

VARIANT FCC TEST REPORT

(PART 24)

Applicant:	MUNIC
Address:	100 Avenue de Stalingrad 94800 Villejuif – France

Manufacturer or Supplier:	MUNIC
Address:	100 Avenue de Stalingrad 94800 Villejuif – France
Product:	Telematic embedded system
Brand Name:	MUNIC
Model Name:	C4D-4MUSAB_V8
FCC ID:	A6GC4D-4MUSABV8
Date of tests:	Apr. 24, 2022 ~ May. 06, 2022

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

☒ **FCC PART 24, Subpart E** ☒ **FCC PART 2**
☒ **ANSI/TIA/EIA-603-D** ☒ **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
	
Date: May. 06, 2022	Date: May. 06, 2022

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TABLE OF CONTENTS

RELEASE CONTROL RECORD	3
1 SUMMARY OF TEST RESULTS	4
1.1 MEASUREMENT UNCERTAINTY	5
1.2 TEST SITE AND INSTRUMENTS	6
2 GENERAL INFORMATION	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 CONFIGURATION OF SYSTEM UNDER TEST	9
2.3 DESCRIPTION OF SUPPORT UNITS	10
2.4 TEST ITEM AND TEST CONFIGURATION	10
2.5 EUT OPERATING CONDITIONS	13
2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS	13
3 TEST TYPES AND RESULTS	14
3.1 OUTPUT POWER MEASUREMENT	14
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT	14
3.1.2 TEST PROCEDURES	14
3.1.3 TEST SETUP	15
3.1.4 TEST RESULTS	15
3.2 RADIATED EMISSION MEASUREMENT	23
3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT	23
3.2.2 TEST PROCEDURES	23
3.2.3 DEVIATION FROM TEST STANDARD	23
3.2.4 TEST SETUP	24
3.2.5 TEST RESULTS	25
4 INFORMATION ON THE TESTING LABORATORIES	55
5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	56

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P21090017RF01	Original release	Nov. 17, 2021
W7L-P22040025RF01	Based on the original report W7L-P21090017RF01 Update components, In this report verify RSE worst case and conducted power; other test data is copied from the original test report W7L-P21090017RF01.	May. 06, 2022

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 24 & Part 2		
STANDARD SECTION	TEST TYPE	RESULT
2.1046 24.232	Equivalent Isotropic Radiated Power	See Note
2.1055 24.235	Frequency Stability	See Note
2.1049 24.238(b)	Occupied Bandwidth	See Note
24.232(d)	Peak to average ratio	See Note
24.238(b)	Band Edge Measurements	See Note
2.1051 24.238	Conducted Spurious Emissions	See Note
2.1053 24.238	Radiated Spurious Emissions	Compliance

Note : Per the change notice provide by manufactory, the difference is changing components, all the change no effect any RF parameter. Therefore only verify the radiated emission worse case and show the verify test data on this report. More test details please refer from the original report W7L-P21090017RF01.

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions & Radiated Power (30MHz~1GMHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (1GMHz ~6GMHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GMHz ~18GMHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GMHz ~40GMHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Band Edge Measurements	$\pm 4.70\text{dB}$
Peak to average ratio	$\pm 0.76\text{dB}$

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	Apr. 22,22	Apr. 21,23
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 03,21	Jun. 02,22
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.05,21	Sep.04,22
Bilog Antenna	ETS-LINDGRE N	3143B	00161964	Feb. 24,22	Feb. 23,23
Horn Antenna	ETS-LINDGRE N	3117	00168692	Mar. 06,22	Mar. 05,23
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K- SG/QMS-00361	15433	Aug. 25, 21	Aug. 24, 22
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 15,22	Feb. 14,23
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,21	Jun. 01,22
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 03,21	Jun. 02,22
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 22,21	Apr. 21,22
3m Semi-anechoic Chamber	ETS-LINDGRE N	9m*6m*6m	Euroshieldpn- CT0001143-121 6	May. 19,20	May. 18,23
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V 7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 03,21	Jun. 02,22
Power Meter	Anritsu	N1914A	MY52180044	Feb.19,22	Feb.18,23
Power Sensor	Agilent	E9304A H18	MY52050011	Feb.20,22	Feb.19,23
Temperature Chamber	ESPEC	SH-242	93000855	Jun. 02,21	Jun. 01,22
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Mar. 04,22	Mar. 05,23
Power Divider	MCLI/USA	PS2-15	24880	N/A	N/A

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	Telematics Embedded System	
BRAND NAME	MUNIC	
MODEL NAME	C4D-4MUSAB_V8	
NOMINAL VOLTAGE	DC 13.7V	
MODULATION TYPE	GSM/GPRS/EDGE: GMSK, 8PSK	
	LTE: QPSK, 16QAM	
FREQUENCY RANGE	GSM/GPRS/EDGE	1850.7MHz ~ 1909.8MHz
	LTE Band 2 Channel Bandwidth: 1.4MHz	1850.7MHz ~ 1909.3MHz
	LTE Band 2 Channel Bandwidth: 3MHz	1851.5MHz ~ 1908.5MHz
	LTE Band 2 Channel Bandwidth: 5MHz	1852.5MHz ~ 1907.5MHz
	LTE Band 2 Channel Bandwidth: 10MHz	1855.0MHz ~ 1905.0MHz
	LTE Band 2 Channel Bandwidth: 15MHz	1857.5MHz ~ 1902.5MHz
	LTE Band 2 Channel Bandwidth: 20MHz	1860.0MHz ~ 1900.0MHz
MAX. EIRP POWER	GSM	1101.54mW
	EDGE	409.26mW
	LTE Band 2 Channel Bandwidth: 1.4MHz	198.15mW
	LTE Band 2 Channel Bandwidth: 3MHz	196.34mW
	LTE Band 2 Channel Bandwidth: 5MHz	198.61mW
	LTE Band 2 Channel Bandwidth: 10MHz	198.61mW
	LTE Band 2 Channel Bandwidth: 15MHz	197.70mW
	LTE Band 2 Channel Bandwidth: 20MHz	199.53mW



EMISSION DESIGNATOR	GSM	246KG7W
	EDGE	247KG7W
	LTE Band 2 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D 16QAM: 1M09W7D
	LTE Band 2 Channel Bandwidth: 3MHz	QPSK: 2M69G7D 16QAM: 1M27W7D
	LTE Band 2 Channel Bandwidth: 5MHz	QPSK: 1M09G7D 16QAM: 1M09W7D
	LTE Band 2 Channel Bandwidth: 10MHz	QPSK: 1M09G7D 16QAM: 1M09W7D
	LTE Band 2 Channel Bandwidth: 15MHz	QPSK: 1M09G7D 16QAM: 1M10W7D
	LTE Band 2 Channel Bandwidth: 20MHz	QPSK: 1M09G7D 16QAM: 1M10W7D
ANTENNA TYPE	Fixed Internal Antenna with 0.8dBi gain for GSM 1900 Fixed Internal Antenna with 0.8dBi gain for LTE Band 2	
HW VERSION	HC4D-4MUSAB_V8.02	
SW VERSION	SC4D-4MUSAB_V8.02	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	
EXTREME TEMPERATURE	-30 - 50°C	
EXTREME VOLTAGE	8V-18V	

NOTE:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

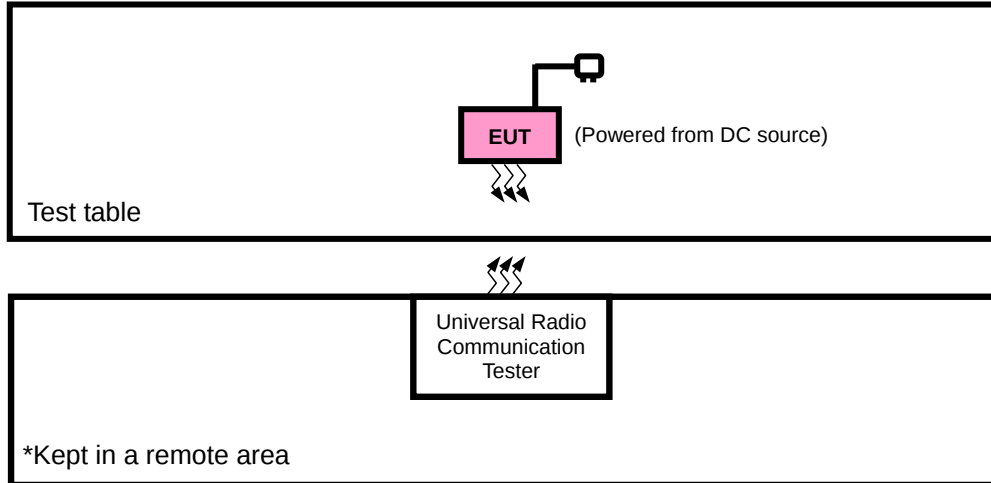
List of Accessory:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
Battery	Howell	Li-polymer 552535H	Capacity : Li-ion, 450mAh



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	Kikusui/JP	PMX18-5A	0000001	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m

2.4 TEST ITEM AND TEST CONFIGURATION

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

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + DC Source with GSM & LTE link

GSM MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	EIRP	512 to 810	512, 661, 810	GPRS, EDGE
A	FREQUENCY STABILITY	512 to 810	512, 810	GPRS, EDGE
A	OCCUPIED BANDWIDTH	512 to 810	512, 661, 810	GPRS, EDGE
A	PEAK TO AVERAGE RATIO	512 to 810	512, 661, 810	GPRS, EDGE
A	BAND EDGE	512 to 810	512, 810	GPRS, EDGE
A	CONDUCTED EMISSION	512 to 810	512, 661, 810	GPRS, EDGE
A	RADIATED EMISSION	512 to 810	512, 661, 810	GPRS, EDGE

LTE BAND 2

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM,	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
A	FREQUENCY STABILITY	18607 to 19193	18607, 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18615, 19185	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18625, 19175	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18650, 19150	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18675, 19125	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700, 19100	20MHz	QPSK	1 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	6 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	1 RB / 0 RB Offset

A	BAND EDGE	18607 to 19193	18607	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
			19193	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18615 to 19185	18615	3MHz	QPSK,16QAM	1 RB / 5 RB Offset
			19185	3MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18625 to 19175	18625	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
			19175	5MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18650 to 19150	18650	10MHz	QPSK,16QAM	1 RB / 5 RB Offset
			19150	10MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18675 to 19125	18675	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
			19125	15MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18700 to 19100	18700	20MHz	QPSK,16QAM	1 RB / 5 RB Offset
			19100	20MHz	QPSK,16QAM	6 RB / 0 RB Offset
A	CONDUCTED EMISSION	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	18607 to 19193	18900	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18900	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18900	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18607, 18900, 19193	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18900	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18900	20MHz	QPSK	1 RB / 0 RB Offset

**TEST CONDITION:**

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	23deg. C, 70%RH	DC 13.7V	Jace Hu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 13.7V	Jace Hu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 13.7V	Jace Hu
BAND EDGE	23deg. C, 70%RH	DC 13.7V	Jace Hu
CONDCUDED EMISSION	23deg. C, 70%RH	DC 13.7V	Jace Hu
RADIATED EMISSION	23deg. C, 70%RH	DC 13.7V	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 13.7V	Jace Hu

2.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

2.6 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 24

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

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

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile and portable stations are limited to 2 watts EIRP.

