

# TEST REPORT



Applicant:	BenQ Corporation
Address:	16 Jihu Road, Neihu, Taipei 114, Taiwan

Manufacturer or Supplier	BenQ Corporation
Address	16 Jihu Road, Neihu, Taipei 114, Taiwan
Product:	Dongle
Brand Name:	BenQ
Model:	TRY01D
Additional Model & Model Difference	N/A
Date of tests:	Jun. 27, 2022 ~ Jul. 14, 2022

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

**FCC Part 15, Subpart C, Section 15.249**

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

Tested by Andy Zhu Supervisor / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	  Date: Aug. 08, 2022

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## TABLE OF CONTENTS

<b>RELEASE CONTROL RECORD .....</b>	<b>4</b>
<b>1 SUMMARY OF TEST RESULTS.....</b>	<b>5</b>
2 MEASUREMENT UNCERTAINTY .....	5
<b>3 GENERAL INFORMATION .....</b>	<b>6</b>
3.1 GENERAL DESCRIPTION OF EUT .....	6
3.2 DESCRIPTION OF TEST MODES.....	7
3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS .....	9
3.4 DESCRIPTION OF SUPPORT UNITS .....	9
<b>4. TEST TYPES AND RESULTS.....</b>	<b>10</b>
4.1 CONDUCTED EMISSION MEASUREMENT .....	10
4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT .....	10
4.1.2 TEST INSTRUMENTS.....	10
4.1.3 TEST PROCEDURES .....	11
4.1.4 DEVIATION FROM TEST STANDARD .....	11
4.1.5 TEST SETUP.....	12
4.1.6 EUT OPERATING CONDITIONS.....	12
4.1.7 TEST RESULTS .....	13
4.2 RADIATED EMISSION MEASUREMENT .....	15
4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT .....	15
4.2.2 TEST INSTRUMENTS.....	16
4.2.3 TEST PROCEDURES .....	17
4.2.4 DEVIATION FROM TEST STANDARD .....	17
4.2.5 TEST SETUP.....	18
4.2.6 EUT OPERATING CONDITIONS.....	19
4.2.7 TEST RESULTS .....	20
4.3 20DB BANDWIDTH MEASUREMENT .....	27
4.3.1 LIMITS OF 20DB BANDWIDTH MEASUREMENT .....	27
4.3.2 TEST INSTRUMENTS.....	27
4.3.3 TEST PROCEDURE.....	28



**BUREAU  
VERITAS**

**Test Report No.: RF2206WDG0250**

4.3.4 DEVIATION FROM TEST STANDARD .....	28
4.3.5 TEST SETUP .....	28
4.2.6 EUT OPERATING CONDITIONS .....	28
4.3.7 TEST RESULTS .....	29
<b>5. PHOTOGRAPHS OF THE TEST CONFIGURATION .....</b>	<b>31</b>
<b>6. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB .....</b>	<b>32</b>



Test Report No.: RF2206WDG0250

## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF2206WDG0250	Original release	Aug. 08, 2022

## 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.249)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
§15.203	Antenna Requirement	PASS	No antenna connector is used
§15.207 (a)	Conducted Emission	PASS	Compliant
§15.205	Restricted Band of Operation	PASS	Compliant
§15.209 §15.249(a)	Radiated Emission	PASS	Compliant
§15.215(c)	20dB Bandwidth Test	PASS	Compliant

## 2 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
Radiated emissions	9KHz ~ 30MHz	2.16dB
	30MHz ~ 1GMHz	3.60dB
	1GHz ~ 18GHz	4.82dB
	18GHz ~ 40GHz	5.00dB
20dB Bandwidth	1GHz ~ 18GHz	1.132x10 <sup>-4</sup> %

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

### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	Dongle
<b>MODEL NO.</b>	TRY01D
<b>ADDITIONAL MODEL</b>	N/A
<b>FCC ID</b>	JVPTRY01D
<b>NOMINAL VOLTAGE</b>	DC 5V From USB Host Unit
<b>MODULATION TECHNOLOGY</b>	GFSK
<b>OPERATING FREQUENCY</b>	2404-2479MHz
<b>ANTENNA TYPE</b>	PCB Antenna, with 0dBi gain
<b>I/O PORTS</b>	Refer to user's manual
<b>CABLE SUPPLIED</b>	N/A

**NOTES:**

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. Please refer to the EUT photo document (Reference No.: 2206WDG0250) for detailed product photo.

### 3.2 DESCRIPTION OF TEST MODES

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and packet type. The worst case was found when the EUT was positioned on X axis for radiated emission. The EUT was tested under the following mode.

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE<1G	RE≥1G	PLC	BW	
A	√	√	√	√	DC 5V from Notebook

Where **RE<1G**: Radiated Emission below 1GHz      **RE≥1G**: Radiated Emission above 1GHz  
**PLC**: Power Line Conducted Emission      **BW**: 20db bandwidth

**NOTE:** No need to concern of Conducted Emission due to the EUT is powered by battery.

Following channel(s) was (were) selected for the test as listed below.

