FCC TEST REPORT

(PART 27)

Applicant:	SIMCom Wireless Solutions Limited
Address:	8F,Building3,No.289,Linhong Road,Changning District,Shanghai, P.R.China

Manufacturer or Supplier:	SIMCom Wireless Solutions Limited
Address:	8F,Building3,No.289,Linhong Road,Changning District,Shanghai, P.R.China
Product:	SIM7672G
Brand Name:	SIMCom
Model Name:	SIM7672G
FCC ID:	2AJYU-8XS0001
Date of tests:	Aug. 22, 2023 ~ Sep. 11, 2023

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

☒ **FCC Part 27** ☒ **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: Sep. 11, 2023	Luke Lu Date: Sep. 11, 2023

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P23070009RF03	Original release	Sep. 11, 2023

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**
§2.1046	Conducted Output Power	Compliance
§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13) (Band 71)	Compliance
§27.50(h)(2)	Equivalent Isotropically Radiated Power (Band 7)	Compliance
§2.1055 §27.54	Frequency Stability	Compliance
§2.1049	Occupied Bandwidth	Compliance
§2.1051 §27.53(c)(2)(4) §27.53(g) §27.53(m)(4)(6) §27.53(a)(4)	Conducted Band Edge Measurements (Band 7) (Band 12) (Band 13) (Band 71)	Compliance
§2.1051 §27.53(c)(2)(4) §27.53(g) §27.53(m)(4)(6)	Conducted Spurious Emissions (Band 7) (Band 12) (Band 13) (Band 71)	Compliance
§2.1053 §27.53(c)(2)(4) §27.53(f) §27.53(g) §27.53(m)(4)(6)	Radiated Spurious Emissions (Band 7) (Band 12) (Band 13) (Band 71)	Compliance
NA	Peak to average ratio	Compliance

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. 28,23	Mar. 27,24
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.10,23	May.09,24
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.03,22	Sep.02,23
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.02,23	Sep.01,24
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Feb. 18,23	Feb. 17,24
Horn Antenna	ETS-LINDGREN	3117	00168692	Feb. 18,23	Feb. 17,24
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Sep.04, 22	Sep.03, 23
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Sep.03, 23	Sep.02, 24
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 14,23	Feb. 13,24
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 06,23	May. 05,24
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.10,23	May.09,24
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 17,23	Feb.16,24
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 22, 23	May. 21,26
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. 06,23	May. 05,24
Power Meter	Anritsu	ML2495A	1506002	Feb. 14,23	Feb. 13,24
Power Sensor	Anritsu	MA2411B	1339352	Feb. 14,23	Feb. 13,24
Temperature Chamber	ESPEC	SH-242	93000855	May. 06,23	May. 05,24
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 14,23	Feb. 13,24
Base station R&S CMW500	Rohde&Schwarz	CMW500	153085	May.10,23	May.09,24
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	SIM7672G	
BRAND NAME	SIMCom	
MODEL NAME	SIM7672G	
NOMINAL VOLTAGE	EUT 3.8V	
MODULATION TECHNOLOGY	**LTE**	QPSK, 16QAM
FREQUENCY RANGE	**LTE Band 7 Channel Bandwidth: 5MHz**	2502.5MHz ~ 2567.5MHz
	LTE Band 7 Channel Bandwidth: 10MHz	2505MHz ~ 2565MHz
	LTE Band 7 Channel Bandwidth: 15MHz	2507.5MHz ~ 2562.5MHz
	LTE Band 7 Channel Bandwidth: 20MHz	2510MHz ~ 2560MHz
	LTE Band 12 Channel Bandwidth: 1.4MHz	699.7MHz ~ 715.3MHz
	LTE Band 12 Channel Bandwidth: 3MHz	700.5MHz ~ 714.5MHz
	LTE Band 12 Channel Bandwidth: 5MHz	701.5MHz ~ 713.5MHz
	LTE Band 12 Channel Bandwidth: 10MHz	704MHz ~ 711MHz
	LTE Band 13 Channel Bandwidth: 5MHz	779.5MHz ~ 784.5MHz
	LTE Band 13 Channel Bandwidth: 10MHz	782MHz
	LTE Band 71 Channel Bandwidth: 5MHz	665.5MHz ~ 695.5MHz
	LTE Band 71 Channel Bandwidth: 10MHz	668MHz ~ 693MHz
	LTE Band 71 Channel Bandwidth: 15MHz	670.5MHz ~ 690.5MHz
	LTE Band 71 Channel Bandwidth: 20MHz	673MHz ~ 688MHz
MAX. EIRP/ERP POWER	**LTE Band 7 Channel Bandwidth: 5MHz**	362.24mW
	LTE Band 7 Channel Bandwidth: 10MHz	366.44mW
	LTE Band 7 Channel Bandwidth: 15MHz	368.13mW

	LTE Band 7 Channel Bandwidth: 20MHz	372.39mW
	LTE Band 12 Channel Bandwidth: 1.4MHz	162.55mW
	LTE Band 12 Channel Bandwidth: 3MHz	162.18mW
	LTE Band 12 Channel Bandwidth: 5MHz	162.18mW
	LTE Band 12 Channel Bandwidth: 10MHz	163.68mW
	LTE Band 13 Channel Bandwidth: 5MHz	230.14mW
	LTE Band 13 Channel Bandwidth: 10MHz	230.67mW
	LTE Band 71 Channel Bandwidth: 5MHz	154.17mW
	LTE Band 71 Channel Bandwidth: 10MHz	155.24mW
	LTE Band 71 Channel Bandwidth: 15MHz	154.17mW
	LTE Band 71 Channel Bandwidth: 20MHz	156.31mW

EMISSION DESIGNATOR	**LTE Band 7 Channel Bandwidth: 5MHz**	QPSK: 4M52G7D 16QAM: 4M50W7D
	LTE Band 7 Channel Bandwidth: 10MHz	QPSK:9M01G7D 16QAM: 4M85W7D
	LTE Band 7 Channel Bandwidth: 15MHz	QPSK: 13M5G7D 16QAM: 4M88W7D
	LTE Band 7 Channel Bandwidth: 20MHz	QPSK: 18M0G7D 16QAM: 4M90W7D
	LTE Band 12 Channel Bandwidth: 1.4MHz	QPSK: 1M09G7D 16QAM: 1M10W7D
	LTE Band 12 Channel Bandwidth: 3MHz	QPSK: 2M71G7D 16QAM: 2M71W7D
	LTE Band 12 Channel Bandwidth: 5MHz	QPSK: 4M52G7D 16QAM: 4M51W7D
	LTE Band 12 Channel Bandwidth: 10MHz	QPSK: 9M02G7D 16QAM: 4M87W7D
	LTE Band 13 Channel Bandwidth: 5MHz	QPSK: 4M52G7D 16QAM: 4M50W7D
	LTE Band 13 Channel Bandwidth: 10MHz	QPSK: 9M00G7D 16QAM: 4M87W7D

EMISSION DESIGNATOR	**LTE Band 71 Channel Bandwidth: 5MHz**	QPSK: 4M51G7D 16QAM: 4M50W7D
	LTE Band 71 Channel Bandwidth: 10MHz	QPSK: 9M00G7D 16QAM: 4M86W7D
	LTE Band 71 Channel Bandwidth: 15MHz	QPSK: 13M5G7D 16QAM: 4M88W7D
	CLTE Band 71 Channel Bandwidth: 20MHz	QPSK: 18M0G7D 16QAM: 4M90W7D
ANTENNA TYPE	Monopole Antenna with 1.13dBi gain for LTE7 Monopole Antenna with 0.22dBi gain for LTE12 Monopole Antenna with 2.23dBi gain for LTE13 Monopole Antenna with 0.22dBi gain for LTE71	
HW VERSION	V2.02	
SW VERSION	SIM7672M5A	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	
EXTREME TEMPERATURE	-10-55 ℃	
EXTREME VOLTAGE	3.2V - 4.2V	

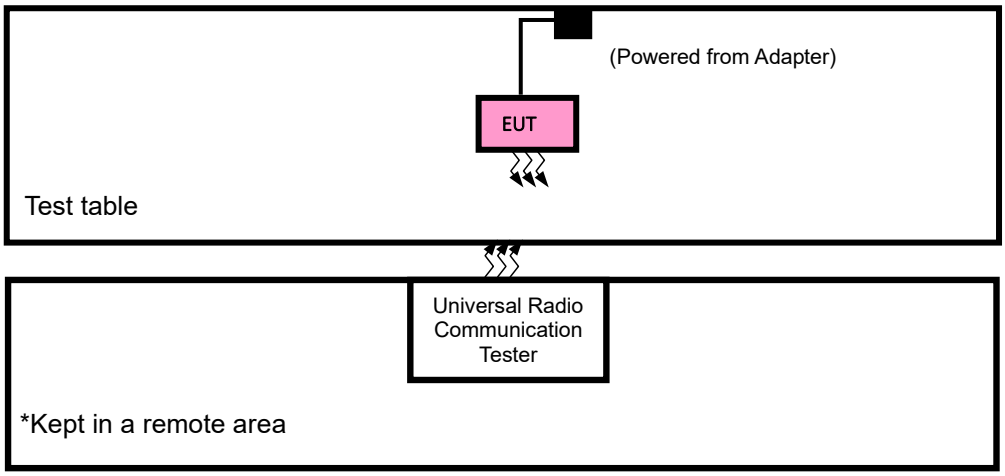
NOTE:
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

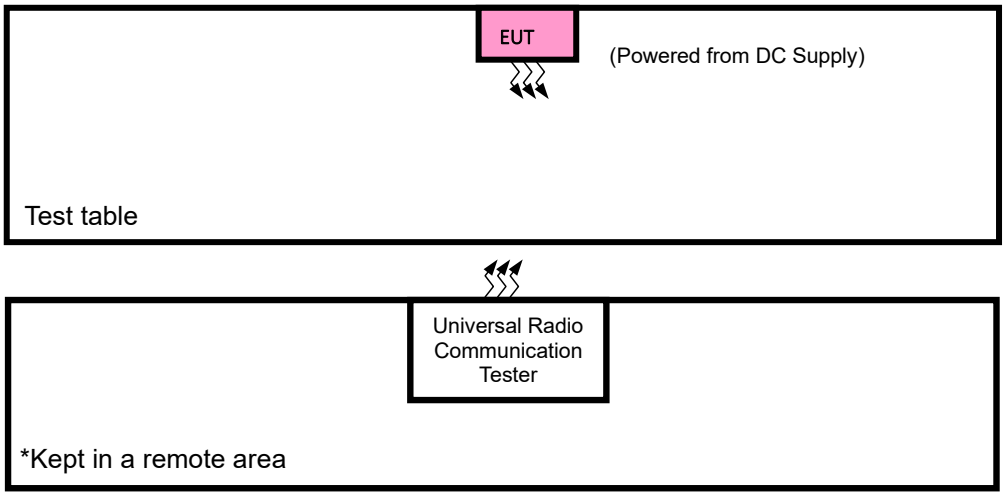
MODULATION MODE	TX FUNCTION
LTE	1TX/1RX

3. 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	DC source	LONG WEI	PS-6403D	010934269	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 + Adapter with LTE link
B	EUT + DC Supply with LTE link

LTE BAND 7 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	20775 to 21425	20775, 21100, 21425	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK,16QAM	1 RB / 0RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	20850 to 21350	20850, 21100, 21350	20MHz	QPSK,16QAM	Full RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	20775 to 21425	20775, 21100, 21425	5MHz	QPSK,16QAM	Full RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK,16QAM	Full RB / 0 RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK,16QAM	Full RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK,16QAM	Full RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	20850 to 21350	20850, 21100, 21350	20MHz	QPSK,16QAM	Full RB / 0 RB Offset
A	BAND EDGE	20775 to 21425	20775	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
			21425	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						Full RB / 0 RB Offset
		20800 to 21400	20800	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
			21400	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						Full RB / 0 RB Offset
		20825 to 21375	20825	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
			21375	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
						Full RB / 0 RB Offset
		20850 to 21350	20850	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offset
			21350	20MHz	QPSK,16QAM	1 RB / 99 RB Offset
						Full RB / 0 RB Offset
A	CONDCUDETED EMISSION	20775 to 21425	20775, 21100, 21425	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK,16QAM	1 RB / 0RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	20775 to 21425	21100	5MHz	QPSK	1 RB / 0 RB Offset
		20800 to 21400	21100	10MHz	QPSK	1 RB / 0 RB Offset
		20825 to 21375	21100	15MHz	QPSK	1 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK	1 RB / 0 RB Offset

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

LTE BAND 12 MODE

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

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

LTE BAND 13 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	23205 to 23255	23205, 23230, 23255	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	23230	23230	10MHz	QPSK,16QAM	Full RB / 0 RB Offse
A	OCCUPIED BANDWIDTH	23205 to 23255	23205, 23230, 23255	5MHz	QPSK,16QAM	Full RB / 0 RB Offse
		23230	23230	10MHz	QPSK,16QAM	Full RB / 0 RB Offse
A	PEAK TO AVERAGE RATIO	23230	23230	10MHz	QPSK,16QAM	1 RB / 0 RB Offset Full RB / 0 RB Offse
A	BAND EDGE	23205 to 23255	23205	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offse
			23255	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						Full RB / 0 RB Offse
		23230	23230	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						1 RB / 49 RB Offset
						Full RB / 0 RB Offse
A	CONDCUDETED EMISSION	23205 to 23255	23205, 23230, 23255	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	23205 to 23255	23205, 23230, 23255	5MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB Offset

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

LTE BAND 71

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	133147 to 133447	133147, 133297, 133447	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		133172 to 133422	133172, 133297 133422	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	133222 to 133372	133222, 133372	20MHz	QPSK,16QAM	Full RB / 0 RB Offse
A	OCCUPIED BANDWIDTH	133147 to 133447	133147, 133297, 133447	5MHz	QPSK,16QAM	Full RB / 0 RB Offse
		133172 to 133422	133172, 133297 133422	10MHz	QPSK,16QAM	Full RB / 0 RB Offse
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM	Full RB / 0 RB Offse
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM	Full RB / 0 RB Offse
A	PEAK TO AVERAGE RATIO	133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM	1 RB / 99 RB Offsett Full RB / 0 RB Offse
A	BAND EDGE	133147 to 133447	133147	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offse
			133447	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						Full RB / 0 RB Offse
		133172 to 133422	133172	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offse
			133422	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						Full RB / 0 RB Offse
		133197 to 133397	133197	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offse
			133397	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
						Full RB / 0 RB Offse
		133222 to 133372	133222	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
						Full RB / 0 RB Offse
			133372	20MHz	QPSK,16QAM	1 RB / 99 RB Offset
						Full RB / 0 RB Offse
A	CONDCUDETED EMISSION	133147 to 133447	133147, 133297, 133447	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		133172 to 133422	133172, 133297 133422	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	133147 to 133447	133297	5MHz	QPSK	1 RB / 0 RB Offset
		133172 to 133422	133172, 133297 133422	10MHz	QPSK	1 RB / 0 RB Offset
		133197 to 133397	133297	15MHz	QPSK	1 RB / 0 RB Offset
		133222 to 133372	133322	20MHz	QPSK	1 RB / 0 RB Offset

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

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP&EIRP	23deg. C, 70%RH	EUT 3.8V	Jace Hu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.2V/3.8V/4.2V By DC Supply	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	EUT 3.8V	James Fu
BAND EDGE	23deg. C, 70%RH	EUT 3.8V	James Fu
CONDCUDETED EMISSION	23deg. C, 70%RH	EUT 3.8V	James Fu
RADIATED EMISSION	23deg. C, 70%RH	EUT 3.8V	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	EUT 3.8V	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 27

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

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

Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP

According to the specific rule Part 27.50(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.

For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth.For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

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:

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);

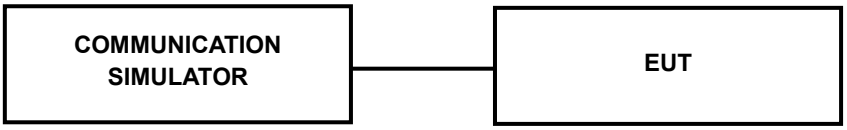
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

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:



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 7

Band/BW	Modulation	RB Size	RB Offset	Low CH 20775	Mid CH 21100	High CH 21425
				Frequency 2502.5 MHz	Frequency 2535 MHz	Frequency 2567.5 MHz
7/ 5	QPSK	1	0	22.73	23.54	22.59
		1	12	23.64	22.38	23.15
		1	24	24.46	22.71	22.09
		12	0	22.41	21.95	22.05
		12	6	22.94	21.49	22.16
		12	13	23.58	21.48	21.70
		25	0	23.20	21.81	21.95
	16QAM	1	0	22.27	22.90	21.84
		1	12	23.18	21.91	22.50
		1	24	24.07	22.16	21.47
		12	0	22.13	22.44	21.77
		12	6	22.84	21.68	22.29
		12	13	23.90	21.82	21.43
		25	0	21.14	21.27	20.96

Band/BW	Modulation	RB Size	RB Offset	Low CH 20800	Mid CH 21100	High CH 21400
				Frequency 2505 MHz	Frequency 2535 MHz	Frequency 2565 MHz
7/ 10	QPSK	1	0	22.81	23.57	22.51
		1	24	23.62	22.44	23.11
		1	49	24.51	22.66	22.12
		25	0	22.45	21.88	22.07
		25	12	22.88	21.58	22.11
		25	25	23.53	21.46	21.71
		50	0	23.20	21.71	21.94
	16QAM	1	0	22.28	22.89	21.81
		1	24	23.14	21.89	22.48
		1	49	24.06	22.20	21.43
		12	0	22.14	22.46	21.79
		12	17	22.86	21.62	22.33
		12	36	23.86	21.75	21.37
		27	0	21.06	21.27	20.94

Band/BW	Modulation	RB Size	RB Offset	Low CH 20825 Frequency 2507.5 MHz	Mid CH 21100 Frequency 2535 MHz	High CH 21375 Frequency 2562.5 MHz
7/ 15	QPSK	1	0	22.84	23.52	22.54
		1	37	23.61	22.39	23.18
		1	74	24.53	22.77	22.12
		36	0	22.47	21.92	22.07
		36	19	22.94	21.58	22.17
		36	39	23.50	21.54	21.69
		75	0	23.20	21.77	22.05
	16QAM	1	0	22.24	22.83	21.85
		1	37	23.14	21.86	22.55
		1	74	24.01	22.17	21.46
		12	0	22.07	22.42	21.72
		12	30	22.79	21.67	22.30
		12	61	23.85	21.86	21.32
		27	0	21.14	21.29	20.97

Band/BW	Modulation	RB Size	RB Offset	Low CH 20850 Frequency 2510 MHz	Mid CH 21100 Frequency 2535 MHz	High CH 21350 Frequency 2560 MHz
7/ 20	QPSK	1	0	22.85	23.57	22.62
		1	50	23.66	22.49	23.23
		1	99	24.58	22.77	22.16
		50	0	22.50	21.97	22.17
		50	25	22.99	21.61	22.20
		50	50	23.59	21.56	21.77
		100	0	23.21	21.82	22.05
	16QAM	1	0	22.29	22.92	21.85
		1	50	23.19	21.96	22.56
		1	99	24.10	22.22	21.51
		12	0	22.18	22.50	21.82
		12	42	22.88	21.69	22.35
		12	86	23.95	21.87	21.43
		27	0	21.15	21.37	21.05

LTE Band 12

Band/BW	Modulation	RB Size	RB Offset	Low CH 23017 Frequency 699.7 MHz	Mid CH 23095 Frequency 707.5 MHz	High CH 23173 Frequency 715.3 MHz
12/ 1.4	QPSK	1	0	23.69	22.94	22.77
		1	2	23.31	23.72	22.77
		1	5	24.04	23.55	22.67
		3	0	23.31	23.49	23.10
		3	1	23.41	23.85	22.96
		3	3	23.83	23.84	22.61
		6	0	22.58	22.62	21.85
	16QAM	1	0	22.94	22.12	22.12
		1	2	22.44	22.70	22.46
		1	5	22.68	22.99	22.20
		3	0	23.49	23.11	23.16
		3	1	23.22	23.54	23.22
		3	3	23.18	23.73	23.22
		6	0	21.22	21.55	21.20

Band/BW	Modulation	RB Size	RB Offset	Low CH 23025 Frequency 700.5 MHz	Mid CH 23095 Frequency 707.5 MHz	High CH 23165 Frequency 714.5 MHz
12/ 3	QPSK	1	0	23.72	22.88	22.74
		1	7	23.24	23.70	22.85
		1	14	24.03	23.59	22.70
		8	0	22.25	22.52	22.12
		8	3	22.33	22.83	21.91
		8	7	22.73	22.95	21.64
		15	0	22.51	22.62	21.84
	16QAM	1	0	22.93	22.18	22.10
		1	7	22.38	22.66	22.52
		1	14	22.58	23.02	22.28
		8	0	22.38	22.18	22.16
		8	3	22.28	22.44	22.29
		8	7	22.15	22.73	22.21
		15	0	21.24	21.56	21.11

Band/BW	Modulation	RB Size	RB Offset	Low CH 23035 Frequency 701.5 MHz	Mid CH 23095 Frequency 707.5 MHz	High CH 23155 Frequency 713.5 MHz
12/ 5	QPSK	1	0	23.72	22.94	22.78
		1	12	23.26	23.72	22.81
		1	24	24.03	23.58	22.63
		12	0	22.28	22.52	22.11
		12	6	22.41	22.85	21.96
		12	13	22.78	22.94	21.65
		25	0	22.59	22.62	21.94
	16QAM	1	0	22.99	22.11	22.16
		1	12	22.43	22.73	22.48
		1	24	22.69	23.02	22.23
		12	0	22.41	22.14	22.19
		12	6	22.18	22.49	22.24
		12	13	22.22	22.76	22.15
		25	0	21.22	21.54	21.17

Band/BW	Modulation	RB Size	RB Offset	Low CH 23060 Frequency 704 MHz	Mid CH 23095 Frequency 707.5 MHz	High CH 23130 Frequency 711 MHz
12/ 10	QPSK	1	0	23.74	22.99	22.79
		1	24	23.34	23.76	22.87
		1	49	24.07	23.63	22.73
		25	0	22.36	22.55	22.15
		25	12	22.44	22.89	22.03
		25	25	22.85	22.95	21.69
		50	0	22.60	22.74	21.94
	16QAM	1	0	23.04	22.22	22.21
		1	24	22.47	22.78	22.55
		1	49	22.69	23.08	22.29
		12	0	22.50	22.22	22.20
		12	17	22.29	22.56	22.30
		12	36	22.26	22.77	22.26
		27	0	21.34	21.64	21.21

LTE Band 13

Band/BW	Modulation	RB Size	RB Offset	Low CH 23205	Mid CH 23230	High CH 23255
				Frequency 779.5 MHz	Frequency 782.0 MHz	Frequency 784.5 MHz
13/ 5	QPSK	1	0	23.45	23.51	23.54
		1	12	22.83	22.87	22.86
		1	24	23.16	23.16	23.19
		12	0	22.35	22.27	22.37
		12	6	22.17	22.14	22.17
		12	13	22.13	22.13	22.18
		25	0	22.27	22.28	22.25
	16QAM	1	0	22.73	22.76	22.84
		1	12	22.56	22.53	22.55
		1	24	22.24	22.29	22.23
		12	0	22.51	22.46	22.49
		12	6	22.32	22.41	22.31
		12	13	22.27	22.22	22.24
		25	0	21.34	21.33	21.31

