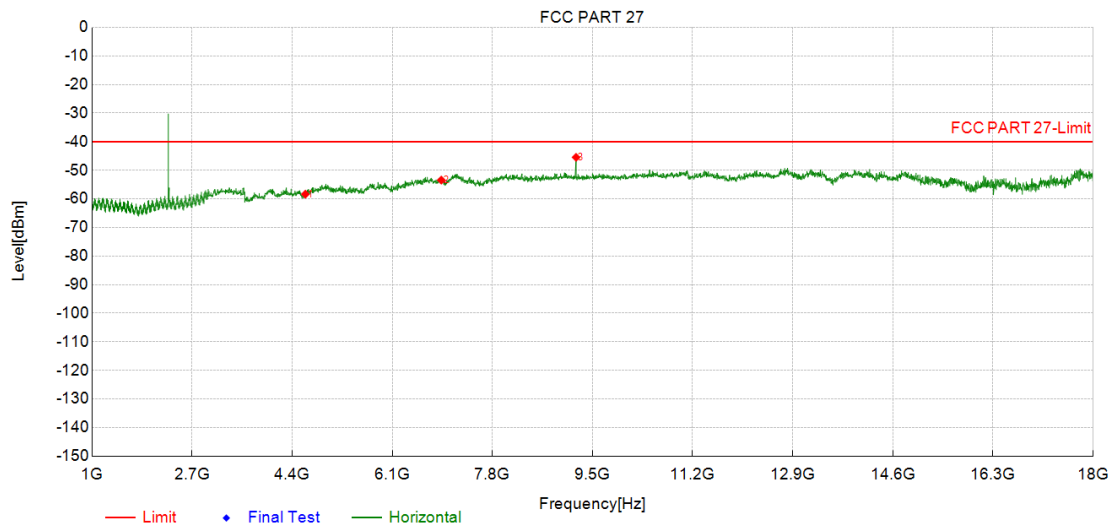


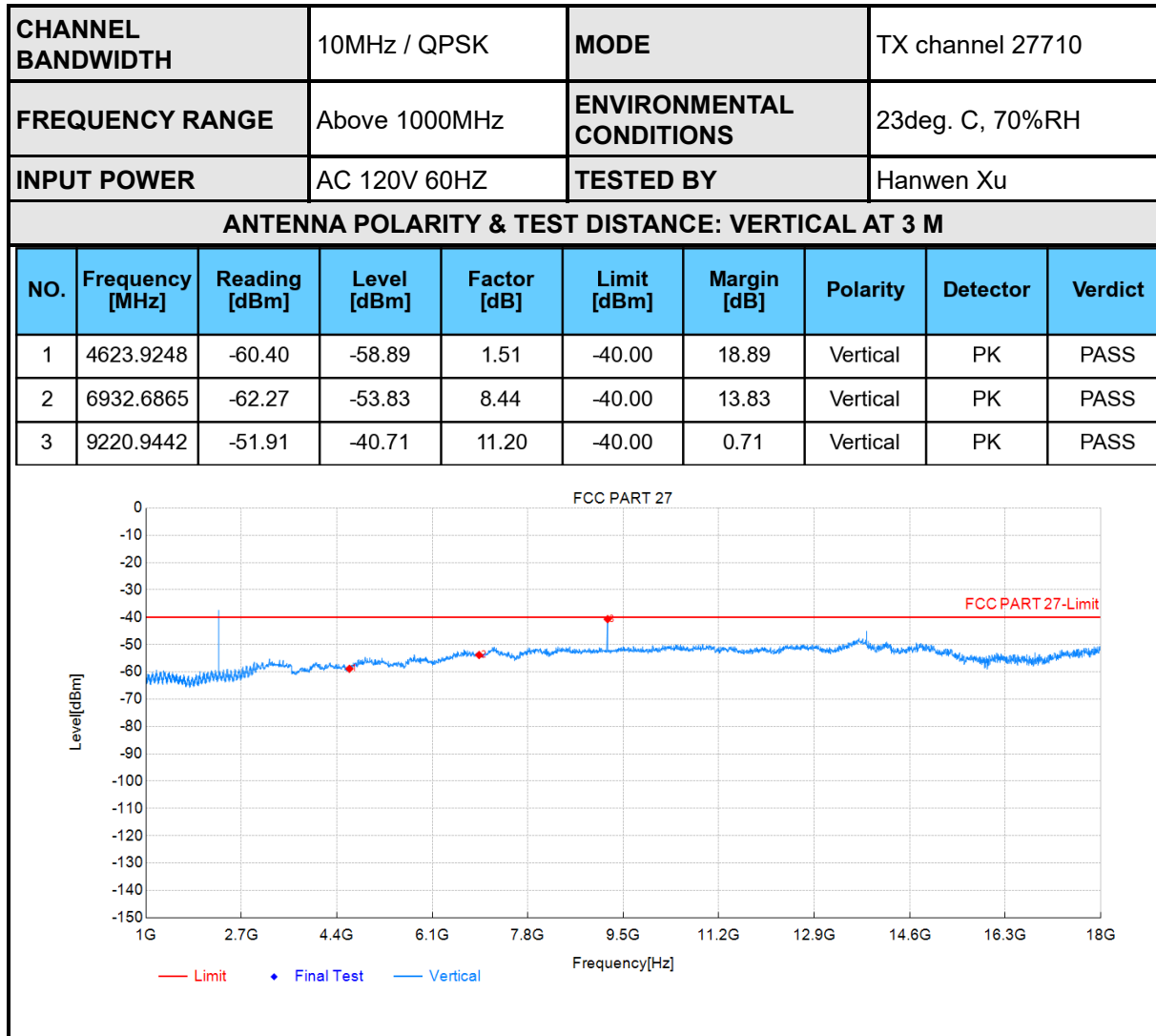
BUREAU VERITAS Test Report No.: PSU-QBJ2512030110RF07

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 27710
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	4623.9248	-60.17	-58.35	1.82	-40.00	18.35	Horizontal	PK	PASS
2	6932.6865	-61.66	-53.42	8.24	-40.00	13.42	Horizontal	PK	PASS
3	9220.9442	-56.46	-45.45	11.01	-40.00	5.45	Horizontal	PK	PASS







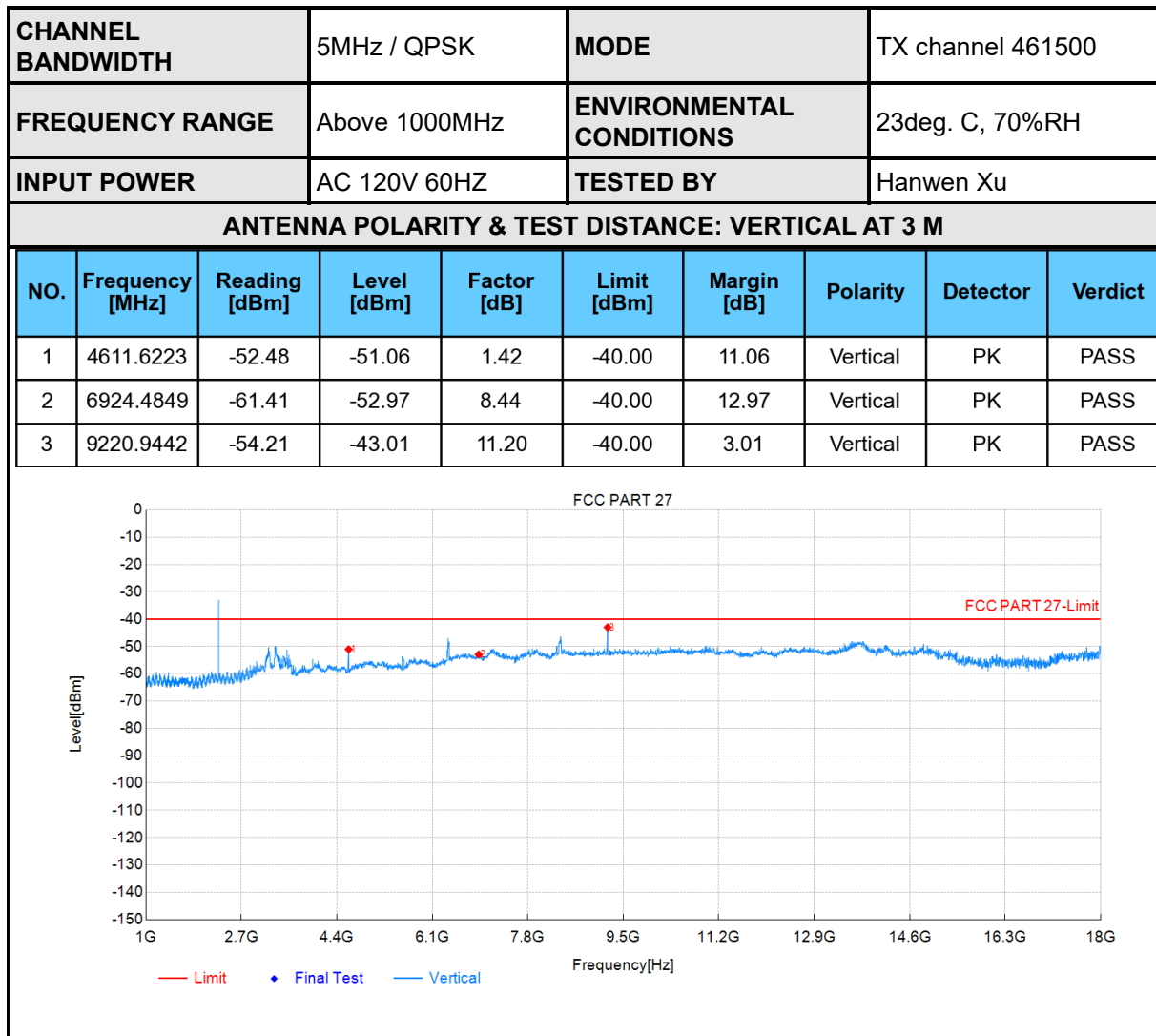
LTE BAND 30									
CHANNEL BANDWIDTH		5MHz / QPSK			MODE		TX channel 461500		
FREQUENCY RANGE		Above 1000MHz			ENVIRONMENTAL CONDITIONS		23deg. C, 70%RH		
INPUT POWER		AC 120V 60HZ			TESTED BY		Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M									
NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	4611.6223	-55.90	-54.13	1.77	-40.00	14.13	Horizontal	PK	PASS
2	6924.4849	-61.50	-53.26	8.24	-40.00	13.26	Horizontal	PK	PASS
3	9220.9442	-62.32	-51.31	11.01	-40.00	11.31	Horizontal	PK	PASS

FCC PART 27

Level[dBm]

Frequency[Hz]

— Limit • Final Test — Horizontal



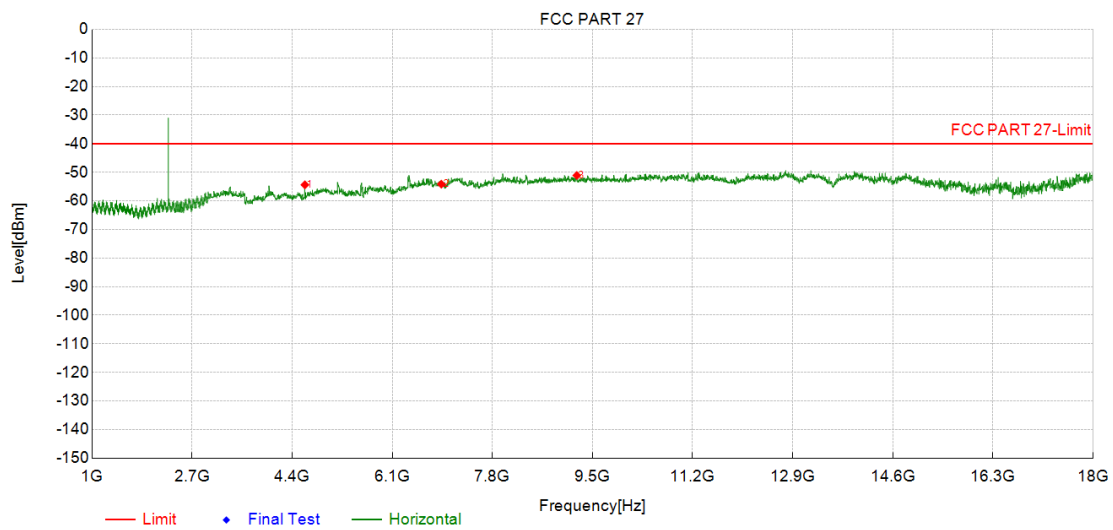


BUREAU VERITAS Test Report No.: PSU-QBJ2512030110RF07

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 462000
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	4615.7231	-56.17	-54.38	1.79	-40.00	14.38	Horizontal	PK	PASS
2	6932.6865	-62.39	-54.15	8.24	-40.00	14.15	Horizontal	PK	PASS
3	9233.2466	-62.17	-51.10	11.07	-40.00	11.10	Horizontal	PK	PASS





