



BUREAU  
VERITAS

Test Report No.: ICP20120008-1



Certificate # 3939.01

# IC TEST REPORT (RSS- 132)

**Product:** Boron 2G/3G

**Model No.:** BRN310, BRN314

**IC:** 20127-BRN310

**Applicant:** Particle Industries, Inc

**Address:** 126 Post St, 4th floor, San Francisco, CA 94108 USA

**Manufacturer:** Particle Industries, Inc

**Address:** 126 Post St, 4th floor, San Francisco, CA 94108 USA

**Prepared by:** BV 7Layers Communications Technology (Shenzhen) Co. Ltd

**Lab Location:** No.B102, Dazu Chuangxin Mansion, North of Beihuan Avenue, North Area, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China

**TEL:** +86 755 8869 6566

**FAX:** +86 755 8869 6577

**E-MAIL:** customerservice.sw@bureauveritas.com

**Report No.:** ICP20120008-1

**Received Date:** Sep. 21, 2018

**Test Date:** Sep. 24, 2018 ~ Oct. 22, 2018

**Issued Date:** Dec. 25, 2020

This report should not be used by the client to claim product certification, approval, or endorsement by A2LA or any government agencies.

This report is governed by, and incorporates by reference, CPS Conditions of Service as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



# TABLE OF CONTENTS

**RELEASE CONTROL RECORD .....4**

**1 CERTIFICATION .....5**

**2 SUMMARY OF TEST RESULTS .....6**

2.1 MEASUREMENT UNCERTAINTY .....6

2.2 TEST SITE AND INSTRUMENTS .....7

**3 GENERAL INFORMATION.....8**

3.1 GENERAL DESCRIPTION OF EUT .....8

3.2 CONFIGURATION OF SYSTEM UNDER TEST .....9

3.3 DESCRIPTION OF SUPPORT UNITS .....10

3.4 TEST ITEM AND TEST CONFIGURATION .....10

3.5 EUT OPERATING CONDITIONS.....12

3.6 GENERAL DESCRIPTION OF APPLIED STANDARDS .....12

**4 TEST TYPES AND RESULTS .....13**

4.1 OUTPUT POWER MEASUREMENT .....13

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT .....13

4.1.2 TEST PROCEDURES .....13

4.1.3 TEST SETUP .....14

4.1.4 TEST RESULTS .....15

4.2 FREQUENCY STABILITY MEASUREMENT .....17

4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT .....17

4.2.2 TEST PROCEDURE .....17

4.2.3 TEST SETUP .....17

4.2.4 TEST RESULTS .....17

4.3 OCCUPIED BANDWIDTH MEASUREMENT .....18

4.3.1 TEST PROCEDURES .....18

4.3.2 TEST SETUP .....18

4.3.3 TEST RESULTS .....18

4.4 BAND EDGE MEASUREMENT .....19

4.4.1 LIMITS OF BAND EDGE MEASUREMENT .....19

4.4.2 TEST SETUP .....19

4.4.3 TEST PROCEDURES .....20

4.4.4 TEST RESULTS .....20

4.5 CONDUCTED SPURIOUS EMISSIONS.....21

4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT .....21

4.5.2 TEST PROCEDURE .....21

4.5.3 TEST SETUP .....21

4.5.4 TEST RESULTS .....21

4.6 RADIATED EMISSION MEASUREMENT .....22

4.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT .....22

4.6.2 TEST PROCEDURES .....22

4.6.3 DEVIATION FROM TEST STANDARD .....22

4.6.4 TEST SETUP .....23

4.6.5 TEST RESULTS .....25

4.7 RECEIVER SPURIOUS EMISSIONS .....45

4.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT .....45



**BUREAU  
VERITAS**

**Test Report No.: ICP20120008-1**

4.7.2	TEST PROCEDURES .....	46
4.7.3	DEVIATION FROM TEST STANDARD .....	46
4.7.4	TEST SETUP .....	47
4.7.5	TEST RESULT .....	48
4.8	PEAK TO AVERAGE RATIO .....	49
4.8.1	LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT .....	49
4.8.2	TEST SETUP .....	49
4.8.3	TEST PROCEDURES .....	49
4.8.4	TEST RESULTS .....	49
<b>5</b>	<b>INFORMATION ON THE TESTING LABORATORIES .....</b>	<b>50</b>
<b>6</b>	<b>APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB .....</b>	<b>51</b>



## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
IC180921W002-1	Original release	Nov. 15, 2018
ICP20120008-1	Based on the original report IC180921W002-1 change the product name and models, which not affect RF function. So all the test data re-use from IC180921W002-1.	Dec. 25, 2020



# 1 CERTIFICATION

**PRODUCT:** Boron 2G/3G

**BRAND NAME:** Particle Industries, Inc

**MODEL NAME:** BRN310, BRN314

**APPLICANT:** Particle Industries, Inc

**TESTED:** Sep. 24, 2018 ~ Oct. 22, 2018

**TEST SAMPLE:** Production Unit

**STANDARDS:** **Canada RSS-132, Issue 3, January 2013**

**Canada RSS-Gen, Issue 5, April 2018**

**ANSI C63.26 - 2015**

The above equipment has been tested by **BV 7Layers Communications Technology (Shenzhen) Co. Ltd** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY :** Alex **DATE :** Dec. 25, 2020  
( Alex Chen / Engineer)

**APPROVED BY :** Luke Lu **DATE :** Dec. 25, 2020  
( Luke Lu / Manager)



## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: IC RSS-132, RSS-Gen			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
<b>RSS-Gen</b>			
4.6	Occupied Bandwidth	N/A(see note)	Meet the requirement.
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
<b>RSS-132</b>			
5.3	Frequency Stability AFC Freq. Error vs. Voltage AFC Freq. Error vs. Temperature	N/A(see note)	Meet the requirement of limit.
5.4	Maximum Peak Output Power	N/A(see note)	Meet the requirement of limit.
5.4	peak-to-average power ratio	N/A(see note)	Meet the requirement of limit.
5.5	Band Edge Measurements	N/A(see note)	Meet the requirement of limit.
5.5	Conducted Spurious Emissions	N/A(see note)	Meet the requirement of limit.
5.5	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -19.08dB at 45.380MHz.
5.6	Receiver Spurious Emissions	PASS	Meet the requirement of limit

Note: more detail please refer to the original report IC180921W002-1

\* Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01

### 2.1 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	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.68dB
	30MHz ~ 1GMHz	3.26dB
	1GHz ~ 18GHz	4.48dB
	18GHz ~ 40GHz	4.12dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



## 2.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 16,18	Mar. 15,19
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Mar. 16,18	Mar. 15,19
Bilog Antenna 1	ETS-LINDGREN	3143B	00161964	Nov. 26,16	Nov. 25,18
Bilog Antenna 2	ETS-LINDGREN	3143B	00161965	Nov. 26,16	Nov. 25,18
Horn Antenna 1	ETS-LINDGREN	3117	00168728	Nov. 26,16	Nov. 25,18
Horn Antenna 2	ETS-LINDGREN	3117	00168692	Nov. 26,16	Nov. 25,18
Loop antenna	Daze	ZN30900A	0708	Nov. 20,17	Nov. 19,18
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40 -K-SG/QMS-00 361	15433	Dec. 16,16	Dec. 15,18
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Mar. 02,18	Mar. 01,19
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jul. 09,18	Jul. 08,19
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jul. 09,18	Jul. 08,19
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jul. 09,18	Jul. 08,19
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn- CT0001143-1216	Apr. 21,18	Apr. 20,19
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-SM A	1505	Jul. 09,18	Jul. 08,19
Power Meter	Anritsu	ML2495A	1506002	Mar. 02,18	Mar. 01,19
Power Sensor	Anritsu	MA2411B	1339352	Mar. 16,18	Mar. 15,19
Humid & Temp Programmable Tester	Juyi	ITH-120-45-CP -AR	IAA1504-001	Jul. 09,18	Jul. 08,19
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Mar. 13,18	Mar. 12,19

**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 IC test Site Registration No. is 21771-1.



### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	Boron 2G/3G	
<b>MODEL NAME</b>	BRN310, BRN314	
<b>POWER SUPPLY</b>	5.0Vdc (adapter) 3.7Vdc (battery)	
<b>MODULATION TYPE</b>	<b>GPRS/EDGE</b>	GMSK
	<b>WCDMA</b>	BPSK,QPSK
<b>FREQUENCY RANGE</b>	<b>GPRS/EDGE</b>	824.2MHz ~ 848.8MHz
	<b>WCDMA</b>	826.4MHz ~ 846.6MHz
<b>MAX. ERP POWER</b>	<b>GPRS</b>	553mW
	<b>EDGE</b>	340mW
	<b>WCDMA</b>	138mW
<b>EMISSION DESIGNATOR</b>	<b>GPRS</b>	245KGXW
	<b>EDGE</b>	250KG7W
	<b>WCDMA</b>	4M08F9W
<b>ANTENNA TYPE</b>	Fixed External antenna with 0dBi gain	
<b>ANTENNA PORT</b>	IPEX antenna connector	
<b>HW VERSION</b>	V1.00	
<b>SW VERSION</b>	V1.00	
<b>I/O PORTS</b>	Refer to user's manual	
<b>DATA CABLE</b>	N/A	

**NOTE:**

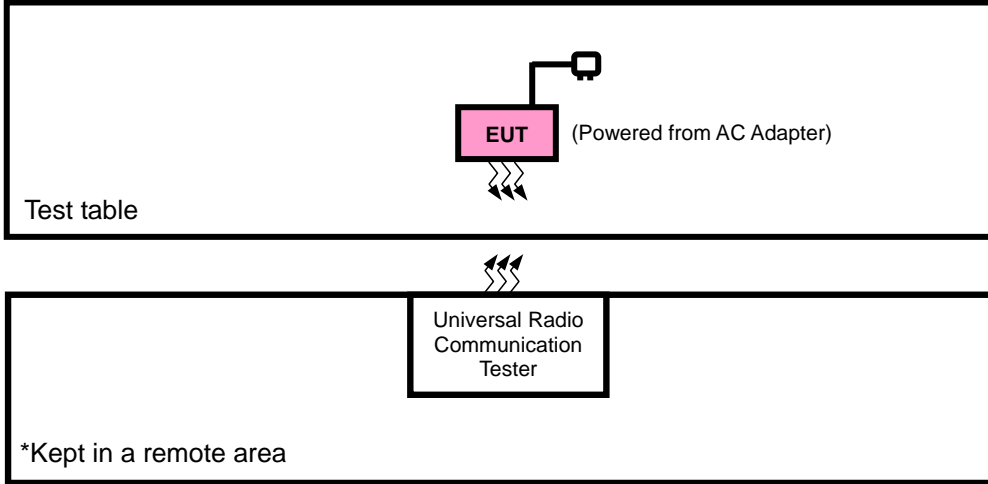
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. The differences of BRN310 and BRN314 are as follow: BRN310 uses eSIM of Kore. BRN314 uses eSIM of Twilio.



