

# FCC TEST REPORT (PART 24)


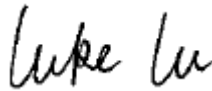
Applicant:	Particle Industries, Inc
Address:	126 Post St, 4th floor, San Francisco, CA 94108 USA

Manufacturer or Supplier	Particle Industries, Inc
Address	126 Post St, 4th floor, San Francisco, CA 94108 USA
Product	Tracker One LTE M1
Brand Name	Particle
Model Name	ONE402M, ONE404M
FCC ID	2AEMI-ONE40X
Date of tests	Aug. 08, 2020 ~ Sept. 10, 2020

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 Alex Chen Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
	
Date: Sept. 10, 2020	Date: Sept. 10, 2020

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**BUREAU**  
**VERITAS**

Test Report No.: RF200807W004-2

## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF200807W004-2	Original release	Sept. 10, 2020



# 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	REMARK
2.1046 24.232	Equivalent Isotropic Radiated Power	Compliance	Meet the requirement of limit
2.1055 24.235	Frequency Stability	N.A	See note 1
2.1049 24.238(b)	Occupied Bandwidth	N.A	See note 1
24.232(d)	Peak to average ratio	N.A	See note 1
24.238(b)	Band Edge Measurements	N.A	See note 1
2.1051 24.238	Conducted Spurious Emissions	N.A	See note 1
2.1053 24.238	Radiated Spurious Emissions	Compliance	Meet the requirement of limit.

\* REFER TO KDB 971168 D01 POWER MEAS LICENSE DIGITAL SYSTEMS V03R01.

Note: Note: The host Traker One LTE M1 (FCC ID: 2AEMI-ONE40X) is a new product with one certified module T402M/T404M (Module ID: 2AEMI-T40X ,Grant Date:09/16/2020) integrated. This module is a single modular and it was integrated into the host that not make any effect on RF performance.Other test data are reused from RF200520W003-2. More details please refer test report RF200520W003-2.



### 1.1 MEASUREMENT UNCERTAINTY

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

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

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. 27,20	Apr. 26,21
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 26,20	Feb. 25,21
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 27,20	Mar. 26,21
Horn Antenna (1GHz-18GHz)	ETS-LINDGREN	3117	00168692	Mar. 27,20	Mar. 26,21
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Nov. 24, 19	Nov. 23, 20
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 27,20	Feb. 26,21
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,20	Jun. 01,21
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 02,20	Jun. 01,21
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 30,20	Apr. 29,21
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 18,23
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 03,20	Jun. 02,21
Power Meter	Anritsu	ML2495A	1506002	Feb. 26,20	Feb. 25,21
Power Sensor	Anritsu	MA2411B	1339352	Feb. 26,20	Feb. 25,21
Humid & Temp Programmable Tester	Juyi	ITH-120-45-CP-AR	IAA1504-001	Jun. 02,20	Jun. 01,21
MXG Analog Microwave Signal Generator	KEYSIGHT	N5183A	MY50143024	Mar. 11,20	Mar. 10,21
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 24 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

<b>PRODUCT</b>	Tracker One LTE M1		
<b>BRAND NAME</b>	Particle		
<b>MODEL NAME</b>	ONE402M, ONE404M		
<b>NOMINAL VOLTAGE</b>	DC 3.7V from Battery or DC 5V from USB Host Unit or DC 12V from Adapter (support unit)		
<b>MODULATION TYPE</b>	<b>GPRS: GMSK</b> <b>EDGE: 8PSK</b> <b>LTE: QPSK, 16QAM</b>		
<b>FREQUENCY RANGE</b>	<b>GSM, GPRS, EDGE</b>	1850.2MHz ~ 1909.8MHz	
	<b>LTE Band 2 Channel Bandwidth: 1.4MHz</b>	1850.7MHz ~ 1909.3MHz	
	<b>LTE Band 2 Channel Bandwidth: 3MHz</b>	1851.5MHz ~ 1908.5MHz	
	<b>LTE Band 2 Channel Bandwidth: 5MHz</b>	1852.5MHz ~ 1907.5MHz	
	<b>LTE Band 2 Channel Bandwidth: 10MHz</b>	1855.0MHz ~ 1905.0MHz	
	<b>LTE Band 2 Channel Bandwidth: 15MHz</b>	1857.5MHz ~ 1902.5MHz	
	<b>LTE Band 2 Channel Bandwidth: 20MHz</b>	1860.0MHz ~ 1900.0MHz	
	<b>LTE Band 25 Channel Bandwidth: 1.4MHz</b>	1850.7MHz ~ 1914.3MHz	
	<b>LTE Band 25 Channel Bandwidth: 3MHz</b>	1851.5MHz ~ 1913.5MHz	
	<b>LTE Band 25 Channel Bandwidth: 5MHz</b>	1852.5MHz ~ 1912.5MHz	
	<b>LTE Band 25 Channel Bandwidth: 10MHz</b>	1855.0MHz ~ 1910.0MHz	
	<b>LTE Band 25 Channel Bandwidth: 15MHz</b>	1857.5MHz ~ 1907.5MHz	
	<b>LTE Band 25 Channel Bandwidth: 20MHz</b>	1860.0MHz ~ 1905.0MHz	
	<b>MAX. EIRP POWER</b>	<b>GSM</b>	1633mW
		<b>EDGE</b>	531mW
<b>LTE Band 2 Channel Bandwidth: 1.4MHz</b>		372mW	
<b>LTE Band 2 Channel Bandwidth: 3MHz</b>		369mW	





	<b>LTE Band 2</b> <b>Channel Bandwidth: 5MHz</b>	370mW
	<b>LTE Band 2</b> <b>Channel Bandwidth: 10MHz</b>	367mW
	<b>LTE Band 2</b> <b>Channel Bandwidth: 15MHz</b>	373mW
	<b>LTE Band 2</b> <b>Channel Bandwidth: 20MHz</b>	374mW
	<b>LTE Band 25</b> <b>Channel Bandwidth: 1.4MHz</b>	403 mW
	<b>LTE Band 25</b> <b>Channel Bandwidth: 3MHz</b>	402 mW
	<b>LTE Band 25</b> <b>Channel Bandwidth: 5MHz</b>	406 mW
	<b>LTE Band 25</b> <b>Channel Bandwidth: 10MHz</b>	403 mW
	<b>LTE Band 25</b> <b>Channel Bandwidth: 15MHz</b>	403 mW
	<b>LTE Band 25</b> <b>Channel Bandwidth: 20MHz</b>	407 mW



<b>EMISSION DESIGNATOR</b>	<b>GSM</b>	246KGXW
	<b>EDGE</b>	248KG7W
	<b>LTE Band 2 Channel Bandwidth: 1.4MHz</b>	QPSK: 1M11G7D 16QAM: 948KW7D
	<b>LTE Band 2 Channel Bandwidth: 3MHz</b>	QPSK: 1M16G7D 16QAM: 985KW7D
	<b>LTE Band 2 Channel Bandwidth: 5MHz</b>	QPSK: 1M17G7D 16QAM: 1M01W7D
	<b>LTE Band 2 Channel Bandwidth: 10MHz</b>	QPSK: 1M19G7D 16QAM: 1M19W7D
	<b>LTE Band 2 Channel Bandwidth: 15MHz</b>	QPSK: 1M22G7D 16QAM: 1M90W7D
	<b>LTE Band 2 Channel Bandwidth: 20MHz</b>	QPSK: 1M25G7D 16QAM: 1M15W7D
	<b>LTE Band 25 Channel Bandwidth: 1.4MHz</b>	QPSK: 1M11G7D 16QAM: 951KW7D
	<b>LTE Band 25 Channel Bandwidth: 3MHz</b>	QPSK: 1M16G7D 16QAM: 992KW7D
	<b>LTE Band 25 Channel Bandwidth: 5MHz</b>	QPSK: 1M14G7D 16QAM: 975KW7D
	<b>LTE Band 25 Channel Bandwidth: 10MHz</b>	QPSK: 1M18G7D 16QAM: 1M05W7D
	<b>LTE Band 25 Channel Bandwidth: 15MHz</b>	QPSK: 1M20G7D 16QAM: 1M06W7D
	<b>LTE Band 25 Channel Bandwidth: 20MHz</b>	QPSK: 1M21G7D 16QAM: 1M11W7D
	<b>ANTENNA TYPE</b>	External Antenna with 2.27dBi gain for GSM 1900/ LTE Band 2/ LTE Band 25
<b>HW VERSION</b>	V1.0	
<b>SW VERSION</b>	V1.5.4	
<b>I/O PORTS</b>	Refer to user's manual	
<b>CABLE SUPPLIED</b>	USB cable: non-shielded, detachable,2meter	



**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
GSM/GPRS/EDGE	1TX/1RX
LTE	1TX/1RX

3. The EUT was powered by the following Battery:

BATTERY	
BRAND:	Zhaoneng
MODEL:	113450
MANUFACTURER	Zhaoneng Battery Industrial Co., Ltd
POWER RATING:	3.7V, 2000mAh

4. The EUT matched the following USB cable:

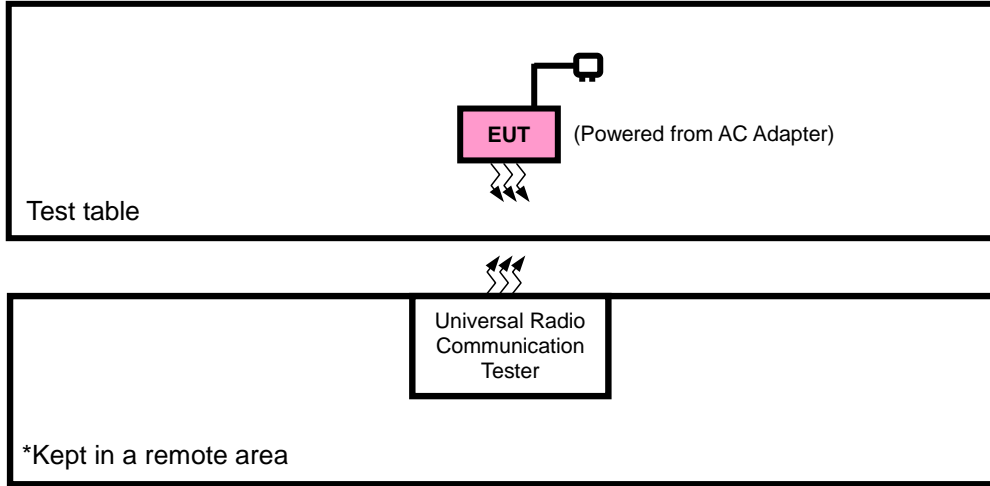
USB CABLE	
BRAND:	KAWEEI
MODEL:	CBUSB31-AM-CM-2000
SIGNAL LINE:	2.0 METER

5. The schematic and PCB of each model is same, and the HW&SW used is the same. The only difference is ONE402M uses eSIM of Kore, ONE404M uses eSIM of Twilio.
6. 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 in EIRP and radiated emission was found when positioned on X-plane for GSM/EDGE/WCDMA/ LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter + USB Cable with GSM or LTE link
B	EUT + Battery with GSM or LTE link

#### GSM MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	EIRP	512 to 810	512, 661, 810	GSM, EDGE
A	RADIATED EMISSION	512 to 810	512, 661, 810	GSM, 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	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	18650, 18900, 19150	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



LTE BAND 25

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26090 to 26640	26090, 26365, 26640	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	26047 to 26683	26365	1.4MHz	QPSK	1 RB / 0 RB Offset
		26055 to 26675	26365	3MHz	QPSK	1 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK	1 RB / 0 RB Offset
		26090 to 26640	26365	10MHz	QPSK	1 RB / 0 RB Offset
		26115 to 26615	26365	15MHz	QPSK	1 RB / 0 RB Offset
		26140 to 26590	26365	20MHz	QPSK	1 RB / 0 RB Offset

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	23deg. C, 70%RH	DC 5V from USB Host Unit	Jacky Liu
RADIATED EMISSION	23deg. C, 70%RH	DC 5V from USB Host Unit	Jacky Liu

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:

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

Where:

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

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

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

$G_{\text{T}}$  = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

$L_{\text{C}}$  = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

###### **CONDUCTED POWER MEASUREMENT:**

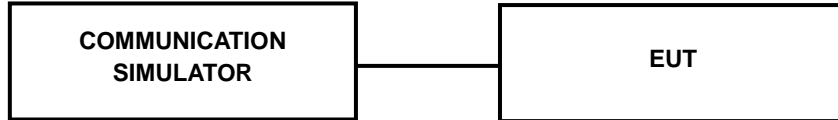
The EUT was set up for the maximum power with WCDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



### 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	
Frequency	1850.2	1880	1909.8	
GPRS (GMSK, 1Tx-slot)	29.76	29.80	29.86	30.0
GPRS (GMSK, 2Tx-slot)	29.68	29.70	29.78	30.0
GPRS (GMSK, 3Tx-slot)	29.42	29.45	29.52	30.0
GPRS (GMSK, 4Tx-slot)	29.36	29.31	29.43	30.0
EDGE (GMSK, 1Tx-slot)	24.87	24.91	24.98	25.5
EDGE (GMSK, 2Tx-slot)	24.75	24.80	24.86	25.5
EDGE (GMSK, 3Tx-slot)	24.49	24.40	24.52	25.0
EDGE (GMSK, 4Tx-slot)	24.42	24.35	24.46	25.0



Band/BW	Modulation	RB Size	RB Offset	Low CH 18607	Mid CH 18900	High CH 19193	Tune Up
				Frequency 1850.7 MHz	Frequency 1880 MHz	Frequency 1909.3 MHz	
2/ 1.4	QPSK	1	0	23.38	23.31	23.32	23.5
		1	5	23.36	23.22	23.28	
		3	0	23.43	23.27	23.31	23.5
		3	3	23.32	23.19	23.27	
		6	0	23.38	23.26	23.22	23.5
	16QAM	1	0	22.90	22.77	22.81	23.5
		1	5	22.90	22.73	22.81	
		3	0	23.02	22.88	22.97	23.5
		3	3	23.06	22.94	22.96	
		6	0	23.16	23.12	23.10	23.5

Band/BW	Modulation	RB Size	RB Offset	Low CH 18615	Mid CH 18900	High CH 19185	Tune Up
				Frequency 1851.5 MHz	Frequency 1880 MHz	Frequency 1908.5 MHz	
2/ 3	QPSK	1	0	23.40	23.33	23.31	23.5
		1	5	23.32	23.23	23.28	
		3	0	23.39	23.27	23.31	23.5
		3	3	23.31	23.22	23.27	
		6	0	23.31	23.26	23.24	23.5
	16QAM	1	0	22.87	22.83	22.84	23.5
		1	5	22.87	22.76	22.79	
		3	0	23.05	22.88	22.97	23.5
		3	3	23.02	22.95	22.96	
		6	0	23.21	23.07	23.13	23.5



Band/BW	Modulation	RB Size	RB Offset	Low CH 18625	Mid CH 18900	High CH 19175	Tune Up
				Frequency 1852.5 MHz	Frequency 1880 MHz	Frequency 1907.5 MHz	
2/ 5	QPSK	1	0	23.41	23.28	23.32	23.5
		1	5	23.37	23.20	23.28	
		3	0	23.40	23.26	23.35	23.5
		3	3	23.34	23.22	23.24	
		6	0	23.31	23.27	23.25	23.5
	16QAM	1	0	22.88	22.79	22.84	23.5
		1	5	22.84	22.79	22.78	
		3	0	23.05	22.88	22.96	23.5
		3	3	23.02	22.93	22.93	
		6	0	23.18	23.11	23.09	23.5

Band/BW	Modulation	RB Size	RB Offset	Low CH 18650	Mid CH 18900	High CH 19150	Tune Up
				Frequency 1855 MHz	Frequency 1880 MHz	Frequency 1905 MHz	
2/ 10	QPSK	1	0	23.38	23.31	23.32	23.5
		1	5	23.37	23.20	23.29	
		3	0	23.37	23.30	23.31	23.5
		3	3	23.35	23.21	23.27	
		6	0	23.37	23.21	23.25	23.5
	16QAM	1	0	22.88	22.76	22.80	23.5
		1	5	22.89	22.75	22.81	
		3	0	23.05	22.89	22.93	23.5
		3	3	23.04	22.91	22.99	
		6	0	23.22	23.05	23.14	23.5



Band/BW	Modulation	RB Size	RB Offset	Low CH 18675	Mid CH 18900	High CH 19125	Tune Up
				Frequency 1857.5 MHz	Frequency 1880 MHz	Frequency 1902.5 MHz	
2/ 15	QPSK	1	0	23.45	23.31	23.29	23.5
		1	5	23.35	23.25	23.24	
		3	0	23.43	23.33	23.32	23.5
		3	3	23.32	23.22	23.28	
		6	0	23.38	23.26	23.25	23.5
	16QAM	1	0	22.92	22.83	22.80	23.5
		1	5	22.88	22.76	22.81	
		3	0	23.01	22.94	22.95	23.5
		3	3	23.08	22.91	23.00	
		6	0	23.16	23.09	23.10	23.5

Band/BW	Modulation	RB Size	RB Offset	Low CH 18700	Mid CH 18900	High CH 19100	Tune Up
				Frequency 1860 MHz	Frequency 1880 MHz	Frequency 1900 MHz	
2/ 20	QPSK	1	0	23.46	23.35	23.37	23.5
		1	5	23.39	23.28	23.30	
		3	0	23.45	23.34	23.36	23.5
		3	3	23.38	23.27	23.29	
		6	0	23.39	23.28	23.30	23.5
	16QAM	1	0	22.95	22.84	22.86	23.5
		1	5	22.92	22.81	22.83	
		3	0	23.07	22.96	22.98	23.5
		3	3	23.10	22.99	23.01	
		6	0	23.24	23.13	23.15	23.5