CHANNEL BANDWIDTH		5MHz / QPSK		MODE		TX channel 462000			
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									
NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	4615.7231	-51.96	-50.52	1.44	-40.00	10.52	Vertical	PK	PASS
2	6932.6865	-62.81	-54.37	8.44	-40.00	14.37	Vertical	PK	PASS
3	9233.2466	-55.01	-43.72	11.29	-40.00	3.72	Vertical	PK	PASS

FCC PART 27

Level[dBm]

Frequency[Hz]

— Limit • Final Test — Vertical

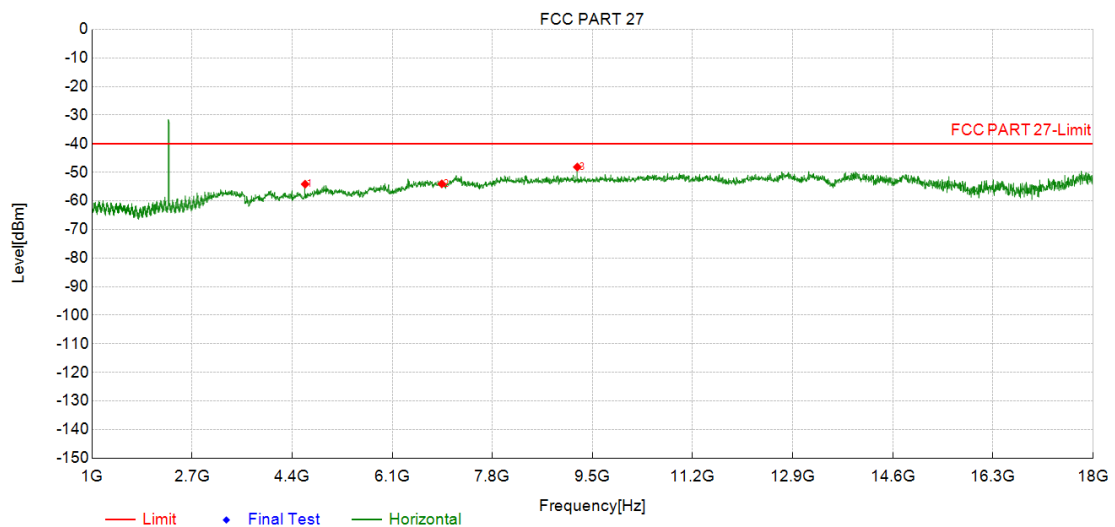


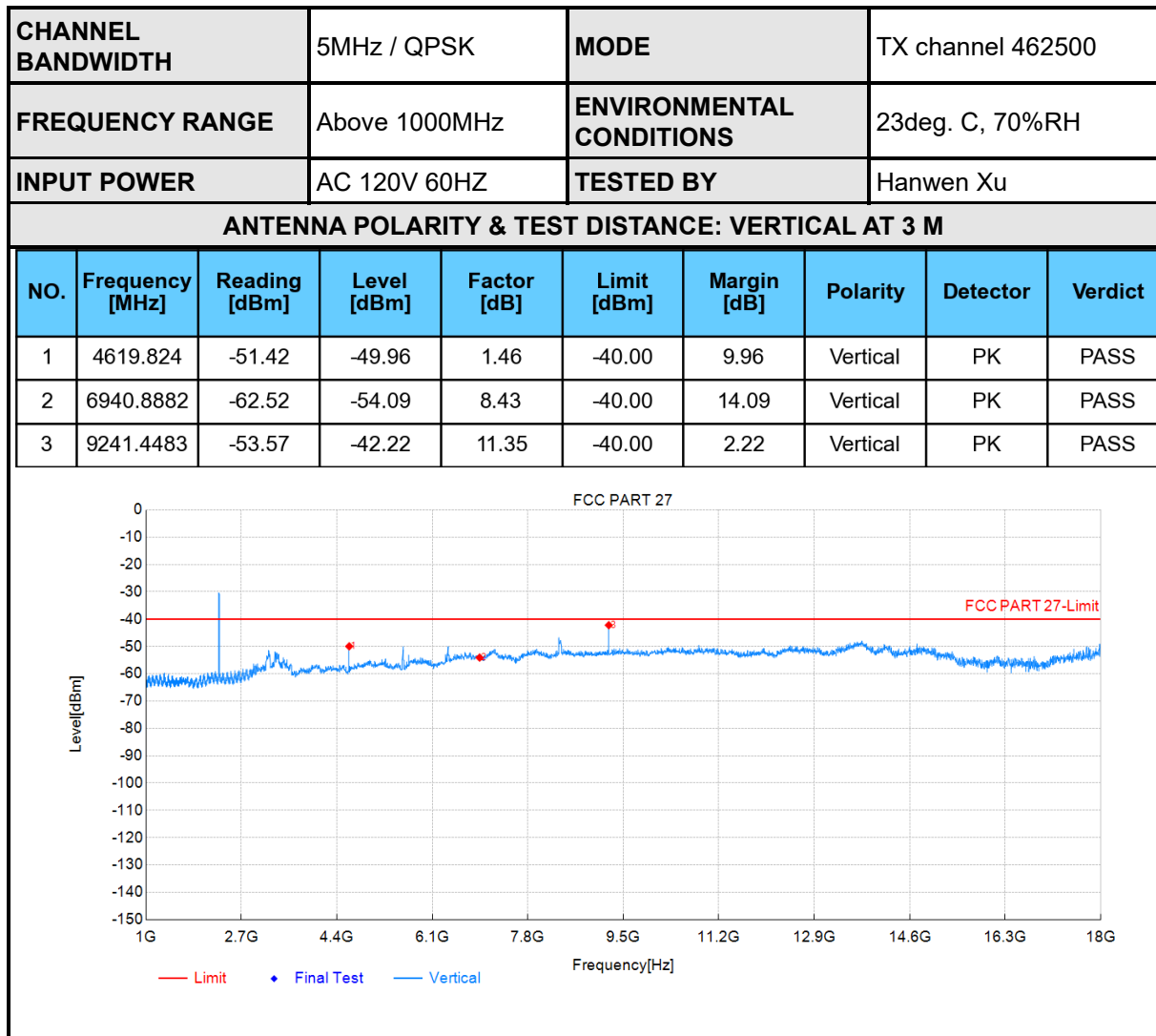
BUREAU VERITAS Test Report No.: PSU-QBJ2512030110RF07

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 462500
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	4619.824	-55.95	-54.15	1.80	-40.00	14.15	Horizontal	PK	PASS
2	6940.8882	-62.28	-54.04	8.24	-40.00	14.04	Horizontal	PK	PASS
3	9241.4483	-59.27	-48.16	11.11	-40.00	8.16	Horizontal	PK	PASS





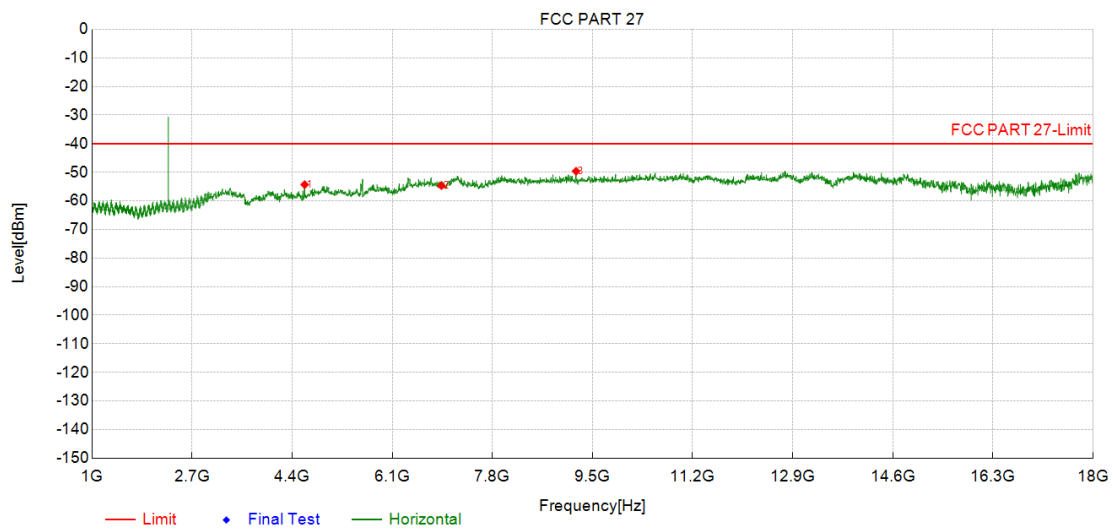


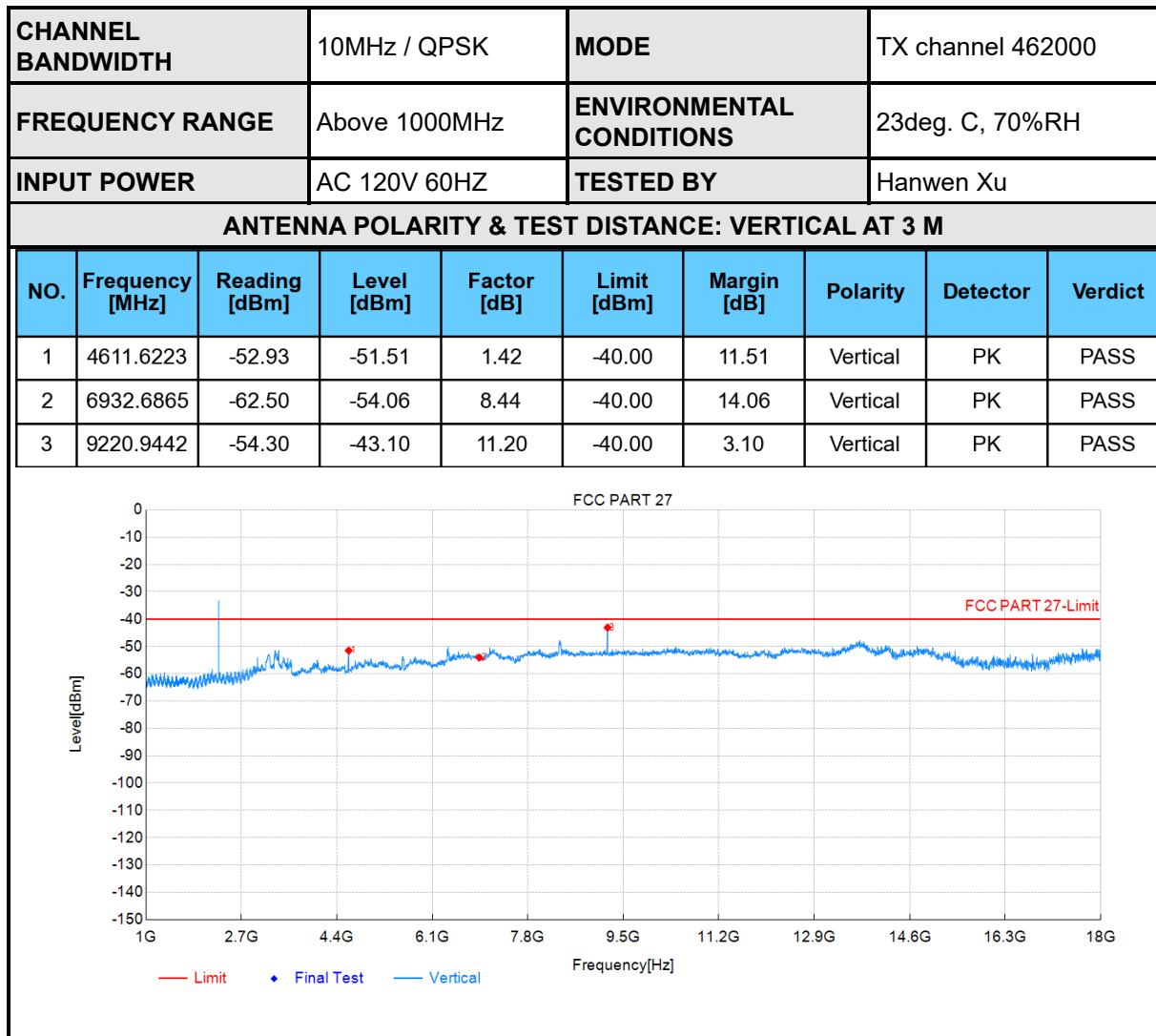
BUREAU VERITAS Test Report No.: PSU-QBJ2512030110RF07

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 462000
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	4611.6223	-56.09	-54.32	1.77	-40.00	14.32	Horizontal	PK	PASS
2	6932.6865	-62.90	-54.66	8.24	-40.00	14.66	Horizontal	PK	PASS
3	9220.9442	-60.64	-49.63	11.01	-40.00	9.63	Horizontal	PK	PASS



