FCC RF TEST REPORT

Applicant:	TCL Communication Ltd.
Address:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong

Manufacturer or Supplier:	TCL Communication Ltd.
Address:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
Product:	TCL LINKPORT IK511
Brand Name:	TCL
Model Name:	IK511U
FCC ID:	2ACCJSCD005
Date of tests:	Jul. 05, 2024 ~ Jul. 24, 2024

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

☒ **FCC PART 22, Subpart H** ☒ **FCC PART 24, Subpart E** ☒ **FCC Part 27, Subpart C, M** ☒ **ANSI/TIA/EIA-603-D**
☒ **FCC Part 2** ☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

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

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
Simon Wang Date: Jul. 24, 2024	Luke Lu Date: Jul. 24, 2024

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

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P24070005RF06	Original release	Jul. 24, 2024

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 24/27 & PART 2		
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**
§2.1046	Conducted Output Power	Compliance
§24.232(c) §27.50(d)(4)	Equivalent Isotropically Radiated Power (5G NR n25,n66)	Compliance
§27.50(c)(10)	Equivalent Radiated Power (5G NR n71)	Compliance
§2.1055 §24.235 §27.54	Frequency Stability	Compliance
§2.1049	Occupied Bandwidth	Compliance
§2.1051 §24.238(a)(b) §27.53(g) §27.53(h)	Band Edge Measurements	Compliance
§2.1051 §24.238(a)(b) §27.53(g) §27.53(h)	Conducted Spurious Emissions	Compliance
§2.1053 §24.238(a)(b) §27.53(g) §27.53(h)	Radiated Spurious Emissions	Compliance
§27.50(j)(4)	Peak-to-Average Ratio	Compliance

NOTE:

1. Max ERP/EIRP is according to Max conducted power calculate for SA.
2. The sample supports both 5g NR normal mode and redcap mode. Except for Transmit Power, the whole testing is assessed for NR mode only because of the higher conducted power.

1.1 MEASREMENT 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.

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 28,24	Mar. 27,25
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.10,24	May.09,25
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.03,23	Sep.02,24
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Feb. 18,24	Feb. 17,25
Horn Antenna	ETS-LINDGREN	3117	00168692	Feb. 18,24	Feb. 17,25
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Sep.04, 23	Sep.03, 24
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 14,24	Feb. 13,25
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 06,24	May. 05,25
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.10,24	May.09,25
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 17,24	Feb.16,25
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	Nov. 14,23	Nov. 13,26
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120	3.1.36	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	50HF-010-SMA	May. 06,24	May. 05,25
Power Meter	Anritsu	ML2495A	1506002	Feb. 14,24	Feb. 13,25
Power Sensor	Anritsu	MA2411B	1339352	Feb. 14,24	Feb. 13,25
Temperature Chamber	ESPEC	SH-242	93000855	May. 06,24	May. 05,25
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 14,24	Feb. 13,25
Base station R&S CMW500	Rohde&Schwarz	CMW500	153085	May.10,24	May.09,25
DC Source	Kikusui/JP	PMX18-5A	N/A	Aug. 11,23	Aug. 10,24

NOTE: 1. The calibration interval of the above test instruments is 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 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	TCL LINKPORT IK511	
BRAND NAME	TCL	
MODEL NAME	IK511U	
NOMINAL VOLTAGE	DC5V	
MODULATION TECHNOLOGY	**5G NR**	DFT-s-OFDM(Pi/2BPSK, QPSK, 16QAM, 64QAM, 256QAM); CP-OFDM(QPSK,16QAM,64QAM,256QAM);
FREQUENCY RANGE	**NR Band n25**	1852.5MHz ~ 1912.5MHz
	NR Band n66	1712.5MHz ~ 1777.5MHz
	NR Band n71	665.5MHz ~ 695.5MHz
EMISSION DESIGNATOR	**NR Band n25 Channel Bandwidth: 5MHz**	DFT-PI2BPSK 4M49G7D DFT-QPSK 4M46G7D DFT-16QAM 4M47W7D DFT-64QAM 4M46W7D DFT-256QAM 4M48W7D
	NR Band n25 Channel Bandwidth: 10MHz	DFT-PI2BPSK 8M91G7D DFT-QPSK 8M91G7D DFT-16QAM 8M90W7D DFT-64QAM 8M91W7D DFT-256QAM 8M91W7D
	NR Band n25 Channel Bandwidth: 15MHz	DFT-PI2BPSK 13M4G7D DFT-QPSK 13M4G7D DFT-16QAM 13M4W7D DFT-64QAM 13M4W7D DFT-256QAM 13M4W7D
	NR Band n25 Channel Bandwidth: 20MHz	DFT-PI2BPSK 17M8G7D DFT-QPSK 17M9G7D DFT-16QAM 17M9W7D DFT-64QAM 17M9W7D DFT-256QAM 17M9W7D

	NR Band n66 Channel Bandwidth: 5MHz	DFT-PI2BPSK 4M48G7D DFT-QPSK 4M46G7D DFT-16QAM 4M46W7D DFT-64QAM 4M47W7D DFT-256QAM 4M47W7D
	NR Band n66 Channel Bandwidth: 10MHz	DFT-PI2BPSK 8M91G7D DFT-QPSK 8M91G7D DFT-16QAM 8M93W7D DFT-64QAM 8M92W7D DFT-256QAM 8M91W7D
	NR Band n66 Channel Bandwidth: 15MHz	DFT-PI2BPSK 13M4G7D DFT-QPSK 13M4G7D DFT-16QAM 13M4W7D DFT-64QAM 13M4W7D DFT-256QAM 13M4W7D
	NR Band n66 Channel Bandwidth: 20MHz	DFT-PI2BPSK 17M9G7D DFT-QPSK 17M8G7D DFT-16QAM 17M9W7D DFT-64QAM 17M9W7D DFT-256QAM 17M9W7D
	NR Band n71 Channel Bandwidth: 5MHz	DFT-PI2BPSK 4M48G7D DFT-QPSK 4M47G7D DFT-16QAM 4M47W7D DFT-64QAM 4M48W7D DFT-256QAM 4M48W7D
	NR Band n71 Channel Bandwidth: 10MHz	DFT-PI2BPSK 8M90G7D DFT-QPSK 8M90G7D DFT-16QAM 8M90W7D DFT-64QAM 8M90W7D DFT-256QAM 8M89W7D
	NR Band n71 Channel Bandwidth: 15MHz	DFT-PI2BPSK 13M4G7D DFT-QPSK 13M4G7D DFT-16QAM 13M4W7D DFT-64QAM 13M4W7D DFT-256QAM 13M4W7D
	NR Band n71 Channel Bandwidth: 20MHz	DFT-PI2BPSK 17M8G7D DFT-QPSK 17M8G7D DFT-16QAM 17M8W7D DFT-64QAM 17M8W7D DFT-256QAM 17M8W7D

5G SA MAX. EIRP POWER	NR Band n25 Channel Bandwidth: 5MHz	225.42mW
	NR Band n25 Channel Bandwidth: 10MHz	220.8mW
	NR Band n25 Channel Bandwidth: 15MHz	218.27mW
	NR Band n25 Channel Bandwidth: 20MHz	225.94mW
	NR Band n66 Channel Bandwidth: 5MHz	196.79mW
	NR Band n66 Channel Bandwidth: 10MHz	197.24mW
	NR Band n66 Channel Bandwidth: 15MHz	199.99mW
	NR Band n66 Channel Bandwidth: 20MHz	207.97mW
	NR Band n71 Channel Bandwidth: 5MHz	59.57mW
	NR Band n71 Channel Bandwidth: 10MHz	60.26mW
	NR Band n71 Channel Bandwidth: 15MHz	59.7mW
	NR Band n71 Channel Bandwidth: 20MHz	76.56mW

5G REDCAP EIRP POWER	NR Band n25 Channel Bandwidth: 5MHz	201.84mW
	NR Band n25 Channel Bandwidth: 10MHz	200.91mW
	NR Band n25 Channel Bandwidth: 15MHz	205.12mW
	NR Band n25 Channel Bandwidth: 20MHz	205.59mW
	NR Band n66 Channel Bandwidth: 5MHz	202.77mW
	NR Band n66 Channel Bandwidth: 10MHz	201.37mW
	NR Band n66 Channel Bandwidth: 15MHz	206.54mW
	NR Band n66 Channel Bandwidth: 20MHz	207.49mW
	NR Band n71 Channel Bandwidth: 5MHz	72.44mW
	NR Band n71 Channel Bandwidth: 10MHz	72.44mW
	NR Band n71 Channel Bandwidth: 15MHz	72.61mW
	NR Band n71 Channel Bandwidth: 20MHz	74.64mW

ANTENNA GAIN	NR N25: 0.7dbi NR N66: 0.5dbi NR N71: -2.5dbi
ANTENNA TYPE	Fixed Internal Antenna
HW VERSION	V3.0
SW VERSION	IK511U_ZZ_01.00_01
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: with shielded cable, w/o ferrite core, 0.15 meter
EXTREME TEMPERATURE	-20 ~55℃
EXTREME VOLTAGE	4.75V – 5.25V

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter.

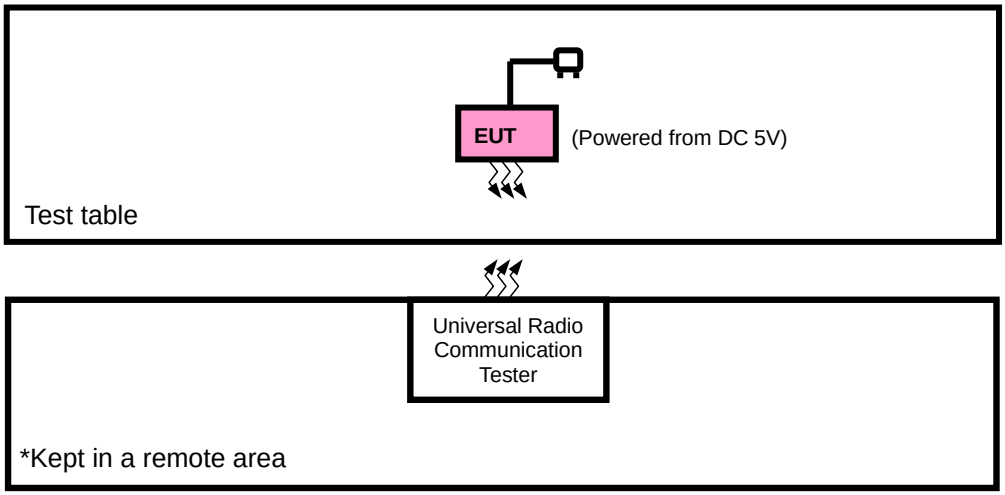
MODULATION MODE	TX FUNCTION
5G NR	1TX

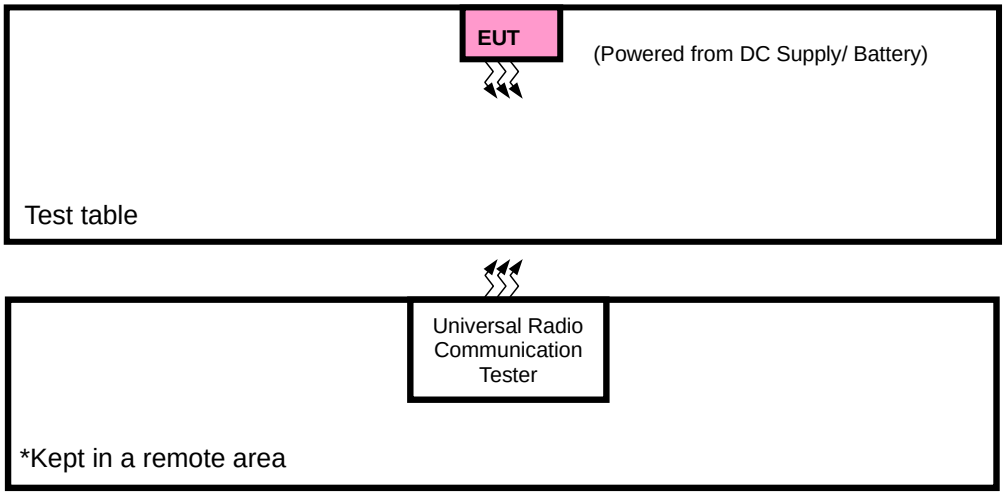
3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

4. Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST





2.3 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A
2	Laptop	Dell	Latitude 5430	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.8m

2.4 TEST ITEM AND TEST CONFIGURATION

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

EUT CONFIGURE MODE	DESCRIPTION
A	**EUT + DC Supply with 5G NR link**

5G NR n25 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	EIRP	370500 to 382500	370500 to 382500	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		371000 to 382000	371000 to 382000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		371500 to 381500	371500 to 381500	Low, Middle, High	15MHz	QPSK	1RB/ 0RB Offset
		372000 to 381000	372000 to 381000	Low, Middle, High	20MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	1RB/ 0RB Offset
A	FREQUENCY STABILITY	372000 to 381000	372000 to 381000	Low, Middle, High	20MHz	QPSK	Outer_ Full
A	PEAK TO AVERAGE RATIO	372000 to 381000	372000 to 381000	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
A	OCCUPIED BANDWIDTH	370500 to 382500	370500 to 382500	Middle	5MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		371000 to 382000	371000 to 382000	Middle	10MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		371500 to 381500	371500 to 381500	Middle	15MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		372000 to 381000	372000 to 381000	Middle	20MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
A	BAND EDGE	370500 to 382500	370500 to 382500	Low	5MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	5MHz	QPSK	1RB/ 24 RB Offset
							Outer_ Full
		371000 to 382000	371000 to 382000	Low	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	10MHz	QPSK	1RB/ 105 RB Offset
							Outer_ Full
		372000 to 381000	372000 to 381000	Low	20MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	20MHz	QPSK	1RB/ 215 RB Offset
							Outer_ Full
A	CONDUCTED EMISSION	370500 to 382500	370500 to 382500	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		371000 to 382000	371000 to 382000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		372000 to 381000	372000 to 381000	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset

A	RADIATED EMISSION	370500 to 382500	370500 to 382500	Middle	5MHz	QPSK	1RB/ 0RB Offset
		371000 to 382000	371000 to 382000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		371500 to 381500	371500 to 381500	Middle	15MHz	QPSK	1RB/ 0RB Offset
		372000 to 381000	372000 to 381000	Middle	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_n25

5G NR n66 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	EIRP	342500 to 355500	342500 to 355500	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		343000 to 355000	343000 to 355000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		343500 to 354500	343500 to 354500	Low, Middle, High	15MHz	QPSK	1RB/ 0RB Offset
		344000 to 354000	344000 to 354000	Low, Middle, High	20MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	1RB/ 0RB Offset
A	FREQUENCY STABILITY	344000 to 354000	344000 to 354000	Low, Middle, High	20MHz	QPSK	Outer_ Full
A	PEAK TO AVERAGE RATIO	344000 to 354000	344000 to 354000	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
A	OCCUPIED BANDWIDTH	342500 to 355500	342500 to 355500	Middle	5MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		343000 to 355000	343000 to 355000	Middle	10MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		343500 to 354500	343500 to 354500	Middle	15MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		344000 to 354000	344000 to 354000	Middle	20MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
A	BAND EDGE	342500 to 355500	342500 to 355500	Low	5MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	5MHz	QPSK	1RB/ 24RB Offset
							Outer_ Full
		343000 to 355000	343000 to 355000	Low	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	10MHz	QPSK	1RB/ 105RB Offset
							Outer_ Full
		344000 to 354000	344000 to 354000	Low	20MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	20MHz	QPSK	1RB/ 215RB Offset
							Outer_ Full
A	CONDUCTED EMISSION	342500 to 355500	342500 to 355500	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		343000 to 355000	343000 to 355000	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		344000 to 354000	344000 to 354000	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset

A	RADIATED EMISSION	342500 to 355500	342500 to 355500	Middle	5MHz	QPSK	1RB/ 0RB Offset
		343000 to 355000	343000 to 355000	Middle	10MHz	QPSK	1RB/ 0RB Offset
		343500 to 354500	343500 to 354500	Middle	15MHz	QPSK	1RB/ 0RB Offset
		344000 to 354000	344000 to 354000	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_n66.

5G NR n71 MODE

EUT CONFIGURE MODE	TESWT ITEM	AVAILABLE CP-OFDM CHANNEL	AVAILABLE DFT-S-OFDM CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(DFT-S-OFDM) (INCLUDE CP-OFDM)
A	ERP	133100 to 139100	133100 to 139100	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		133600 to 138600	133600 to 138600	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		134100 to 138100	134100 to 138100	Low, Middle, High	15MHz	QPSK	1RB/ 0RB Offset
		134600 to 137600	134600 to 137600	Low, Middle, High	20MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	1RB/ 0RB Offset
A	FREQUENCY STABILITY	134100 to 138100	134600 to 137600	Middle	20MHz	QPSK	Outer_ Full
A	PEAK TO AVERAGE RATIO	134100 to 138100	134600 to 137600	Low, Middle, High	20MHz	QPSK	Outer_ Full
A	OCCUPIED BANDWIDTH	133100 to 139100	133100 to 139100	Middle	5MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		133600 to 138600	133600 to 138600	Middle	10MHz	Pi/2BPSK, QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		134100 to 138100	134100 to 138100	Middle	15MHz	Pi/2BPSK, QPSK, 16QAM, 64QAM, 256QAM	Outer_ Full
		134600 to 137600	134600 to 137600	Middle	20MHz	Pi/2BPSK, QPSK, 16QAM, 64QAM, 256QAM	Outer_ Full
A	BAND EDGE	133100 to 139100	133100 to 139100	Low	5MHz	QPSK	1RB/ 0RB Offset
							1RB/ 24RB Offset
							Outer_ Full
				High	5MHz	QPSK	1RB/ 0RB Offset
							1RB/ 24RB Offset
							Outer_ Full
		133600 to 138600	133600 to 138600	Low	10MHz	QPSK	1RB/ 0RB Offset
							1RB/ 51RB Offset
							Outer_ Full
				High	10MHz	QPSK	1RB/ 0RB Offset
							1RB/ 51RB Offset

							Outer_ Full
		134600 to 137600	134600 to 137600	Low	20MHz	QPSK	1RB/ 0RB Offset
							1RB/ 78RB Offset
							Outer_ Full
				High	20MHz	QPSK	1RB/ 0RB Offset
							1RB/ 78RB Offset
							Outer_ Full
A	CONDUCTED EMISSION	133100 to 139100	133100 to 139100	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		133600 to 138600	133600 to 138600	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
		134600 to 137600	134600 to 137600	Low, Middle, High	20MHz	QPSK	1RB/ 0RB Offset
A	RADIATED EMISSION	133100 to 139100	133100 to 139100	Middle	5MHz	QPSK	1RB/ 0RB Offset
		133600 to 138600	133600 to 138600	Middle	10MHz	QPSK	1RB/ 0RB Offset
		134100 to 138100	134100 to 138100	Middle	15MHz	QPSK	1RB/ 0RB Offset
		134600 to 137600	134600 to 137600	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_n71.