Band/BW	Modulation	RB Size	RB Offset	26047 CH	26365 CH	26683 CH	Tune Up
				1850.7 MHz	1882.5 MHz	1914.3 MHz	
25/ 1.4	QPSK	1	0	23.53	23.59	23.78	24.5
		1	5	23.53	23.52	23.76	
		3	0	23.58	23.55	23.77	24.5
		3	3	23.49	23.49	23.75	
		6	0	23.52	23.53	23.67	24.5
	16QAM	1	0	23.08	23.08	23.30	24.5
		1	5	23.02	22.98	23.24	
		3	0	23.27	23.26	23.53	24.5
		3	3	23.25	23.26	23.46	
		6	0	23.44	23.53	23.69	24.5

Band/BW	Modulation	RB Size	RB Offset	26055 CH	26365 CH	26675 CH	Tune Up
				1851.5 MHz	1882.5 MHz	1913.5 MHz	
25/ 3	QPSK	1	0	23.55	23.61	23.77	24.5
		1	5	23.49	23.53	23.76	
		3	0	23.54	23.55	23.77	24.5
		3	3	23.48	23.52	23.75	
		6	0	23.45	23.53	23.69	24.5
	16QAM	1	0	23.05	23.14	23.33	24.5
		1	5	22.99	23.01	23.22	
		3	0	23.30	23.26	23.53	24.5
		3	3	23.21	23.27	23.46	
		6	0	23.49	23.48	23.72	24.5



Band/BW	Modulation	RB Size	RB Offset	26065 CH	26365 CH	26665 CH	Tune Up
				1852.5 MHz	1882.5 MHz	1912.5 MHz	
25/ 5	QPSK	1	0	23.56	23.56	23.78	24.5
		1	5	23.54	23.50	23.76	
		3	0	23.55	23.54	23.81	24.5
		3	3	23.51	23.52	23.72	
		6	0	23.45	23.54	23.70	24.5
	16QAM	1	0	23.06	23.10	23.33	24.5
		1	5	22.96	23.04	23.21	
		3	0	23.30	23.26	23.52	24.5
		3	3	23.21	23.25	23.43	
		6	0	23.46	23.52	23.68	24.5

Band/BW	Modulation	RB Size	RB Offset	26090 CH	26365 CH	26640 CH	Tune Up
				1855 MHz	1882.5 MHz	1910 MHz	
25/ 10	QPSK	1	0	23.53	23.59	23.78	24.5
		1	5	23.54	23.50	23.77	
		3	0	23.52	23.58	23.77	24.5
		3	3	23.52	23.51	23.75	
		6	0	23.51	23.48	23.70	24.5
	16QAM	1	0	23.06	23.07	23.29	24.5
		1	5	23.01	23.00	23.24	
		3	0	23.30	23.27	23.49	24.5
		3	3	23.23	23.23	23.49	
		6	0	23.50	23.46	23.73	24.5



Band/BW	Modulation	RB Size	RB Offset	26115 CH	26365 CH	26615 CH	Tune Up
				1857.5 MHz	1882.5 MHz	1907.5 MHz	
25/ 15	QPSK	1	0	23.60	23.59	23.75	24.5
		1	5	23.52	23.55	23.72	
		3	0	23.58	23.61	23.78	24.5
		3	3	23.49	23.52	23.76	
		6	0	23.52	23.53	23.70	24.5
	16QAM	1	0	23.10	23.14	23.29	24.5
		1	5	23.00	23.01	23.24	
		3	0	23.26	23.32	23.51	24.5
		3	3	23.27	23.23	23.50	
		6	0	23.44	23.50	23.69	24.5

Band/BW	Modulation	RB Size	RB Offset	26140 CH	26365 CH	26590 CH	Tune Up
				1860 MHz	1882.5 MHz	1905 MHz	
25/ 20	QPSK	1	0	23.61	23.63	23.83	24.5
		1	5	23.56	23.58	23.78	
		3	0	23.60	23.62	23.82	24.5
		3	3	23.55	23.57	23.77	
		6	0	23.53	23.55	23.75	24.5
	16QAM	1	0	23.13	23.15	23.35	24.5
		1	5	23.04	23.06	23.26	
		3	0	23.32	23.34	23.54	24.5
		3	3	23.29	23.31	23.51	
		6	0	23.52	23.54	23.74	24.5





**EIRP POWER (dBm)**

**GSM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
512	1850.2	29.76	2.27	32.03	1595.88	2
661	1880.0	29.80	2.27	32.07	1610.65	2
810	1909.8	29.86	2.27	32.13	<b>1633.05</b>	2

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

**EDGE**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
512	1850.2	24.87	2.27	27.14	517.61	2
661	1880.0	24.91	2.27	27.18	522.4	2
810	1909.8	24.98	2.27	27.25	<b>530.88</b>	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 <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	23.43	2.27	25.70	371.54	2
18900	1880.0	23.31	2.27	25.58	361.41	2
19193	1908.3	23.32	2.27	25.59	362.24	2

**CHANNEL BANDWIDTH: 1.4MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	23.16	2.27	25.43	349.14	2
18900	1880.0	23.12	2.27	25.39	345.94	2
19193	1908.3	23.10	2.27	25.37	344.35	2

**CHANNEL BANDWIDTH: 3MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	23.40	2.27	25.67	368.98	2
18900	1880.0	23.33	2.27	25.60	363.08	2
19185	1908.5	23.31	2.27	25.58	361.41	2

**CHANNEL BANDWIDTH: 3MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	23.21	2.27	25.48	353.18	2
18900	1880.0	23.07	2.27	25.34	341.98	2
19185	1908.5	23.13	2.27	25.40	346.74	2



**CHANNEL BANDWIDTH: 5MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	23.41	2.27	25.68	369.83	2
18900	1880.0	23.28	2.27	25.55	358.92	2
19175	1907.5	23.35	2.27	25.62	364.75	2

**CHANNEL BANDWIDTH: 5MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	23.18	2.27	25.45	350.75	2
18900	1880.0	23.11	2.27	25.38	345.14	2
19175	1907.5	23.09	2.27	25.36	343.56	2

**CHANNEL BANDWIDTH: 10MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855.0	23.38	2.27	25.65	367.28	2
18900	1880.0	23.31	2.27	25.58	361.41	2
19150	1905.0	23.32	2.27	25.59	362.24	2

**CHANNEL BANDWIDTH: 10MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855.0	23.22	2.27	25.49	354	2
18900	1880.0	23.05	2.27	25.32	340.41	2
19150	1905.0	23.14	2.27	25.41	347.54	2



**CHANNEL BANDWIDTH: 15MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	23.45	2.27	25.72	373.25	2
18900	1880.0	23.33	2.27	25.60	363.08	2
19125	1902.5	23.32	2.27	25.59	362.24	2

**CHANNEL BANDWIDTH: 15MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	23.16	2.27	25.43	349.14	2
18900	1880.0	23.09	2.27	25.36	343.56	2
19125	1902.5	23.10	2.27	25.37	344.35	2

**CHANNEL BANDWIDTH: 20MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18700	1860	23.46	2.27	25.73	374.11	2
18900	1880	23.35	2.27	25.62	364.75	2
19100	1900	23.37	2.27	25.64	366.44	2

**CHANNEL BANDWIDTH: 20MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18700	1860	23.24	2.27	25.51	355.63	2
18900	1880	23.13	2.27	25.40	346.74	2
19100	1900	23.15	2.27	25.42	348.34	2



**LTE BAND 25**

**CHANNEL BANDWIDTH: 1.4MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26047	1850.7	23.58	2.27	25.85	384.59	2
26340	1880.0	23.59	2.27	25.86	385.48	2
26683	1914.3	23.78	2.27	26.05	402.72	2

**CHANNEL BANDWIDTH: 1.4MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26047	1850.7	23.44	2.27	25.71	372.39	2
26340	1880.0	23.53	2.27	25.80	380.19	2
26683	1914.3	23.69	2.27	25.96	394.46	2

**CHANNEL BANDWIDTH: 3MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26055	1851.5	23.55	2.27	25.82	381.94	2
26340	1880.0	23.61	2.27	25.88	387.26	2
26675	1913.5	23.77	2.27	26.04	401.79	2

**CHANNEL BANDWIDTH: 3MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26055	1851.5	23.49	2.27	25.76	376.7	2
26340	1880.0	23.48	2.27	25.75	375.84	2
26675	1913.5	23.72	2.27	25.99	397.19	2



**CHANNEL BANDWIDTH: 5MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26065	1852.5	23.56	2.27	25.83	382.82	2
26340	1880.0	23.56	2.27	25.83	382.82	2
26665	1912.5	23.81	2.27	26.08	405.51	2

**CHANNEL BANDWIDTH: 5MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26065	1852.5	23.46	2.27	25.73	374.11	2
26340	1880.0	23.52	2.27	25.79	379.31	2
26665	1912.5	23.68	2.27	25.95	393.55	2

**CHANNEL BANDWIDTH: 10MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26090	1855.0	23.53	2.27	25.80	380.19	2
26340	1880.0	23.59	2.27	25.86	385.48	2
26640	1910.0	23.78	2.27	26.05	402.72	2

**CHANNEL BANDWIDTH: 10MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26090	1855.0	23.50	2.27	25.77	377.57	2
26340	1880.0	23.46	2.27	25.73	374.11	2
26640	1910.0	23.73	2.27	26.00	398.11	2



**CHANNEL BANDWIDTH: 15MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>c</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26115	1857.5	23.60	2.27	25.87	386.37	2
26340	1880.0	23.61	2.27	25.88	387.26	2
26615	1907.5	23.78	2.27	26.05	402.72	2

**CHANNEL BANDWIDTH: 15MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>c</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26115	1857.5	23.44	2.27	25.71	372.39	2
26340	1880.0	23.50	2.27	25.77	377.57	2
26615	1907.5	23.69	2.27	25.96	394.46	2

**CHANNEL BANDWIDTH: 20MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>c</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26140	1860.0	23.61	2.27	25.88	387.26	2
26340	1880.0	23.63	2.27	25.90	389.05	2
26590	1905.0	23.83	2.27	26.10	407.38	2

**CHANNEL BANDWIDTH: 20MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>c</sub> (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26140	1860.0	23.52	2.27	25.79	379.31	2
26340	1880.0	23.54	2.27	25.81	381.07	2
26590	1905.0	23.74	2.27	26.01	399.02	2

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



### 3.2 FREQUENCY STABILITY MEASUREMENT

#### 3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

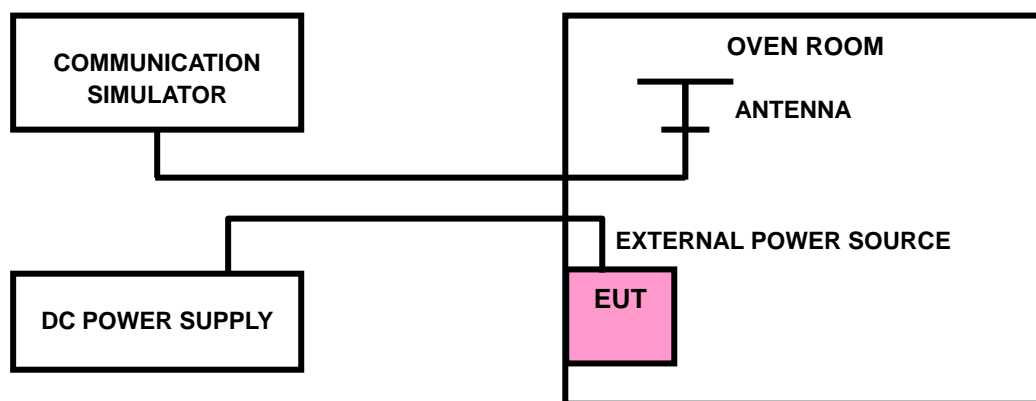
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

#### 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  $\pm 0.5^{\circ}\text{C}$  during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

**NOTE:** The frequency error was recorded frequency error from the communication simulator.

#### 3.2.3 TEST SETUP







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**VERITAS**

### 3.2.4 TEST RESULTS

**N/A**

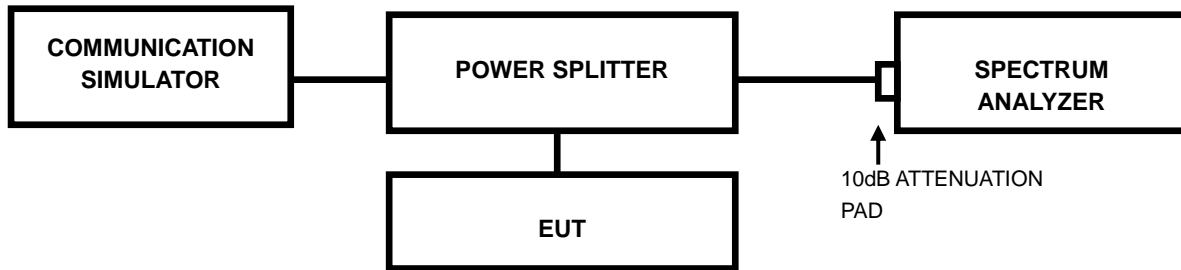


### 3.3 OCCUPIED BANDWIDTH MEASUREMENT

#### 3.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

#### 3.3.2 TEST SETUP





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**VERITAS**

### 3.3.3 TEST RESULTS

**N/A**

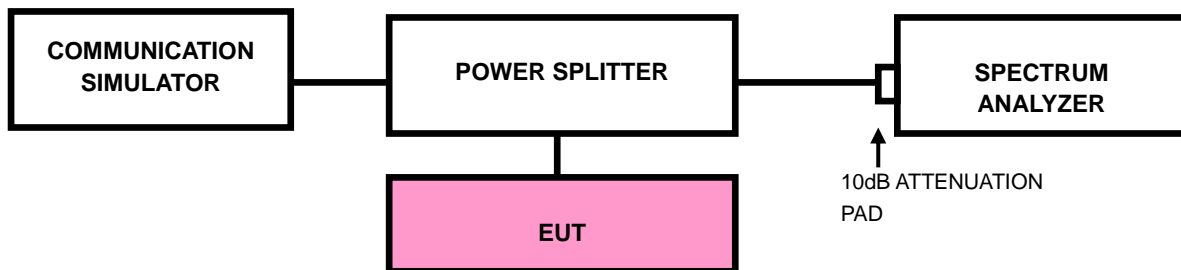


### 3.4 BAND EDGE MEASUREMENT

#### 3.4.1 LIMITS OF BAND EDGE MEASUREMENT

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

#### 3.4.2 TEST SETUP





### 3.4.3 TEST PROCEDURES

- a. All measurements were done at low and high operational frequency range.
- b. The center frequency of spectrum is the band edge frequency and span is 1.5 MHz. RBW of the spectrum is 10kHz and VBW of the spectrum is 30kHz (GSM/GPRS/ EDGE).
- c. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 20kHz and VBW of the spectrum is 100 kHz. (LTE bandwidth 1.4MHz)
- d. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 30kHz and VBW of the spectrum is 100kHz. (LTE bandwidth 3MHz)
- e. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 50kHz and VBW of the spectrum is 200kHz. (LTE bandwidth 5MHz)
- f. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz. (LTE bandwidth 10MHz)
- g. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 200kHz and VBW of the spectrum is 1MHz. (LTE bandwidth 15MHz)
- h. he center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 200kHz and VBW of the spectrum is 1MHz. (LTE bandwidth 20MHz)
- i. Record the max trace plot into the test report.



**BUREAU  
VERITAS**

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### 3.4.4. TEST RESULTS

**N/A**



### 3.5 CONDUCTED SPURIOUS EMISSIONS

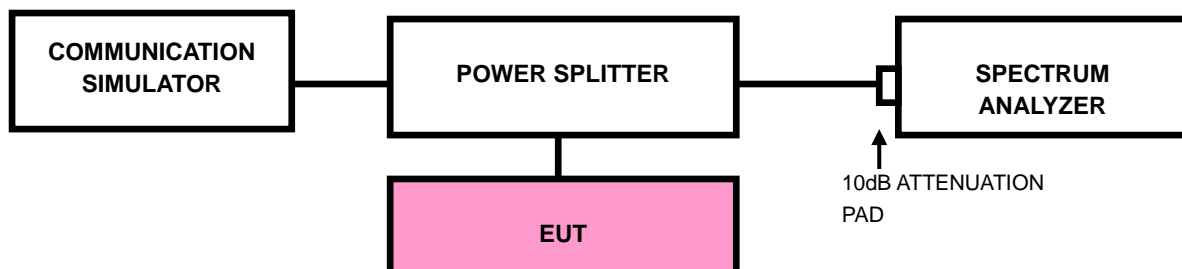
#### 3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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  $-13\text{dBm}$ .