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

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

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

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as P_{Meas} , typically dBW or dBm);

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

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

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

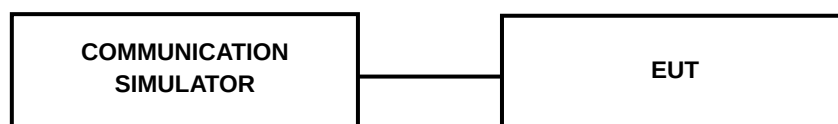
CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

3.1.3 TEST SETUP

EIRP / ERP Measurement:

CONDUCTED POWER MEASUREMENT:



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	GSM1900			Max. Tune-up Power
Channel	512	661	810	
Frequency	1850.2	1880	1909.8	
GPRS (GMSK, 1Tx-slot)	29.19	29.40	29.62	30.0
GPRS (GMSK, 2Tx-slot)	29.09	29.25	29.40	30.0
GPRS (GMSK, 3Tx-slot)	28.93	29.13	29.33	30.0
GPRS (GMSK, 4Tx-slot)	28.79	29.01	29.23	30.0
EDGE (8PSK, 1Tx-slot)	25.03	25.23	25.32	26.0
EDGE (8PSK, 2Tx-slot)	24.95	24.87	25.12	26.0
EDGE (8PSK, 3Tx-slot)	24.66	24.69	24.98	26.0
EDGE (8PSK, 4Tx-slot)	24.41	24.50	24.83	26.0



LTE BAND 2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18607	Mid CH 18900	High CH 19193	MPR
				Frequency 1850.7 MHz	Frequency 1880 MHz	Frequency 1909.3 MHz	
2/ 1.4	QPSK	1	0	22.07	21.96	21.88	0
		1	5	22.17	21.98	21.95	0
		3	0	22.11	21.94	21.98	0
		3	3	22.14	21.99	21.91	0
		6	0	22.11	22.00	21.96	1
	16QAM	1	0	22.07	21.92	21.95	1
		1	5	22.07	21.86	22.00	1
		3	0	22.06	21.98	21.90	1
		3	3	22.00	22.02	21.98	1
		6	0	22.04	21.98	21.98	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18615	Mid CH 18900	High CH 19185	MPR
				Frequency 1851.5 MHz	Frequency 1880 MHz	Frequency 1908.5 MHz	
2/ 3	QPSK	1	0	22.09	21.98	21.87	0
		1	5	22.13	21.99	21.95	0
		3	0	22.10	21.97	21.98	1
		3	3	22.07	21.99	21.93	1
		6	0	22.08	22.01	21.90	1
	16QAM	1	0	22.04	21.98	21.98	1
		1	5	22.04	21.89	21.98	1
		3	0	22.02	21.99	21.90	2
		3	3	22.05	21.97	22.01	2
		6	0	22.04	21.92	22.01	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18625	Mid CH 18900	High CH 19175	MPR
				Frequency 1852.5 MHz	Frequency 1880 MHz	Frequency 1907.5 MHz	
2/ 5	QPSK	1	0	22.10	21.93	21.88	0
		1	5	22.18	21.96	21.95	0
		3	0	22.13	21.97	21.95	1
		3	3	22.07	22.00	21.94	1
		6	0	22.06	22.04	21.93	1
	16QAM	1	0	22.05	21.94	21.98	1
		1	5	22.01	21.92	21.97	1
		3	0	22.02	21.97	21.87	2
		3	3	22.02	22.01	21.97	2
		6	0	22.04	21.93	21.98	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18650	Mid CH 18900	High CH 19150	MPR
				Frequency 1855 MHz	Frequency 1880 MHz	Frequency 1905 MHz	
2/ 10	QPSK	1	0	22.07	21.96	21.88	0
		1	5	22.18	21.96	21.96	0
		3	0	22.14	21.96	21.98	1
		3	3	22.13	21.94	21.94	1
		6	0	22.11	22.04	21.90	1
	16QAM	1	0	22.05	21.91	21.94	1
		1	5	22.06	21.88	22.00	1
		3	0	22.04	21.95	21.93	2
		3	3	22.06	21.95	22.02	2
		6	0	22.08	21.92	22.02	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18675	Mid CH 18900	High CH 19125	MPR
				Frequency 1857.5 MHz	Frequency 1880 MHz	Frequency 1902.5 MHz	
2/ 15	QPSK	1	0	22.14	21.96	21.85	0
		1	5	22.16	22.01	21.91	0
		3	0	22.11	21.97	21.99	1
		3	3	22.14	21.99	21.94	1
		6	0	22.11	22.02	21.95	1
	16QAM	1	0	22.09	21.98	21.94	1
		1	5	22.05	21.89	22.00	1
		3	0	22.08	21.95	21.94	2
		3	3	22.00	21.99	21.98	2
		6	0	22.09	21.95	21.95	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18700	Mid CH 18900	High CH 19100	MPR
				Frequency 1860 MHz	Frequency 1880 MHz	Frequency 1900 MHz	
2/ 20	QPSK	1	0	22.15	22.00	21.93	0
		1	5	22.20	22.04	21.97	0
		3	0	22.17	22.02	22.00	1
		3	3	22.15	22.01	21.99	1
		6	0	22.12	22.06	21.98	1
	16QAM	1	0	22.12	21.99	22.00	1
		1	5	22.09	21.94	22.02	1
		3	0	22.10	22.03	21.95	2
		3	3	22.08	22.03	22.03	2
		6	0	22.10	22.00	22.03	2

**EIRP POWER (dBm)****GSM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
512	1850.2	29.19	0.8	29.99	997.70	2
661	1880	29.4	0.8	30.2	1047.13	2
810	1909.8	29.62	0.8	30.42	1101.54	2

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

EDGE

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
512	1850.2	25.03	0.8	25.83	382.82	2
661	1880	25.23	0.8	26.03	400.87	2
810	1909.8	25.32	0.8	26.12	409.26	2

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

LTE BAND 2

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	22.17	0.8	22.97	198.15	2
18900	1880.0	22	0.8	22.8	190.55	2
19193	1909.3	21.98	0.8	22.78	189.67	2

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	22.07	0.8	22.87	193.64	2
18900	1880.0	22.02	0.8	22.82	191.43	2
19193	1909.3	22	0.8	22.8	190.55	2

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	22.13	0.8	22.93	196.34	2
18900	1880.0	22.01	0.8	22.81	190.99	2
19185	1908.5	21.98	0.8	22.78	189.67	2

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	22.05	0.8	22.85	192.75	2
18900	1880.0	21.99	0.8	22.79	190.11	2
19185	1908.5	22.01	0.8	22.81	190.99	2



CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	22.18	0.8	22.98	198.61	2
18900	1880.0	22.04	0.8	22.84	192.31	2
19175	1907.5	21.95	0.8	22.75	188.36	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	22.05	0.8	22.85	192.75	2
18900	1880.0	22.01	0.8	22.81	190.99	2
19175	1907.5	21.98	0.8	22.78	189.67	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855.0	22.18	0.8	22.98	198.61	2
18900	1880.0	22.04	0.8	22.84	192.31	2
19150	1905.0	21.98	0.8	22.78	189.67	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855.0	22.08	0.8	22.88	194.09	2
18900	1880.0	21.95	0.8	22.75	188.36	2
19150	1905.0	22.02	0.8	22.82	191.43	2



CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	22.16	0.8	22.96	197.70	2
18900	1880.0	22.02	0.8	22.82	191.43	2
19125	1902.5	21.99	0.8	22.79	190.11	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	22.09	0.8	22.89	194.54	2
18900	1880.0	21.99	0.8	22.79	190.11	2
19125	1902.5	22	0.8	22.8	190.55	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18700	1860	22.20	0.8	23	199.53	2
18900	1880	22.06	0.8	22.86	193.2	2
19100	1900	22.00	0.8	22.8	190.55	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18700	1860	22.12	0.8	22.92	195.88	2
18900	1880	22.03	0.8	22.83	191.87	2
19100	1900	22.03	0.8	22.83	191.87	2

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

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 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 .

3.2.2 TEST PROCEDURES

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

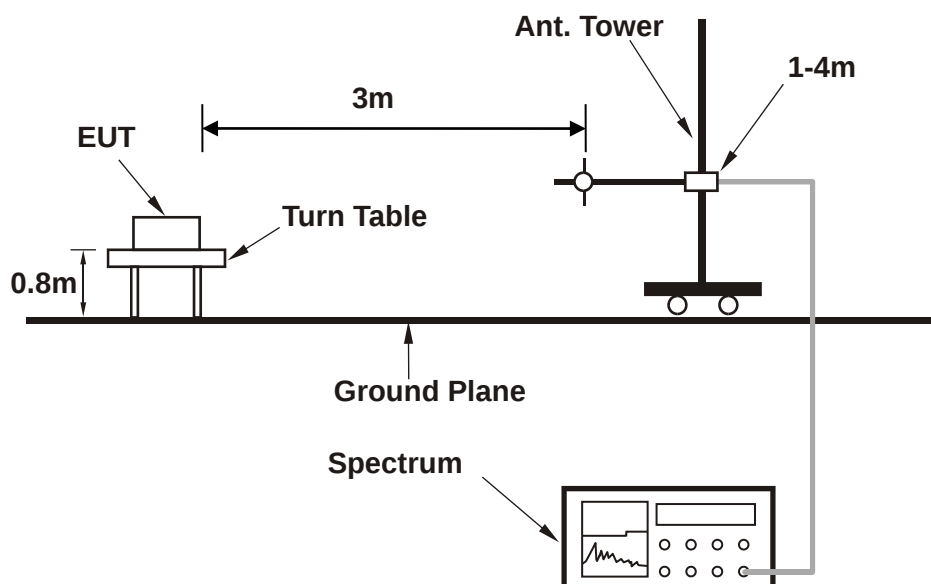
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.2.3 DEVIATION FROM TEST STANDARD