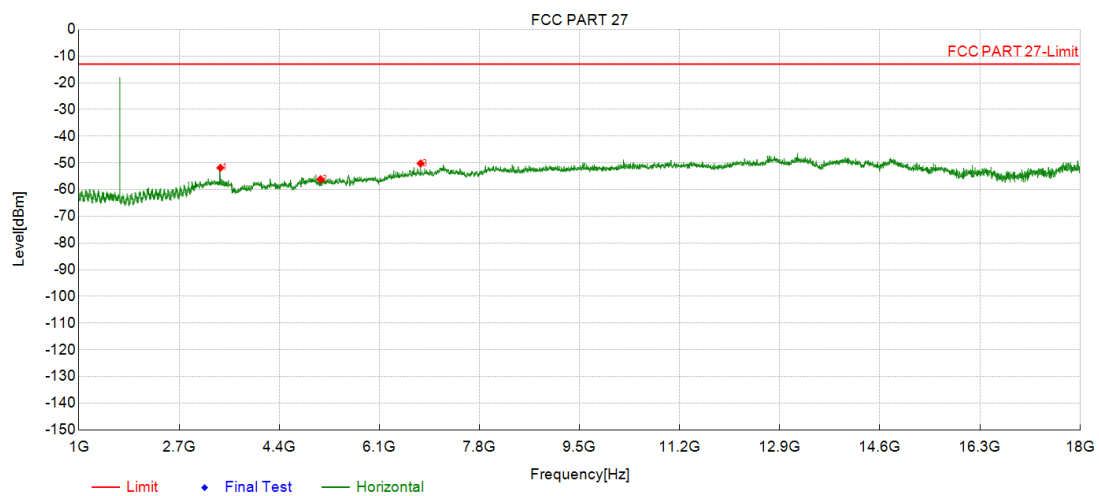




NR BAND N70			
CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 340500
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	3402.0804	-49.69	-51.83	-2.14	-13.00	38.83	Horizontal	PK	PASS
2	5100.4201	-59.82	-56.11	3.71	-13.00	43.11	Horizontal	PK	PASS
3	6801.7604	-58.49	-50.21	8.28	-13.00	37.21	Horizontal	PK	PASS

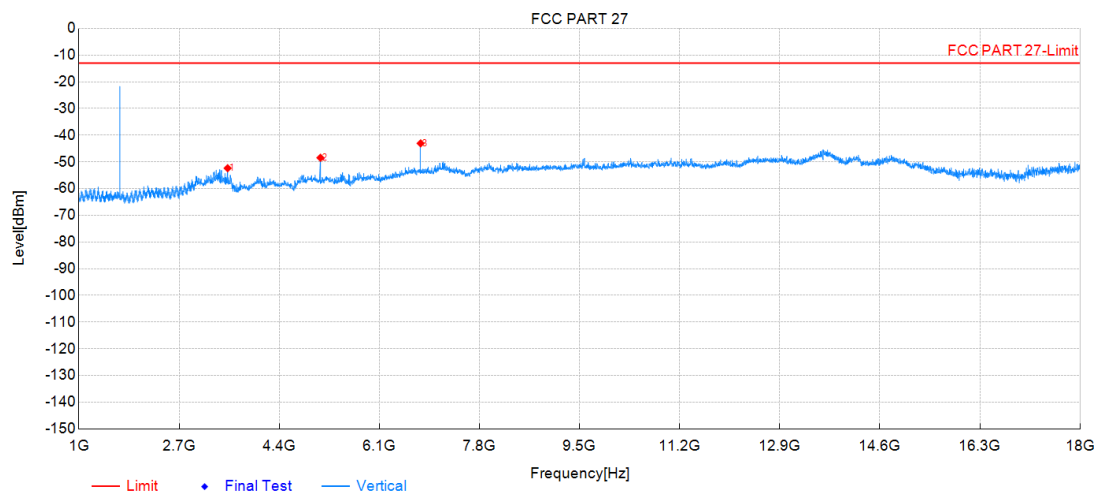




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 340500
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	3525.105	-50.15	-52.35	-2.20	-13.00	39.35	Vertical	PK	PASS
2	5100.4201	-52.39	-48.43	3.96	-13.00	35.43	Vertical	PK	PASS
3	6801.7604	-51.49	-43.05	8.44	-13.00	30.05	Vertical	PK	PASS





CHANNEL BANDWIDTH		10MHz / QPSK		MODE		TX channel 34000			
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									
NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	3390.078	-51.13	-53.28	-2.15	-13.00	40.28	Horizontal	PK	PASS
2	5085.4171	-54.95	-51.21	3.74	-13.00	38.21	Horizontal	PK	PASS
3	6780.7562	-59.48	-51.21	8.27	-13.00	38.21	Horizontal	PK	PASS

FCC PART 27

Level[dBm]

Frequency[Hz]

— Limit ♦ Final Test — Horizontal

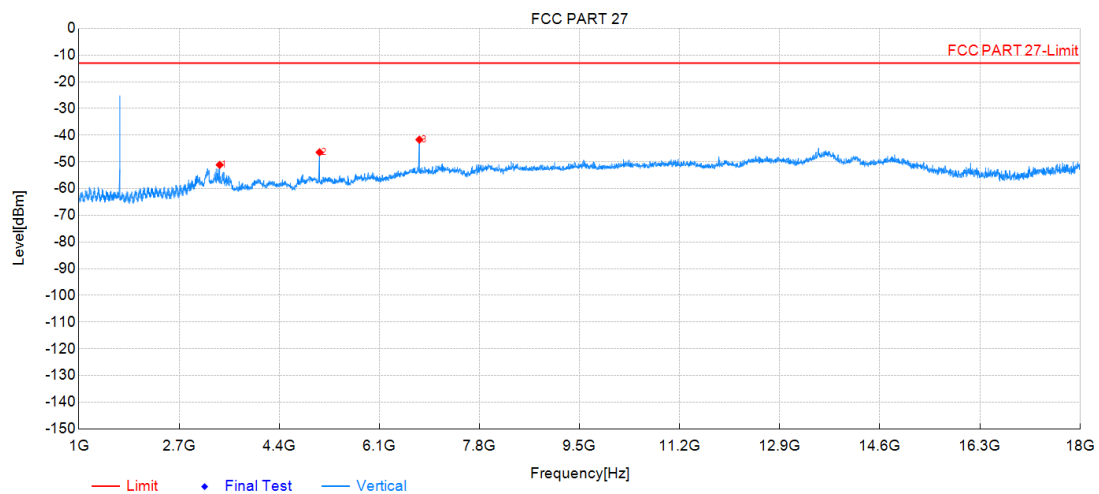
FCC PART 27-Limit



CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 34000
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	3390.078	-48.86	-51.11	-2.25	-13.00	38.11	Vertical	PK	PASS
2	5085.4171	-50.35	-46.39	3.96	-13.00	33.39	Vertical	PK	PASS
3	6780.7562	-50.12	-41.66	8.46	-13.00	28.66	Vertical	PK	PASS



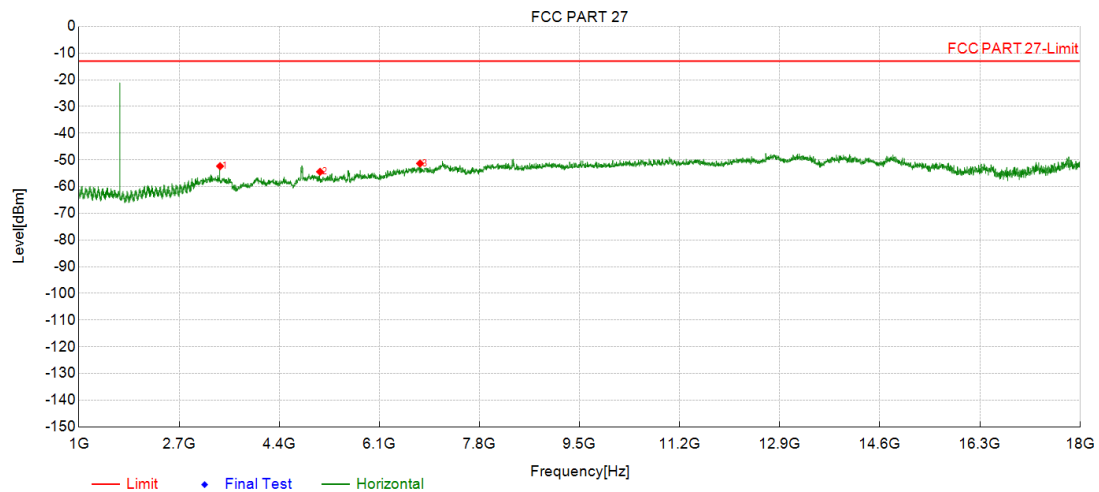


BUREAU VERITAS Test Report No.: PSU-QBJ2512030110RF07

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 340500
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	3396.0792	-50.19	-52.34	-2.15	-13.00	39.34	Horizontal	PK	PASS
2	5094.4189	-58.17	-54.45	3.72	-13.00	41.45	Horizontal	PK	PASS
3	6792.7586	-59.61	-51.34	8.27	-13.00	38.34	Horizontal	PK	PASS

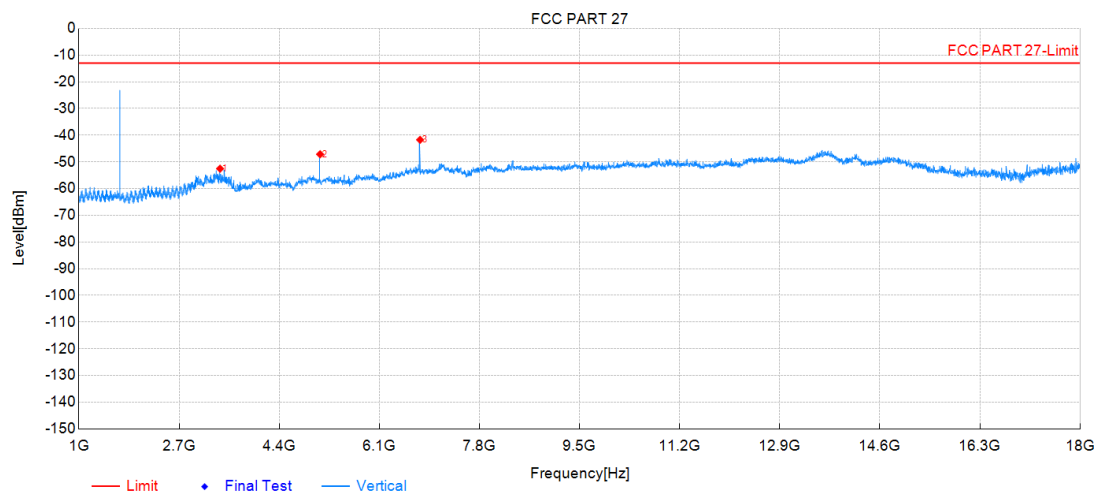




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 340500
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	3396.0792	-50.27	-52.53	-2.26	-13.00	39.53	Vertical	PK	PASS
2	5094.4189	-51.09	-47.13	3.96	-13.00	34.13	Vertical	PK	PASS
3	6792.7586	-50.15	-41.71	8.44	-13.00	28.71	Vertical	PK	PASS



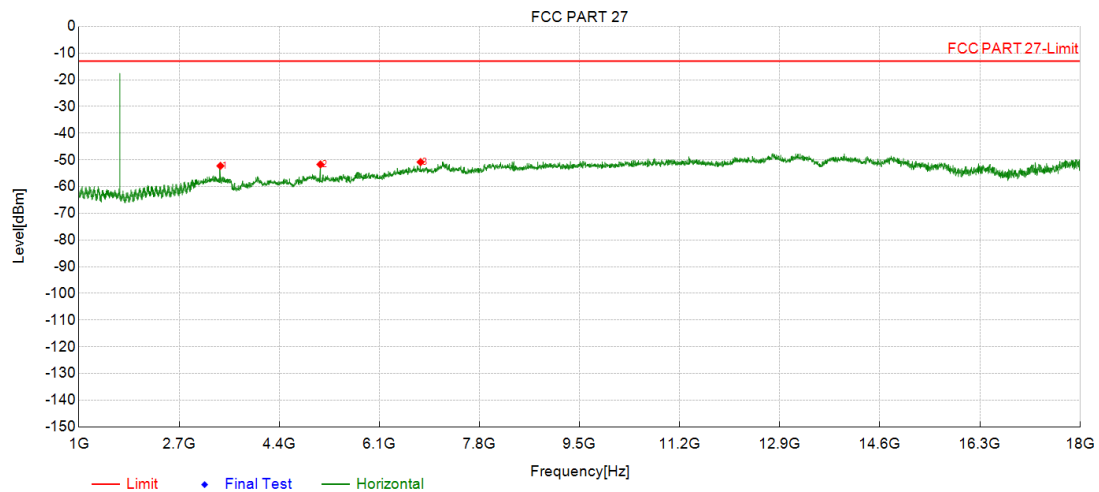


BUREAU VERITAS Test Report No.: PSU-QBJ2512030110RF07

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 341000
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	3402.0804	-50.10	-52.24	-2.14	-13.00	39.24	Horizontal	PK	PASS
2	5100.4201	-55.40	-51.69	3.71	-13.00	38.69	Horizontal	PK	PASS
3	6801.7604	-59.09	-50.81	8.28	-13.00	37.81	Horizontal	PK	PASS