#### 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 30 MHz to 19.1GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

#### 3.5.3 TEST SETUP





**BUREAU VERITAS** Test Report No.: RF200807W004-2

### 3.5.4 TEST RESULTS

**N/A**





### 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  $-13\text{dBm}$ .

#### 3.6.2 TEST PROCEDURES

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

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

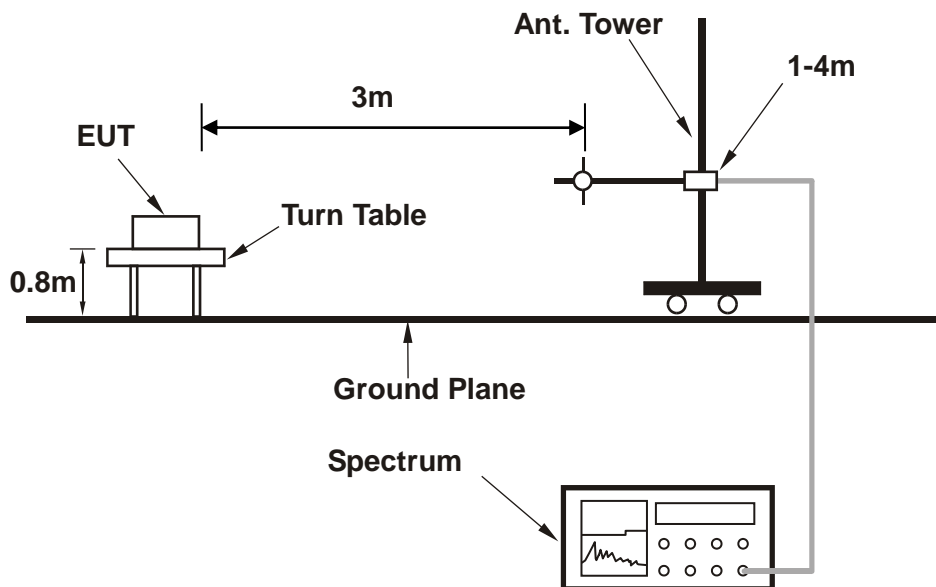
#### 3.6.3 DEVIATION FROM TEST STANDARD

No deviation

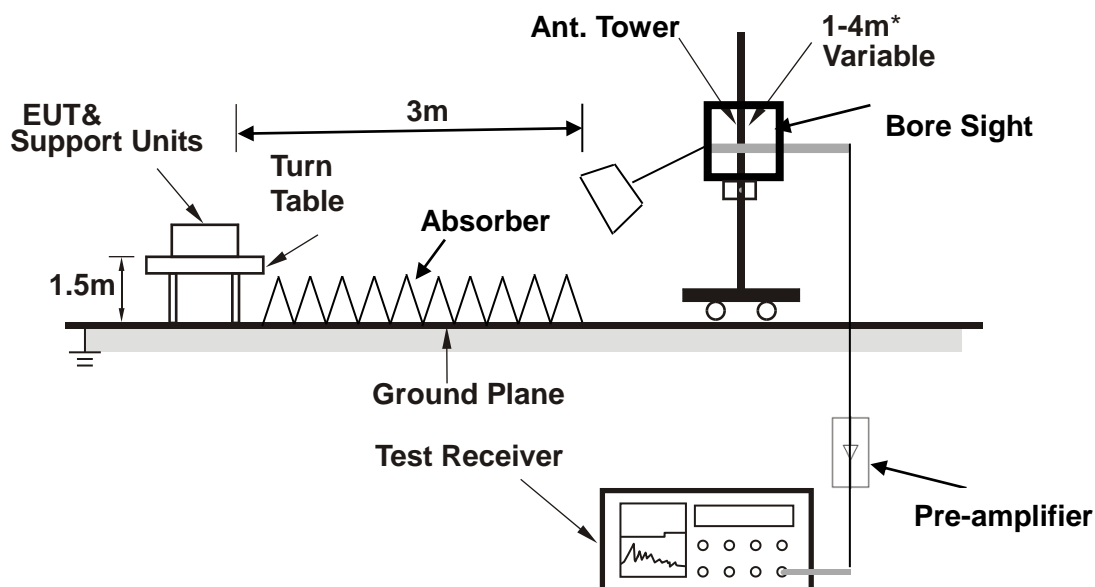


### 3.6.4 TEST SETUP

#### < 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).



### 3.6.5 TEST RESULTS

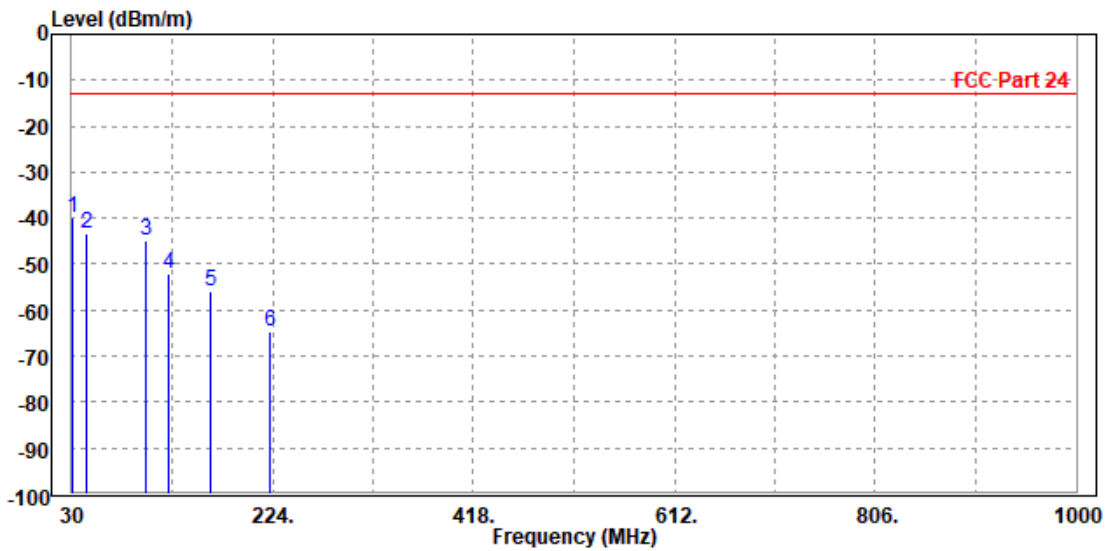
#### BELOW 1GHz WORST-CASE DATA

30 MHz – 1GHz data:

PCS 1900:

<b>MODE</b>	TX channel 661	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

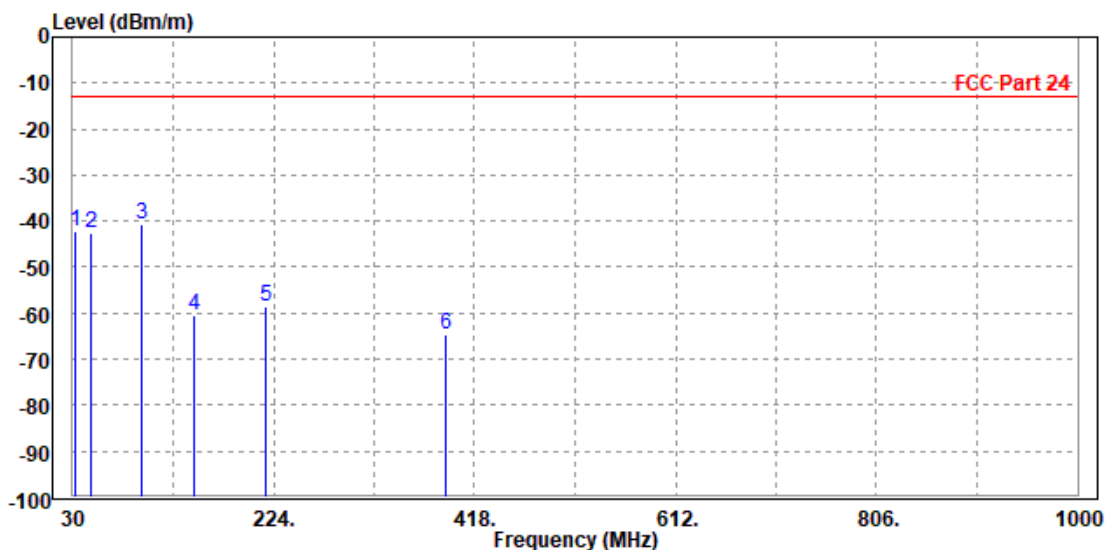
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	30.780	-39.95	-58.22	-13.00	-26.95	18.27	Peak	Horizontal
2	44.120	-43.27	-51.74	-13.00	-30.27	8.47	Peak	Horizontal
3	101.250	-44.95	-33.54	-13.00	-31.95	-11.41	Peak	Horizontal
4	123.410	-52.11	-36.45	-13.00	-39.11	-15.66	Peak	Horizontal
5	164.250	-55.90	-37.58	-13.00	-42.90	-18.32	Peak	Horizontal
6	220.770	-64.69	-47.85	-13.00	-51.69	-16.84	Peak	Horizontal





MODE	TX channel 661	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	33.200	-42.19	-43.26	-13.00	-29.19	1.07	Peak	Vertical
2	48.150	-42.70	-38.55	-13.00	-29.70	-4.15	Peak	Vertical
3 PP	97.150	-40.77	-30.14	-13.00	-27.77	-10.63	Peak	Vertical
4	148.020	-60.63	-44.65	-13.00	-47.63	-15.98	Peak	Vertical
5	216.360	-58.46	-47.54	-13.00	-45.46	-10.92	Peak	Vertical
6	389.560	-64.71	-53.74	-13.00	-51.71	-10.97	Peak	Vertical





**ABOVE 1GHz DATA**

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

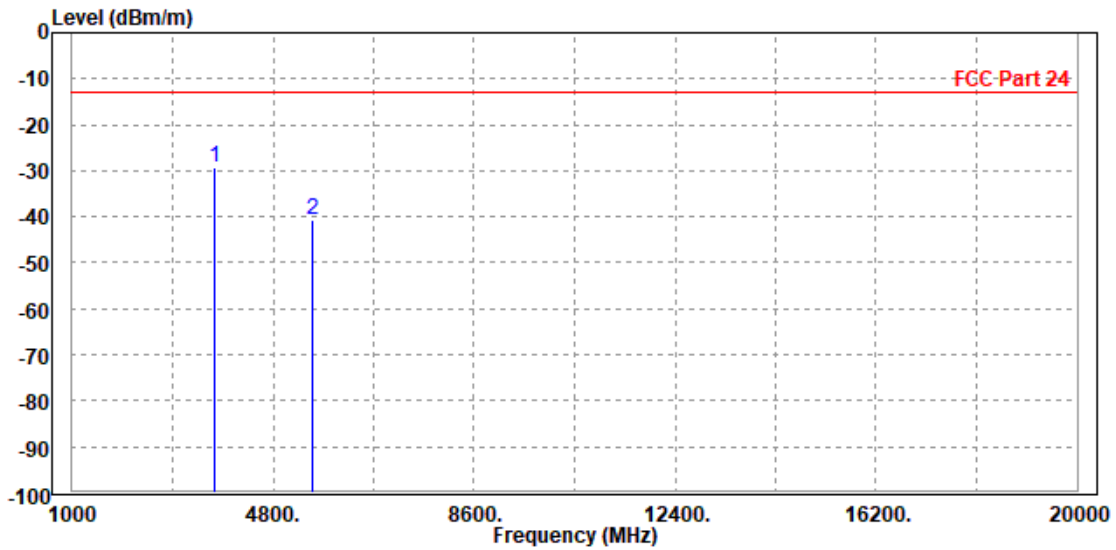
**WORST-CASE DATA**

**PCS 1900:**

**CH 512**

<b>MODE</b>	TX channel 512	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	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	-29.37	-38.15	-13.00	-16.37	8.78	Peak	Horizontal
2	5550.600	-40.54	-50.73	-13.00	-27.54	10.19	Peak	Horizontal



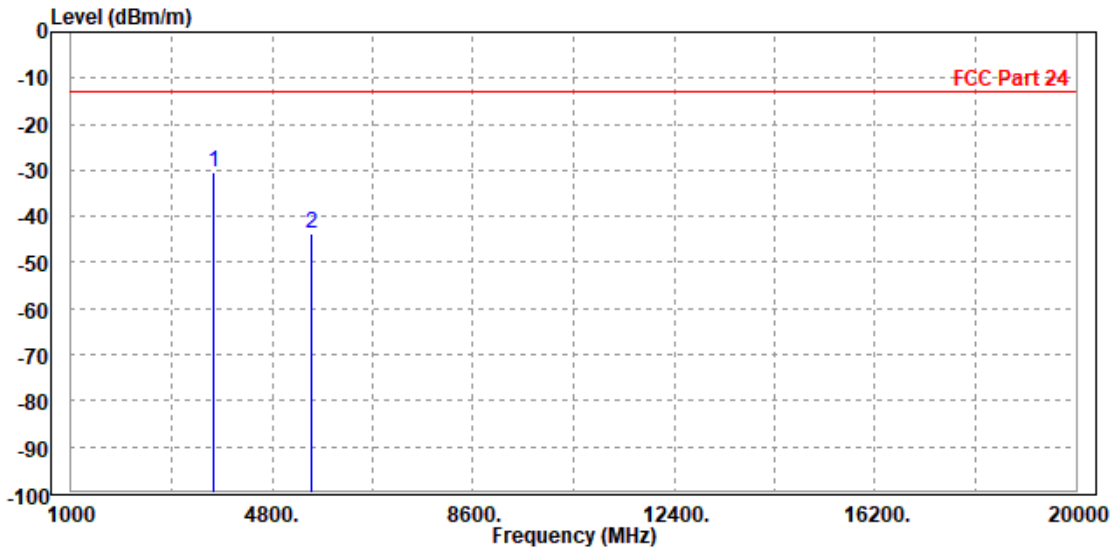


BUREAU VERITAS

Test Report No.: RF200807W004-2

MODE	TX channel 512	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3698.000	-30.53	-39.78	-13.00	-17.53	9.25	Peak	Vertical
2	5550.600	-43.71	-53.61	-13.00	-30.71	9.90	Peak	Vertical

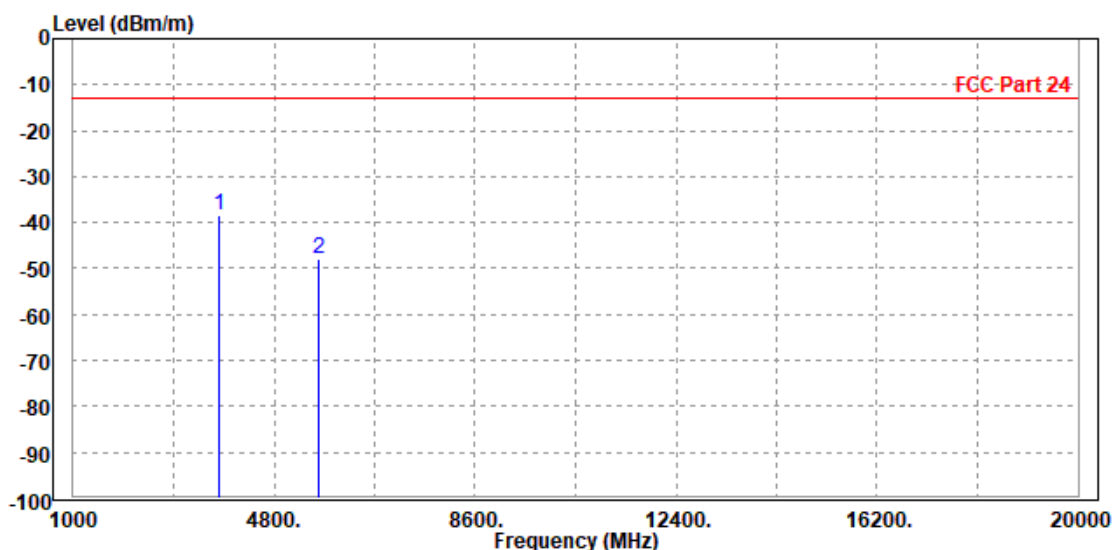




CH 661

MODE	TX channel 661	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	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	-38.40	-47.25	-13.00	-25.40	8.85	Peak	Horizontal
2	5640.000	-47.89	-58.37	-13.00	-34.89	10.48	Peak	Horizontal



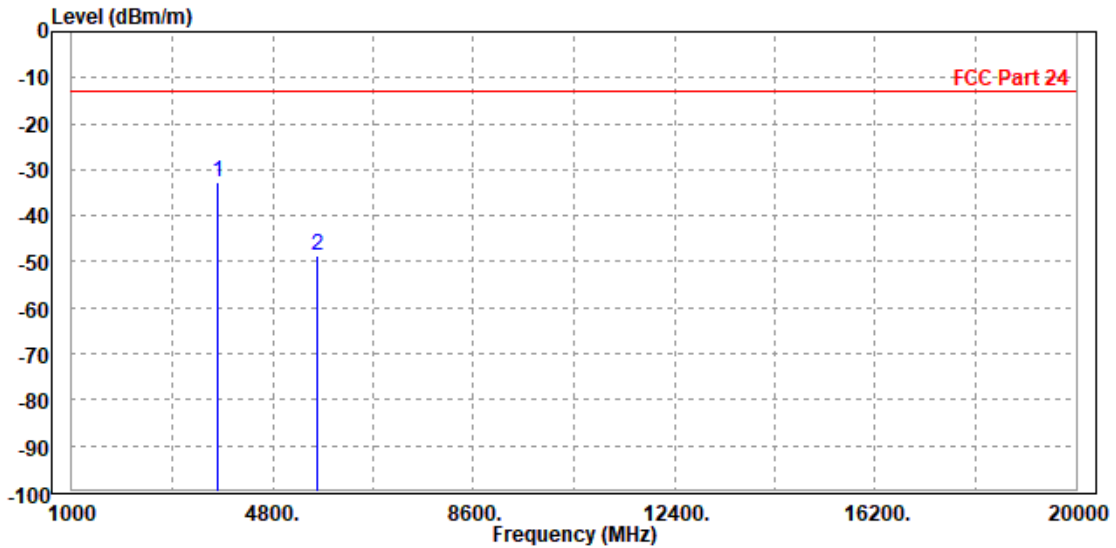


BUREAU VERITAS

Test Report No.: RF200807W004-2

MODE	TX channel 661	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-32.86	-42.13	-13.00	-19.86	9.27	Peak	Vertical
2	5640.000	-48.71	-58.96	-13.00	-35.71	10.25	Peak	Vertical