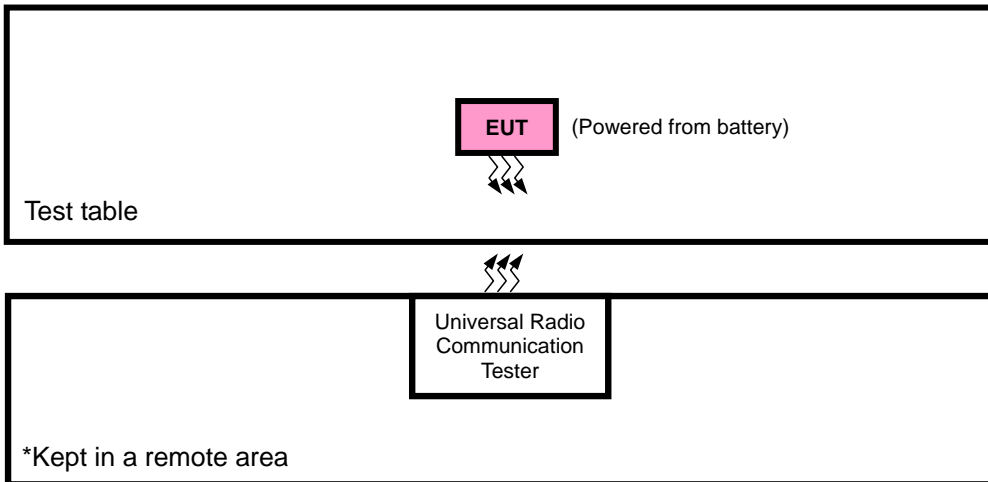


### 3.2 CONFIGURATION OF SYSTEM UNDER TEST

#### FOR RADIATION EMISSION TEST



#### FOR CONDUCTED & E.R.P. TEST





### 3.3 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A
2	PC	HP	A6608CN	3CR83825X3	N/A
3	USB	N/A	N/A	N/A	N/A
4	Battery	N/A	N/A	N/A	N/A
5	Adapter	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m
2	AC Line: Unshielded, Detachable 1.5m
3	N/A
4	N/A
5	N/A

### 3.4 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 ERP and radiated emission was found when positioned on X-plane for GPRS/EDGE/WCDMA. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter + USB Cable with GPRS / EDGE or WCDMA link
B	EUT + Battery with GPRS / EDGE or WCDMA link



**GPRS MODE**

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
B	ERP	128 to 251	128, 192, 251	GPRS, EDGE
A	RADIATED EMISSION	128 to 251	128, 192, 251	GPRS, EDGE

**WCDMA MODE**

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
B	ERP	4132 to 4233	4132, 4185, 4233	WCDMA
A	RADIATED EMISSION	4132 to 4233	4132, 4185, 4233	WCDMA

**TEST CONDITION:**

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	23deg. C, 62%RH	3.7Vdc from Battery	Rose Ma
RADIATED EMISSION	23deg. C, 60%RH	DC 5V from adaptor	Rose Ma



### 3.5 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

### 3.6 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:

**Canada RSS-132, Issue 3, January 2013**

**Canada RSS-Gen, Issue 5, April 2018**

**ANSI C63.26 - 2015**

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



## 4 TEST TYPES AND RESULTS

### 4.1 OUTPUT POWER MEASUREMENT

#### 4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile / Portable station are limited to 11.5 watts e.i.r.p.

#### 4.1.2 TEST PROCEDURES

##### **EIRP / ERP MEASUREMENT:**

- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1MHz for 1MHz for GPRS & EDGE, 5MHz for WCDMA mode.
- b. 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.
- c. 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 b. Record the power level of S.G
- d.  $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ .  
E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  
 $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15dBi$ .

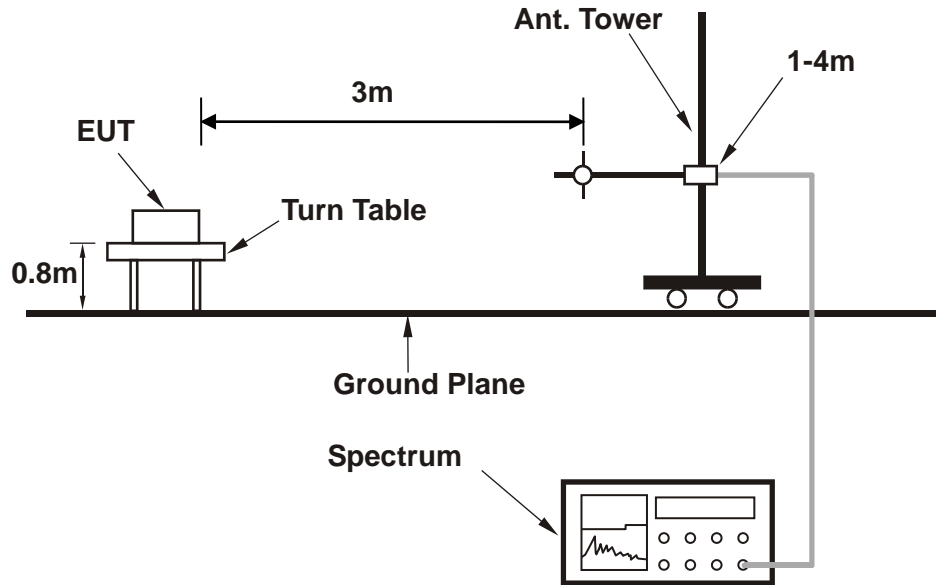
##### **CONDUCTED POWER MEASUREMENT:**

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.

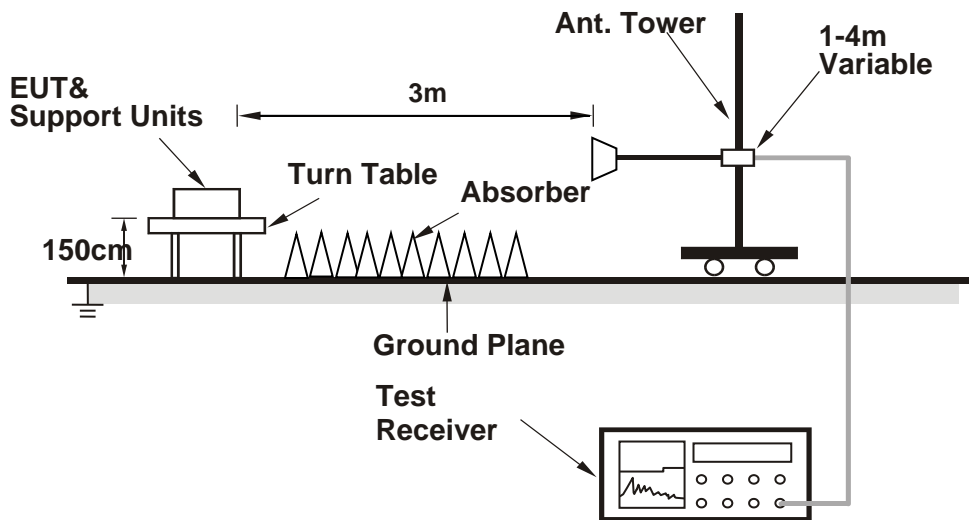


### 4.1.3 TEST SETUP

#### ERP MEASUREMENT:



#### EIRP MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### CONDUCTED POWER MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).



#### 4.1.4 TEST RESULTS

##### CONDUCTED OUTPUT POWER (dBm)

The test results were recorded in Reports No.: 16-1-0019501T07a & 16-1-0019501T05a.

##### ERP POWER (dBm)

###### GPRS

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
128	824.2	-3.98	33.56	27.43	<b>553.22</b>	H
192	836.4	-4.08	33.63	27.40	549.41	H
251	848.8	-4.76	33.57	26.66	463.23	H
128	824.2	-12.36	34.24	19.73	93.89	V
192	836.4	-11.59	34.59	20.85	121.51	V
251	848.8	-11.01	34.62	21.46	140.06	V

**REMARKS:** 1. ERP Output Power (dBm) = SPA LVL (dBm) + Correction Factor (dB) -2.15(dB).  
 2. Correction factor (dB) = Free Space Loss + Antenna Factor + Cable Loss

###### EDGE

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
128	824.2	-6.17	33.56	25.24	334.12	H
192	836.4	-6.17	33.63	25.31	<b>339.55</b>	H
251	848.8	-6.37	33.57	25.05	319.74	H
128	824.2	-10.98	34.24	21.11	129.00	V
192	836.4	-11.81	34.59	20.63	115.50	V
251	848.8	-11.98	34.62	20.49	112.02	V

**REMARKS:** 1. ERP Output Power (dBm) = SPA LVL (dBm) + Correction Factor (dB) -2.15(dB).  
 2. Correction factor (dB) = Free Space Loss + Antenna Factor + Cable Loss



WCDMA

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
4132	826.4	-10.01	33.56	21.40	<b>138.01</b>	H
4185	836.4	-10.42	33.63	21.06	127.61	H
4233	846.6	-10.14	33.57	21.28	134.21	H
4132	826.4	-15.34	34.24	16.75	47.27	V
4185	836.4	-15.58	34.59	16.86	48.48	V
4233	846.6	-16.87	34.62	15.60	36.33	V

- REMARKS:** 1. ERP Output Power (dBm) = SPA LVL (dBm) + Correction Factor (dB) -2.15(dB).  
2. Correction factor (dB) = Free Space Loss + Antenna Factor + Cable Loss





## 4.2 FREQUENCY STABILITY MEASUREMENT

### 4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

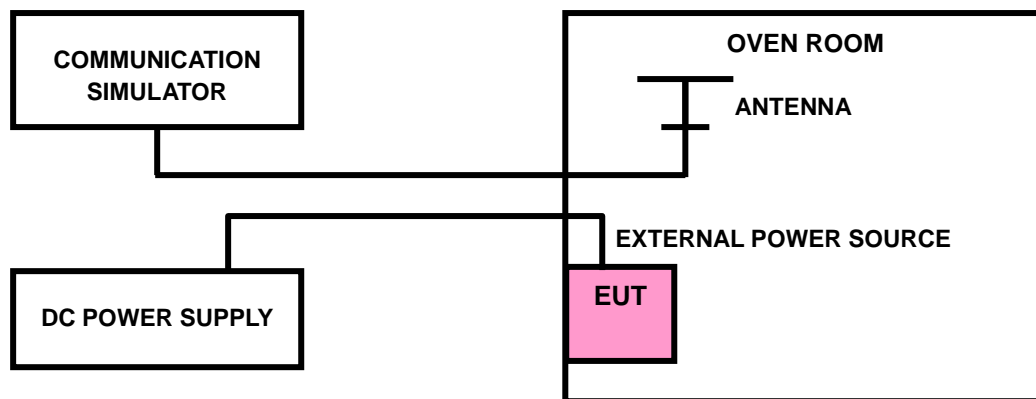
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

### 4.2.2 TEST PROCEDURE

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5^{\circ}\text{C}$  during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

### 4.2.3 TEST SETUP



### 4.2.4 TEST RESULTS

The test results were recorded in Reports No.: 16-1-0019501T07a & 16-1-0019501T05a.

