



TEST REPORT

Applicant	HYPER TOY COMPANY
Address	177 Malaga Park Drive, Malaga, NJ 08328

Manufacturer or Supplier	HYPER TOY COMPANY				
Address	177 Malaga Park Drive, Malaga, NJ 08328				
Product	RC FLYING EAGLE				
Brand Name	N/A				
Model	HYP-HRC-1411				
Additional Model & Model Difference	N/A				
Date of tests	Jul. 21, 2021 ~ Aug. 26, 2021				
the tests have been	the tests have been carried out according to the requirements of the following standard:				
☑ FCC Part 15, Subpart C, Section 15.249					
CONCLUSION: The	CONCLUSION: The submitted sample was found to <u>COMPLY</u> with the test requirement				
Tested by Lucas Chen Approved by Glyn He					

 Tested by Lucas Chen Project Engineer / EMC Department
 Approved by Glyn He Assistant Manager / EMC Department

 General Content of the second second

completeness of this report, the tests conducted and the correctness of the report contents

Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch



TABLE OF CONTENTS

RE	LEAS		3
1	SU	MMARY OF TEST RESULTS	4
2	ME	ASUREMENT UNCERTAINTY	4
3	GE	NERAL INFORMATION	5
3	3.1 G	ENERAL DESCRIPTION OF EUT	5
3	3.2 D	ESCRIPTION OF TEST MODES	3
3	3.3 G	ENERAL DESCRIPTION OF APPLIED STANDARDS	3
3	3.4 D	ESCRIPTION OF SUPPORT UNITS	3
4.	TE	ST TYPES AND RESULTS	9
Z	4.1 RA	DIATED EMISSION MEASUREMENT	9
	4.1	.1 LIMITS OF RADIATED EMISSION MEASUREMENT	9
	4.1	.2 TEST INSTRUMENTS	C
	4.1	.3 TEST PROCEDURES	1
	4.1	.4 DEVIATION FROM TEST STANDARD1	1
	4.1	.5 TEST SETUP	2
	4.1	.6 EUT OPERATING CONDITIONS 13	3
	4.1	.7 TEST RESULTS	4
Z	1.2 201	DB BANDWIDTH MEASUREMENT	1
	4.2	.1 LIMITS OF 20DB BANDWIDTH MEASUREMENT	1
	4.2	.2 TEST INSTRUMENTS	1
	4.2	.3 TEST PROCEDURE	1
	4.2	.4 DEVIATION FROM TEST STANDARD	1
	4.2	.5 TEST SETUP	2
	4.2	.6 EUT OPERATING CONDITIONS	2
	4.2	.7 TEST RESULTS	2
5.	PH	OTOGRAPHS OF THE TEST CONFIGURATION2	5
6.	AP	PENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE	
	EU'	T BY THE LAB	6



RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF2107WDG0414	Original release	Sep. 01, 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	RESULT	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	RC FLYING EAGLE	
MODEL NO.	HYP-HRC-1411	
ADDITIONAL MODEL	N/A	
FCC ID	2AMOVHRC1411	
NOMINAL VOLTAGE	DC 3V (1.5V*AAA*2) from Battery	
MODULATION TECHNOLOGY	GFSK	
OPERATING FREQUENCY	2420-2461MHz	
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.: 2107WDG0414) 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 Y axis for radiated emission. The EUT was tested under the following mode.

EUT CONFIGUR	E	APPLIC	ABLE TO		DESCRIPTION	
MODE	RE<1G	RE≥1G	PLC	BW	DESCRIPTION	
А	\checkmark	\checkmark	-	\checkmark	DC 3V from New 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	2420 MHz
Middle	2440 MHz
High	2461 MHz



Channel List

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2420	9	2430	17	2443	25	2455
2	2421	10	2434	18	2444	26	2456
3	2423	11	2435	19	2445	27	2458
4	2424	12	2436	20	2446	28	2459
5	2425	13	2438	21	2450	29	2460
6	2426	14	2439	22	2451	30	2461
7	2428	15	2440	23	2453		
8	2429	16	2441	24	2454		

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 3V from New Battery	Panda
BW	25deg. C, 56%RH	DC 3V from New Battery	Jeffrey
PLC	-	-	-



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

4.1.1LIMITS 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.