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP/EIRP	23deg. C, 70%RH	DC5V	Jace Hu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 4.75V/5V/5.25V By DC Supply	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC5V	James Fu
BAND EDGE	23deg. C, 70%RH	DC5V	James Fu
CONDUCTED EMISSION	23deg. C, 70%RH	DC5V	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC5V	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC5V	James Fu

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 22/24/27

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

Mobile and portable stations are limited to 2 watts EIRP. (n25)

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(n66)

According to the specific rule Part 27.50(b)(10) and 27.50(c)(10) Fixed, mobile, and Portable stations (hand-held devices) transmitting in the 698-746 MHz, 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP(n71)

3.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

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

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

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, typically dBW or dBm);

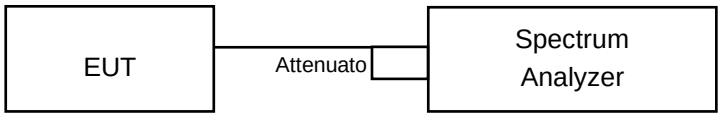
P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

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

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

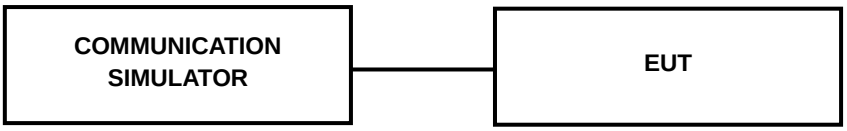
CONDUCTED POWER MEASUREMENT:

a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
b. 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:



1. Connect the DUT transmitter output to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
2. Time the analyzer to the nominal center frequency of the emission bandwidth (EBW).
3. Set the span to twice the nominal EBW (span = 2 x EBW).
4. Set the resolution bandwidth (RBW) to approximately 1% of EBW.
5. Set the video bandwidth (VBW) to ≧ 3 x RBW
6. Select the average power (RMS) display detector.
7. Set the number of measurement points to ≧1001.
8. Use auto-coupled sweep time.
9. Perform measurement over an interval of time when the transmission is continuous and at its maximum power level.
10. Utilize trace averaging over 100 traces in the power averaging mode.
11. Use the Band/Channel Power function to determine the integrated power over the full EBW.
12. Record the band power level.
13. Adjust the recorded level by applying appropriate correction factors for the measurement set-up.
14. Determine the EIRP by adding the effective antenna gain to the adjusted power level.

3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Normal mode

n25 (SCS 15 kHz) (Ant0)						
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		372000	376500	381000
		Frequence (MHz)		1860	1882.5	1905
20M	DFT-s-OFDM Pi/2 BPSK	1	1	22.77	22.77	22.83
		1	53	22.75	22.62	22.63
		1	104	22.74	22.48	22.51
		50	0	21.91	21.73	21.69
		50	28	22.76	22.63	22.75
		50	56	21.79	21.58	21.64
		100	0	21.82	21.61	21.59
	DFT-s-OFDM QPSK	1	1	22.79	22.70	22.84
		1	53	22.73	22.66	22.65
		1	104	22.76	22.55	22.61
		50	0	21.91	21.65	21.67
		50	28	22.65	22.67	22.69
		50	56	21.80	21.55	21.58
		100	0	21.71	21.53	21.74
	DFT-s-OFDM 16QAM	1	1	21.86	21.83	21.91
	DFT-s-OFDM 64QAM	1	1	19.87	19.79	19.89
	DFT-s-OFDM 256QAM	1	1	17.71	17.58	17.72
BW	Modulation	Channel		371500	376500	381500
		Frequence (MHz)		1857.5	1882.5	1907.5
15M	DFT-s-OFDM QPSK	1	1	22.64	22.55	22.69
BW	Modulation	Channel		371000	376500	382000
		Frequence (MHz)		1855	1882.5	1910
10M	DFT-s-OFDM QPSK	1	1	22.65	22.60	22.74
BW	Modulation	Channel		370500	376500	382500
		Frequence (MHz)		1852.5	1882.5	1912.5
5M	DFT-s-OFDM QPSK	1	1	22.66	22.69	22.83

n66 (SCS 15 kHz) (Ant0)						
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		344000	349000	354000
		Frequence (MHz)		1720	1745	1770
20M	DFT-s-OFDM Pi/2 BPSK	1	1	22.27	22.25	22.34
		1	53	22.18	22.17	22.18
		1	104	22.24	22.27	22.21
		50	0	21.14	21.17	21.26
		50	28	22.12	22.18	22.20
		50	56	21.16	21.16	21.27
		100	0	21.09	21.18	21.15
	DFT-s-OFDM QPSK	1	1	22.29	22.33	22.68
		1	53	22.12	22.15	22.30
		1	104	22.21	22.28	22.44
		50	0	21.08	21.17	21.33
		50	28	22.17	22.26	22.40
		50	56	21.19	21.16	21.40
		100	0	21.00	21.20	21.35
	DFT-s-OFDM 16QAM	1	1	21.30	21.58	21.66
	DFT-s-OFDM 64QAM	1	1	19.12	19.46	19.59
	DFT-s-OFDM 256QAM	1	1	17.15	17.21	17.28
BW	Modulation	Channel		343500	349000	354500
		Frequence (MHz)		1717.5	1745	1772.5
15M	DFT-s-OFDM QPSK	1	1	22.28	22.18	22.51
BW	Modulation	Channel		343000	349000	355000
		Frequence (MHz)		1715	1745	1775
10M	DFT-s-OFDM QPSK	1	1	22.24	22.29	22.45
BW	Modulation	Channel		342500	349000	355500
		Frequence (MHz)		1712.5	1745	1777.5
5M	DFT-s-OFDM QPSK	1	1	22.25	22.30	22.44

n71 (SCS 15 kHz) (Ant0)						
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		134600	136100	137600
		Frequence (MHz)		673	680.5	688
20M	DFT-s-OFDM Pi/2 BPSK	1	1	23.37	23.41	23.37
		1	53	23.39	23.29	23.16
		1	104	23.21	23.12	23.11
		50	0	22.47	22.30	22.32
		50	28	23.32	23.32	23.28
		50	56	22.31	22.31	22.16
		100	0	22.26	22.32	22.31
	DFT-s-OFDM QPSK	1	1	23.49	23.40	23.36
		1	53	23.35	23.28	23.27
		1	104	23.24	23.09	23.13
		50	0	22.47	22.37	22.41
		50	28	23.34	23.26	23.30
		50	56	22.29	22.27	22.24
		100	0	22.39	22.37	22.27
	DFT-s-OFDM 16QAM	1	1	22.69	22.66	22.56
	DFT-s-OFDM 64QAM	1	1	20.49	20.54	20.49
	DFT-s-OFDM 256QAM	1	1	18.49	18.49	18.47
BW	Modulation	Channel		134100	136100	138100
		Frequence (MHz)		670.5	680.5	690.5
15M	DFT-s-OFDM QPSK	1	1	22.36	22.41	22.32
BW	Modulation	Channel		133600	136100	138600
		Frequence (MHz)		668	680.5	693
10M	DFT-s-OFDM QPSK	1	1	22.44	22.37	22.45
BW	Modulation	Channel		133100	136100	139100
		Frequence (MHz)		665.5	680.5	695.5
5M	DFT-s-OFDM QPSK	1	1	22.40	22.35	22.32

Redcap mode

n25 (SCS 15 kHz) (Ant0)						
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		372000	376500	381000
		Frequence (MHz)		1860	1882.5	1905
20M	DFT-s-OFDM Pi/2 BPSK	1	1	22.18	22.21	22.33
		1	53	22.25	22.23	22.29
		1	104	22.34	22.26	22.37
		50	0	21.80	21.81	21.88
		50	28	22.24	22.32	22.40
		50	56	21.84	21.80	21.85
		100	0	21.74	21.79	21.88
	DFT-s-OFDM QPSK	1	1	22.41	22.38	22.43
		1	53	22.21	22.27	22.36
		1	104	22.35	22.29	22.31
		50	0	21.26	21.18	21.25
		50	28	22.33	22.27	22.41
		50	56	21.30	21.19	21.41
		100	0	21.25	21.21	21.42
	DFT-s-OFDM 16QAM	1	1	21.20	21.44	21.49
	DFT-s-OFDM 64QAM	1	1	19.33	19.52	19.78
	DFT-s-OFDM 256QAM	1	1	17.57	17.90	18.00
BW	Modulation	Channel		371500	376500	381500
		Frequence (MHz)		1857.5	1882.5	1907.5
15M	DFT-s-OFDM QPSK	1	1	22.37	22.29	22.42
BW	Modulation	Channel		371000	376500	382000
		Frequence (MHz)		1855	1882.5	1910
10M	DFT-s-OFDM QPSK	1	1	22.28	22.33	22.28
BW	Modulation	Channel		370500	376500	382500
		Frequence (MHz)		1852.5	1882.5	1912.5
5M	DFT-s-OFDM QPSK	1	1	22.35	22.26	22.34

n66 (SCS 15 kHz) (Ant0)						
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		344000	349000	354000
		Frequence (MHz)		1720	1745	1770
20M	DFT-s-OFDM Pi/2 BPSK	1	1	22.35	22.32	22.38
		1	53	22.28	22.40	22.47
		1	104	22.20	22.38	22.65
		50	0	21.64	21.80	21.98
		50	28	22.24	22.27	22.57
		50	56	21.67	21.80	21.96
		100	0	21.76	21.76	22.04
	DFT-s-OFDM QPSK	1	1	22.39	22.51	22.67
		1	53	22.27	22.38	22.55
		1	104	22.15	22.36	22.62
		50	0	21.71	21.34	21.56
		50	28	22.19	22.29	22.64
		50	56	21.75	21.37	21.60
		100	0	21.52	21.36	21.66
	DFT-s-OFDM 16QAM	1	1	21.43	21.41	21.59
	DFT-s-OFDM 64QAM	1	1	19.85	19.49	19.74
	DFT-s-OFDM 256QAM	1	1	17.66	17.87	18.32
BW	Modulation	Channel		343500	349000	354500
		Frequence (MHz)		1717.5	1745	1772.5
15M	DFT-s-OFDM QPSK	1	1	22.33	22.48	22.65
BW	Modulation	Channel		343000	349000	355000
		Frequence (MHz)		1715	1745	1775
10M	DFT-s-OFDM QPSK	1	1	22.37	22.43	22.54
BW	Modulation	Channel		342500	349000	355500
		Frequence (MHz)		1712.5	1745	1777.5
5M	DFT-s-OFDM QPSK	1	1	22.34	22.43	22.57

n71 (SCS 15 kHz) (Ant0)						
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		134600	136100	137600
		Frequence (MHz)		673	680.5	688
20M	DFT-s-OFDM Pi/2 BPSK	1	1	23.16	23.07	23.16
		1	53	23.14	23.01	23.09
		1	104	23.00	22.88	22.91
		50	0	22.25	22.11	22.15
		50	28	23.15	23.04	23.11
		50	56	22.08	22.04	21.94
		100	0	22.11	22.10	22.05
	DFT-s-OFDM QPSK	1	1	23.38	23.26	23.23
		1	53	23.17	23.09	23.12
		1	104	23.05	22.91	22.93
		50	0	22.18	22.06	22.17
		50	28	23.19	23.05	23.04
		50	56	22.11	21.94	21.97
		100	0	22.10	22.08	21.97
	DFT-s-OFDM 16QAM	1	1	22.40	22.31	22.35
	DFT-s-OFDM 64QAM	1	1	20.26	20.23	20.31
	DFT-s-OFDM 256QAM	1	1	18.28	18.28	18.22
BW	Modulation	Channel		134100	136100	138100
		Frequence (MHz)		670.5	680.5	690.5
15M	DFT-s-OFDM QPSK	1	1	23.26	23.20	23.17
BW	Modulation	Channel		133600	136100	138600
		Frequence (MHz)		668	680.5	693
10M	DFT-s-OFDM QPSK	1	1	23.25	23.20	23.17
BW	Modulation	Channel		133100	136100	139100
		Frequence (MHz)		665.5	680.5	695.5
5M	DFT-s-OFDM QPSK	1	1	23.23	23.25	23.11

EIRP

Normal mode

N25

n25 20M DFT-s-OFDM Pi/2 BPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
372000	1860	22.77	0.7	23.47	222.33	2
376500	1882.5	22.77	0.7	23.47	222.33	2
381000	1905	22.83	0.7	23.53	225.42	2

n25 20M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
372000	1860	22.79	0.7	23.49	223.36	2
376500	1882.5	22.7	0.7	23.4	218.78	2
381000	1905	22.84	0.7	23.54	225.94	2

n25 20M DFT-s-OFDM 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
372000	1860	21.86	0.7	22.56	180.3	2
376500	1882.5	21.83	0.7	22.53	179.06	2
381000	1905	21.91	0.7	22.61	182.39	2

n25 20M DFT-s-OFDM 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
372000	1860	19.87	0.7	20.57	114.02	2
376500	1882.5	19.79	0.7	20.49	111.94	2
381000	1905	19.89	0.7	20.59	114.55	2

n25 20M DFT-s-OFDM 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
372000	1860	17.71	0.7	18.41	69.34	2
376500	1882.5	17.58	0.7	18.28	67.3	2
381000	1905	17.72	0.7	18.42	69.5	2

n25 15M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
371500	1857.5	22.64	0.7	23.34	215.77	2
376500	1882.5	22.55	0.7	23.25	211.35	2
381500	1907.5	22.69	0.7	23.39	218.27	2

n25 10M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
371000	1855	22.65	0.7	23.35	216.27	2
376500	1882.5	22.6	0.7	23.3	213.8	2
382000	1910	22.74	0.7	23.44	220.8	2

n25 5M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
370500	1852.5	22.66	0.7	23.36	216.77	2
376000	1882.5	22.69	0.7	23.39	218.27	2
382500	1912.5	22.83	0.7	23.53	225.42	2

N66

n66 20M DFT-s-OFDM Pi/2 BPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
344000	1720	22.27	0.5	22.77	189.23	1
349000	1745	22.27	0.5	22.77	189.23	1
354000	1770	22.34	0.5	22.84	192.31	1

n66 20M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
344000	1720	22.29	0.5	22.79	190.11	1
349000	1745	22.33	0.5	22.83	191.87	1
354000	1770	22.68	0.5	23.18	207.97	1

n66 20M DFT-s-OFDM 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
344000	1720	21.3	0.5	21.8	151.36	1
349000	1745	21.58	0.5	22.08	161.44	1
354000	1770	21.66	0.5	22.16	164.44	1

n66 20M DFT-s-OFDM 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
344000	1720	19.12	0.5	19.62	91.62	1
349000	1745	19.46	0.5	19.96	99.08	1
354000	1770	19.59	0.5	20.09	102.09	1

n66 20M DFT-s-OFDM 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
344000	1720	17.15	0.5	17.65	58.21	1
349000	1745	17.21	0.5	17.71	59.02	1
354000	1770	17.28	0.5	17.78	59.98	1

n66 15M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
343500	1717.5	22.28	0.5	22.78	189.67	1
349000	1745	22.18	0.5	22.68	185.35	1
354500	1772.5	22.51	0.5	23.01	199.99	1

n66 10M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
343000	1715	22.24	0.5	22.74	187.93	1
349000	1745	22.29	0.5	22.79	190.11	1
355000	1775	22.45	0.5	22.95	197.24	1

n66 5M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
342500	1712.5	22.25	0.5	22.75	188.36	1
349000	1745	22.3	0.5	22.8	190.55	1
355500	1777.5	22.44	0.5	22.94	196.79	1

N71

n71 20M DFT-s-OFDM Pi/2 BPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134600	673	23.39	-2.5	18.74	74.82	3
136100	680.5	23.41	-2.5	18.76	75.16	3
137600	688	23.37	-2.5	18.72	74.47	3

n71 20M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134600	673	23.49	-2.5	18.84	76.56	3
136100	680.5	23.4	-2.5	18.75	74.99	3
137600	688	23.36	-2.5	18.71	74.3	3

n71 20M DFT-s-OFDM 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134600	673	22.69	-2.5	18.04	63.68	3
136100	680.5	22.66	-2.5	18.01	63.24	3
137600	688	22.56	-2.5	17.91	61.8	3

n71 20M DFT-s-OFDM 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134600	673	20.49	-2.5	15.84	38.37	3
136100	680.5	20.54	-2.5	15.89	38.82	3
137600	688	20.49	-2.5	15.84	38.37	3

n71 20M DFT-s-OFDM 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134600	673	18.49	-2.5	13.84	24.21	3
136100	680.5	18.49	-2.5	13.84	24.21	3
137600	688	18.47	-2.5	13.82	24.1	3

n71 15M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134100	670.5	22.36	-2.5	17.71	59.02	3
136100	680.5	22.41	-2.5	17.76	59.7	3
138100	690.5	22.32	-2.5	17.67	58.48	3

n71 10M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133600	668	22.44	-2.5	17.79	60.12	3
136100	680.5	22.37	-2.5	17.72	59.16	3
138600	693	22.45	-2.5	17.8	60.26	3

n71 5M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133100	665.5	22.4	-2.5	17.75	59.57	3
136100	680.5	22.35	-2.5	17.7	58.88	3
139100	695.5	22.32	-2.5	17.67	58.48	3