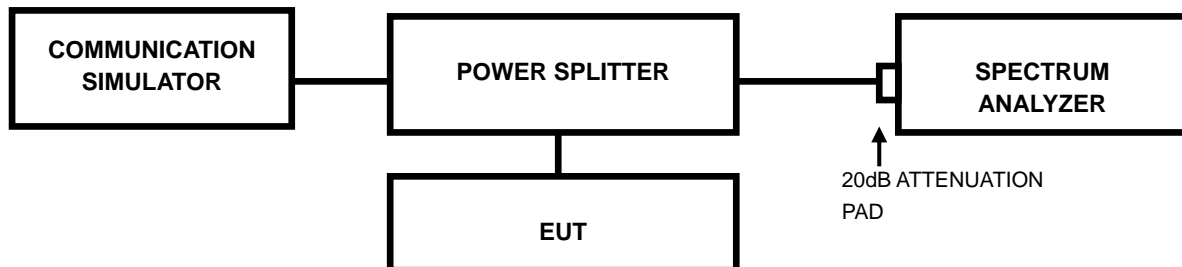


### 4.3 OCCUPIED BANDWIDTH MEASUREMENT

#### 4.3.1 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.

#### 4.3.2 TEST SETUP



#### 4.3.3 TEST RESULTS

The test results were recorded in Reports No.: 16-1-0019501T07a & 16-1-0019501T05a.

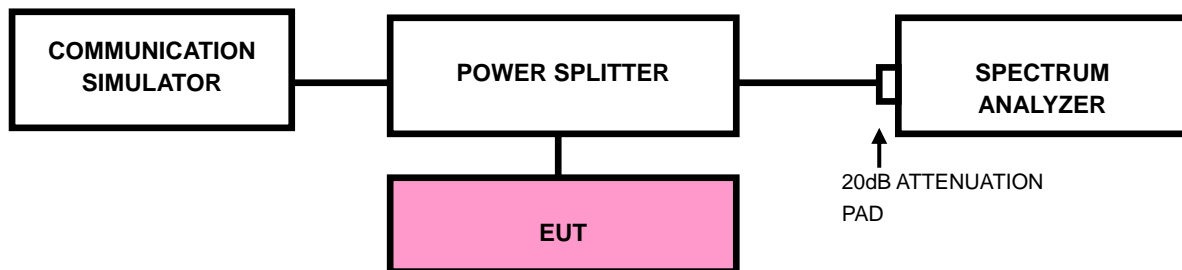


## 4.4 BAND EDGE MEASUREMENT

### 4.4.1 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.

### 4.4.2 TEST SETUP





#### 4.4.3 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 1.5MHz. RBW of the spectrum is 10kHz and VBW of the spectrum is 30kHz (GPRS/ EDGE).
- c. The center frequency of spectrum is the band edge frequency and span is 10MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz (WCDMA).
- d. Record the max trace plot into the test report.

#### 4.4.4 TEST RESULTS

The test results were recorded in Reports No.: 16-1-0019501T07a & 16-1-0019501T05a.



## 4.5 CONDUCTED SPURIOUS EMISSIONS

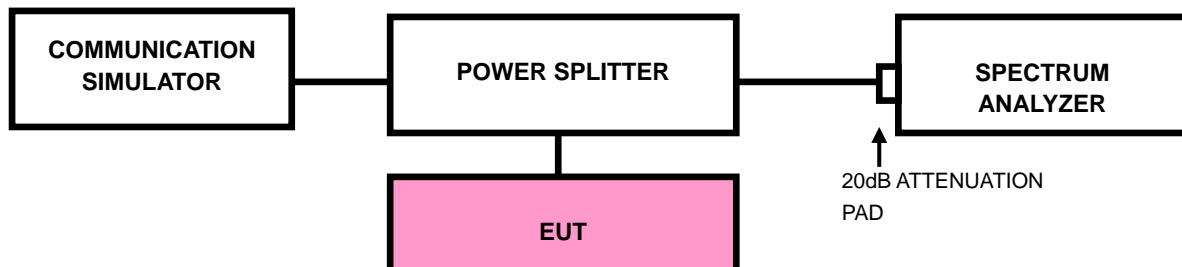
### 4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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  $-13\text{dBm}$ .

### 4.5.2 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 9 kHz to 9.0GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

### 4.5.3 TEST SETUP



### 4.5.4 TEST RESULTS

The test results were recorded in Reports No.: 16-1-0019501T07a & 16-1-0019501T05a.



## 4.6 RADIATED EMISSION MEASUREMENT

### 4.6.1 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  $-13\text{dBm}$ .

### 4.6.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m/1.5m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G
- c.  $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi.}$

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

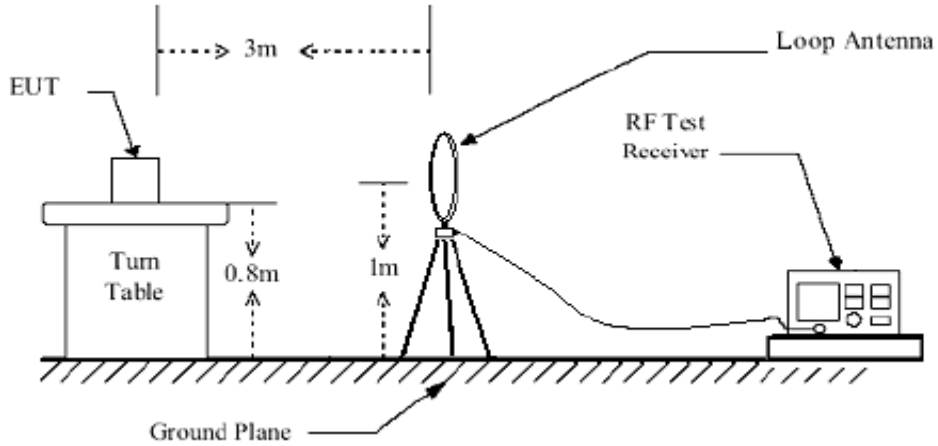
### 4.6.3 DEVIATION FROM TEST STANDARD

No deviation

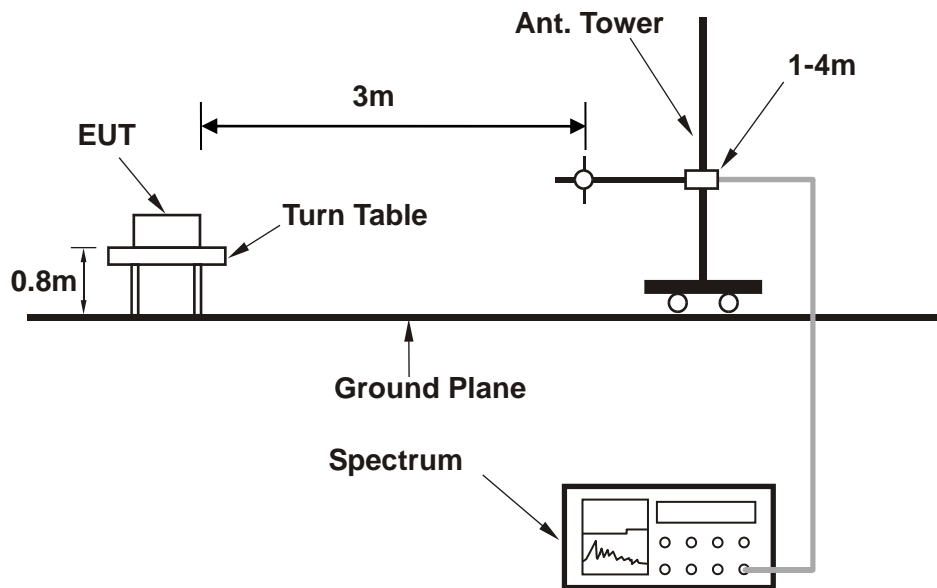


#### 4.6.4 TEST SETUP

##### < Frequency Range below 30MHz >

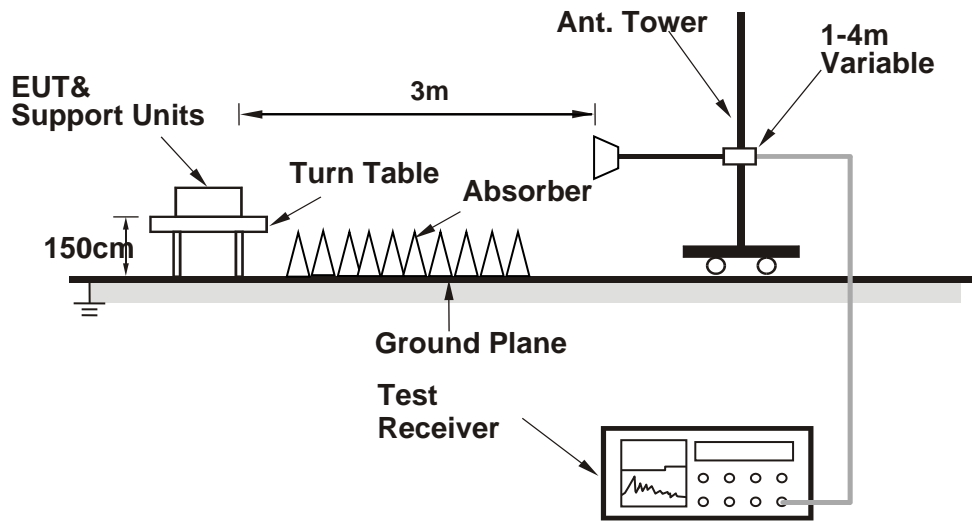


##### < Frequency Range 30MHz~1GHz >





< Frequency Range above 1GHz >



For the actual test configuration, please refer to the attached file (Test Setup Photo).