TESTED CHANNEL	TESTED FREQUENCY
Low	2404 MHz
Middle	2444 MHz
High	2479 MHz

Channel List

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2404	20	2423	39	2442	58	2461
2	2405	21	2424	40	2443	59	2462
3	2406	22	2425	41	2444	60	2463
4	2407	23	2426	42	2445	61	2464
5	2408	24	2427	43	2446	62	2465
6	2409	25	2428	44	2447	63	2466
7	2410	26	2429	45	2448	64	2467
8	2411	27	2430	46	2449	65	2468
9	2412	28	2431	47	2450	66	2469
10	2413	29	2432	48	2451	67	2470
11	2414	30	2433	49	2452	68	2471
12	2415	31	2434	50	2453	69	2472
13	2416	32	2435	51	2454	70	2473
14	2417	33	2436	52	2455	71	2474
15	2418	34	2437	53	2456	72	2475
16	2419	35	2438	54	2457	73	2476
17	2420	36	2439	55	2458	74	2477
18	2421	37	2440	56	2459	75	2478
19	2422	38	2441	57	2460	76	2479

Note: The more detailed channel, please refer to the product specifications

**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE	25deg. C, 55%RH	DC 5V from Notebook	Hu
BW	25deg. C, 56%RH	DC 5V from Notebook	Robert
PLC	25deg. C, 56%RH	DC 5V from Notebook	MingBai



### 3.3 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 Part 15, Subpart C, Section 15.249**

**ANSI C63.10-2013**

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

### 3.4 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	Notebook	DELL	Latitude 5280	77K2GH2	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded, Detachable 0.8m, DC Line: Unshielded, Detachable 1.8m

## 4. TEST TYPES AND RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB $\mu$ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
  2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
  3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Mar. 07,23
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Mar. 07,23
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Mar. 07,23
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Sep. 17,22
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A

**NOTES:**

1. The test was performed in shielded room 553.
2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

#### 4.1.3 TEST PROCEDURES

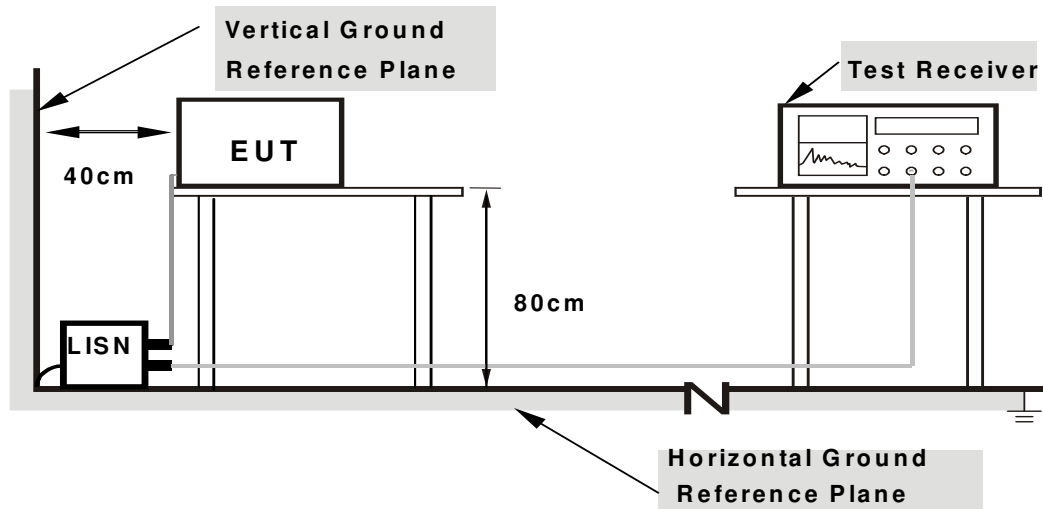
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

**NOTE:** All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.1.5 TEST SETUP



- Note: 1.Support units were connected to second LISN.  
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80  
from other units and other metal planes**

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

#### 4.1.6 EUT OPERATING CONDITIONS

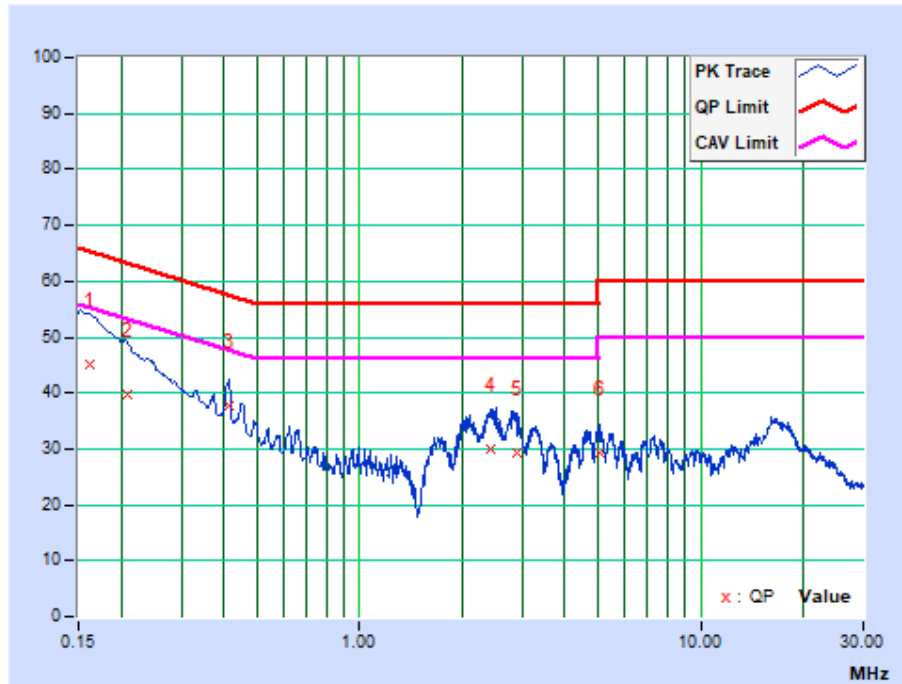
- a. Turned on the power and connected of all equipment.
- b. EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