Redcap mode

N25

n25 20M DFT-s-OFDM Pi/2 BPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
372000	1860	22.34	0.7	23.04	201.37	2
376500	1882.5	22.32	0.7	23.02	200.45	2
381000	1905	22.4	0.7	23.1	204.17	2

n25 20M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
372000	1860	22.41	0.7	23.11	204.64	2
376500	1882.5	22.38	0.7	23.08	203.24	2
381000	1905	22.43	0.7	23.13	205.59	2

n25 20M DFT-s-OFDM 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
372000	1860	21.2	0.7	21.9	154.88	2
376500	1882.5	21.44	0.7	22.14	163.68	2
381000	1905	21.49	0.7	22.19	165.58	2

n25 20M DFT-s-OFDM 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
372000	1860	19.33	0.7	20.03	100.69	2
376500	1882.5	19.52	0.7	20.22	105.2	2
381000	1905	19.78	0.7	20.48	111.69	2

n25 20M DFT-s-OFDM 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
372000	1860	17.57	0.7	18.27	67.14	2
376500	1882.5	17.9	0.7	18.6	72.44	2
381000	1905	18	0.7	18.7	74.13	2

n25 15M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
371500	1857.5	22.37	0.7	23.07	202.77	2
376500	1882.5	22.29	0.7	22.99	199.07	2
381500	1907.5	22.42	0.7	23.12	205.12	2

n25 10M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
371000	1855	22.28	0.7	22.98	198.61	2
376500	1882.5	22.33	0.7	23.03	200.91	2
382000	1910	22.28	0.7	22.98	198.61	2

n25 5M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
370500	1852.5	22.35	0.7	23.05	201.84	2
376000	1882.5	22.26	0.7	22.96	197.7	2
382500	1912.5	22.34	0.7	23.04	201.37	2

N66

n66 20M DFT-s-OFDM Pi/2 BPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
344000	1720	22.35	0.5	22.85	192.75	1
349000	1745	22.4	0.5	22.9	194.98	1
354000	1770	22.65	0.5	23.15	206.54	1

n66 20M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
344000	1720	22.39	0.5	22.89	194.54	1
349000	1745	22.51	0.5	23.01	199.99	1
354000	1770	22.67	0.5	23.17	207.49	1

n66 20M DFT-s-OFDM 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
344000	1720	21.43	0.5	21.93	155.96	1
349000	1745	21.41	0.5	21.91	155.24	1
354000	1770	21.59	0.5	22.09	161.81	1

n66 20M DFT-s-OFDM 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
344000	1720	19.85	0.5	20.35	108.39	1
349000	1745	19.49	0.5	19.99	99.77	1
354000	1770	19.74	0.5	20.24	105.68	1

n66 20M DFT-s-OFDM 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
344000	1720	17.66	0.5	18.16	65.46	1
349000	1745	17.87	0.5	18.37	68.71	1
354000	1770	18.32	0.5	18.82	76.21	1

n66 15M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
343500	1717.5	22.33	0.5	22.83	191.87	1
349000	1745	22.48	0.5	22.98	198.61	1
354500	1772.5	22.65	0.5	23.15	206.54	1

n66 10M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
343000	1715	22.37	0.5	22.87	193.64	1
349000	1745	22.43	0.5	22.93	196.34	1
355000	1775	22.54	0.5	23.04	201.37	1

n66 5M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
342500	1712.5	22.34	0.5	22.84	192.31	1
349000	1745	22.43	0.5	22.93	196.34	1
355500	1777.5	22.57	0.5	23.07	202.77	1

N71

n71 20M DFT-s-OFDM Pi/2 BPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134600	673	23.16	-2.5	18.51	70.96	3
136100	680.5	23.07	-2.5	18.42	69.5	3
137600	688	23.16	-2.5	18.51	70.96	3

n71 20M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134600	673	23.38	-2.5	18.73	74.64	3
136100	680.5	23.26	-2.5	18.61	72.61	3
137600	688	23.23	-2.5	18.58	72.11	3

n71 20M DFT-s-OFDM 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134600	673	22.4	-2.5	17.75	59.57	3
136100	680.5	22.31	-2.5	17.66	58.34	3
137600	688	22.35	-2.5	17.7	58.88	3

n71 20M DFT-s-OFDM 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134600	673	20.26	-2.5	15.61	36.39	3
136100	680.5	20.23	-2.5	15.58	36.14	3
137600	688	20.31	-2.5	15.66	36.81	3

n71 20M DFT-s-OFDM 256QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134600	673	18.28	-2.5	13.63	23.07	3
136100	680.5	18.28	-2.5	13.63	23.07	3
137600	688	18.22	-2.5	13.57	22.75	3

n71 15M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
134100	670.5	23.26	-2.5	18.61	72.61	3
136100	680.5	23.2	-2.5	18.55	71.61	3
138100	690.5	23.17	-2.5	18.52	71.12	3

n71 10M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133600	668	23.25	-2.5	18.6	72.44	3
136100	680.5	23.2	-2.5	18.55	71.61	3
138600	693	23.17	-2.5	18.52	71.12	3

n71 5M DFT-s-OFDM QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133100	665.5	23.23	-2.5	18.58	72.11	3
136100	680.5	23.25	-2.5	18.6	72.44	3
139100	695.5	23.11	-2.5	18.46	70.15	3

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

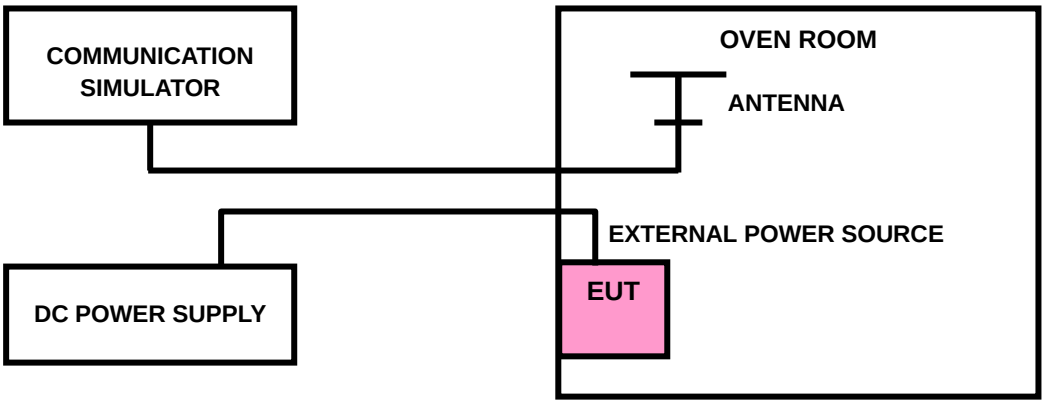
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

a. 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.
b. 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.
c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ 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 F.

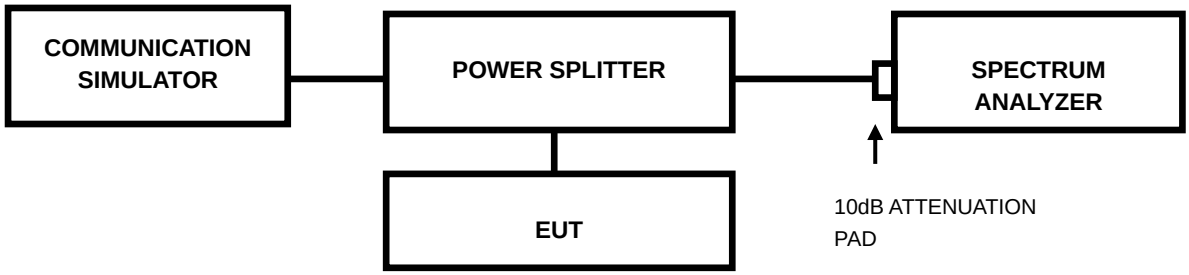
Note: VL = Low voltage(4.75V); VN/NV = Normal voltage(5V); VH = High voltage(5.25V);
NT = Normal temperature (25℃)

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

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

3.3.4 TEST RESULTS

Please Refer to Appendix F.

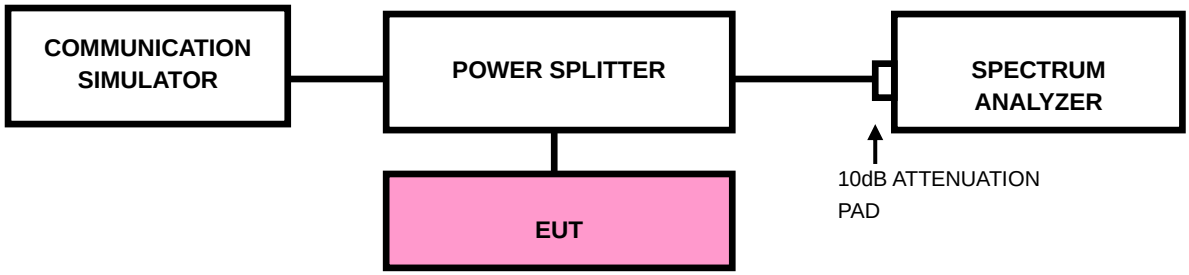
3.4 BAND EDGE MEASUREMENT

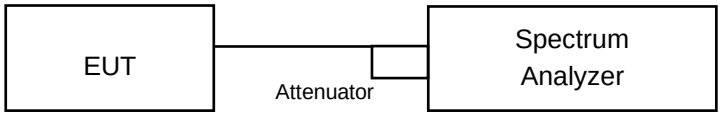
3.4.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.(n25/n66)

According to FCC 27.53(g) specified that For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed. (n71)

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) ≧ 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 ≧3 x 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 is10KHz or 100KHz.

k) Record the max trace plot into the test report.

3.4.4 TEST RESULTS

Please Refer to Appendix F.

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

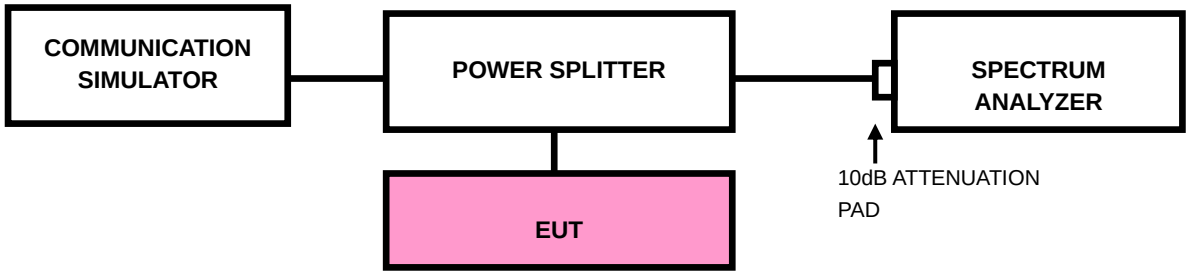
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission is equal to -13dBm.

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 F.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission is equal to -13dBm.

3.6.2 TEST PROCEDURES

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

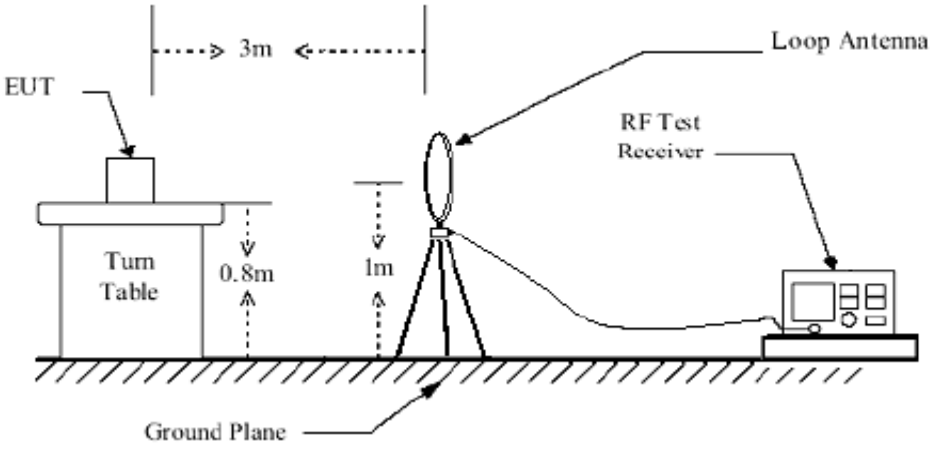
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

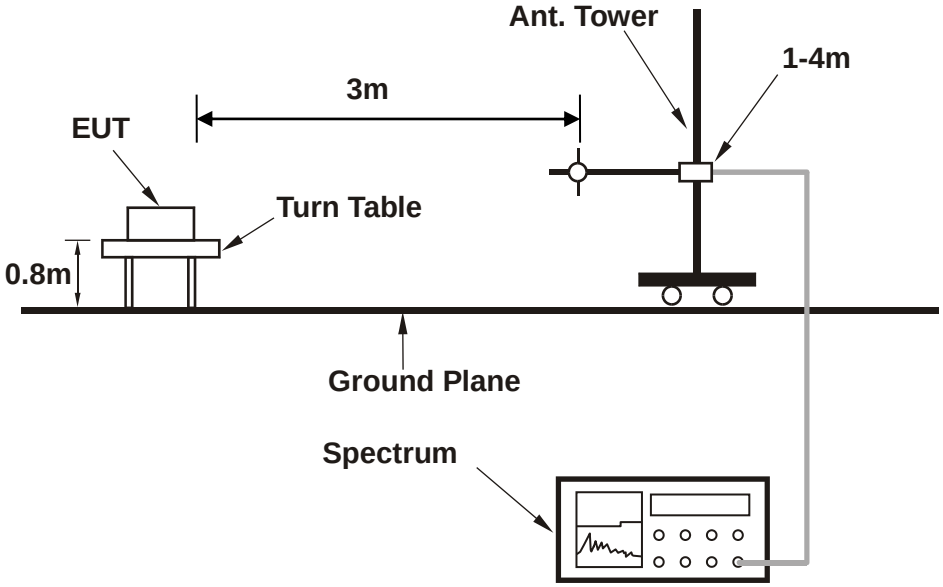
No deviation

3.6.4 TEST SETUP

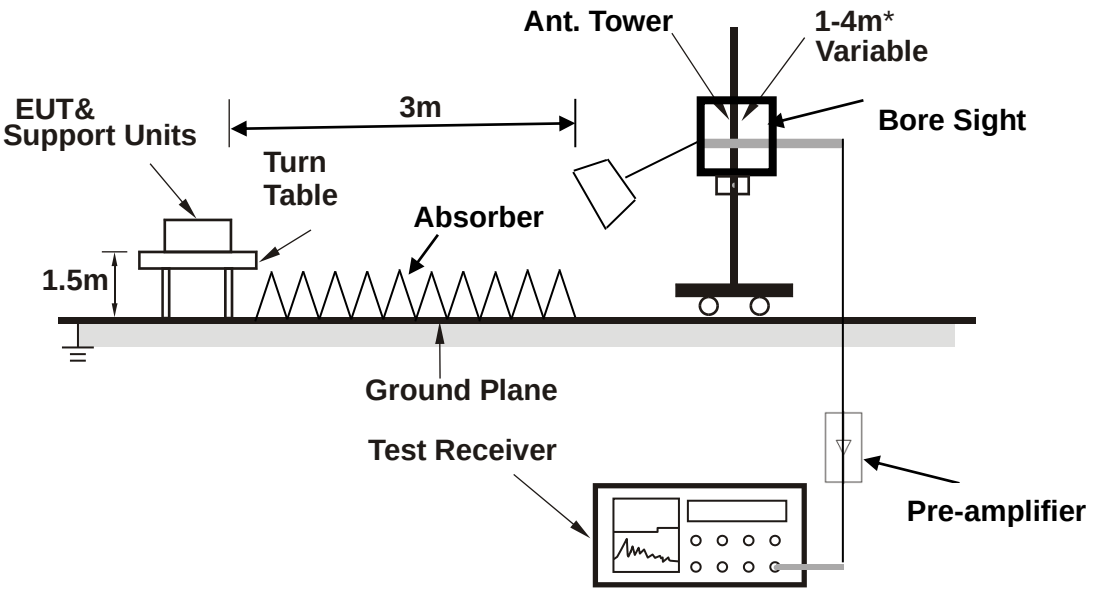
< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 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：

1. Spurious emissions below 1GHz were found more than 20dB below limit line

ABOVE 1GHz

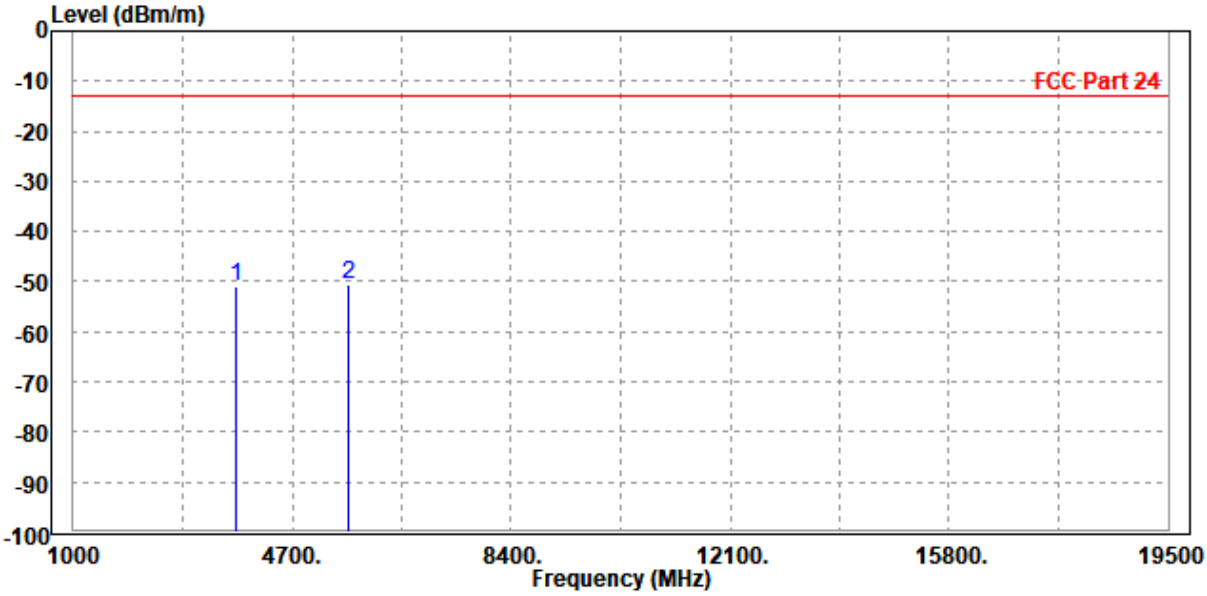
Note: For higher frequency, the emission is too low to be detected.