### 4.6.5 TEST RESULTS

#### BELOW 1GHz WORST-CASE DATA

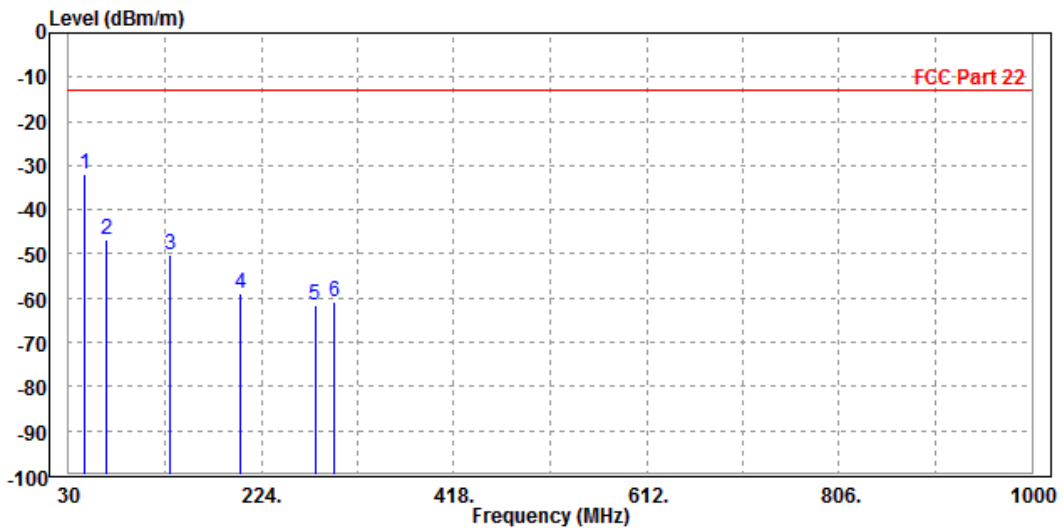
**9 KHz – 30 MHz data:** the amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

**30 MHz – 1GHz data:**

**WCDMA Band V:**

<b>MODE</b>	TX channel 4185	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 60%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

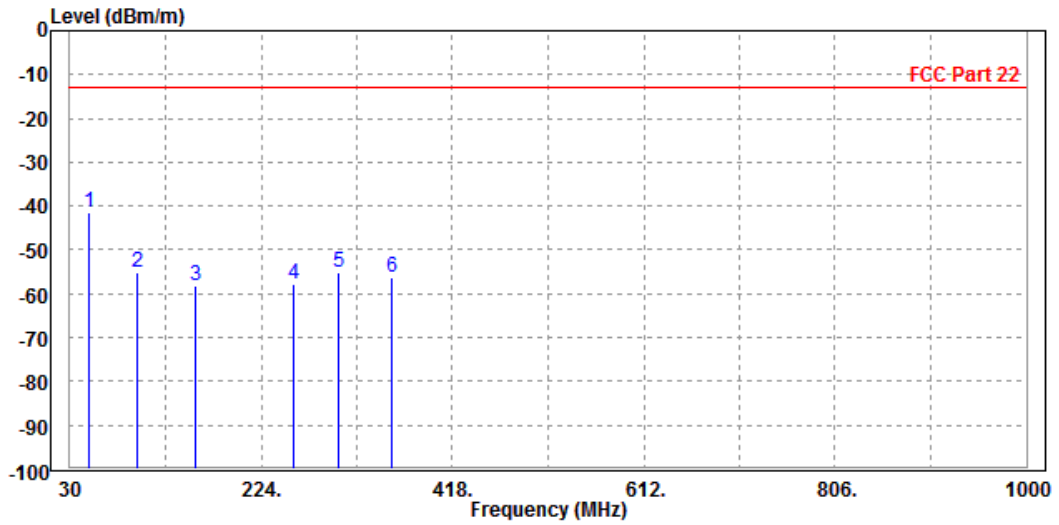
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase	
	MHz	dBm/m	dBm	dBm/m	dB	dB/m			
1	PP	45.380	-32.08	-39.44	-13.00	-19.08	7.36	Peak	Horizontal
2		68.790	-46.96	-35.22	-13.00	-33.96	-11.74	Peak	Horizontal
3		132.480	-50.16	-33.14	-13.00	-37.16	-17.02	Peak	Horizontal
4		202.340	-58.77	-41.58	-13.00	-45.77	-17.19	Peak	Horizontal
5		278.000	-61.44	-46.55	-13.00	-48.44	-14.89	Peak	Horizontal
6		296.780	-60.84	-46.87	-13.00	-47.84	-13.97	Peak	Horizontal





<b>MODE</b>	TX channel 4185	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 60%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<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	48.980	-41.38	-36.98	-13.00	-28.38	-4.40 Peak	Vertical
2		97.560	-55.20	-44.56	-13.00	-42.20	-10.64 Peak	Vertical
3		156.890	-58.15	-42.66	-13.00	-45.15	-15.49 Peak	Vertical
4		256.360	-57.70	-46.21	-13.00	-44.70	-11.49 Peak	Vertical
5		302.800	-55.07	-43.79	-13.00	-42.07	-11.28 Peak	Vertical
6		356.790	-56.20	-45.11	-13.00	-43.20	-11.09 Peak	Vertical





**ABOVE 1GHz DATA**

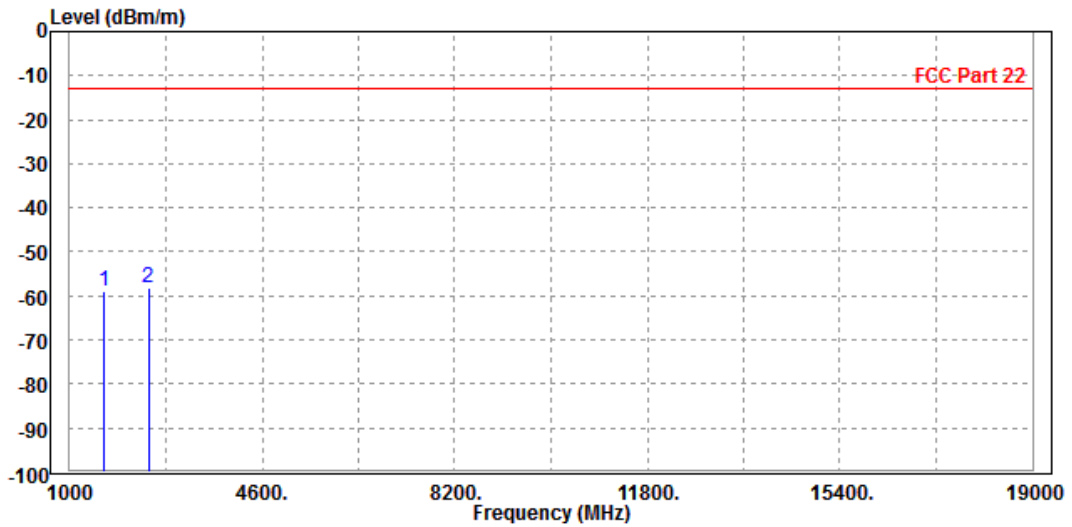
**Note:** For higher frequency, the emission is too low to be detected.

**GPRS 850**

**CH 128:**

<b>MODE</b>	TX channel 128	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

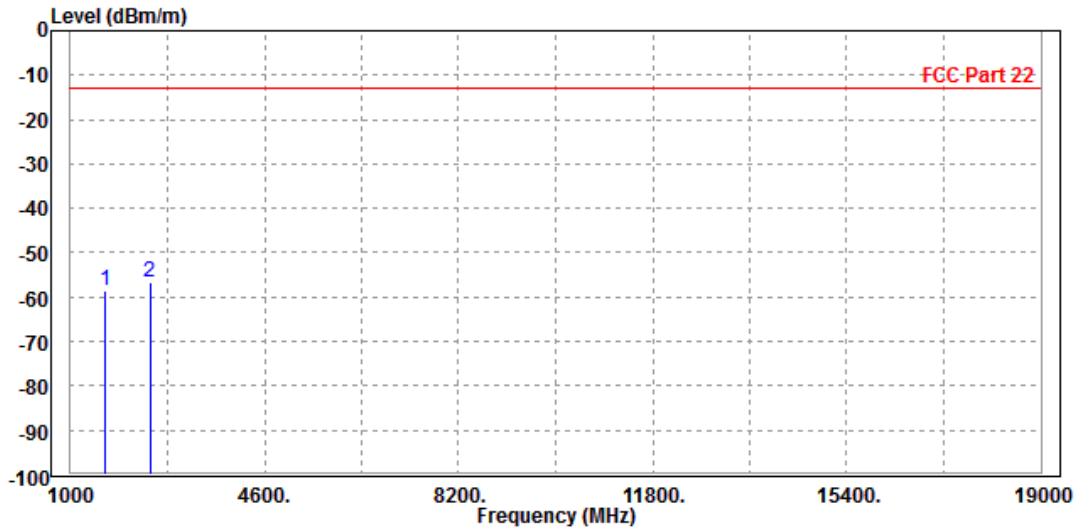
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-58.89	-53.92	-13.00	-45.89	-4.97	Peak	Horizontal
2 PP	2472.600	-57.99	-56.33	-13.00	-44.99	-1.66	Peak	Horizontal





<b>MODE</b>	TX channel 128	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<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	1648.000	-58.43	-54.88	-13.00	-45.43	-3.55	Peak	Vertical
2	PP 2472.600	-56.67	-56.50	-13.00	-43.67	-0.17	Peak	Vertical