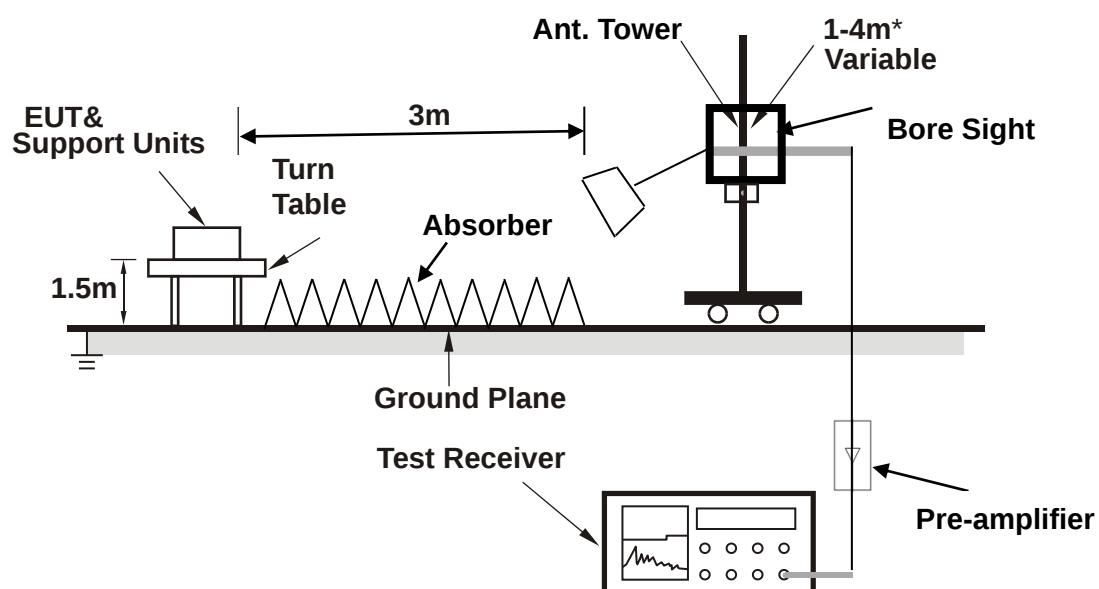
No deviation

3.2.4 TEST SETUP

< 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).



**BUREAU
VERITAS**

Test Report No.: W7L-P22040025RF01

3.2.5 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

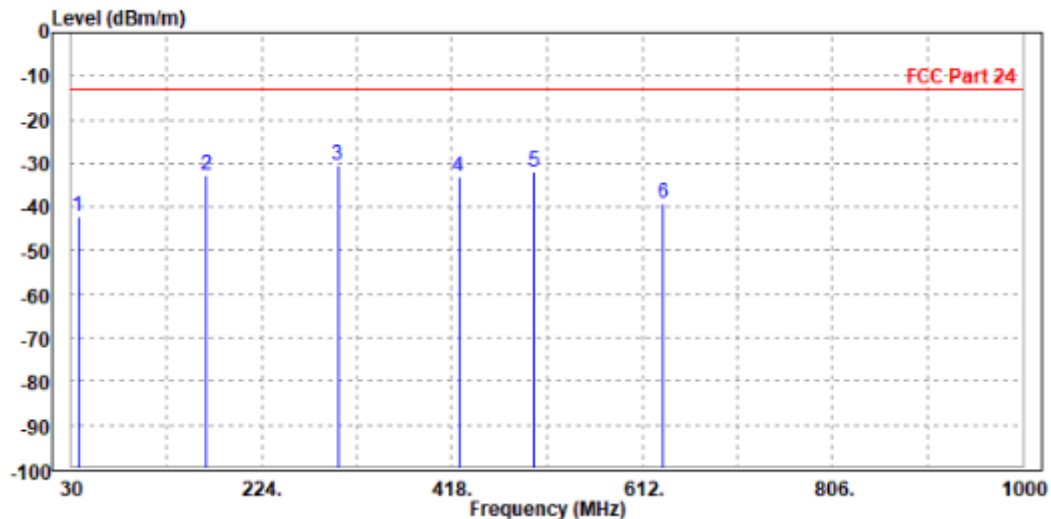
30 MHz – 1GHz data:

LTE Band 2

CHANNEL BANDWIDTH: 5MHz / QPSK

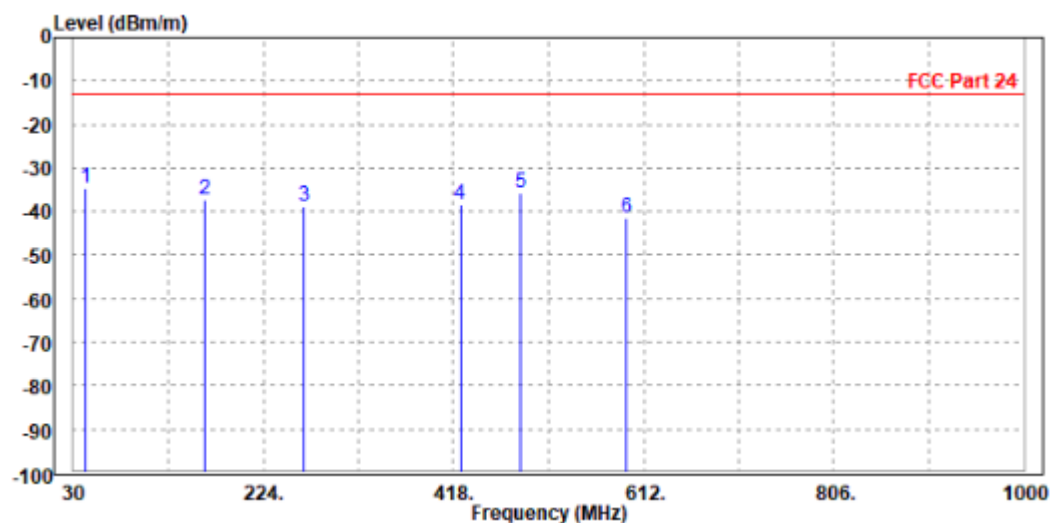
MODE	TX channel 19175	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	36.790	-42.19	-59.02	-13.00	-29.19	16.83	Peak	Horizontal
2	167.740	-32.68	-43.31	-13.00	-19.68	10.63	Peak	Horizontal
3 PP	301.600	-30.56	-44.61	-13.00	-17.56	14.05	Peak	Horizontal
4	424.790	-33.27	-50.62	-13.00	-20.27	17.35	Peak	Horizontal
5	501.420	-31.82	-50.55	-13.00	-18.82	18.73	Peak	Horizontal
6	632.370	-39.14	-60.49	-13.00	-26.14	21.35	Peak	Horizontal



MODE	TX channel 19175	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
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	42.610	-34.46	-45.82	-13.00	-21.46	11.36	Peak	Vertical
2	163.860	-37.34	-48.61	-13.00	-24.34	11.27	Peak	Vertical
3	265.710	-38.93	-53.11	-13.00	-25.93	14.18	Peak	Vertical
4	424.790	-38.21	-55.88	-13.00	-25.21	17.67	Peak	Vertical
5	486.870	-35.78	-54.63	-13.00	-22.78	18.85	Peak	Vertical
6	594.540	-41.62	-62.42	-13.00	-28.62	20.80	Peak	Vertical





**BUREAU
VERITAS**

Test Report No.: W7L-P22040025RF01

ABOVE 1GHz DATA

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

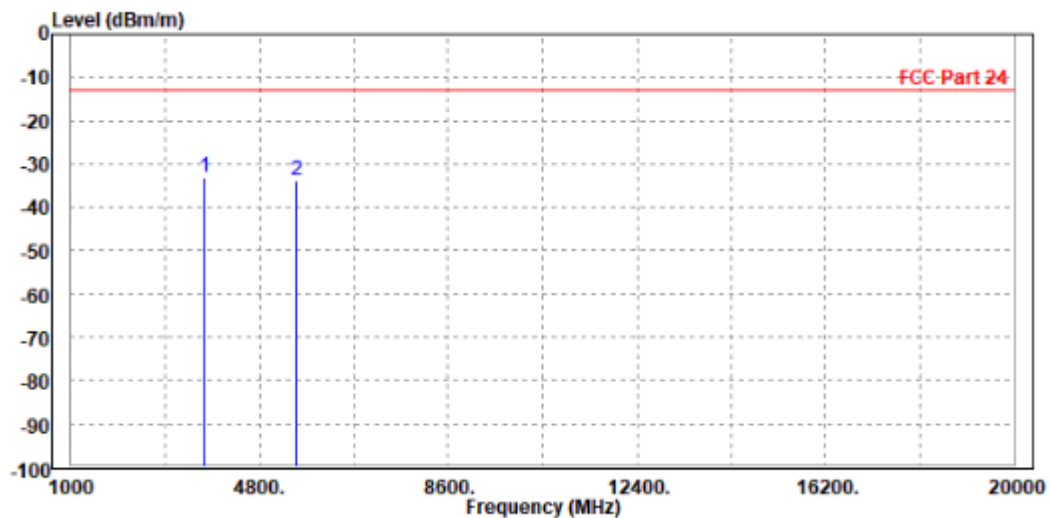
WORST-CASE DATA

GSM 1900:

CH 512

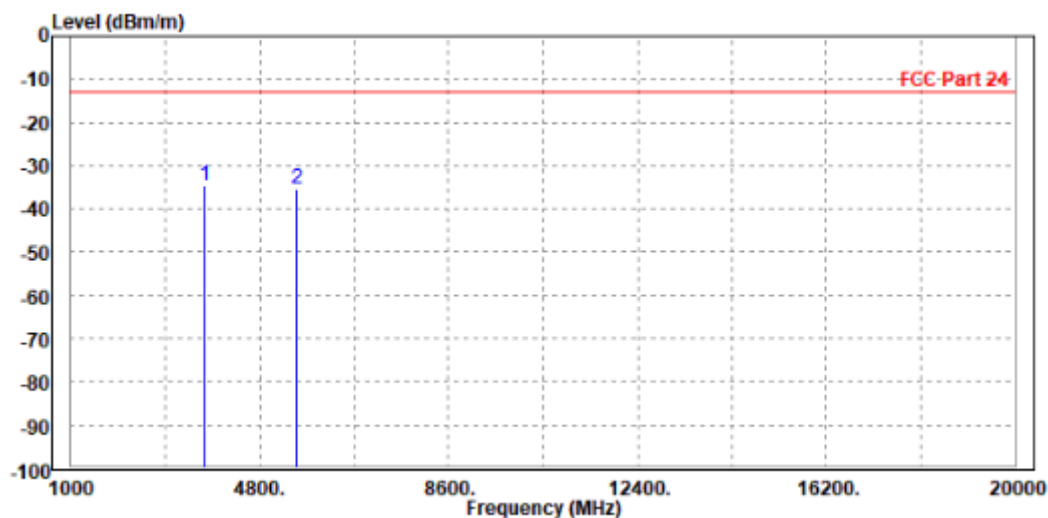
MODE	TX channel 512	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3698.000	-33.27	-42.05	-13.00	-20.27	8.78	Peak	Horizontal
2	5550.600	-33.85	-44.04	-13.00	-20.85	10.19	Peak	Horizontal