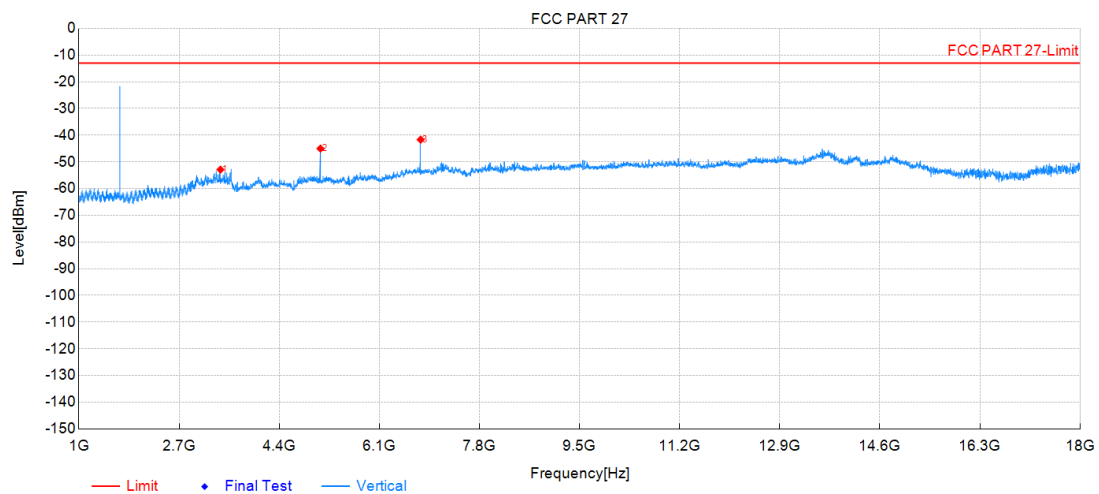




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 341000
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	3402.0804	-50.63	-52.88	-2.25	-13.00	39.88	Vertical	PK	PASS
2	5100.4201	-48.97	-45.01	3.96	-13.00	32.01	Vertical	PK	PASS
3	6801.7604	-50.09	-41.65	8.44	-13.00	28.65	Vertical	PK	PASS





CHANNEL BANDWIDTH		15MHz / QPSK		MODE		TX channel 340500			
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									
NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	3390.078	-50.27	-52.42	-2.15	-13.00	39.42	Horizontal	PK	PASS
2	5085.4171	-56.75	-53.01	3.74	-13.00	40.01	Horizontal	PK	PASS
3	6780.7562	-58.52	-50.25	8.27	-13.00	37.25	Horizontal	PK	PASS

FCC PART 27

Level[dBm]

Frequency[Hz]

— Limit ♦ Final Test — Horizontal

FCC PART 27-Limit



CHANNEL BANDWIDTH		15MHz / QPSK		MODE		TX channel 340500			
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									
NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	3390.078	-49.06	-51.31	-2.25	-13.00	38.31	Vertical	PK	PASS
2	5085.4171	-48.80	-44.84	3.96	-13.00	31.84	Vertical	PK	PASS
3	6780.7562	-49.73	-41.27	8.46	-13.00	28.27	Vertical	PK	PASS

FCC PART 27

Level[dBm]

Frequency[Hz]

— Limit • Final Test — Vertical

FCC PART 27-Limit

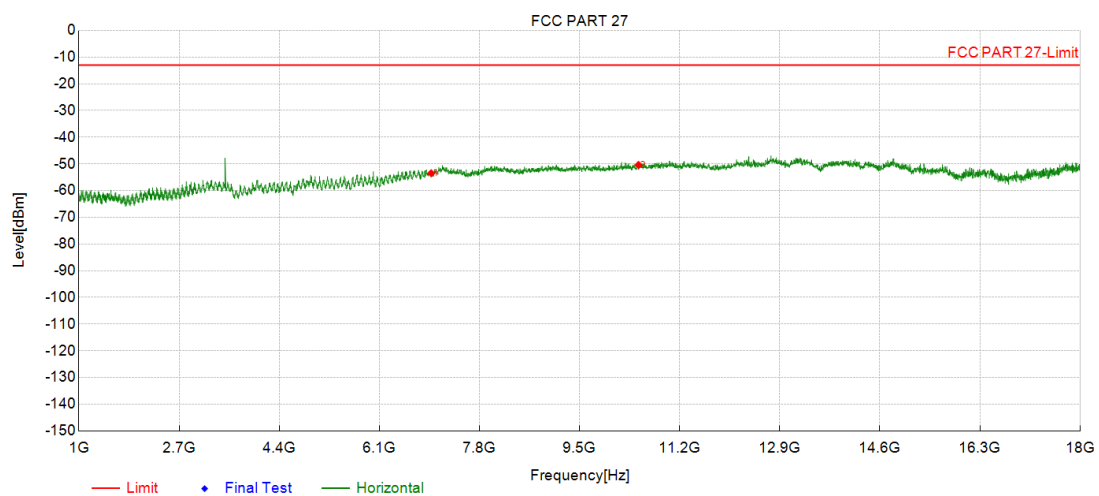


NR Band N77 HPUE

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 656000
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	6981.7964	-61.71	-53.49	8.22	-13.00	40.49	Horizontal	PK	PASS
2	10501.5003	-63.90	-50.37	13.53	-13.00	37.37	Horizontal	PK	PASS

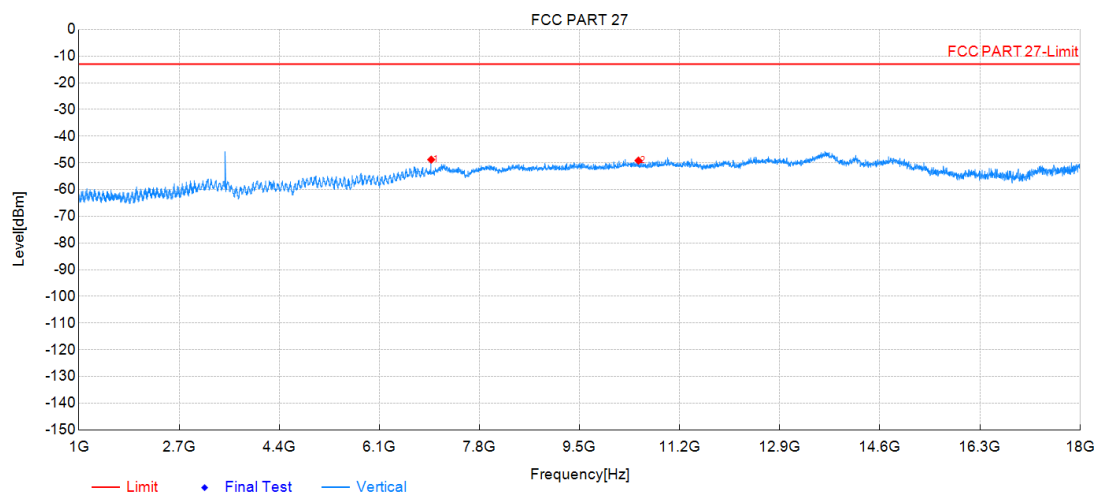




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 656000
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	6981.7964	-57.20	-48.77	8.43	-13.00	35.77	Vertical	PK	PASS
2	10501.5003	-62.92	-49.13	13.79	-13.00	36.13	Vertical	PK	PASS

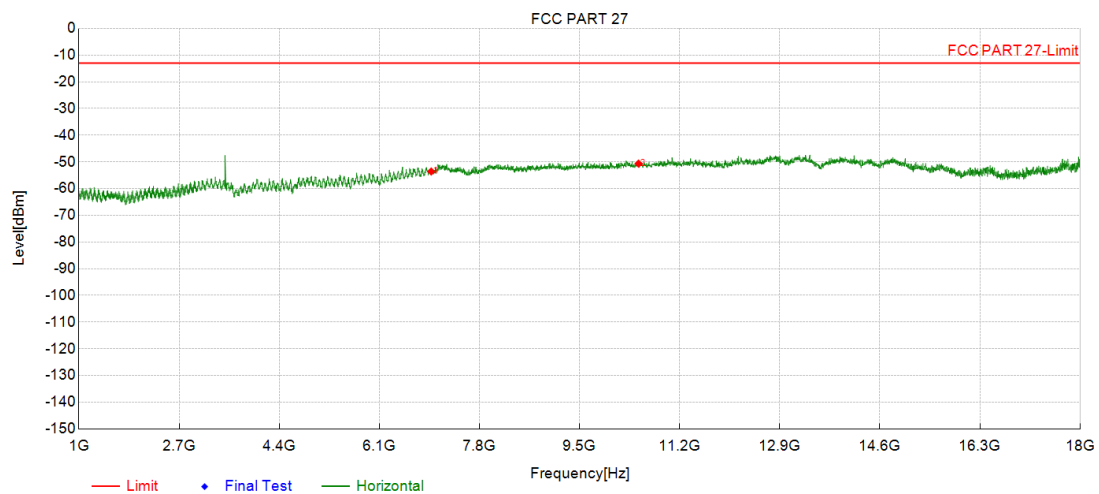




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 656000
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	6981.7964	-61.80	-53.58	8.22	-13.00	40.58	Horizontal	PK	PASS
2	10501.5003	-64.17	-50.62	13.55	-13.00	37.62	Horizontal	PK	PASS

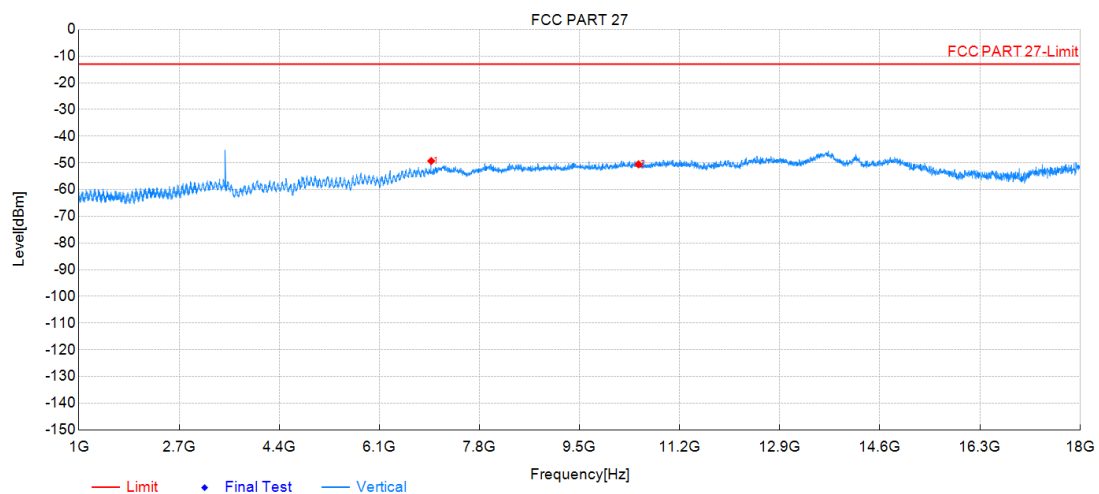




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 656000
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	6981.7964	-57.71	-49.28	8.43	-13.00	36.28	Vertical	PK	PASS
2	10501.5003	-64.31	-50.52	13.79	-13.00	37.52	Vertical	PK	PASS