N25

CHANNEL BANDWIDTH: 5MHz / QPSK

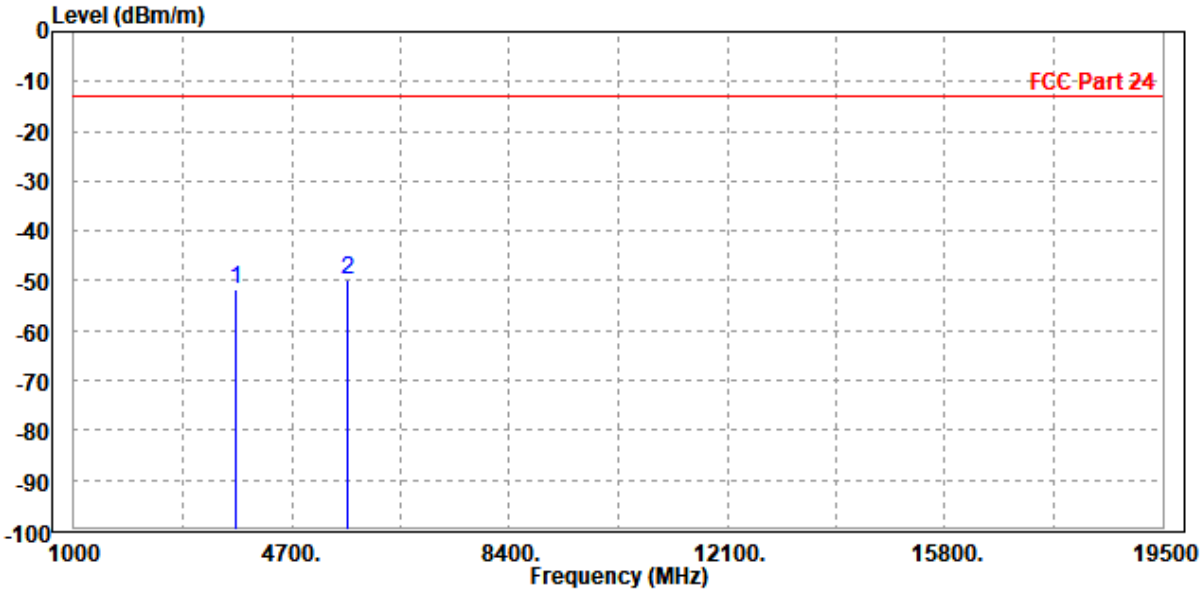
MODE	TX channel 376500	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3765.000	-50.88	-59.23	-13.00	-37.88	8.35	Peak	Horizontal
2	PP	5643.500	-50.44	-62.25	-13.00	-37.44	11.81	Peak	Horizontal



MODE	TX channel 376500	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3756.500	-51.62	-60.25	-13.00	-38.62	8.63	Peak	Vertical
2 PP	5647.500	-49.91	-62.23	-13.00	-36.91	12.32	Peak	Vertical

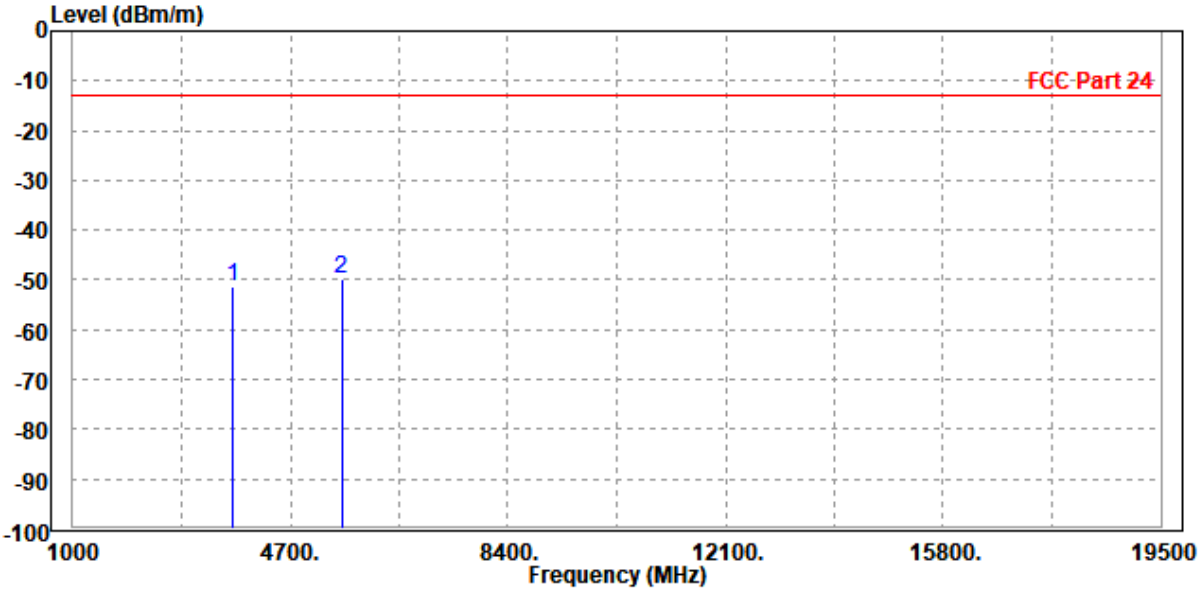


CHANNEL BANDWIDTH: 10MHz / QPSK

CH 371000

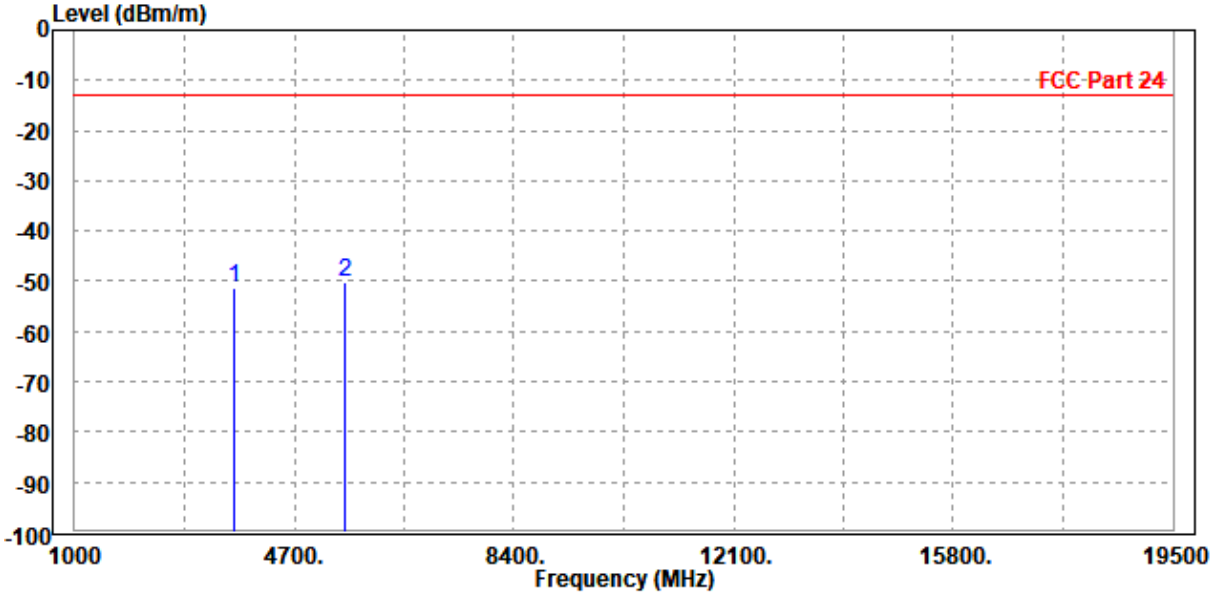
MODE	TX channel 371000	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3710.000	-51.52	-59.91	-13.00	-38.52	8.39	Peak	Horizontal
2 PP	5569.500	-49.95	-61.76	-13.00	-36.95	11.81	Peak	Horizontal



MODE	TX channel 371000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

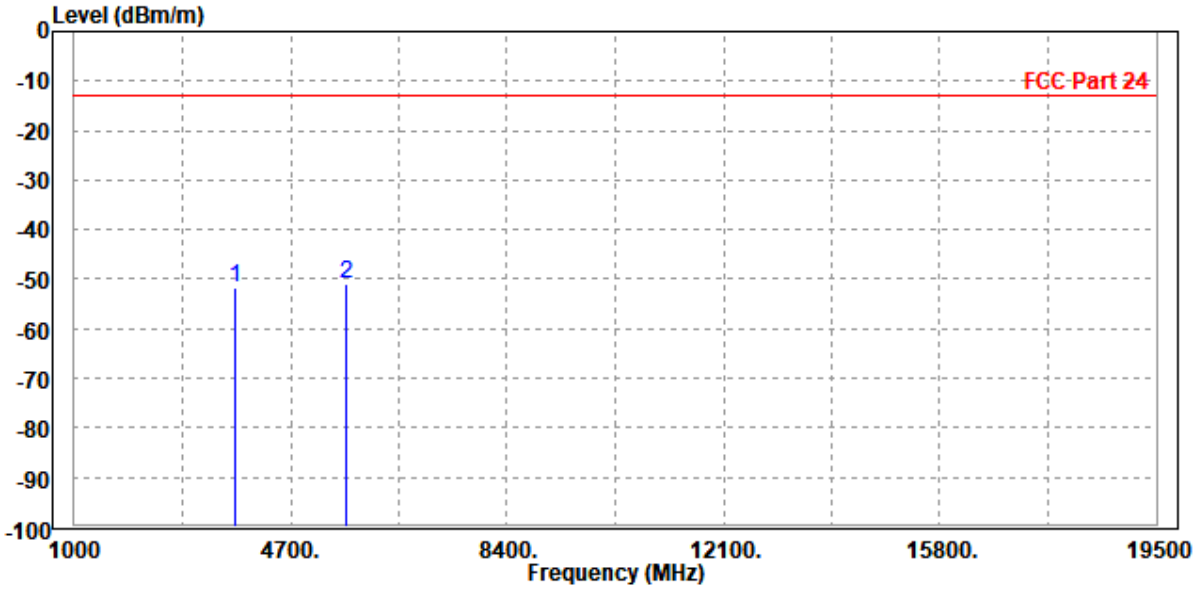
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3701.000	-51.25	-59.88	-13.00	-38.25	8.63	Peak	Vertical
2	PP	5565.000	-50.11	-62.44	-13.00	-37.11	12.33	Peak	Vertical



CH 376500

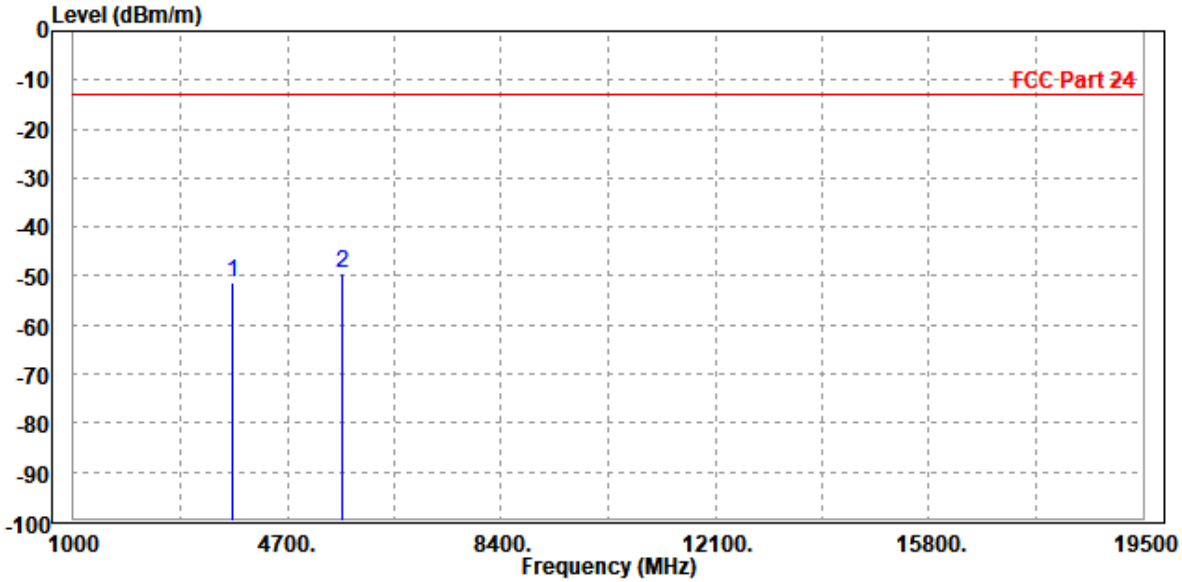
MODE	TX channel 376500	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3756.500	-51.71	-60.06	-13.00	-38.71	8.35	Peak	Horizontal
2	PP	5647.500	-50.86	-62.67	-13.00	-37.86	11.81	Peak	Horizontal



MODE	TX channel 376500	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

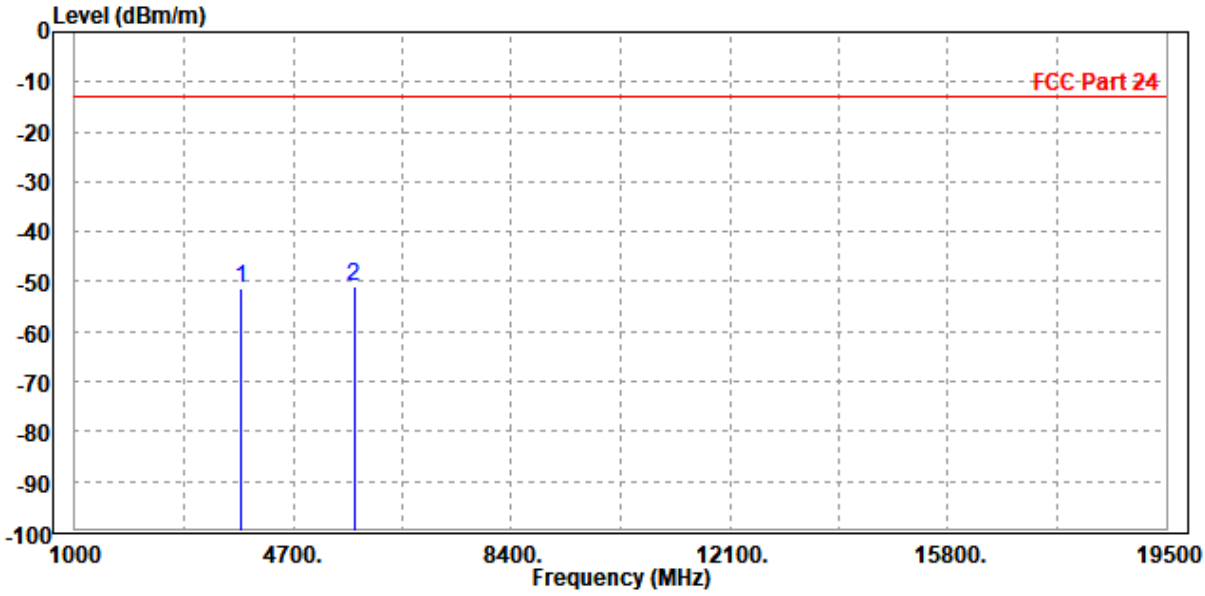
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3765.000	-51.41	-60.04	-13.00	-38.41	8.63	Peak	Vertical
2	PP	5643.500	-49.32	-61.64	-13.00	-36.32	12.32	Peak	Vertical



CH 382000

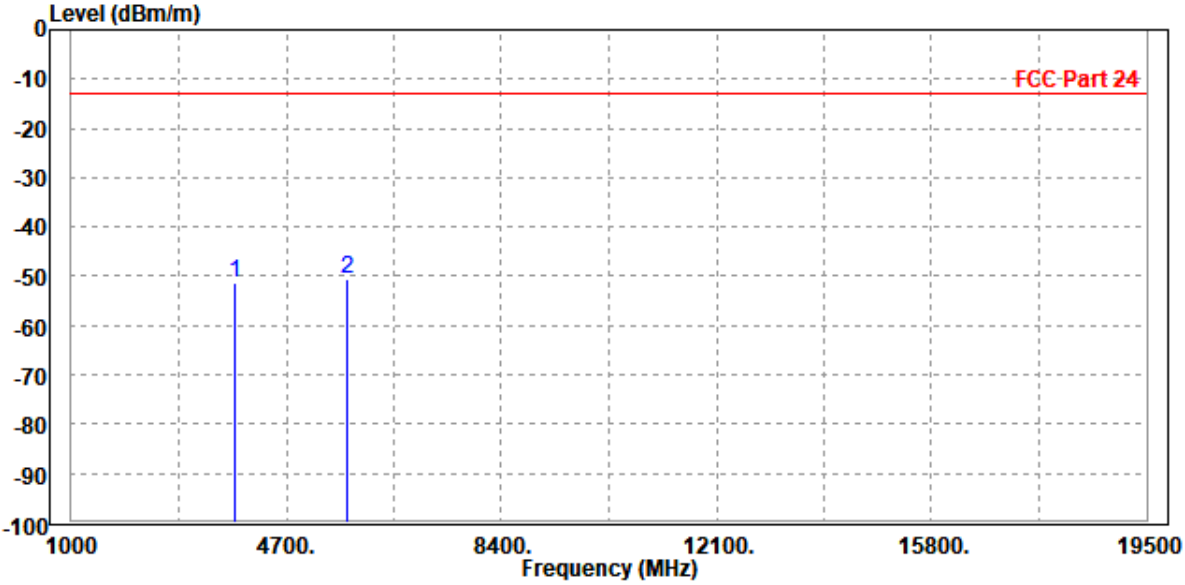
MODE	TX channel 382000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3812.000	-51.17	-59.48	-13.00	-38.17	8.31	Peak	Horizontal
2 PP	5730.000	-51.10	-62.92	-13.00	-38.10	11.82	Peak	Horizontal