MODE	TX channel 512	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			

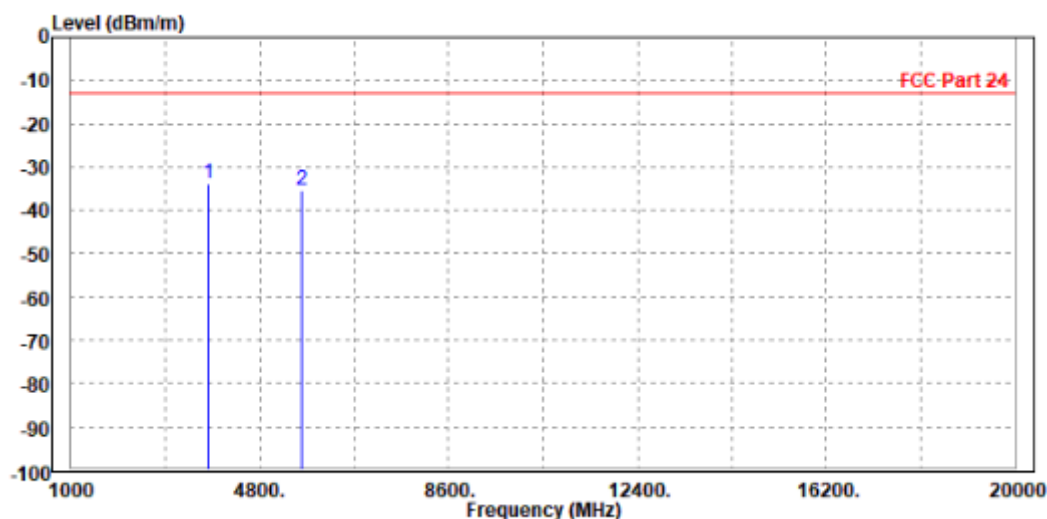
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3698.000	-34.46	-43.71	-13.00	-21.46	9.25	Peak	Vertical
2		5550.600	-35.40	-45.30	-13.00	-22.40	9.90	Peak	Vertical



CH 661

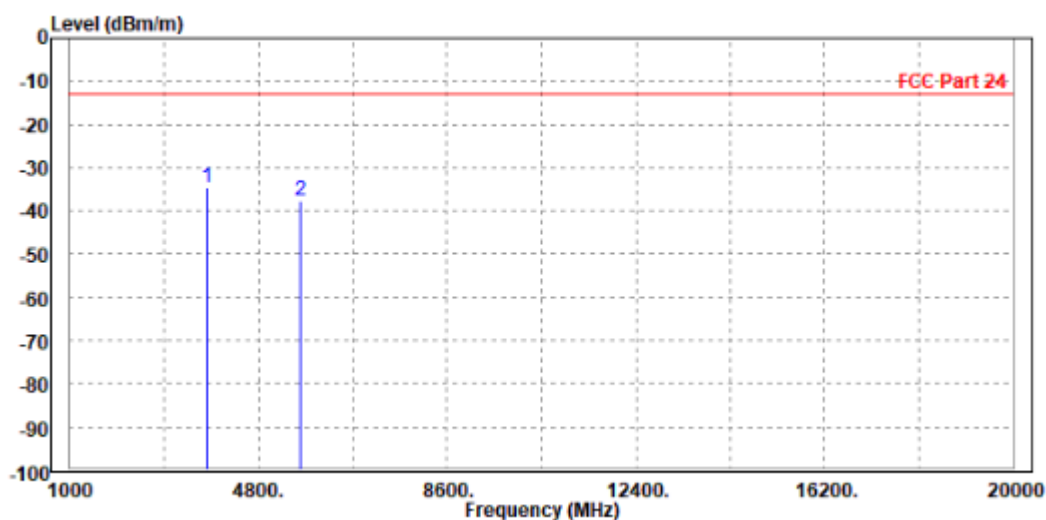
MODE	TX channel 661	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3755.000	-33.69	-42.54	-13.00	-20.69	8.85	Peak	Horizontal
2		5640.000	-35.34	-45.82	-13.00	-22.34	10.48	Peak	Horizontal



MODE	TX channel 661	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			

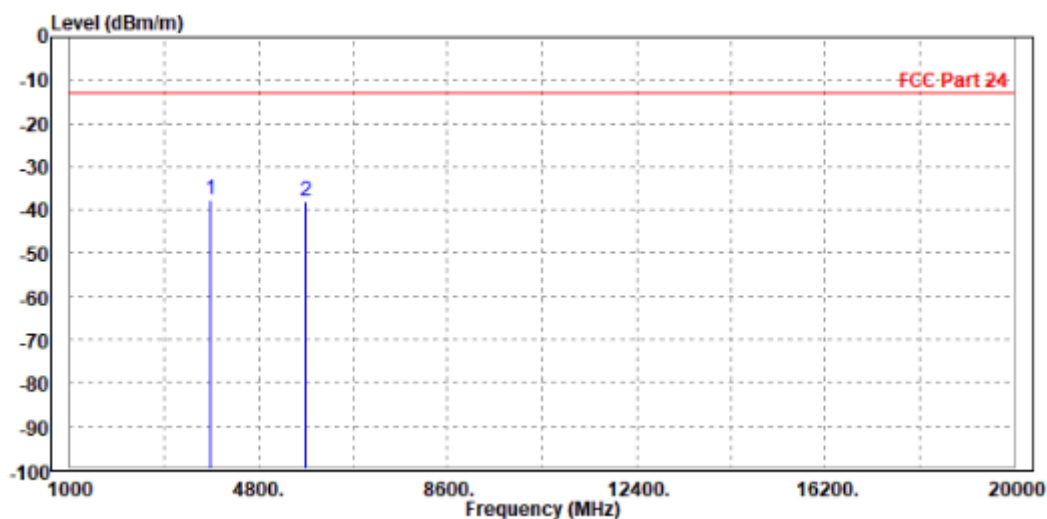
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3755.000	-34.53	-43.80	-13.00	-21.53	9.27	Peak	Vertical
2	5640.000	-37.49	-47.74	-13.00	-24.49	10.25	Peak	Vertical



CH 810

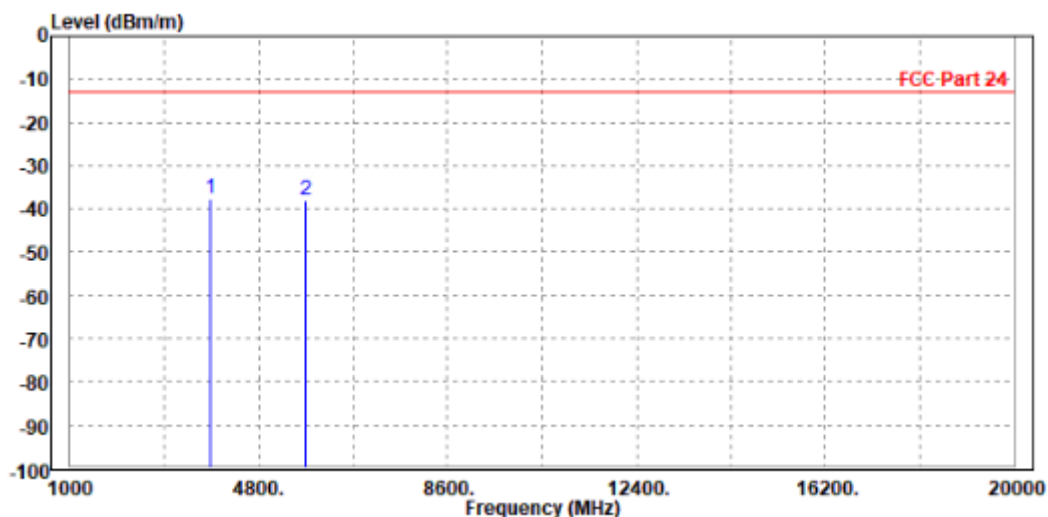
MODE	TX channel 810	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3812.000	-37.67	-46.58	-13.00	-24.67	8.91	Peak	Horizontal
2	5731.000	-38.00	-48.78	-13.00	-25.00	10.78	Peak	Horizontal



MODE	TX channel 810	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	3812.000	-37.67	-46.58	-13.00	-24.67	8.91	Peak	Horizontal
2	5731.000	-38.00	-48.78	-13.00	-25.00	10.78	Peak	Horizontal

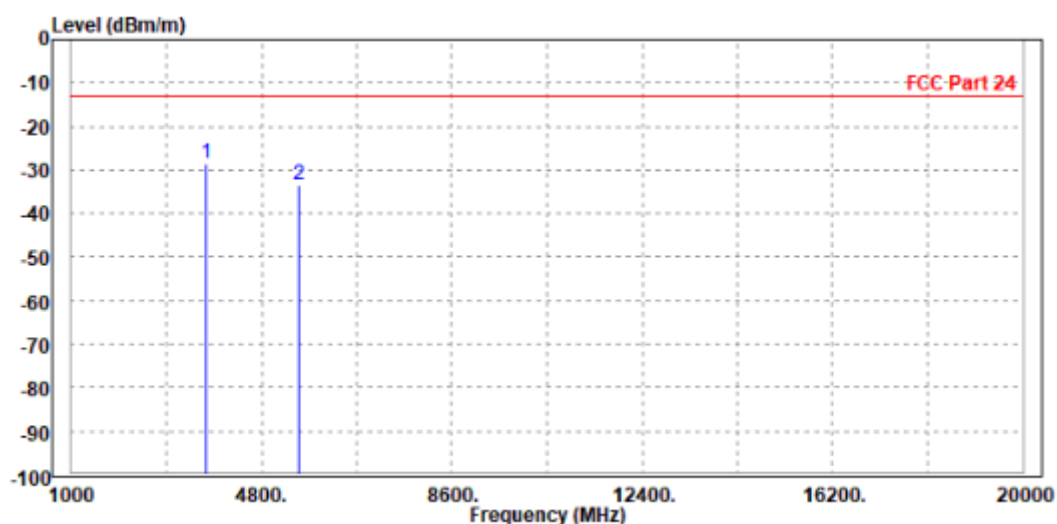


EDGE 1900:

CH 512

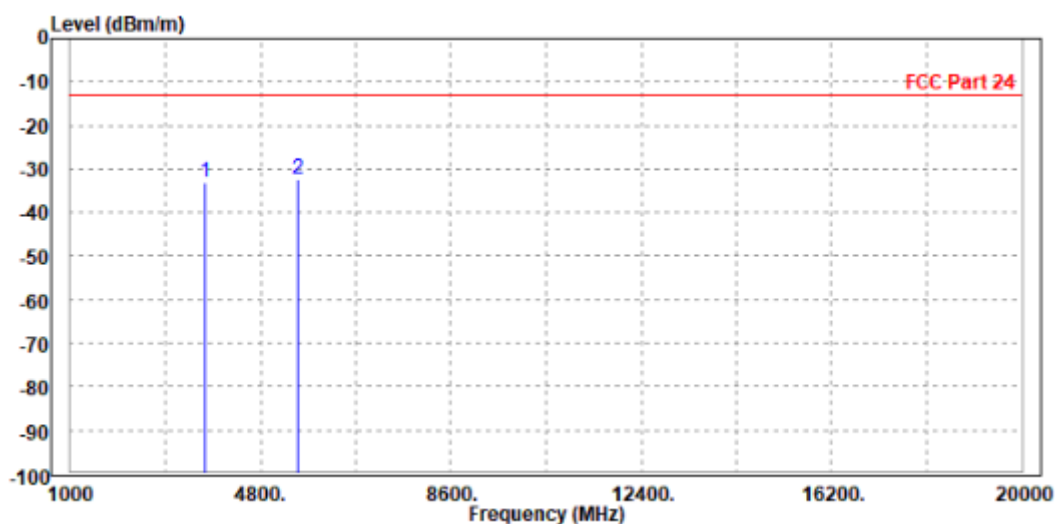
MODE	TX channel 512	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3698.000	-28.49	-37.27	-13.00	-15.49	8.78	Peak	Horizontal
2		5560.000	-33.47	-43.69	-13.00	-20.47	10.22	Peak	Horizontal



MODE	TX channel 512	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			

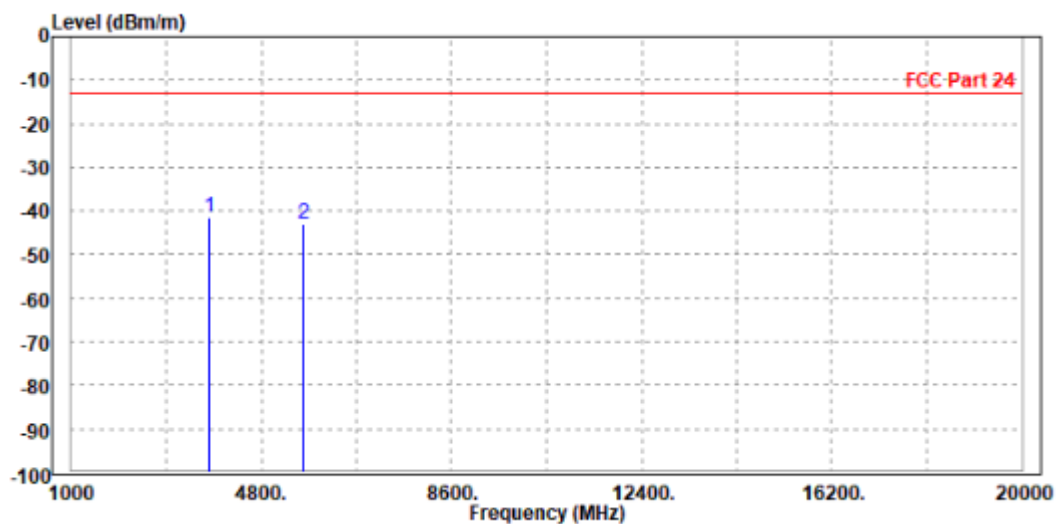
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3698.000	-33.22	-42.47	-13.00	-20.22	9.25	Peak	Vertical
2 PP	5550.600	-32.28	-42.18	-13.00	-19.28	9.90	Peak	Vertical



CH 661

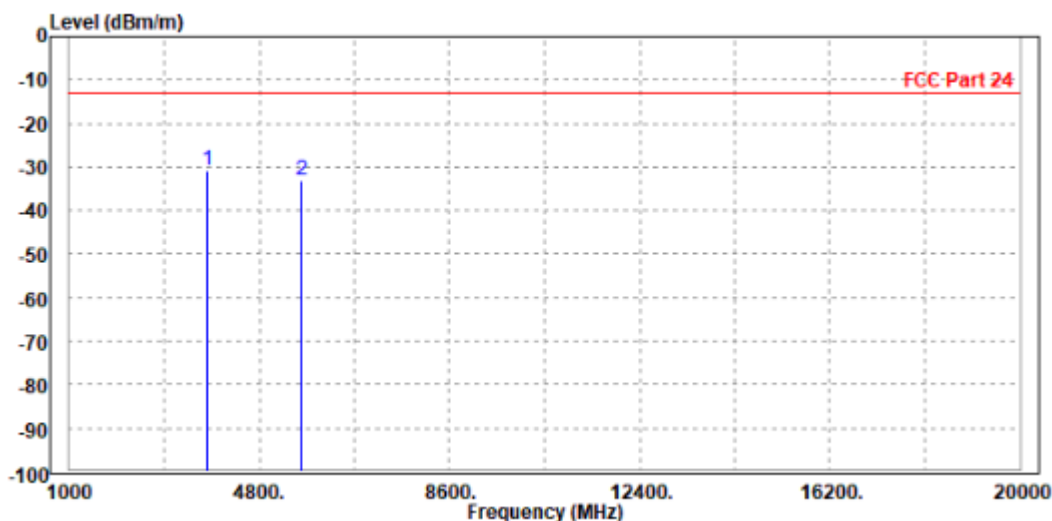
MODE	TX channel 661	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3755.000	-41.36	-50.21	-13.00	-28.36	8.85	Peak	Horizontal
2	5640.000	-42.81	-53.29	-13.00	-29.81	10.48	Peak	Horizontal



MODE	TX channel 661	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			

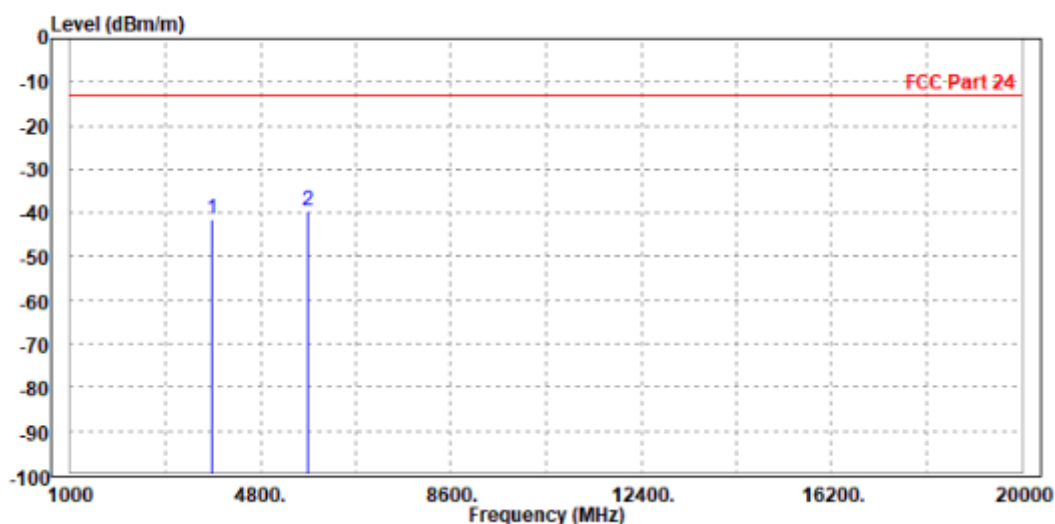
			Read	Limit	Over			
	Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3755.000	-30.80	-40.07	-13.00	-17.80	9.27	Peak	Vertical
2	5636.000	-33.12	-43.35	-13.00	-20.12	10.23	Peak	Vertical



CH 810

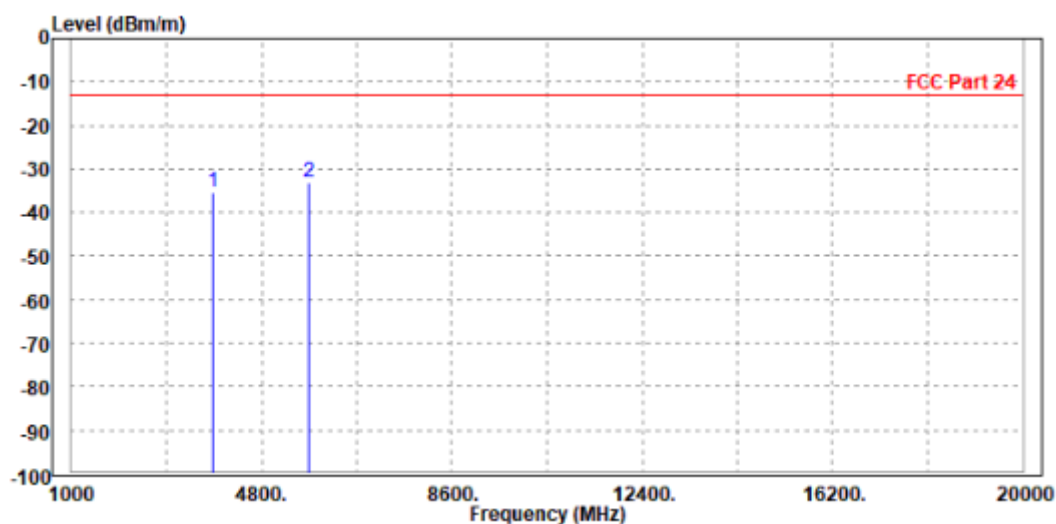
MODE	TX channel 810	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60Hz
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3812.000	-41.55	-50.46	-13.00	-28.55	8.91	Peak	Horizontal
2 PP	5731.000	-39.45	-50.23	-13.00	-26.45	10.78	Peak	Horizontal



MODE	TX channel 810	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	3819.600	-35.54	-44.83	-13.00	-22.54	9.29	Peak	Vertical
2 PP	5731.000	-33.25	-43.85	-13.00	-20.25	10.60	Peak	Vertical