### 4.1.7 TEST RESULTS

<b>PHASE</b>	Line	<b>6dB BANDWIDTH</b>	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16125	9.90	35.34	23.95	45.24	33.85	65.40	55.40	-20.15	-21.54
2	0.20850	9.92	29.66	19.19	39.58	29.11	63.26	53.26	-23.68	-24.15
3	0.41305	9.95	27.76	26.89	37.71	36.84	57.59	47.59	-19.87	-10.74
4	2.42899	10.11	19.79	17.57	29.90	27.68	56.00	46.00	-26.10	-18.32
5	2.88600	10.12	19.14	12.96	29.26	23.08	56.00	46.00	-26.74	-22.92
6	5.09100	10.18	19.21	16.06	29.39	26.24	60.00	50.00	-30.61	-23.76

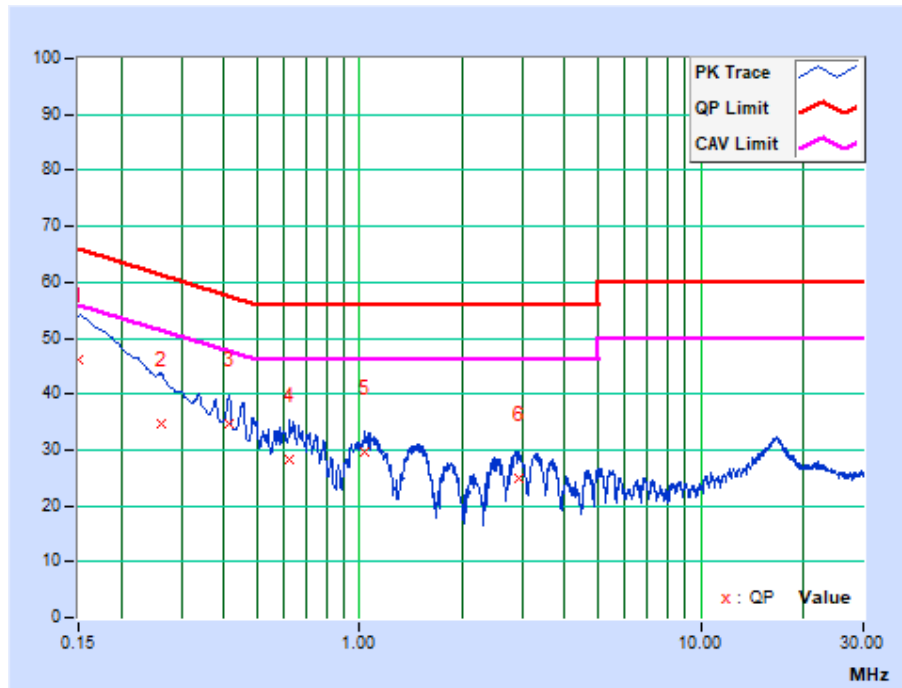
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.



<b>PHASE</b>	Neutral	<b>6dB BANDWIDTH</b>	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.84	36.12	20.02	45.96	29.86	66.00	56.00	-20.04	-26.14
2	0.26090	9.85	24.83	13.57	34.68	23.42	61.40	51.40	-26.72	-27.98
3	0.41305	9.85	24.84	24.47	34.69	34.32	57.59	47.59	-22.90	-13.27
4	0.62357	9.86	18.55	13.75	28.41	23.61	56.00	46.00	-27.59	-22.39
5	1.03526	9.90	19.76	17.76	29.66	27.66	56.00	46.00	-26.34	-18.34
6	2.93756	9.93	15.04	11.47	24.97	21.40	56.00	46.00	-31.03	-24.60

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
  2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
  3. The emission levels of other frequencies were very low against the limit.
  4. Margin value = Emission level - Limit value
  5. Correction factor = Insertion loss + Cable loss
  6. Emission Level = Correction Factor + Reading Value.



## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

According to §15.249(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field strength of fundamental (milli-volts/meter)	Field strength of harmonics (micro-volts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



#### 4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Feb. 22, 23
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	May 09, 23
Active Loop Antenna (9KHz -30MHz)	SCHWARZBECK	FMZB 1519B	1519B-045	May 20, 23
Amplifier (9KHz -1GHz)	Burgeon	BPA-530	100210	Mar. 08, 23
Trilog-Broadband Antenna(20M-2G)	SCHWARZBECK	VULB 9168	01263	Sep. 30, 22
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 21, 23
Horn Antenna (18GHz -40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	May 14, 23
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	May 22, 23
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	May 12, 23
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Jan. 10, 23
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	N/A

**NOTE:**

1. The test was performed in 966 Chamber. (Chenwu)
2. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above1GHz if tested.
4. The FCC Site Registration No. is 749762.



#### 4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 1.5 meters (above 1GHz) and 0.8 meters (below 1GHz) above the ground at a 3 meters semi-anechoic 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. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
- g. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**NOTE:**

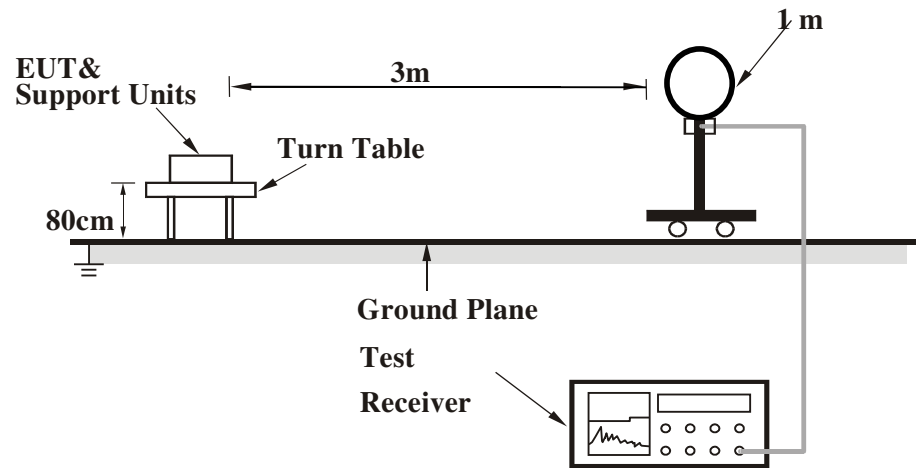
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes; the worst-case test configuration was reported on the file test setup photo.