MODE	TX channel 382000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

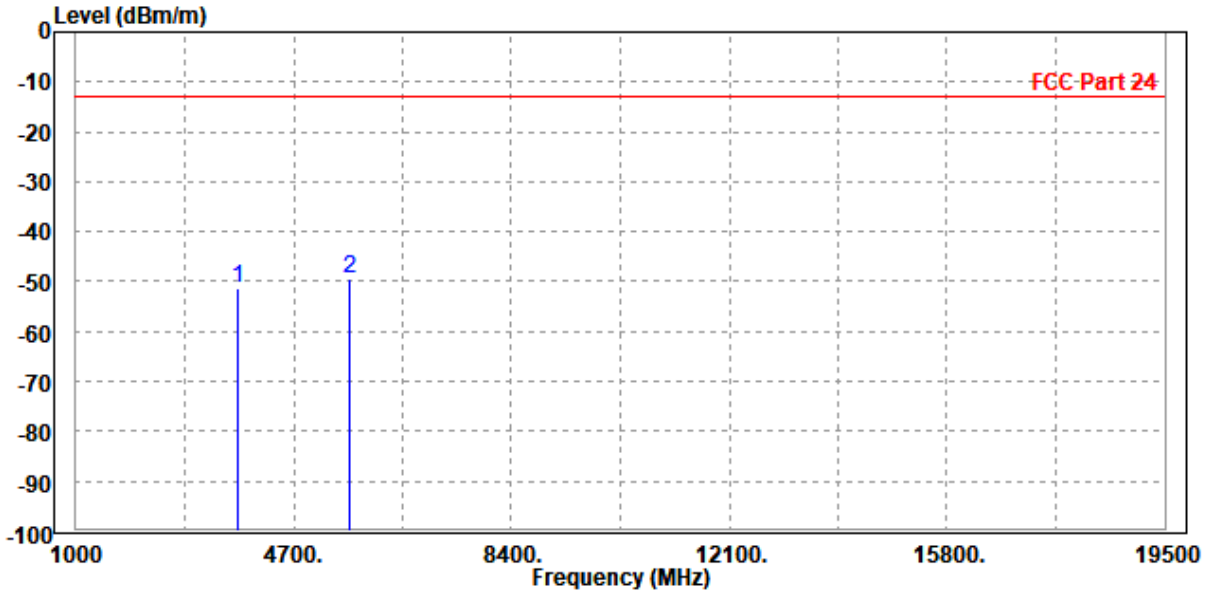
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3820.000	-51.19	-59.82	-13.00	-38.19	8.63	Peak	Vertical
2 PP	5736.000	-50.76	-63.07	-13.00	-37.76	12.31	Peak	Vertical



CHANNEL BANDWIDTH: 15MHz / QPSK

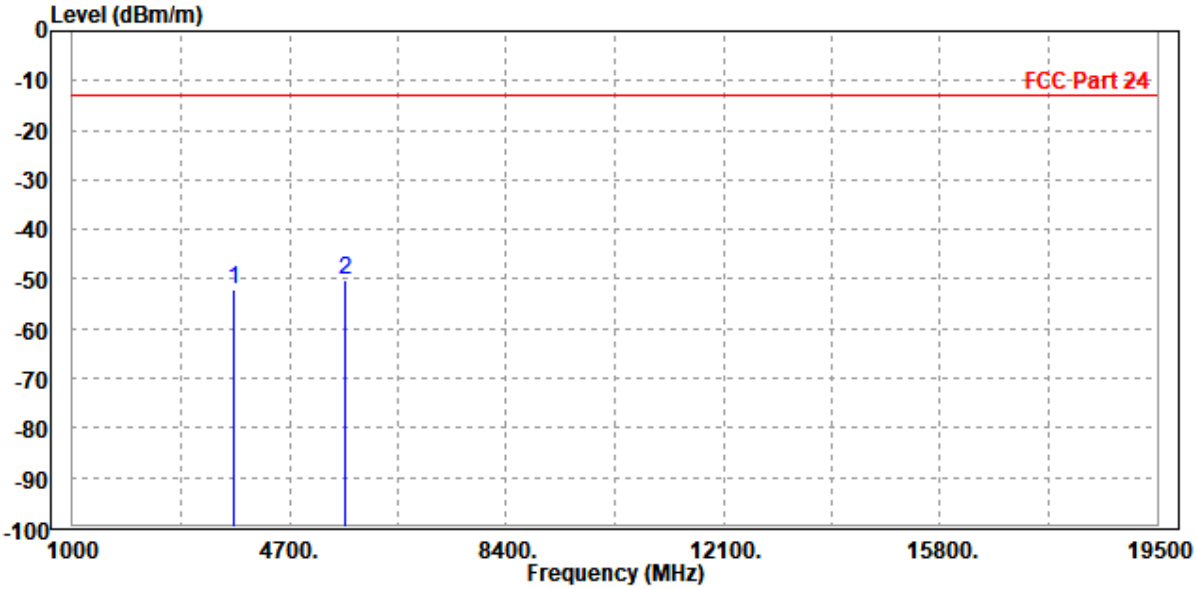
MODE	TX channel 376500	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3765.000	-51.50	-59.85	-13.00	-38.50	8.35	Peak	Horizontal
2 PP	5643.500	-49.36	-61.17	-13.00	-36.36	11.81	Peak	Horizontal



MODE	TX channel 376500	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

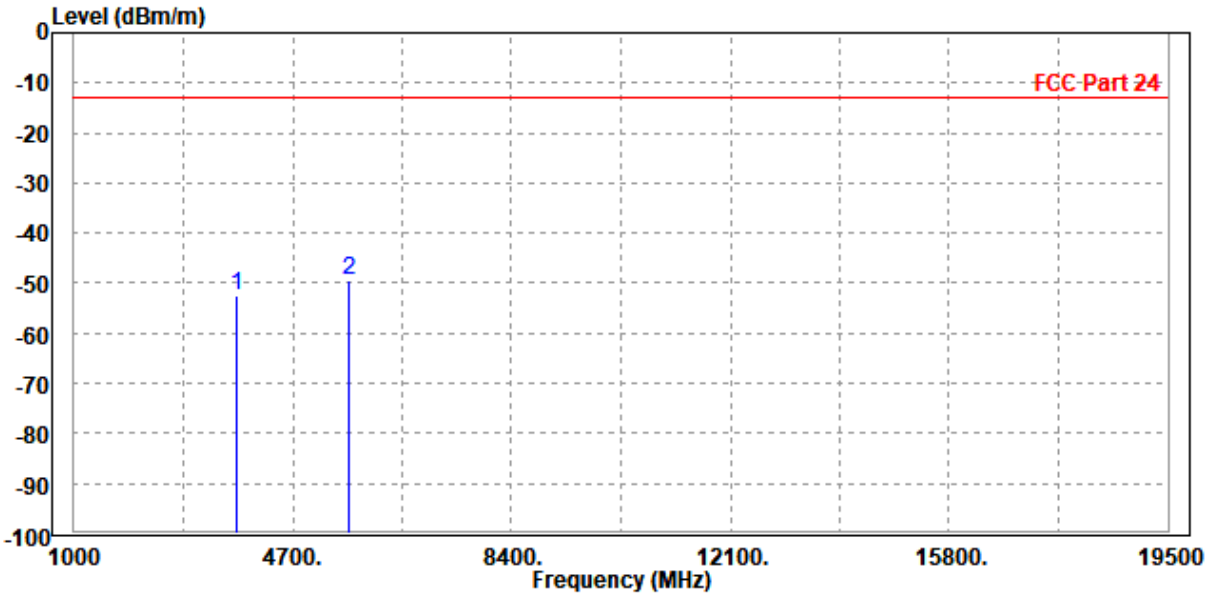
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3756.500	-52.16	-60.79	-13.00	-39.16	8.63	Peak	Vertical
2	PP	5647.500	-50.06	-62.38	-13.00	-37.06	12.32	Peak	Vertical



CHANNEL BANDWIDTH: 20MHz / QPSK

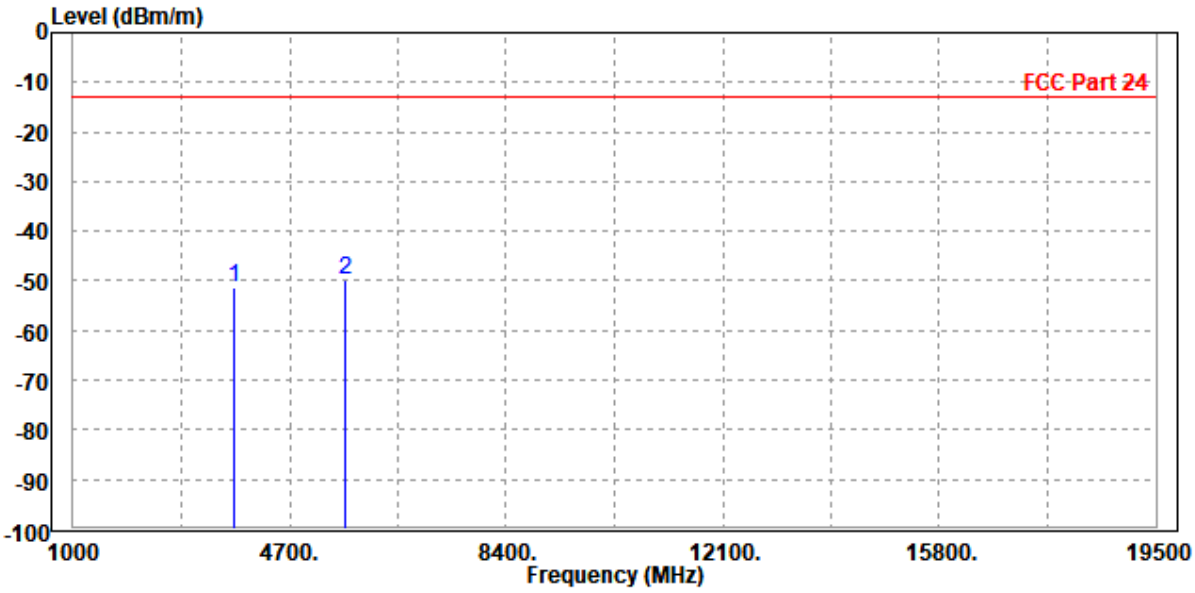
MODE	TX channel 376500	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3756.500	-52.30	-60.65	-13.00	-39.30	8.35	Peak	Horizontal
2 PP	5647.500	-49.35	-61.16	-13.00	-36.35	11.81	Peak	Horizontal



MODE	TX channel 376500	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3756.500	-51.32	-59.95	-13.00	-38.32	8.63	Peak	Vertical
2 PP	5647.500	-49.87	-62.19	-13.00	-36.87	12.32	Peak	Vertical

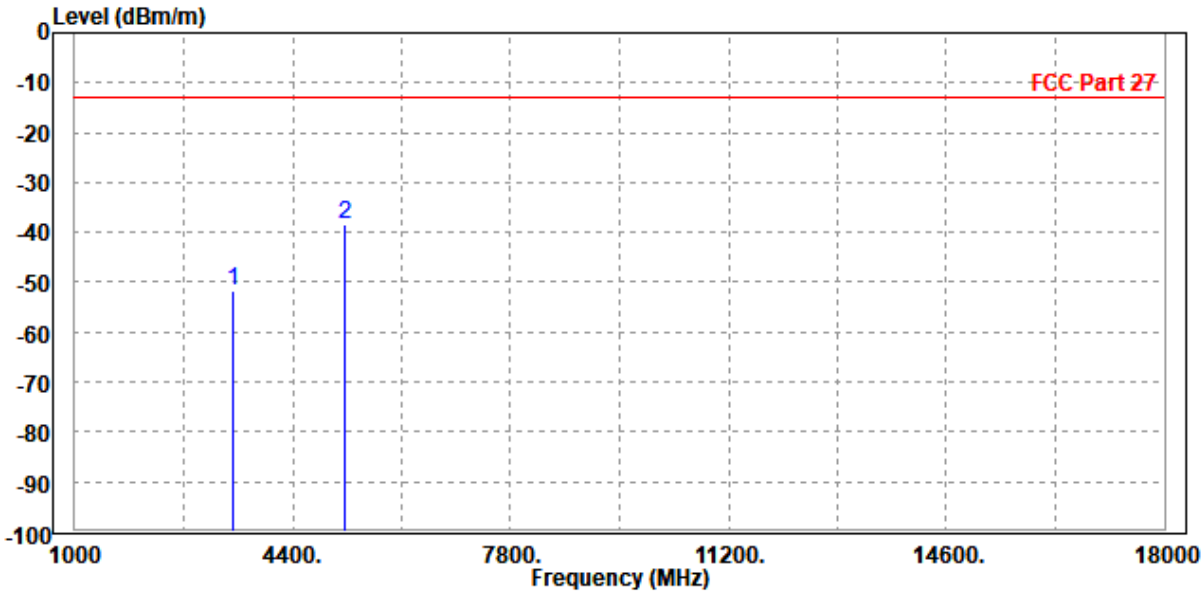


N66

CHANNEL BANDWIDTH: 5MHz / QPSK

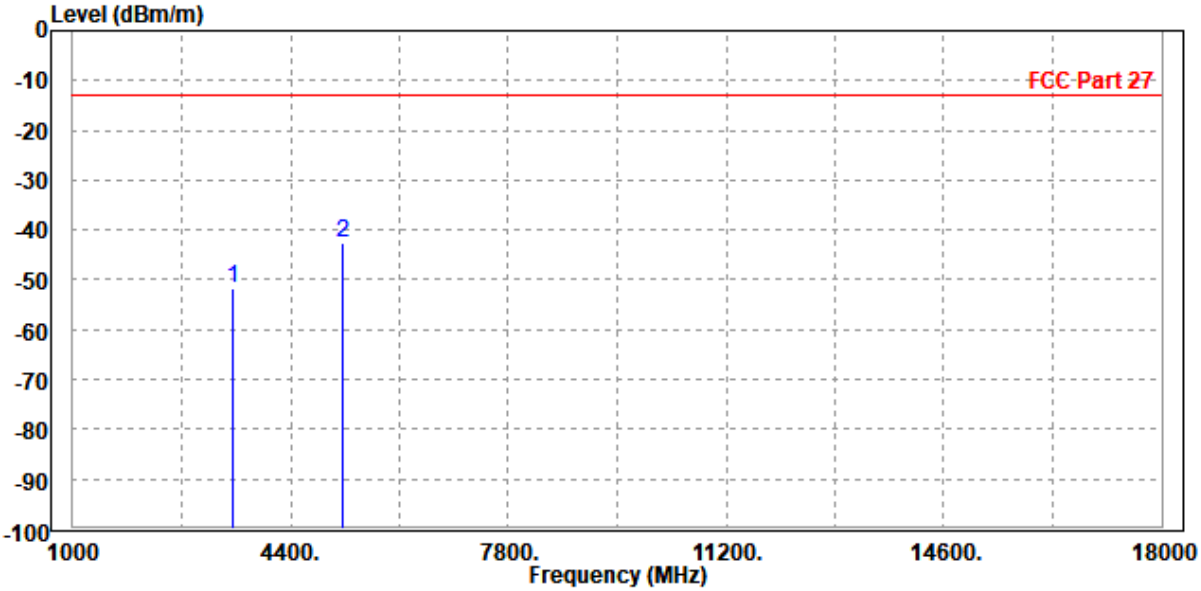
MODE	TX channel 349000	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3482.000	-51.66	-60.21	-13.00	-38.66	8.55	Peak	Horizontal
2 PP	5216.000	-38.54	-49.92	-13.00	-25.54	11.38	Peak	Horizontal



MODE	TX channel 349000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

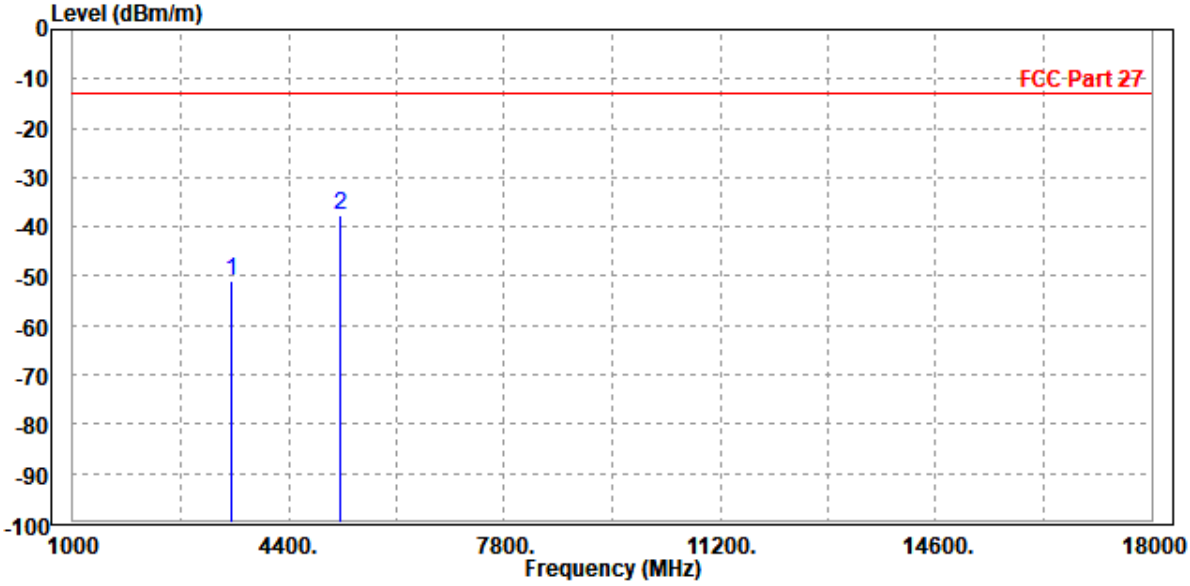
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3490.000	-51.73	-60.37	-13.00	-38.73	8.64	Peak	Vertical
2	PP	5216.000	-42.62	-54.41	-13.00	-29.62	11.79	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