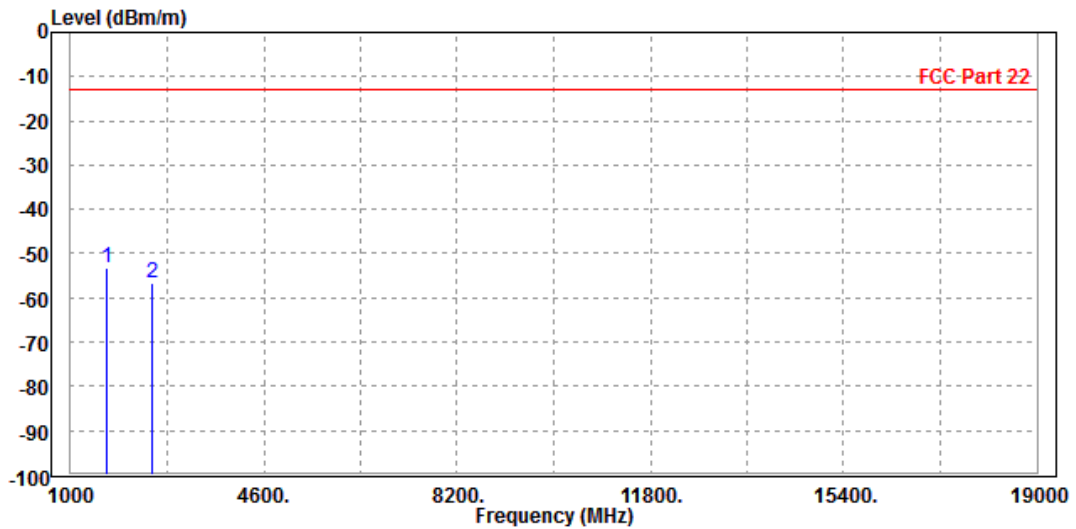




CH 192:

<b>MODE</b>	TX channel 192	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<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 1666.000	-53.33	-48.51	-13.00	-40.33	-4.82	Peak	Horizontal
2	2509.200	-56.62	-55.02	-13.00	-43.62	-1.60	Peak	Horizontal



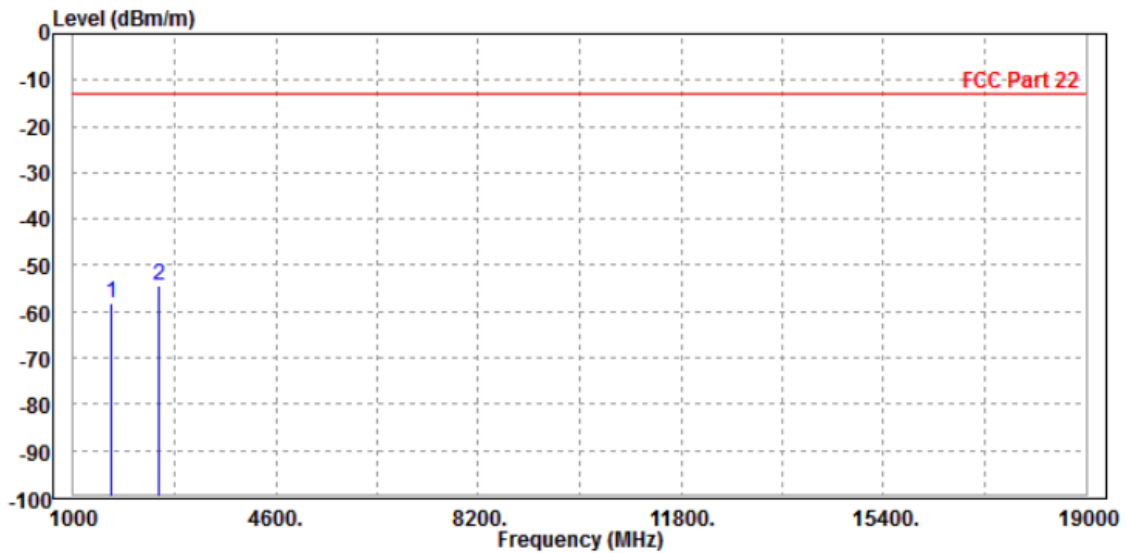


**BUREAU  
VERITAS**

Test Report No.: ICP20120008-1

<b>MODE</b>	TX channel 192	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<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	1666.000	-58.19	-54.81	-13.00	-45.19	-3.38	Peak	Vertical
2 PP	2509.200	-54.48	-54.35	-13.00	-41.48	-0.13	Peak	Vertical

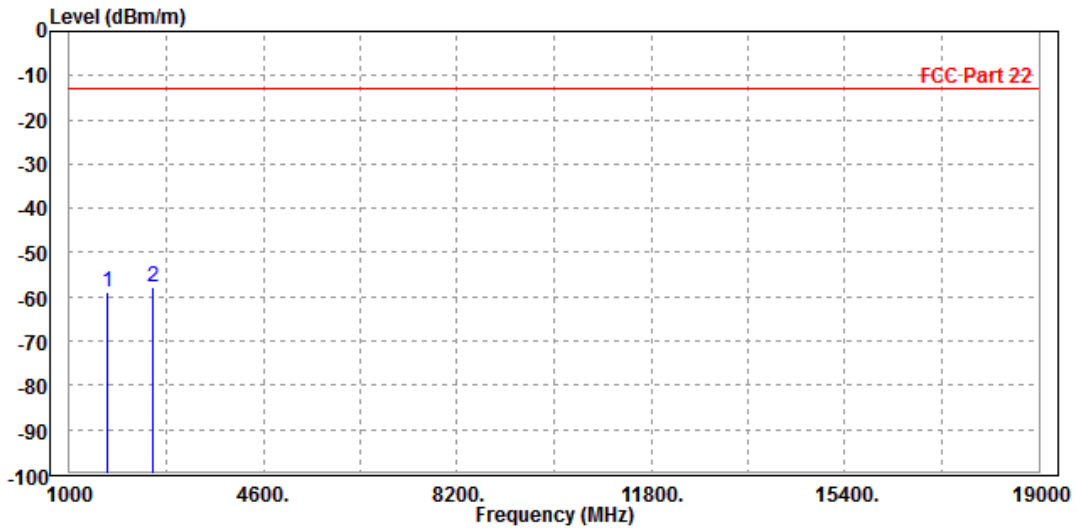




CH 251:

<b>MODE</b>	TX channel 251	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

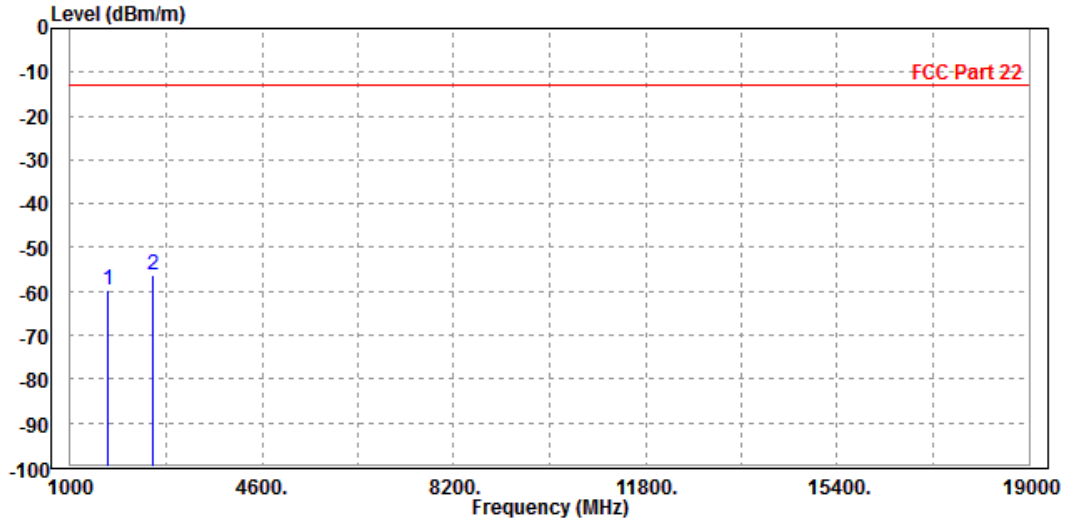
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1702.000	-58.85	-54.33	-13.00	-45.85	-4.52	Peak	Horizontal
2	PP 2546.400	-57.94	-56.48	-13.00	-44.94	-1.46	Peak	Horizontal





<b>MODE</b>	TX channel 251	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<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	1702.000	-59.53	-56.48	-13.00	-46.53	-3.05	Peak	Vertical
2 PP	2546.400	-56.33	-56.36	-13.00	-43.33	0.03	Peak	Vertical