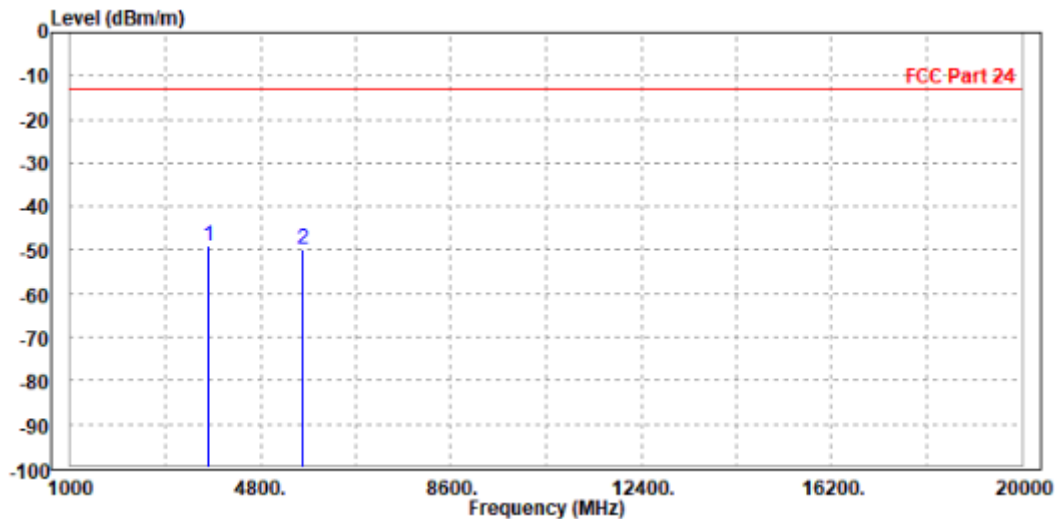


LTE Band 2

CHANNEL BANDWIDTH: 1.4MHz / QPSK

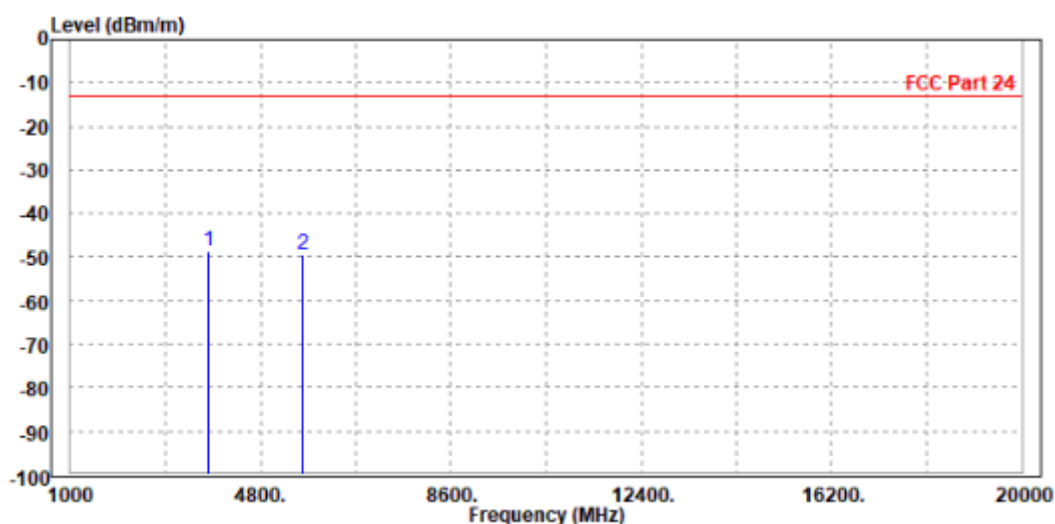
MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3755.000	-49.23	-58.08	-13.00	-36.23	8.85	Peak	Horizontal
2		5640.000	-49.64	-60.12	-13.00	-36.64	10.48	Peak	Horizontal



MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

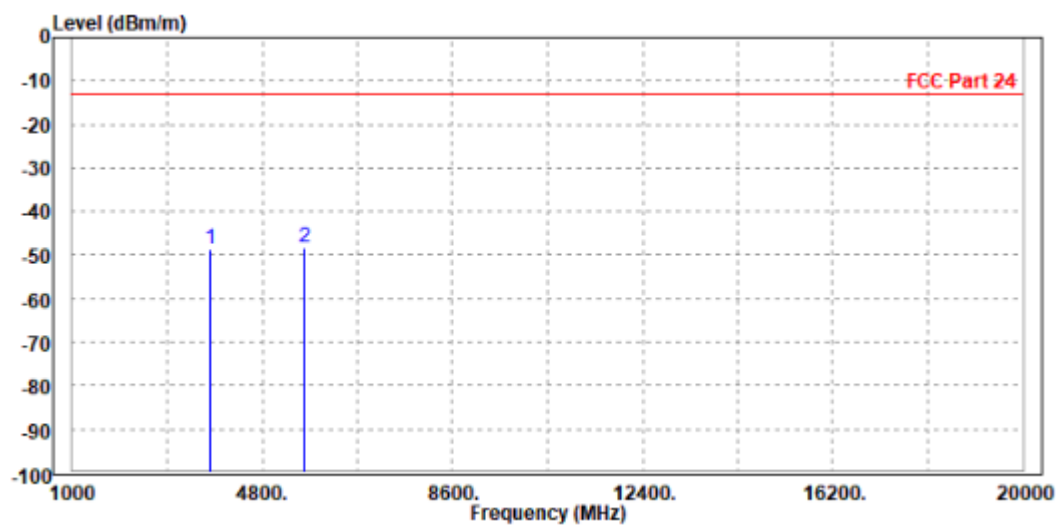
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3760.000	-48.81	-58.08	-13.00	-35.81	9.27	Peak	Vertical
2		5636.000	-49.24	-59.47	-13.00	-36.24	10.23	Peak	Vertical



CHANNEL BANDWIDTH: 3MHz / QPSK

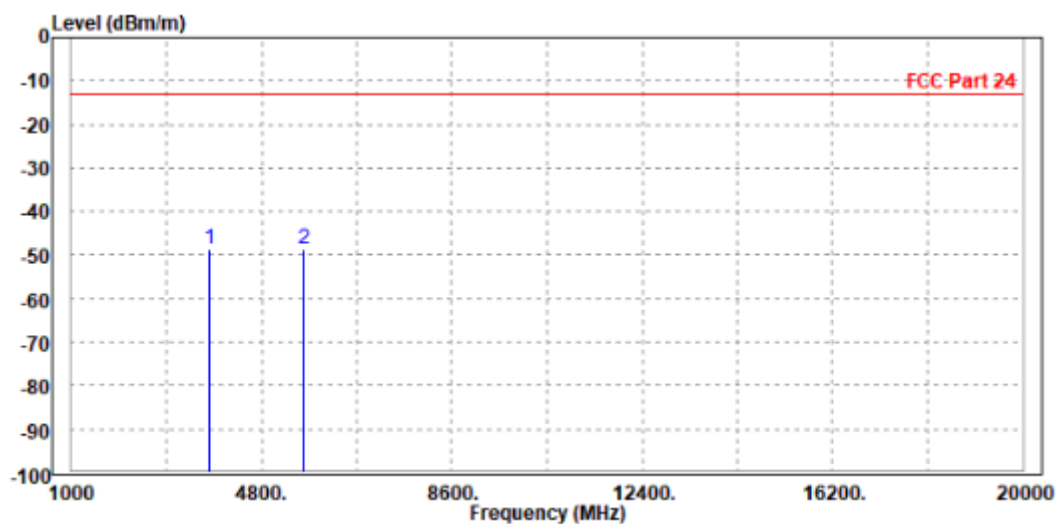
MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3760.000	-48.63	-57.48	-13.00	-35.63	8.85	Peak	Horizontal
2 PP	5636.000	-48.42	-58.89	-13.00	-35.42	10.47	Peak	Horizontal



MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

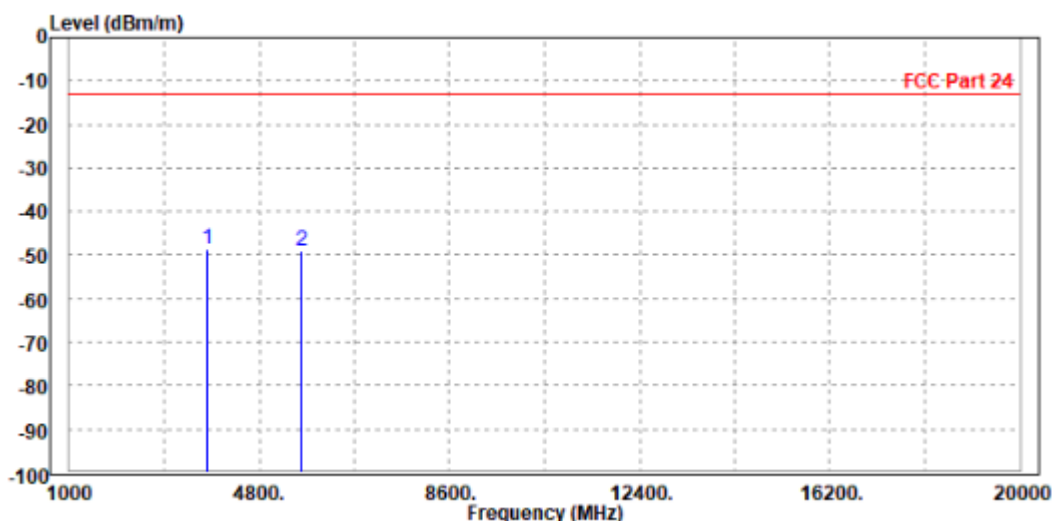
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3755.000	-48.81	-58.08	-13.00	-35.81	9.27	Peak	Vertical
2	5640.000	-48.82	-59.07	-13.00	-35.82	10.25	Peak	Vertical



CHANNEL BANDWIDTH: 5MHz / QPSK

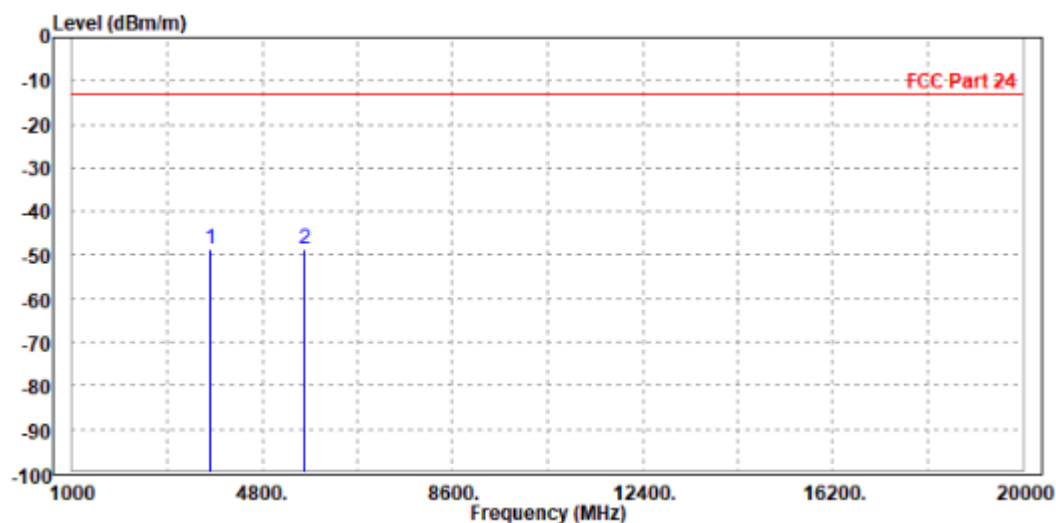
MODE	TX channel 18625	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3755.000	-48.65	-57.50	-13.00	-35.65	8.85	Peak	Horizontal
2		5640.000	-49.12	-59.60	-13.00	-36.12	10.48	Peak	Horizontal



