





# **TEST REPORT**

Applicant:	GUANGDONG FEILUN TECHNOLOGY INDUSTRIAL CO., LTD.
Address:	Laimei Industrial District, Fengxiang Chenghai, Shantou city, Guangdong, China

Manufacturer or Supplier	GUANGDONG FEILUN TECHNOLOGY INDUSTRIAL CO., LTD.
Address	Laimei Industrial District, Fengxiang Chenghai, Shantou city, Guangdong, China
Product:	Toy RC Italia Racer 1:16 Sport Real Drive
Brand Name:	Sharper Image
Model:	1009574
Additional Model & Model Difference	N/A
Date of tests:	Feb. 25 to Mar. 02, 2019

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 Evans He	Approved by David Huang
Project Engineer / EMC Department	Supervisor / EMC Department
mas. He	David Huang

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Date: Mar. 05, 2019

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# **TABLE OF CONTENTS**

RE	LEASE	CONTROL RECORD	
1	SUMN	MARY OF TEST RESULTS	4
2	2 MEAS	SUREMENT UNCERTAINTY	4
3	GENE	ERAL INFORMATION	5
3	3.1 GENE	ERAL DESCRIPTION OF EUT	5
3	3.2 DESC	CRIPTION OF TEST MODES	6
3	3.3 GENE	ERAL DESCRIPTION OF APPLIED STANDARDS	8
3	3.4 DESC	CRIPTION OF SUPPORT UNITS	8
4.	TEST	TYPES AND RESULTS	9
2	l.1 RADI	ATED EMISSION MEASUREMENT	9
	4.1.1	LIMITS OF RADIATED EMISSION MEASUREMENT	9
	4.1.2	TEST INSTRUMENTS	
	4.1.3	TEST PROCEDURES	11
	4.1.4	DEVIATION FROM TEST STANDARD	11
	4.1.5	TEST SETUP	
	4.1.6	EUT OPERATING CONDITIONS	
	4.1.7	TEST RESULTS	
2	4.2 20DB	BANDWIDTH MEASUREMENT	21
	4.2.11	LIMITS OF 20dB BANDWIDTH MEASUREMENT	21
	4.2.2 7	TEST INSTRUMENTS	21
	4.2.3 7	TEST PROCEDURE	22
	4.2.4 1	DEVIATION FROM TEST STANDARD	22
	4.2.5 7	TEST SETUP	22
	4.2.6 I	EUT OPERATING CONDITIONS	22
	4.2.7 T	TEST RESULTS	23
5.	РНОТ	TOGRAPHS OF THE TEST CONFIGURATION	25
6.	APPE	NDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHA	NGES TO THE
EU	T BY TE	IE LAB	

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# **RELEASE CONTROL RECORD**

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF 190123N017-1	Original release	Mar. 05, 2019

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# 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	I TECT TYPE AND LIMIT THE REMARK						
§15.203	Antenna Requirement	PASS	No antenna connector is used				
§15.207 (a)	Conducted Emission	N/A	Powered from 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				

NOTE: Test Lab Information:

Lab: Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch

Test Lab Address: Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

South Side of Zhoushi Road, Bao'an District Shenzhen, Guangdong,

518108, People's Republic of China

#### 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
	9kHz~30MHz	3.11dB
Radiated emissions	30MHz ~ 1GMHz	5.12dB
Radialed emissions	1GHz ~ 18GHz	5.34dB
	18GHz ~ 40GHz	5.20dB

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

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# 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Toy RC Italia Racer 1:16 Sport Real Drive
MODEL NO.	1009574
ADDITIONAL MODELS	N/A
FCC ID	Z6QFC15724GTX
NOMINAL VOLTAGE	DC 3V (2*1.5V*AA) from Battery
MODULATION TECHNOLOGY	GFSK
OPERATING FREQUENCY	2407-2477MHz
ANTENNA TYPE	Wire antenna, with 0dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	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. Please refer to the EUT photo document (Reference No.: 190123N017-1) for detailed product photo.