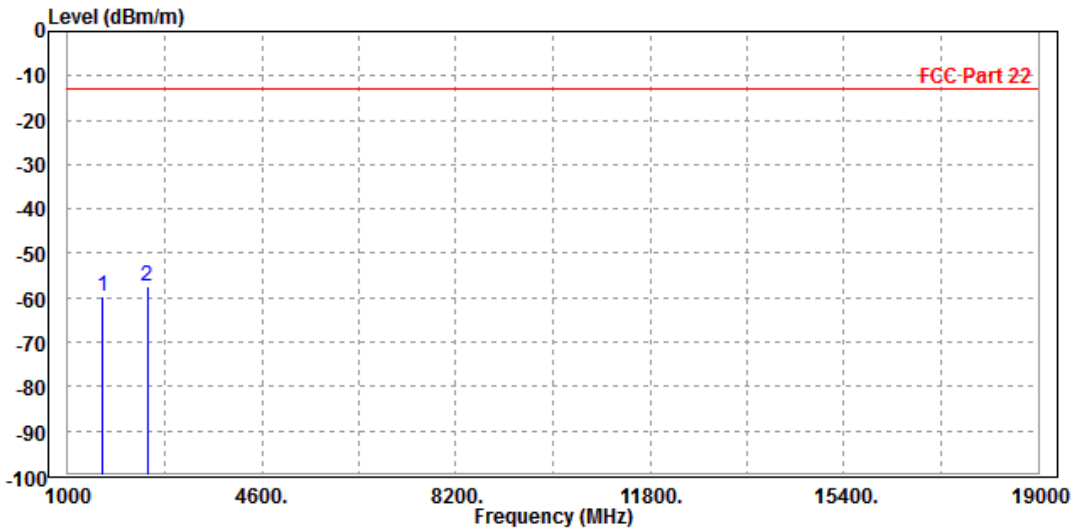


**EDGE 850:**

**CH 128:**

<b>MODE</b>	TX channel 128	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

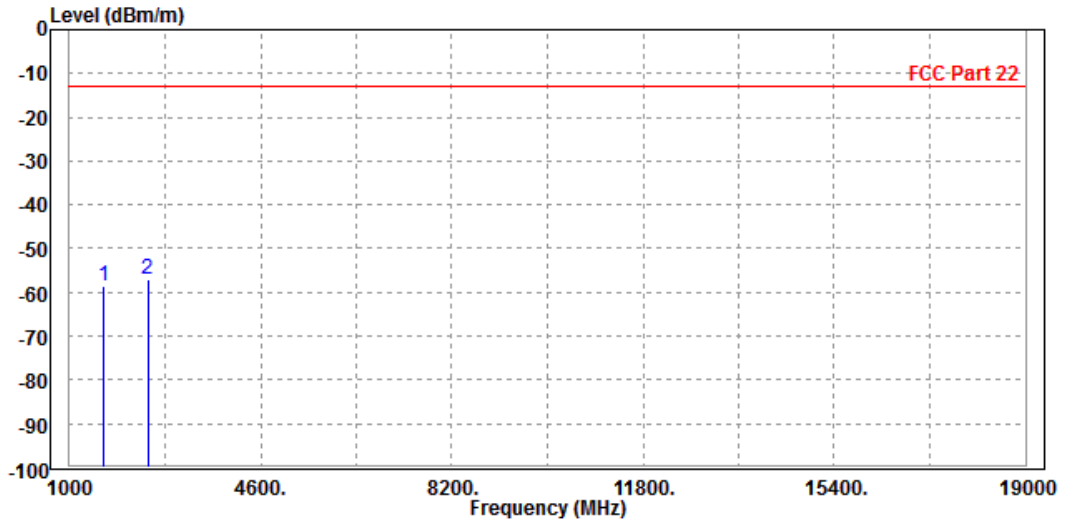
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-59.67	-54.70	-13.00	-46.67	-4.97	Peak	Horizontal
2 PP	2472.600	-57.58	-55.92	-13.00	-44.58	-1.66	Peak	Horizontal





<b>MODE</b>	TX channel 128	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<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	1648.000	-58.54	-54.99	-13.00	-45.54	-3.55	Peak	Vertical
2	PP 2472.600	-56.87	-56.70	-13.00	-43.87	-0.17	Peak	Vertical

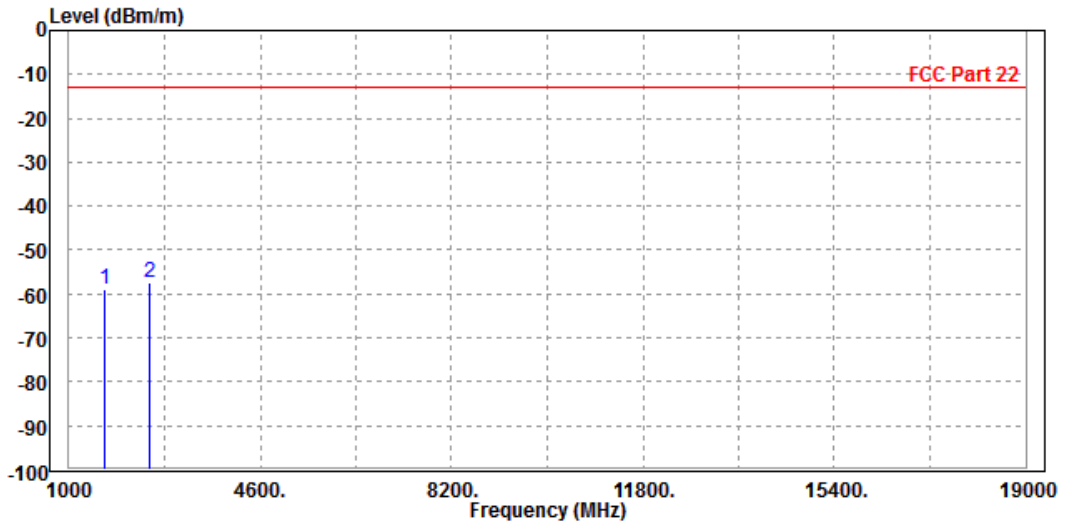




**CH 192:**

<b>MODE</b>	TX channel 192	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

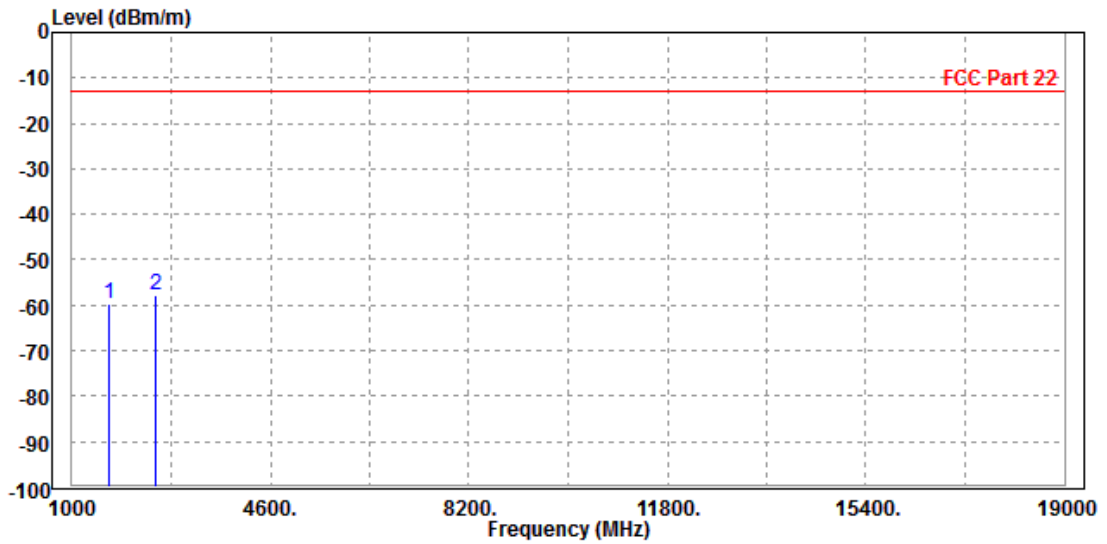
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-58.91	-55.53	-13.00	-45.91	-3.38	Peak	Vertical
2 PP	2509.200	-57.28	-57.15	-13.00	-44.28	-0.13	Peak	Vertical





<b>MODE</b>	TX channel 192	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<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	1672.800	-59.56	-54.80	-13.00	-46.56	-4.76	Peak	Horizontal
2 PP	2509.200	-57.81	-56.21	-13.00	-44.81	-1.60	Peak	Horizontal

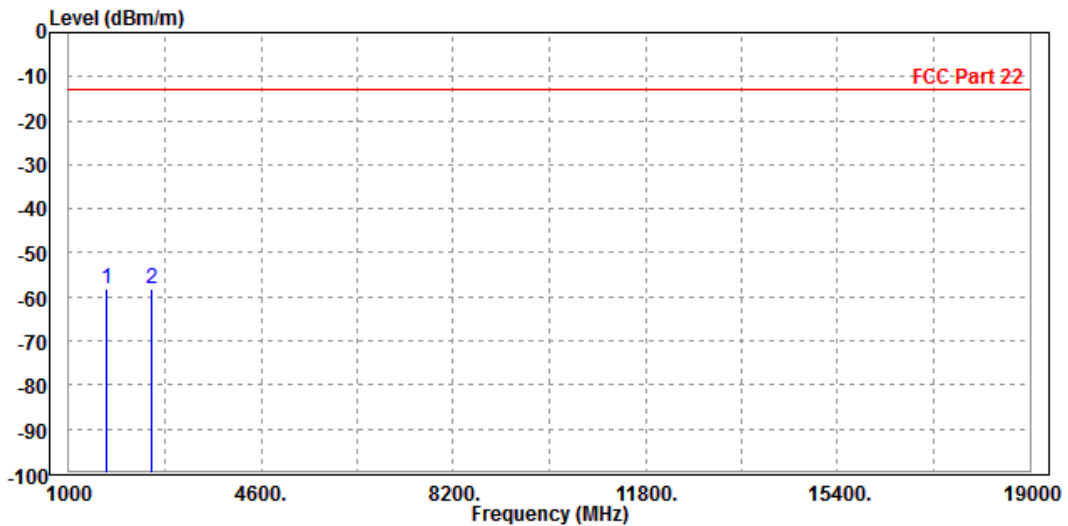




CH 251:

MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Rose Ma		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

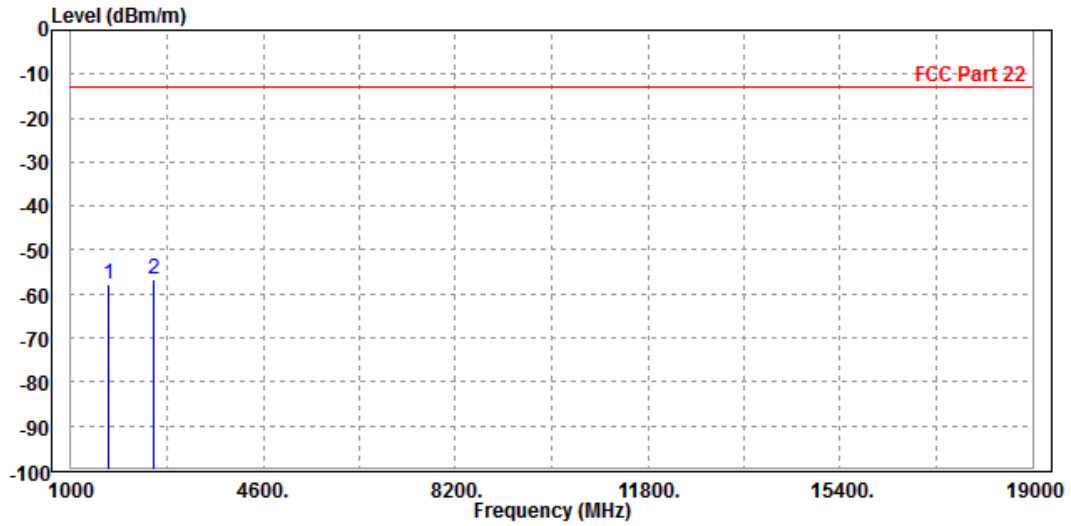
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1702.000	-58.18	-53.66	-13.00	-45.18	-4.52	Peak	Horizontal
2	2546.400	-58.26	-56.80	-13.00	-45.26	-1.46	Peak	Horizontal