Band/BW	Modulation	RB Size	RB Offset	/	Mid CH 23230	/
				/	Frequency 782.0 MHz	/
13/ 10	QPSK	1	0	/	23.55	/
		1	24	/	22.90	/
		1	49	/	23.20	/
		25	0	/	22.39	/
		25	12	/	22.22	/
		25	25	/	22.23	/
		50	0	/	22.30	/
	16QAM	1	0	/	22.85	/
		1	24	/	22.57	/
		1	49	/	22.33	/
		12	0	/	22.52	/
		12	17	/	22.43	/
		12	36	/	22.31	/
		27	0	/	21.38	/

LTE Band 71

Band/BW	Modulation	RB Size	RB Offset	Low CH 133147 Frequency 665.5MHz	Mid CH 133247 Frequency 675.5MHz	High CH 133447 Frequency 695.5MHz
71/ 5	QPSK	1	0	23.73	23.81	23.35
		1	12	23.81	23.58	23.79
		1	24	23.37	23.44	23.73
		12	0	22.55	22.69	22.68
		12	6	22.71	22.78	22.98
		12	13	22.81	22.91	23.03
		25	0	22.72	22.79	22.79
	16QAM	1	0	23.00	23.10	22.87
		1	12	23.16	23.02	23.20
		1	24	22.61	22.94	23.05
		12	0	22.75	22.88	22.50
		12	6	22.59	22.95	22.65
		12	13	22.52	23.01	22.82
		25	0	21.68	21.65	21.62

Band/BW	Modulation	RB Size	RB Offset	Low CH 133172 Frequency 668MHz	Mid CH 133272 Frequency 678MHz	High CH 133172 Frequency 693MHz
71/ 10	QPSK	1	0	23.65	23.80	23.35
		1	24	23.84	23.54	23.78
		1	49	23.29	23.49	23.70
		25	0	22.50	22.66	22.63
		25	12	22.64	22.76	22.93
		25	25	22.71	22.87	23.01
		50	0	22.73	22.79	22.80
	16QAM	1	0	22.96	23.12	22.93
		1	24	23.23	22.98	23.18
		1	49	22.62	23.04	23.13
		12	0	22.67	22.91	22.48
		12	17	22.63	23.01	22.58
		12	36	22.60	23.06	22.89
		27	0	21.58	21.67	21.62

Band/BW	Modulation	RB Size	RB Offset	Low CH 133197 Frequency 670.5MHz	Mid CH 133297 Frequency 680.5MHz	High CH 133397 Frequency 690.5MHz
71/ 15	QPSK	1	0	23.75	23.72	23.34
		1	37	23.81	23.57	23.77
		1	74	23.38	23.45	23.75
		36	0	22.60	22.72	22.69
		36	19	22.68	22.73	22.92
		36	39	22.72	22.93	23.05
		75	0	22.68	22.74	22.86
	16QAM	1	0	22.95	23.05	22.90
		1	37	23.17	23.07	23.12
		1	74	22.63	22.96	23.13
		12	0	22.77	22.87	22.48
		12	30	22.68	22.98	22.60
		12	61	22.51	23.07	22.83
		27	0	21.60	21.70	21.58

Band/BW	Modulation	RB Size	RB Offset	Low CH 133222 Frequency 673MHz	Mid CH 133322 Frequency 683MHz	High CH 133372 Frequency 688MHz
71/ 20	QPSK	1	0	23.77	23.81	23.39
		1	50	23.87	23.61	23.85
		1	99	23.41	23.54	23.75
		50	0	22.61	22.73	22.71
		50	25	22.73	22.80	23.00
		50	50	22.82	22.96	23.08
		100	0	22.76	22.83	22.89
	16QAM	1	0	23.06	23.15	22.96
		1	50	23.23	23.10	23.22
		1	99	22.70	23.05	23.13
		12	0	22.78	22.99	22.52
		12	42	22.70	23.05	22.68
		12	86	22.62	23.10	22.93
		27	0	21.70	21.77	21.66

EIRP

LTE BAND 7
CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20775	2502.5	24.46	1.13	25.59	362.24	2
21100	2535.0	23.54	1.13	24.67	293.09	2
21425	2567.5	23.15	1.13	24.28	267.92	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20775	2502.5	24.07	1.13	25.2	331.13	2
21100	2535.0	22.9	1.13	24.03	252.93	2
21425	2567.5	22.5	1.13	23.63	230.67	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505.0	24.51	1.13	25.64	366.44	2
21100	2535.0	23.57	1.13	24.7	295.12	2
21400	2565.0	23.11	1.13	24.24	265.46	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505.0	24.06	1.13	25.19	330.37	2
21100	2535.0	22.89	1.13	24.02	252.35	2
21400	2565.0	22.48	1.13	23.61	229.61	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	24.53	1.13	25.66	368.13	2
21100	2535.0	23.52	1.13	24.65	291.74	2
21375	2562.5	23.18	1.13	24.31	269.77	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	24.01	1.13	25.14	326.59	2
21100	2535.0	22.83	1.13	23.96	248.89	2
21375	2562.5	22.55	1.13	23.68	233.35	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	24.58	1.13	25.71	372.39	2
21100	2535.0	23.57	1.13	24.7	295.12	2
21350	2560.0	23.23	1.13	24.36	272.9	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	24.1	1.13	25.23	333.43	2
21100	2535.0	22.92	1.13	24.05	254.1	2
21350	2560.0	22.56	1.13	23.69	233.88	2

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

LTE BAND 12
CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23017	699.7	24.04	0.22	22.11	162.55	3
23095	707.5	23.85	0.22	21.92	155.6	3
23173	715.3	23.1	0.22	21.17	130.92	3

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23017	699.7	23.49	0.22	21.56	143.22	3
23095	707.5	23.73	0.22	21.8	151.36	3
23173	715.3	23.22	0.22	21.29	134.59	3

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23025	700.5	24.03	0.22	22.1	162.18	3
23095	707.5	23.7	0.22	21.77	150.31	3
23165	714.5	22.85	0.22	20.92	123.59	3

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23025	700.5	22.93	0.22	21	125.89	3
23095	707.5	23.02	0.22	21.09	128.53	3
23165	714.5	22.52	0.22	20.59	114.55	3

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23035	701.5	24.03	0.22	22.1	162.18	3
23095	707.5	23.72	0.22	21.79	151.01	3
23155	713.5	22.81	0.22	20.88	122.46	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23035	701.5	22.99	0.22	21.06	127.64	3
23095	707.5	23.02	0.22	21.09	128.53	3
23155	713.5	22.48	0.22	20.55	113.5	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	24.07	0.22	22.14	163.68	3
23095	707.5	23.76	0.22	21.83	152.41	3
23130	711	22.87	0.22	20.94	124.17	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	23.04	0.22	21.11	129.12	3
23095	707.5	23.08	0.22	21.15	130.32	3
23130	711	22.55	0.22	20.62	115.35	3

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

LTE BAND 13

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23205	779.5	23.45	2.23	23.53	225.42	3
23230	782	23.51	2.23	23.59	228.56	3
23255	784.5	23.54	2.23	23.62	230.14	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23205	779.5	22.73	2.23	22.81	190.99	3
23230	782	22.76	2.23	22.84	192.31	3
23255	784.5	22.84	2.23	22.92	195.88	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23230	782	23.55	2.23	23.63	230.67	3
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23230	782	22.85	2.23	22.93	196.34	3
-	-	-	-	-	-	-

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

LTE BAND 71

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133147	665.5	23.81	0.22	21.88	154.17	3
133297	680.5	23.81	0.22	21.88	154.17	3
133447	695.5	23.79	0.22	21.86	153.46	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133147	665.5	23.16	0.22	21.23	132.74	3
133297	680.5	23.1	0.22	21.17	130.92	3
133447	695.5	23.2	0.22	21.27	133.97	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133172	668	23.84	0.22	21.91	155.24	3
133297	680.5	23.8	0.22	21.87	153.82	3
133422	693	23.78	0.22	21.85	153.11	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133172	668	23.23	0.22	21.3	134.9	3
133297	680.5	23.12	0.22	21.19	131.52	3
133422	693	23.18	0.22	21.25	133.35	3

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133197	670.5	23.81	0.22	21.88	154.17	3
133297	680.5	23.72	0.22	21.79	151.01	3
133397	690.5	23.77	0.22	21.84	152.76	3

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133197	670.5	23.17	0.22	21.24	133.05	3
133297	680.5	23.07	0.22	21.14	130.02	3
133397	690.5	23.13	0.22	21.2	131.83	3

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133222	673	23.87	0.22	21.94	156.31	3
133322	683	23.81	0.22	21.88	154.17	3
133372	688	23.85	0.22	21.92	155.6	3

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133222	673	23.23	0.22	21.3	134.9	3
133322	683	23.15	0.22	21.22	132.43	3
133372	688	23.22	0.22	21.29	134.59	3

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

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

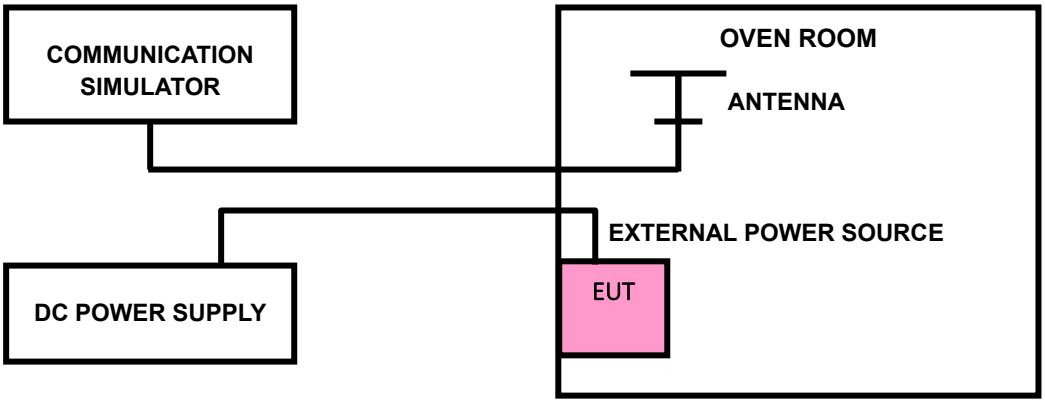
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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 Of this test report.

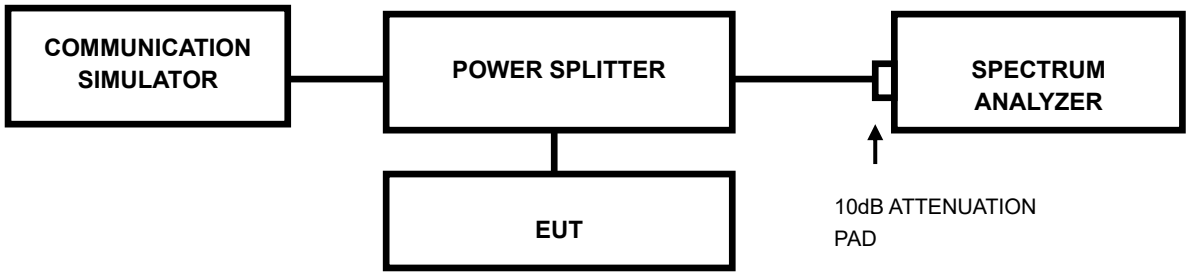
Note: VL = Low voltage(3.2V); VN/NV = Normal voltage(3.8V); VH = High voltage(4.2V);
NT = Normal temperature (25℃)

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 Of this test report.

3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

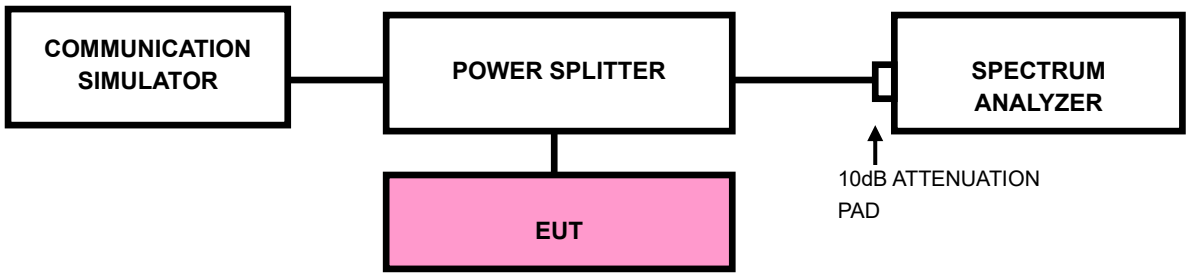
According to FCC 27.53(c) specified that For operations in the 746-758 MHz band and the 776-788 MHz band , the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.In addition, the power of any unwanted emission in an 6.25kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power,P(dBW),by at least 65 +10log10p(P),dB,for mobile and portable equipment.

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

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

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

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

a) All measurements were done at low and high operational frequency range

b) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.

c) Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW)

d) .Set the resolution bandwidth (RBW) ≧ 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.

e) Beyond the 1MHz band from the band edge, RBW=1MHz was used.

f) Set the video bandwidth (VBW) to ≧3 x RBW.

g) Select the average power (RMS) display detector.

h) Set the number of measurement points to ≧ 1001.

i) Use auto-coupled sweep time.

j) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.

k) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.

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

3.4.4 TEST RESULTS

Please Refer to Appendix Of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

For: LTE Band7

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

For: LTE Band30

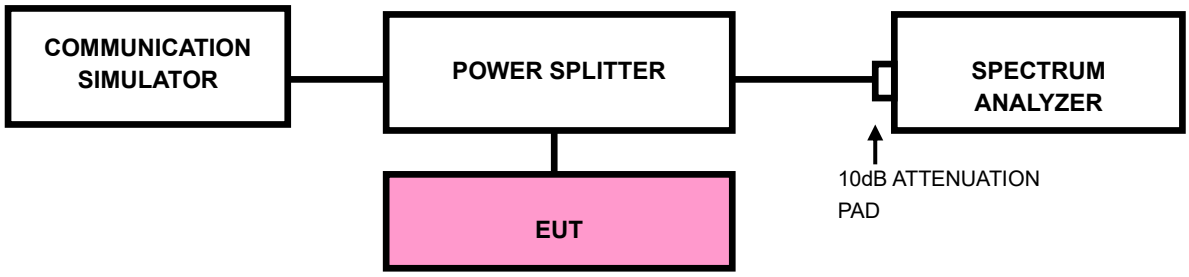
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 70 +10 log10(P) dB. The limit of emission is equal to -40dBm.

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

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

For: LTE Band7/ Band41

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

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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.P.R power - 2.15dBi.

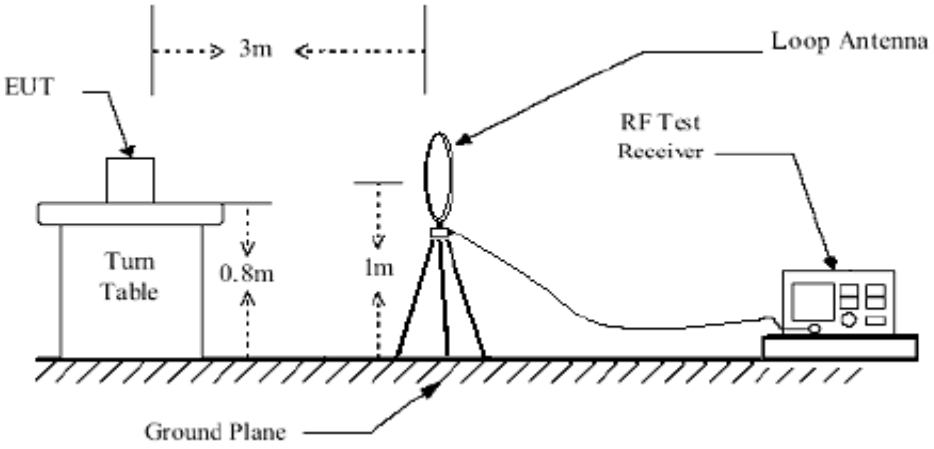
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

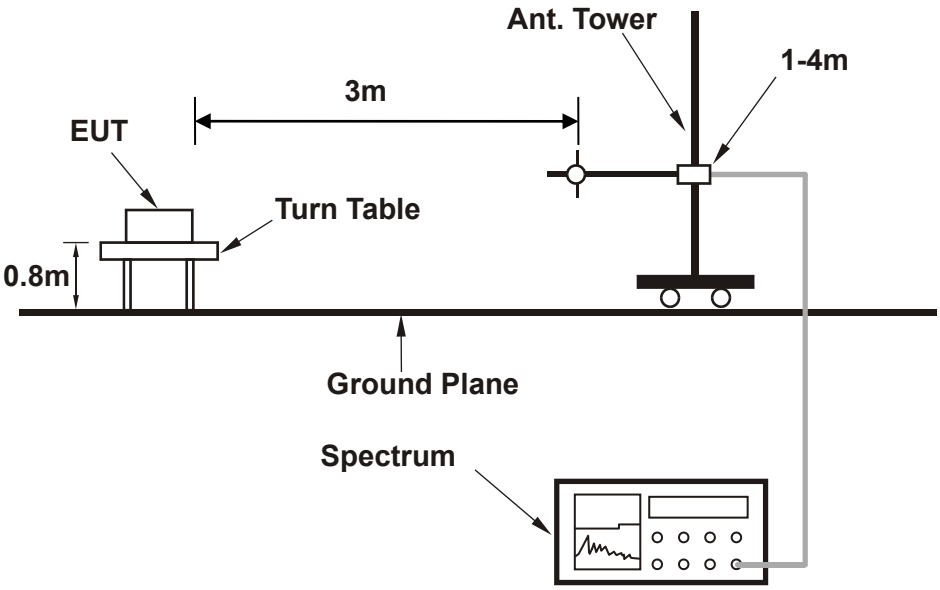
No deviation

3.6.4 TEST SETUP

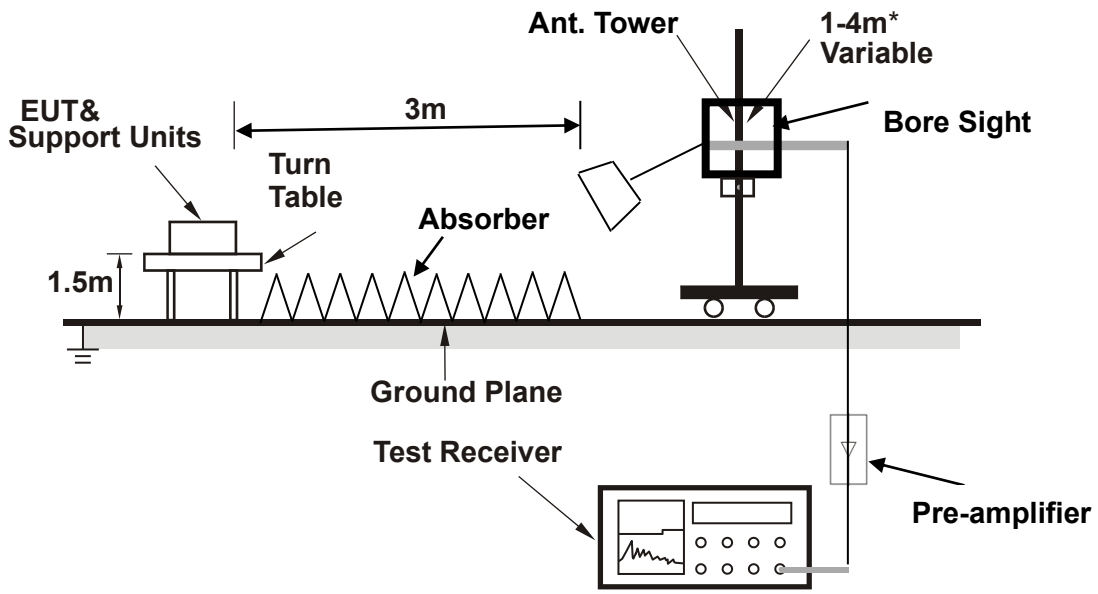
< Frequency Range below 30MHz >



< 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： The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

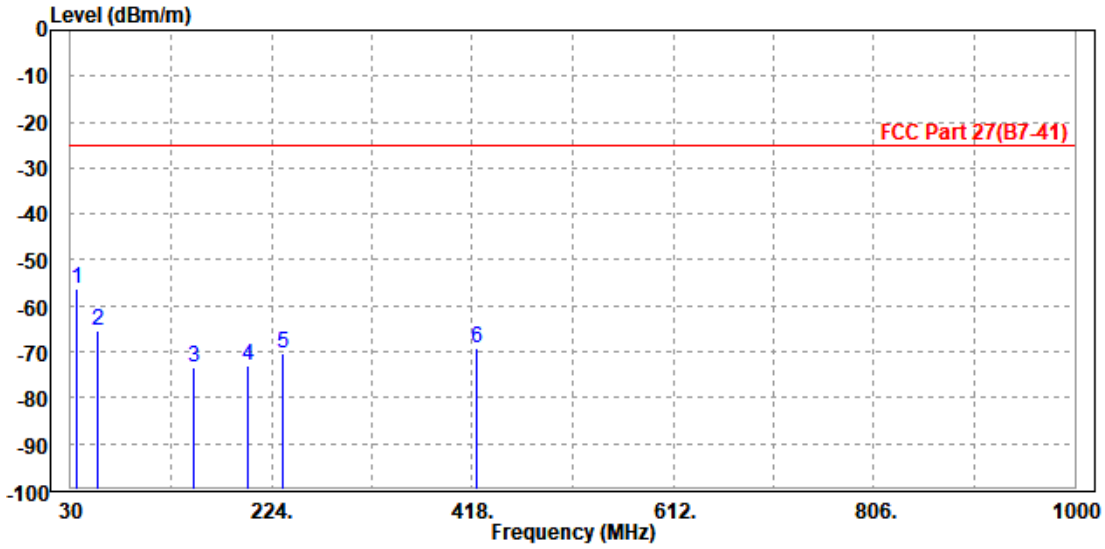
BELOW 1GHz WORST-CASE DATA

30 MHz – 1GHz data:

LTE Band 7
CHANNEL BANDWIDTH: 20MHz / QPSK

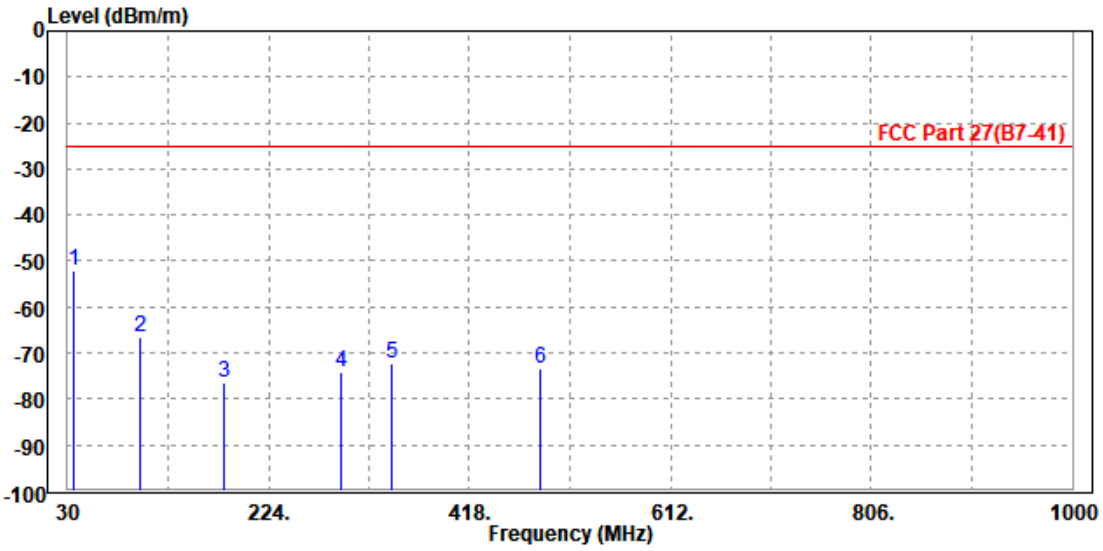
MODE	TX channel 21100	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	35.820	-56.34	-43.49	-25.00	-31.34	-12.85	Peak	Horizontal
2	56.190	-65.48	-47.40	-25.00	-40.48	-18.08	Peak	Horizontal
3	149.310	-73.33	-54.21	-25.00	-48.33	-19.12	Peak	Horizontal
4	200.720	-72.86	-55.52	-25.00	-47.86	-17.34	Peak	Horizontal
5	235.640	-70.39	-57.22	-25.00	-45.39	-13.17	Peak	Horizontal
6	422.850	-69.17	-59.55	-25.00	-44.17	-9.62	Peak	Horizontal