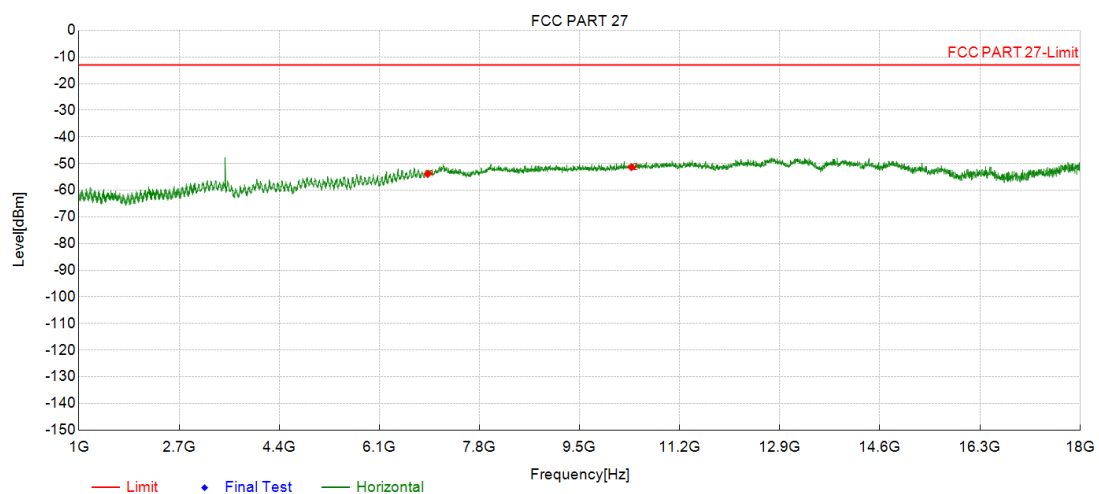


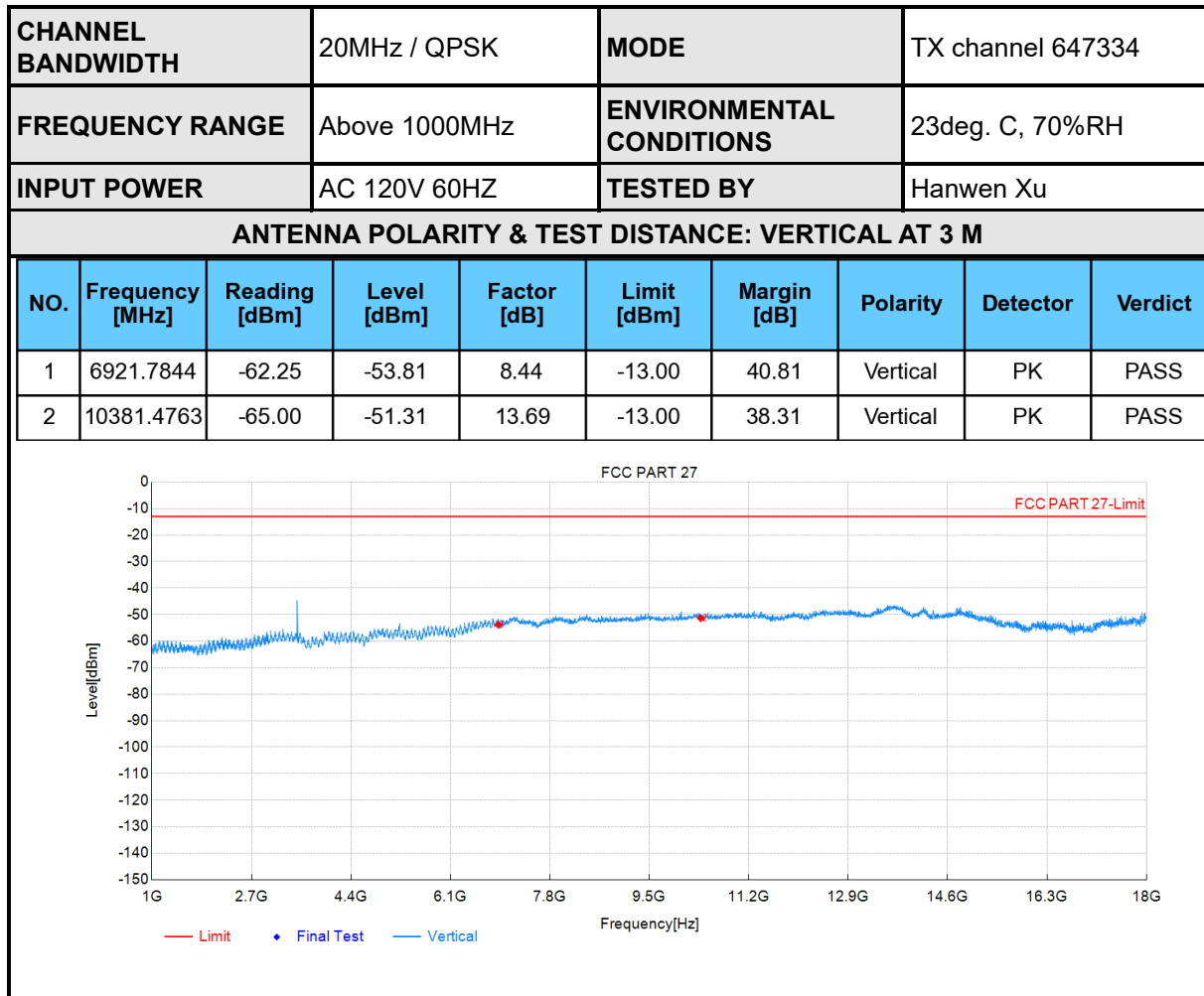


CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 647334
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	6921.7844	-62.12	-53.88	8.24	-13.00	40.88	Horizontal	PK	PASS
2	10381.4763	-64.42	-51.35	13.07	-13.00	38.35	Horizontal	PK	PASS



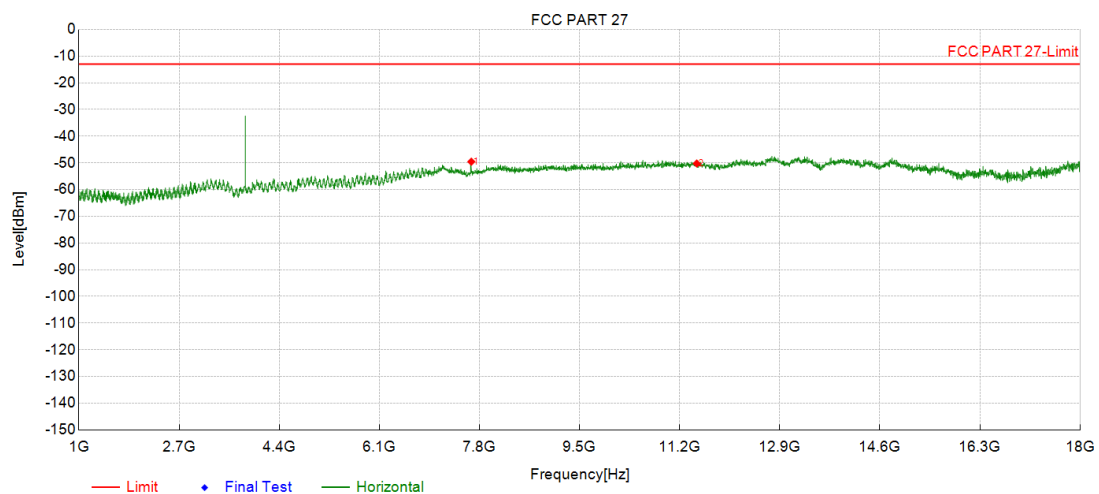




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 656000
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	7662.9326	-58.34	-49.54	8.80	-13.00	36.54	Horizontal	PK	PASS
2	11491.6983	-65.48	-50.22	15.26	-13.00	37.22	Horizontal	PK	PASS

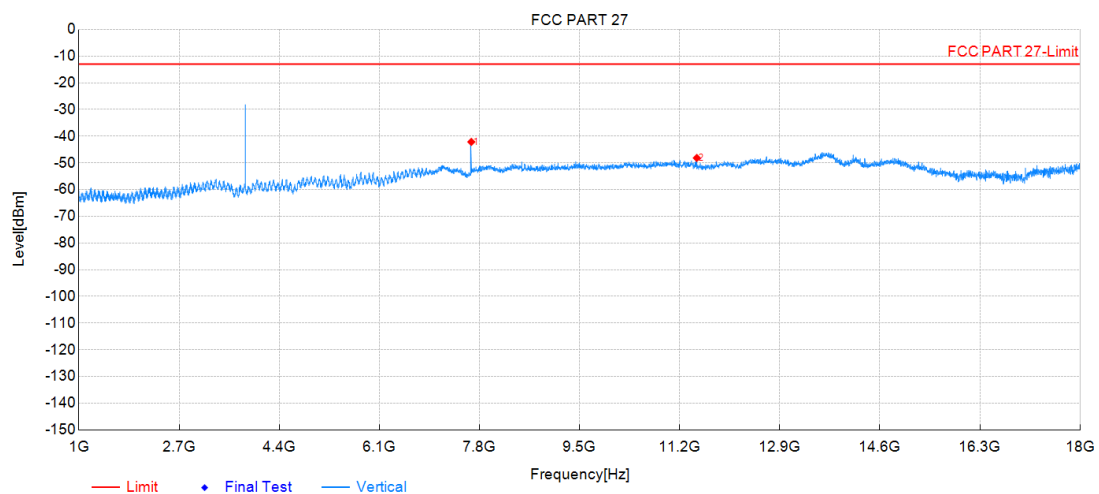




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 656000
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	7662.9326	-51.15	-42.13	9.02	-13.00	29.13	Vertical	PK	PASS
2	11491.6983	-63.00	-48.13	14.87	-13.00	35.13	Vertical	PK	PASS

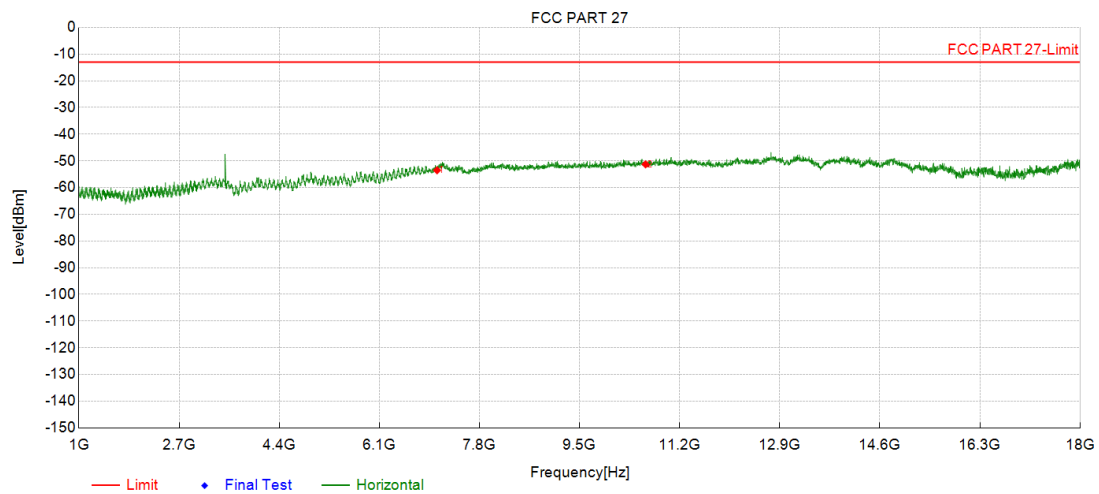


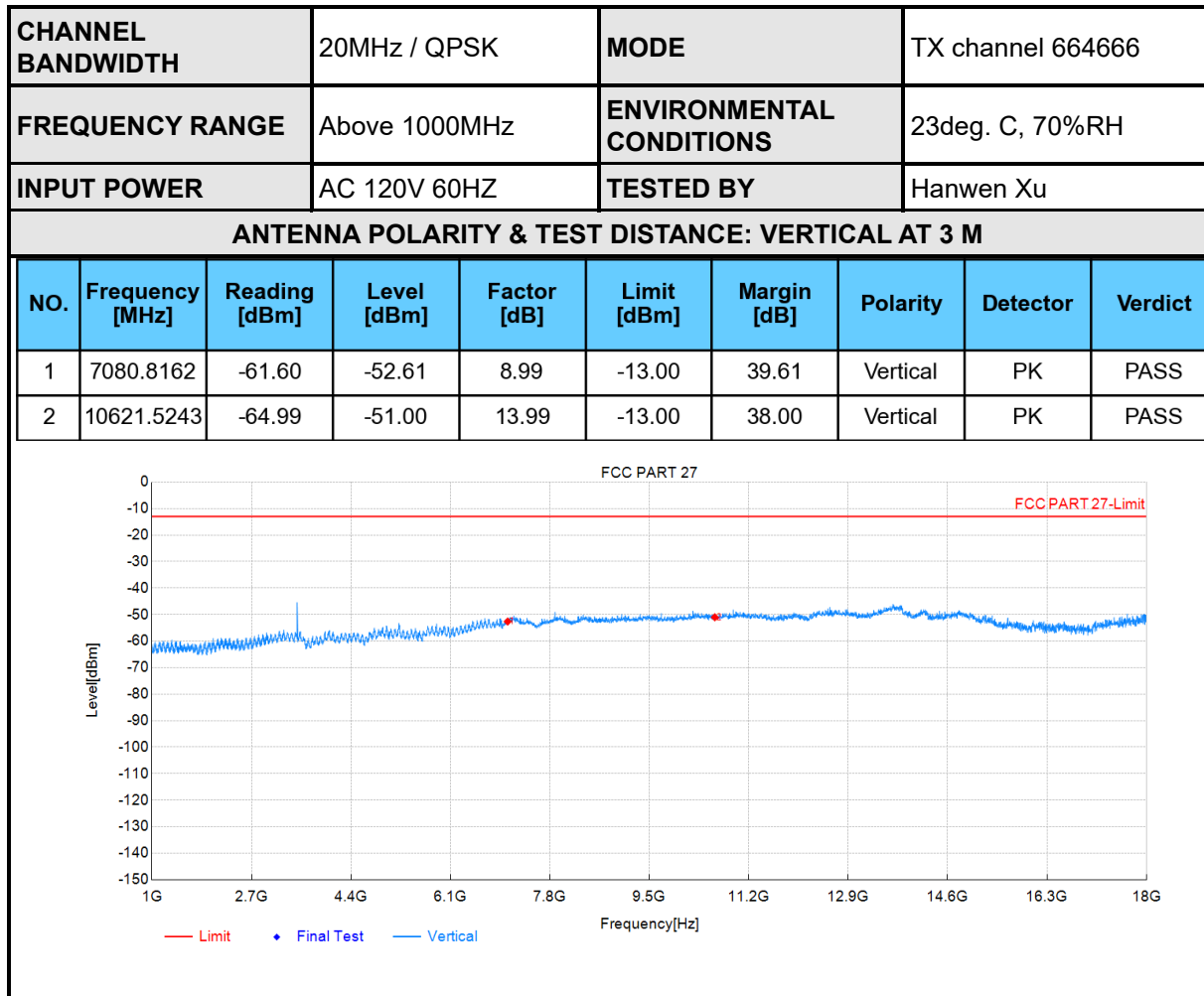


CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 664666
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	7080.8162	-62.30	-53.50	8.80	-13.00	40.50	Horizontal	PK	PASS
2	10621.5243	-65.36	-51.27	14.09	-13.00	38.27	Horizontal	PK	PASS