<b>MODE</b>	TX channel 251	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<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	1702.000	-57.77	-54.72	-13.00	-44.77	-3.05	Peak	Vertical
2 PP	2546.400	-56.53	-56.56	-13.00	-43.53	0.03	Peak	Vertical



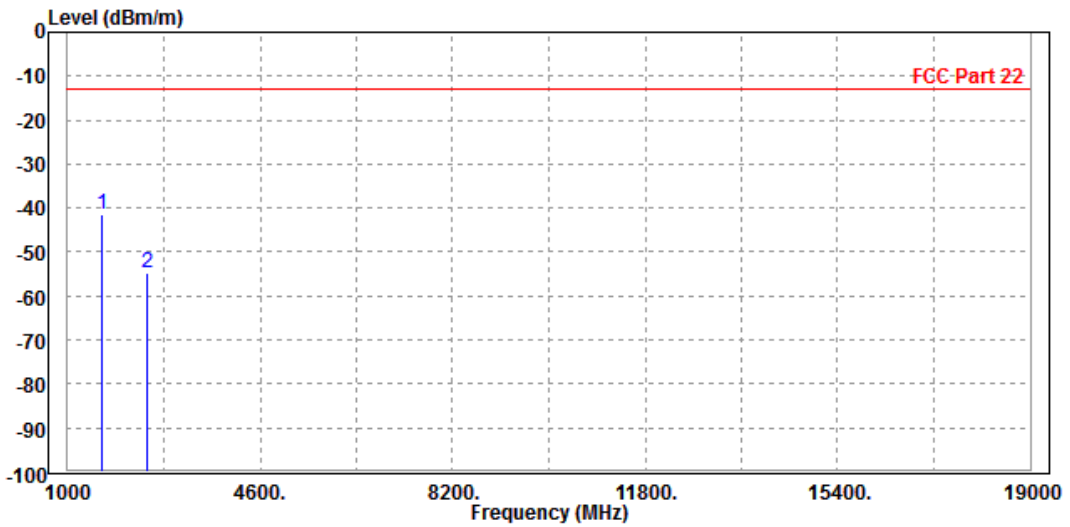


WCDMA Band V:

CH 4132:

MODE	TX channel 4132	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Rose Ma		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

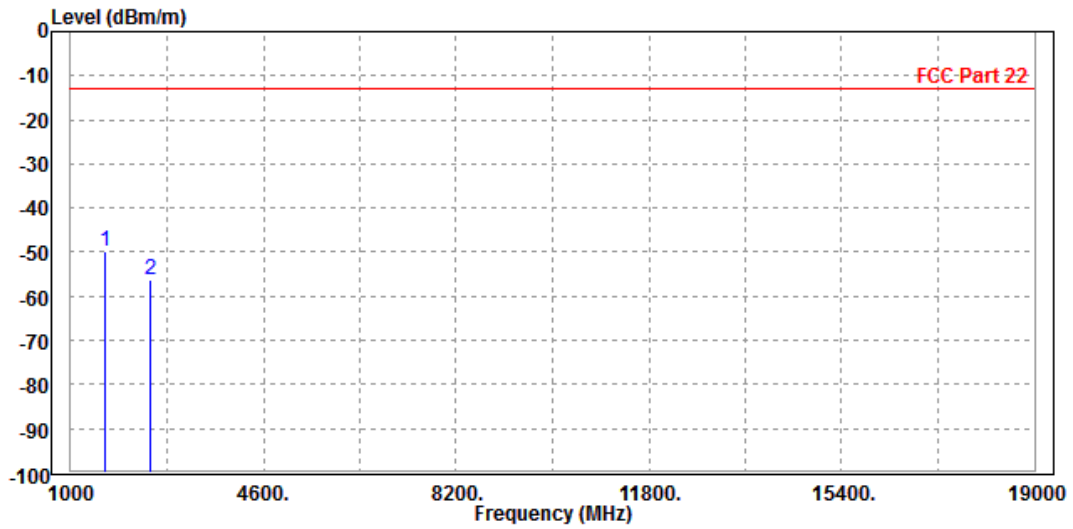
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1648.000	-41.58	-36.61	-13.00	-28.58	-4.97	Peak	Horizontal
2	2479.200	-54.74	-53.09	-13.00	-41.74	-1.65	Peak	Horizontal





<b>MODE</b>	TX channel 4132	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<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 1648.000	-49.78	-46.23	-13.00	-36.78	-3.55	Peak	Vertical
2	2479.200	-56.40	-56.23	-13.00	-43.40	-0.17	Peak	Vertical



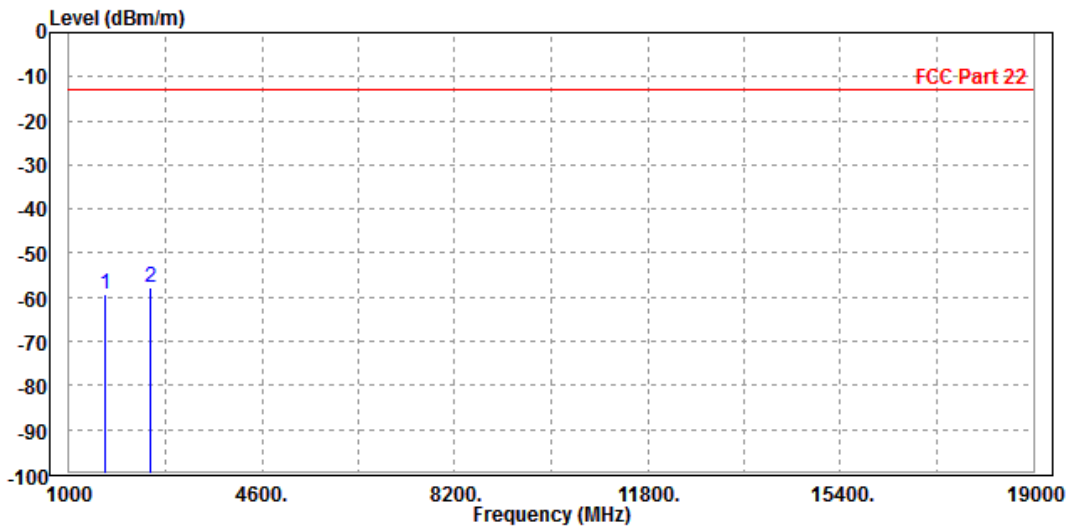




**CH 4185:**

<b>MODE</b>	TX channel 4185	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

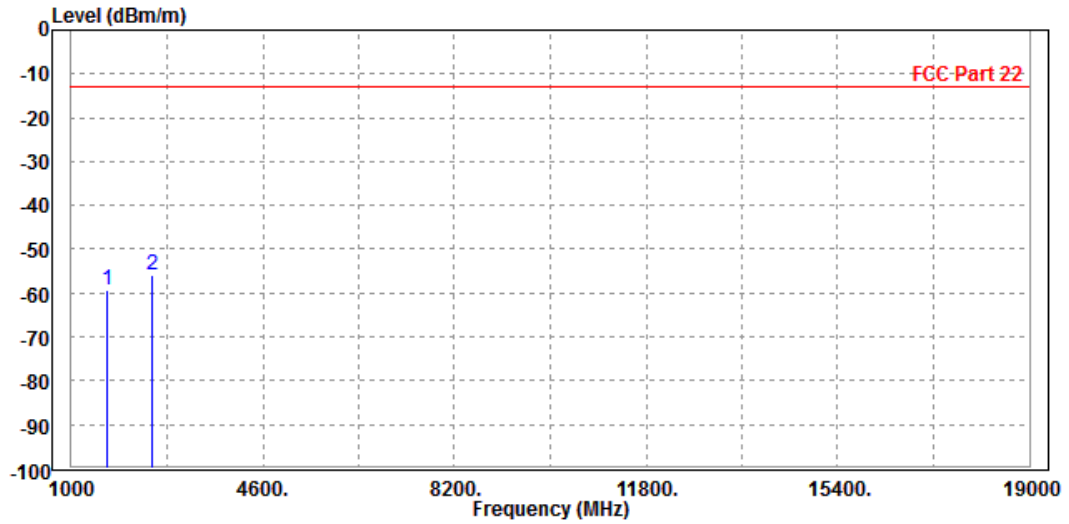
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1666.000	-59.28	-54.46	-13.00	-46.28	-4.82	Peak	Horizontal
2 PP	2509.200	-57.94	-56.34	-13.00	-44.94	-1.60	Peak	Horizontal





<b>MODE</b>	TX channel 4185	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<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	1666.000	-59.14	-55.76	-13.00	-46.14	-3.38	Peak	Vertical
2 PP	2509.200	-55.99	-55.86	-13.00	-42.99	-0.13	Peak	Vertical

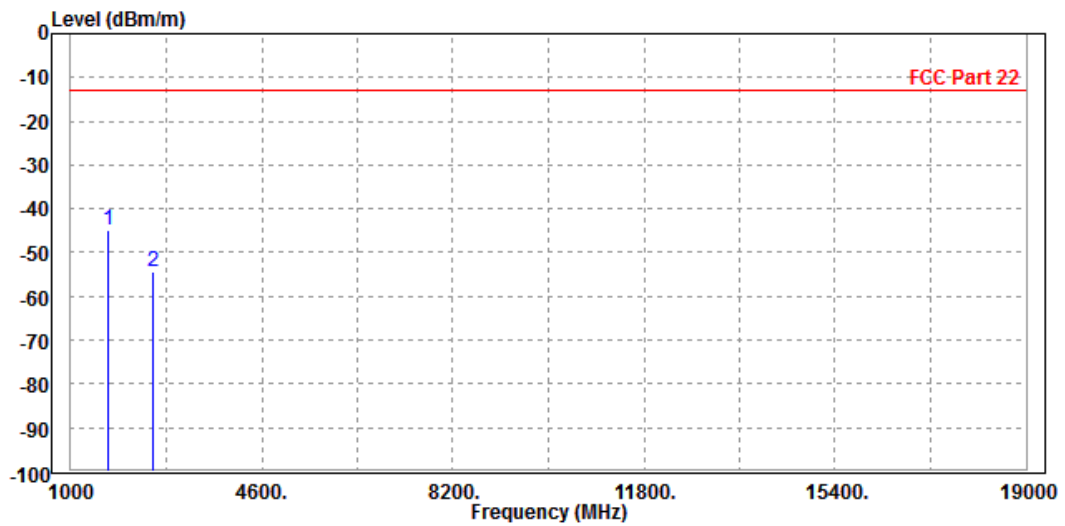




CH 4233:

<b>MODE</b>	TX channel 4233	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

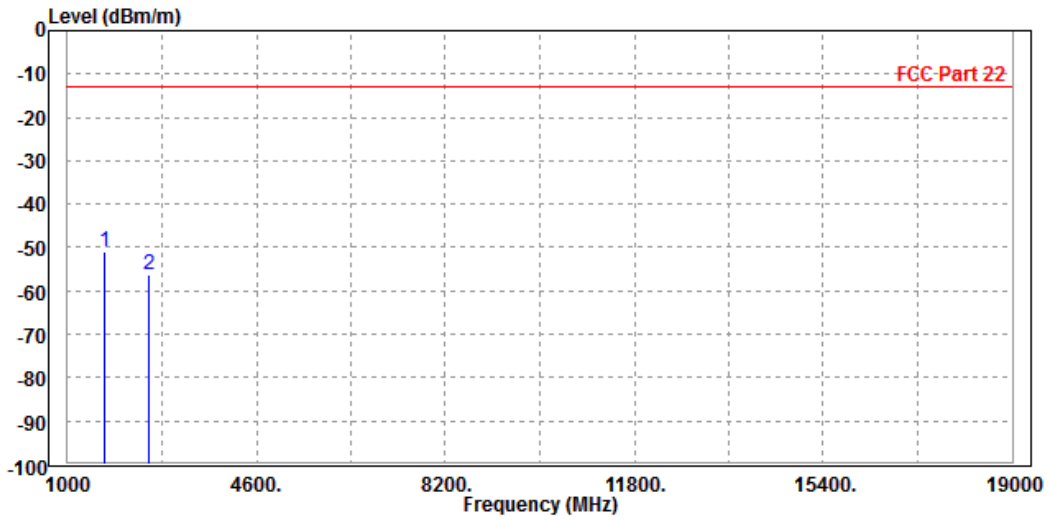
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1702.000	-45.02	-40.50	-13.00	-32.02	-4.52	Peak	Horizontal
2	2539.800	-54.36	-52.87	-13.00	-41.36	-1.49	Peak	Horizontal





<b>MODE</b>	TX channel 4233	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	DC 5V from adapter
<b>TESTED BY</b>	Rose Ma		
<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	1702.000	-51.09	-48.04	-13.00	-38.09	-3.05	Peak	Vertical
2	2539.800	-56.10	-56.10	-13.00	-43.10	0.00	Peak	Vertical





## 4.7 RECEIVER SPURIOUS EMISSIONS

### 4.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Spurious emissions from receivers shall not exceed the radiated emission limits shown in follow table

Frequency(MHz)	Field strength(Uv/m at 3 metres)
30~88	100
88~216	150
216~960	200
Above 960	500

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).



#### 4.7.2 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

#### NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. If the dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from  $20\log(\text{dwell time}/100 \text{ ms})$ , in an effort to demonstrate compliance with the 15.209 limit.
5. All modes of operation were investigated and the worst-case emissions are reported.

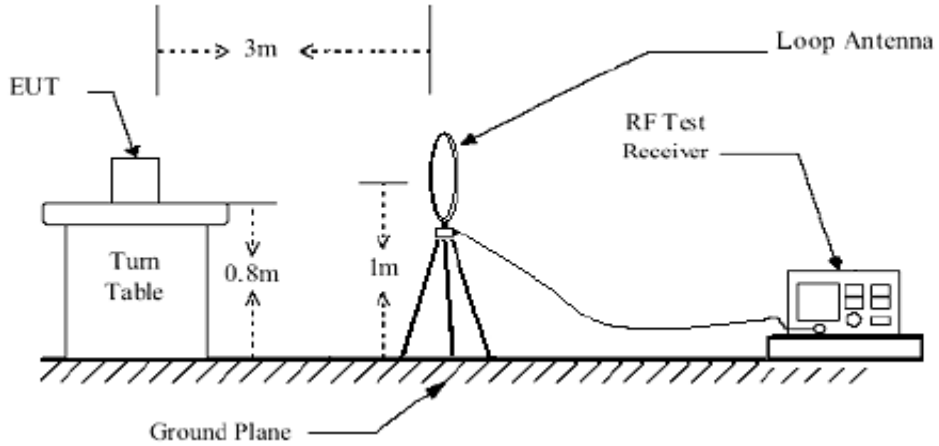
#### 4.7.3 DEVIATION FROM TEST STANDARD

No deviation

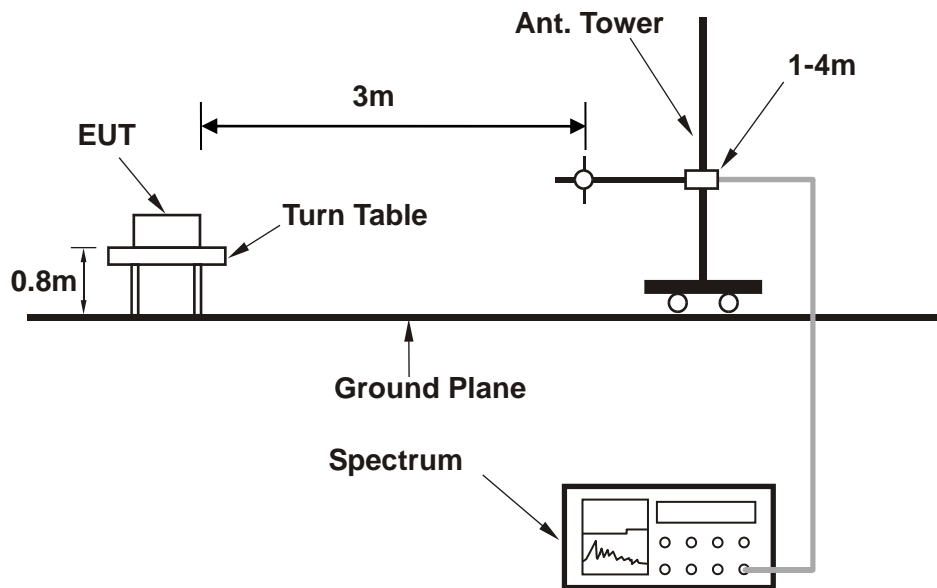


#### 4.7.4 TEST SETUP

##### < Frequency Range below 30MHz >

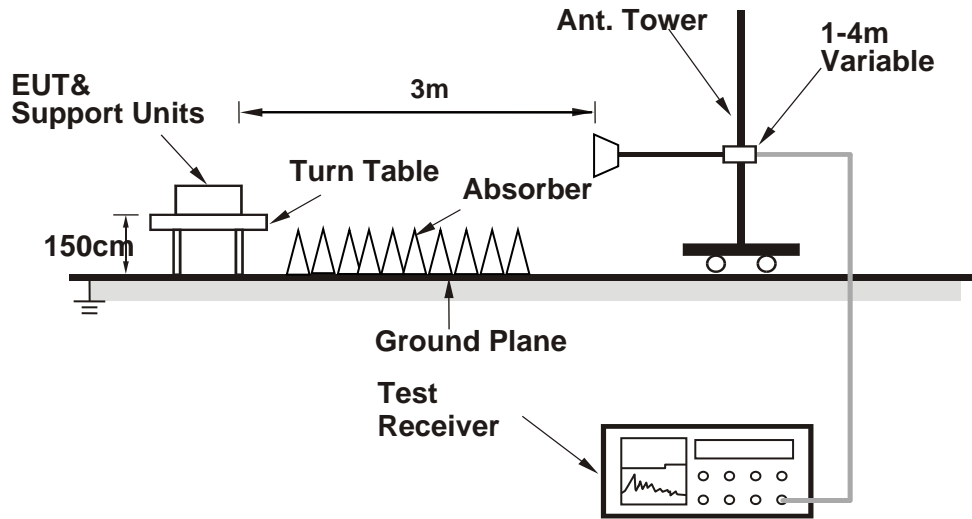


##### < Frequency Range 30MHz~1GHz >





< Frequency Range above 1GHz >



For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### 4.7.5 TEST RESULT

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.



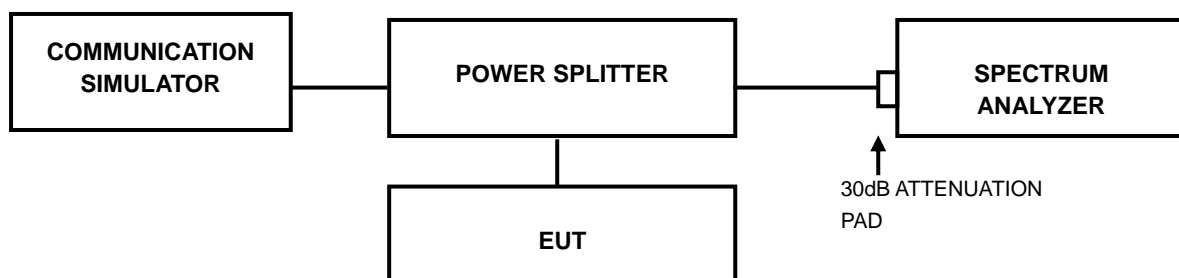


## 4.8 PEAK TO AVERAGE RATIO

### 4.8.1 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

### 4.8.2 TEST SETUP



### 4.8.3 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%.

### 4.8.4 TEST RESULTS

The test results were recorded in Reports No.: 16-1-0019501T07a & 16-1-0019501T05a.



Test Report No.: ICP20120008-1

## 5 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, and Telecom. 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 8869 6566

Fax: +86 755 8869 6577

**Email:** [customerservice.dg@cn.bureauveritas.com](mailto:customerservice.dg@cn.bureauveritas.com)

**Web Site:** [www.adt.com.tw](http://www.adt.com.tw)

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



**BUREAU  
VERITAS**

Test Report No.: ICP20120008-1

## **6 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---**