MODE	TX channel 18625	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
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	3760.000	-48.60	-57.87	-13.00	-35.60	9.27	Peak	Vertical
2		5636.000	-48.62	-58.85	-13.00	-35.62	10.23	Peak	Vertical

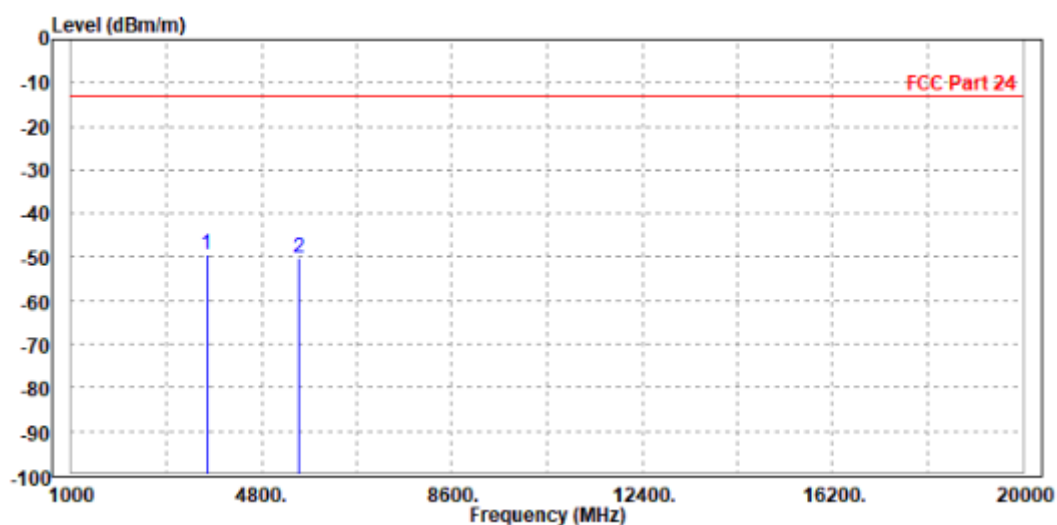


CHANNEL BANDWIDTH: 10MHz / QPSK

CH18650

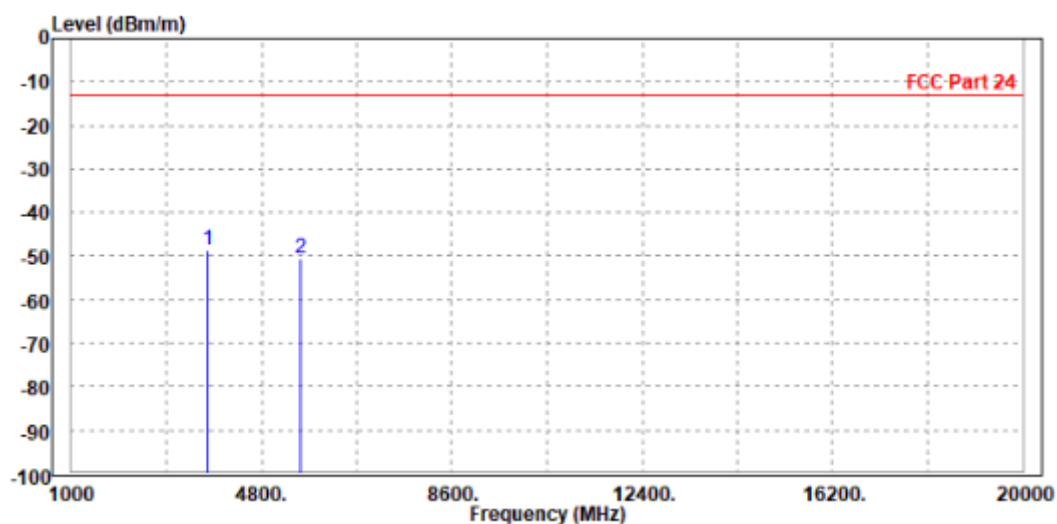
MODE	TX channel 18650	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3710.000	-49.40	-58.20	-13.00	-36.40	8.80	Peak	Horizontal
2		5560.000	-50.29	-60.51	-13.00	-37.29	10.22	Peak	Horizontal



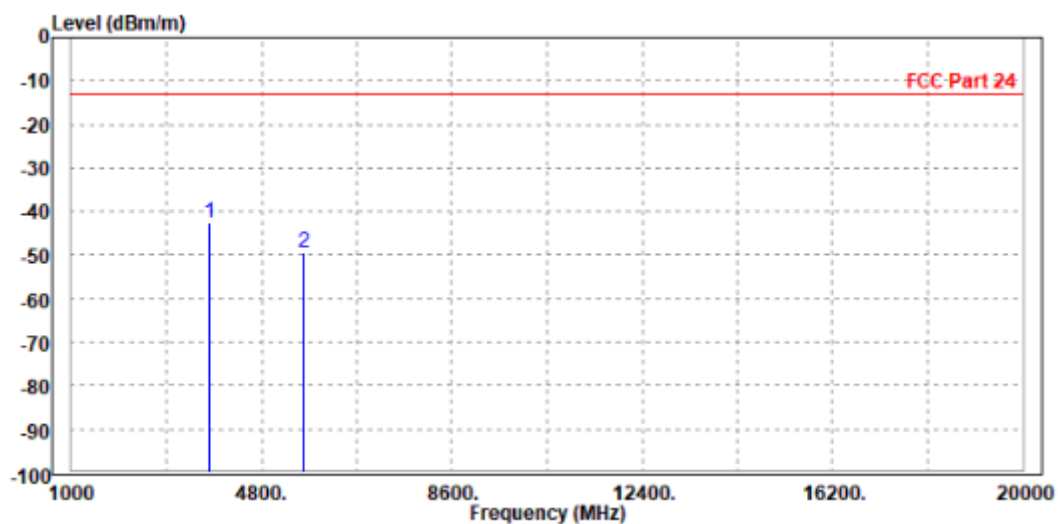
MODE	TX channel 18650	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3717.000	-48.61	-57.87	-13.00	-35.61	9.26	Peak	Vertical
2		5565.000	-50.51	-60.47	-13.00	-37.51	9.96	Peak	Vertical



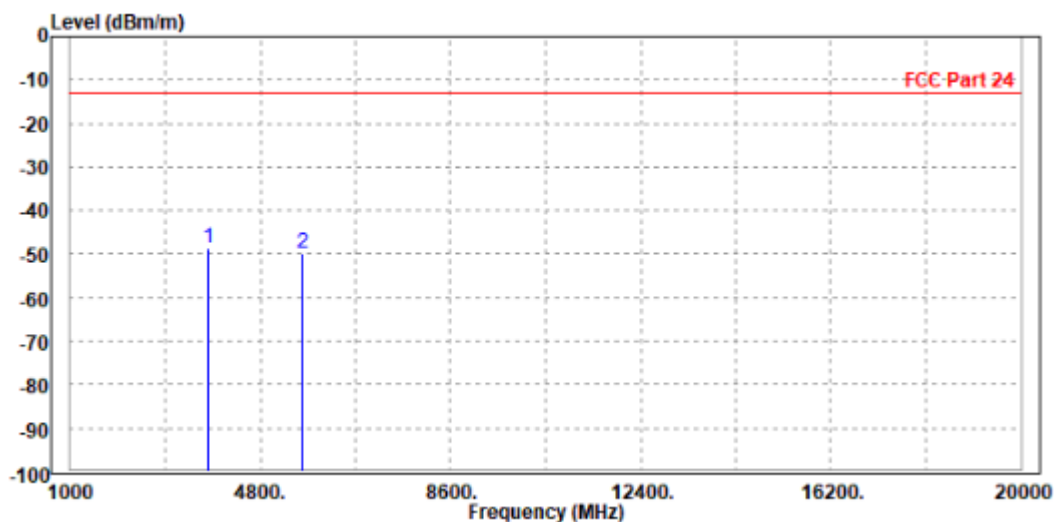
MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3760.000	-42.62	-51.47	-13.00	-29.62	8.85	Peak	Horizontal
2	5636.000	-49.52	-59.99	-13.00	-36.52	10.47	Peak	Horizontal



MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

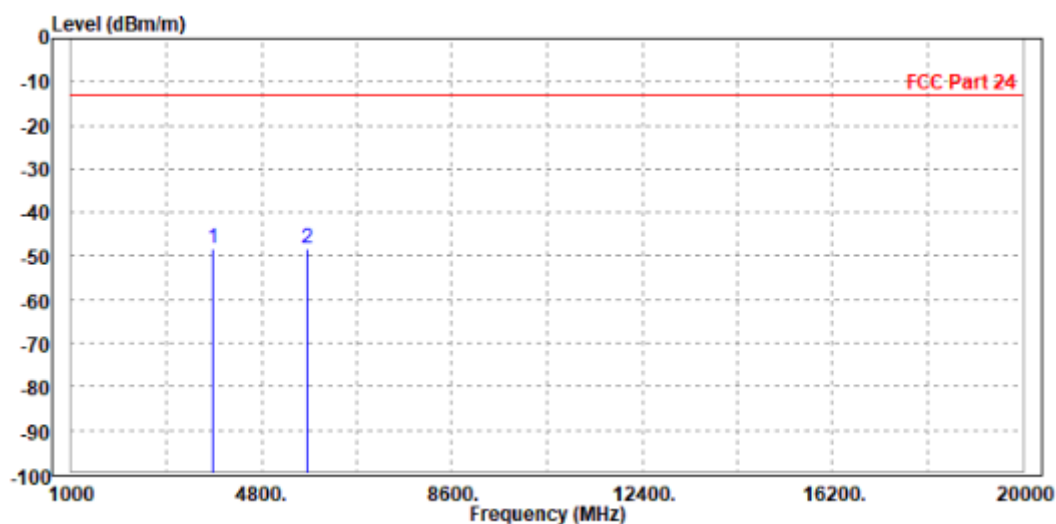
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3755.000	-48.77	-58.04	-13.00	-35.77	9.27	Peak	Vertical
2		5640.000	-49.83	-60.08	-13.00	-36.83	10.25	Peak	Vertical