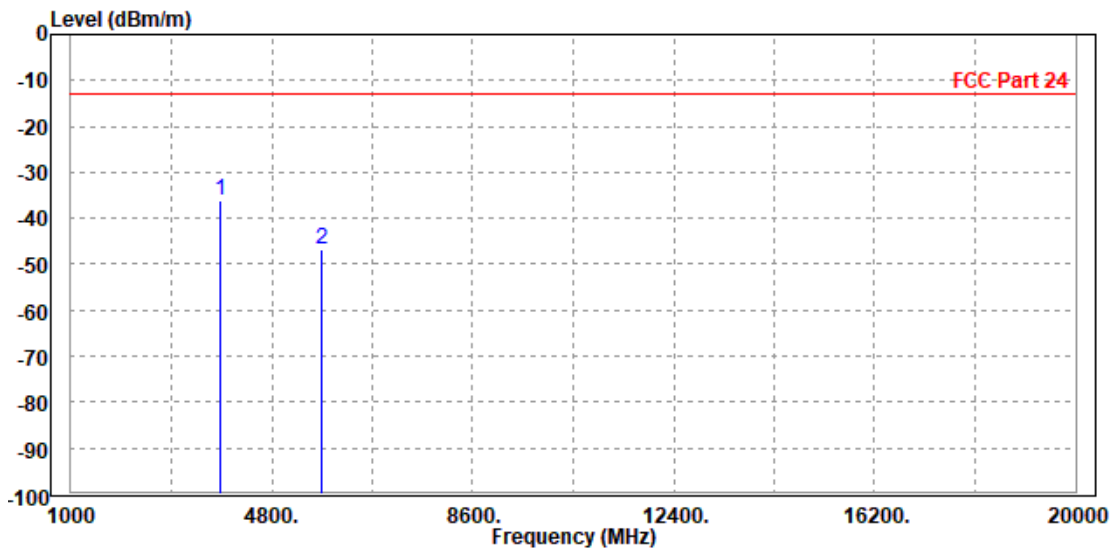




**CH 810**

<b>MODE</b>	TX channel 810	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	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	-36.03	-44.94	-13.00	-23.03	8.91	Peak	Horizontal
2	5729.400	-46.62	-57.40	-13.00	-33.62	10.78	Peak	Horizontal



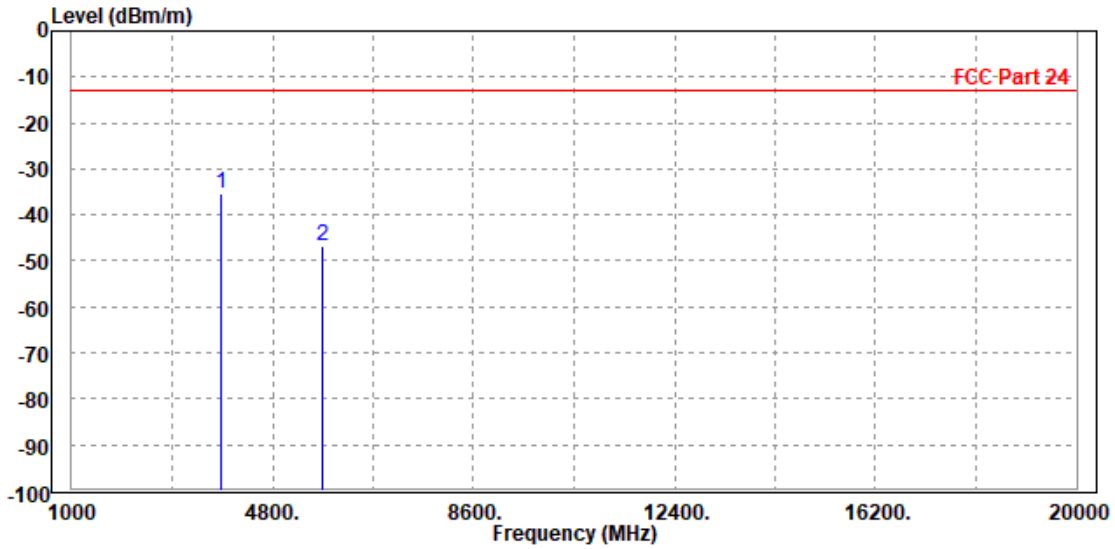


**BUREAU  
VERITAS**

Test Report No.: RF200807W004-2

<b>MODE</b>	TX channel 810	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-35.45	-44.74	-13.00	-22.45	9.29	Peak	Vertical
2	5729.400	-46.81	-57.40	-13.00	-33.81	10.59	Peak	Vertical



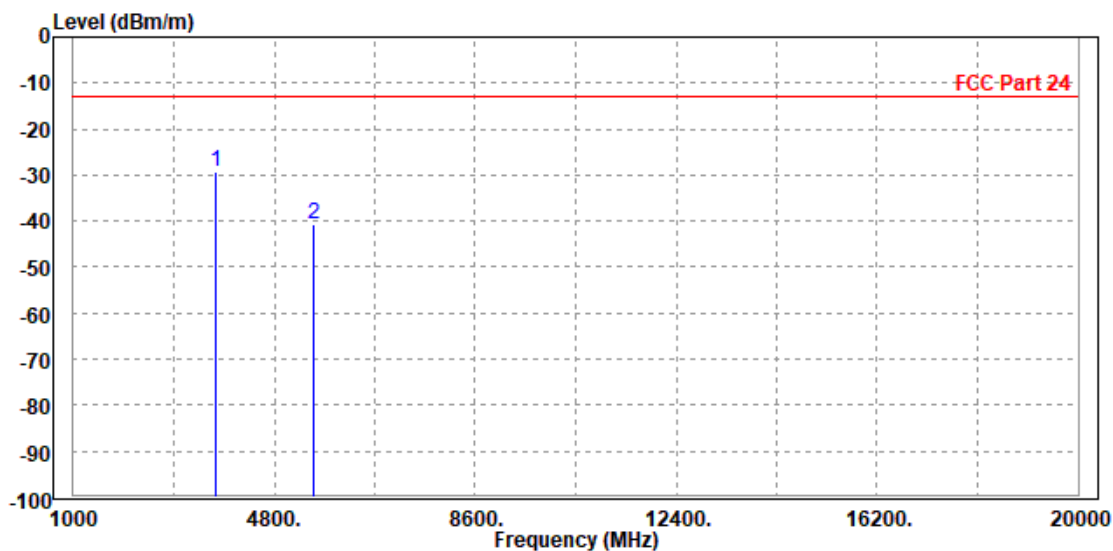


EDGE 1900:

CH 512

MODE	TX channel 512	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

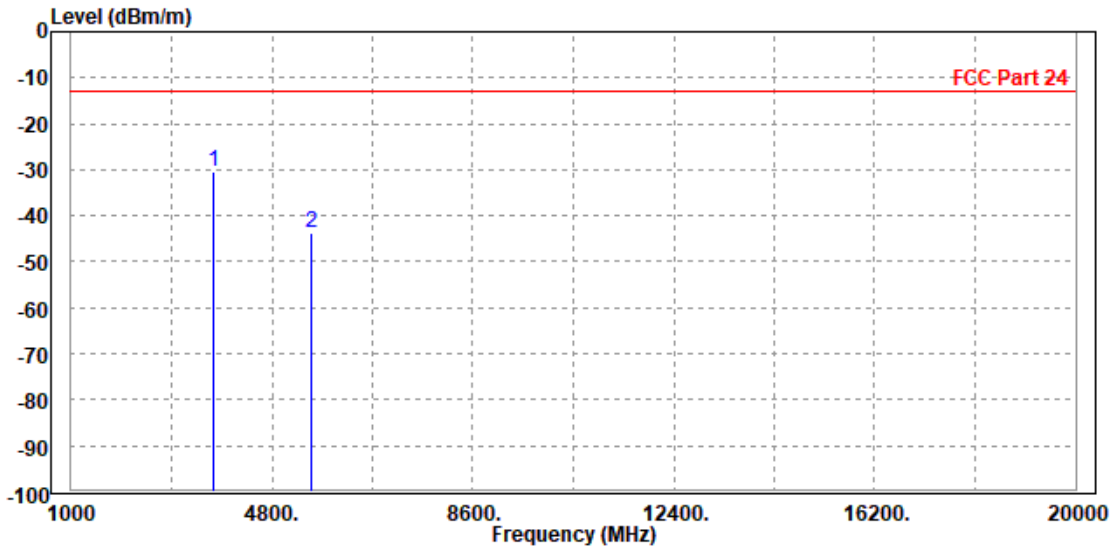
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3698.000	-29.37	-38.15	-13.00	-16.37	8.78	Peak	Horizontal
2	5550.600	-40.54	-50.73	-13.00	-27.54	10.19	Peak	Horizontal





MODE	TX channel 512	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-30.53	-39.78	-13.00	-17.53	9.25	Peak	Vertical
2	5550.600	-43.71	-53.61	-13.00	-30.71	9.90	Peak	Vertical

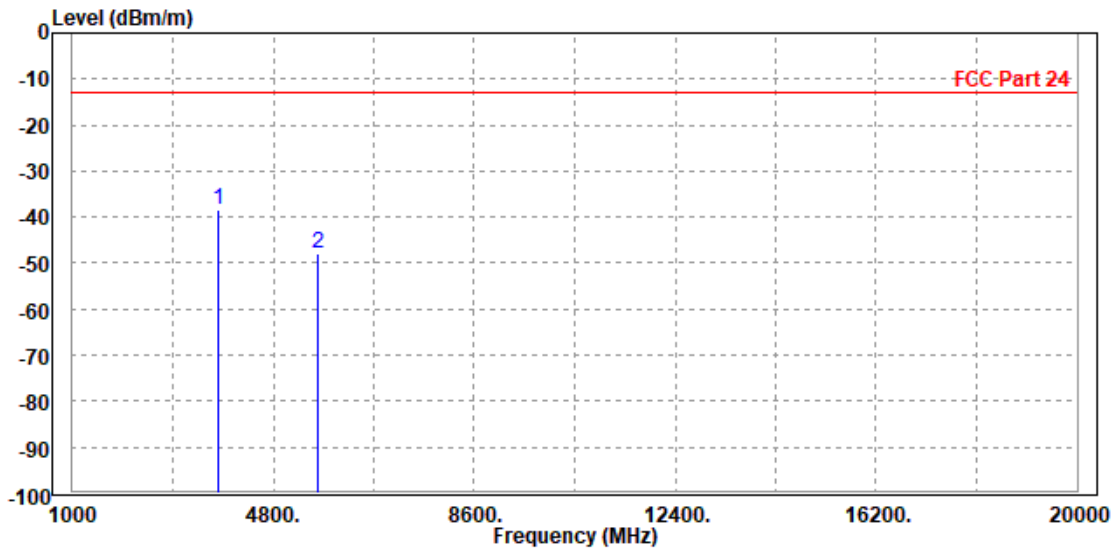




CH 661

MODE	TX channel 661	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	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	-38.40	-47.25	-13.00	-25.40	8.85	Peak	Horizontal
2	5640.000	-47.89	-58.37	-13.00	-34.89	10.48	Peak	Horizontal



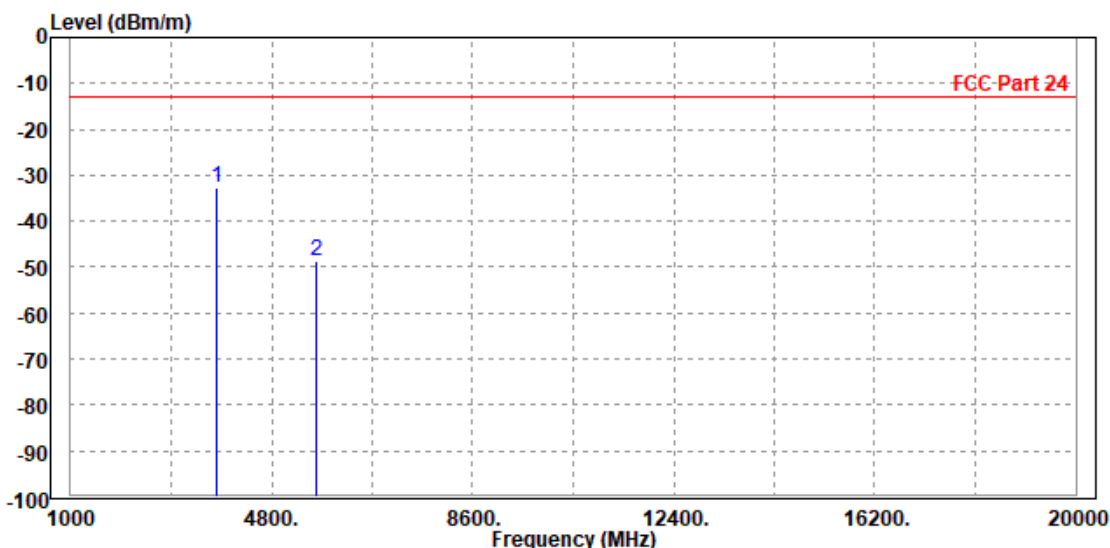


BUREAU VERITAS

Test Report No.: RF200807W004-2

MODE	TX channel 661	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-32.86	-42.13	-13.00	-19.86	9.27	Peak	Vertical
2	5640.000	-48.71	-58.96	-13.00	-35.71	10.25	Peak	Vertical

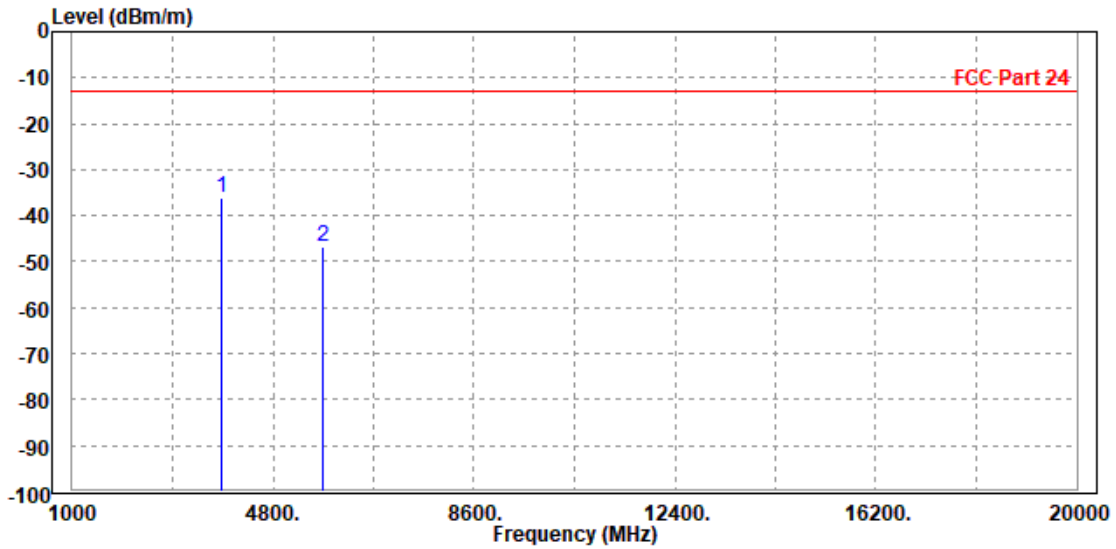




CH 810

MODE	TX channel 810	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	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	-36.03	-44.94	-13.00	-23.03	8.91	Peak	Horizontal
2	5729.400	-46.62	-57.40	-13.00	-33.62	10.78	Peak	Horizontal



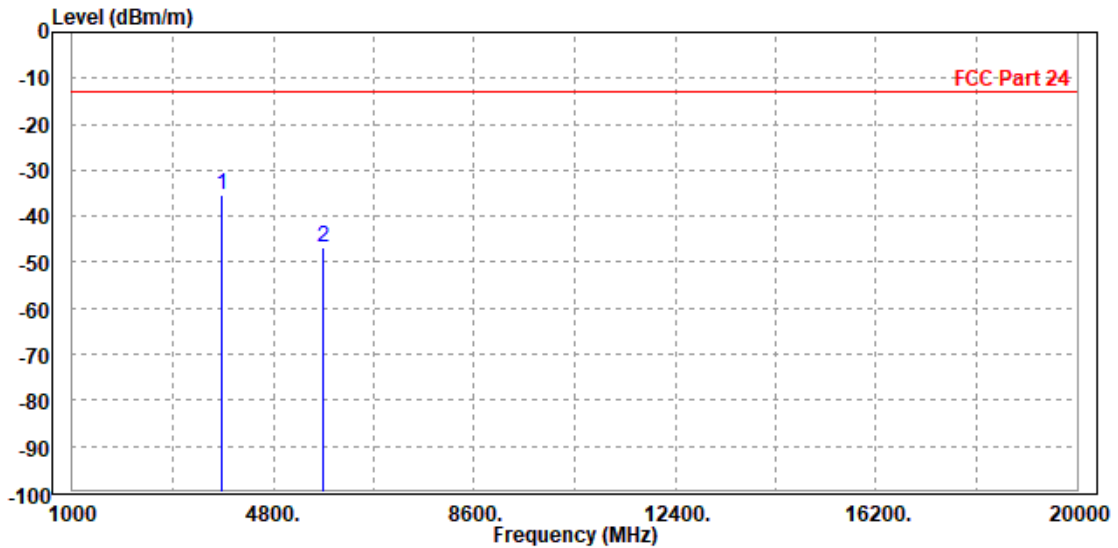


**BUREAU  
VERITAS**

Test Report No.: RF200807W004-2

<b>MODE</b>	TX channel 810	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-35.45	-44.74	-13.00	-22.45	9.29	Peak	Vertical
2	5729.400	-46.81	-57.40	-13.00	-33.81	10.59	Peak	Vertical