#### 4.2.4 DEVIATION FROM TEST STANDARD

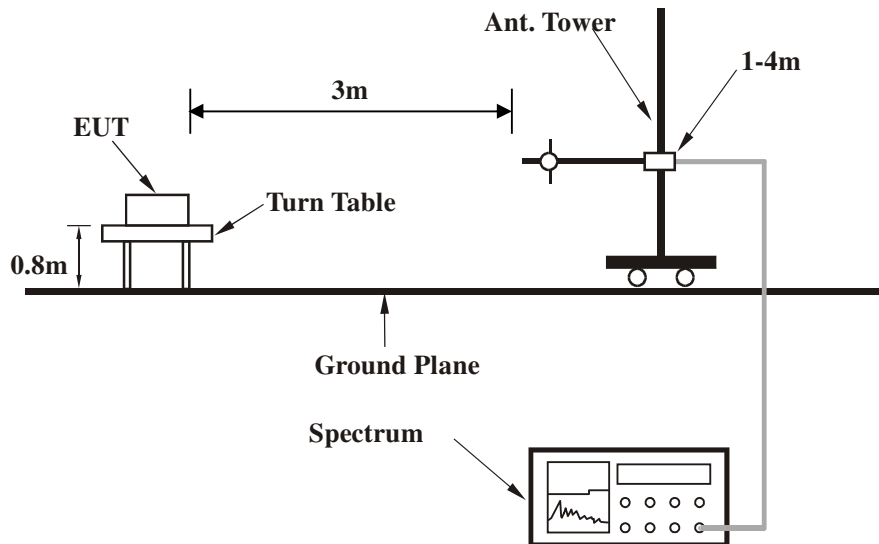
No deviation.

#### 4.2.5 TEST SETUP

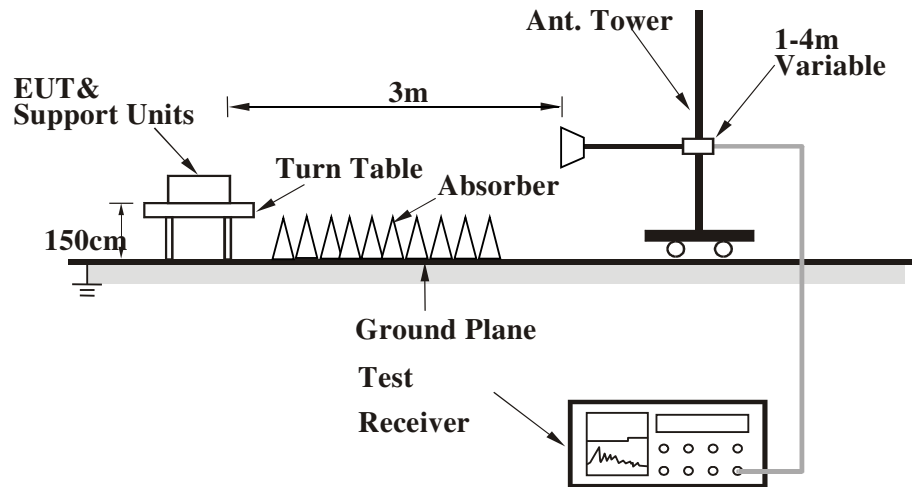
##### Below 30MHz test setup



##### Below 1GHz test setup



### Above 1GHz test setup



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

#### 4.2.6 EUT OPERATING CONDITIONS

- c) Turned on the power of all equipment.
- d) EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

#### 4.2.7 TEST RESULTS

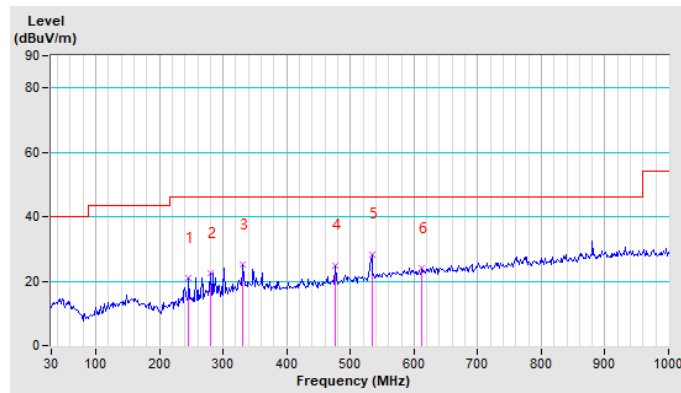
##### BELOW 1GHz WORST-CASE DATA

<b>CHANNEL</b>	TX Middle Channel	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	246.07	20.89 QP	46.00	-25.11	1.00 H	204	38.18	-17.29
2	280.27	22.50 QP	46.00	-23.50	1.00 H	256	38.35	-15.85
3	331.57	25.23 QP	46.00	-20.77	1.00 H	270	39.89	-14.66
4	476.14	24.95 QP	46.00	-21.05	1.00 H	167	35.86	-10.91
5	533.65	28.41 QP	46.00	-17.59	1.00 H	239	37.82	-9.41
6	612.93	24.16 QP	46.00	-21.84	1.00 H	225	31.74	-7.58

##### REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value.

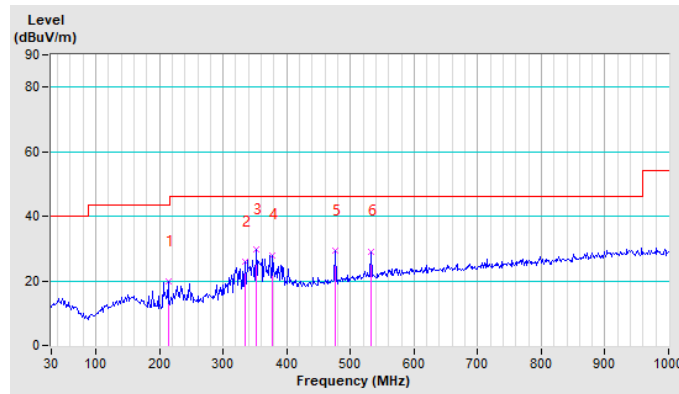


<b>CHANNEL</b>	TX Middle Channel	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	213.43	19.91 QP	43.50	-23.59	1.00 V	0	38.75	-18.84
2	334.68	25.79 QP	46.00	-20.21	1.00 V	0	40.37	-14.58
<b>3</b>	<b>351.78</b>	<b>29.63 QP</b>	<b>46.00</b>	<b>-16.37</b>	<b>1.00 V</b>	<b>0</b>	<b>43.78</b>	<b>-14.15</b>
4	378.21	27.99 QP	46.00	-18.01	1.00 V	0	41.42	-13.43
5	476.14	29.43 QP	46.00	-16.57	1.00 V	352	40.34	-10.91
6	532.10	29.16 QP	46.00	-16.84	1.00 V	0	38.61	-9.45

**REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value.



**ABOVE 1GHz WORST-CASE DATA:**

<b>CHANNEL</b>	TX Low Channel	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2400.00	47.20 PK	74.00	-26.80	1.00 H	215	45.88	1.32
2	2400.00	35.79 AV	54.00	-18.21	1.00 H	215	34.47	1.32
3	*2404.00	71.65 PK	114.00	-42.35	1.00 H	215	70.32	1.33
4	*2404.00	60.24 AV	94.00	-33.76	1.00 H	215	58.91	1.33
5	4808.00	48.02 PK	74.00	-25.98	1.00 H	52	43.42	4.60
6	4808.00	36.61 AV	54.00	-17.39	1.00 H	52	32.01	4.60
7	7212.00	51.26 PK	74.00	-22.74	2.00 H	104	41.87	9.39
8	7212.00	39.85 AV	54.00	-14.15	2.00 H	104	30.46	9.39

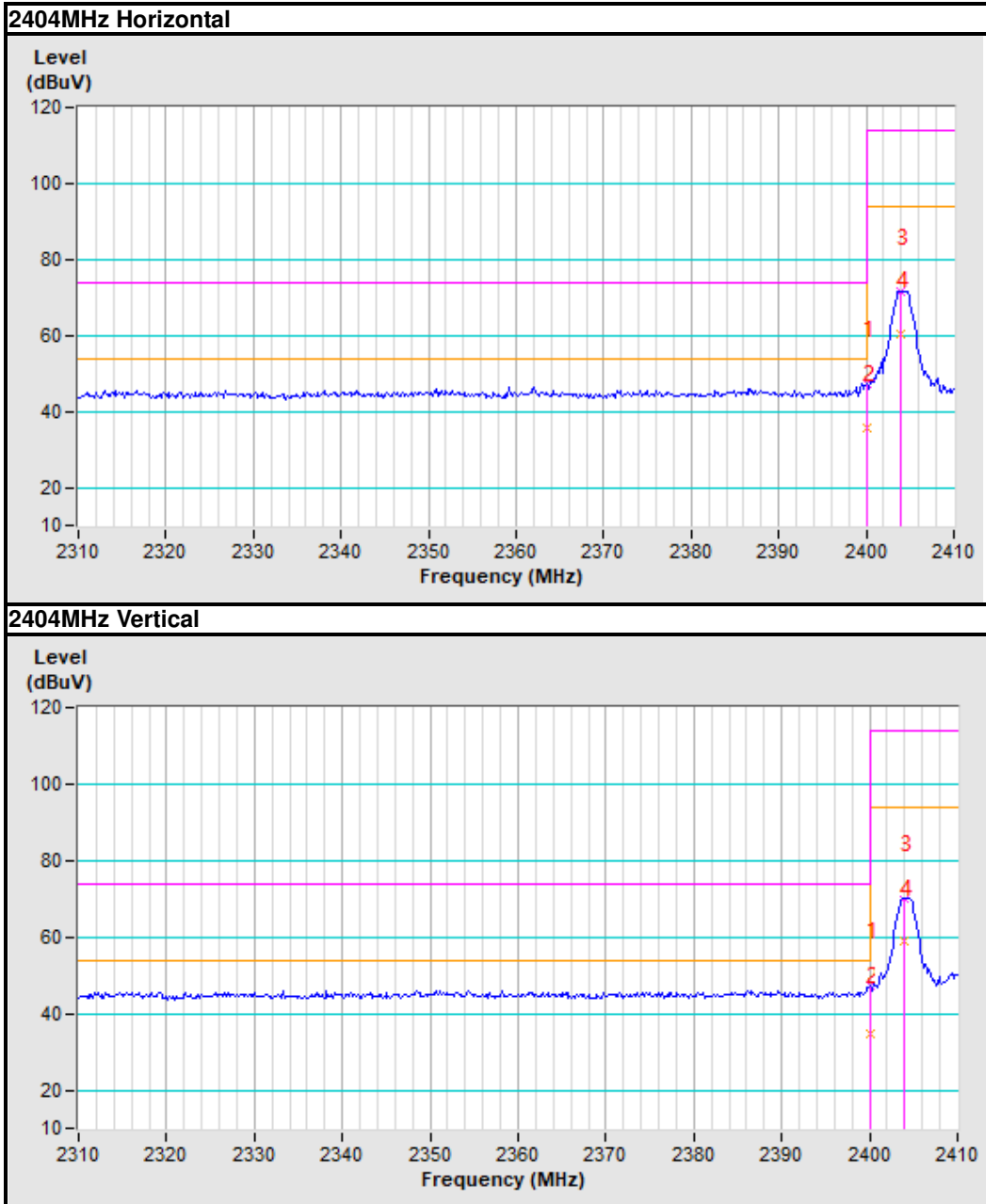
**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2400.00	46.04 PK	114.00	-69.28	1.00 V	216	44.72	1.32
2	2400.00	34.63 AV	94.00	-60.69	1.00 V	216	33.31	1.32
3	*2404.00	70.21 PK	114.00	-43.79	1.00 V	216	68.88	1.33
4	*2404.00	58.80 AV	94.00	-35.20	1.00 V	216	57.47	1.33
5	4808.00	47.50 PK	74.00	-26.50	1.00 V	211	42.90	4.60
6	4808.00	36.09 AV	54.00	-17.91	1.00 V	211	31.49	4.60
7	7212.00	50.69 PK	74.00	-23.31	1.00 V	210	41.30	9.39
8	7212.00	39.28 AV	54.00	-14.72	1.00 V	210	29.89	9.39