CH19150

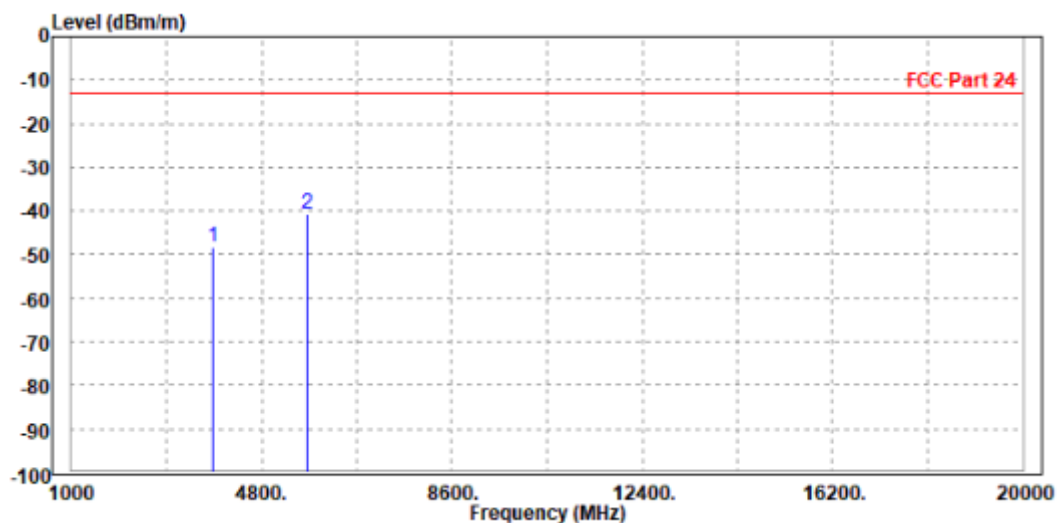
MODE	TX channel 19150	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3812.000	-48.47	-57.38	-13.00	-35.47	8.91	Peak	Horizontal
2 PP	5715.000	-48.18	-58.91	-13.00	-35.18	10.73	Peak	Horizontal



MODE	TX channel 19150	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
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	3812.000	-48.20	-57.49	-13.00	-35.20	9.29	Peak	Vertical
2 PP	5715.000	-40.66	-51.20	-13.00	-27.66	10.54	Peak	Vertical

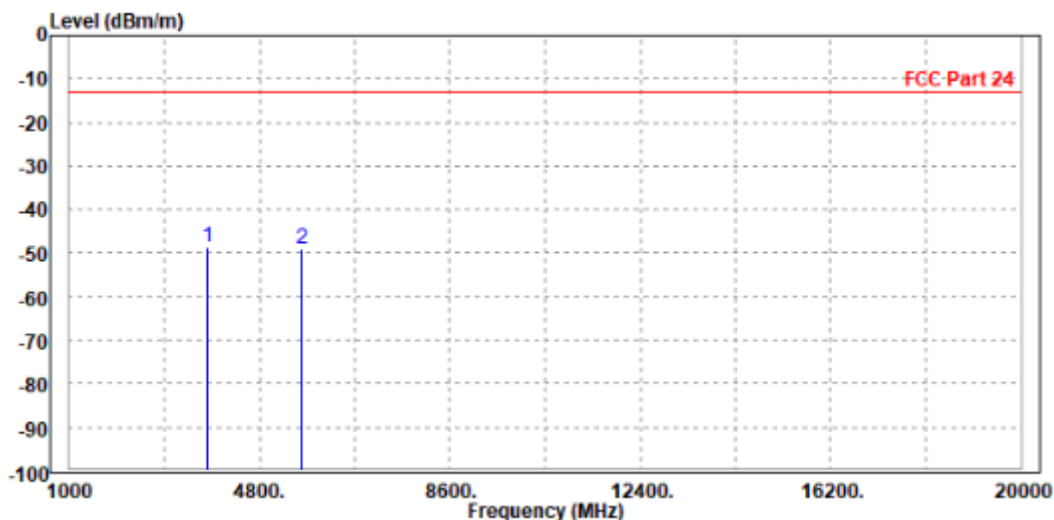


CHANNEL BANDWIDTH: 15MHz / QPSK

CH18675

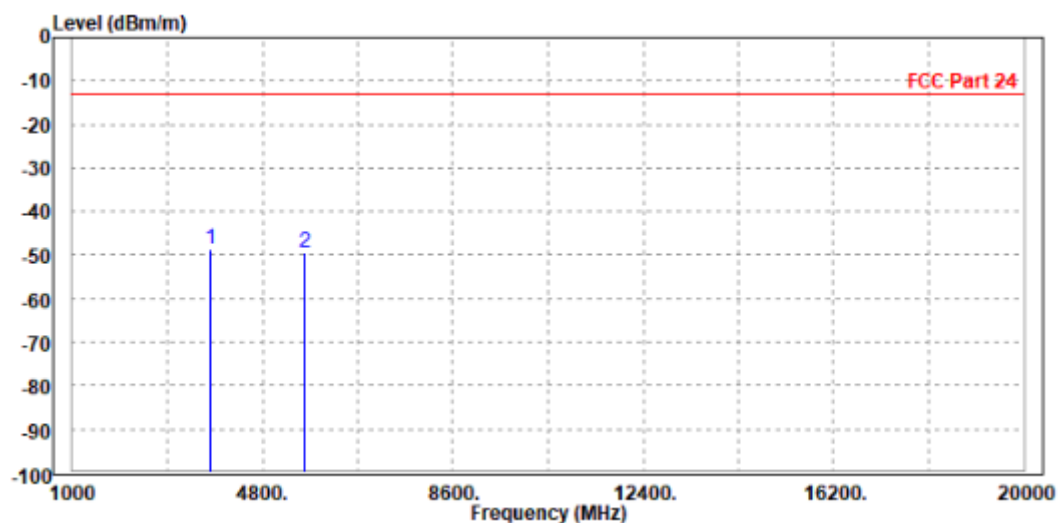
MODE	TX channel 18675	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3760.000	-48.68	-57.53	-13.00	-35.68	8.85	Peak	Horizontal
2		5636.000	-48.97	-59.44	-13.00	-35.97	10.47	Peak	Horizontal



MODE	TX channel 18675	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

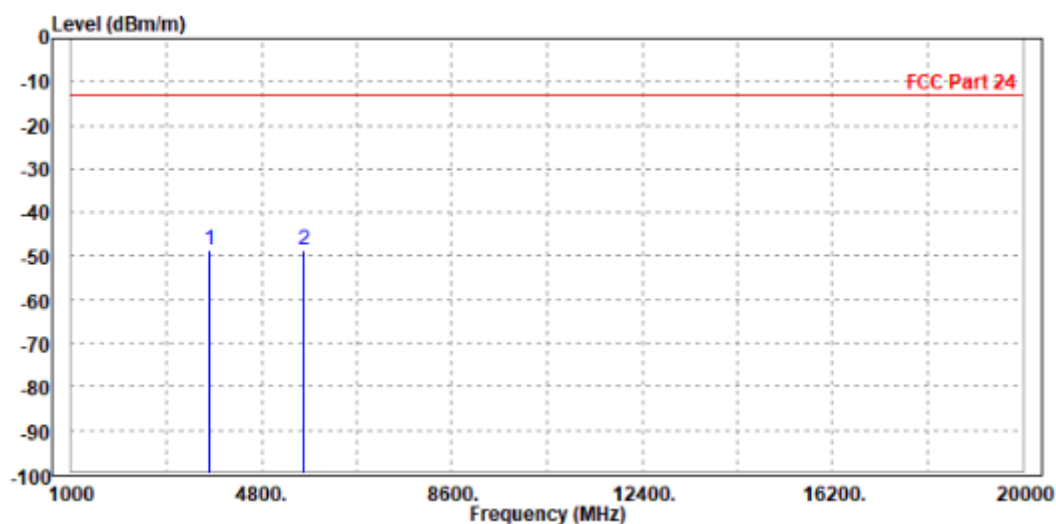
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3755.000	-48.49	-57.76	-13.00	-35.49	9.27	Peak	Vertical
2	5640.000	-49.31	-59.56	-13.00	-36.31	10.25	Peak	Vertical



CHANNEL BANDWIDTH: 20MHz / QPSK

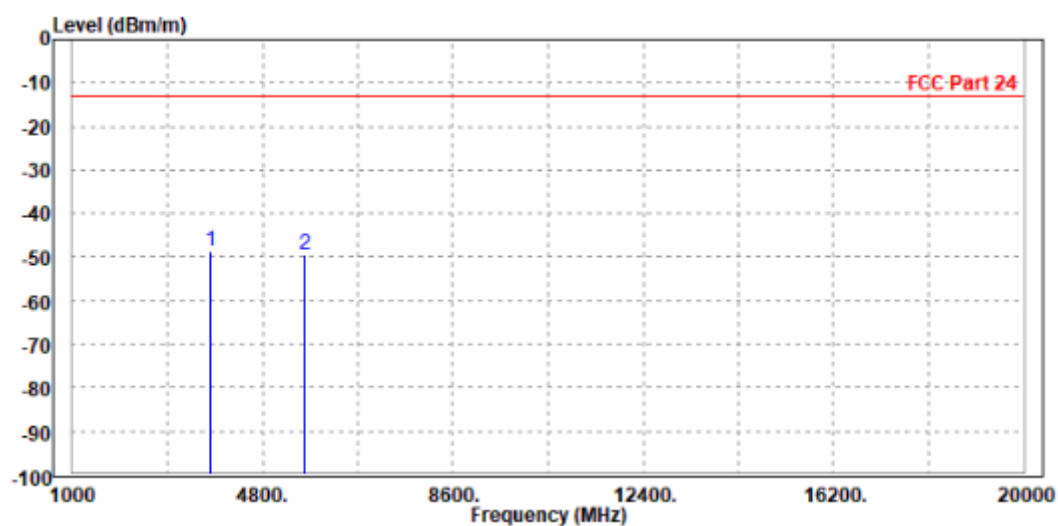
MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3755.000	-48.83	-57.68	-13.00	-35.83	8.85	Peak	Horizontal
2 PP	5640.000	-48.77	-59.25	-13.00	-35.77	10.48	Peak	Horizontal



MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.7V
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	3760.000	-48.83	-58.10	-13.00	-35.83	9.27	Peak	Vertical
2	5636.000	-49.44	-59.67	-13.00	-36.44	10.23	Peak	Vertical





BUREAU
VERITAS

Test Report No.: W7L-P22040025RF01

4 INFORMATION ON THE TESTING LABORATORIES

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

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

Shenzhen EMC/RF Lab:

Tel: +86-755-88696566

Fax: +86-755-88696577

Email: customerservice.sw@bureauveritas.com

Web Site: www.adt.com.tw

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

5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

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

---END---