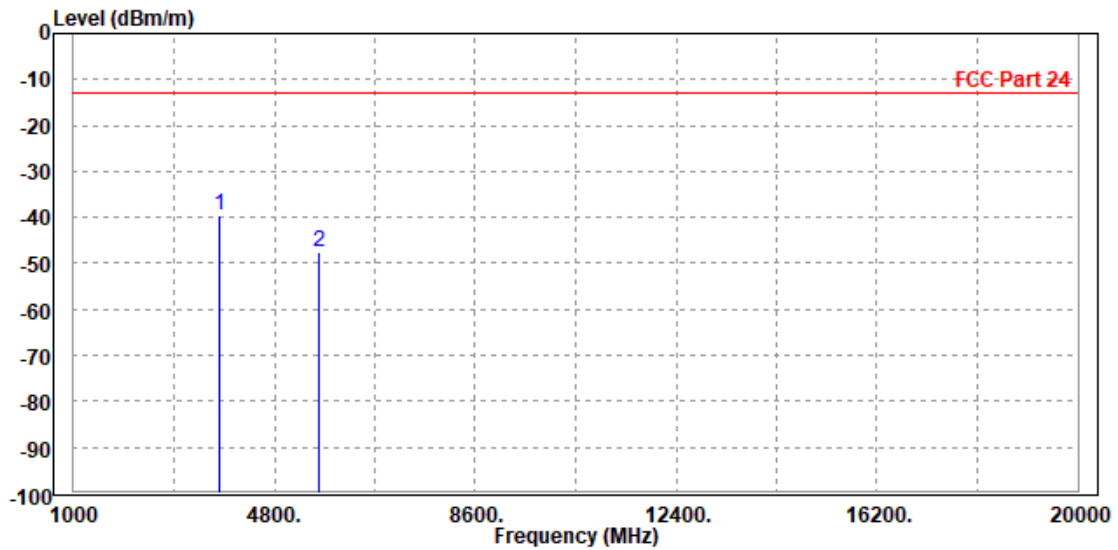


**LTE Band 2**

**CHANNEL BANDWIDTH: 1.4MHz / QPSK**

<b>MODE</b>	TX channel 18900	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

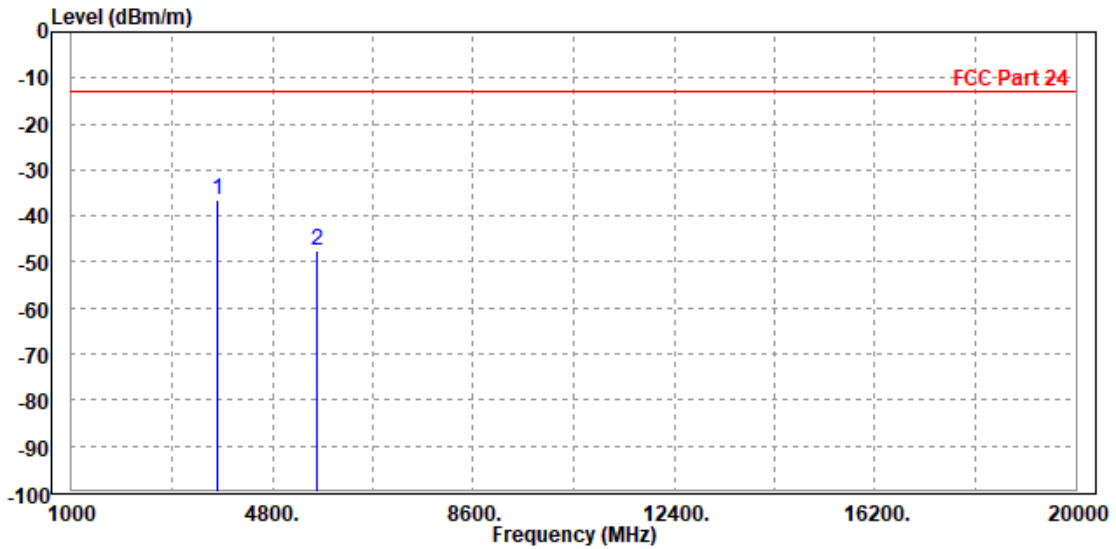
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3755.000	-39.36	-48.21	-13.00	-26.36	8.85	Peak	Horizontal
2	5640.000	-47.53	-58.01	-13.00	-34.53	10.48	Peak	Horizontal





MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-36.54	-45.81	-13.00	-23.54	9.27	Peak	Vertical
2	5640.000	-47.47	-57.72	-13.00	-34.47	10.25	Peak	Vertical

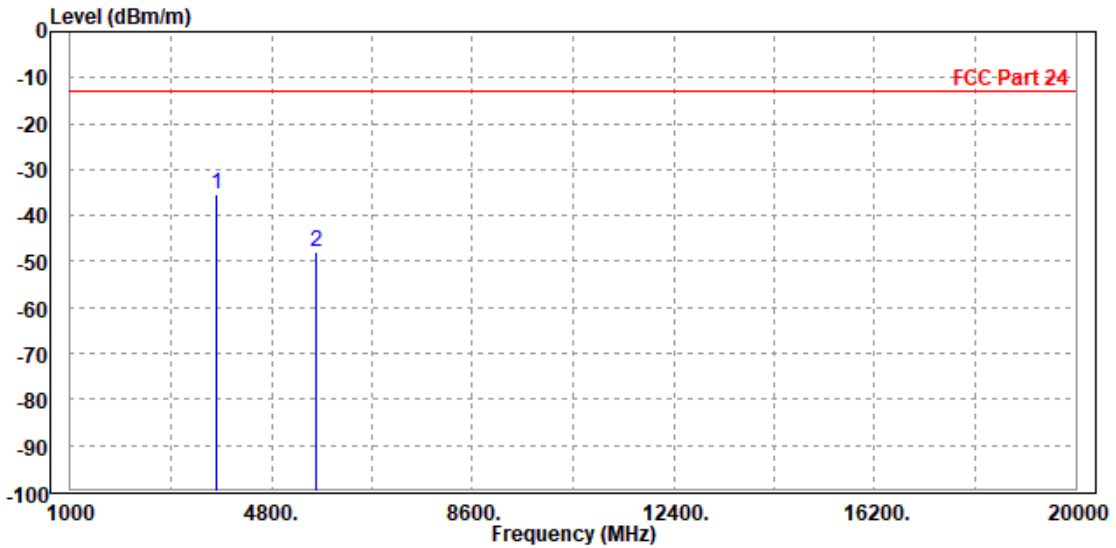




CHANNEL BANDWIDTH: 3MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
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	-35.32	-44.17	-13.00	-22.32	8.85	Peak	Horizontal
2	5640.000	-47.93	-58.41	-13.00	-34.93	10.48	Peak	Horizontal



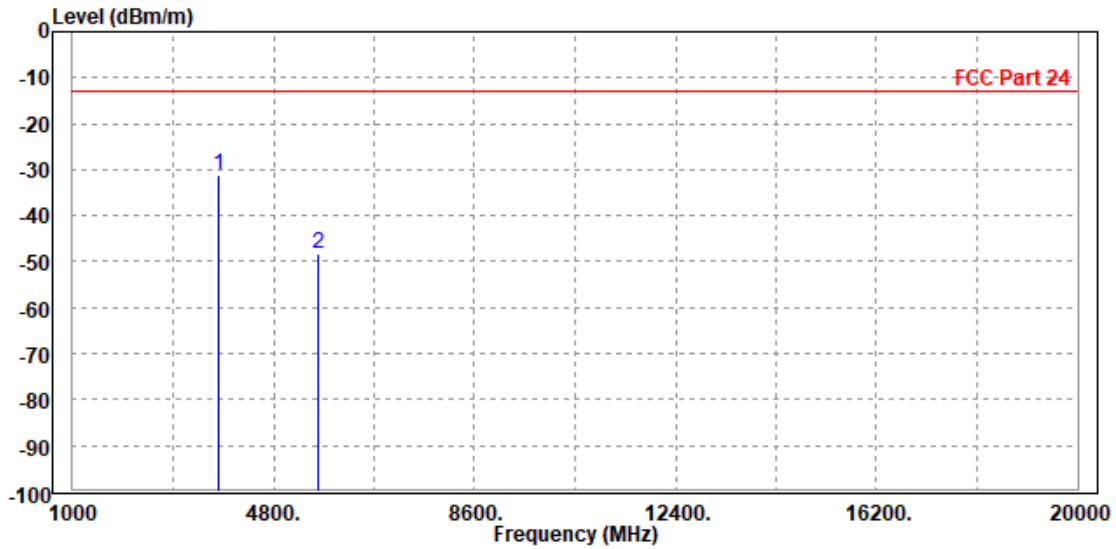


**BUREAU  
VERITAS**

Test Report No.: RF200807W004-2

<b>MODE</b>	TX channel 18900	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-31.14	-40.41	-13.00	-18.14	9.27	Peak	Vertical
2	5640.000	-48.40	-58.65	-13.00	-35.40	10.25	Peak	Vertical





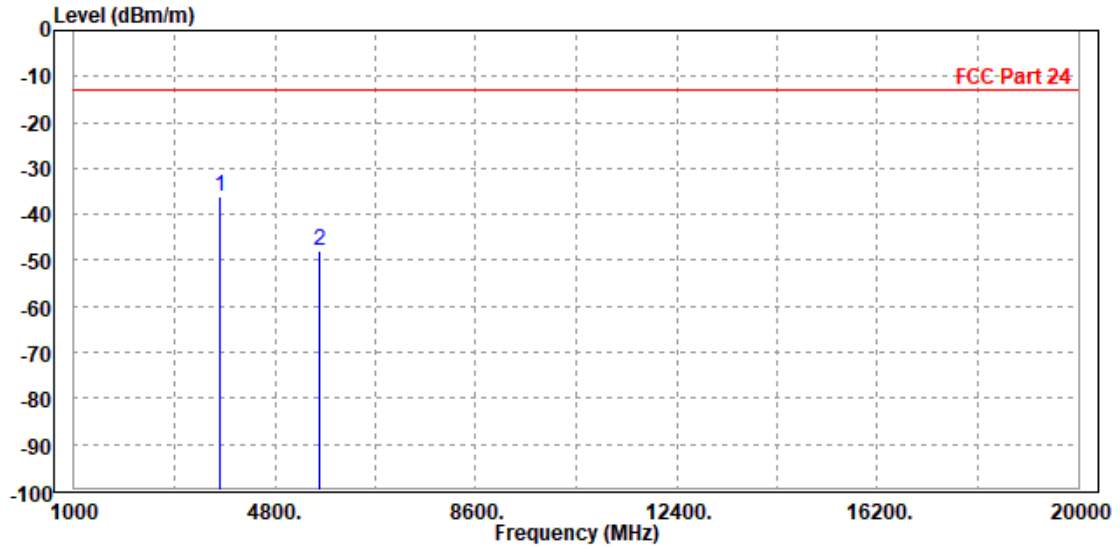
BUREAU VERITAS

Test Report No.: RF200807W004-2

CHANNEL BANDWIDTH: 5MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	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	-36.01	-44.86	-13.00	-23.01	8.85	Peak	Horizontal
2	5640.000	-47.93	-58.41	-13.00	-34.93	10.48	Peak	Horizontal



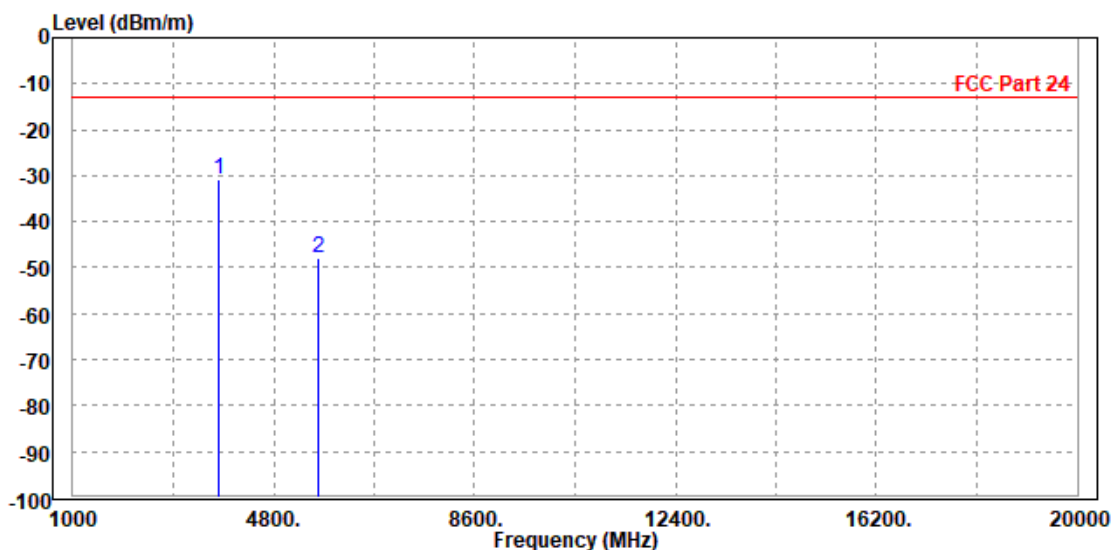


BUREAU VERITAS

Test Report No.: RF200807W004-2

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-30.95	-40.22	-13.00	-17.95	9.27	Peak	Vertical
2	5640.000	-48.08	-58.33	-13.00	-35.08	10.25	Peak	Vertical



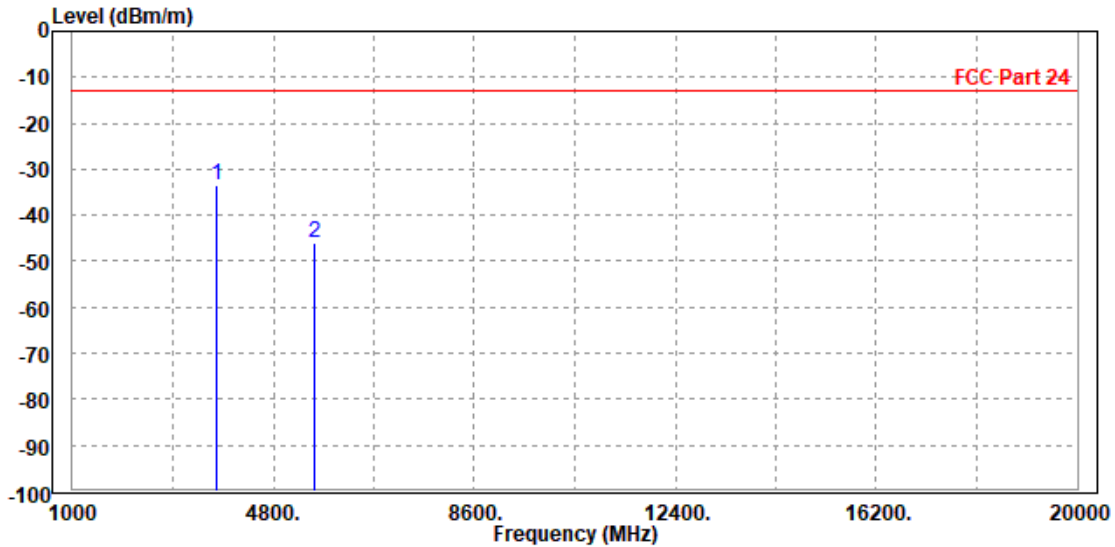


**CHANNEL BANDWIDTH: 10MHz / QPSK**

**CH18650**

<b>MODE</b>	TX channel 18650	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

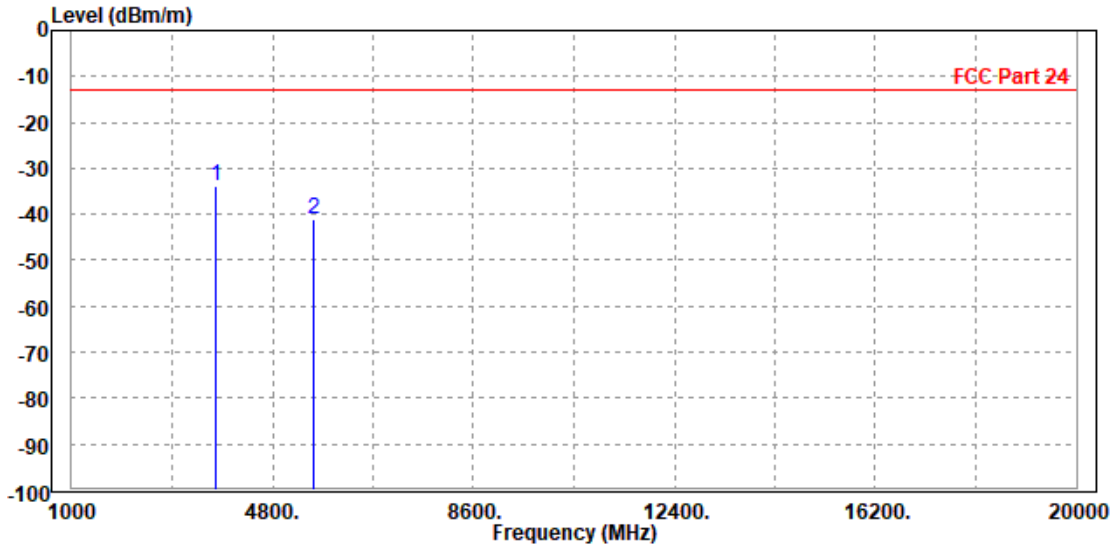
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3717.000	-33.48	-42.29	-13.00	-20.48	8.81	Peak	Horizontal
2	5565.000	-46.10	-56.34	-13.00	-33.10	10.24	Peak	Horizontal





MODE	TX channel 18650	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-33.69	-42.95	-13.00	-20.69	9.26	Peak	Vertical
2	5565.000	-40.90	-50.86	-13.00	-27.90	9.96	Peak	Vertical



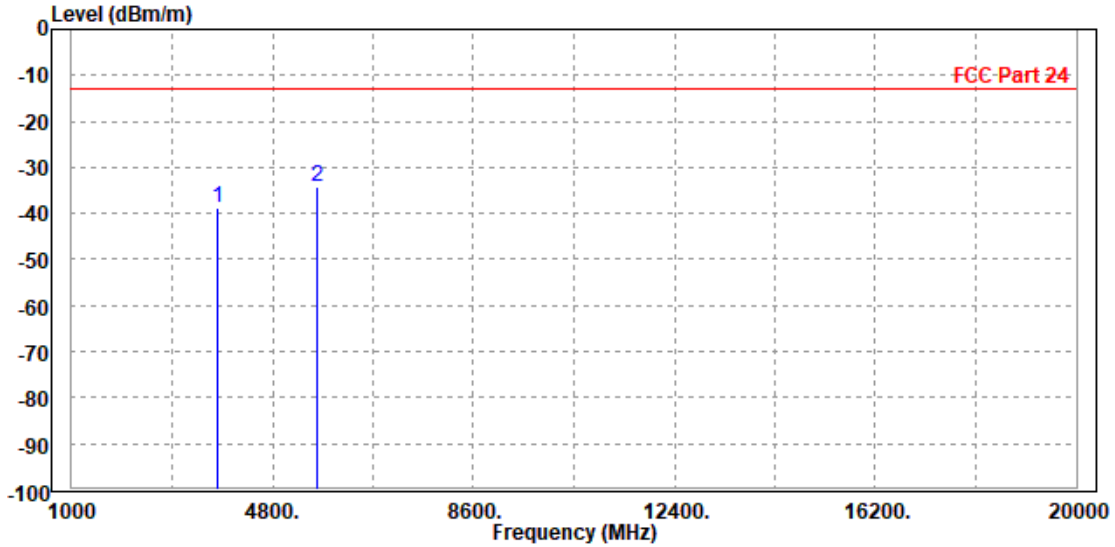




CH18900

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3755.000	-38.86	-47.71	-13.00	-25.86	8.85	Peak	Horizontal
2	PP 5640.000	-34.06	-44.54	-13.00	-21.06	10.48	Peak	Horizontal