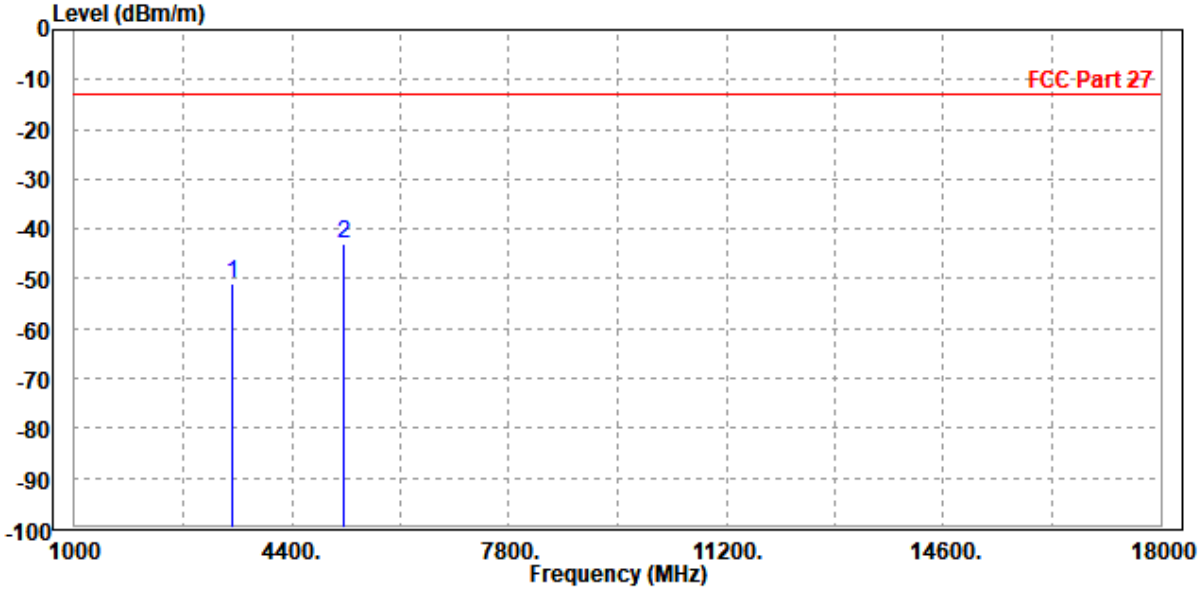
MODE	TX channel 349000	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3490.000	-51.00	-59.55	-13.00	-38.00	8.55	Peak	Horizontal
2 PP	5216.000	-37.76	-49.14	-13.00	-24.76	11.38	Peak	Horizontal



MODE	TX channel 349000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

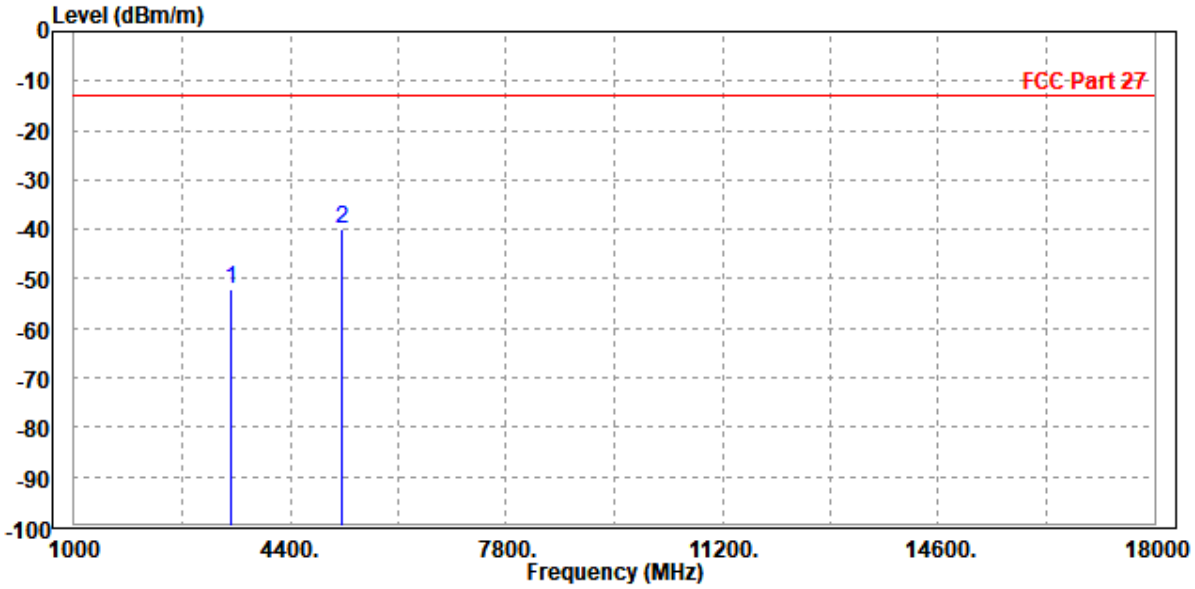
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3482.000	-50.98	-59.63	-13.00	-37.98	8.65	Peak	Vertical
2	PP	5216.000	-43.02	-54.81	-13.00	-30.02	11.79	Peak	Vertical



CHANNEL BANDWIDTH: 15MHz / QPSK

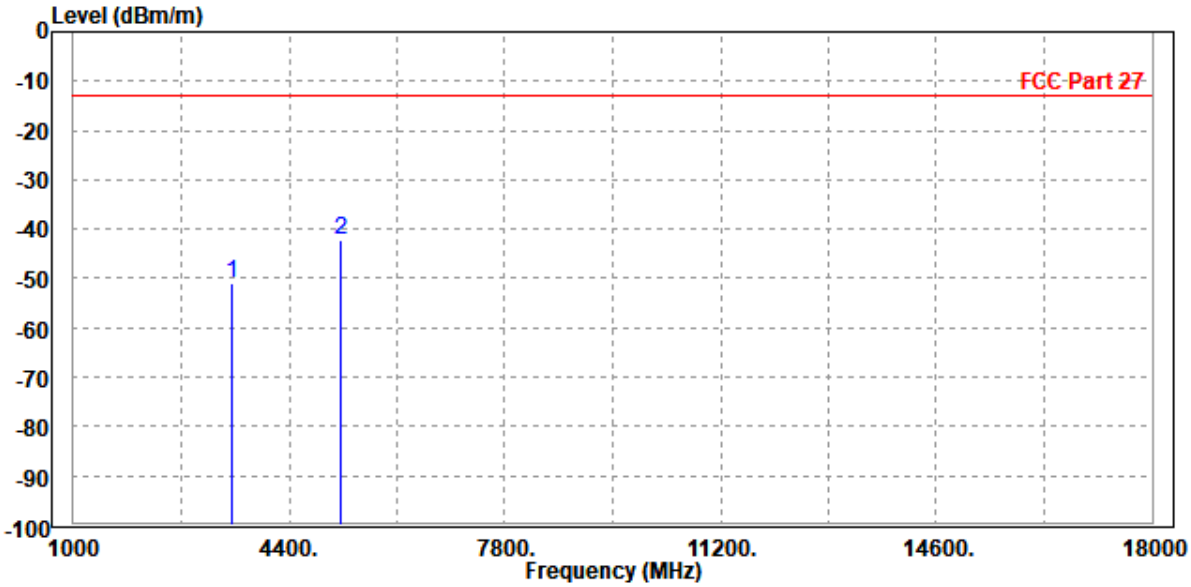
MODE	TX channel 349000	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3482.000	-52.15	-60.70	-13.00	-39.15	8.55	Peak	Horizontal
2	PP	5216.000	-39.83	-51.21	-13.00	-26.83	11.38	Peak	Horizontal



MODE	TX channel 349000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3490.000	-51.02	-59.66	-13.00	-38.02	8.64	Peak	Vertical
2 PP	5216.000	-42.36	-54.15	-13.00	-29.36	11.79	Peak	Vertical

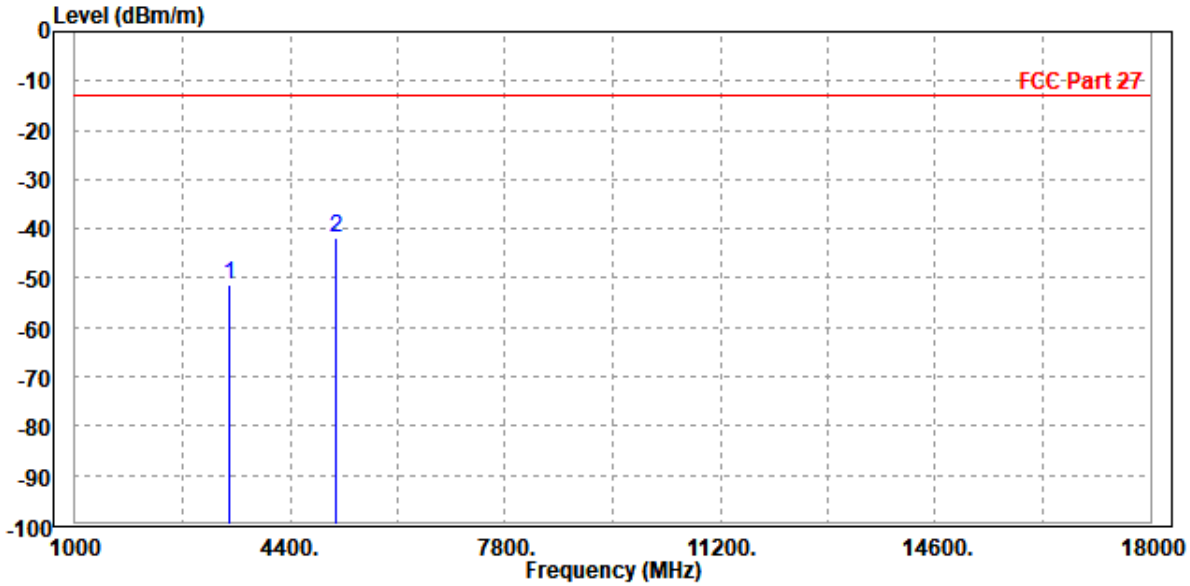


CHANNEL BANDWIDTH: 20MHz / QPSK

CH 344000

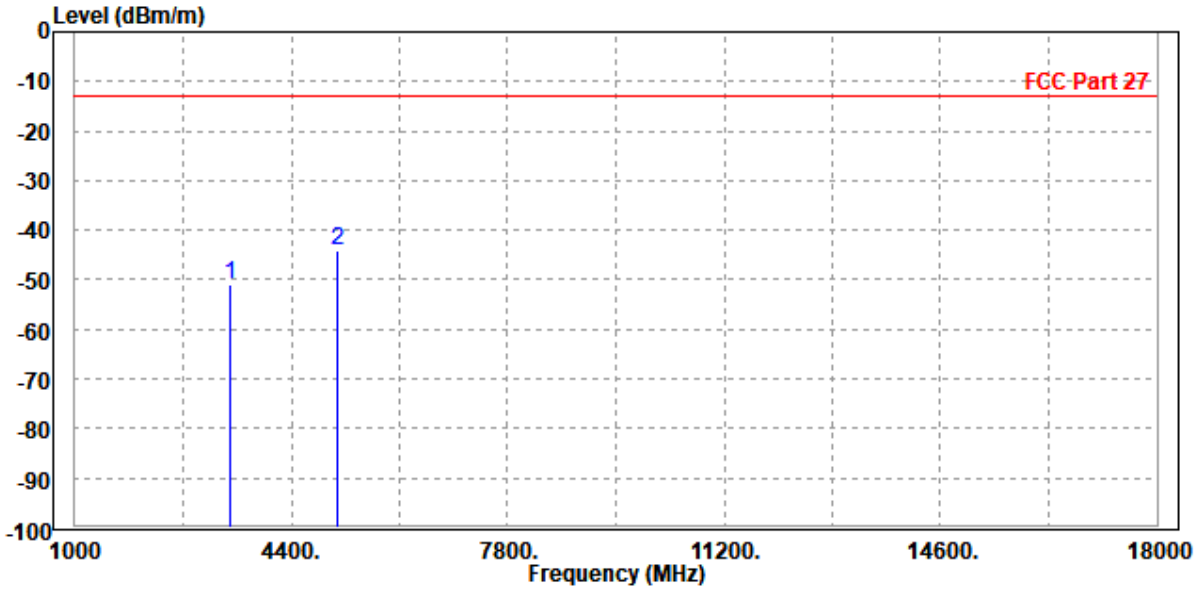
MODE	TX channel 344000	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3440.000	-51.41	-59.93	-13.00	-38.41	8.52	Peak	Horizontal
2 PP	5131.000	-41.86	-53.11	-13.00	-28.86	11.25	Peak	Horizontal



MODE	TX channel 344000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

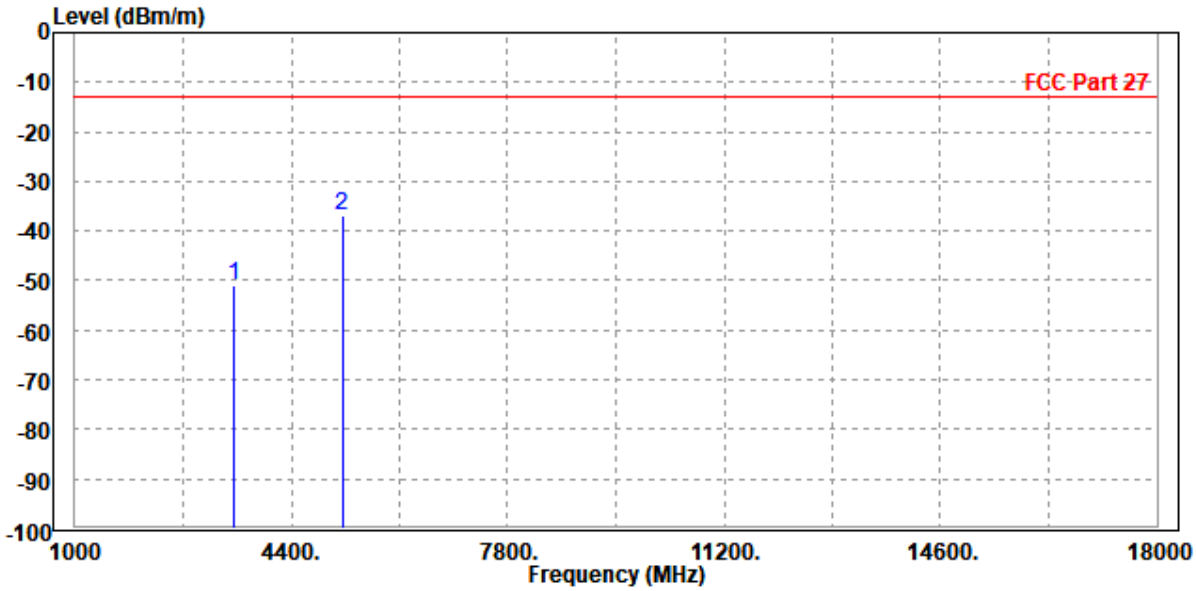
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3448.000	-51.01	-59.67	-13.00	-38.01	8.66	Peak	Vertical
2	PP	5131.000	-44.14	-55.76	-13.00	-31.14	11.62	Peak	Vertical



CH 349000

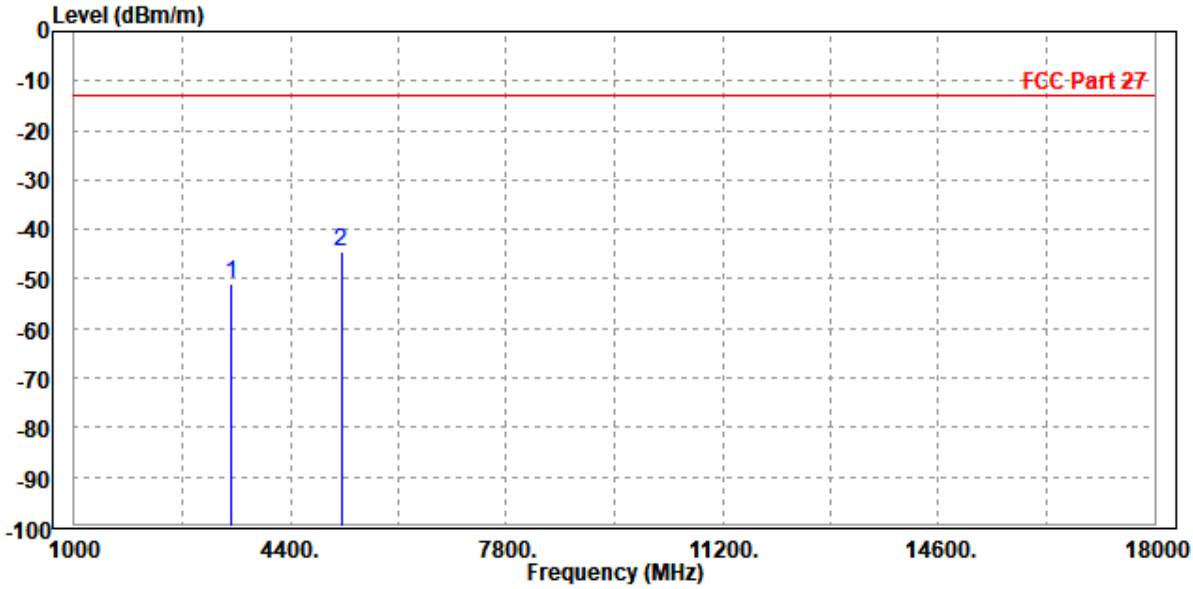
MODE	TX channel 349000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3490.000	-50.91	-59.46	-13.00	-37.91	8.55	Peak	Horizontal
2 PP	5199.000	-36.85	-48.20	-13.00	-23.85	11.35	Peak	Horizontal