MODE	TX channel 21100	FREQUENCY RANGE	Below 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	35.820	-51.96	-30.58	-25.00	-26.96	-21.38	Peak	Vertical
2		99.840	-66.51	-60.00	-25.00	-41.51	-6.51	Peak	Vertical
3		181.320	-76.51	-57.76	-25.00	-51.51	-18.75	Peak	Vertical
4		293.840	-73.99	-62.83	-25.00	-48.99	-11.16	Peak	Vertical
5		342.340	-72.06	-62.01	-25.00	-47.06	-10.05	Peak	Vertical
6		486.870	-73.23	-65.03	-25.00	-48.23	-8.20	Peak	Vertical



ABOVE 1GHz

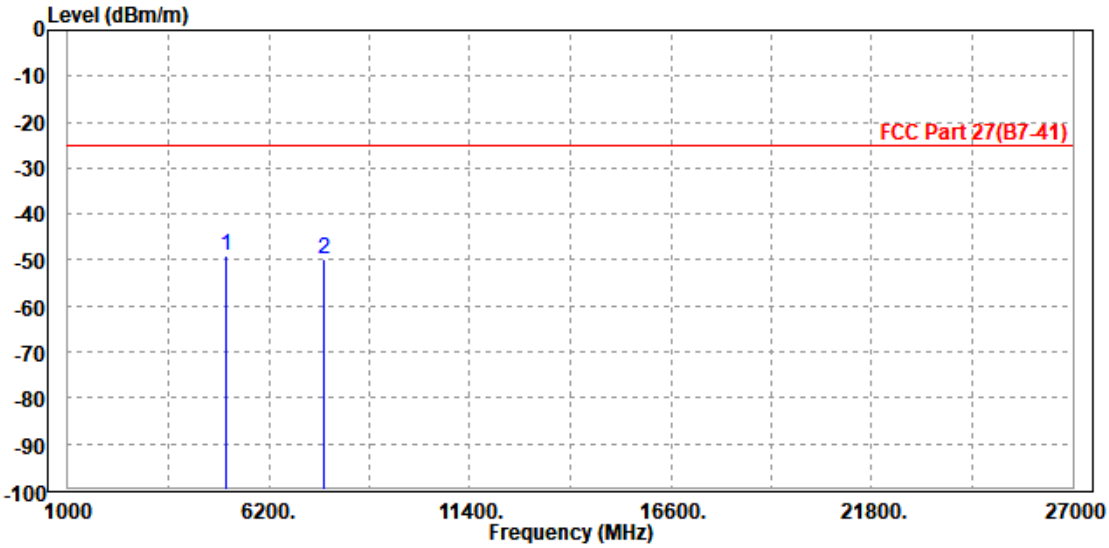
Note: For higher frequency, the emission is too low to be detected.

LTE Band 7
CHANNEL BANDWIDTH: 5MHz / QPSK

CH 21100

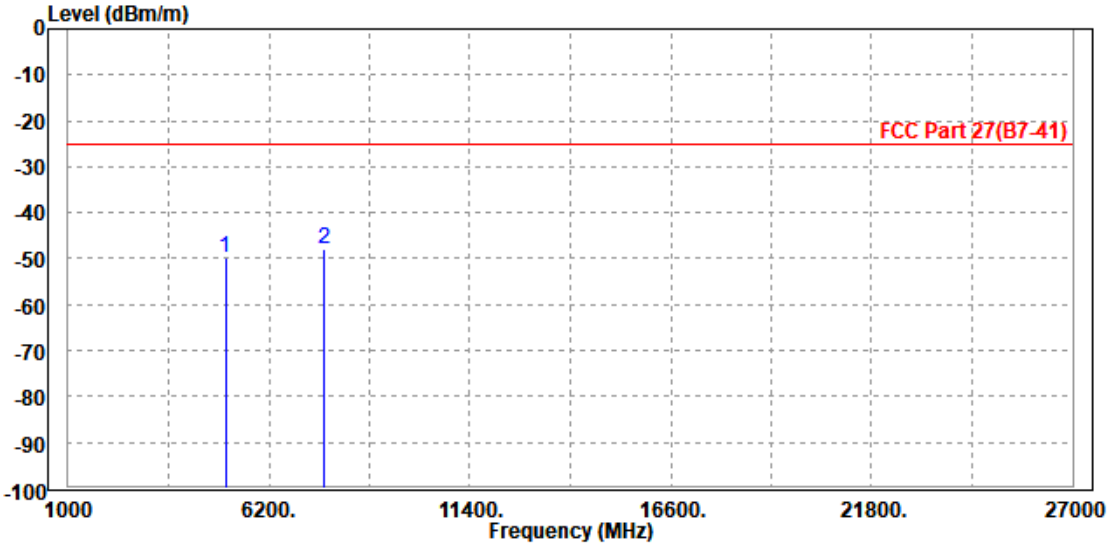
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	5082.000	-49.21	-59.03	-25.00	-24.21	9.82	Peak	Horizontal
2	7605.000	-49.98	-62.16	-25.00	-24.98	12.18	Peak	Horizontal



MODE	TX channel 21100	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			

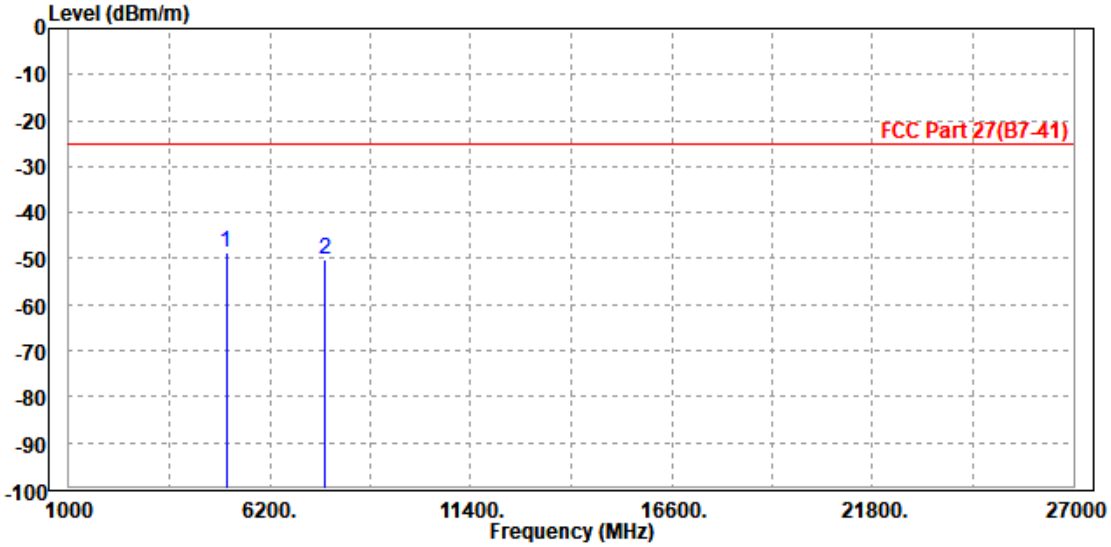
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5070.000	-49.66	-59.99	-25.00	-24.66	10.33	Peak	Vertical
2 PP	7604.000	-47.79	-62.64	-25.00	-22.79	14.85	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

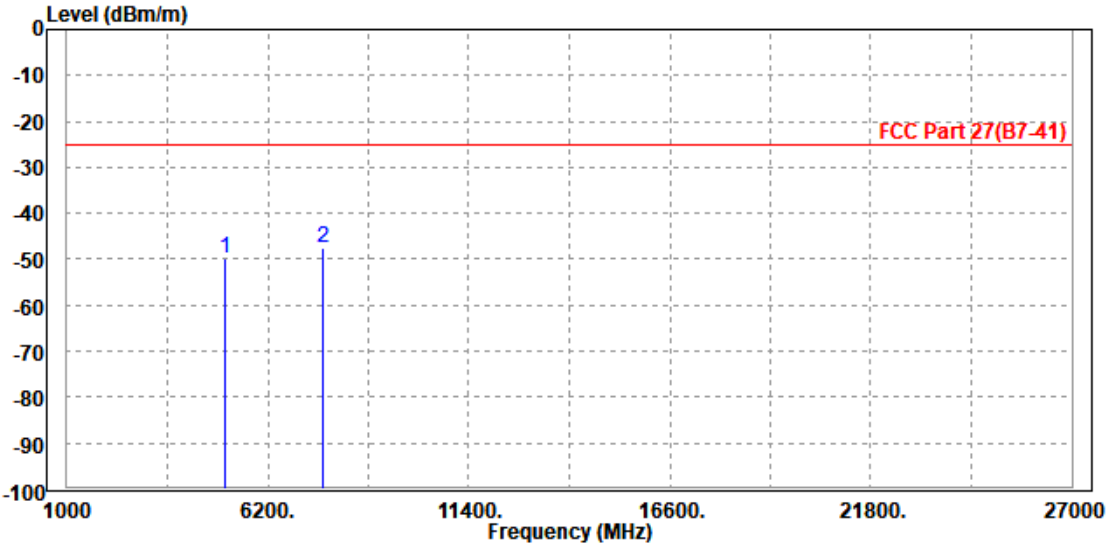
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	5070.000	-48.81	-58.61	-25.00	-23.81	9.80	Peak	Horizontal
2		7604.000	-50.26	-62.43	-25.00	-25.26	12.17	Peak	Horizontal



MODE	TX channel 21100	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			

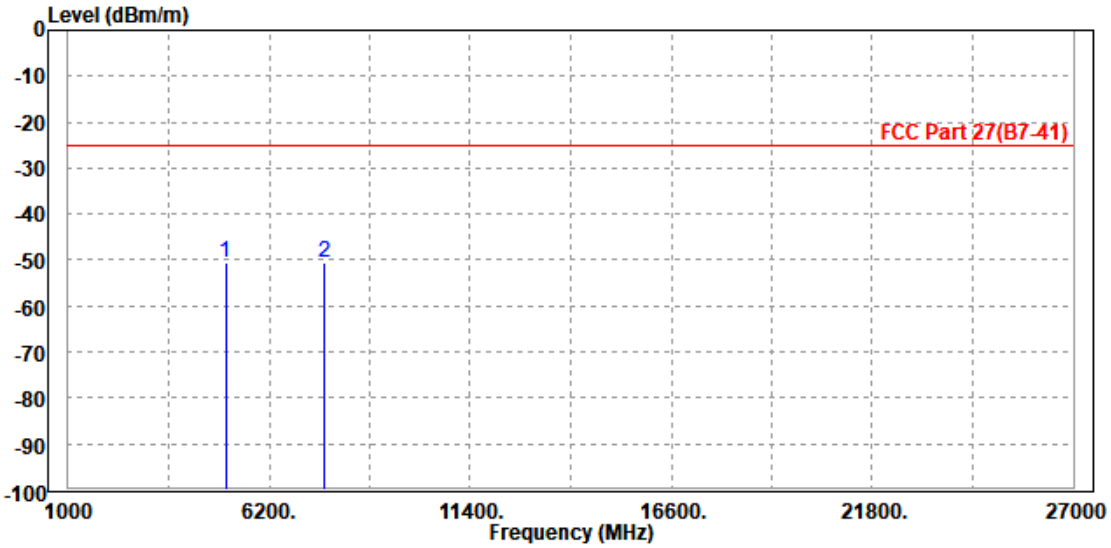
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5082.000	-49.87	-60.21	-25.00	-24.87	10.34	Peak	Vertical
2 PP	7605.000	-47.60	-62.45	-25.00	-22.60	14.85	Peak	Vertical



CHANNEL BANDWIDTH: 15MHz / QPSK

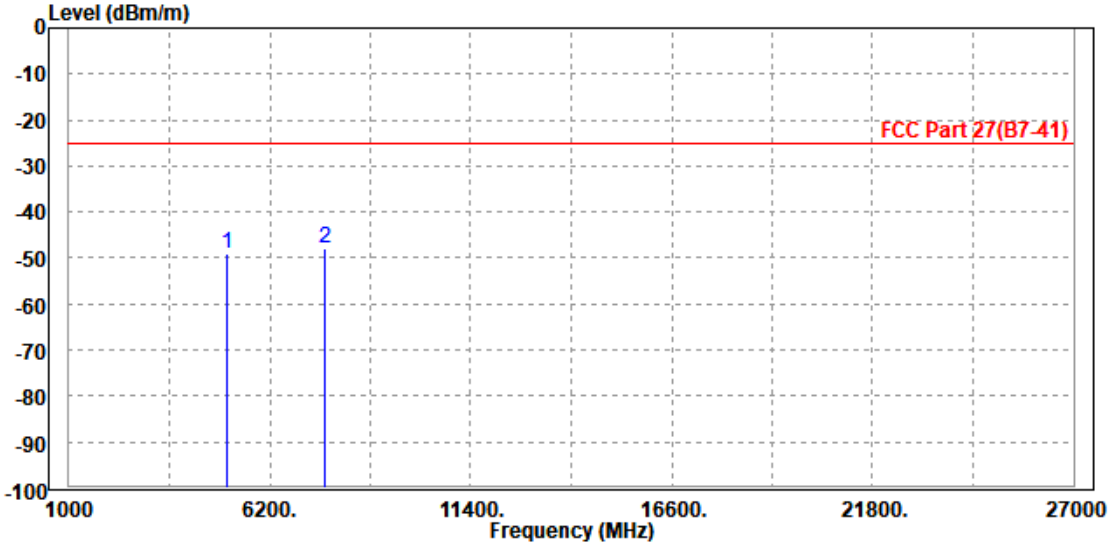
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	5070.000	-50.53	-60.33	-25.00	-25.53	9.80	Peak	Horizontal
2		7604.000	-50.62	-62.79	-25.00	-25.62	12.17	Peak	Horizontal



MODE	TX channel 21100	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	5082.000	-48.98	-59.32	-25.00	-23.98	10.34	Peak	Vertical
2 PP	7605.000	-47.77	-62.62	-25.00	-22.77	14.85	Peak	Vertical

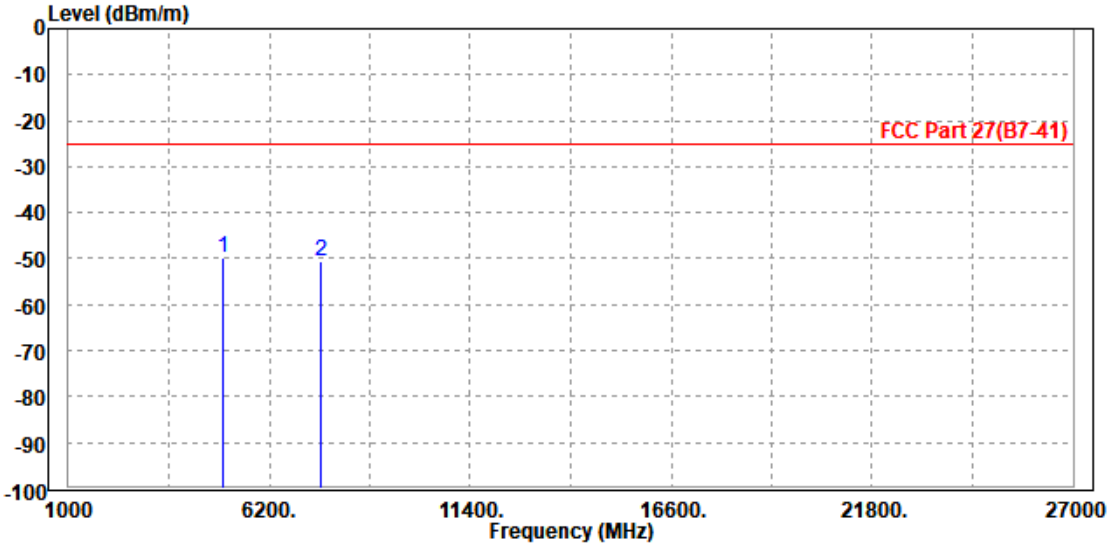


CHANNEL BANDWIDTH: 20MHz / QPSK

CH 20850

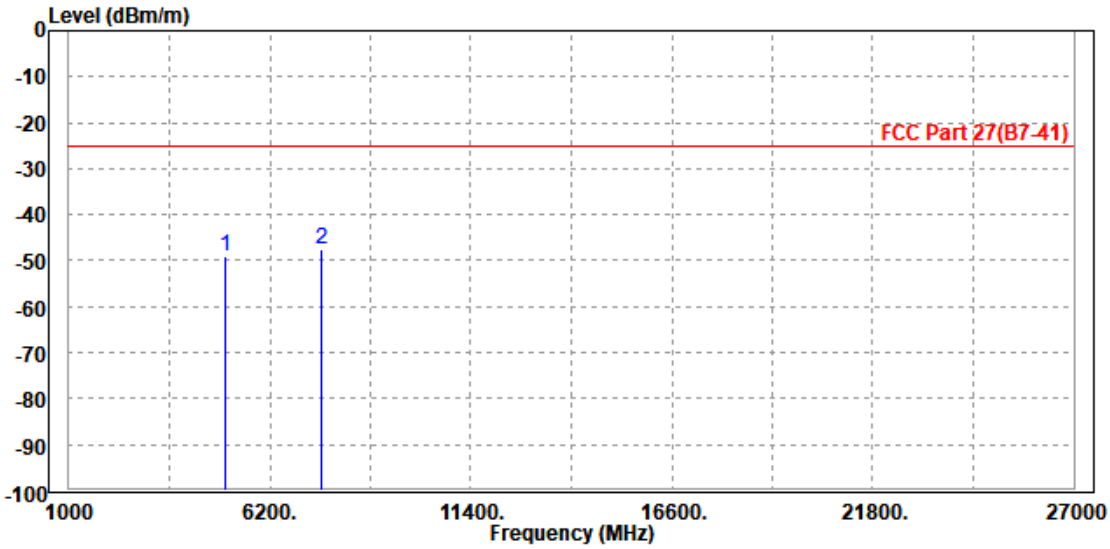
MODE	TX channel 20850	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	5020.000	-49.75	-59.47	-25.00	-24.75	9.72	Peak	Horizontal
2		7526.000	-50.54	-62.15	-25.00	-25.54	11.61	Peak	Horizontal



MODE	TX channel 20850	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			

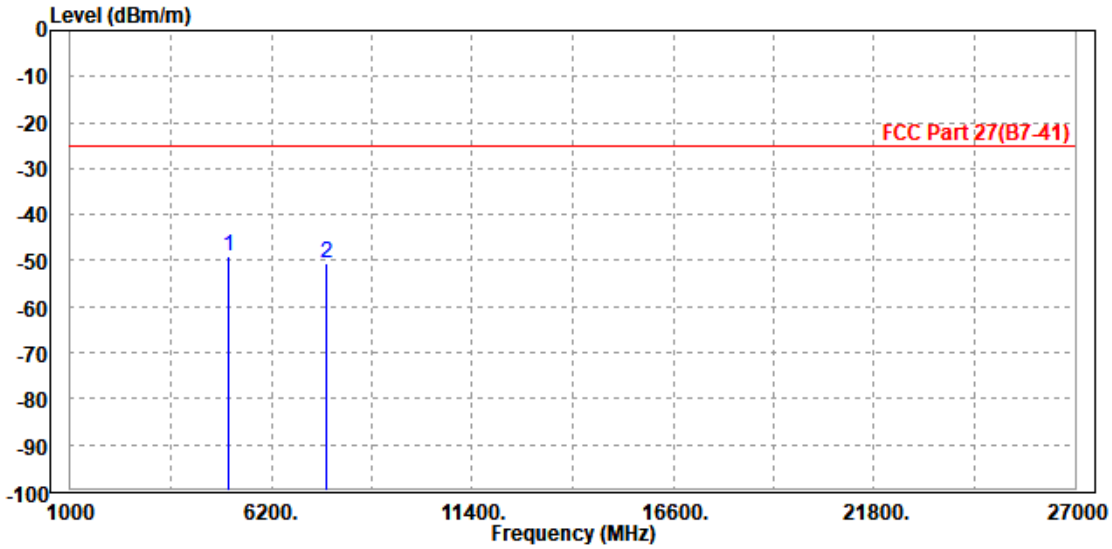
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		5030.000	-48.89	-59.19	-25.00	-23.89	10.30	Peak	Vertical
2	PP	7530.000	-47.66	-62.40	-25.00	-22.66	14.74	Peak	Vertical