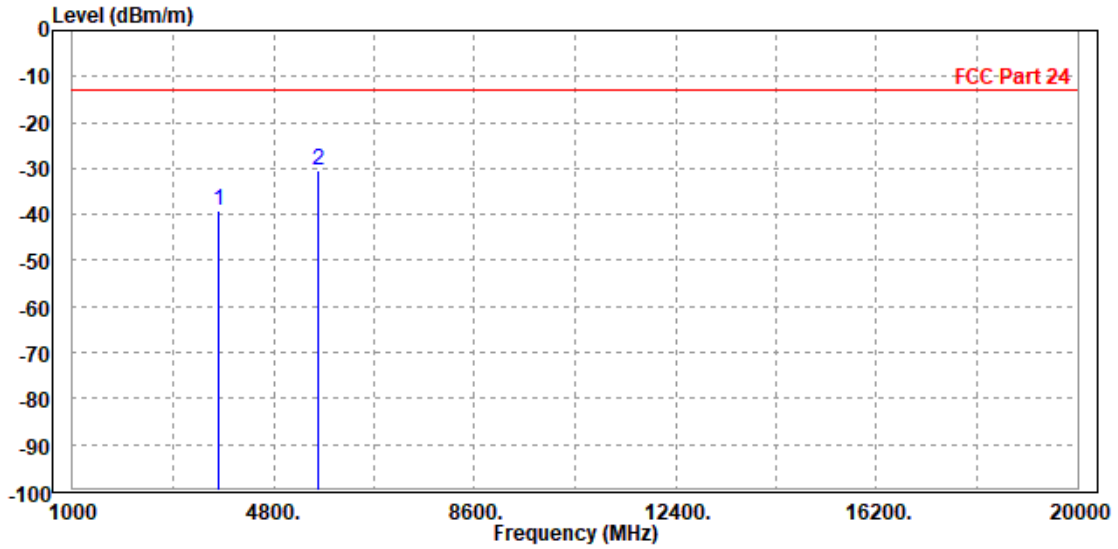


**BUREAU  
VERITAS**

Test Report No.: RF200807W004-2

<b>MODE</b>	TX channel 18900	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3755.000	-39.23	-48.50	-13.00	-26.23	9.27	Peak	Vertical
2	PP 5640.000	-30.28	-40.53	-13.00	-17.28	10.25	Peak	Vertical

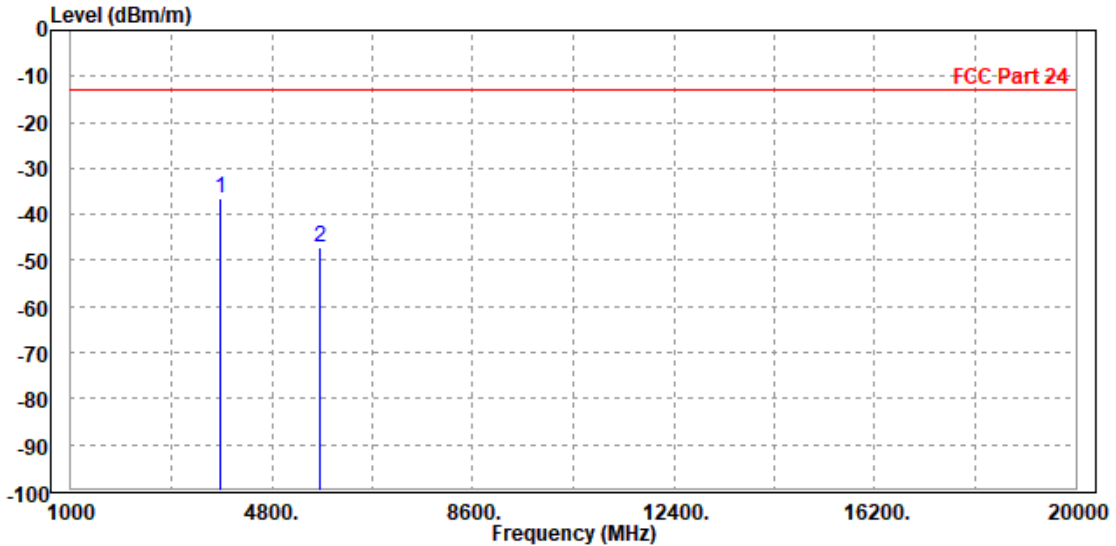




CH19150

MODE	TX channel 19150	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	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	-36.51	-45.42	-13.00	-23.51	8.91	Peak	Horizontal
2	5715.000	-47.17	-57.90	-13.00	-34.17	10.73	Peak	Horizontal



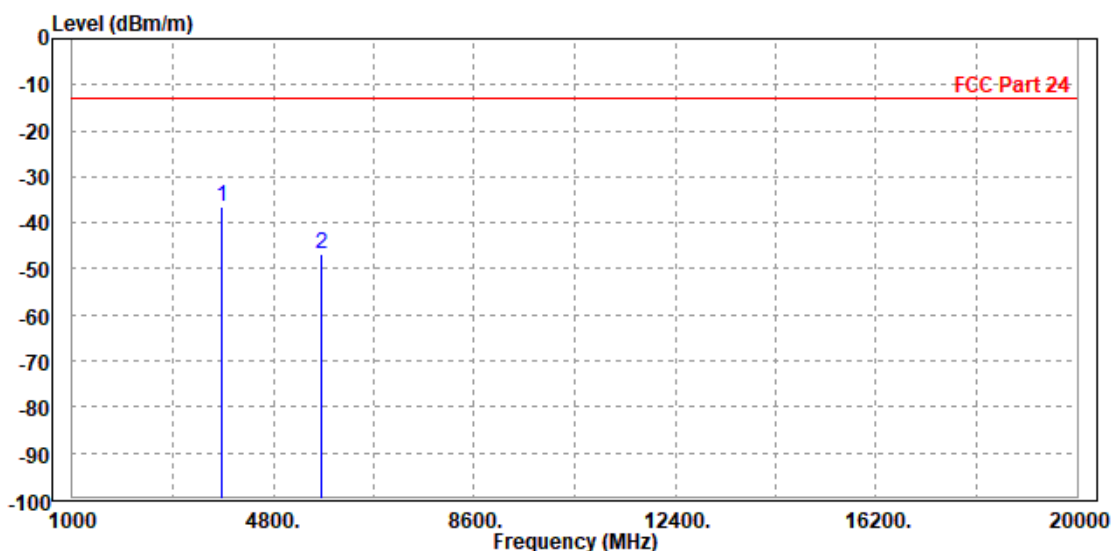


BUREAU VERITAS

Test Report No.: RF200807W004-2

MODE	TX channel 19150	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-36.58	-45.87	-13.00	-23.58	9.29	Peak	Vertical
2	5715.000	-46.81	-57.35	-13.00	-33.81	10.54	Peak	Vertical

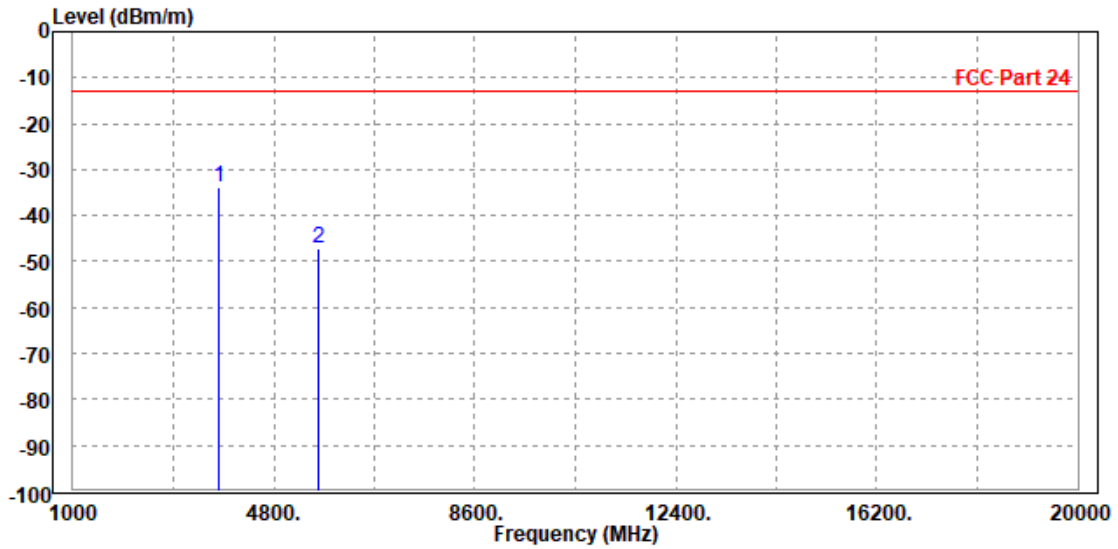




CHANNEL BANDWIDTH: 15MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	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	-33.85	-42.70	-13.00	-20.85	8.85	Peak	Horizontal
2	5640.000	-47.16	-57.64	-13.00	-34.16	10.48	Peak	Horizontal



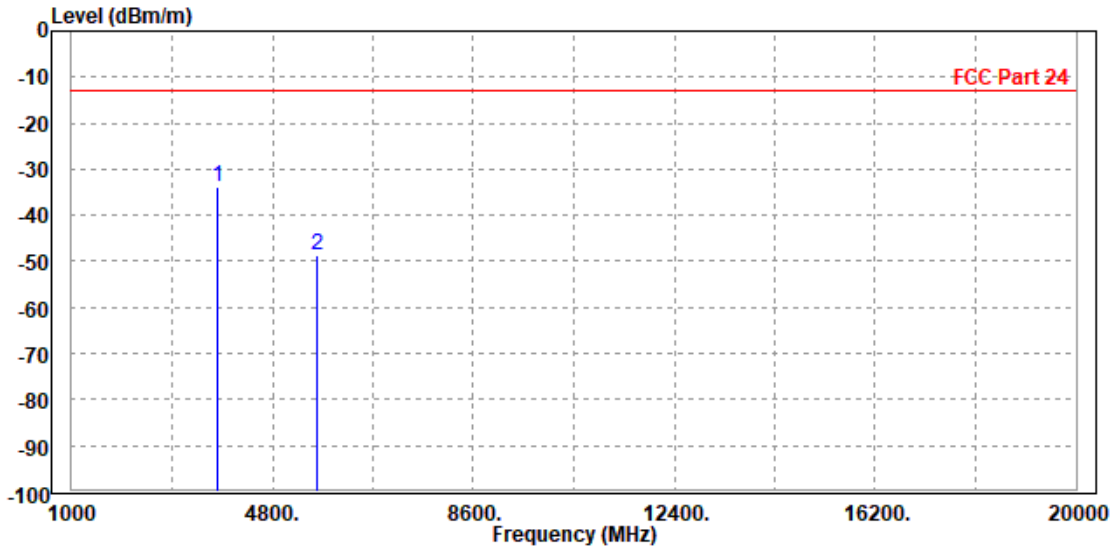


BUREAU VERITAS

Test Report No.: RF200807W004-2

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-33.92	-43.19	-13.00	-20.92	9.27	Peak	Vertical
2	5640.000	-48.59	-58.84	-13.00	-35.59	10.25	Peak	Vertical

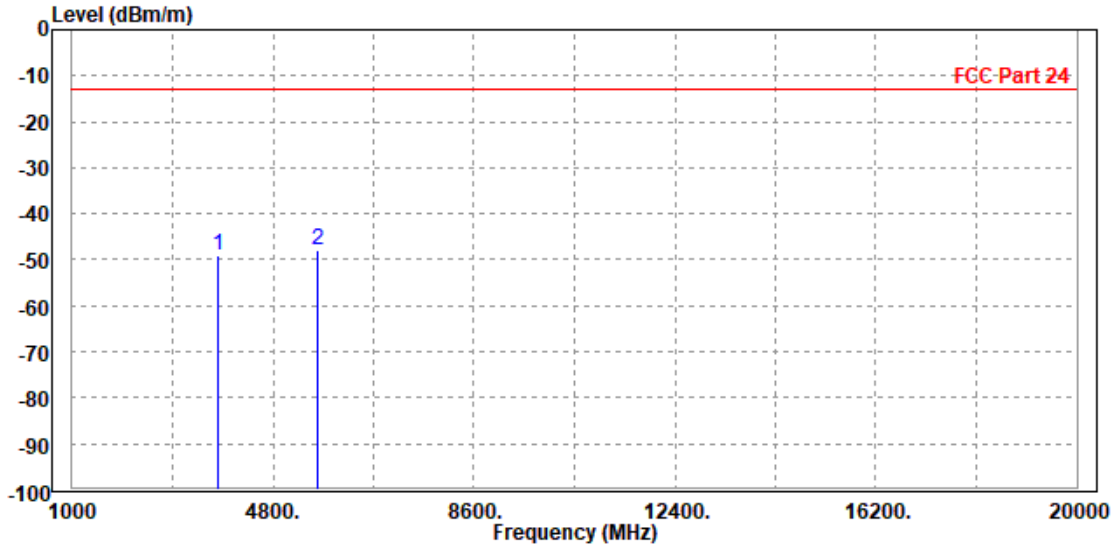




CHANNEL BANDWIDTH: 20MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

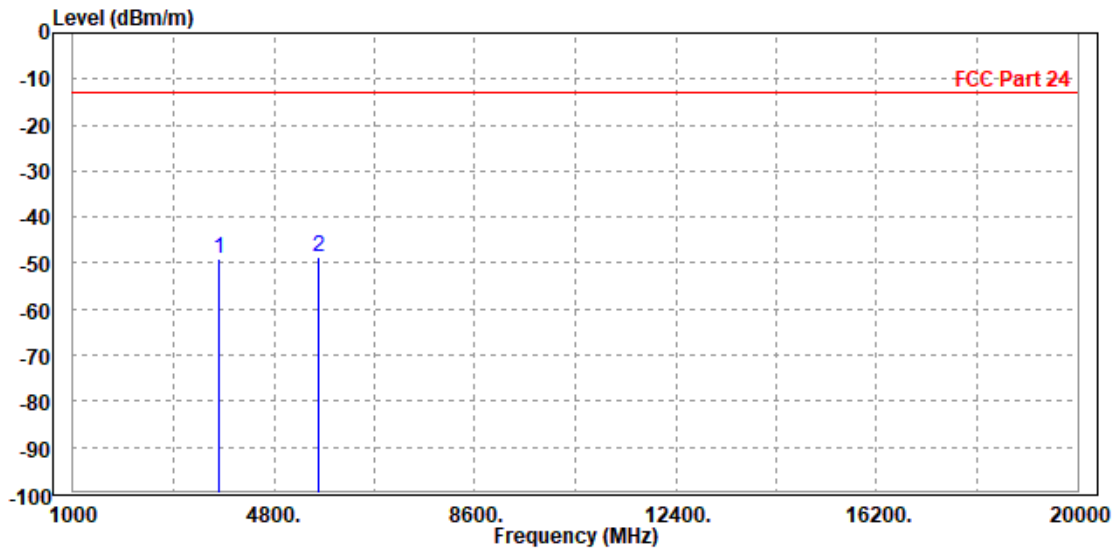
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3755.000	-49.02	-57.87	-13.00	-36.02	8.85	Peak	Horizontal
2 PP	5640.000	-47.89	-58.37	-13.00	-34.89	10.48	Peak	Horizontal





<b>MODE</b>	TX channel 18900	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3755.000	-48.95	-58.22	-13.00	-35.95	9.27	Peak	Vertical
2 PP	5640.000	-48.59	-58.84	-13.00	-35.59	10.25	Peak	Vertical





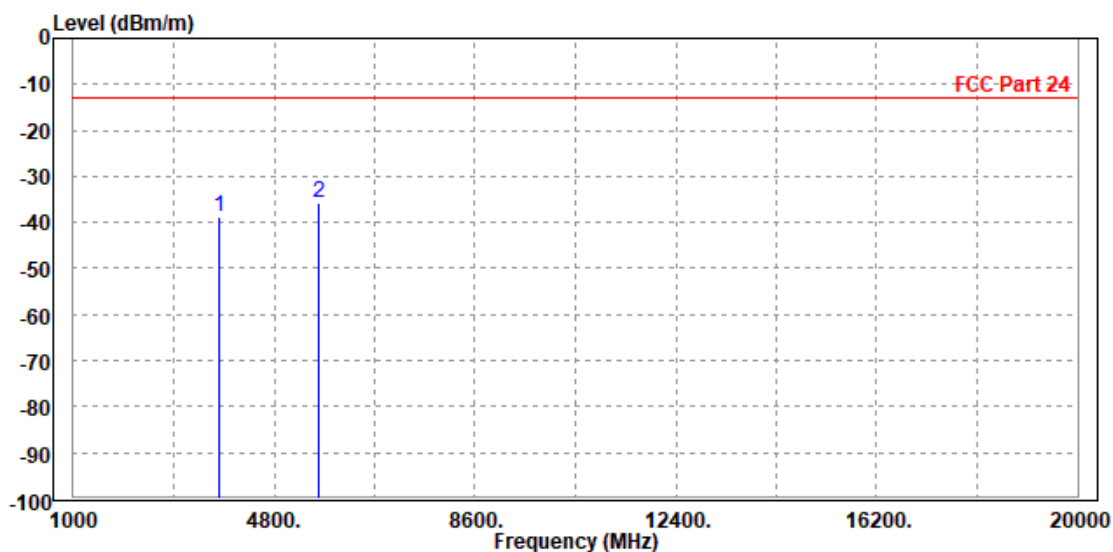


LTE Band 25

CHANNEL BANDWIDTH: 1.4MHz / QPSK

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
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	3774.000	-38.69	-47.56	-13.00	-25.69	8.87	Peak	Horizontal
2 PP	5647.500	-35.86	-46.37	-13.00	-22.86	10.51	Peak	Horizontal



