



# TEST REPORT

Applicant	Shantou City Hengdi Industry Co., Ltd
Address	West of NingchuanBei Road and South of Huancui Roda, Guangyi St, Chenghai
Address	District, Shantou, Guangdong, China

Manufacturer or Supplier	Shantou City Hengdi Industry Co., Ltd
Address	West of NingchuanBei Road and South of Huancui Roda, Guangyi St, Chenghai District, Shantou, Guangdong, China
Product	Toy RC Dragster Reddy Racer COMPOSITE
Brand Name	FAO Schwarz
Model	1014451
Additional Model & Model Difference	N/A
Date of tests	May 25, 2021 ~ Jul. 21, 2021

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

#### Kernel FCC Part 15, Subpart C, Section 15.249

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

Tested by Eric Fang Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
Erric fang	Date: Sep. 08, 2021
This report is governed by, and incorporates by reference, CPS Condition	is of Service as posted at the date of issuance of this report at

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# **RELEASE CONTROL RECORD**

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF2105WDG0320-1	Original release	Sep. 08, 2021



# **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	REMARK					
§15.203	Antenna Requirement	PASS	No antenna connector is used				
§15.207 (a)	Conducted Emission	N/A	Powered by Battery				
§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	
Conducted emissions	9kHz~30MHz	3.05dB	
	9KHz ~ 30MHz	2.16dB	
Radiated emissions	30MHz ~ 1GMHz	4.00dB	
hadiated emissions	1GHz ~ 18GHz	5.17dB	
	18GHz ~ 40GHz	5.07dB	

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

PRODUCT	Toy RC Dragster Reddy Racer COMPOSITE
MODEL NO.	1014451
ADDITIONAL MODEL	N/A
FCC ID	2AALAHD21A24G
NOMINAL VOLTAGE	DC 3V (1.5V AA*2) from Battery
MODULATION TECHNOLOGY	GFSK
OPERATING FREQUENCY	2410-2475MHz
ANTENNA TYPE	Wire Antenna, with 0dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	Refer to user's manual

#### 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.: 2105WDG0320-1) 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		APPLICA	ABLE TO		DESCRIPTION		
MODE	RE<1G	RE≥1G	PLC	BW	DESCRIPTION		
A	$\checkmark$	$\checkmark$	-	$\checkmark$	DC 3V from Fully Battery		

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

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

TESTED CHANNEL	TESTED FREQUENCY
Low	2410 MHz
Middle	2440 MHz
High	2475 MHz



#### **Channel List**

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2410	17	2427	34	2444	51	2461
1	2411	18	2428	35	2445	52	2462
2	2412	19	2429	36	2446	53	2463
3	2413	20	2430	37	2447	54	2464
4	2414	21	2431	38	2448	55	2465
5	2415	22	2432	39	2449	56	2466
6	2416	23	2433	40	2450	57	2467
7	2417	24	2434	41	2451	58	2468
8	2418	25	2435	42	2452	59	2469
9	2419	26	2436	43	2453	60	2470
10	2420	27	2437	44	2454	61	2471
11	2421	28	2438	45	2455	62	2472
12	2422	29	2439	46	2456	63	2473
13	2423	30	2440	47	2457	64	2474
14	2424	31	2441	48	2458	65	2475
15	2425	32	2442	49	2459	66	
16	2426	33	2443	50	2460	67	

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

## **TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE	26deg. C, 55%RH	DC 3V from Fully Battery	Panda
BW	25deg. C, 54%RH	DC 3V from Fully Battery	уоуо



## 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 without any other necessary accessories or support units.



# 4. TEST TYPES AND RESULTS

## 4.1 RADIATED EMISSION MEASUREMENT

#### 4.1.1 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.

#### NOTES:

- 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.



#### 4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 07, 22
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	May 09, 22
Active Loop Antenna (9KHz -30MHz)	SCHWARZBECK	FMZB 1519B	1519B-045	May 29, 22
Amplifier (9KHz -1GHz)	Burgeon	BPA-530	100210	Mar. 13, 22
Bilog Antenna (20MHz -2GHz)	Teseq	CBL 6111D	30643	May 29, 22
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 29, 22
Horn Antenna (18GHz -40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	May 09, 22
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	May 22, 22
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A
Broadband Preamplifier (1GHz~18GHz)	SCHWARZBECK	BBV9718	305	May 08, 22
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Mar. 13, 22
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	N/A

#### NOTES:

1. The test was performed in 966 Chamber.

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.