CH 21100

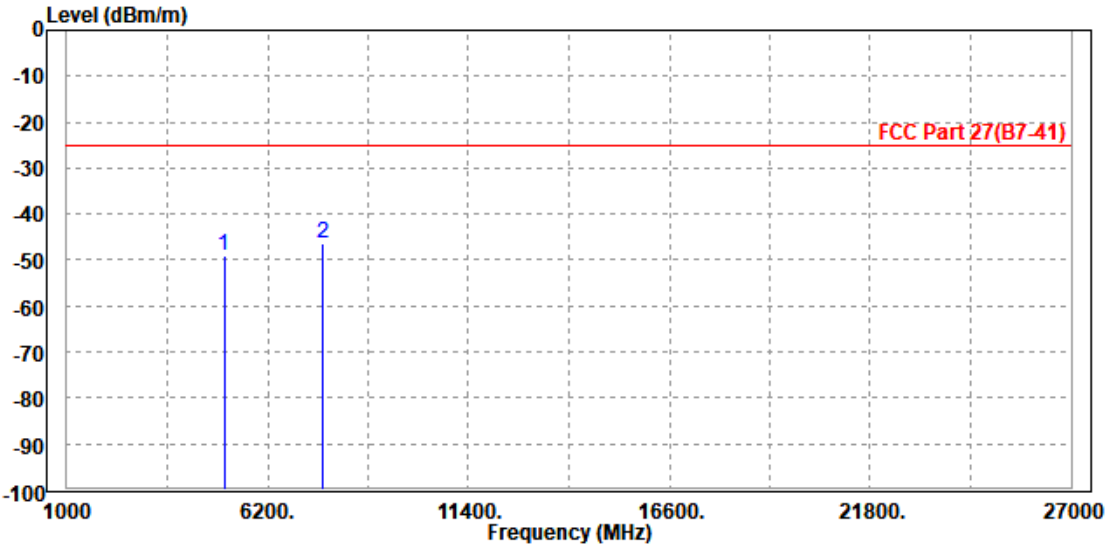
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	5082.000	-49.12	-58.94	-25.00	-24.12	9.82	Peak	Horizontal
2		7605.000	-50.74	-62.92	-25.00	-25.74	12.18	Peak	Horizontal



MODE	TX channel 21100	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			

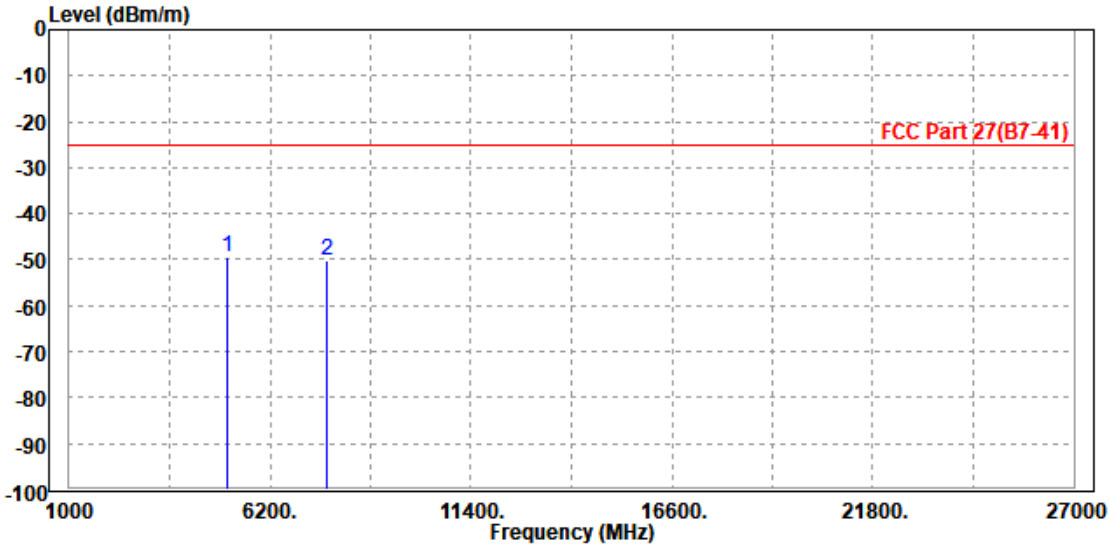
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	5070.000	-48.86	-59.19	-25.00	-23.86	10.33	Peak	Vertical
2 PP	7604.000	-46.37	-61.22	-25.00	-21.37	14.85	Peak	Vertical



CH 21350

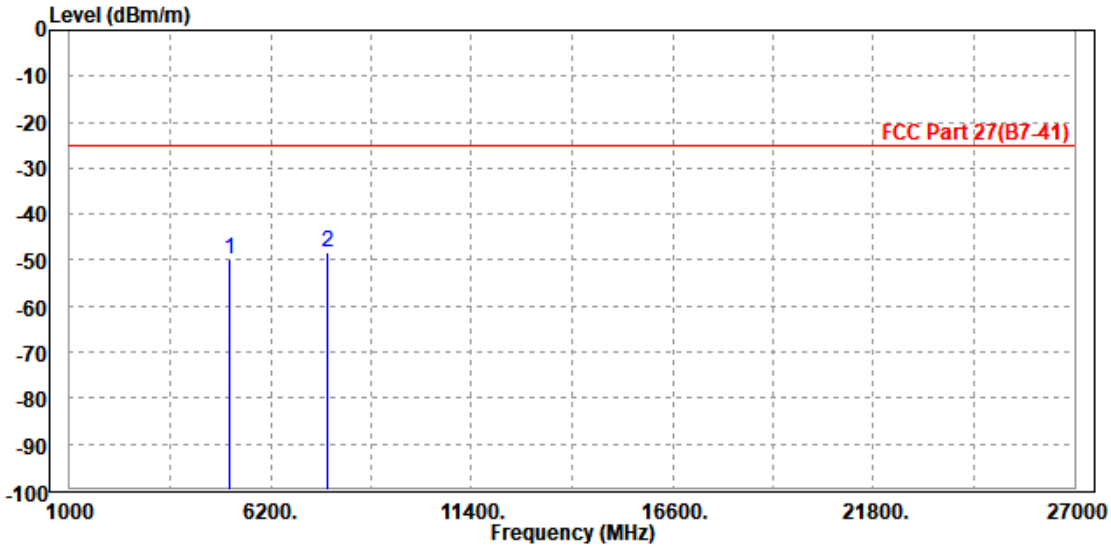
MODE	TX channel 21350	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	5108.000	-49.61	-59.47	-25.00	-24.61	9.86	Peak	Horizontal
2		7680.000	-50.11	-62.83	-25.00	-25.11	12.72	Peak	Horizontal



MODE	TX channel 21350	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	5120.000	-49.67	-60.05	-25.00	-24.67	10.38	Peak	Vertical
2 PP	7682.000	-48.40	-63.37	-25.00	-23.40	14.97	Peak	Vertical

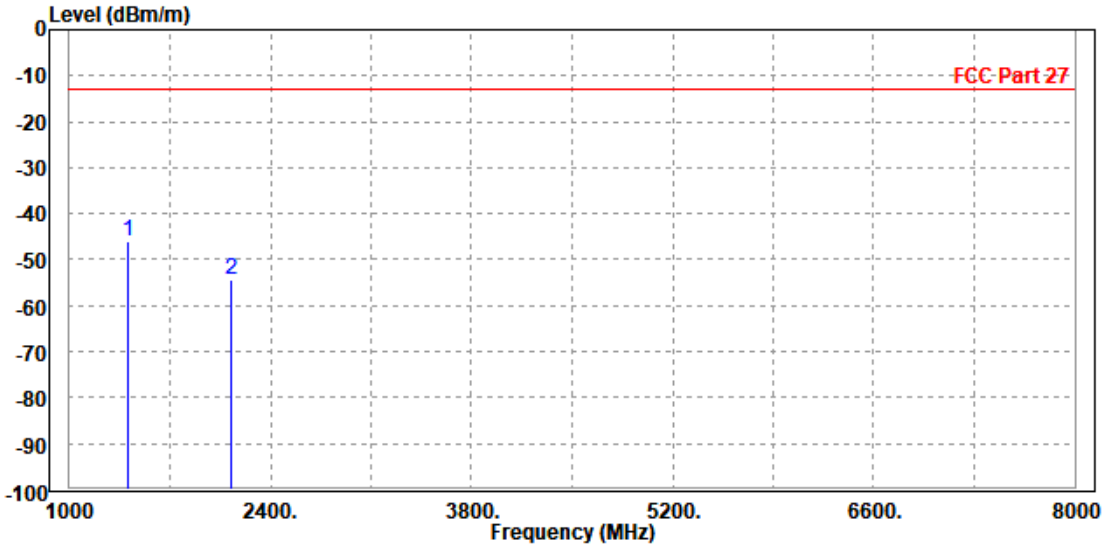


LTE BAND 12

CHANNEL BANDWIDTH: 1.4MHz / QPSK

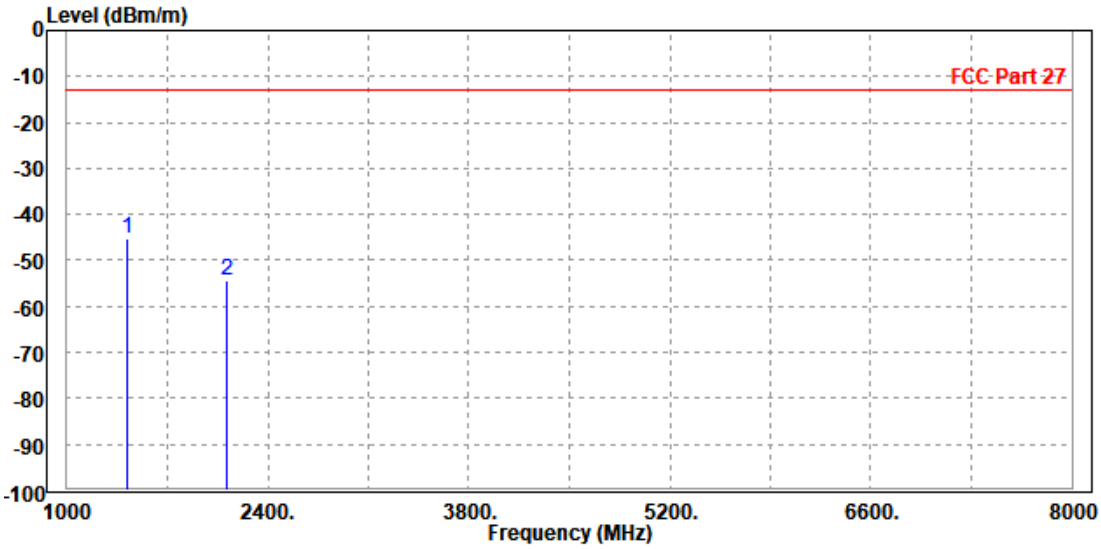
MODE	TX channel 23095	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1413.000	-45.85	-45.20	-13.00	-32.85	-0.65	Peak	Horizontal
2		2122.500	-54.50	-58.56	-13.00	-41.50	4.06	Peak	Horizontal



MODE	TX channel 23095	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			

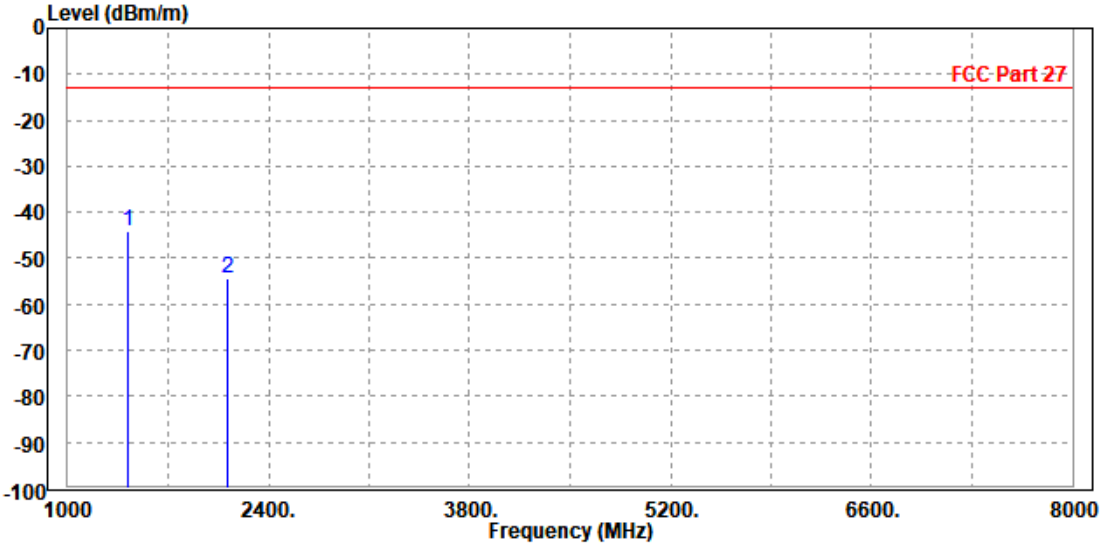
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1415.000	-45.16	-44.75	-13.00	-32.16	-0.41	Peak	Vertical
2		2120.000	-54.40	-58.31	-13.00	-41.40	3.91	Peak	Vertical



CHANNEL BANDWIDTH: 3MHz / QPSK

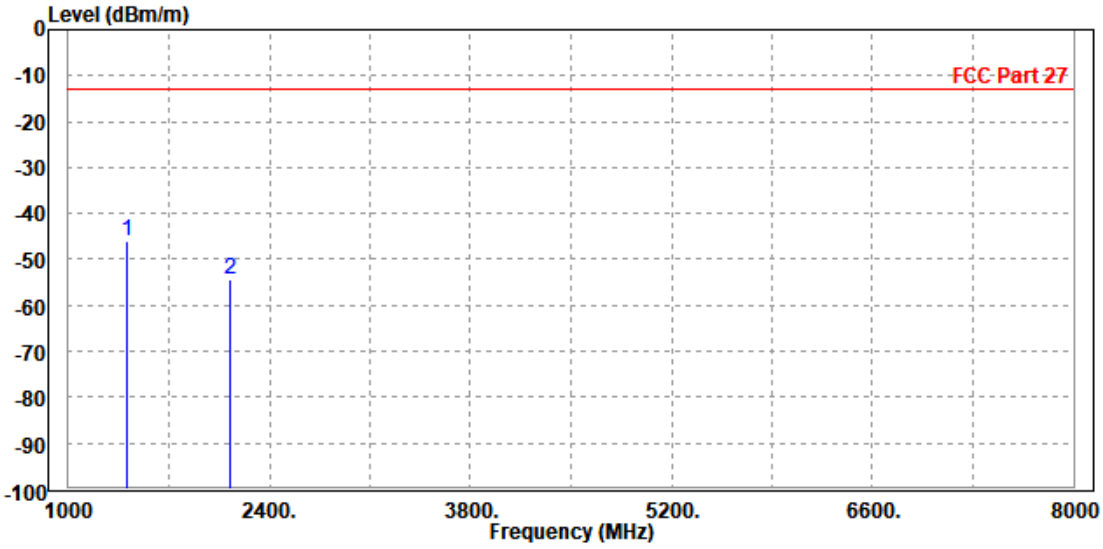
MODE	TX channel 23095	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1415.000	-43.95	-43.30	-13.00	-30.95	-0.65	Peak	Horizontal
2		2120.000	-54.25	-58.31	-13.00	-41.25	4.06	Peak	Horizontal



MODE	TX channel 23095	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			

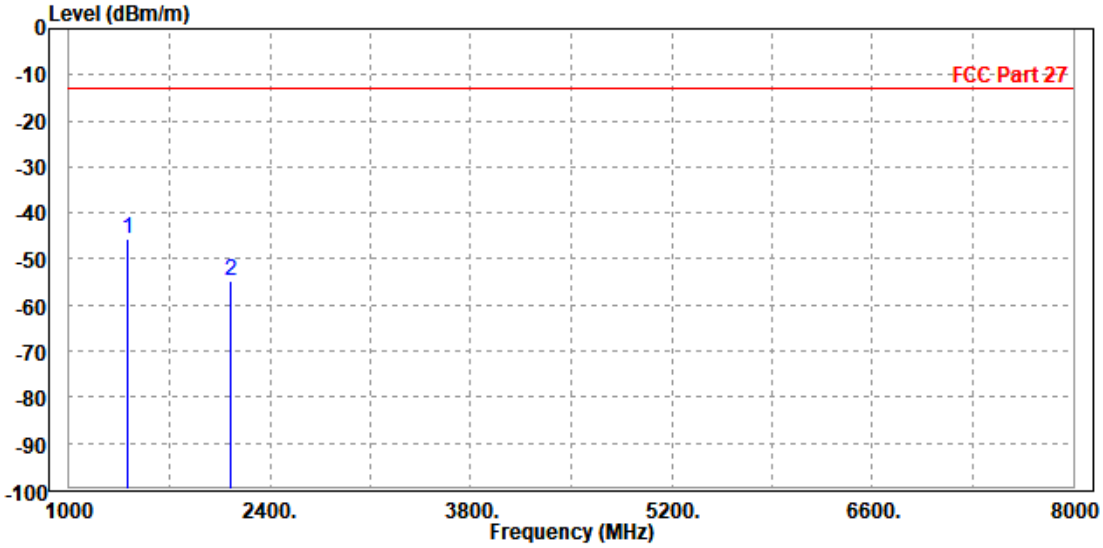
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1413.000	-46.02	-45.60	-13.00	-33.02	-0.42	Peak	Vertical
2	2122.500	-54.36	-58.28	-13.00	-41.36	3.92	Peak	Vertical



CHANNEL BANDWIDTH: 5MHz / QPSK

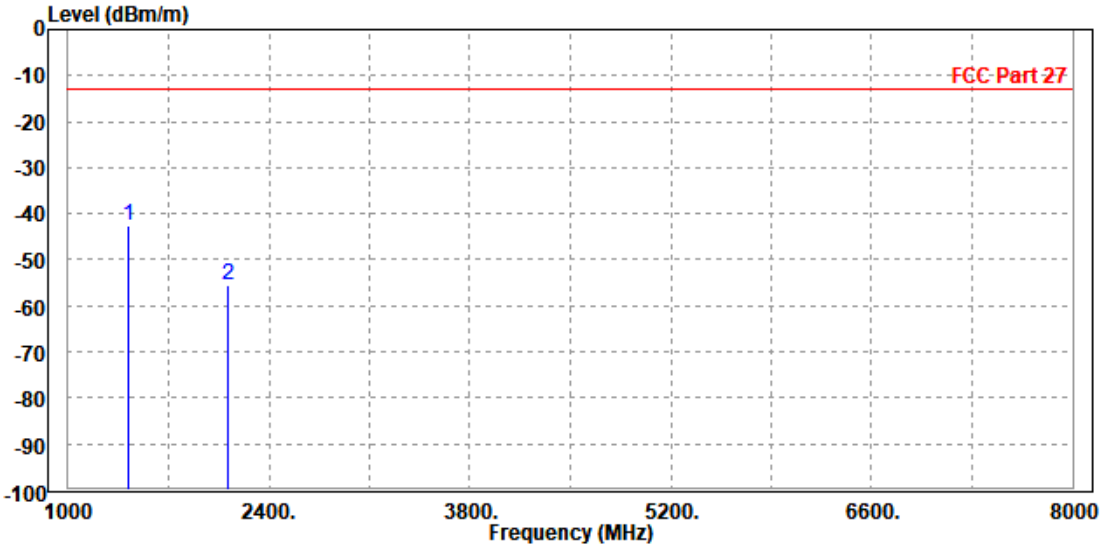
MODE	TX channel 23095	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1413.000	-45.60	-44.95	-13.00	-32.60	-0.65	Peak	Horizontal
2	2122.500	-54.59	-58.65	-13.00	-41.59	4.06	Peak	Horizontal



MODE	TX channel 23095	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	1415.000	-42.74	-42.33	-13.00	-29.74	-0.41	Peak	Vertical
2		2120.000	-55.50	-59.41	-13.00	-42.50	3.91	Peak	Vertical

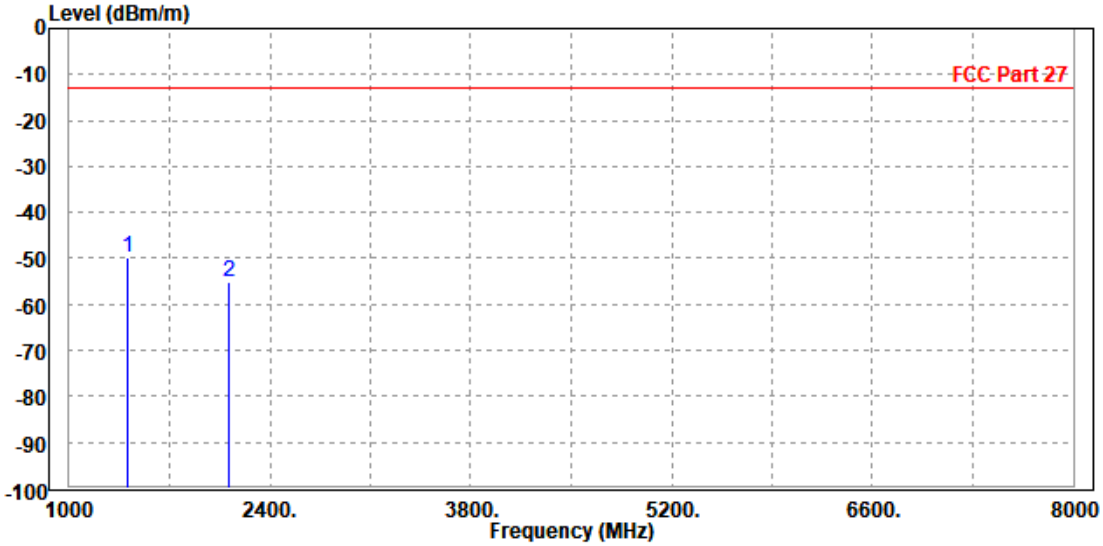


CHANNEL BANDWIDTH: 10MHz / QPSK

CH23060

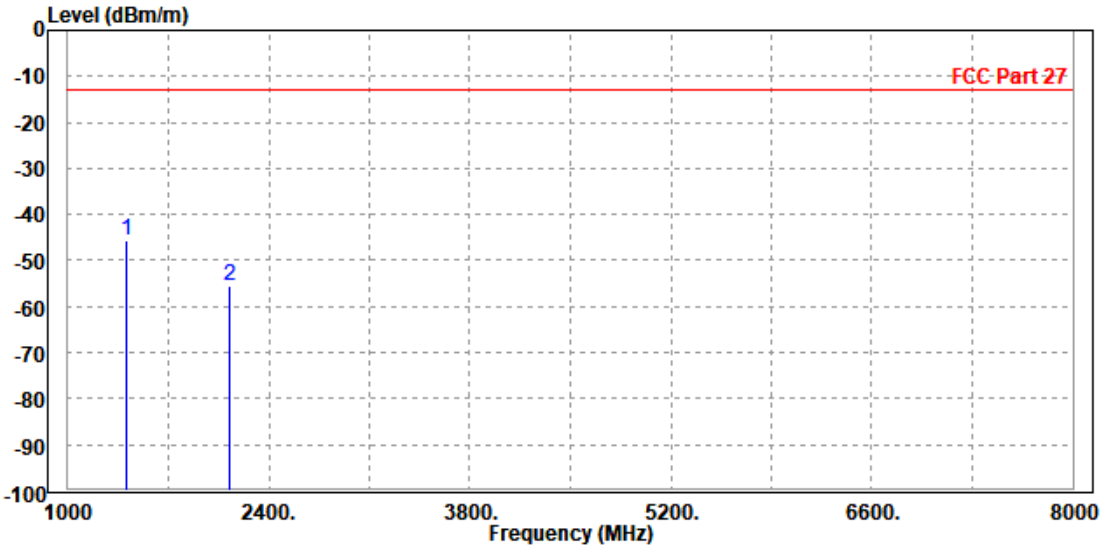
MODE	TX channel 23060	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1408.000	-49.94	-49.28	-13.00	-36.94	-0.66	Peak	Horizontal
2		2113.000	-55.10	-59.13	-13.00	-42.10	4.03	Peak	Horizontal