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#### 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 CONFIGURE		APPLICA	ABLE TO		DESCRIPTION	
MODE	RE<1G	RE≥1G	PLC	BW	DESCRIPTION	
A	√	√	-	√	DC 3V from Battery	

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	2407 MHz
Middle	2442 MHz
High	2477 MHz

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# **Channel List**

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

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#### **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	-	-	-	-	-

NO.	DESCRIPTION OF THE ABOVE SUPPORT UNITS
1, 2	-

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Page 8 of 26



#### 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.

#### 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.

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# 4.1.2 TEST INSTRUMENTS

Instrument	Model	Serial #	Cal Date	Cal Due
Agilent ESA-E SERIES SPECTRUM ANALYZER	E4407B	MY45108319	Feb 11, 19	Feb. 10, 20
EMI test receiver	ESL6	1300.5001K06- 100262-eQ	Jan, 05, 19	Jan. 04, 20
SYNTHESIZED SIGNAL GENERATOR	8665B	3744A01293	Jan, 05, 19	Jan. 04, 20
Bilog Antenna (30MHz~6GHz)	JB6	A110712	Feb 08, 19	Feb. 07, 20
Bilog Antenna (30MHz~2GHz)	JB1	A112017	Jan 26, 19	Jan. 25, 20
A-INFOMW Horn Antenna (1~18GHz)	AH-118	71259	Jan 26, 19	Jan. 25, 20
Pre-Amplifier (100MHz-26.5GHz)	EMC 012645	980077	May 18, 18	May 17, 19
Pre-Amplifier (18GHz-40GHz)	EMC 184045	980102	Nov. 08,18	Nov. 07,19
EMCO Horn Antenna (1~18GHz)	AH-118	71283	Feb 02, 19	Feb. 01, 20
OPT 010 AMPLIFIER (0.1~1300MHz)	8447E	2727A02430	Dec. 09, 18	Dec. 08, 19
Horn Antenna	BBHA 9170	BBHA9170147	Mar. 14, 18	Mar. 13, 19
Microwave Preamplifier (0.5 ~ 18GHz)	PAM-118	443008	Dec. 09, 18	Dec. 08, 19
Large Loop Antenna	RF300	Rf300	Dec. 09, 18	Dec. 08, 19
Universal Radio Communication Tester	CMU200	121393	Feb 11, 19	Feb. 10, 20
Positioning Controller	UC3000	MF780208282	Dec. 09, 18	Dec. 08, 19
Test Software	EZ-EMC	ver.lcp-03A1	N/A	N/A

#### NOTE:

- 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.

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#### 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.

#### 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.

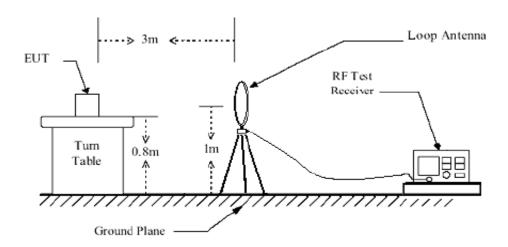
#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

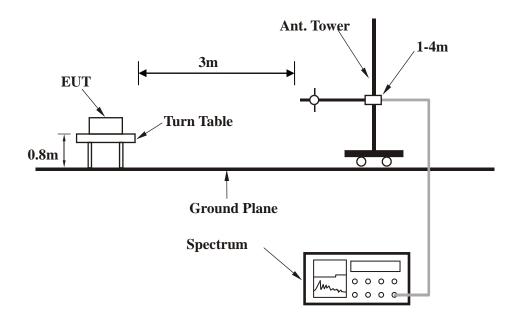


# 4.1.5 TEST SETUP

# **Below 30MHz test setup**



# **Below 1GHz test setup**



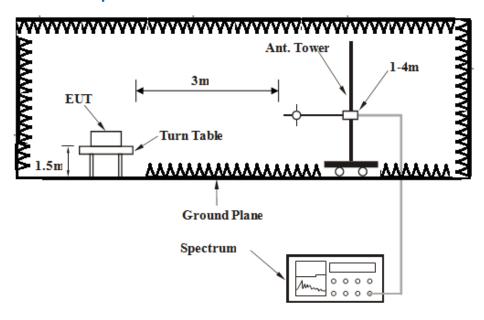
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# **Above 1GHz test setup**