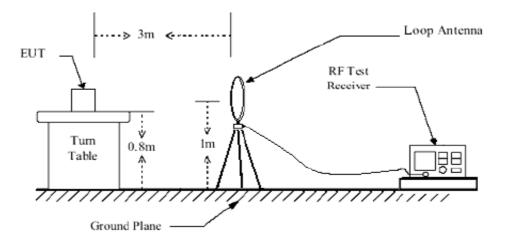
4.1.4DEVIATION FROM TEST STANDARD

No deviation.

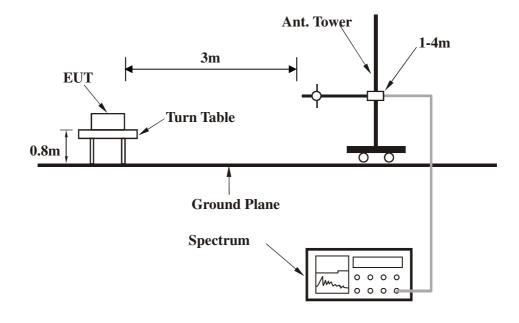


4.1.5 TEST SETUP

Below 30MHz test setup

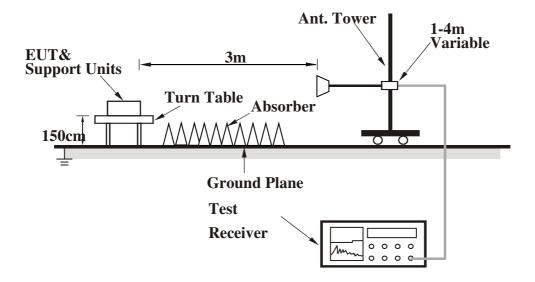


Below 1GHz test setup





Above 1GHz test setup



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

4.1.6 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

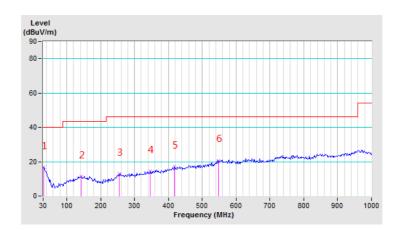
BELOW 1GHz WORST-CASE DATA

CHANNEL	TX Middle Channel	DETECTOR	Overei Bask (OD)
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	31.55	16.92 QP	40.00	-23.08	1.00 H	180	30.43	-13.51				
2	141.92	11.58 QP	43.50	-31.92	1.00 H	180	29.77	-18.19				
3	255.40	12.90 QP	46.00	-33.10	1.00 H	180	29.65	-16.75				
4	347.12	14.62 QP	46.00	-31.38	1.00 H	180	30.04	-15.42				
5	418.62	17.05 QP	46.00	-28.95	1.00 H	180	29.91	-12.86				
6	547.64	20.75 QP	46.00	-25.25	1.00 H	180	29.71	-8.96				

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.



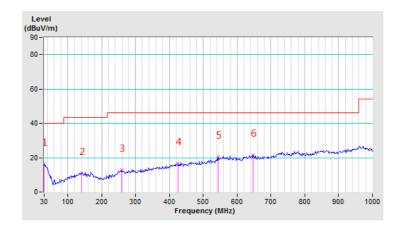


CHANNEL	TX Middle Channel	DETECTOR	Oursei Desk (OD)
FREQUENCY RANGE	9KHz ~ 1GHz	FUNCTION	Quasi-Peak (QP)