**REMARK:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " \* " : Fundamental frequency.

**Band edge Plot**



<b>CHANNEL</b>	TX Middle Channel	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2444.00	73.30 PK	114.00	-40.70	1.00 H	210	71.83	1.47
2	*2444.00	61.39 AV	94.00	-32.61	1.00 H	210	59.92	1.47
3	4888.00	48.36 PK	74.00	-25.64	1.00 H	210	43.53	4.83
4	4888.00	36.96 AV	54.00	-17.04	1.00 H	210	32.13	4.83
5	7332.00	50.74 PK	74.00	-23.26	1.00 H	87	40.97	9.77
6	7332.00	39.33 AV	54.00	-14.67	1.00 H	87	29.56	9.77
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2444.00	72.02 PK	114.00	-41.98	1.00 V	258	70.55	1.47
2	*2444.00	60.61 AV	94.00	-33.39	1.00 V	258	59.14	1.47
3	4888.00	47.51 PK	74.00	-26.49	2.00 V	274	42.68	4.83
4	4888.00	36.10 AV	54.00	-17.90	2.00 V	274	31.27	4.83
5	7332.00	49.68 PK	74.00	-24.32	1.00 V	163	39.91	9.77
6	7332.00	38.27 AV	54.00	-15.73	1.00 V	163	28.50	9.77

**REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " \* " : Fundamental frequency.



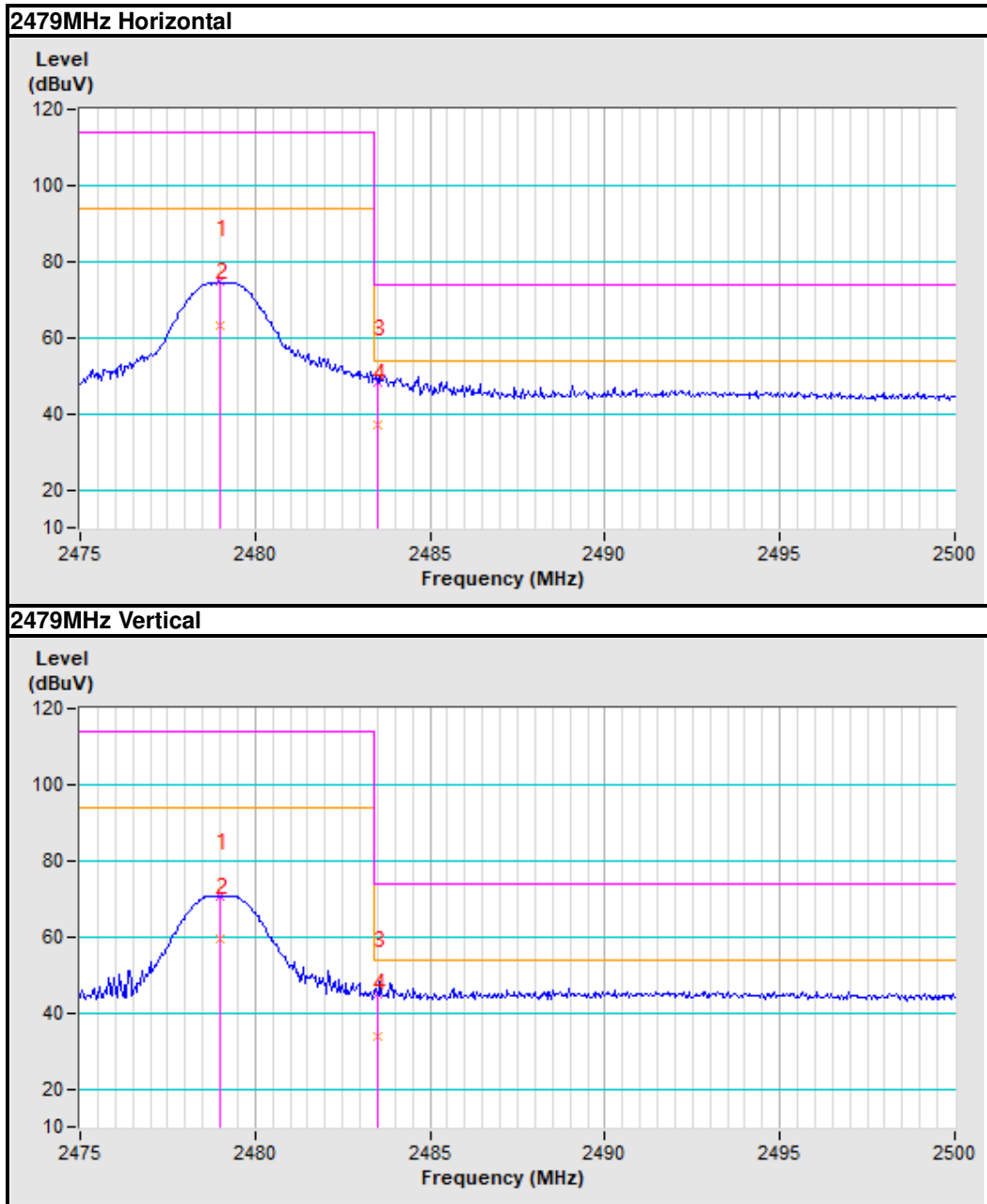
<b>CHANNEL</b>	TX High Channel	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2479.00	74.62 PK	114.00	-39.38	1.00 H	258	73.03	1.59
2	*2479.00	63.21 AV	94.00	-30.79	1.00 H	258	61.62	1.59
3	2483.50	48.29 PK	74.00	-25.71	1.00 H	258	46.68	1.61
4	2483.50	36.88 AV	54.00	-17.12	1.00 H	258	35.27	1.61
5	4958.00	48.36 PK	74.00	-25.64	1.00 H	240	43.33	5.03
6	4958.00	36.95 AV	54.00	-17.05	1.00 H	240	31.92	5.03
7	7437.00	51.22 PK	74.00	-22.78	2.00 H	274	41.12	10.10
8	7437.00	39.81 AV	54.00	-14.19	2.00 H	274	29.71	10.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2479.00	70.69 PK	114.00	-43.31	1.20 V	210	69.10	1.59
2	*2479.00	59.28 AV	94.00	-34.72	1.20 V	210	57.69	1.59
3	2483.50	45.19 PK	74.00	-28.81	1.20 V	210	43.58	1.61
4	2483.50	33.78 AV	54.00	-20.22	1.20 V	210	32.17	1.61
5	4958.00	47.58 PK	74.00	-26.42	1.02 V	169	42.55	5.03
6	4958.00	36.17 AV	54.00	-17.83	1.02 V	169	31.14	5.03
7	7437.00	50.62 PK	74.00	-23.38	1.00 V	40	40.52	10.10
8	7437.00	38.21 AV	54.00	-15.79	1.00 V	40	28.11	10.10

**REMARK:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " \* ": Fundamental frequency.

**Band edge Plot**



### 4.3 20dB BANDWIDTH MEASUREMENT

#### 4.3.1 LIMITS OF 20dB BANDWIDTH MEASUREMENT

According to FCC 15.215(c), must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

#### 4.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Power Sensor	Keysight	U2021XA	MY57320002	Feb. 23, 23
Power Sensor	Keysight	U2021XA	MY55060018	May 09, 23
Humid & Temp Programmable Tester	Haida	HD-225T	110807201	Nov. 03, 22
Oscilloscope	Agilent	DSO9254A	MY51260160	Aug. 11, 22
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Jan. 16, 23
Signal Generator	Agilent	N5183A	MY50140980	Sep. 18, 22
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Sep. 14, 22
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	N/A
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A
DC Source	Keysight	E3642A	MY56146098	N/A
Test software	ADT	ADT_RF Test Software V6.6.5.3	N/A	N/A

**NOTE:**

1. The test was performed in RF Oven room. (Chenwu)
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

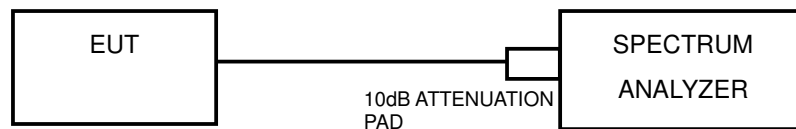
#### 4.3.3 TEST PROCEDURE

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- c. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
- d. Repeat above procedures until all frequencies measured were complete.

#### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.3.5 TEST SETUP



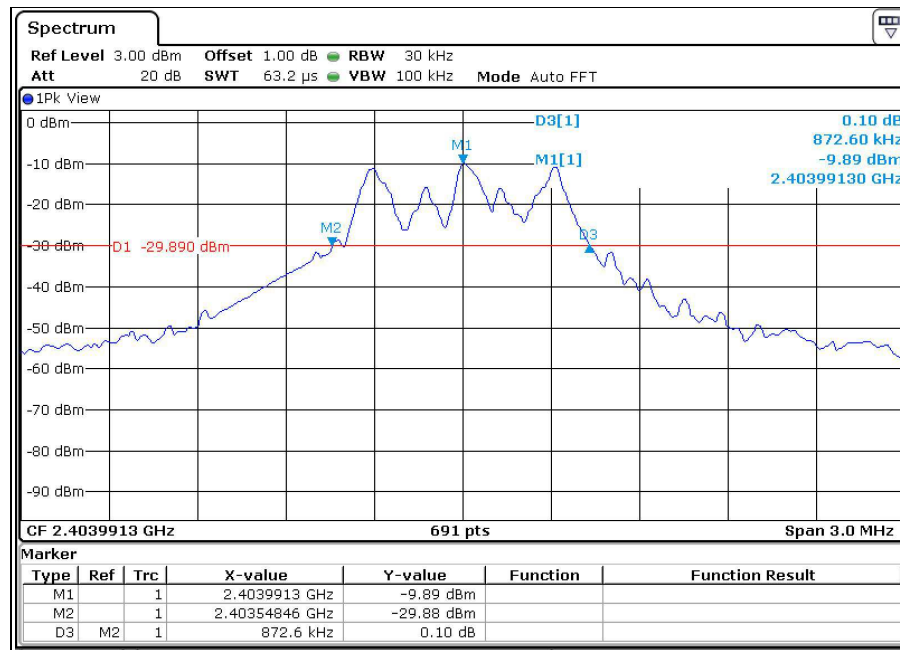
#### 4.2.6 EUT OPERATING CONDITIONS

- a) Turned on the power of all equipment.
- b) EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

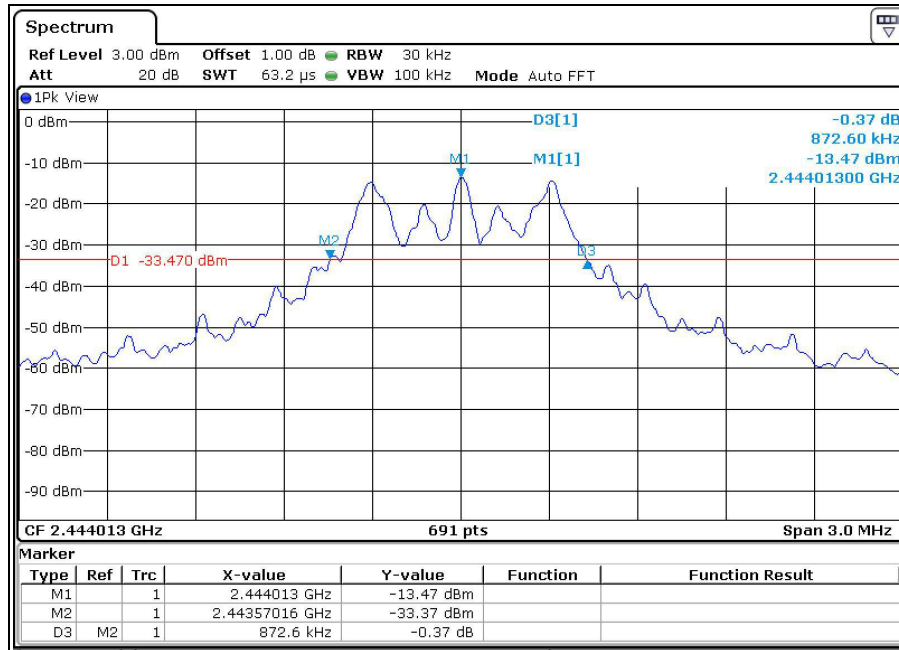
### 4.3.7 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)
Low	2404	0.8726
Middle	2444	0.8726
High	2479	0.8726

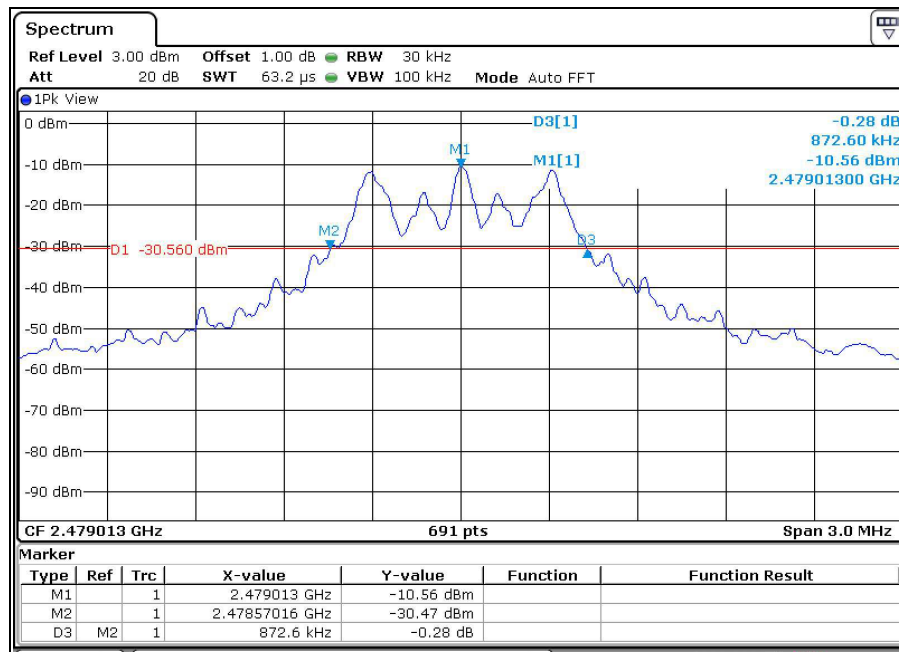
#### Test Data: Low channel



Test Data: Middle channel



Test Data: High channel





Test Report No.: RF2206WDG0250

## 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



Test Report No.: RF2206WDG0250

## 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---