## 4.1.3 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.

#### NOTES:

- 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.

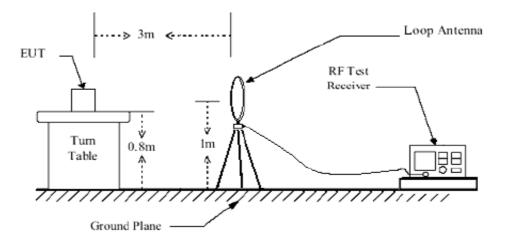
## 4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

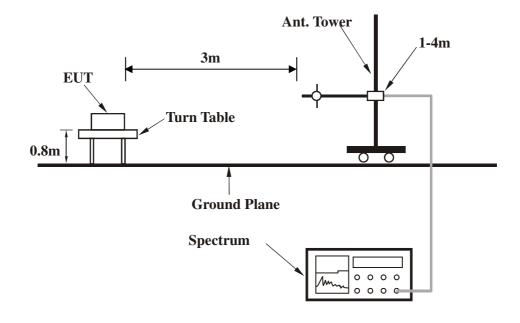


## 4.1.5 TEST SETUP

### Below 30MHz test setup



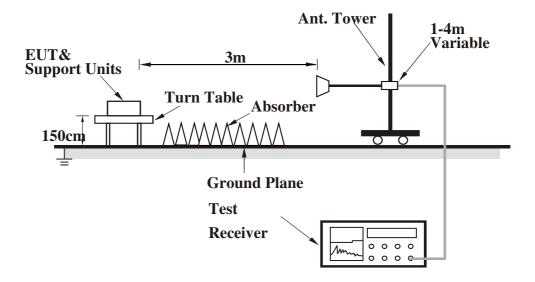
#### **Below 1GHz test setup**



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### Above 1GHz test setup



Note: 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 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

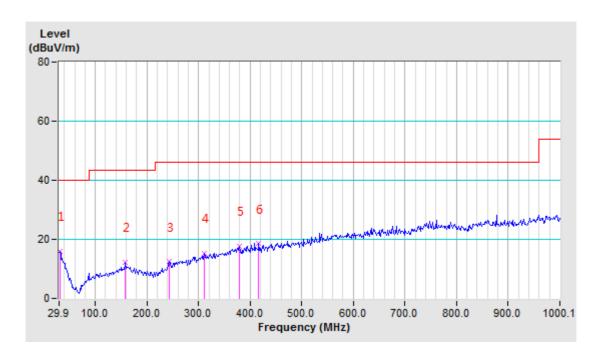
#### **BELOW 1GHz WORST-CASE DATA**

CHANNEL	TX Middle Channel	DETECTOR	Oursei Bask (OB)
FREQUENCY RANGE	9KHz ~ 1GHz	FUNCTION	Quasi-Peak (QP)

	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	31.45	16.02 QP	40.00	-23.98	1.00 H	58	28.61	-12.59	
2	158.94	12.29 QP	43.50	-31.21	1.00 H	44	29.32	-17.03	
3	242.89	12.40 QP	46.00	-33.60	1.00 H	44	29.55	-17.15	
4	311.29	15.28 QP	46.00	-30.72	1.00 H	14	29.08	-13.80	
5	379.70	17.65 QP	46.00	-28.35	1.00 H	4	29.49	-11.84	
6	417.01	18.52 QP	46.00	-27.48	1.00 H	4	29.50	-10.98	

#### **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.



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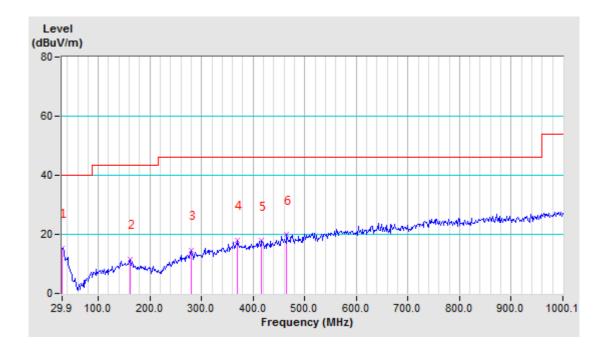


CHANNEL	TX Middle Channel	DETECTOR	Outer Deals (OD)
FREQUENCY RANGE	9KHz ~ 1GHz	FUNCTION	Quasi-Peak (QP)