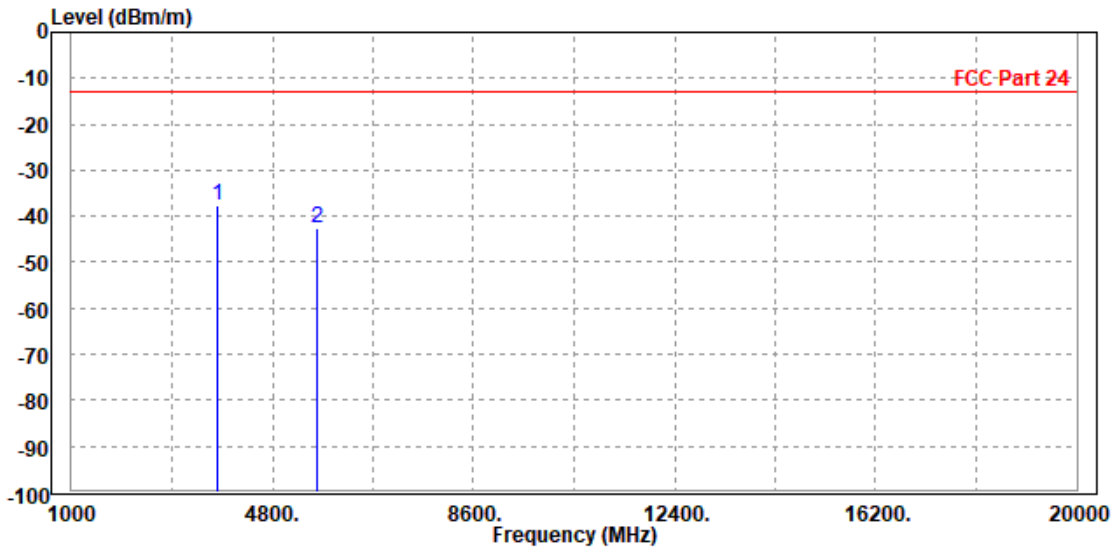


BUREAU VERITAS

Test Report No.: RF200807W004-2

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3774.000	-37.75	-47.02	-13.00	-24.75	9.27	Peak	Vertical
2	5647.500	-42.68	-52.96	-13.00	-29.68	10.28	Peak	Vertical

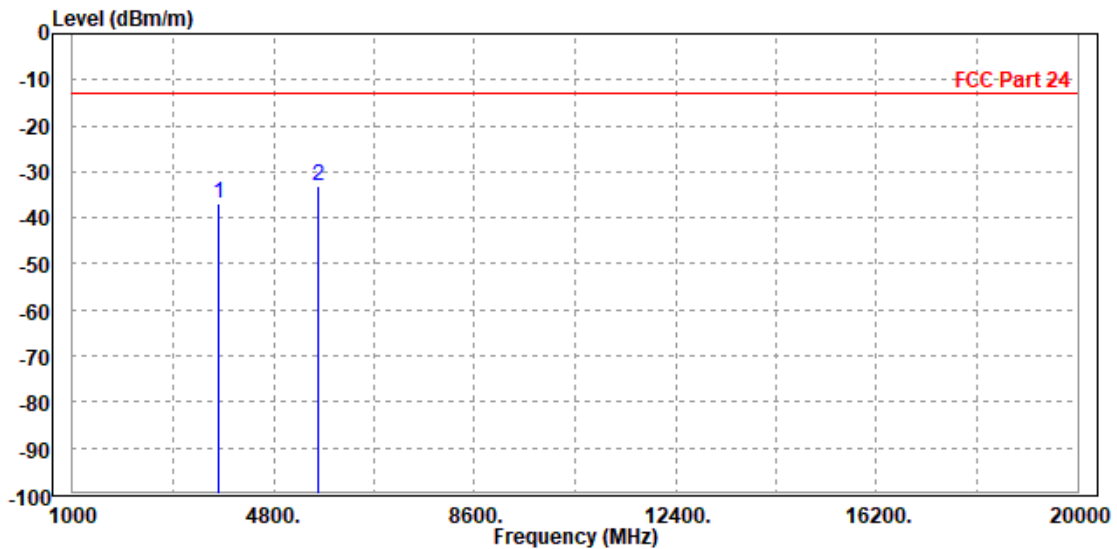




CHANNEL BANDWIDTH: 3MHz / QPSK

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

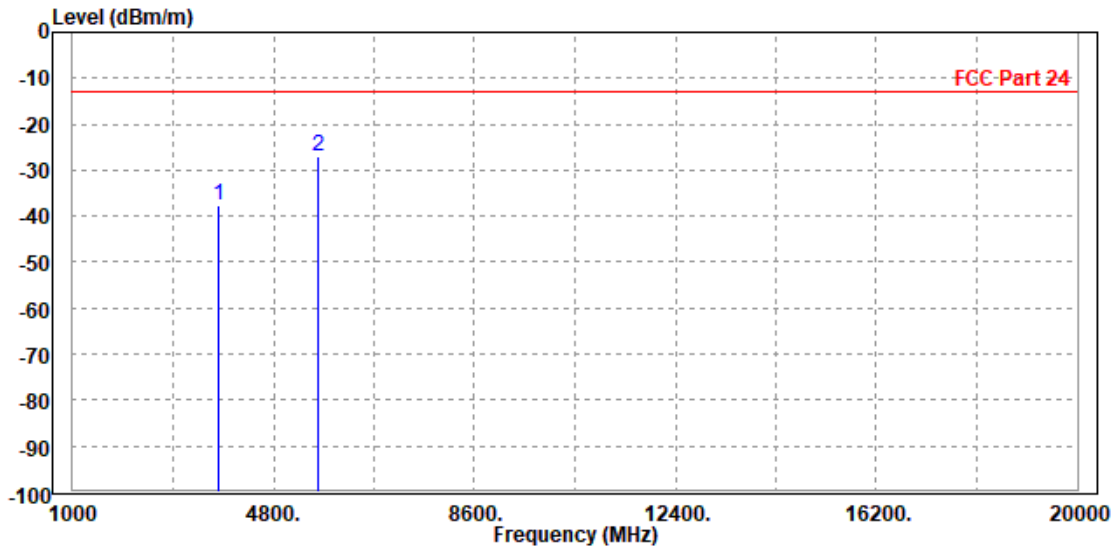
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3774.000	-37.01	-45.88	-13.00	-24.01	8.87	Peak	Horizontal
2	PP 5647.500	-32.89	-43.40	-13.00	-19.89	10.51	Peak	Horizontal





MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3774.000	-37.70	-46.97	-13.00	-24.70	9.27	Peak	Vertical
2	PP 5647.500	-27.04	-37.32	-13.00	-14.04	10.28	Peak	Vertical



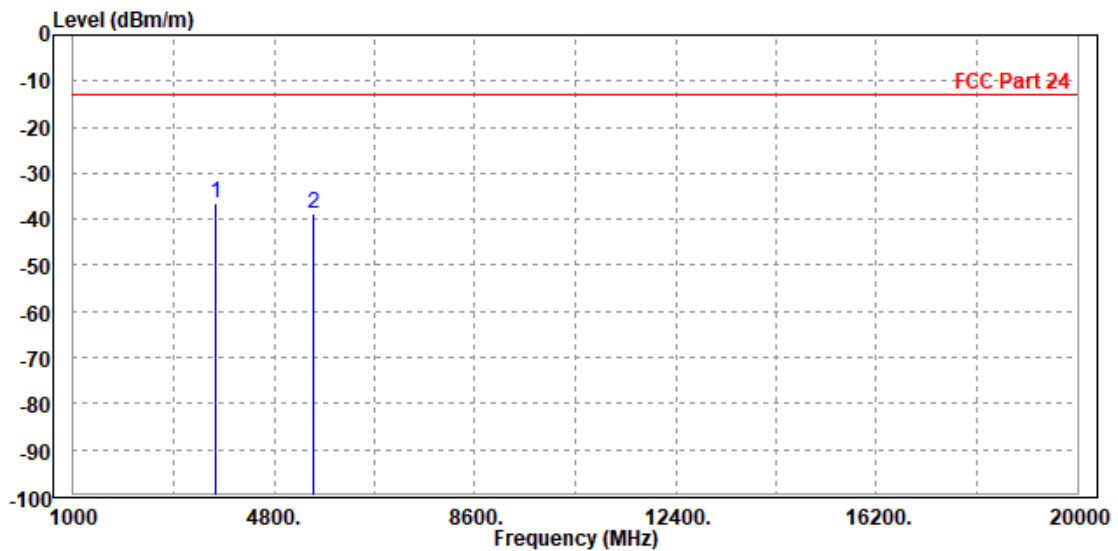


**CHANNEL BANDWIDTH: 5MHz / QPSK**

**CH 26065**

<b>MODE</b>	TX channel 26065	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	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	-36.34	-45.12	-13.00	-23.34	8.78	Peak	Horizontal
2	5557.500	-38.76	-48.97	-13.00	-25.76	10.21	Peak	Horizontal



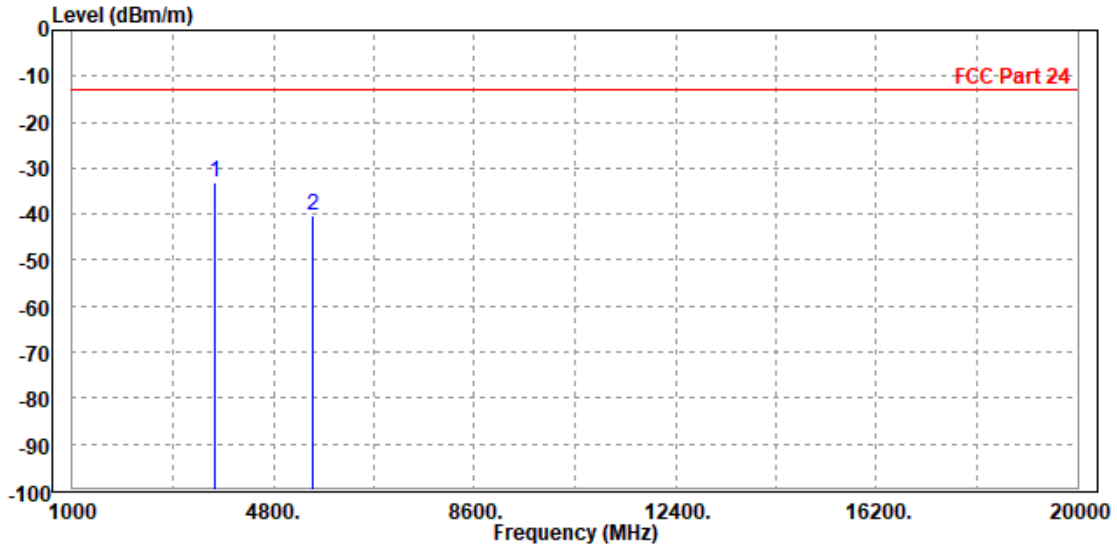


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Test Report No.: RF200807W004-2

<b>MODE</b>	TX channel 26065	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	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	-33.00	-42.25	-13.00	-20.00	9.25	Peak	Vertical
2	5557.500	-40.34	-50.27	-13.00	-27.34	9.93	Peak	Vertical

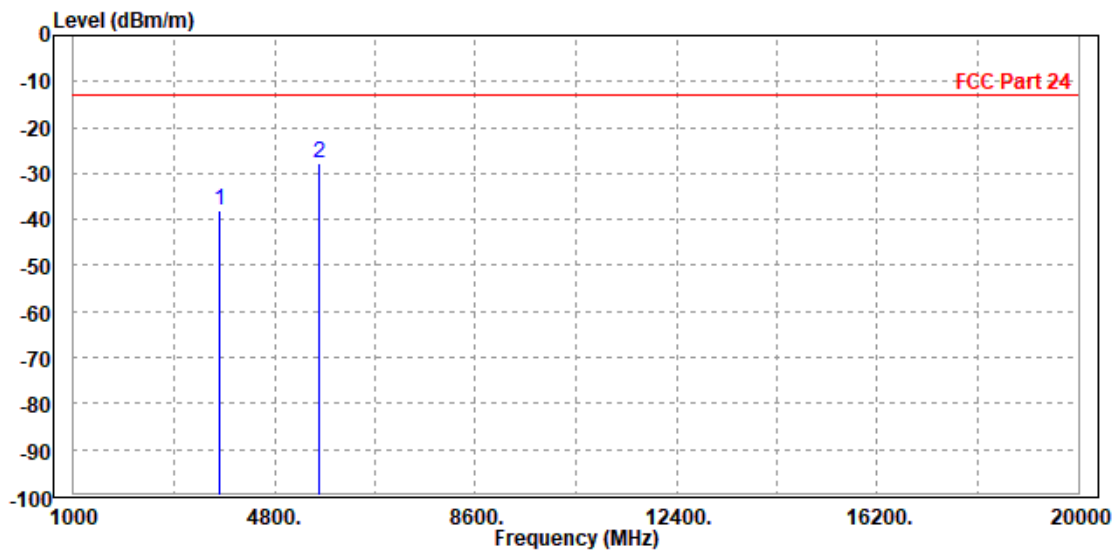




CH 26365

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

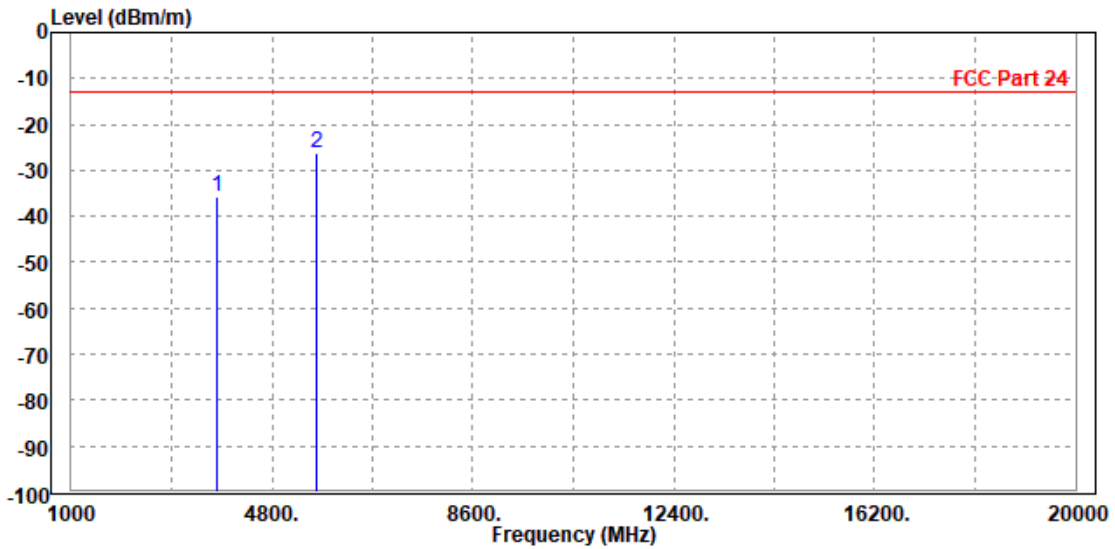
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3774.000	-38.00	-46.87	-13.00	-25.00	8.87	Peak	Horizontal
2 PP	5647.500	-27.87	-38.38	-13.00	-14.87	10.51	Peak	Horizontal





<b>MODE</b>	TX channel 26365	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3774.000	-35.79	-45.06	-13.00	-22.79	9.27	Peak	Vertical
2 PP	5647.500	-26.20	-36.48	-13.00	-13.20	10.28	Peak	Vertical