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

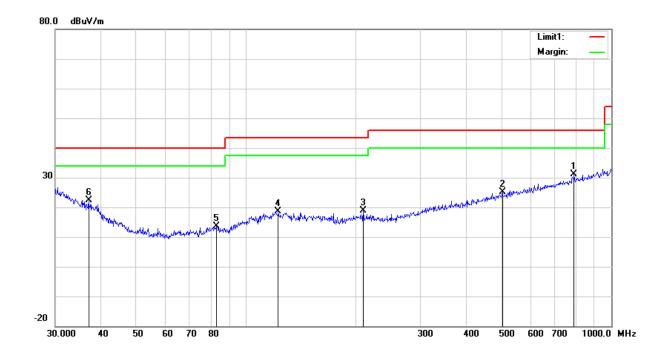
#### **BELOW 1GHz WORST-CASE DATA**

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

	ANTENNA POLARITY & test distance: HORIZONTAL at 3 m											
No.	Frequency	Reading	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree		
	(MHz)	(dBuV/m)	(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)		
1	790.6188	28.09	21.29	21.17	2.94	31.15	46.00	-14.85	100	307		
2	502.9395	26.73	17.74	21.80	2.42	25.09	46.00	-20.91	100	154		
3	209.3129	27.61	11.97	22.36	1.57	18.79	43.50	-24.71	100	64		
4	122.4040	26.15	13.74	22.37	1.17	18.69	43.50	-24.81	100	58		
5	82.9385	27.17	7.72	22.39	1.06	13.56	40.00	-26.44	100	292		
6	37.0249	27.92	16.07	22.26	0.77	22.50	40.00	-17.50	100	40		

#### **REMARKS:**

- 1. Result (dBuV/m) = Reading Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Ant\_F (dB/m) + Cab\_L (dB) PA\_G (dB).
- 3. The emission levels of other frequencies were less than 20dB margin against the limit.
- 4. Margin value = Result level Limit value



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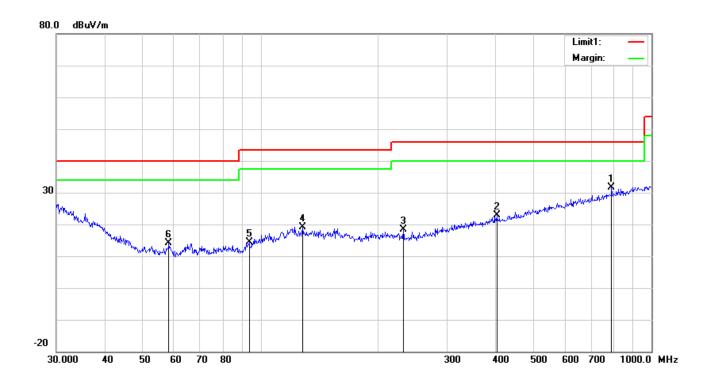


CHANNEL	TX Middle Channel	DETECTOR	Ougsi Dook (OD)
FREQUENCY RANGE	9KHz ~ 1GHz	FUNCTION	Quasi-Peak (QP)

	ANTENNA POLARITY & test distance: Vertical at 3 m											
No.	Frequency	Reading	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree		
	(MHz)	(dBuV/m)	(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)		
1	31.6202	26.00	20.15	22.27	0.67	24.55	40.00	-15.45	100	5		
2	37.2855	26.48	15.88	22.26	0.77	20.87	40.00	-19.13	100	174		
3	71.3300	28.62	7.77	22.39	0.97	14.97	40.00	-25.03	100	6		
4	119.4361	24.98	13.80	22.36	1.16	17.58	43.50	-25.92	100	49		
5	261.9753	24.93	11.93	22.29	1.72	16.29	46.00	-29.71	100	223		
6	495.9344	25.20	17.62	21.82	2.40	23.40	46.00	-22.60	200	322		

#### **REMARKS:**

- 1. Result (dBuV/m) = Reading (dBuV/m) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Ant\_F (dB/m) + Cab\_L (dB) PA\_G (dB).
- 3. The emission levels of other frequencies were less than 20dB margin against the limit.
- 4. Margin value = Result level Limit value



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

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

Frequency	Average	Polarity	Field	Field	Limit(PK)	Limit(AV)	Margin(PK)	Margin(AV)
(MHz)	Factor (dB)	(H/V)	Strength(PK)	Strength(AV)	(dBuV/m)	(dBuV/m)	(dB)	(dB)
			(dBuV/m)	(dBuV/m)				
4814	-9.72	Н	60.17	50.45	74	54	-13.83	-3.55
7221	-9.72	Н	50.36	40.64	74	54	-23.64	-13.36
2388.7	-9.72	Н	44.9	35.18	74	54	-29.1	-18.82
5593.2	-9.72	Н	46.85	37.13	74	54	-27.15	-16.87
4814	-9.72	V	59.77	50.05	74	54	-14.23	-3.95
7221	-9.72	V	50.75	41.03	74	54	-23.25	-12.97
6224.4	-9.72	V	53.87	44.15	74	54	-20.13	-9.85
7720.4	-9.72	V	49.32	39.6	74	54	-24.68	-14.4

Frequency	Average	Polarity	Field	Field	Limit(PK)	Limit(AV)	Margin(PK)	Margin(AV)
(MHz)	Factor (dB)	(H/V)	Strength(PK)	Strength(AV)	(dBuV/m)	(dBuV/m)	(dB)	(dB)
			(dBuV/m)	(dBuV/m)				
*2407	-9.72	Η	67.23	57.51	114	94	-46.77	-36.49
*2407	-9.72	V	65.77	56.05	114	94	-48.23	-37.95