	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	30.00	16.34 QP	40.00	-23.66	1.00 V	180	29.34	-13.00				
2	140.37	11.12 QP	43.50	-32.38	1.00 V	180	29.28	-18.16				
3	258.51	13.08 QP	46.00	-32.92	1.00 V	180	29.58	-16.50				
4	426.39	16.89 QP	46.00	-29.11	1.00 V	180	29.57	-12.68				
5	544.54	20.56 QP	46.00	-25.44	1.00 V	180	30.04	-9.48				
6	647.13	21.60 QP	46.00	-24.40	1.00 V	180	29.53	-7.93				

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 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	49.97 PK	74.00	-24.03	1.00 H	125	44.39	5.58		
2	2400.00	27.05 AV	54.00	-26.95	1.00 H	125	21.47	5.58		
3	*2420.00	89.31 PK	114.00	-24.69	1.00 H	125	83.69	5.62		
4	*2420.00	66.39 AV	94.00	-27.61	1.00 H	125	60.77	5.62		
5	4840.00	55.08 PK	74.00	-18.92	1.00 H	0	44.00	11.08		
6	4840.00	32.16 AV	54.00	-21.84	1.00 H	0	21.08	11.08		
7	#7260.00	58.97 PK	74.00	-15.03	1.00 H	0	40.99	17.98		
8	#7260.00	36.05 AV	54.00	-17.95	1.00 H	0	18.07	17.98		
-		ANTENNA	POLARIT	/ & 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	54.65 PK	74.00	-19.35	1.00 V	125	49.07	5.58		
2	2400.00	31.73 AV	54.00	-22.27	1.00 V	125	26.15	5.58		
3	*2420.00	91.45 PK	114.00	-22.55	1.00 V	125	85.83	5.62		
4	*2420.00	68.53 AV	94.00	-25.47	1.00 V	125	62.91	5.62		
5	4840.00	54.28 PK	74.00	-19.72	1.00 V	0	43.20	11.08		
6	4840.00	31.36 AV	54.00	-22.64	1.00 V	0	20.28	11.08		
7	#7260.00	58.33 PK	74.00	-15.67	1.00 V	0	40.35	17.98		
8	#7260.00	35.41 AV	54.00	-18.59	1.00 V	0	17.43	17.98		

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.

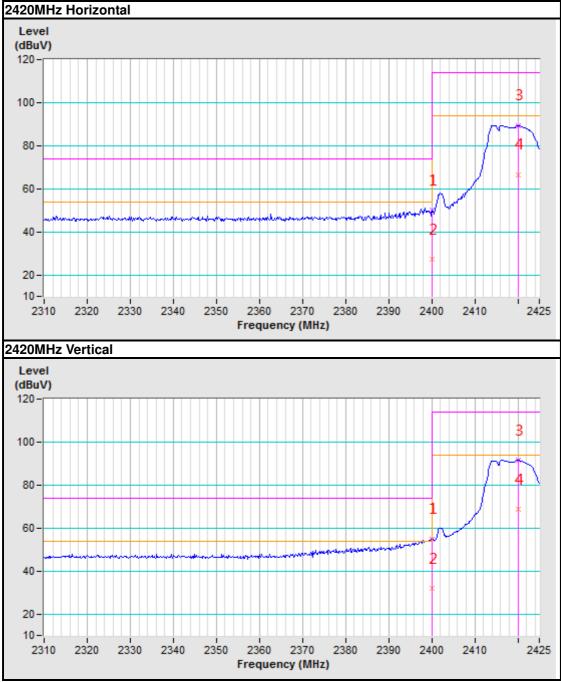
4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