	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	30.000	15.28QP	40.00	-24.72	1.00 V	16	27.32	-12.04	
2	162.050	11.54QP	43.50	-31.96	1.00 V	129	28.69	-17.15	
3	280.200	14.65QP	46.00	-31.35	1.00 V	55	29.91	-15.26	
4	370.370	17.94QP	46.00	-28.06	1.00 V	142	30.00	-12.06	
5	417.010	17.87QP	46.00	-28.13	1.00 V	114	28.85	-10.98	
6	465.200	19.91QP	46.00	-26.09	1.00 V	100	29.96	-10.05	

#### **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.



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#### ABOVE 1GHz DATA:

CHANNEL	TX Low Channel	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	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	61.11PK	74.00	-28.44	1.00 H	110	55.99	5.12	
2	2400.00	33.47AV	54.00	-37.79	1.00 H	110	28.35	5.12	
3	*2410.00	94.77PK	114.00	-55.23	1.00 H	110	89.59	5.18	
4	*2410.00	67.13AV	94.00	-64.58	1.00 H	110	61.95	5.18	
5	4820.00	56.34PK	74.00	-17.66	1.00 H	162	45.67	10.67	
6	4820.00	28.70AV	54.00	-25.30	1.00 H	162	18.03	10.67	
7	#7230.00	61.18PK	74.00	-12.82	1.00 H	145	44.24	16.94	
8	#7230.00	33.54AV	54.00	-20.46	1.00 H	145	16.60	16.94	
		ANTENNA	<b>POLARITY</b>	& TEST DI	STANCE: V	ERTICAL A	Т 3 М		
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	47.35PK	74.00	-26.65	1.00 V	155	42.23	5.12	
2	2400.00	19.71AV	54.00	-34.29	1.00 V	155	14.59	5.12	
3	*2410.00	83.17PK	114.00	-30.83	1.00 V	155	77.99	5.18	
4	*2410.00	55.53AV	94.00	-38.47	1.00 V	155	50.35	5.18	
5	4820.00	55.13PK	74.00	-18.87	1.00 V	107	44.46	10.67	
6	4820.00	27.49AV	54.00	-26.51	1.00 V	107	16.82	10.67	
7	#7230.00	59.69PK	74.00	-14.31	1.00 V	107	42.75	16.94	
8	#7230.00	32.05AV	54.00	-21.95	1.00 V	107	15.11	16.94	

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

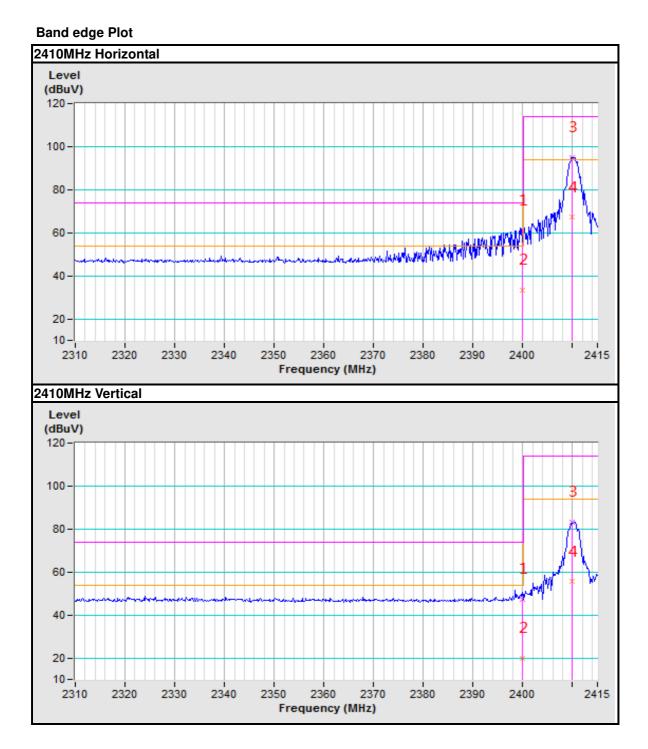
3. The emission levels of other frequencies were greater than 20dB margin.

4. Margin value = Emission level – Limit value.

5. " \* ": Fundamental frequency.

6. " # ": The radiated frequency is out of the restricted band.