#### **REMARKS:**

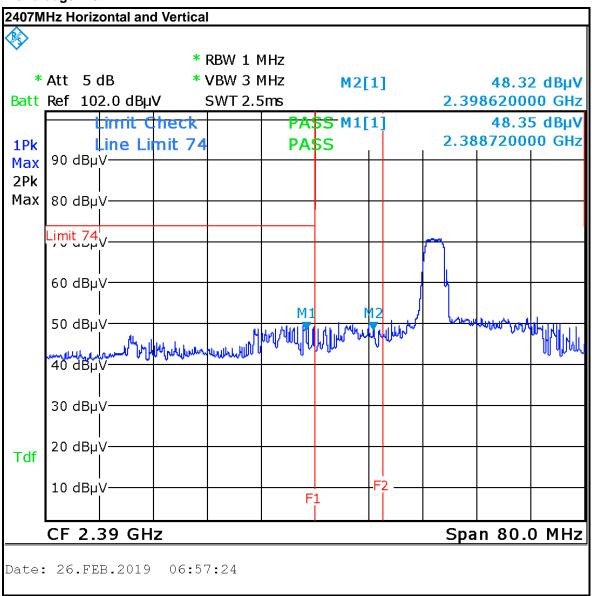
- 1. Field strength value(AV) (dBuV/m) = Field strength value(PK) (dBuV/m) + Average Factor (dB).
  - 2. Margin value = Field strength value Limit value..
  - 3. The emission levels of other frequencies were less than 20dB margin against the limit.
  - 4. . " \* ": Fundamental frequency.

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# **Band edge Plot**





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

Frequency	Average	Polarity	Field	Field	Limit(PK)	Limit(AV)	Margin(PK)	Margin(AV)
(MHz)	Factor (dB)	(H/V)	Strength(PK)	Strength(AV)	(dBuV/m)	(dBuV/m)	(dB)	(dB)
			(dBuV/m)	(dBuV/m)				
4884	-9.72	Н	60.83	51.11	74	54	-13.17	-2.89
7326	-9.72	Н	50.32	40.6	74	54	-23.68	-13.4
8225.9	-9.72	Н	46.46	36.74	74	54	-27.54	-17.26
9896	-9.72	Н	51.69	41.97	74	54	-22.31	-12.03
4884	-9.72	V	60.67	50.95	74	54	-13.33	-3.05
7326	-9.72	V	49.51	39.79	74	54	-24.49	-14.21
6518.1	-9.72	V	50.52	40.8	74	54	-23.48	-13.2
3604.5	-9.72	V	50.89	41.17	74	54	-23.11	-12.83

Frequency	Average	Polarity	Field	Field	Limit(PK)	Limit(AV)	Margin(PK)	Margin(AV)
(MHz)	Factor (dB)	(H/V)	Strength(PK)	Strength(AV)	(dBuV/m)	(dBuV/m)	(dB)	(dB)
			(dBuV/m)	(dBuV/m)				
*2442	-9.72	Н	69.9	60.18	114	94	-44.1	-33.82
*2442	-9.72	V	68.52	58.8	114	94	-45.48	-35.2

# **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 less than 20dB margin against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \* ": Fundamental frequency.

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

Frequency	Average	Polarity	Field	Field	Limit(PK)	Limit(AV)	Margin(PK)	Margin(AV)
(MHz)	Factor (dB)	(H/V)	Strength(PK)	Strength(AV)	(dBuV/m)	(dBuV/m)	(dB)	(dB)
			(dBuV/m)	(dBuV/m)				
4954	-9.72	Н	60.57	50.85	74	54	-13.43	-3.15
7431	-9.72	Н	51.33	41.61	74	54	-22.67	-12.39
2488.1	-9.72	Н	44.35	34.63	74	54	-29.65	-19.37
7571.3	-9.72	Н	45.75	36.03	74	54	-28.25	-17.97
4954	-9.72	٧	60.82	51.1	74	54	-13.18	-2.9
7431	-9.72	٧	47.4	37.68	74	54	-26.6	-16.32
2992.8	-9.72	٧	52.06	42.34	74	54	-21.94	-11.66
8029.1	-9.72	V	49.63	39.91	74	54	-24.37	-14.09
4954	-9.72	Н	60.57	50.85	74	54	-13.43	-3.15
7431	-9.72	Н	51.33	41.61	74	54	-22.67	-12.39