MODE	TX channel 23060	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			

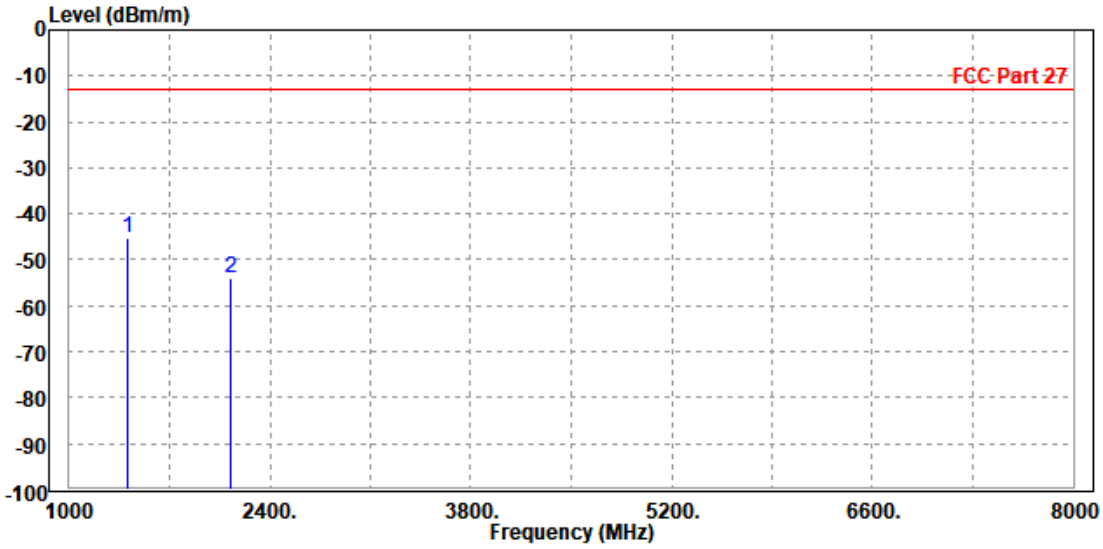
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1413.000	-45.74	-45.32	-13.00	-32.74	-0.42	Peak	Vertical
2	2122.500	-55.34	-59.26	-13.00	-42.34	3.92	Peak	Vertical



CH23095

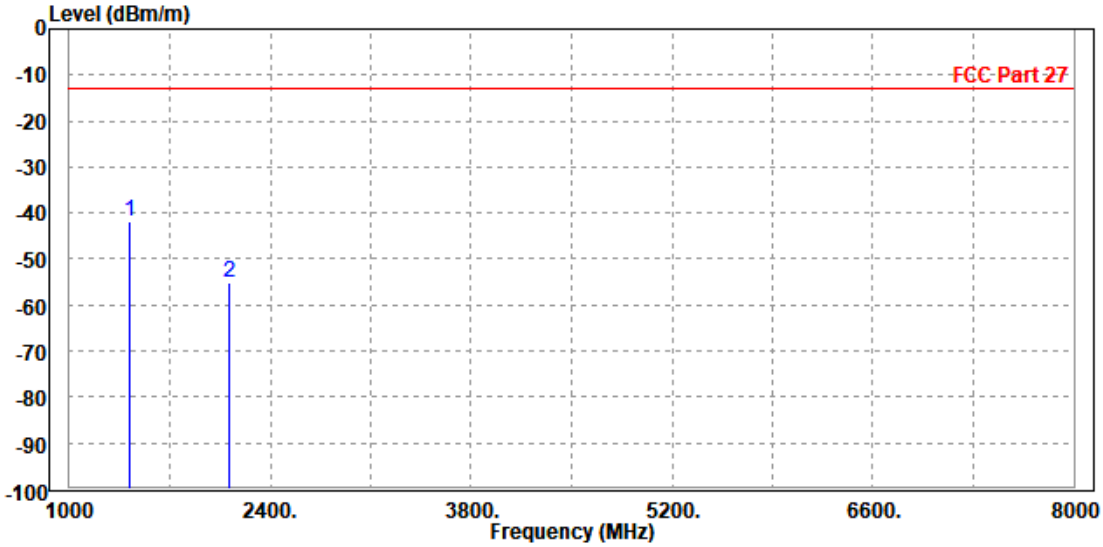
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1413.000	-45.19	-44.54	-13.00	-32.19	-0.65	Peak	Horizontal
2		2122.500	-53.81	-57.87	-13.00	-40.81	4.06	Peak	Horizontal



MODE	TX channel 23095	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			

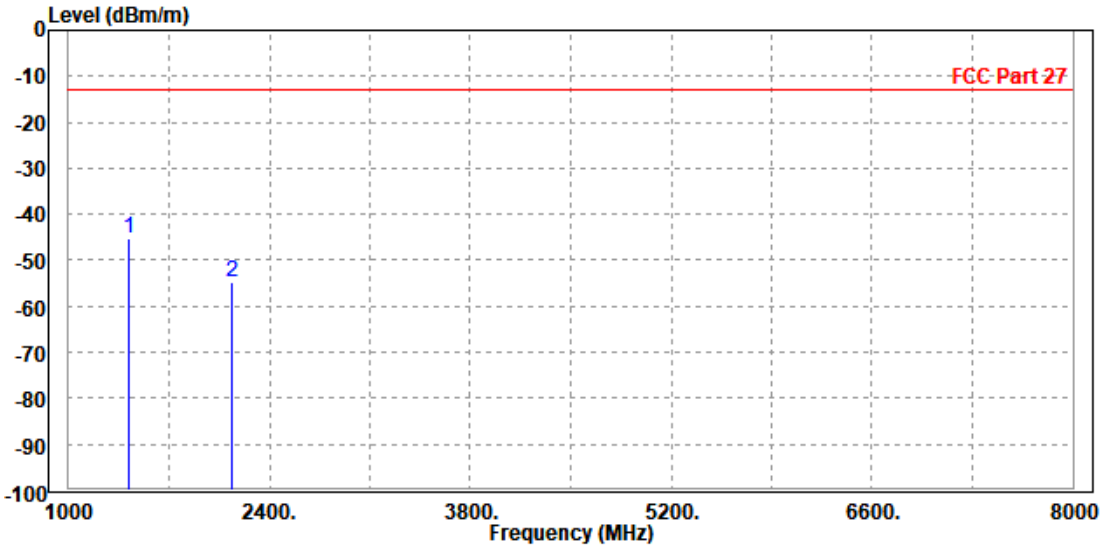
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1415.000	-41.88	-41.47	-13.00	-28.88	-0.41	Peak	Vertical
2		2120.000	-55.22	-59.13	-13.00	-42.22	3.91	Peak	Vertical



CH23130

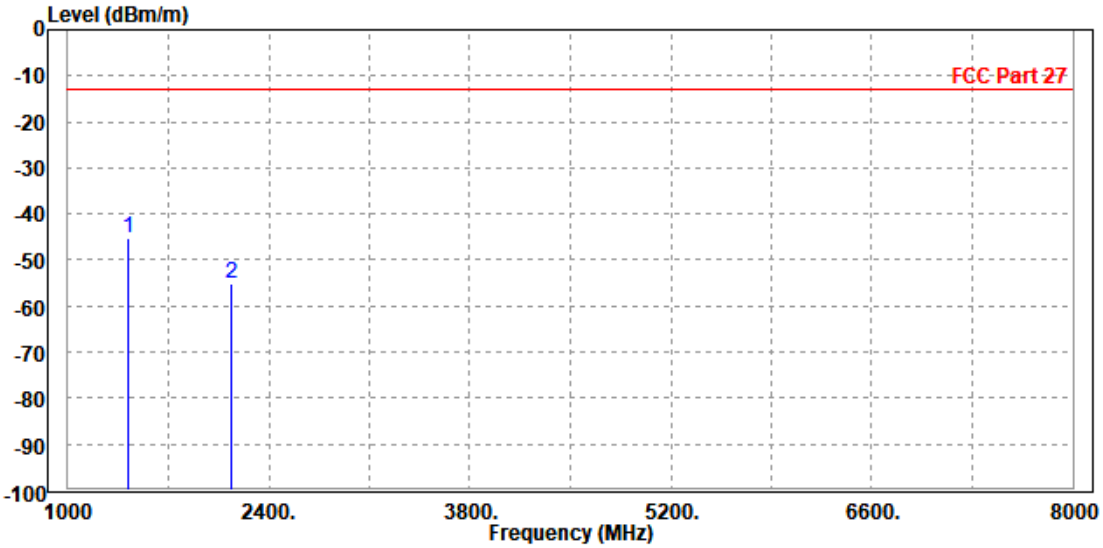
MODE	TX channel 23130	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1420.000	-45.41	-44.78	-13.00	-32.41	-0.63	Peak	Horizontal
2		2133.000	-54.83	-58.93	-13.00	-41.83	4.10	Peak	Horizontal



MODE	TX channel 23130	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	1422.000	-45.41	-45.03	-13.00	-32.41	-0.38	Peak	Vertical
2		2134.000	-55.26	-59.21	-13.00	-42.26	3.95	Peak	Vertical



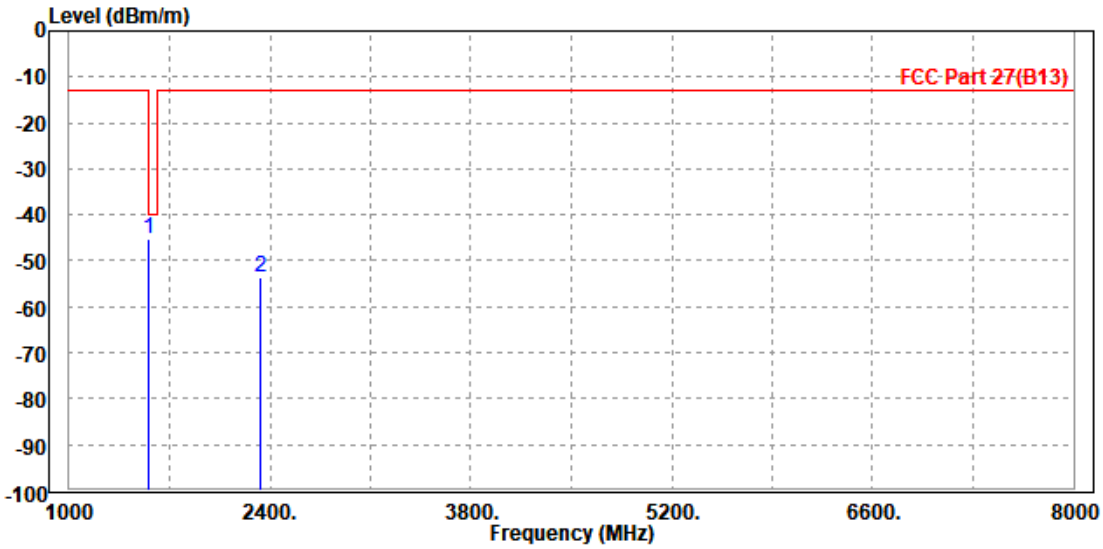
LTE B13

CHANNEL BANDWIDTH: 5MHz / QPSK

CH 23205

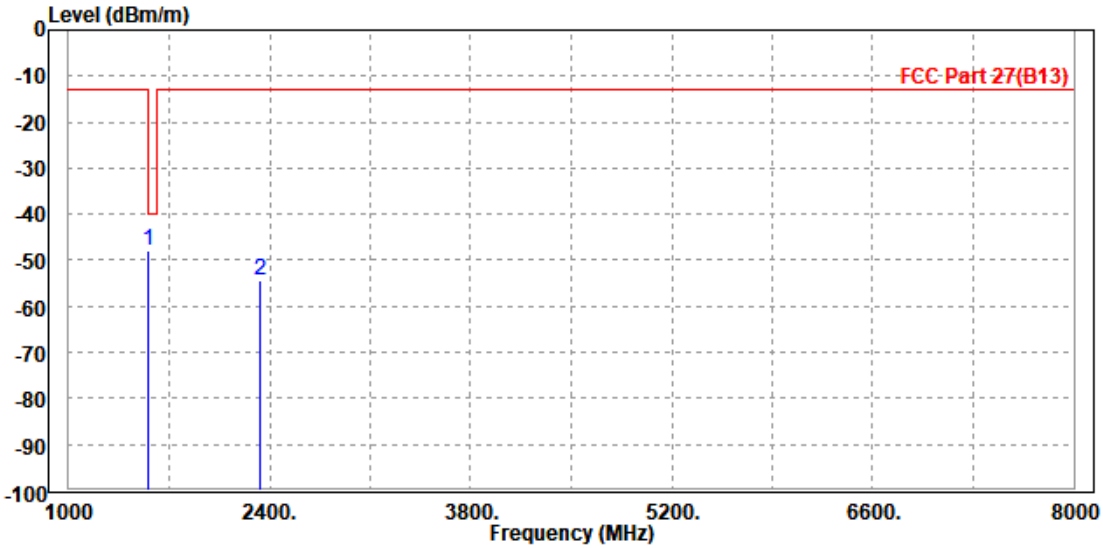
MODE	TX channel 23205	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1559.000	-45.15	-45.20	-40.00	-5.15	0.05	Peak	Horizontal
2	2337.000	-53.43	-58.28	-13.00	-40.43	4.85	Peak	Horizontal



MODE	TX channel 23205	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			

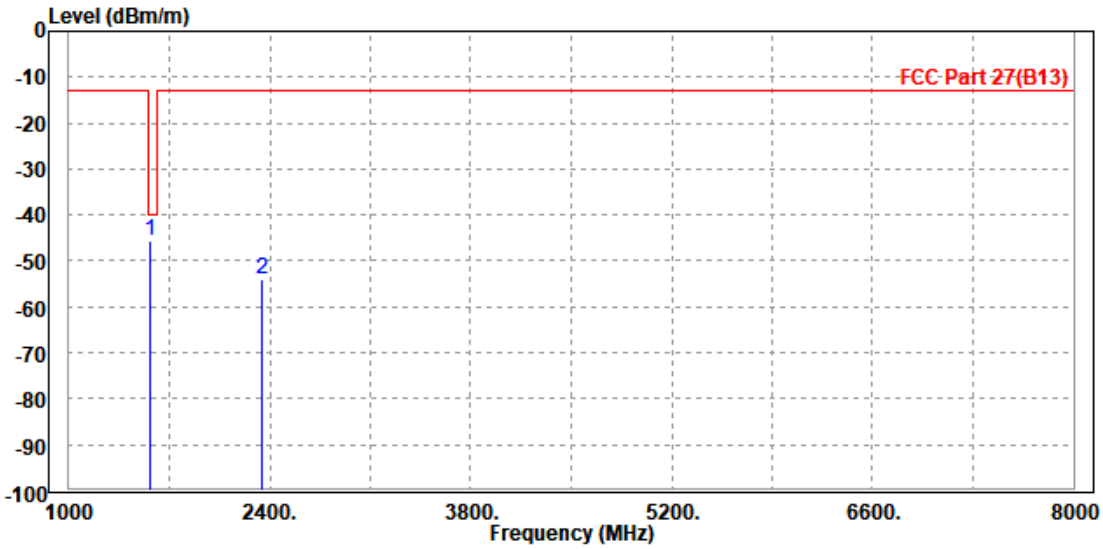
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1560.000	-47.87	-48.27	-40.00	-7.87	0.40	Peak	Vertical
2		2338.500	-54.34	-58.84	-13.00	-41.34	4.50	Peak	Vertical



CH 23230

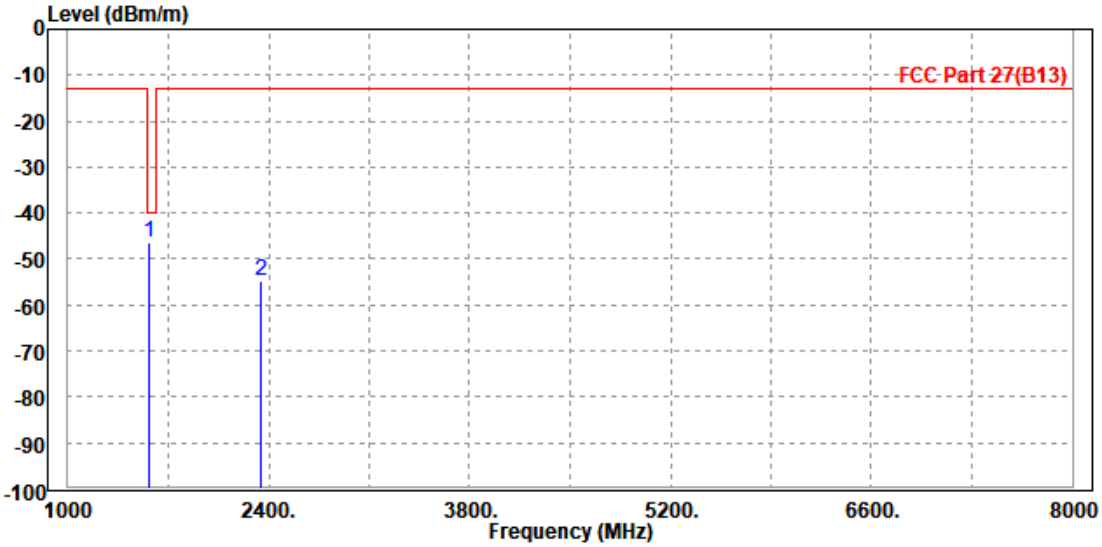
MODE	TX channel 23230	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1567.000	-45.69	-45.81	-40.00	-5.69	0.12	Peak	Horizontal
2	2346.000	-53.99	-58.87	-13.00	-40.99	4.88	Peak	Horizontal



MODE	TX channel 23230	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			

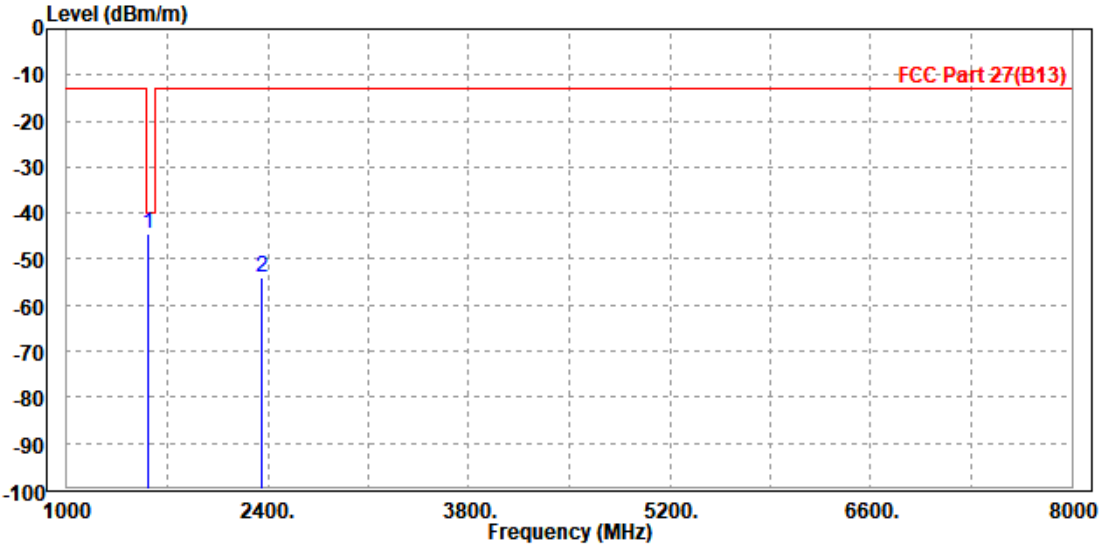
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1564.000	-46.20	-46.63	-40.00	-6.20	0.43	Peak	Vertical
2		2344.000	-54.58	-59.10	-13.00	-41.58	4.52	Peak	Vertical



CH 23255

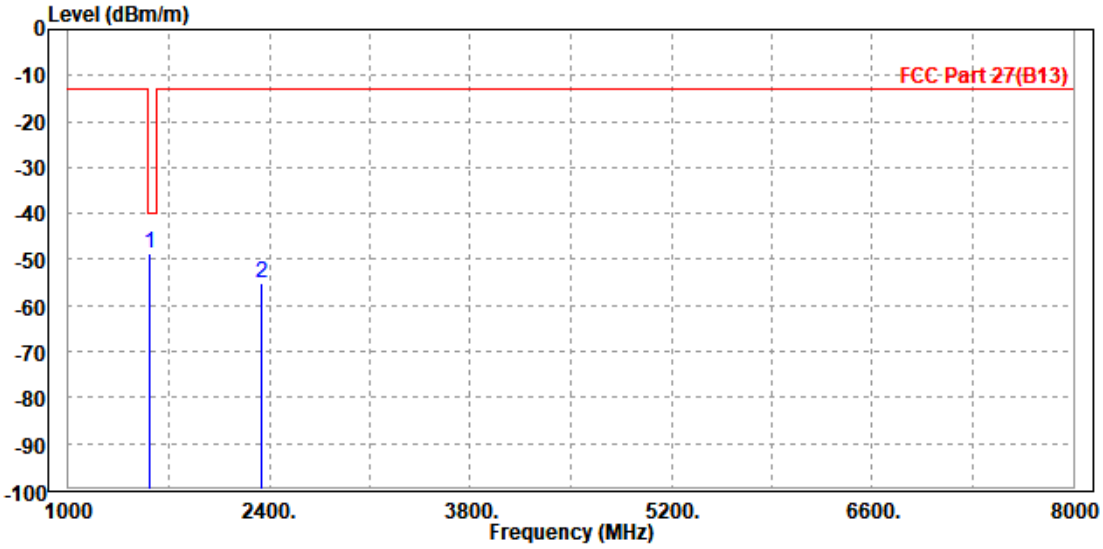
MODE	TX channel 23255	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1567.000	-44.41	-44.53	-40.00	-4.41	0.12	Peak	Horizontal
2		2353.500	-53.95	-58.86	-13.00	-40.95	4.91	Peak	Horizontal



MODE	TX channel 23255	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			

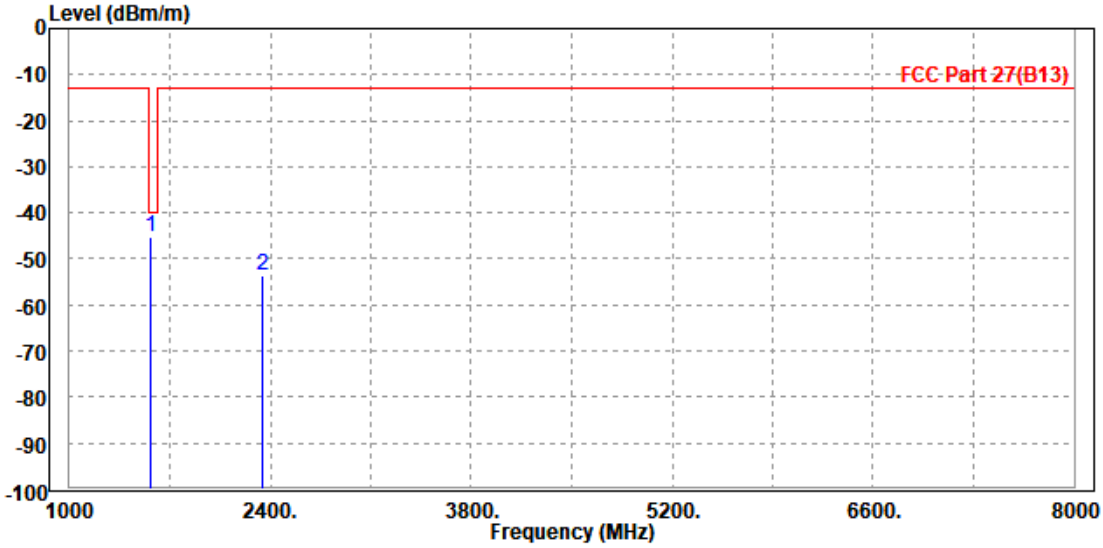
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1569.000	-48.80	-49.26	-40.00	-8.80	0.46	Peak	Vertical
2		2351.000	-55.13	-59.67	-13.00	-42.13	4.54	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz /QPSK