MODE	TX channel 349000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

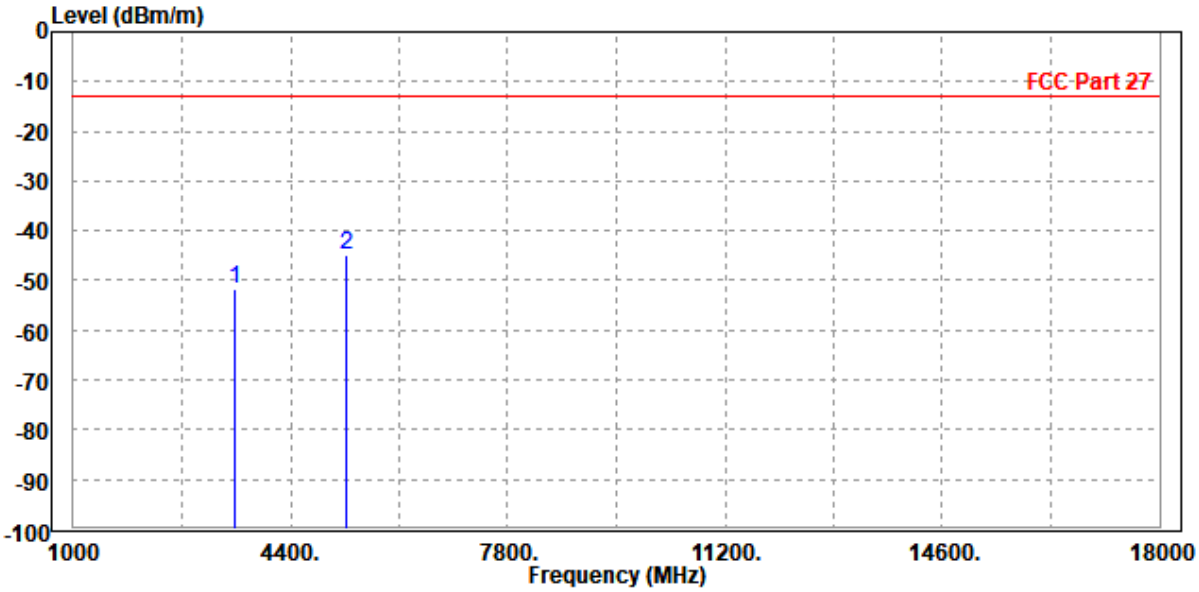
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3482.000	-51.04	-59.69	-13.00	-38.04	8.65	Peak	Vertical
2 PP	5199.000	-44.45	-56.21	-13.00	-31.45	11.76	Peak	Vertical



CH 354000

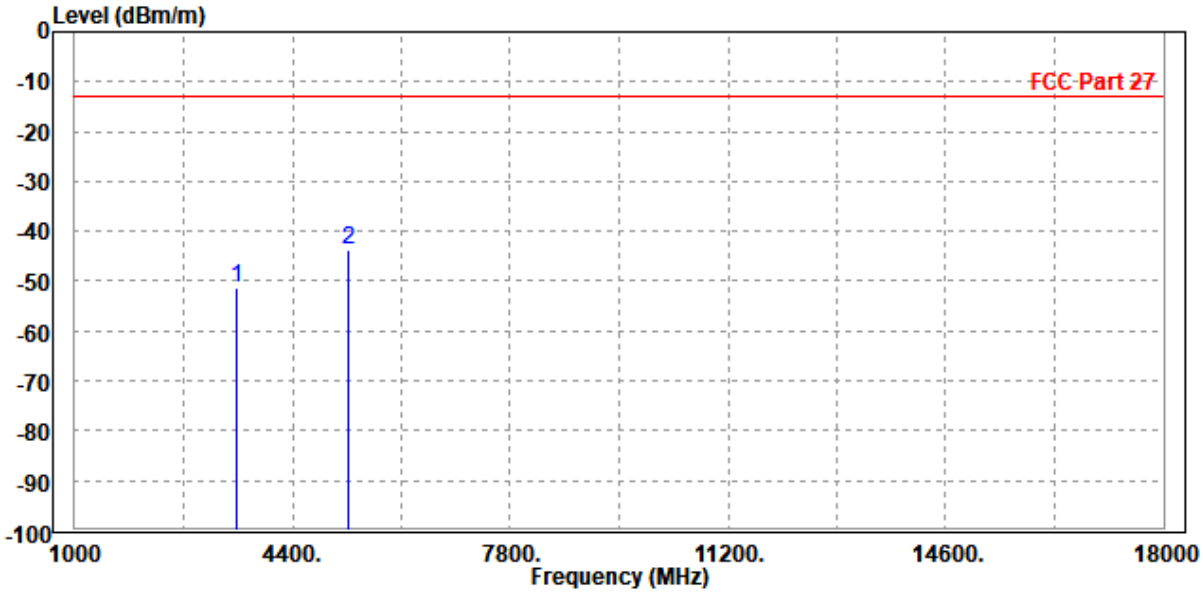
MODE	TX channel 354000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3533.000	-51.58	-60.11	-13.00	-38.58	8.53	Peak	Horizontal
2	PP	5284.000	-44.88	-56.36	-13.00	-31.88	11.48	Peak	Horizontal



MODE	TX channel 354000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3540.000	-51.19	-59.83	-13.00	-38.19	8.64	Peak	Vertical
2 PP	5284.000	-43.55	-55.47	-13.00	-30.55	11.92	Peak	Vertical

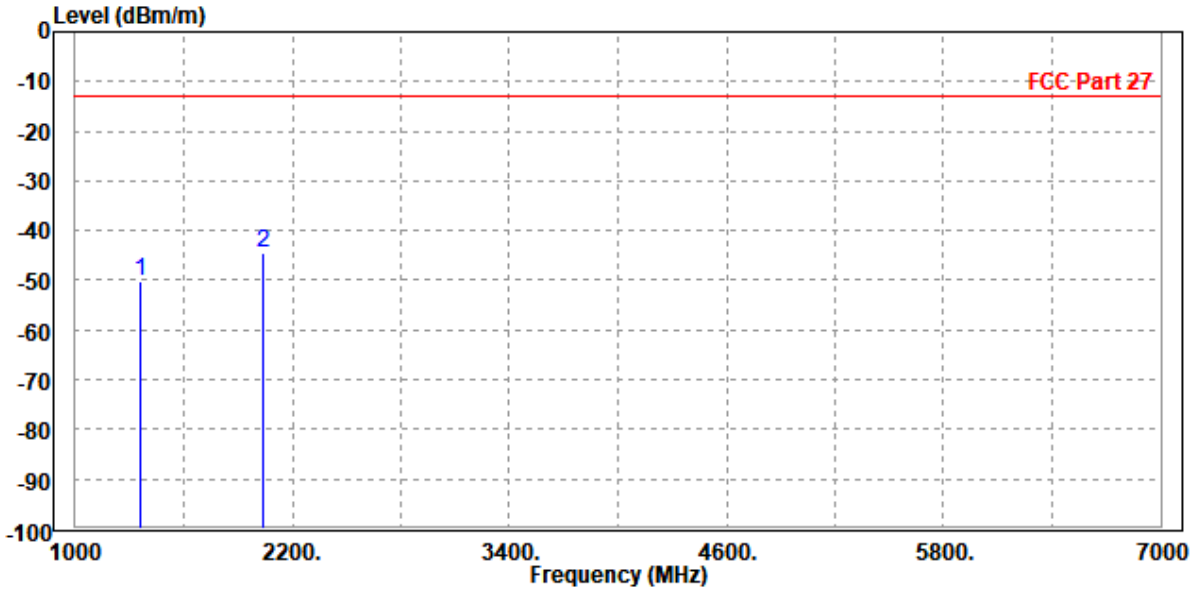


N71

CHANNEL BANDWIDTH: 5MHz / QPSK

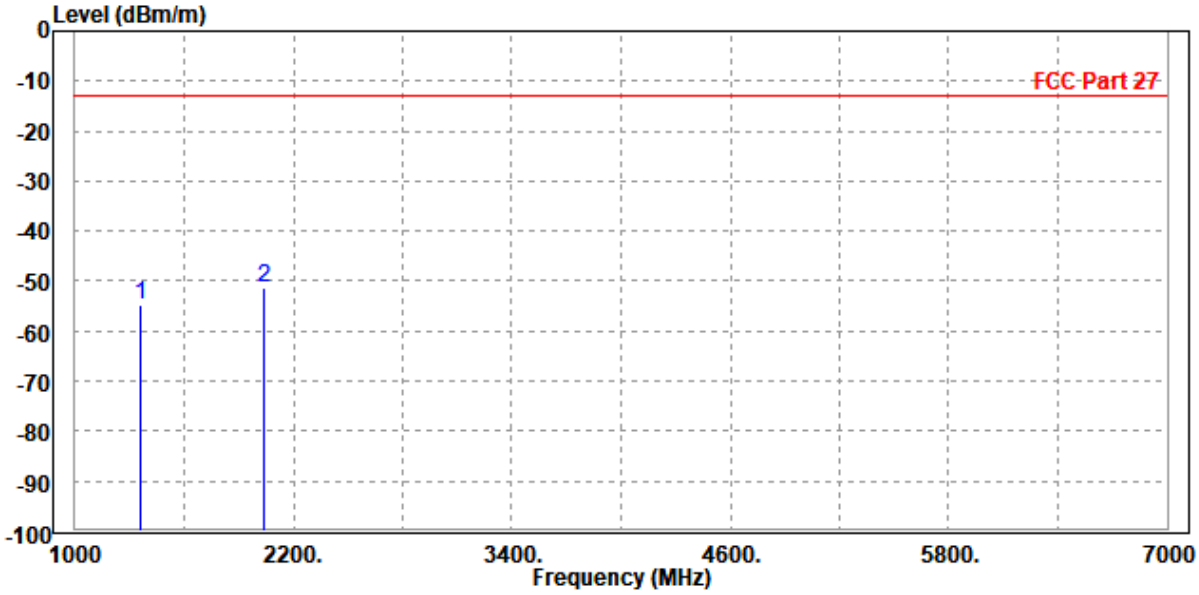
MODE	TX channel 136100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1360.000	-50.05	-52.82	-13.00	-37.05	2.77	Peak	Horizontal
2 PP	2038.000	-44.66	-49.51	-13.00	-31.66	4.85	Peak	Horizontal



MODE	TX channel 136100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

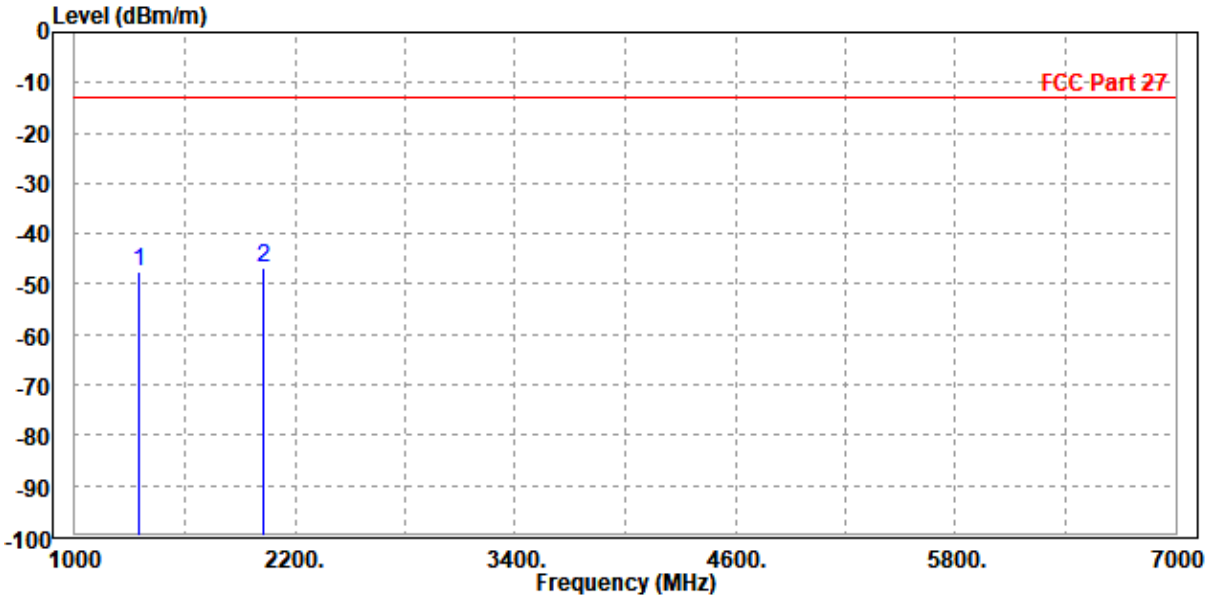
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1360.000	-54.62	-57.41	-13.00	-41.62	2.79	Peak	Vertical
2 PP	2038.000	-51.38	-55.52	-13.00	-38.38	4.14	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

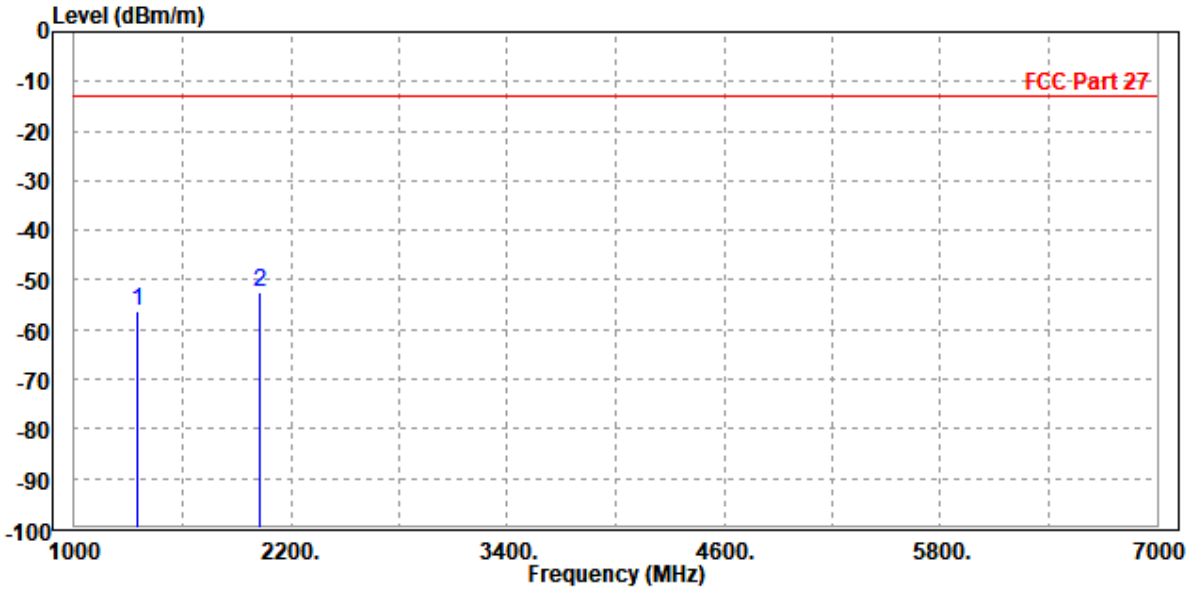
MODE	TX channel 136100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1354.000	-47.56	-50.31	-13.00	-34.56	2.75	Peak	Horizontal
2	PP	2026.000	-46.79	-51.61	-13.00	-33.79	4.82	Peak	Horizontal



MODE	TX channel 136100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

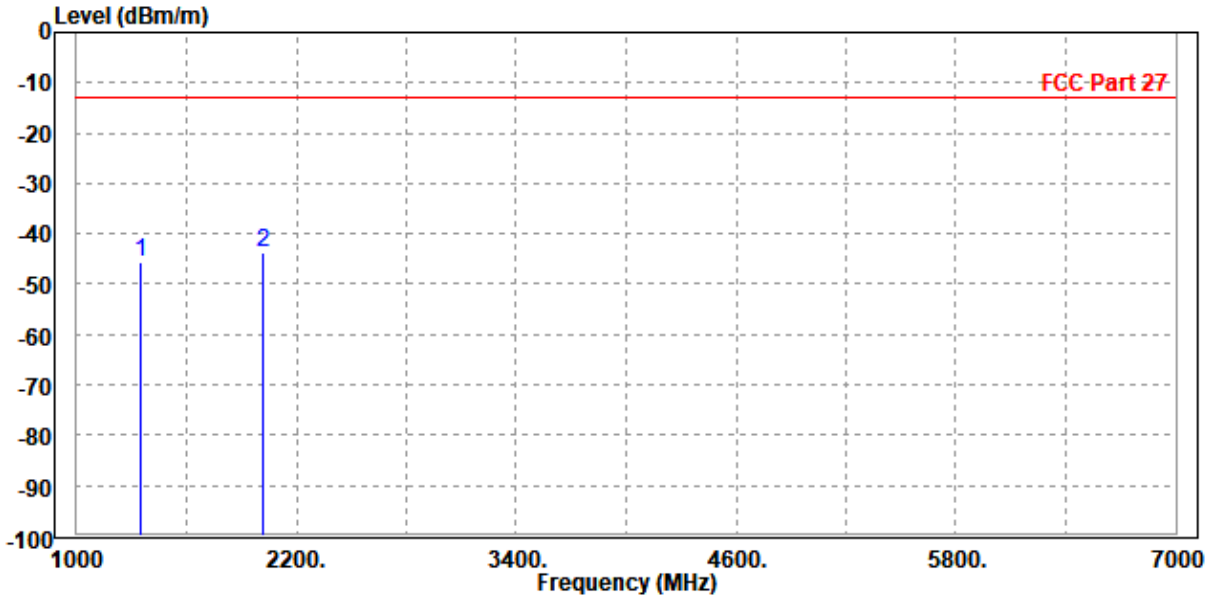
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1348.000	-56.45	-59.21	-13.00	-43.45	2.76	Peak	Vertical
2 PP	2026.000	-52.42	-56.51	-13.00	-39.42	4.09	Peak	Vertical



CHANNEL BANDWIDTH: 15MHz / QPSK

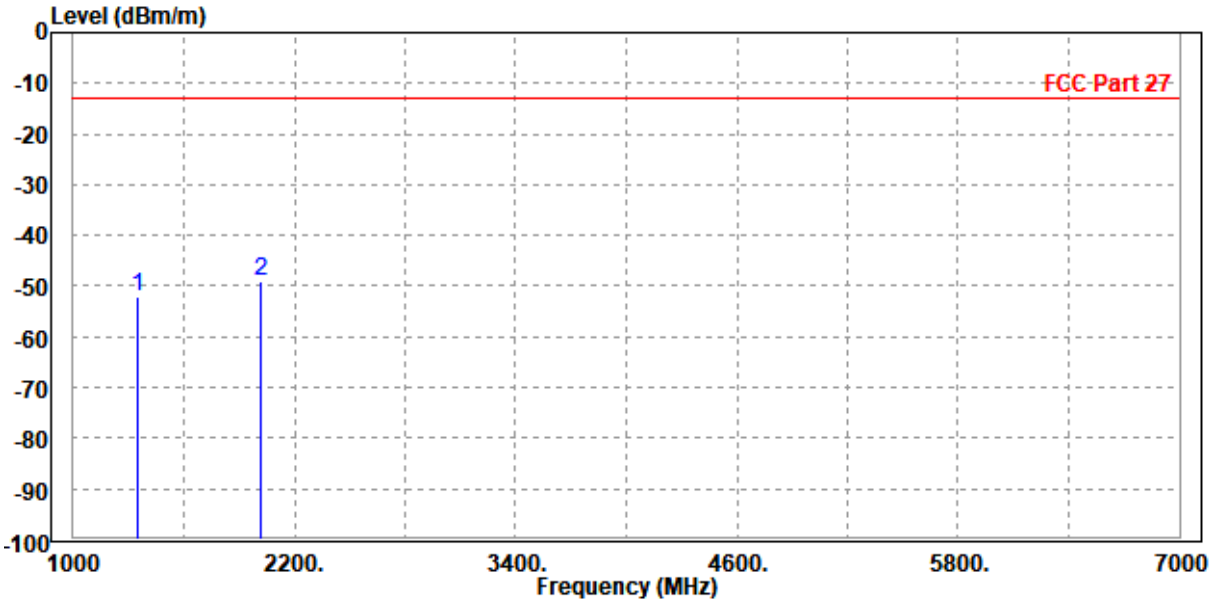
MODE	TX channel 136100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1348.000	-45.67	-48.40	-13.00	-32.67	2.73	Peak	Horizontal
2 PP	2020.000	-43.71	-48.51	-13.00	-30.71	4.80	Peak	Horizontal