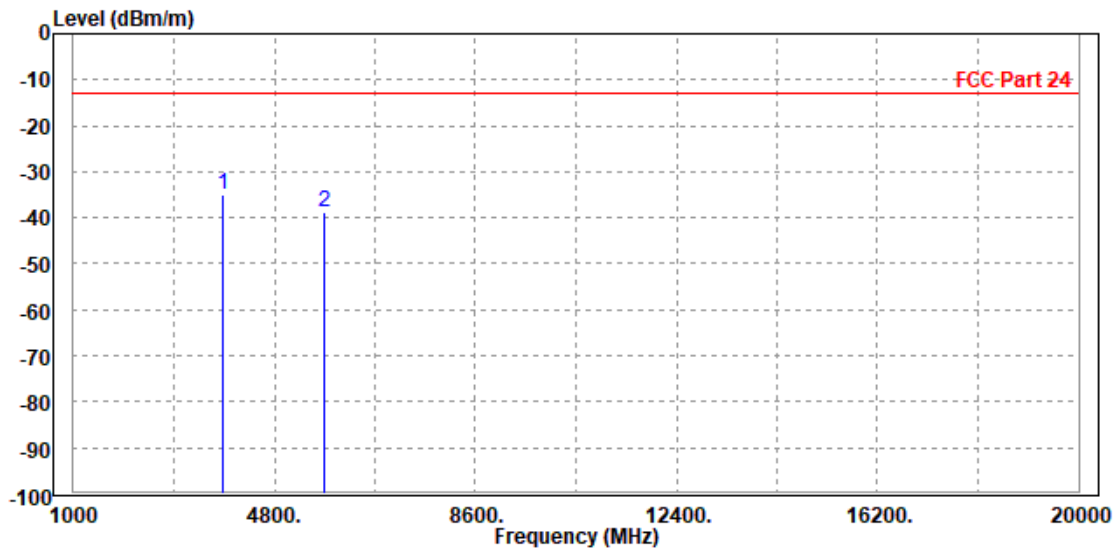
BUREAU VERITAS

Test Report No.: RF200807W004-2

CH 26665

MODE	TX channel 26665	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

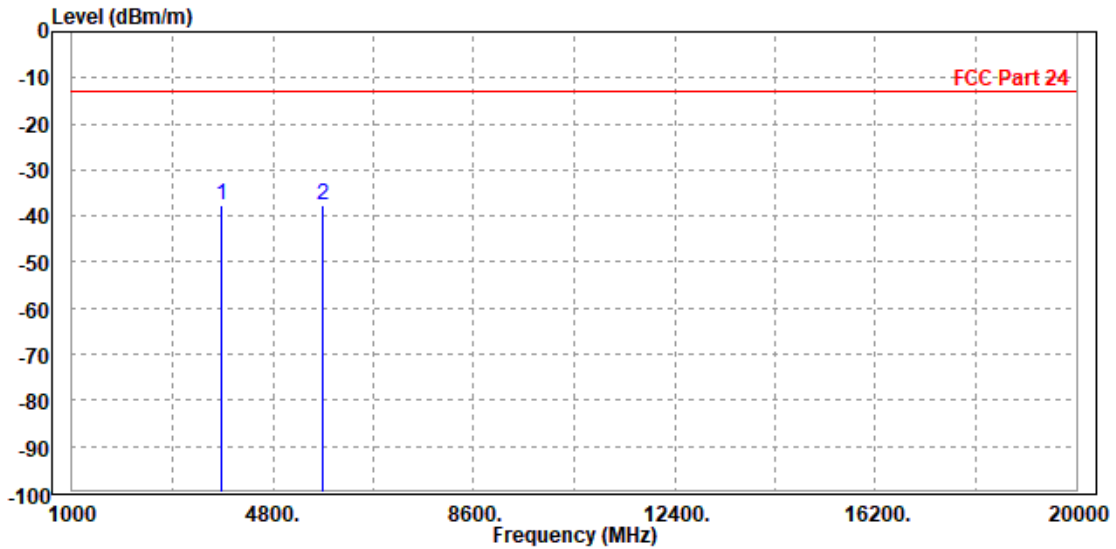
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3831.000	-35.02	-43.95	-13.00	-22.02	8.93	Peak	Horizontal
2	5737.500	-38.62	-49.42	-13.00	-25.62	10.80	Peak	Horizontal





MODE	TX channel 26665	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
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	3831.000	-37.73	-47.02	-13.00	-24.73	9.29	Peak	Vertical
2	PP 5737.500	-37.69	-48.32	-13.00	-24.69	10.63	Peak	Vertical

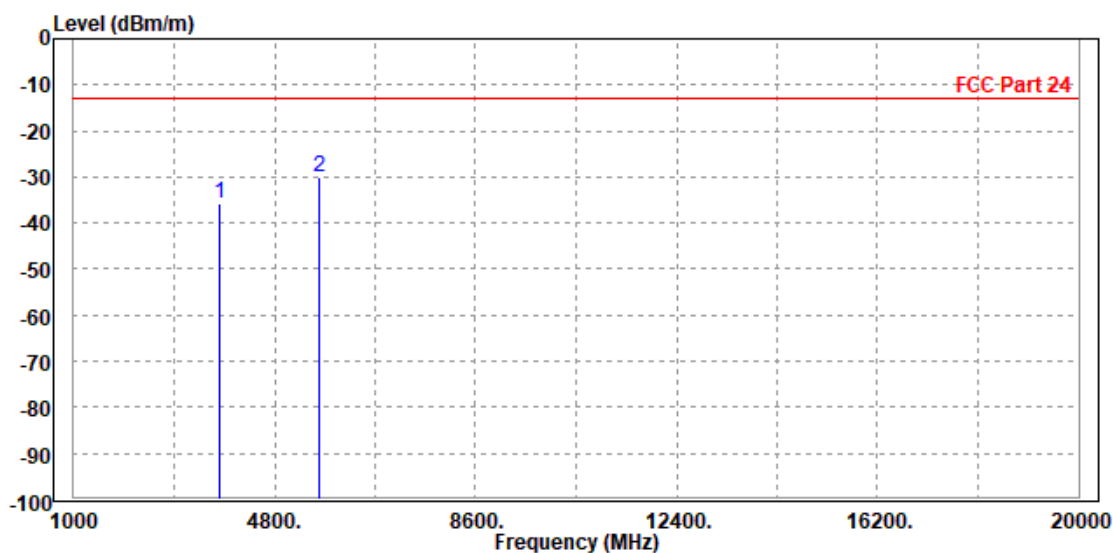




CHANNEL BANDWIDTH: 10MHz / QPSK

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

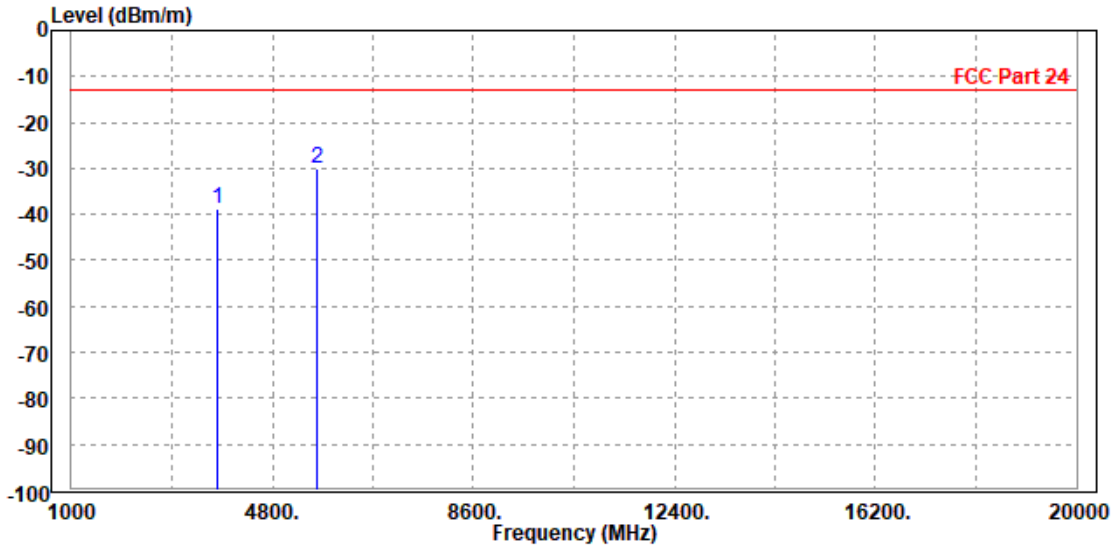
	Freq	Level	Read Level	Limit	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3774.000	-35.65	-44.52	-13.00	-22.65	8.87	Peak	Horizontal
2 PP	5647.500	-30.20	-40.71	-13.00	-17.20	10.51	Peak	Horizontal





MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3774.000	-38.71	-47.98	-13.00	-25.71	9.27	Peak	Vertical
2 PP	5647.500	-29.95	-40.23	-13.00	-16.95	10.28	Peak	Vertical





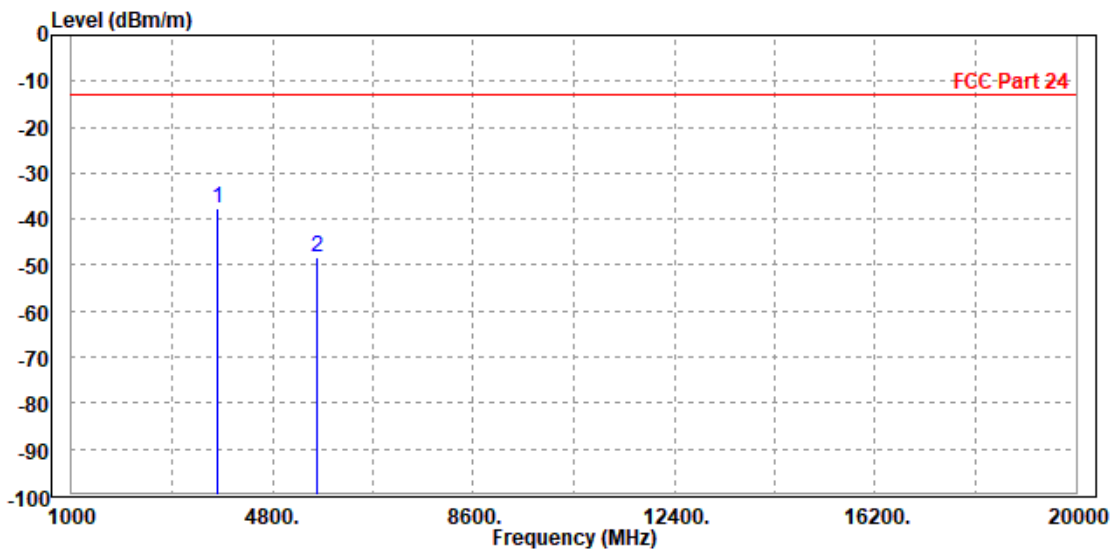
**BUREAU  
VERITAS**

Test Report No.: RF200807W004-2

**CHANNEL BANDWIDTH: 15MHz / QPSK**

<b>MODE</b>	TX channel 26365	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3774.000	-37.76	-46.63	-13.00	-24.76	8.87	Peak	Horizontal
2	5647.500	-48.40	-58.91	-13.00	-35.40	10.51	Peak	Horizontal



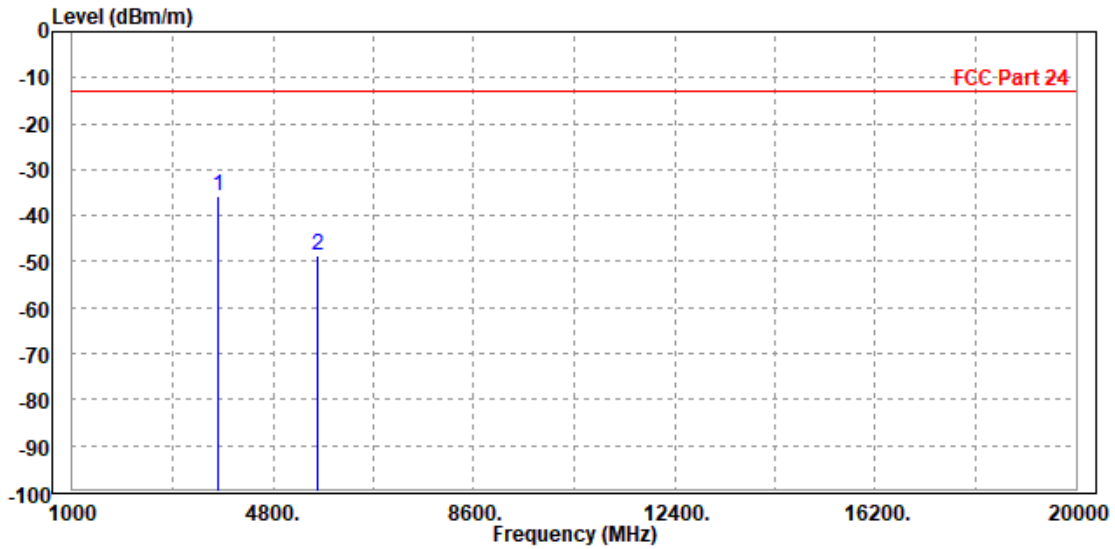


BUREAU VERITAS

Test Report No.: RF200807W004-2

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3774.000	-35.59	-44.86	-13.00	-22.59	9.27	Peak	Vertical
2	5647.500	-48.65	-58.93	-13.00	-35.65	10.28	Peak	Vertical

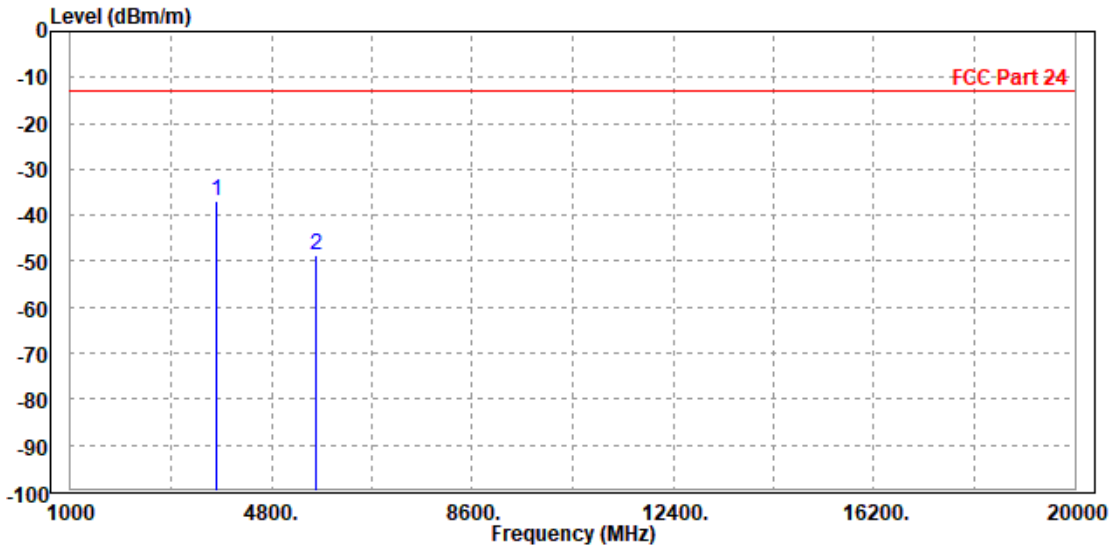




CHANNEL BANDWIDTH: 20MHz / QPSK

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from USB Host Unit
TESTED BY	Jacky Liu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

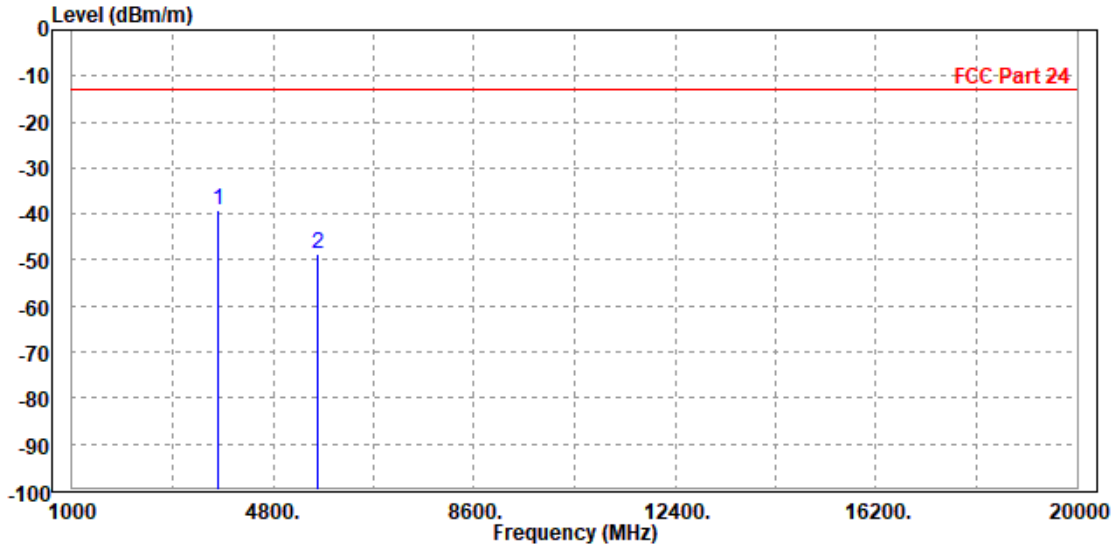
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3774.000	-36.74	-45.61	-13.00	-23.74	8.87	Peak	Horizontal
2	5647.500	-48.79	-59.30	-13.00	-35.79	10.51	Peak	Horizontal





<b>MODE</b>	TX channel 26365	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from USB Host Unit
<b>TESTED BY</b>	Jacky Liu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3774.000	-39.34	-48.61	-13.00	-26.34	9.27	Peak	Vertical
2	5647.500	-48.84	-59.12	-13.00	-35.84	10.28	Peak	Vertical





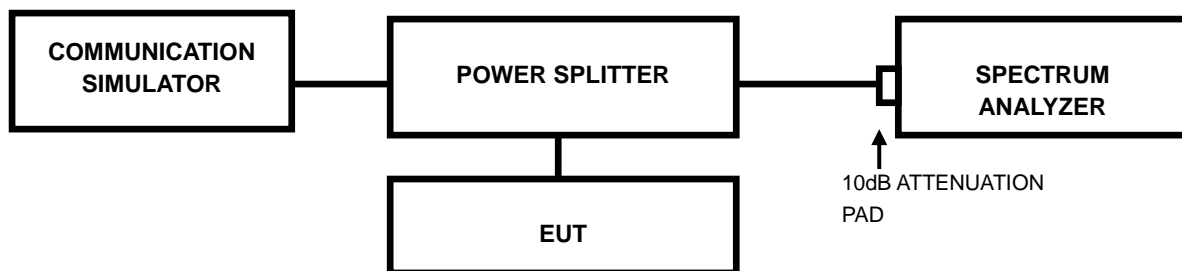


### 3.7 PEAK TO AVERAGE RATIO

#### 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  $\geq$  signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.



**BUREAU** Test Report No.: RF200807W004-2  
**VERITAS**

### 3.7.4 TEST RESULTS

**N/A**



**BUREAU VERITAS** Test Report No.: RF200807W004-2

## 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:

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



**BUREAU** Test Report No.: RF200807W004-2  
**VERITAS**

## **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---**