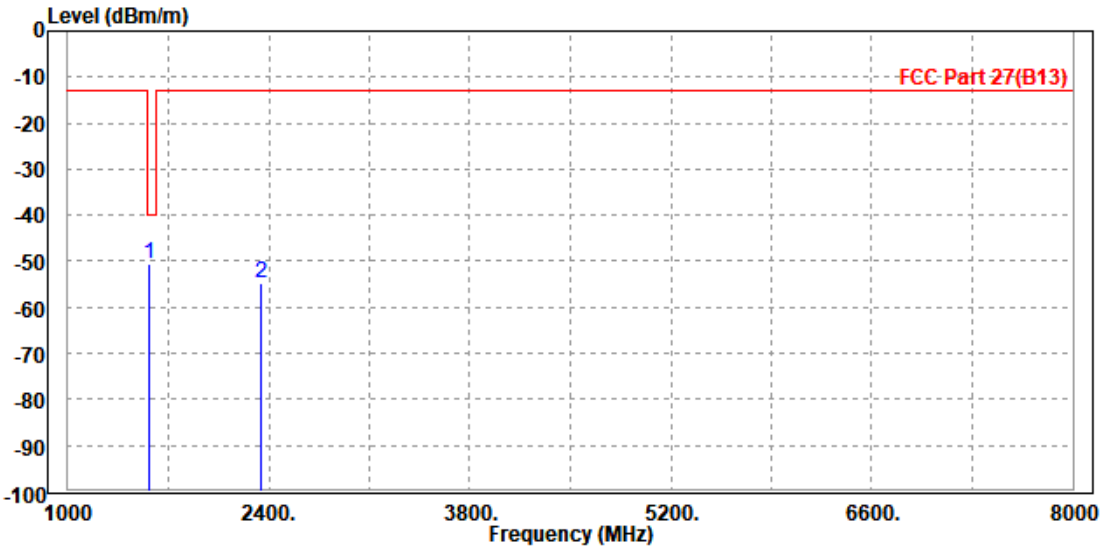
MODE	TX channel 23230	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1567.000	-45.27	-45.39	-40.00	-5.27	0.12	Peak	Horizontal
2	2346.000	-53.72	-58.60	-13.00	-40.72	4.88	Peak	Horizontal



MODE	TX channel 23230	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	1564.000	-50.42	-50.85	-40.00	-10.42	0.43	Peak	Vertical
2		2344.000	-54.75	-59.27	-13.00	-41.75	4.52	Peak	Vertical

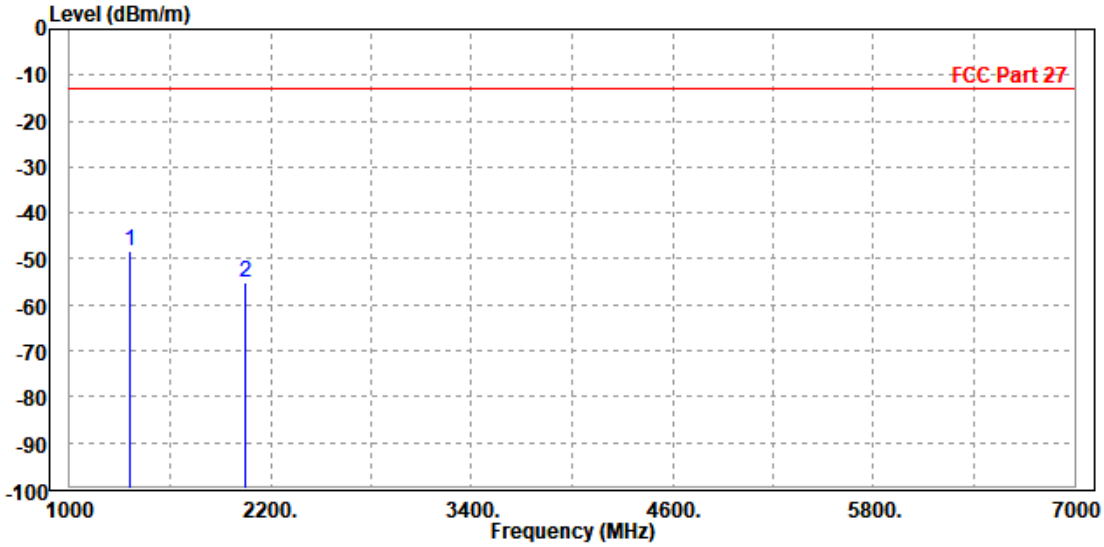


LTE B71

CHANNEL BANDWIDTH: 5MHz / QPSK

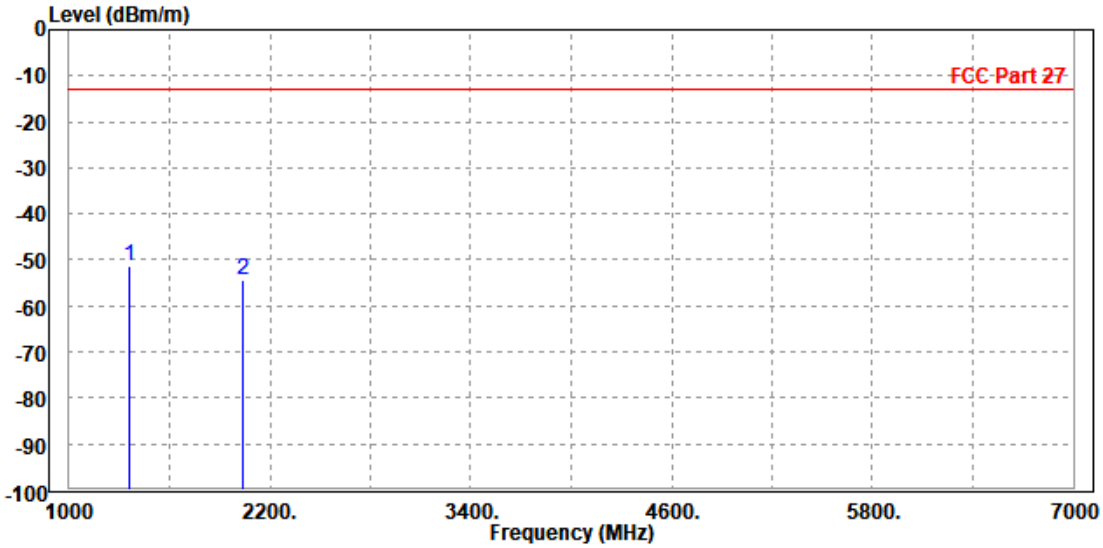
MODE	TX channel 133297	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1361.000	-48.26	-47.47	-13.00	-35.26	-0.79	Peak	Horizontal
2	2044.000	-55.01	-58.79	-13.00	-42.01	3.78	Peak	Horizontal



MODE	TX channel 133297	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	1360.000	-51.50	-50.85	-13.00	-38.50	-0.65	Peak	Vertical
2		2041.500	-54.33	-58.03	-13.00	-41.33	3.70	Peak	Vertical

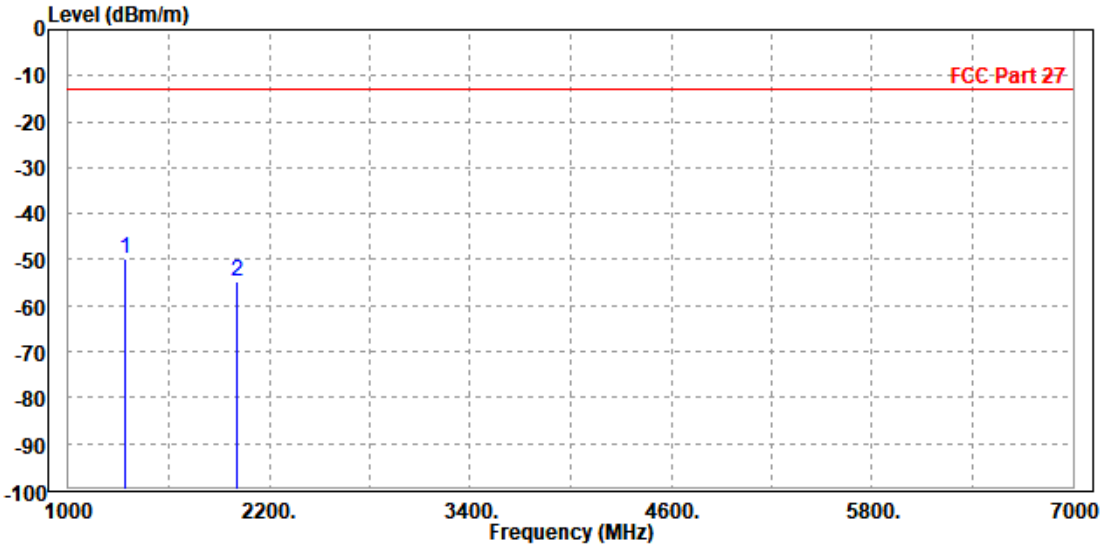


CHANNEL BANDWIDTH: 10MHz / QPSK

CH 133172

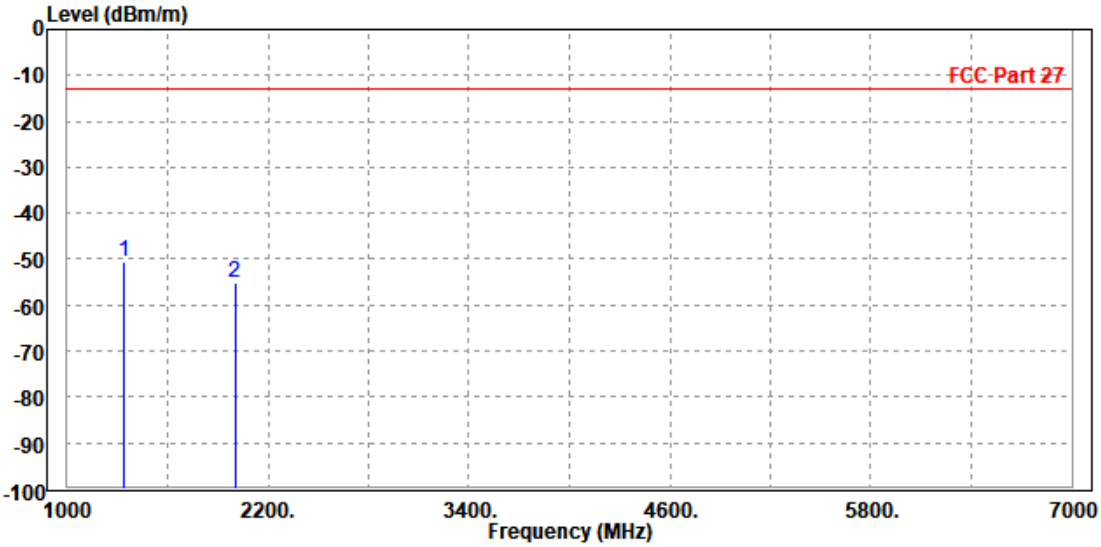
MODE	TX channel 133172	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1336.000	-49.96	-49.11	-13.00	-36.96	-0.85	Peak	Horizontal
2		2004.000	-54.86	-58.49	-13.00	-41.86	3.63	Peak	Horizontal



MODE	TX channel 133172	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			

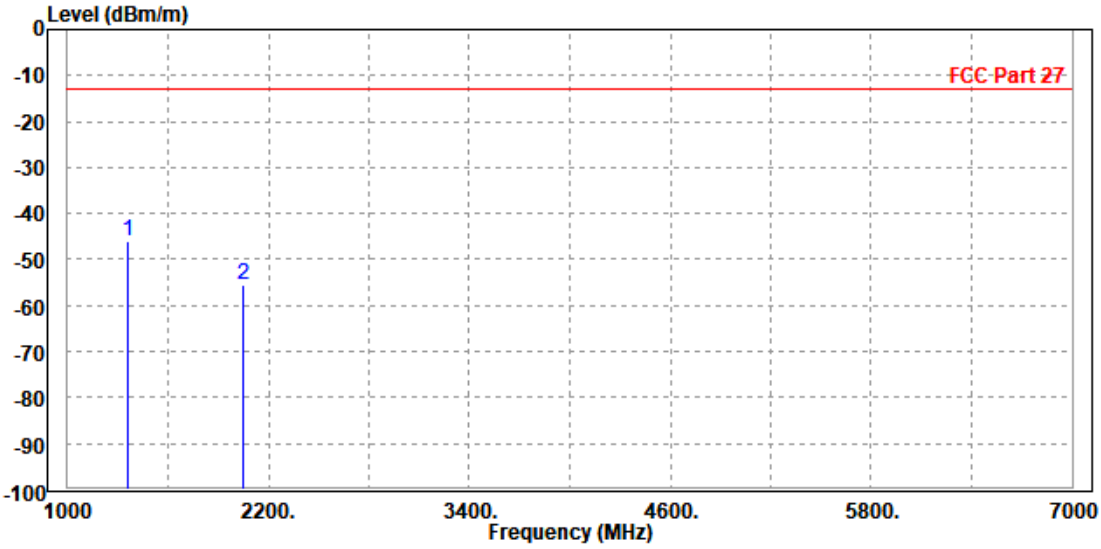
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1336.000	-50.46	-49.71	-13.00	-37.46	-0.75	Peak	Vertical
2		2002.000	-54.97	-58.56	-13.00	-41.97	3.59	Peak	Vertical



CH 133297

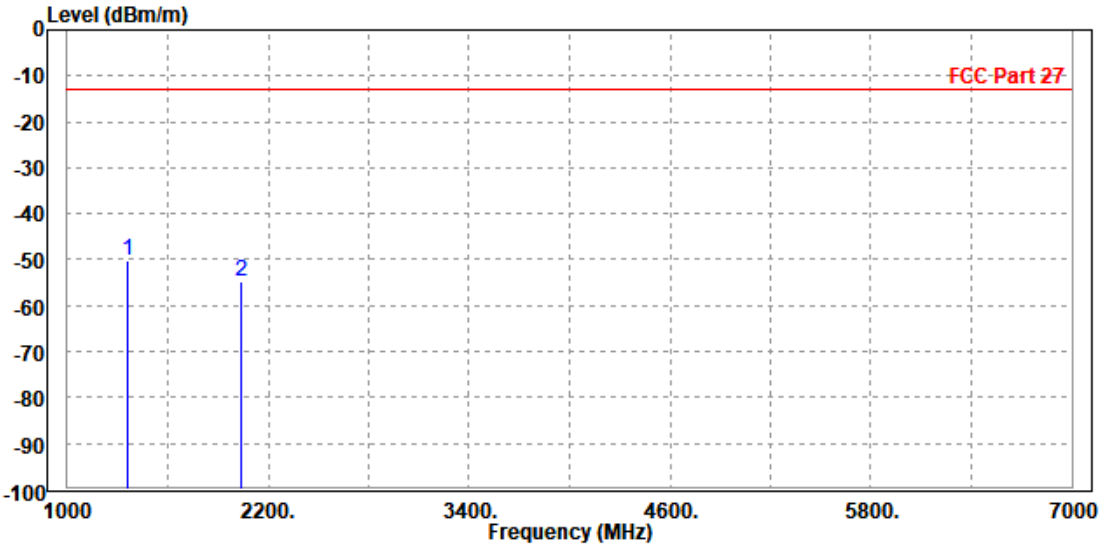
MODE	TX channel 133297	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1361.000	-46.06	-45.27	-13.00	-33.06	-0.79	Peak	Horizontal
2		2044.000	-55.58	-59.36	-13.00	-42.58	3.78	Peak	Horizontal



MODE	TX channel 133297	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			

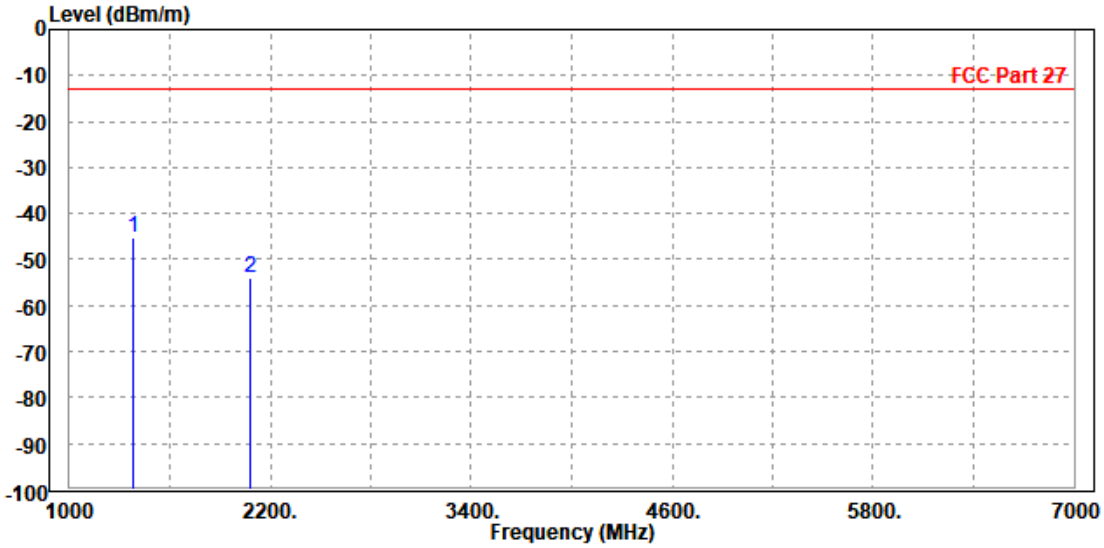
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1360.000	-50.32	-49.67	-13.00	-37.32	-0.65	Peak	Vertical
2	2041.500	-54.58	-58.28	-13.00	-41.58	3.70	Peak	Vertical



CH 133422

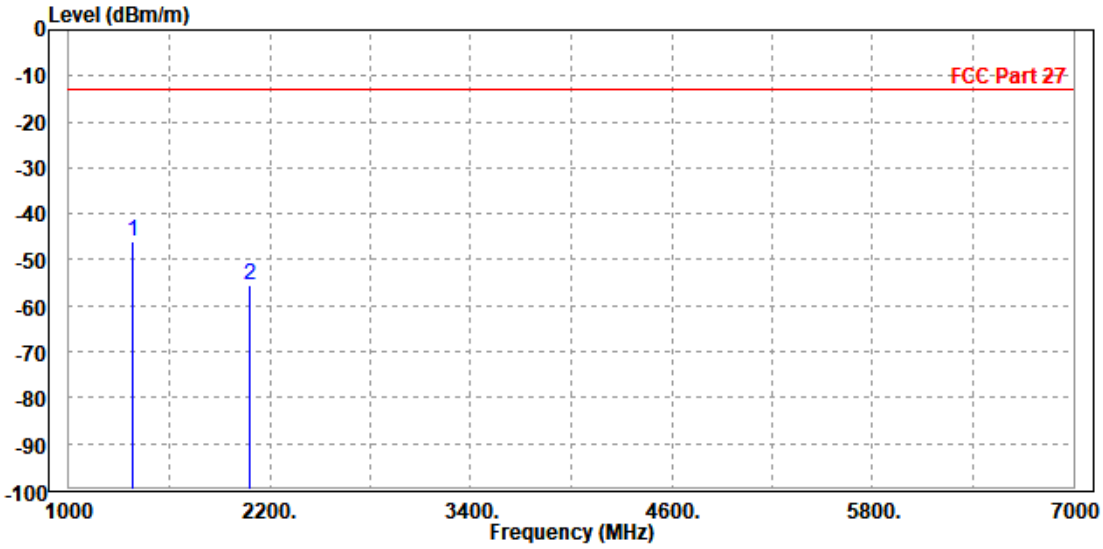
MODE	TX channel 133422	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1386.000	-45.21	-44.49	-13.00	-32.21	-0.72	Peak	Horizontal
2		2080.000	-53.82	-57.73	-13.00	-40.82	3.91	Peak	Horizontal



MODE	TX channel 133422	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			

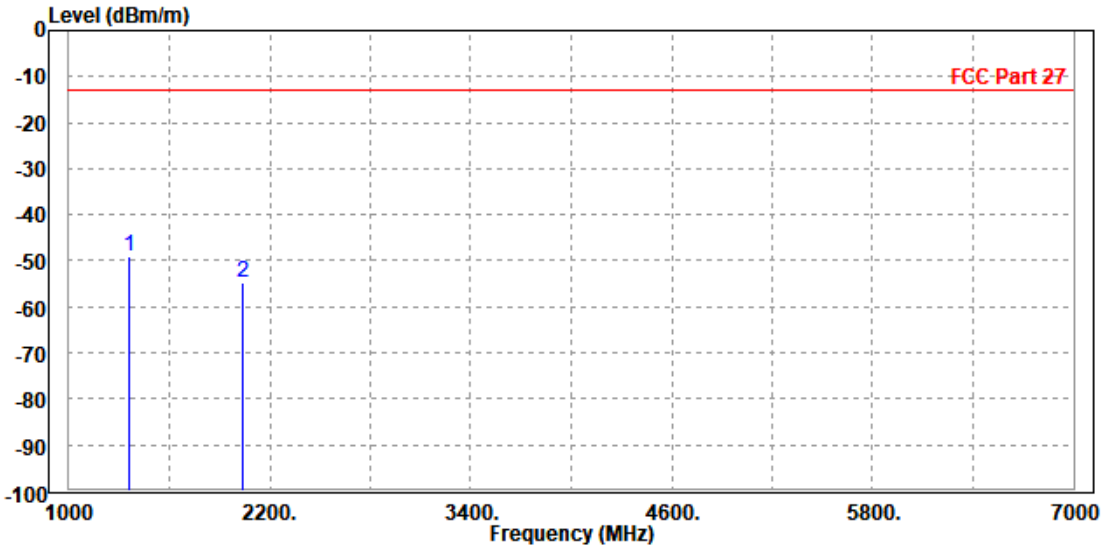
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1384.000	-46.18	-45.64	-13.00	-33.18	-0.54	Peak	Vertical
2		2079.000	-55.47	-59.27	-13.00	-42.47	3.80	Peak	Vertical