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









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

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	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	90.75 PK	114.00	-23.25	1.00 H	125	85.10	5.65
2	*2440.00	67.83 AV	94.00	-26.17	1.00 H	125	62.18	5.65
3	4880.00	54.29 PK	74.00	-19.71	1.00 H	0	43.03	11.26
4	4880.00	31.37 AV	54.00	-22.63	1.00 H	0	20.11	11.26
5	7320.00	58.37 PK	74.00	-15.63	1.00 H	0	40.18	18.19
6	7320.00	35.45 AV	54.00	-18.55	1.00 H	0	17.26	18.19
		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	2440.00	91.88 PK	114.00	-22.12	1.00 V	125	86.23	5.65
2	2440.00	68.96 AV	94.00	-25.04	1.00 V	125	63.31	5.65
3	4880.00	54.10 PK	74.00	-19.90	1.00 V	0	42.84	11.26
4	4880.00	31.18 AV	54.00	-22.82	1.00 V	0	19.92	11.26
5	7320.00	58.73 PK	74.00	-15.27	1.00 V	0	40.54	18.19
6	7320.00	35.81 AV	54.00	-18.19	1.00 V	0	17.62	18.19

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	*2461.00	91.47 PK	114.00	-22.53	1.00 H	125	85.78	5.69	
2	*2461.00	68.55 AV	94.00	-25.45	1.00 H	125	62.86	5.69	
3	2483.50	50.53 PK	74.00	-23.47	1.00 H	125	44.79	5.74	
4	2483.50	27.61 AV	54.00	-26.39	1.00 H	125	21.87	5.74	
5	4922.00	54.75 PK	74.00	-19.25	1.00 H	0	43.32	11.43	
6	4922.00	31.83 AV	54.00	-22.17	1.00 H	0	20.40	11.43	
7	7383.00	58.91 PK	74.00	-15.09	1.00 H	0	40.50	18.41	
8	7383.00	35.88 AV	54.00	-18.12	1.00 H	0	17.47	18.41	
		ANTENNA	POLARITY	& 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	*2461.00	92.00 PK	114.00	-22.00	1.00 V	125	86.31	5.69	
2	*2461.00	69.08 AV	94.00	-24.92	1.00 V	125	63.39	5.69	
3	2483.50	53.14 PK	74.00	-20.86	1.00 V	125	47.40	5.74	
4	2483.50	30.22 AV	54.00	-23.78	1.00 V	125	24.48	5.74	
5	4922.00	55.25 PK	74.00	-18.75	1.00 V	0	43.82	11.43	
6	4922.00	32.33 AV	54.00	-21.67	1.00 V	0	20.90	11.43	
7	7383.00	58.99 PK	74.00	-15.01	1.00 V	0	40.58	18.41	
8	7383.00	36.07 AV	54.00	-17.93	1.00 V	0	17.66	18.41	

REMARKS:

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

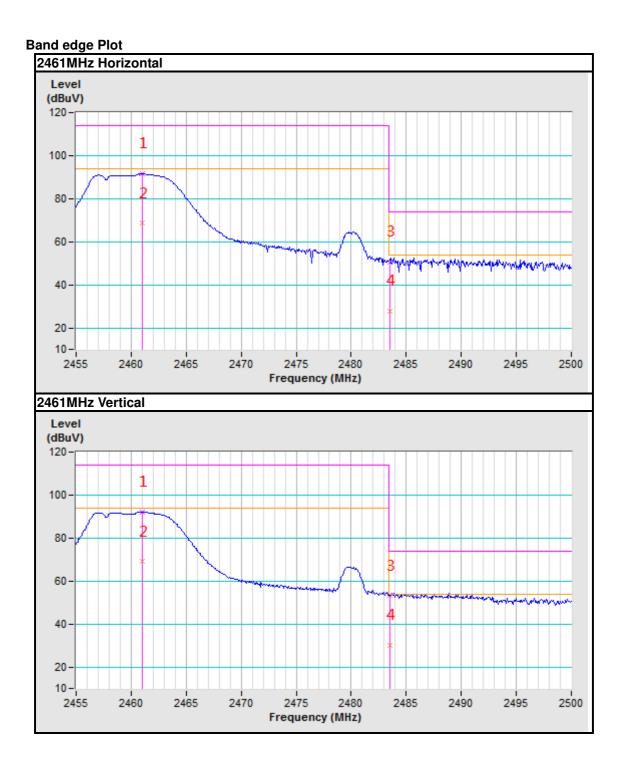
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

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

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.