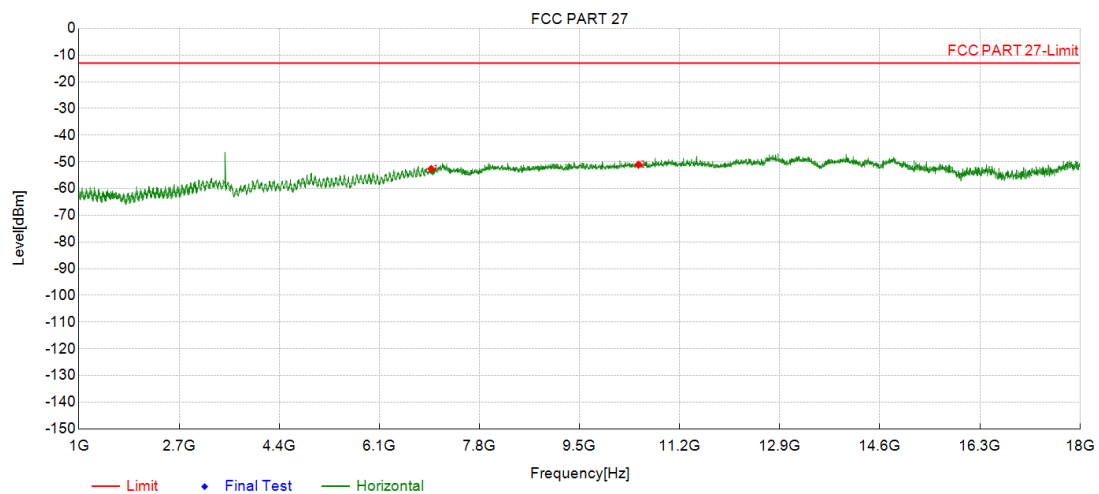


NR Band N78 HPUE

CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 633332
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

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	6981.7964	-60.84	-52.62	8.22	-13.00	39.62	Horizontal	PK	PASS
2	10501.5003	-64.57	-51.02	13.55	-13.00	38.02	Horizontal	PK	PASS

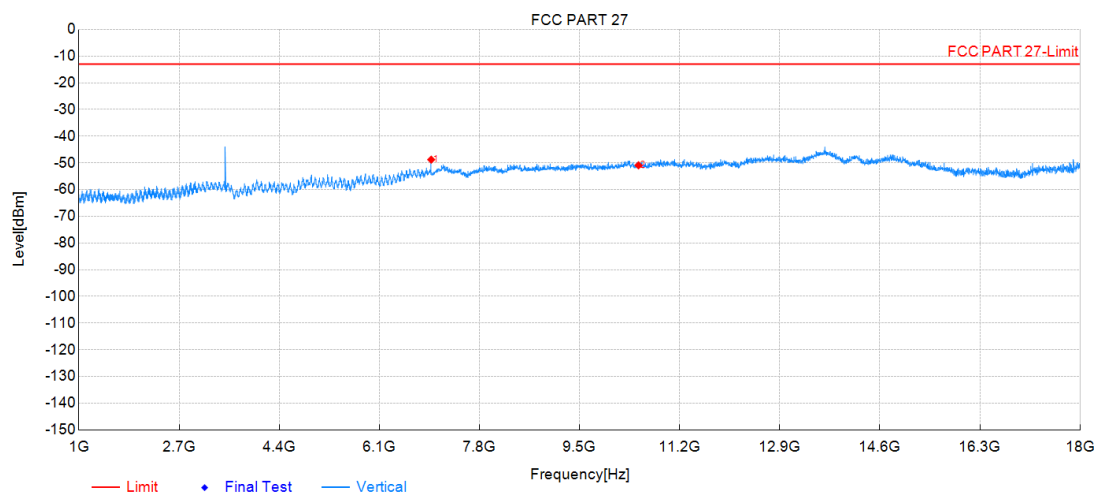




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 633332
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	6981.7964	-57.19	-48.76	8.43	-13.00	35.76	Vertical	PK	PASS
2	10501.5003	-64.69	-50.90	13.79	-13.00	37.90	Vertical	PK	PASS

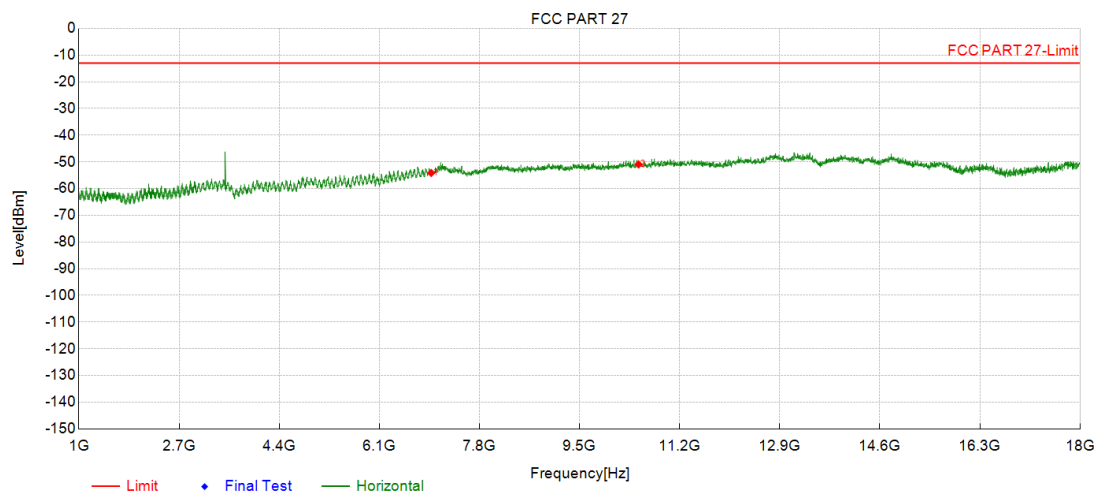




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 633332
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	6981.7964	-62.36	-54.14	8.22	-13.00	41.14	Horizontal	PK	PASS
2	10501.5003	-64.45	-50.90	13.55	-13.00	37.90	Horizontal	PK	PASS

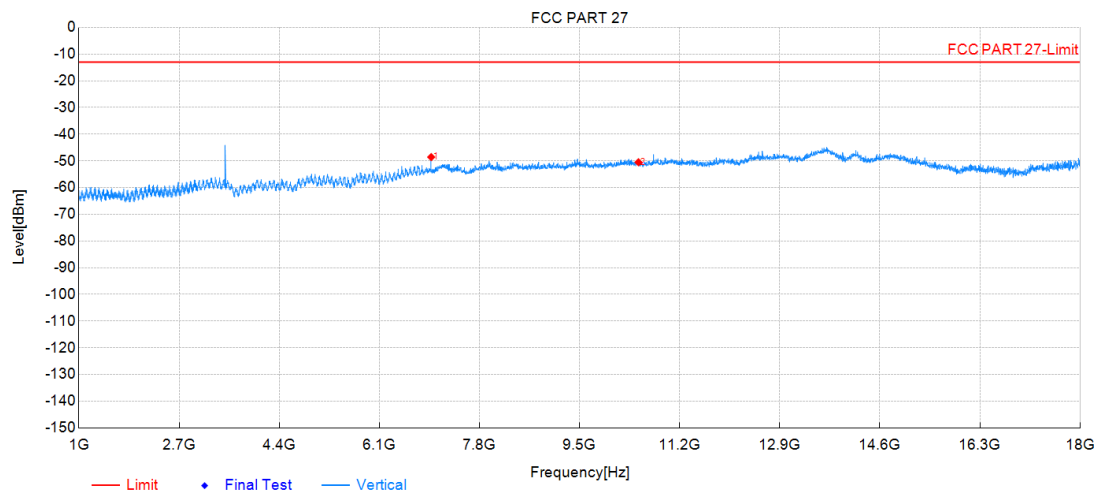




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 633332
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	6981.7964	-56.99	-48.56	8.43	-13.00	35.56	Vertical	PK	PASS
2	10501.5003	-64.28	-50.50	13.78	-13.00	37.50	Vertical	PK	PASS

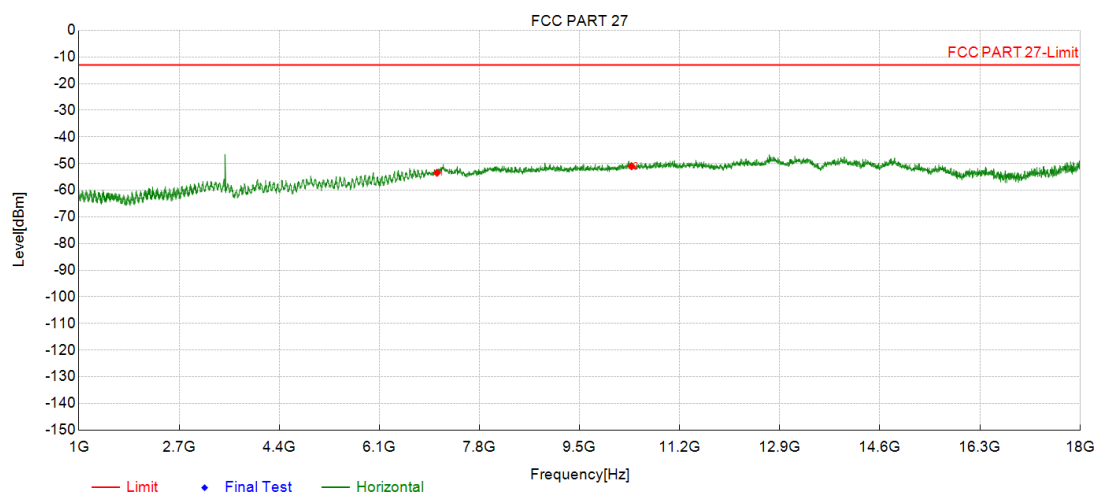


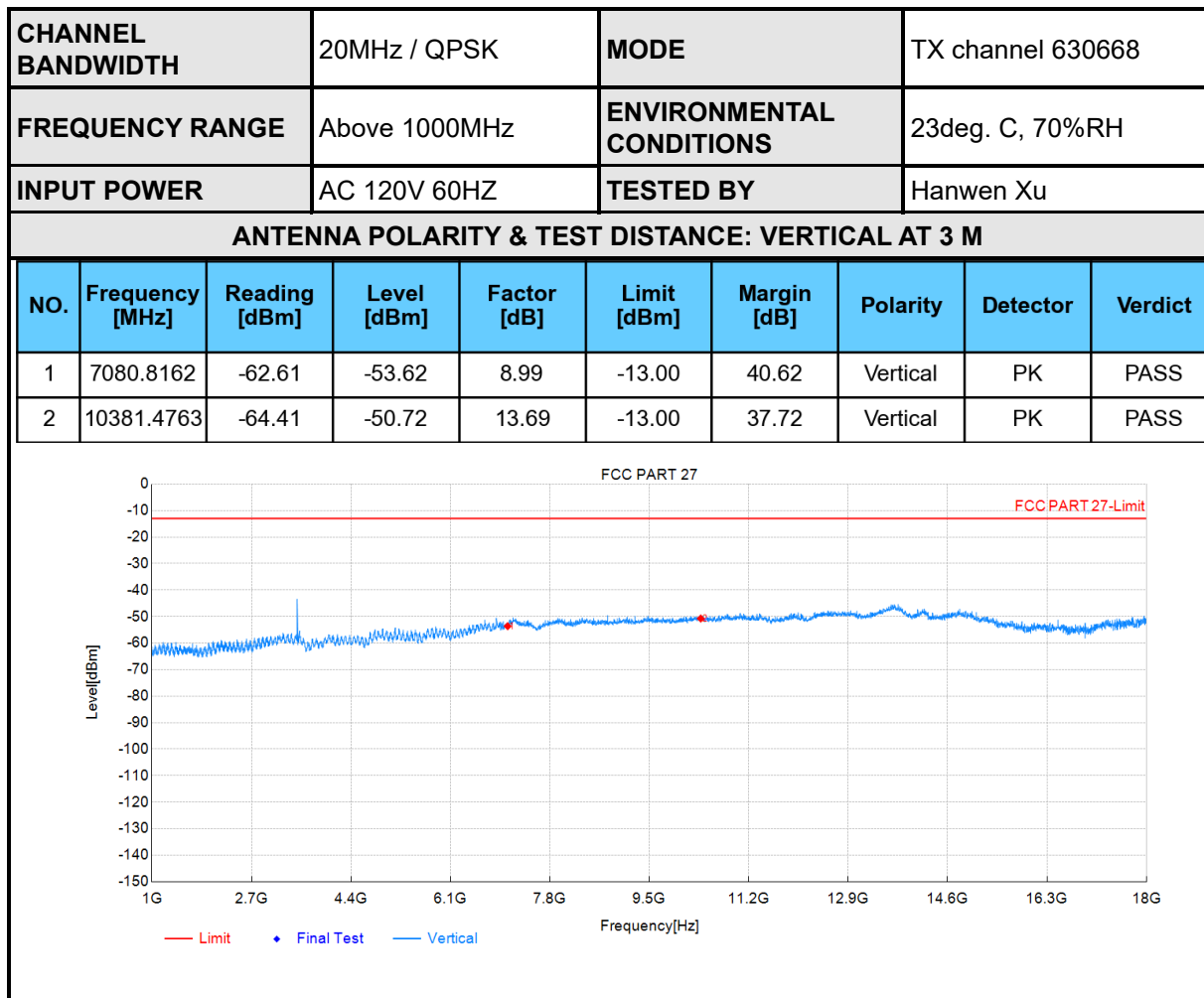


CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 630668
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	7080.8162	-62.22	-53.44	8.78	-13.00	40.44	Horizontal	PK	PASS
2	10381.4763	-64.03	-50.96	13.07	-13.00	37.96	Horizontal	PK	PASS