Frequency (MHz)	Average Factor (dB)	Polarity (H/V)	Field Strength(PK)	Field Strength(AV)	Limit(PK) (dBuV/m)	Limit(AV) (dBuV/m)	Margin(PK) (dB)	Margin(AV) (dB)
			(dBuV/m)	(dBuV/m)				
*2477	-9.72	Н	71.14	61.42	114	94	-42.86	-32.58
*2477	-9.72	V	69.55	59.83	114	94	-44.45	-34.17

#### **REMARKS:**

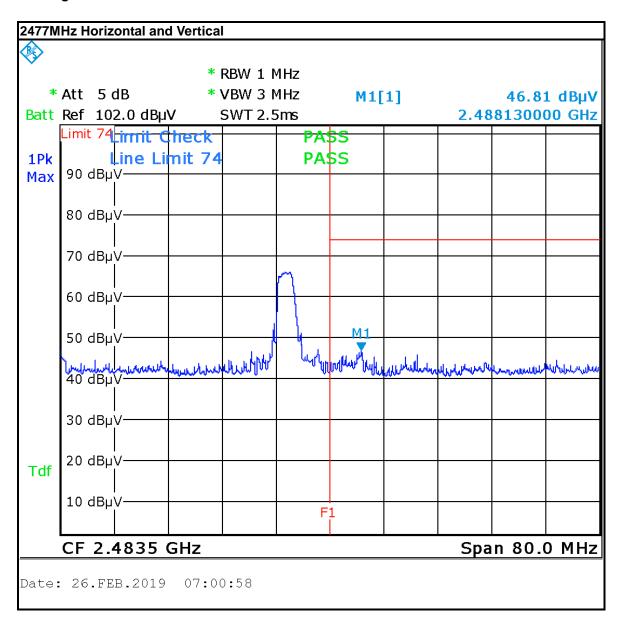
- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The emission levels of other frequencies were less than 20dB margin against the limit.
- 4. Margin value = Emission level Limit value.
- 5. " \*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

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#### **Band edge Plot**



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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

Instrument	Model	Serial #	Cal Date	Cal Due
Power Sensor	Dare RPR3006C/P/W	N/A	Jan. 05, 19	Jan. 04, 20
Power Sensor	Dare RPR3006C/P/W	N/A	Jan. 05, 19	Jan. 04, 20
Agilent ESA-E SERIES SPECTRUM ANALYZER	E4407B	MY45108319	Feb. 11, 19	Feb. 10, 20
EMI test receiver	ESL6	1300.5001K06- 100262-eQ	Jan. 05, 19	Jan. 04, 20
Power Splitter	1#	1#	Dec. 09, 18	Dec. 08, 19
SYNTHESIZED SIGNAL GENERATOR	8665B	3744A01293	Jan. 05, 19	Jan. 04, 20
DC Power Supply	E3640A	MY40004013	Jan. 05, 19	Jan. 04, 20
Bilog Antenna (30MHz~6GHz)	JB6	A110712	Feb. 08, 19	Feb. 07, 20
Bilog Antenna (30MHz~2GHz)	JB1	A112017	Jan. 26, 19	Jan. 25, 20
A-INFOMW Horn Antenna (1~18GHz)	AH-118	71259	Jan. 26, 19	Jan. 25, 20
Pre-Amplifier (100MHz-26.5GHz)	EMC 012645	980077	May 18, 18	May 17, 19
Pre-Amplifier (18GHz-40GHz)	EMC 184045	980102	Nov. 08, 18	Nov. 07, 19
EMCO Horn Antenna (1~18GHz)	AH-118	71283	Feb. 02, 19	Feb. 01, 20
OPT 010 AMPLIFIER (0.1~1300MHz)	8447E	2727A02430	Dec. 09, 18	Dec. 08, 19
Horn Antenna	BBHA 9170	BBHA9170147	Mar. 14, 18	Mar. 13, 19
Microwave Preamplifier (0.5 ~ 18GHz)	PAM-118	443008	Dec. 09, 18	Dec. 08, 19
Attenuator	MINI	N/A	Dec. 09, 18	Dec. 08, 19
Test Software	EZ-EMC	ver.lcp-03A1	N/A	N/A

# NOTE:

- 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.

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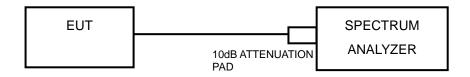
#### 4.2.3 TEST PROCEDURE

- 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.

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# 4.2.7 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)
Low	2407	1.1270
Middle	2442	1.1297
High	2477	1.1609

#### **Test Data: Low channel**



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# **Test Data: Middle channel**



#### **Test Data: High channel**



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# 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

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# 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---

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