**Dongguan Branch** 

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CHANNEL	TX Middle Channel	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	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	*2440.00	95.12PK	114.00	-18.88	1.00 H	140	89.79	5.33
2	*2440.00	67.48AV	94.00	-26.52	1.00 H	140	62.15	5.33
3	4880.00	55.69PK	74.00	-18.31	1.00 H	197	44.77	10.92
4	4880.00	28.05AV	54.00	-25.95	1.00 H	197	17.13	10.92
5	7320.00	57.42PK	74.00	-16.58	1.00 H	168	40.23	17.19
6	7320.00	29.78AV	54.00	-24.22	1.00 H	168	12.59	17.19
		ANTENNA	<b>POLARITY</b>	/ & TEST DI	STANCE: V	ERTICAL A	Т 3 М	
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	*2440.00	80.92PK	114.00	-33.08	1.00 V	236	75.59	5.33
2	*2440.00	53.28AV	94.00	-40.72	1.00 V	236	47.95	5.33
3	4880.00	53.26PK	74.00	-20.74	1.00 V	100	42.34	10.92
4	4880.00	25.62PK	54.00	-28.38	1.00 V	100	14.70	10.92
5	7320.00	55.59PK	74.00	-18.41	1.00 V	198	38.40	17.19
6	7320.00	27.95AV	54.00	-26.05	1.00 V	198	10.76	17.19

**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.



CHANNEL	TX High Channel	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	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	*2475.00	93.76PK	114.00	-20.24	1.00 H	145	88.23	5.53
2	*2475.00	66.12AV	94.00	-27.88	1.00 H	145	60.59	5.53
3	2483.50	62.79PK	74.00	-11.21	1.00 H	145	57.22	5.57
4	2483.50	35.15AV	54.00	-18.85	1.00 H	145	29.58	5.57
5	4950.00	57.76PK	74.00	-16.24	1.00 H	91	46.56	11.20
6	4950.00	30.12AV	54.00	-23.88	1.00 H	91	18.93	11.20
7	7425.00	62.51PK	74.00	-11.49	1.00 H	91	45.03	17.48
8	7425.00	34.87AV	54.00	-19.13	1.00 H	91	17.39	17.48
		ANTENNA		/ & TEST DI	STANCE: V	ERTICAL A	Т 3 М	
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	*2475.00	84.32PK	114.00	-29.68	1.00 V	203	78.79	5.53
2	*2475.00	56.68AV	94.00	-37.32	1.00 V	203	51.15	5.53
3	2483.50	49.88PK	74.00	-24.12	1.00 V	203	44.31	5.57
4	2483.50	32.24AV	54.00	-21.76	1.00 V	203	26.67	5.57
5	4950.00	55.42PK	74.00	-18.58	1.00 V	266	44.23	11.20
6	4950.00	27.78AV	54.00	-26.22	1.00 V	266	16.59	11.20
7	7425.00	60.36PK	74.00	-13.64	1.00 V	177	42.88	17.48
8	7425.00	32.72AV	54.00	-21.28	1.00 V	266	15.24	17.48

#### **REMARKS:**

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

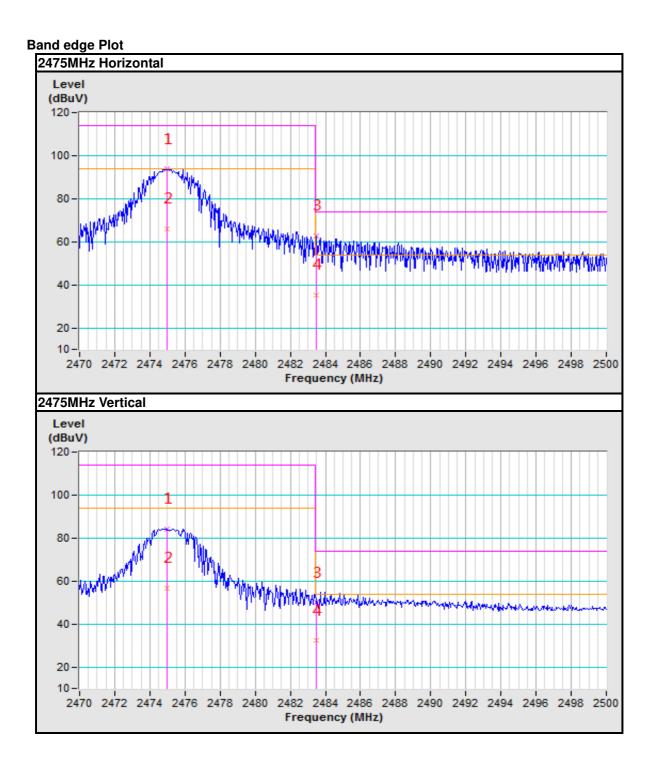
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The emission levels of other frequencies were greater than 20dB margin.