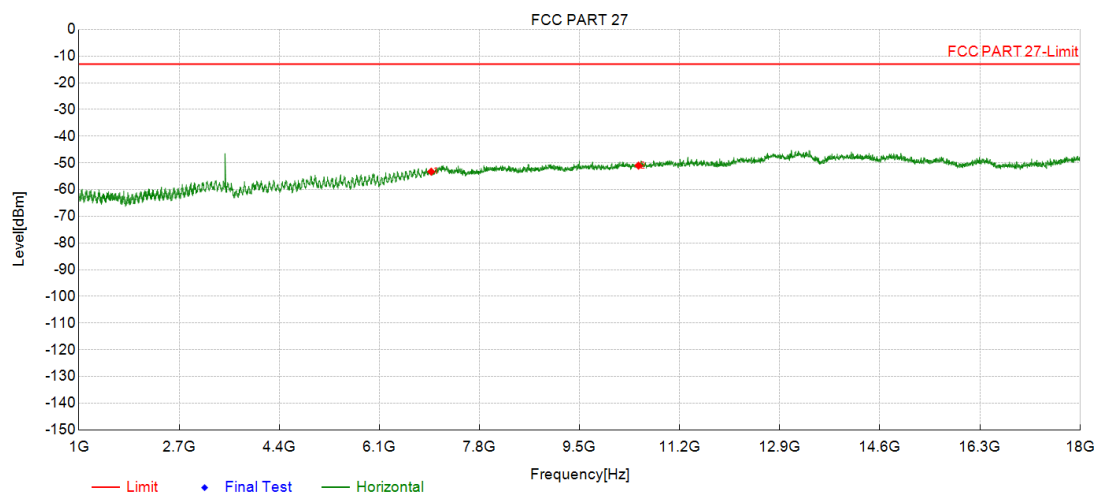




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 633332
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	6981.7964	-61.50	-53.28	8.22	-13.00	40.28	Horizontal	PK	PASS
2	10501.5003	-64.55	-51.00	13.55	-13.00	38.00	Horizontal	PK	PASS

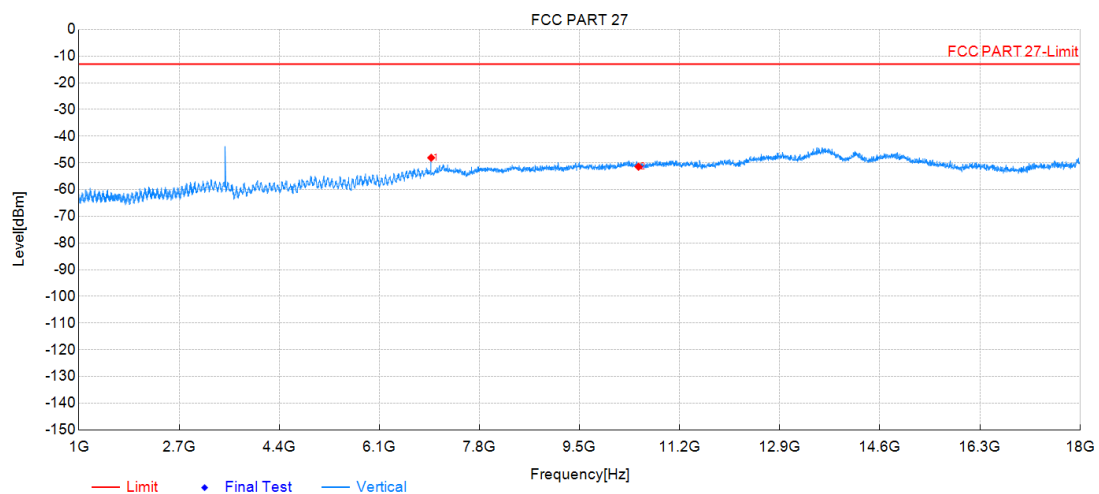




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 633332
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	6981.7964	-56.50	-48.07	8.43	-13.00	35.07	Vertical	PK	PASS
2	10501.5003	-65.20	-51.41	13.79	-13.00	38.41	Vertical	PK	PASS

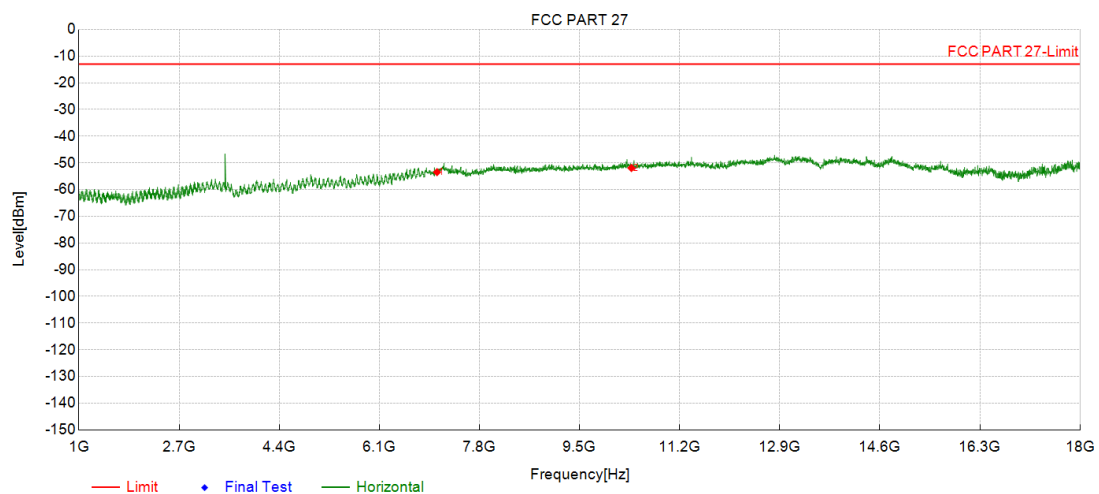


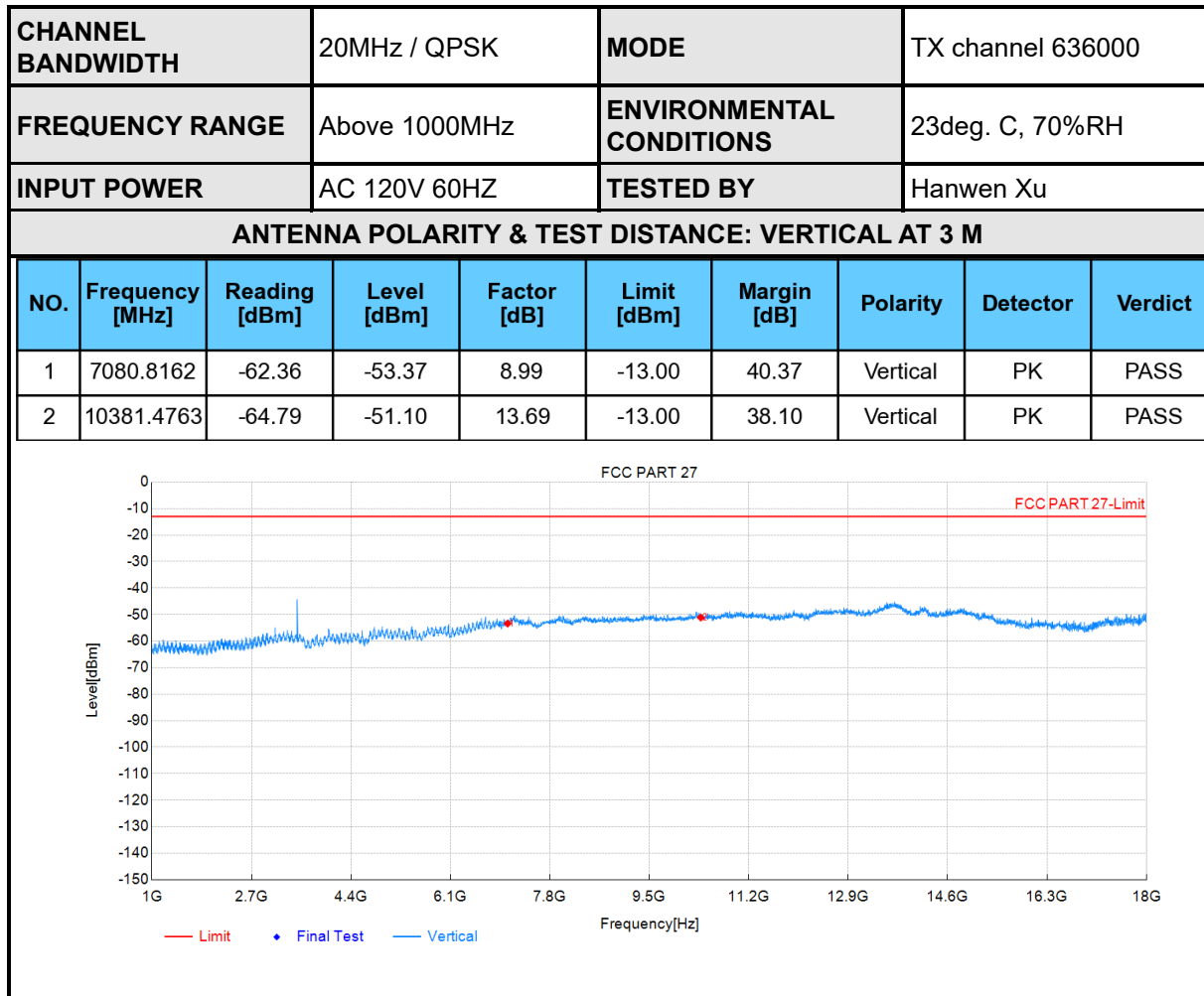


CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 636000
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	Frequency [MHz]	Reading [dBm]	Level [dBm]	Factor [dB]	Limit [dBm]	Margin [dB]	Polarity	Detector	Verdict
1	7080.8162	-62.23	-53.45	8.78	-13.00	40.45	Horizontal	PK	PASS
2	10381.4763	-64.96	-51.89	13.07	-13.00	38.89	Horizontal	PK	PASS