MODE	TX channel 136100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1348.000	-51.91	-54.67	-13.00	-38.91	2.76	Peak	Vertical
2 PP	2020.000	-48.87	-52.94	-13.00	-35.87	4.07	Peak	Vertical

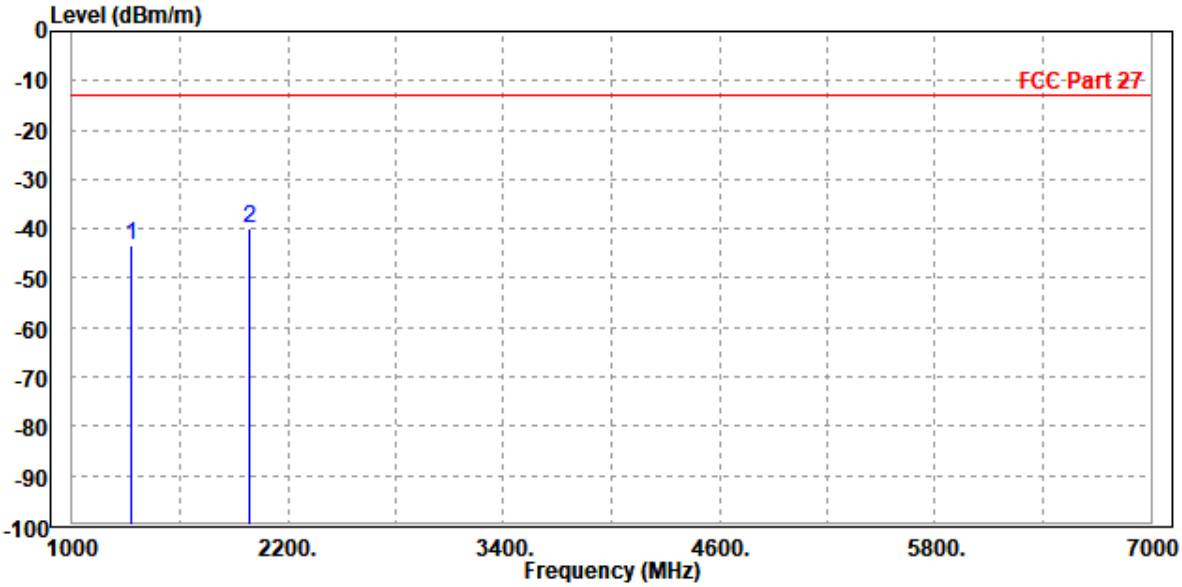


CHANNEL BANDWIDTH: 20MHz / QPSK

CH 134600

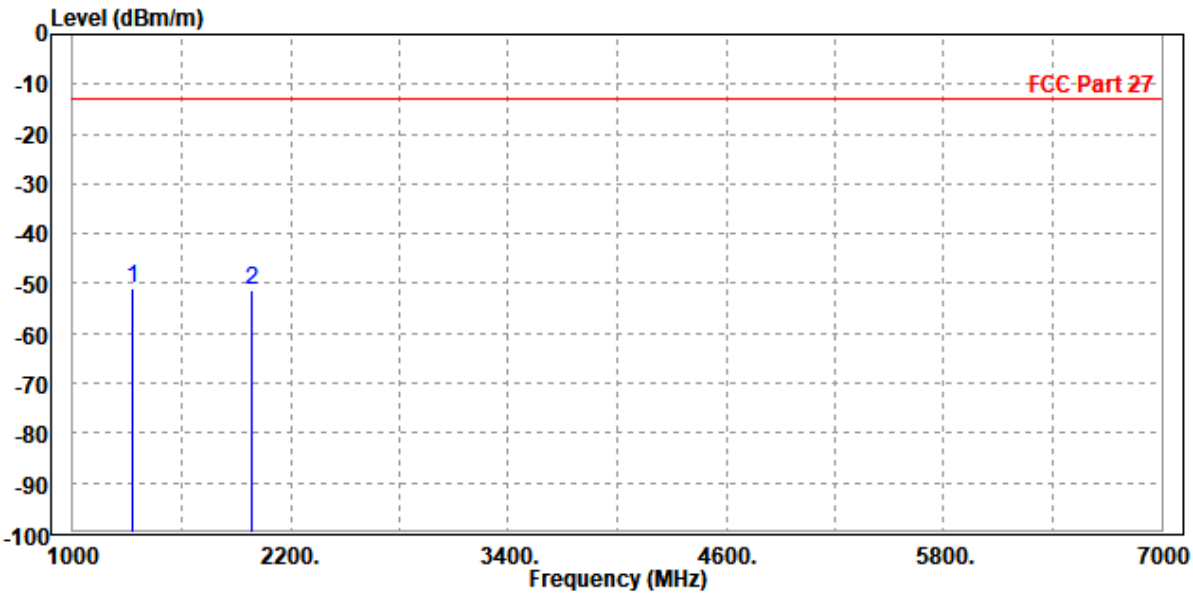
MODE	TX channel 134600	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1330.000	-43.51	-46.19	-13.00	-30.51	2.68	Peak	Horizontal
2	PP	1990.000	-40.06	-44.78	-13.00	-27.06	4.72	Peak	Horizontal



MODE	TX channel 134600	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

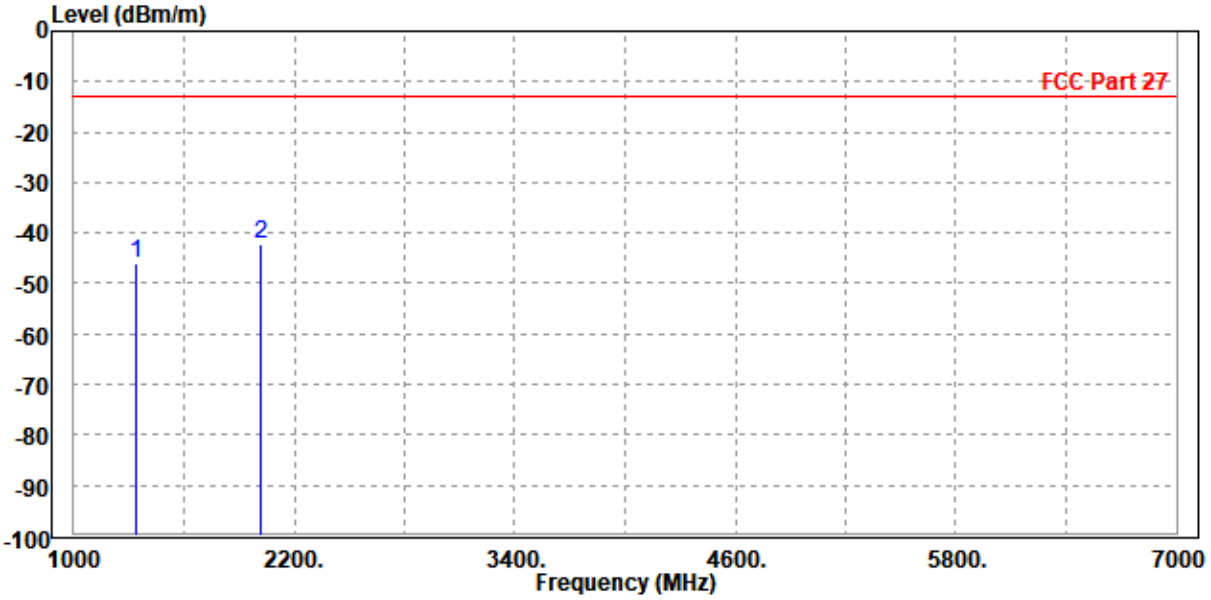
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1330.000	-51.03	-53.75	-13.00	-38.03	2.72	Peak	Vertical
2		1990.000	-51.33	-55.31	-13.00	-38.33	3.98	Peak	Vertical



CH 136100

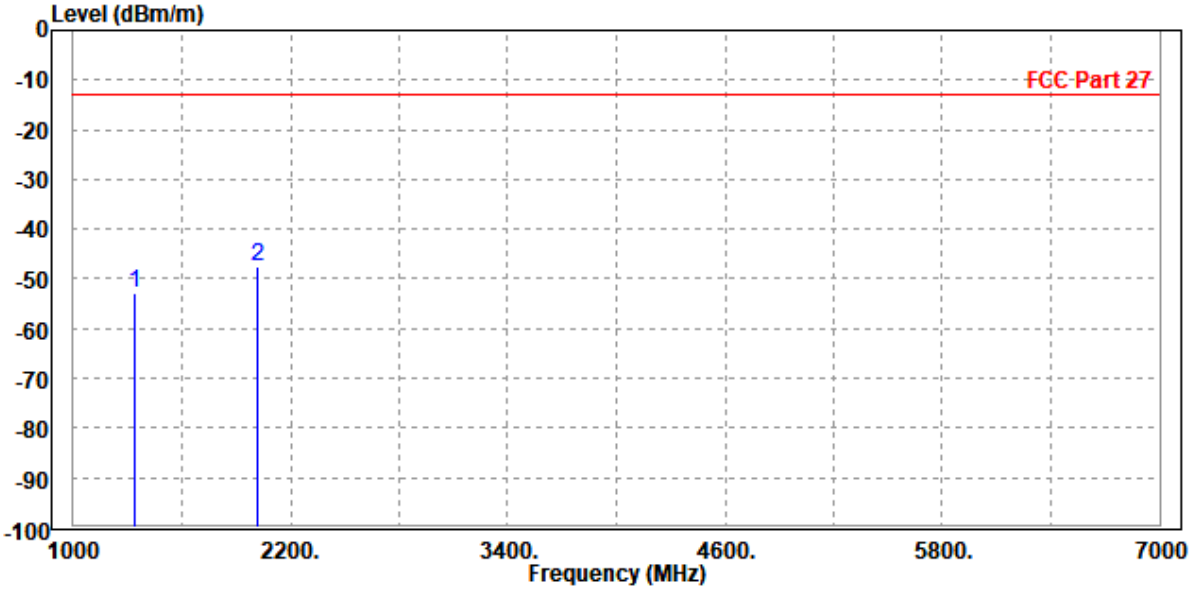
MODE	TX channel 136100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1342.000	-45.84	-48.55	-13.00	-32.84	2.71	Peak	Horizontal
2 PP	2014.000	-42.31	-47.10	-13.00	-29.31	4.79	Peak	Horizontal



MODE	TX channel 136100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

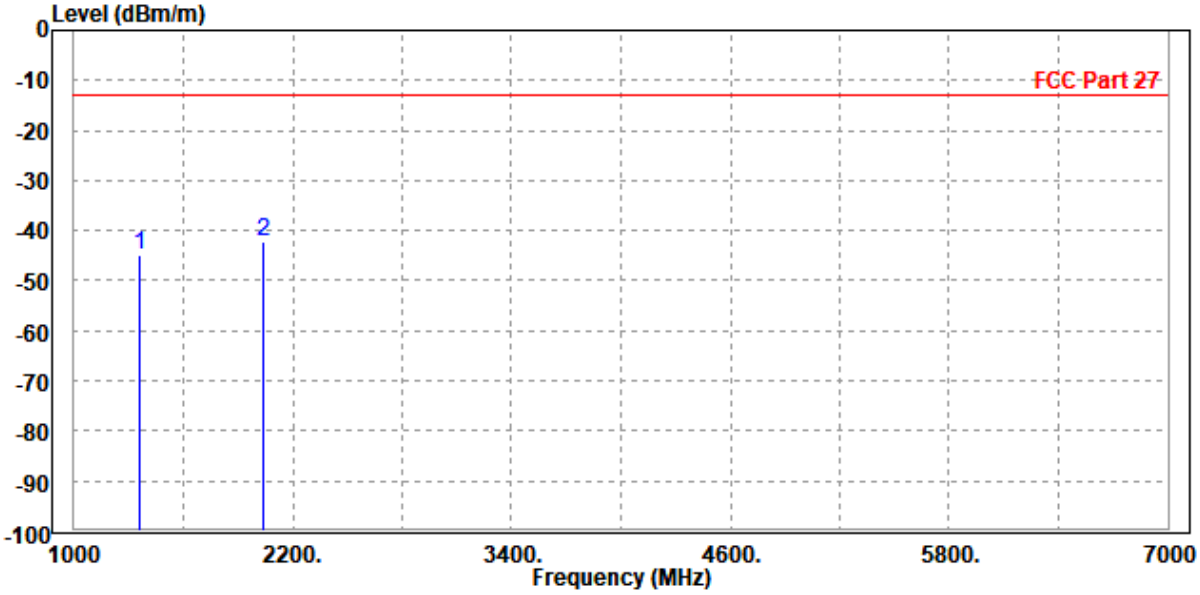
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1342.000	-52.99	-55.74	-13.00	-39.99	2.75	Peak	Vertical
2	PP	2014.000	-47.67	-51.72	-13.00	-34.67	4.05	Peak	Vertical



CH 137600

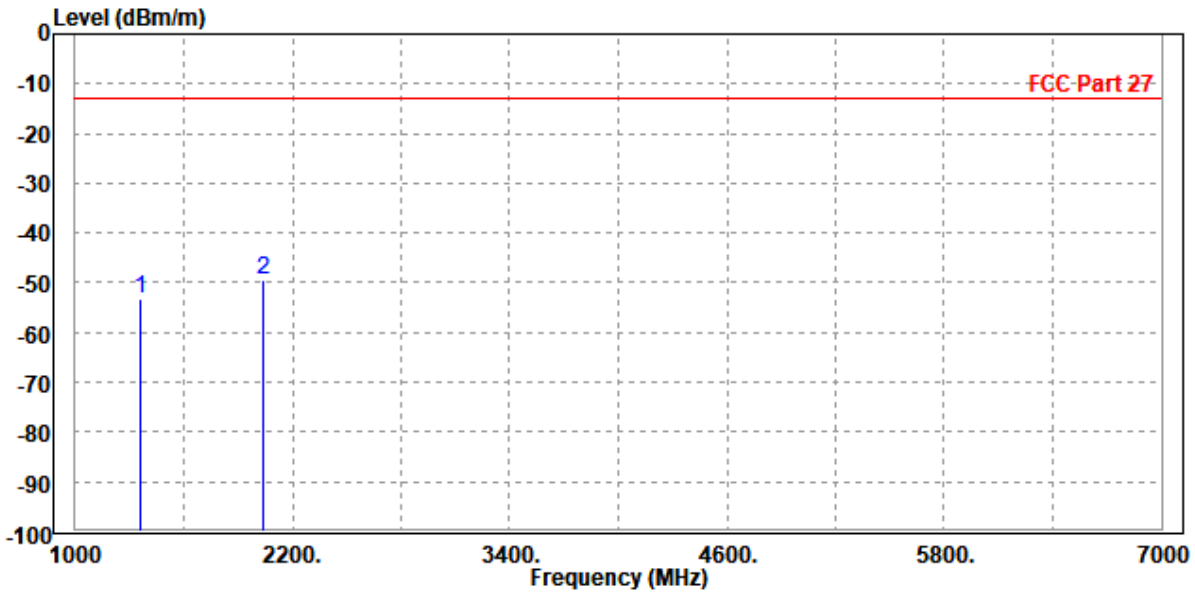
MODE	TX channel 137600	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1360.000	-44.98	-47.75	-13.00	-31.98	2.77	Peak	Horizontal
2	PP	2038.000	-42.09	-46.94	-13.00	-29.09	4.85	Peak	Horizontal



MODE	TX channel 137600	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1360.000	-53.28	-56.07	-13.00	-40.28	2.79	Peak	Vertical
2 PP	2038.000	-49.52	-53.66	-13.00	-36.52	4.14	Peak	Vertical

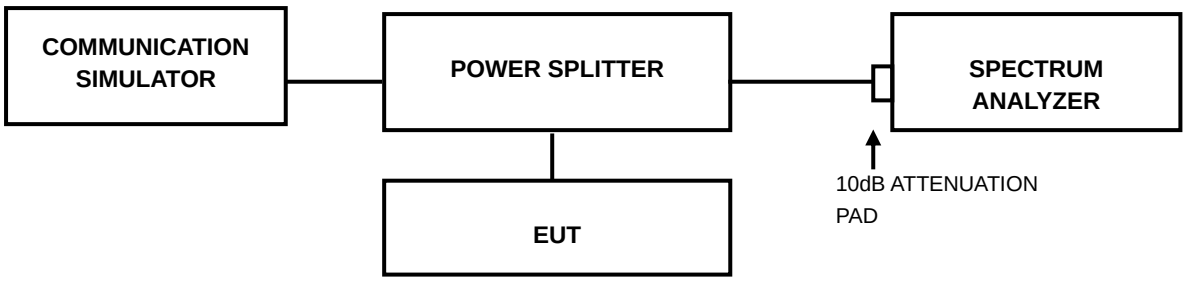


3.7 PEAK TO AVERAGE RATIO

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 ≥ 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 F.

4 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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

Shenzhen EMC/RF Lab:
Tel: +86-755-88696566
Fax: +86-755-88696577

Email: customerservice.sw@bureauveritas.com
Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

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.

--END--