4. Margin value = Emission level – Limit value.

5. " \* ": Fundamental frequency.





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## 4.2 20dB BANDWIDTH MEASUREMENT

#### 4.2.1 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.

#### 4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	N/A
Power Sensor	Keysight	U2021XA	MY55060018	May 09, 22
Power Meter	Anritsu	ML2495A	1139001	Feb. 24, 22
Power Sensor	Anritsu	MA2411B	1531155	Feb. 24, 22
Digital Multimeter	FLUKE	15B	A1220010DG	N/A
Humid & Temp Programmable Tester	Haida	HD-225T	110807201	Nov. 03, 21
Oscilloscope	Agilent	DSO9254A	MY51260160	Aug. 10, 21
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Feb. 24, 22
Signal Generator	Agilent	N5183A	MY50140980	Aug. 10, 21
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Sep. 04, 21
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	N/A
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A
DC Source	Keysight	E3642A	MY56146098	N/A

#### NOTES:

1. The test was performed in RF Oven room.

## 4.2.3 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.

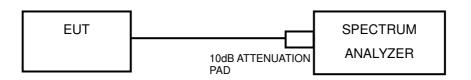
<sup>2.</sup> The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.



4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



## 4.2.6 EUT OPERATING CONDITIONS

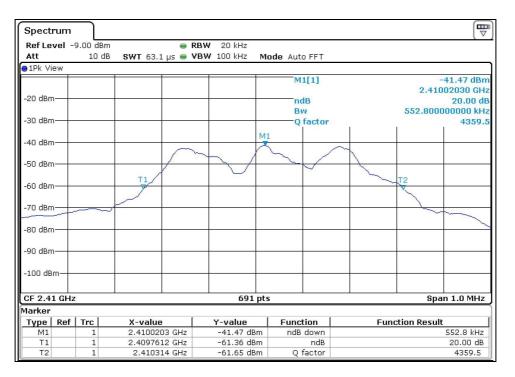
- a) Turned on the power of all equipment.
- b) EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

## 4.2.7 TEST RESULTS

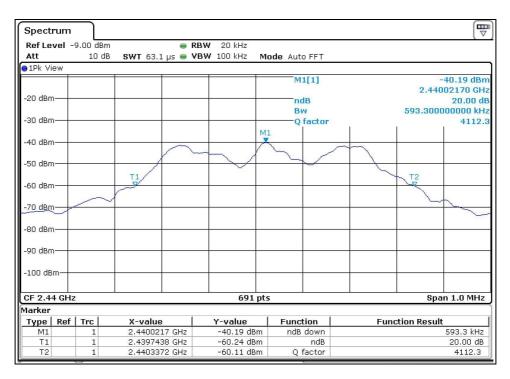
CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)		
Low	2405	0.5528		
Middle	2440	0.5933		
High	2475	0.6165		



#### Test Data: Low channel



#### Test Data: Middle channel



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#### Test Data: High channel

Spectrum							
Ref Level -	9.00 dBm		RBW 20 kHz				
Att	10 dB	SWT 63.1 µs 👄	<b>VBW</b> 100 kHz M	Iode Auto FFT			
●1Pk View							
				M1[1]		-39.23 dBm	
						2.47501880 GHz	
-20 dBm				ndB		20.00 dB	
00.10				Bw		616.50000000 kHz	
-30 dBm				Q factor		4014.6	
-40 dBm			M		1		
-40 UBIII				h	1		
-50 dBm		/					
		T1			~	T2	
-60 dBm		F				V	
-70 dBm	5						
$\sim$							
-80 dBm							
-90 dBm							
-100 dBm							
CF 2.475 GH	z		691 pt	s		Span 1.0 MHz	
Marker							
Type Ref	Trc	X-value	Y-value	Function	Function Result		
M1	1	2.4750188 GHz	-39.23 dBm	ndB down	616.5 kHz		
T1 1		2.4747323 GHz	-59.33 dBm	ndB	20.00 dB		
T2	1	2.4753488 GHz	-59.38 dBm	Q factor		4014.6	



# 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



## 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----