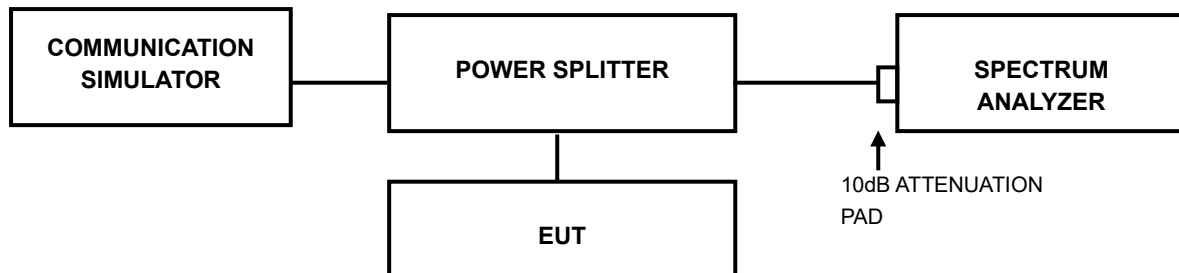


3.7 PEAK TO AVERAGE RATIO

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 BAND 30

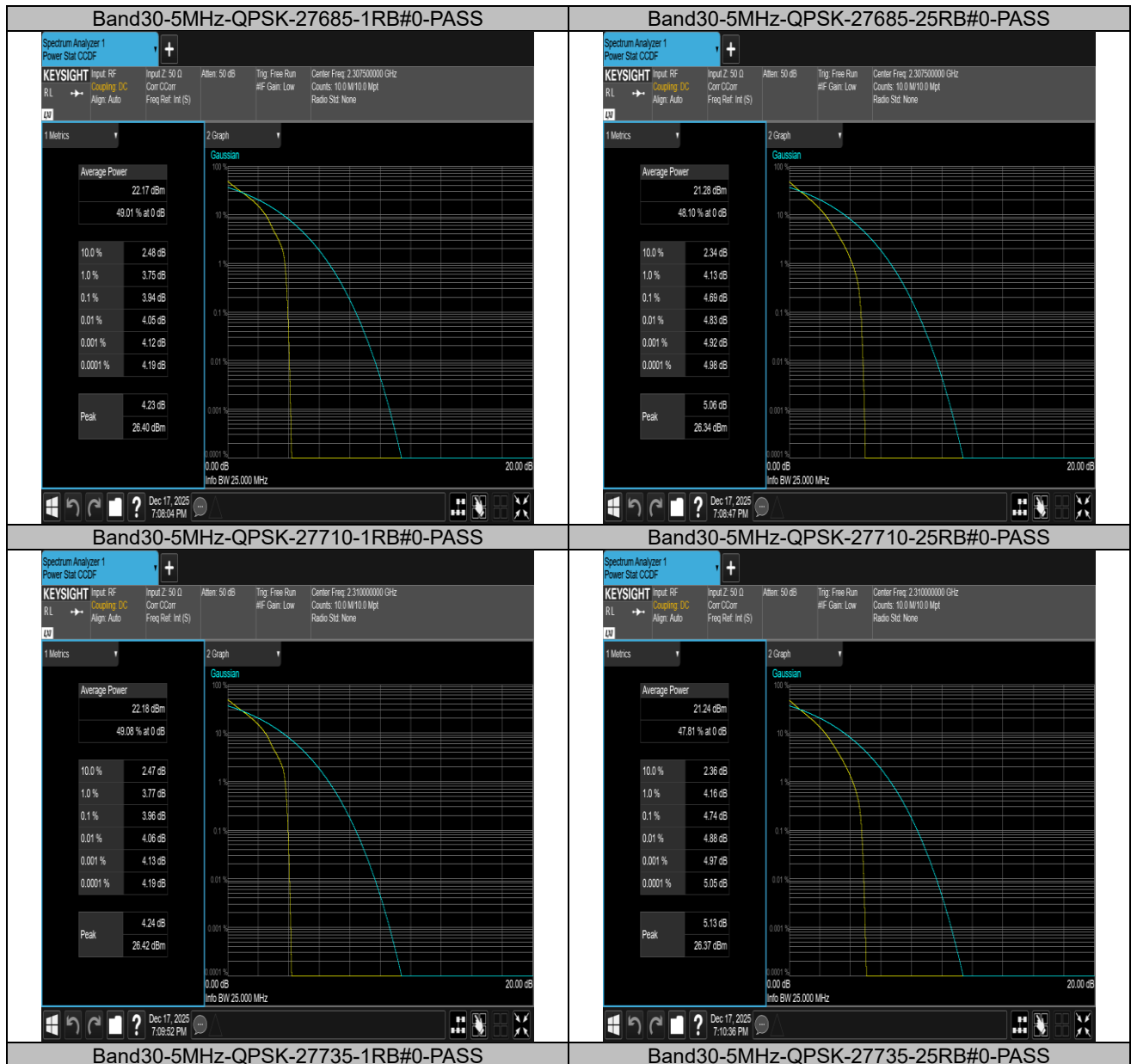
Peak-to-Average Ratio(CCDF)

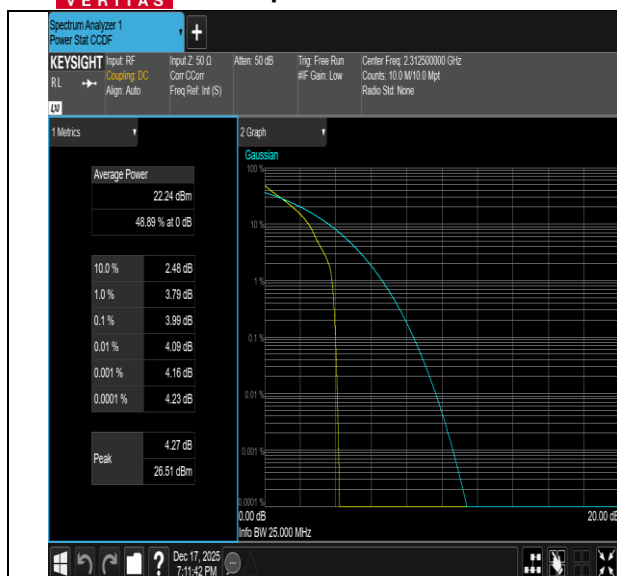
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band30	5MHz	QPSK	27685	1RB#0	3.94	13	PASS
Band30	5MHz	QPSK	27685	25RB#0	4.69	13	PASS
Band30	5MHz	QPSK	27710	1RB#0	3.96	13	PASS
Band30	5MHz	QPSK	27710	25RB#0	4.74	13	PASS
Band30	5MHz	QPSK	27735	1RB#0	3.99	13	PASS
Band30	5MHz	QPSK	27735	25RB#0	4.72	13	PASS
Band30	5MHz	64QAM	27685	1RB#0	5.78	13	PASS
Band30	5MHz	64QAM	27685	25RB#0	6.20	13	PASS
Band30	5MHz	64QAM	27710	1RB#0	5.77	13	PASS
Band30	5MHz	64QAM	27710	25RB#0	6.29	13	PASS
Band30	5MHz	64QAM	27735	1RB#0	5.82	13	PASS
Band30	5MHz	64QAM	27735	25RB#0	6.23	13	PASS
Band30	5MHz	16QAM	27685	1RB#0	4.92	13	PASS
Band30	5MHz	16QAM	27685	25RB#0	5.61	13	PASS
Band30	5MHz	16QAM	27710	1RB#0	4.92	13	PASS
Band30	5MHz	16QAM	27710	25RB#0	5.66	13	PASS
Band30	5MHz	16QAM	27735	1RB#0	4.95	13	PASS
Band30	5MHz	16QAM	27735	25RB#0	5.65	13	PASS
Band30	10MHz	QPSK	27710	1RB#0	3.76	13	PASS
Band30	10MHz	QPSK	27710	50RB#0	4.69	13	PASS
Band30	10MHz	64QAM	27710	1RB#0	5.62	13	PASS
Band30	10MHz	64QAM	27710	50RB#0	6.15	13	PASS
Band30	10MHz	16QAM	27710	1RB#0	4.72	13	PASS
Band30	10MHz	16QAM	27710	50RB#0	5.58	13	PASS

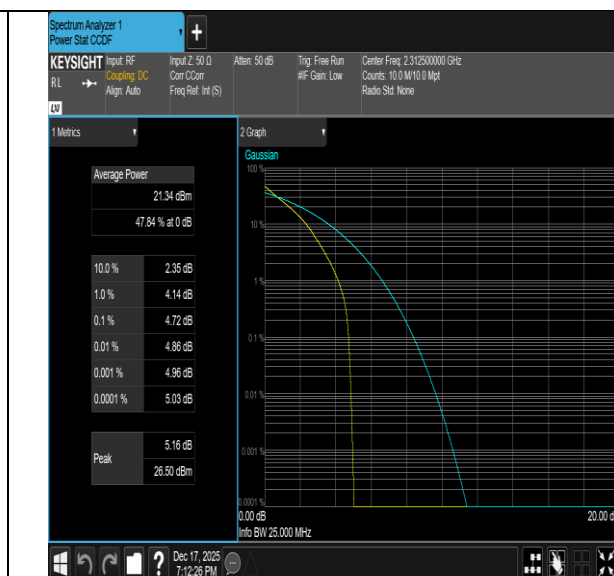


Test Graphs

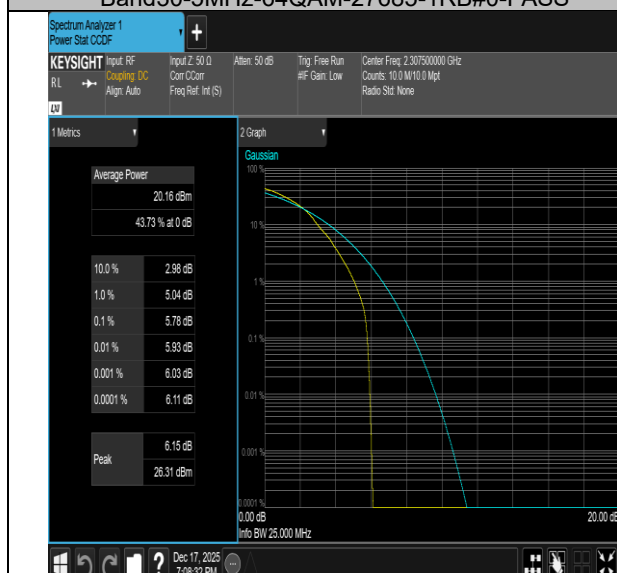




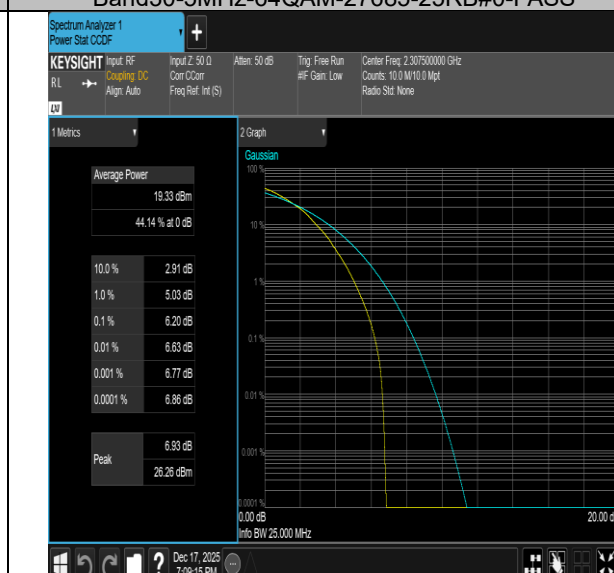
Band30-5MHz-64QAM-27685-1RB#0-PASS



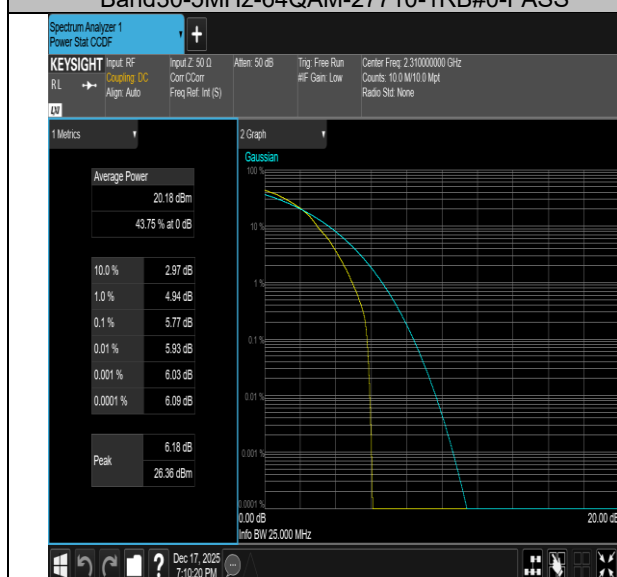
Band30-5MHz-64QAM-27685-25RB#0-PASS



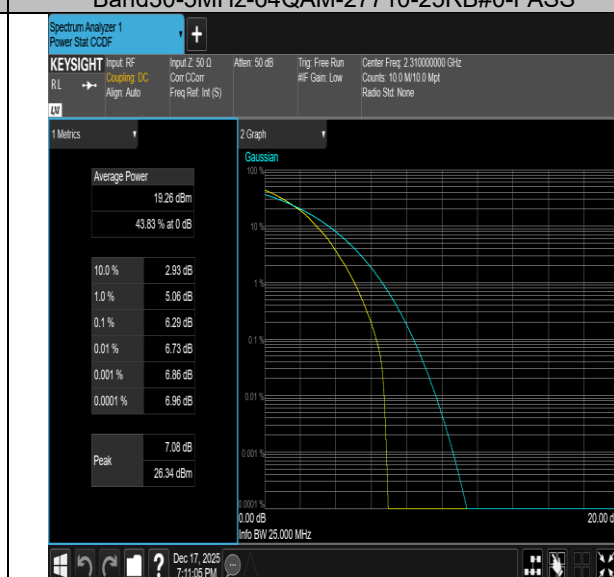
Band30-5MHz-64QAM-27710-1RB#0-PASS



Band30-5MHz-64QAM-27710-25RB#0-PASS



Band30-5MHz-64QAM-27735-1RB#0-PASS



Band30-5MHz-64QAM-27735-25RB#0-PASS