CHANNEL BANDWIDTH: 15MHz / QPSK

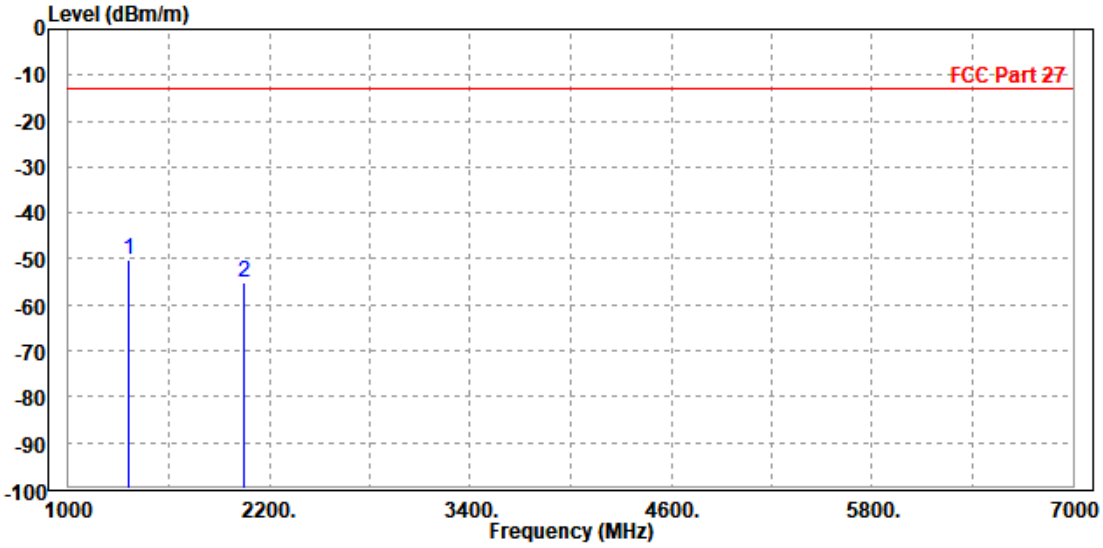
MODE	TX channel 133297	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1360.000	-48.97	-48.18	-13.00	-35.97	-0.79	Peak	Horizontal
2		2041.500	-54.92	-58.69	-13.00	-41.92	3.77	Peak	Horizontal



MODE	TX channel 133297	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			

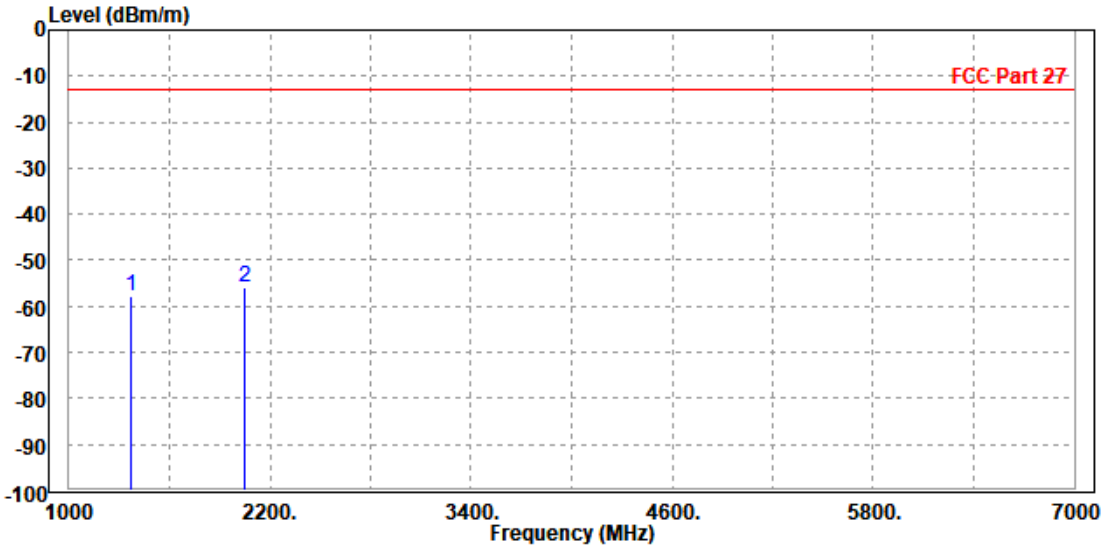
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1361.000	-50.38	-49.74	-13.00	-37.38	-0.64	Peak	Vertical
2		2044.000	-55.18	-58.88	-13.00	-42.18	3.70	Peak	Vertical



CHANNEL BANDWIDTH: 20MHz / QPSK

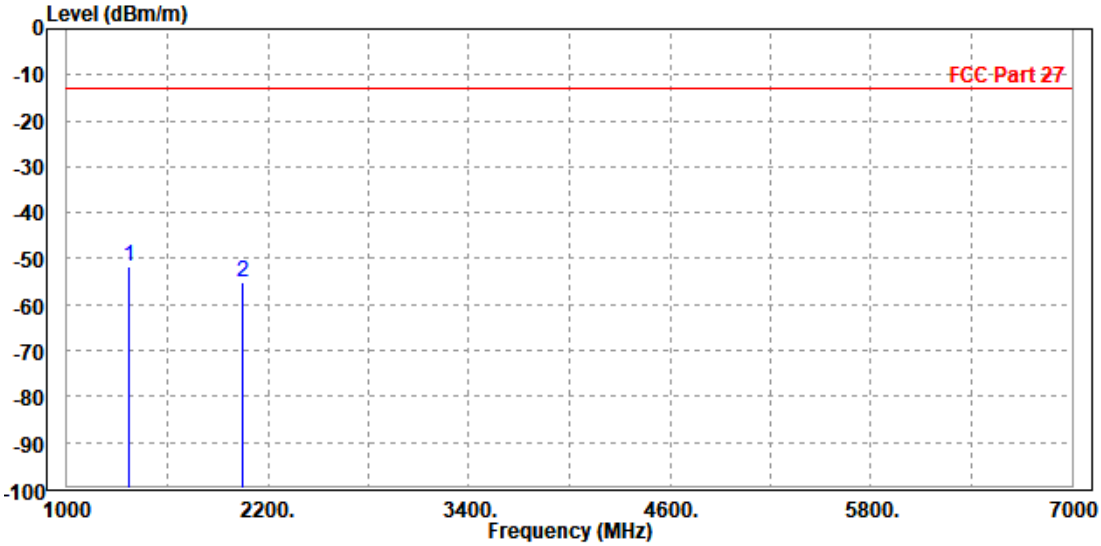
MODE	TX channel 133322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1366.000	-57.82	-57.04	-13.00	-44.82	-0.78	Peak	Horizontal
2 PP	2050.000	-55.88	-59.68	-13.00	-42.88	3.80	Peak	Horizontal



MODE	TX channel 133322	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	1366.000	-51.70	-51.08	-13.00	-38.70	-0.62	Peak	Vertical
2		2049.000	-55.15	-58.87	-13.00	-42.15	3.72	Peak	Vertical

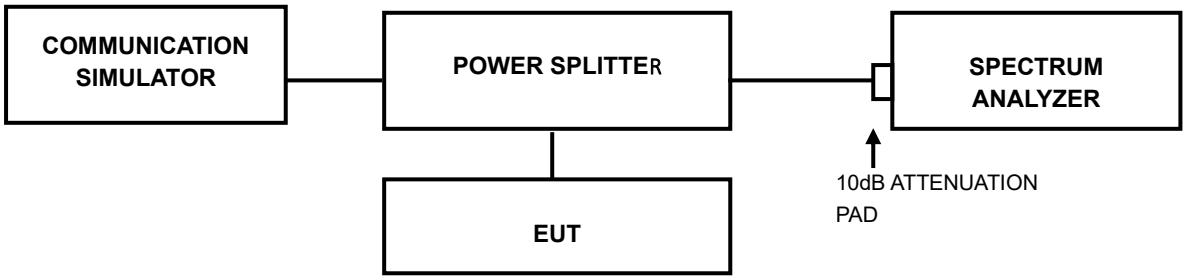


3.7 PEAK TO AVERAGE RATIO

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 Of this test report.

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@cn.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.

6 APPENDIX

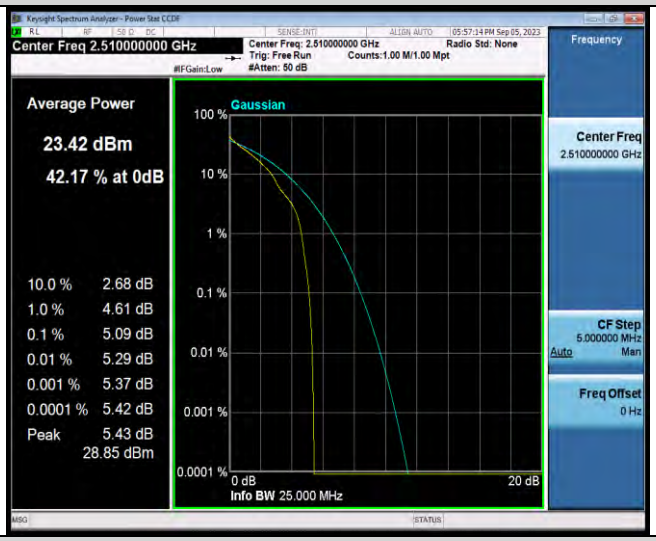
LTE BAND 7

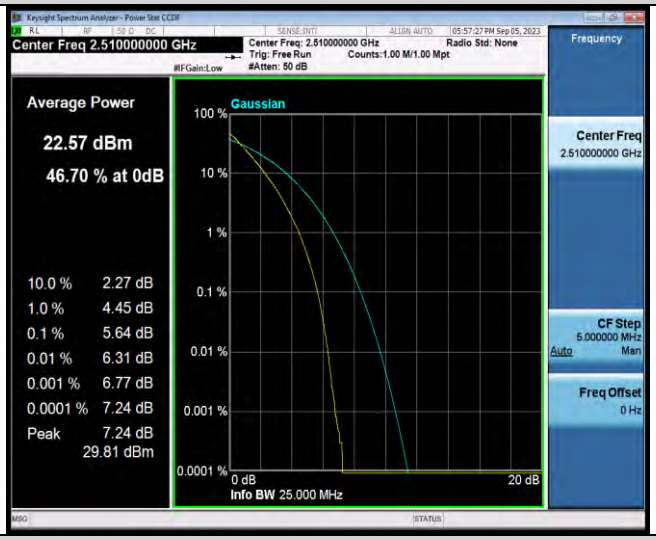
PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

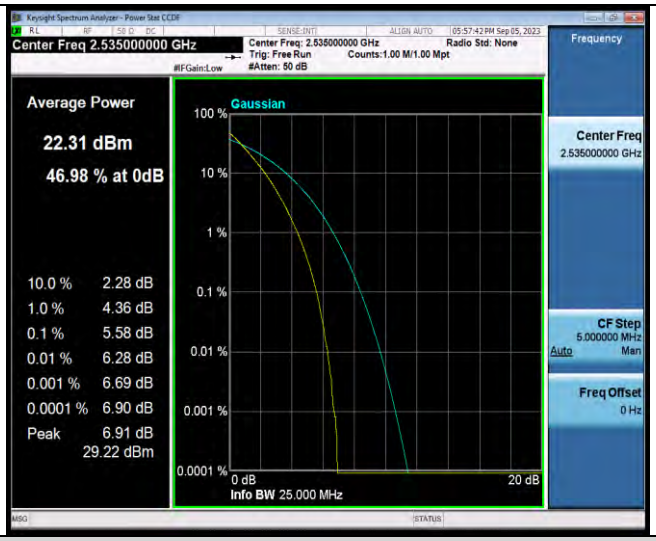
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band7	20MHz	QPSK	20850	1RB#0	5.09	13	PASS
Band7	20MHz	QPSK	20850	100RB#0	5.64	13	PASS
Band7	20MHz	QPSK	21100	1RB#0	5.58	13	PASS
Band7	20MHz	QPSK	21100	100RB#0	5.59	13	PASS
Band7	20MHz	QPSK	21350	1RB#0	5.90	13	PASS
Band7	20MHz	QPSK	21350	100RB#0	5.50	13	PASS
Band7	20MHz	16QAM	20850	1RB#0	5.71	13	PASS
Band7	20MHz	16QAM	20850	27RB#0	6.53	13	PASS
Band7	20MHz	16QAM	21100	1RB#0	5.86	13	PASS
Band7	20MHz	16QAM	21100	27RB#0	5.87	13	PASS
Band7	20MHz	16QAM	21350	1RB#0	6.62	13	PASS
Band7	20MHz	16QAM	21350	27RB#0	6.49	13	PASS

Test Graphs

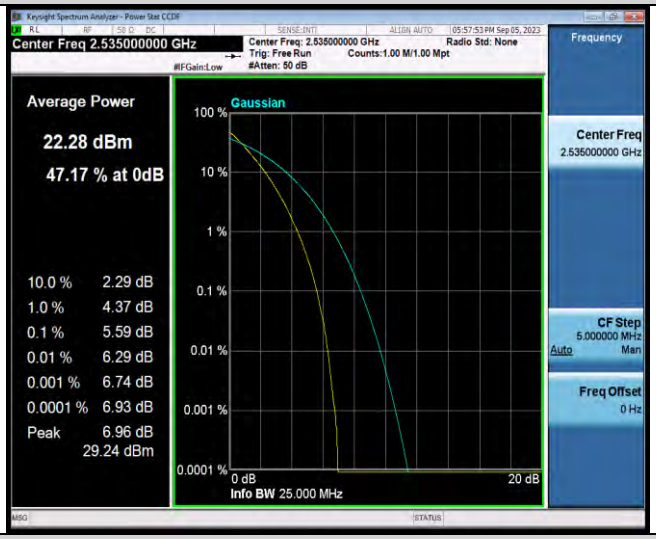
Band7-20MHz-QPSK-20850-1RB#0


Band7-20MHz-QPSK-20850-100RB#0


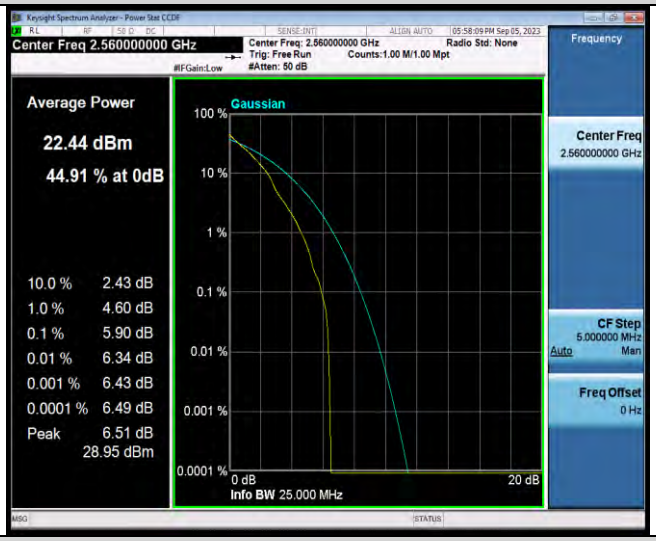
Band7-20MHz-QPSK-21100-1RB#0



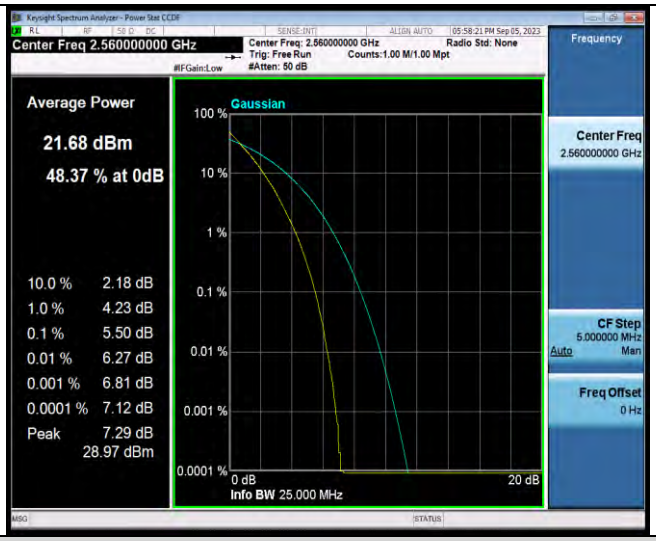
Band7-20MHz-QPSK-21100-100RB#0



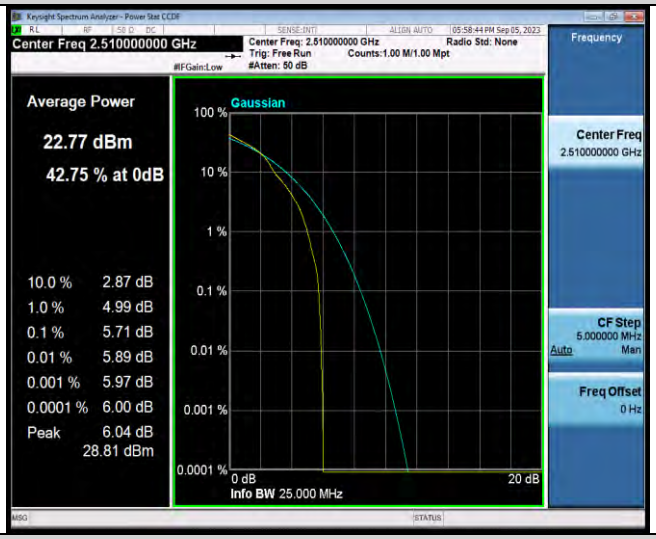
Band7-20MHz-QPSK-21350-1RB#0



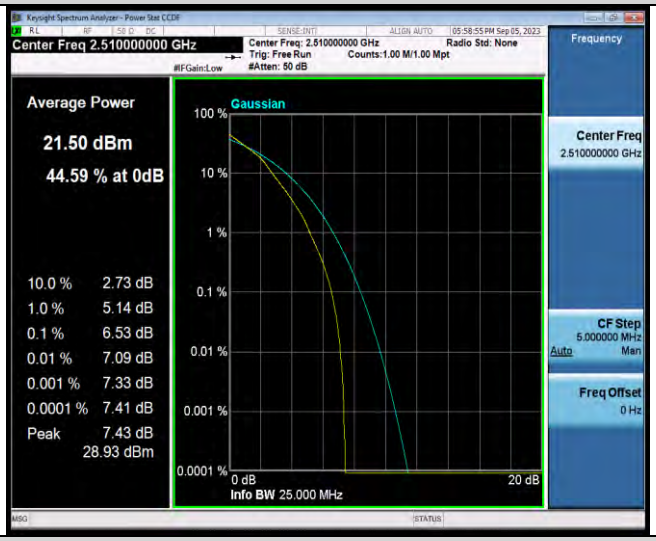
Band7-20MHz-QPSK-21350-100RB#0



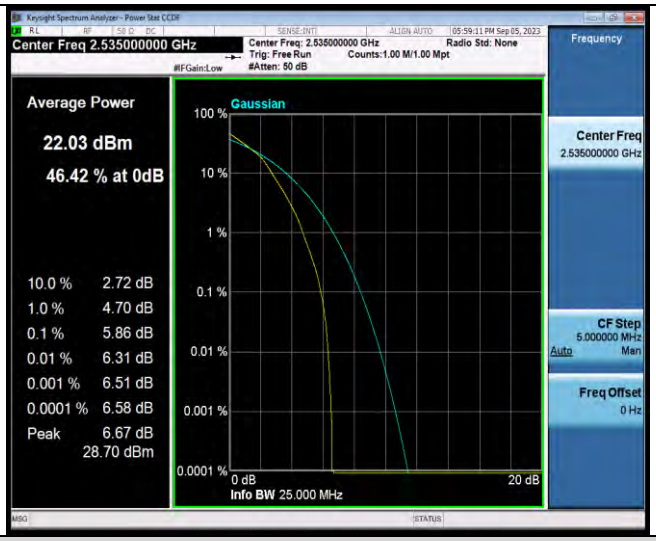
Band7-20MHz-16QAM-20850-1RB#0



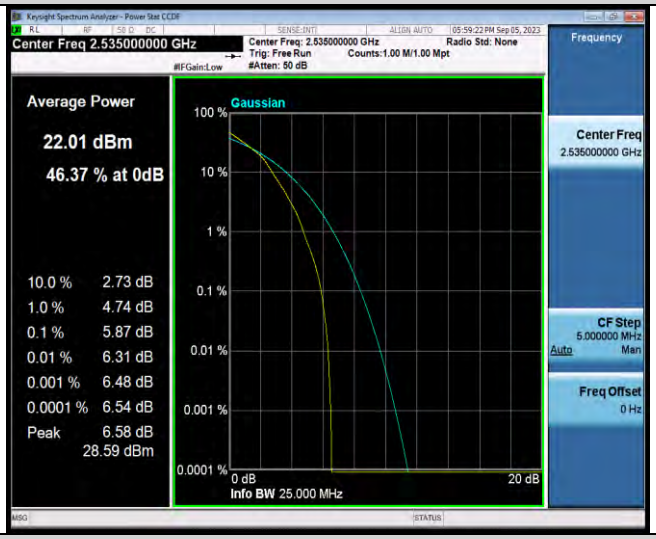
Band7-20MHz-16QAM-20850-27RB#0



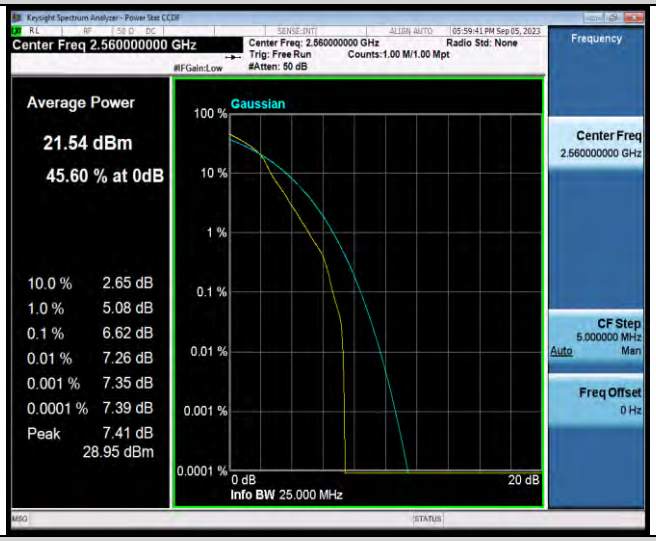
Band7-20MHz-16QAM-21100-1RB#0



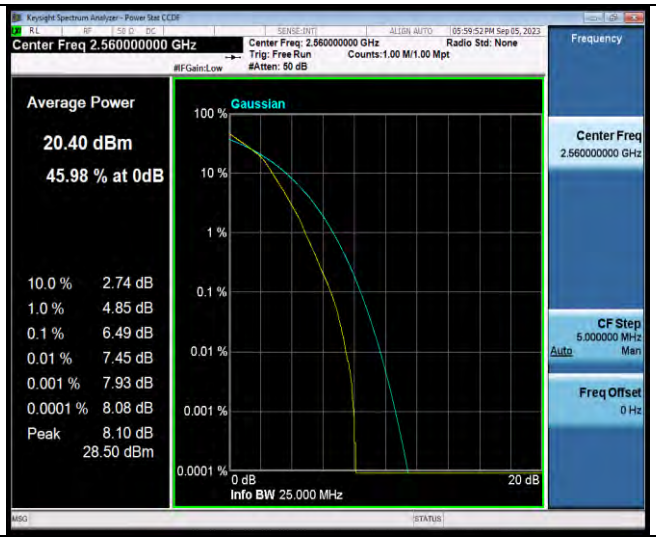
Band7-20MHz-16QAM-21100-27RB#0



Band7-20MHz-16QAM-21350-1RB#0



Band7-20MHz-16QAM-21350-27RB#0


Keysight Spectrum Analyzer - Power Stat CCDF
Center Freq 2.560000000 GHz
Center Freq: 2.560000000 GHz
Trig: Free Run
#Atten: 50 dB
Counts:1.00 M/1.00 Mpt
Radio Std: None
Frequency
Average Power
20.40 dBm
45.98 % at 0dB
10.0 % 2.74 dB
1.0 % 4.85 dB
0.1 % 6.49 dB
0.01 % 7.45 dB
0.001 % 7.93 dB
0.0001 % 8.08 dB
Peak 8.10 dB
28.50 dBm
Gaussian
100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
0 dB
20 dB
Info BW 25.000 MHz
Center Freq
2.560000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz

26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band7	5MHz	QPSK	20775	25RB#0	4.5232	5.098	PASS
Band7	5MHz	QPSK	21100	25RB#0	4.4958	5.031	PASS
Band7	5MHz	QPSK	21425	25RB#0	4.5191	5.074	PASS
Band7	5MHz	16QAM	20775	25RB#0	4.5022	5.098	PASS
Band7	5MHz	16QAM	21100	25RB#0	4.4948	5.049	PASS
Band7	5MHz	16QAM	21425	25RB#0	4.5006	5.112	PASS
Band7	10MHz	QPSK	20800	50RB#0	8.9937	10.16	PASS
Band7	10MHz	QPSK	21100	50RB#0	9.0134	10.26	PASS
Band7	10MHz	QPSK	21400	50RB#0	8.9961	10.21	PASS
Band7	10MHz	16QAM	20800	27RB#0	4.8524	5.554	PASS
Band7	10MHz	16QAM	21100	27RB#0	4.8419	5.596	PASS
Band7	10MHz	16QAM	21400	27RB#0	4.8473	5.624	PASS
Band7	15MHz	QPSK	20825	75RB#0	13.523	15.32	PASS
Band7	15MHz	QPSK	21100	75RB#0	13.529	15.47	PASS
Band7	15MHz	QPSK	21375	75RB#0	13.499	15.21	PASS
Band7	15MHz	16QAM	20825	27RB#0	4.8794	5.850	PASS
Band7	15MHz	16QAM	21100	27RB#0	4.8656	5.702	PASS
Band7	15MHz	16QAM	21375	27RB#0	4.8703	5.653	PASS
Band7	20MHz	QPSK	20850	100RB#0	18.018	20.06	PASS
Band7	20MHz	QPSK	21100	100RB#0	18.018	20.08	PASS
Band7	20MHz	QPSK	21350	100RB#0	17.925	19.90	PASS
Band7	20MHz	16QAM	20850	27RB#0	4.8969	5.857	PASS
Band7	20MHz	16QAM	21100	27RB#0	4.8966	5.922	PASS
Band7	20MHz	16QAM	21350	27RB#0	4.8822	5.839	PASS

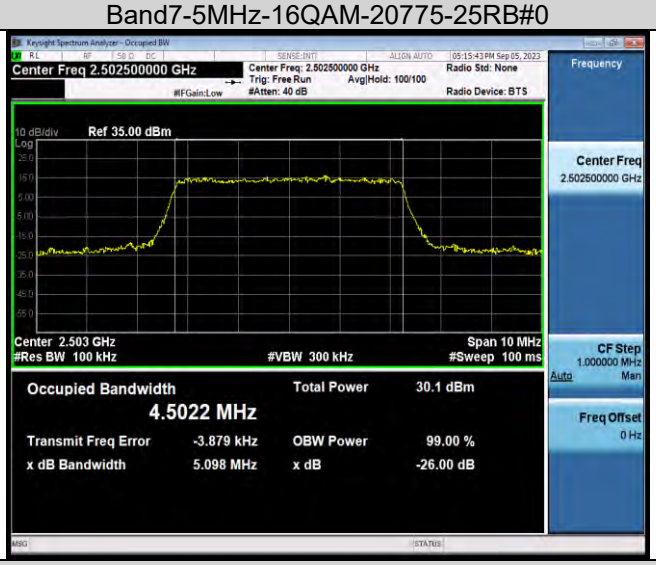
Test Graphs

Band7-5MHz-QPSK-20775-25RB#0

Band7-5MHz-QPSK-21100-25RB#0

Band7-5MHz-QPSK-21425-25RB#0

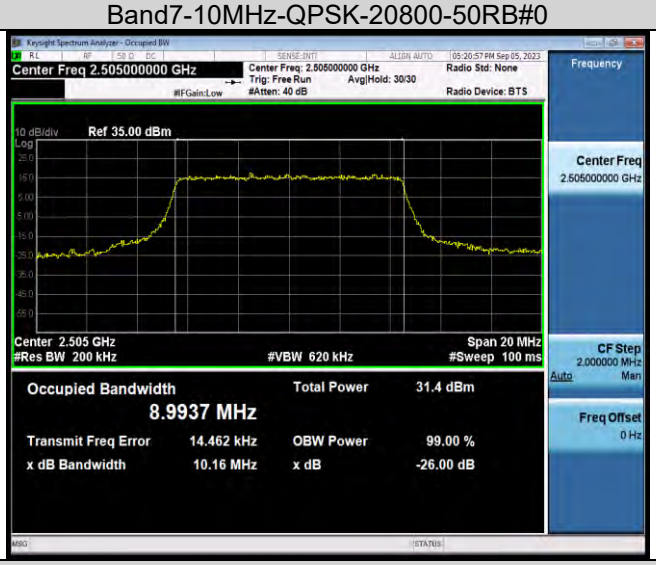
Band7-5MHz-16QAM-20775-25RB#0



Band7-5MHz-16QAM-21100-25RB#0

Band7-5MHz-16QAM-21425-25RB#0

Band7-10MHz-QPSK-20800-50RB#0



Band7-10MHz-QPSK-21100-50RB#0

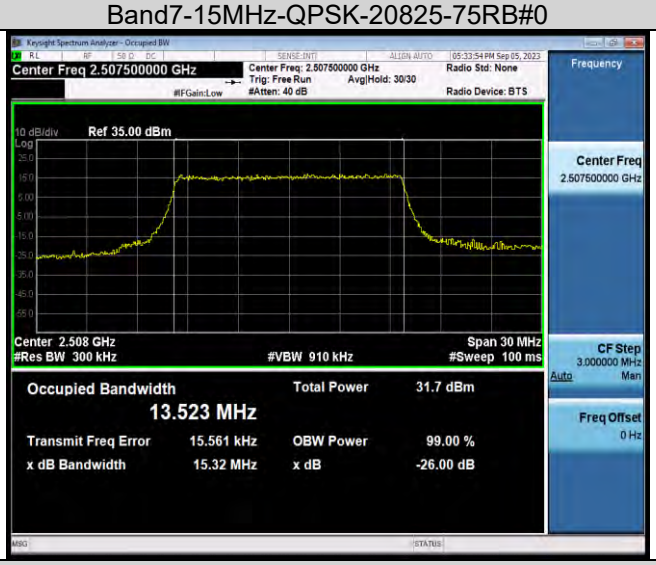
Band7-10MHz-QPSK-21400-50RB#0

Band7-10MHz-16QAM-20800-27RB#0

Band7-10MHz-16QAM-21100-27RB#0

Band7-10MHz-16QAM-21400-27RB#0

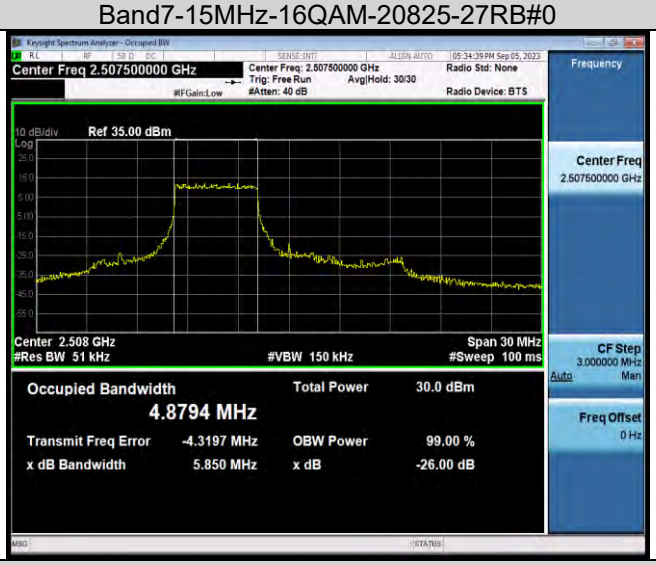
Band7-15MHz-QPSK-20825-75RB#0



Band7-15MHz-QPSK-21100-75RB#0

Band7-15MHz-QPSK-21375-75RB#0

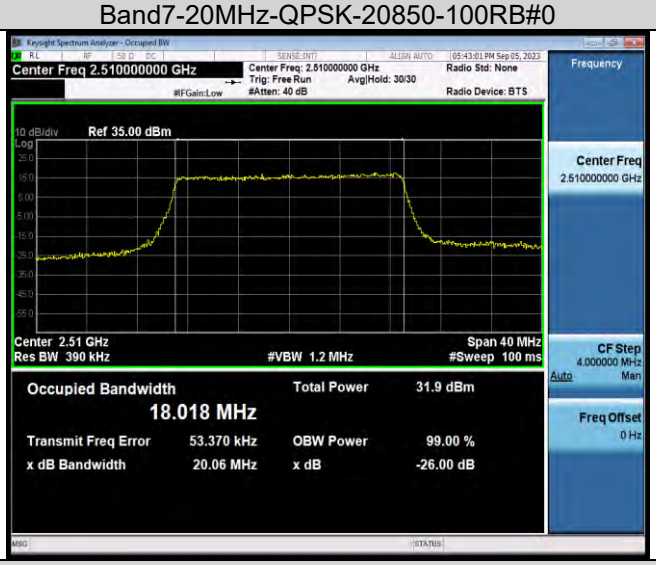
Band7-15MHz-16QAM-20825-27RB#0



Band7-15MHz-16QAM-21100-27RB#0

Band7-15MHz-16QAM-21375-27RB#0

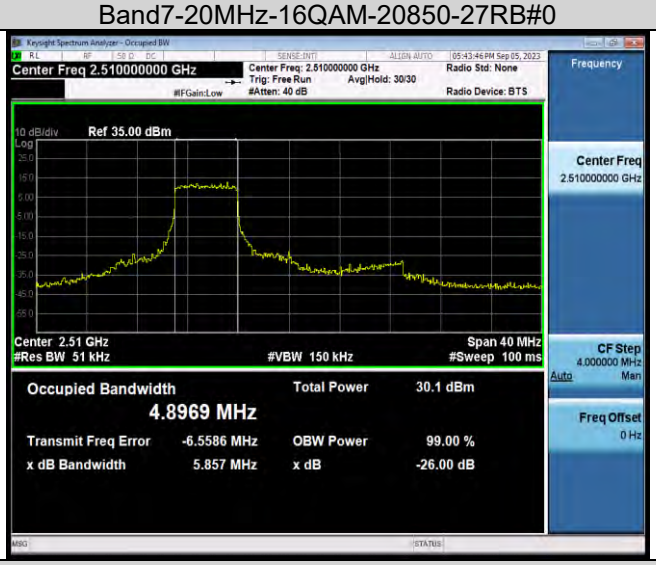
Band7-20MHz-QPSK-20850-100RB#0



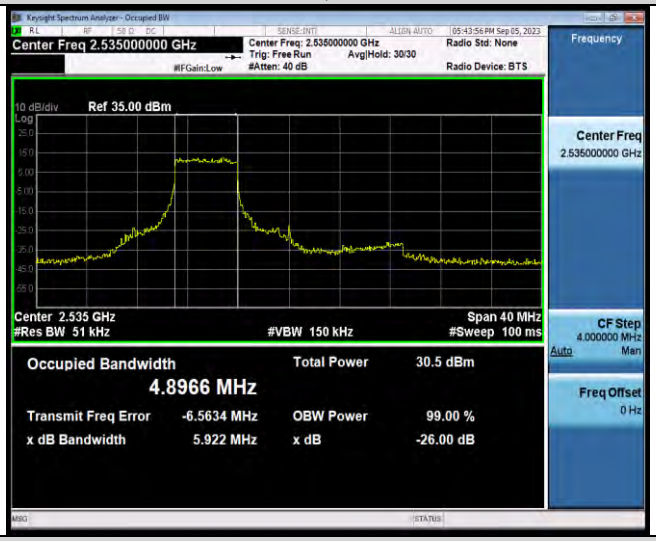
Band7-20MHz-QPSK-21100-100RB#0

Band7-20MHz-QPSK-21350-100RB#0

Band7-20MHz-16QAM-20850-27RB#0



Band7-20MHz-16QAM-21100-27RB#0



Band7-20MHz-16QAM-21350-27RB#0

Keysight Spectrum Analyzer - Occupied BW
Center Freq 2.560000000 GHz
Center Freq: 2.560000000 GHz
Trig: Free Run
Avg|Hold: 30/30
#Atten: 40 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Ref 35.00 dBm
Center Freq
2.560000000 GHz
Center 2.56 GHz
#Res BW 51 kHz
#VBW 150 kHz
Span 40 MHz
#Sweep 100 ms
CF Step
4.000000 MHz
Auto
Man
Occupied Bandwidth
4.8822 MHz
Total Power
29.0 dBm
Transmit Freq Error
-6.5623 MHz
OBW Power
99.00 %
x dB Bandwidth
5.839 MHz
x dB
-26.00 dB
Freq Offset
0 Hz

BAND EDGE

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band7	5MHz	QPSK	20775	1RB#0	-30.83,-30.98,-37.35,-20.19	PASS
Band7	5MHz	QPSK	20775	25RB#0	-37.38,-27.68,-24.07,-27.72	PASS
Band7	5MHz	QPSK	21425	1RB#24	-22.61,-34.98,-32.44,-32.43	PASS
Band7	5MHz	QPSK	21425	25RB#0	-28.33,-25.29,-40.71,-42.54	PASS
Band7	5MHz	16QAM	20775	1RB#0	-32.99,-32.90,-37.74,-20.36	PASS
Band7	5MHz	16QAM	20775	25RB#0	-39.08,-31.47,-23.88,-29.35	PASS
Band7	5MHz	16QAM	21425	1RB#24	-23.50,-36.23,-34.49,-34.46	PASS
Band7	5MHz	16QAM	21425	25RB#0	-30.33,-25.61,-41.69,-43.91	PASS
Band7	10MHz	QPSK	20800	1RB#0	-42.90,-39.49,-38.96,-25.10	PASS
Band7	10MHz	QPSK	20800	50RB#0	-38.23,-29.67,-26.89,-29.24	PASS
Band7	10MHz	QPSK	21400	1RB#49	-25.25,-38.01,-46.56,-43.32	PASS
Band7	10MHz	QPSK	21400	50RB#0	-29.39,-26.41,-31.33,-43.12	PASS
Band7	10MHz	16QAM	20800	1RB#0	-44.14,-40.46,-39.85,-26.15	PASS
Band7	10MHz	16QAM	20800	27RB#0	-44.31,-30.04,-24.52,-27.82	PASS
Band7	10MHz	16QAM	21400	1RB#49	-29.18,-39.33,-47.31,-44.49	PASS
Band7	10MHz	16QAM	21400	27RB#23	-28.51,-25.81,-40.72,-47.11	PASS
Band7	15MHz	QPSK	20825	1RB#0	-44.50,-39.79,-40.67,-26.59	PASS
Band7	15MHz	QPSK	20825	75RB#0	-33.19,-31.44,-28.36,-32.39	PASS
Band7	15MHz	QPSK	21375	1RB#74	-29.63,-39.99,-38.83,-49.41	PASS
Band7	15MHz	QPSK	21375	75RB#0	-31.51,-27.71,-31.19,-45.27	PASS
Band7	15MHz	16QAM	20825	1RB#0	-45.09,-40.63,-41.51,-29.27	PASS
Band7	15MHz	16QAM	20825	27RB#0	-42.80,-30.26,-24.89,-28.39	PASS
Band7	15MHz	16QAM	21375	1RB#74	-29.95,-40.90,-39.78,-49.30	PASS
Band7	15MHz	16QAM	21375	27RB#48	-47.72,-43.51,-46.81,-49.44	PASS
Band7	20MHz	QPSK	20850	1RB#0	-45.29,-39.68,-41.38,-32.30	PASS
Band7	20MHz	QPSK	20850	100RB#0	-36.03,-33.54,-30.16,-31.46	PASS
Band7	20MHz	QPSK	21350	1RB#99	-32.34,-40.31,-39.36,-49.43	PASS
Band7	20MHz	QPSK	21350	100RB#0	-29.31,-28.46,-32.47,-47.22	PASS
Band7	20MHz	16QAM	20850	1RB#0	-45.63,-40.42,-42.12,-30.53	PASS
Band7	20MHz	16QAM	20850	27RB#0	-44.98,-32.34,-25.47,-25.84	PASS
Band7	20MHz	16QAM	21350	1RB#99	-33.69,-41.08,-39.87,-49.46	PASS
Band7	20MHz	16QAM	21350	27RB#73	-26.98,-26.71,-42.45,-49.23	PASS

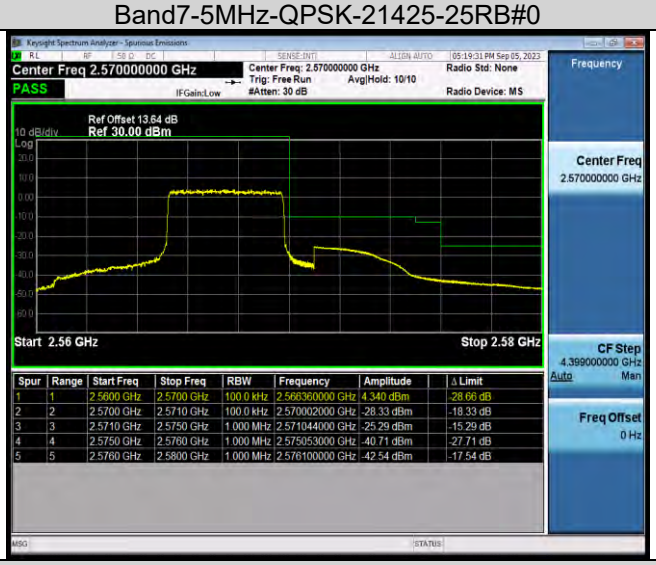
Test Graphs

Band7-5MHz-QPSK-20775-1RB#0

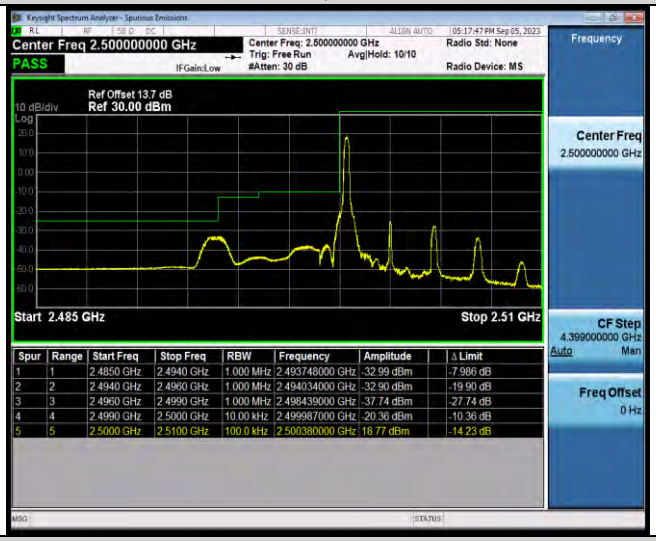
Band7-5MHz-QPSK-20775-25RB#0

Band7-5MHz-QPSK-21425-1RB#24

Band7-5MHz-QPSK-21425-25RB#0

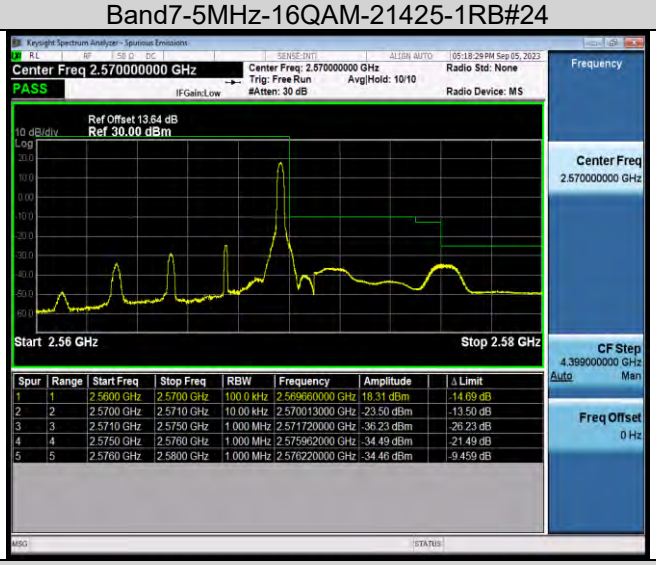


Band7-5MHz-16QAM-20775-1RB#0



Band7-5MHz-16QAM-20775-25RB#0

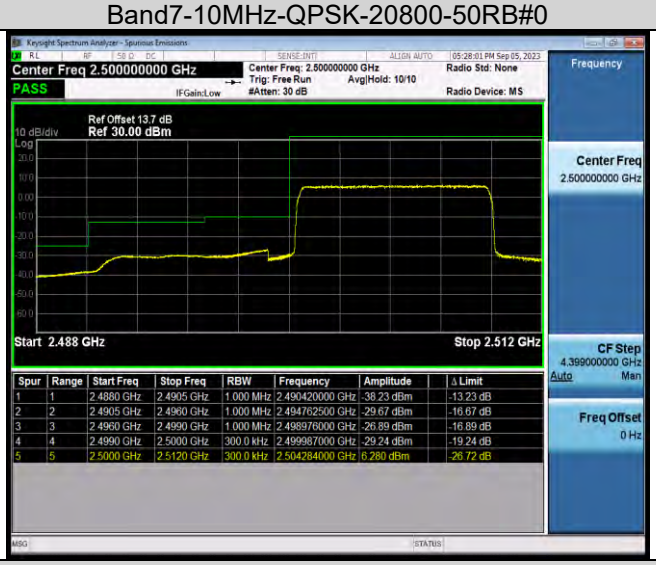
Band7-5MHz-16QAM-21425-1RB#24



Band7-5MHz-16QAM-21425-25RB#0

Band7-10MHz-QPSK-20800-1RB#0

Band7-10MHz-QPSK-20800-50RB#0



Band7-10MHz-QPSK-21400-1RB#49

Band7-10MHz-QPSK-21400-50RB#0