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.				
Digital Multimeter	FLUKE	15B	A1220010DG	N/A				
Humid & Temp Programmable Tester	Haida	HD-225T	110807201	Nov. 03,21				
Oscilloscope	Agilent	DSO9254A	MY51260160	Aug. 10,22				
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Feb. 24,22				
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A				
DC Source	Keysight	E3642A	MY56146098	N/A				

NOTES:

1. The test was performed in RF Oven room.

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.

4.2.3 TEST PROCEDURE

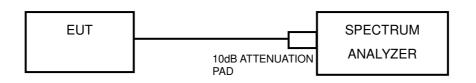
- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the 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.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.



4.2.5 TEST SETUP



4.2.6 EUT OPERATING CONDITIONS

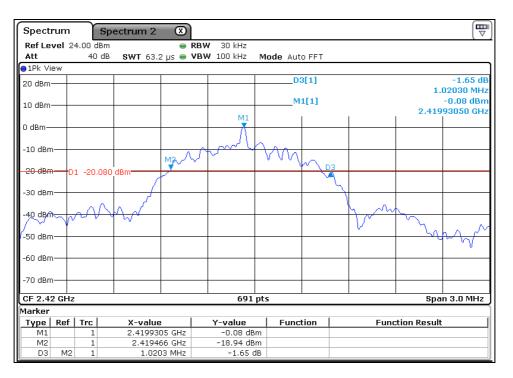
- a) Turned on the power of all equipment.
- b) EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

4.2.7 TEST RESULTS

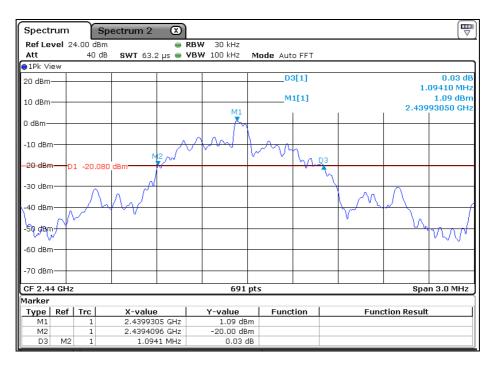
CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)		
Low	2420	1.0203		
Middle	2440	1.0941		
High	2461	1.0637		



Test Data: Low channel



Test Data: Middle channel



Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch No. 96, Guantai Road (Houjie Section), Houjie Town, Dongguan City, Guangdong Province. 523942. People's Republic of China. Tel: +86 769 8998 2098 Fax: +86 769 8593 1080 Email: <u>customerservice.dg@bureauveritas.com</u>



Test Data: High channel

Spectrum 🔆 Spectrum 2 🗵												
Att SGL		9.00 dB 45 c			RBW 30 kH: VBW 100 kH:		i de Aut	o FFT				
⊖1Pk Vi	ew											
20 dBm·	_						D3[1] M1[1]			0.57 dB 1.06370 MHz 0.31 dBm		
10 dBm·			_			_		I	1	2.460	93050 GHz	
0 dBm—					M	1						
-10 dBm	-					h	~~~	2				
-20 dBn	T-D	1 -19.6	90 dBm	M2/V								
-30 dBm	η		~					- V				
		٨N	M_{m}						1 MM			
-40 dBm -50 dBm	mr	\mathcal{N}^*							10-2 ×	m		
-60 dBm												
-ou uBM												
CF 2.461 GHz 691 pts Span 3.0 MHz												
Marker												
Туре	Ref			X-value Y-va			Function			Function Result		
M1 M2		1	2.460930		0.31							
D3	M2	1		13 GHZ 17 MHZ		aBm 7 dB						



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----