SGS-CSTC Standards Technical Services Co., Ltd.

198 Kezhu Road, Scientech Park, Guangzhou Economic & Technological Development District, Guangzhou, China 510663
Telephone: +86 (0) 20 82155555
Fax: +86 (0) 20 82075059
Email: ee.guangzhou@sgs.com

TEST REPORT

Application No.:	GZEM1305001997RF
Applicant:	Guangdong Yinrun Industry Co., LTD.
FCC ID:	XHT10031-32-R49M
Product Name:	SPINNING CAR
Product Description:	Radio toys with 49.860 MHz as a carrier
Model No.:	10031, 10032, 10021, 10022 ♣
♣	Please refer to section 3 of this report for details
Standards:	47 CFR Part 15, Subpart B:2012
Date of Receipt:	2013-05-15
Date of Test:	2013-05-20
Date of Issue:	2013-05-28
Test Result :	**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Richard Li
Manager

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00		2013-05-28		Original

Authorized for issue by:				
Tested By		Storm Shu **(Storm Shu) /Project Engineer**		2013-05-20 **Date**
Prepared By		Millie Li **(Millie Li) /Clerk**		2013-05-24 **Date**
Checked By		Jeffrey Chen **(Jeffrey Chen)/Reviewer**		2013-05-28 **Date**

3 Test Summary

Electromagnetic Interference (EMI)				
Test	**Test Requirement**	**Test Method**	**Class / Severity**	**Result**
Radiated Emission (30 MHz to 1 GHz)	FCC PART 15 SUBPART B	ANSI C63.4	Class B	PASS
Radiated Emission above 1 GHz	FCC PART 15 SUBPART B	ANSI C63.4	Class B	N/A

Remark :

N/A：Not applicable. Please refer to clause 7.3 for details.

EUT: In this whole report EUT means Equipment Under Test.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radio Frequency.

ANSI C63.4: the detail version is ANSI C63.4:2009 in the whole report.

♣ Model No.: 10031, 10032, 10021, 10022

According to the confirmation from the applicant, since the electrical circuit design, layout, components used and internal wiring were identical for the above items, only difference being the item numbers.

Therefore only one item **10032** was tested in this report.

4 Contents

5 General Information

5.1 Client Information

Applicant:	Guangdong Yinrun Industry Co., LTD.
Address of Applicant:	Yinrun Ind. Garden, Laimei Zone, Chenghai, Shantou Guangdong China

5.2 General Description of E.U.T.

Product Name:	SPINNING CAR
Model No:	10032

5.3 Details of E.U.T.

Power Supply:	DC 6.0V (4 x 1.5 V 'AA' batteries)
Power cord:	N/A

5.4 Description of Support Units

The EUT has been tested as an independent unit.

5.5 Deviation from Standards

None.

5.6 Abnormalities from Standard Conditions

None.

5.7 General Test Climate During Testing

Temperature: 15-30 °C Humidity: 30~70 %RH Atmospheric Pressure: 886~1086 mbar

5.8 Other Information Requested by the Customer

None.

5.9 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory,

198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District,

Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

5.10 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **NVLAP (Lab Code: 200611-0)**

  SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

- **ACMA**

  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

  Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

- **FCC (Registration No.: 282399)**

  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

- **Industry Canada (Registration No.: 4620B-1)**

  The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering of Industry Canada for radio equipment testing with Registration No. 4620B-1.

- **VCCI (Registration No.: R-2460, C-2584, G-449 and T-1179)**

  The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2460, C-2584，G-449 and T-1179 respectively.

- **CBTL (Lab Code: TL129)**

  SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01:2006-10 and Rules of procedure IECEE 02:2006-10, and the relevant IECEE CB-Scheme Operational documents.

6 Equipment Used during Test

RE in Chamber						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date (YYYY-MM-DD)	Calibration Interval
EMC0525	Compact Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	2014-08-30	2Y
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100283	2014-05-06	1Y
EMC0056	EMI Test Receiver	Rohde & Schwarz	ESCI	100236	2014-03-04	1Y
EMC0528	RI High frequency Cable	SGS	20 m	N/A	2014-05-09	1Y
EMC2025	Trilog Broadband Antenna 30-3000MHz	SCHWARZBECK MESS-ELEKTRONIK	VULB 9163	9163-450	2013-12-17	2Y
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	2013-11-27	2Y
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	2014-06-02	2Y
EMC2026	Horn Antenna 1-18GHz	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	9120D-841	2013-11-28	2Y
EMC0518	Horn Antenna	Rohde & Schwarz	HF906	100096	2014-07-01	2Y
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	2014-03-04	1Y
EMC2065	Amplifier	HP	8447F	N/A	2013-11-7	1Y
EMC2063	1-26GHz Pre Amplifier	Compliance Direction System Inc.	PAP-1G26-48	6279.628	2013-07-29	1Y
EMC0075	310N Amplifier	Sonama	310N	272683	2014-03-04	1Y
EMC0523	Active Loop Antenna	EMCO	6502	42963	2014-04-07	2Y
EMC2041	Broad-Band Horn Antenna (14)15-26.5(40)GHz	SCHWARZBECK MESS-ELEKTRONI	BBHA 9170	9170-375	2014-06-01	3Y
EMC0530	10m Semi-Anechoic Chamber	ETS	N/A	N/A	2014-04-27	2Y

General used equipment						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date (YYYY-MM-DD)	Calibration Interval
EMC0006	DMM	Fluke	73	70681569	2013-11-5	1Y
EMC0007	DMM	Fluke	73	70671122	2013-11-5	1Y

7 Emission Test Results

Frequency range of radiated emission measurements for unintentional radiators:

Except as otherwise indicated in FCC part 15 Section 15.33 paragraphs (b)(2) or (b)(3), for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency range of measurement
Below 1.705	30
1.705 - 108	1000
108 - 500	2000
500 - 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

7.1 Radiated Emissions, 30 MHz to 1 GHz

Test Requirement: FCC Part15 B

Test Method: ANSI C63.4

Test Voltage: DC 6V

Frequency Range: 30MHz to 1GHz

Measurement Distance: 3 m

Detector: Peak for pre-scan
Quasi-Peak if maximised peak within 6dB of limit
(120 kHz resolution bandwidth)

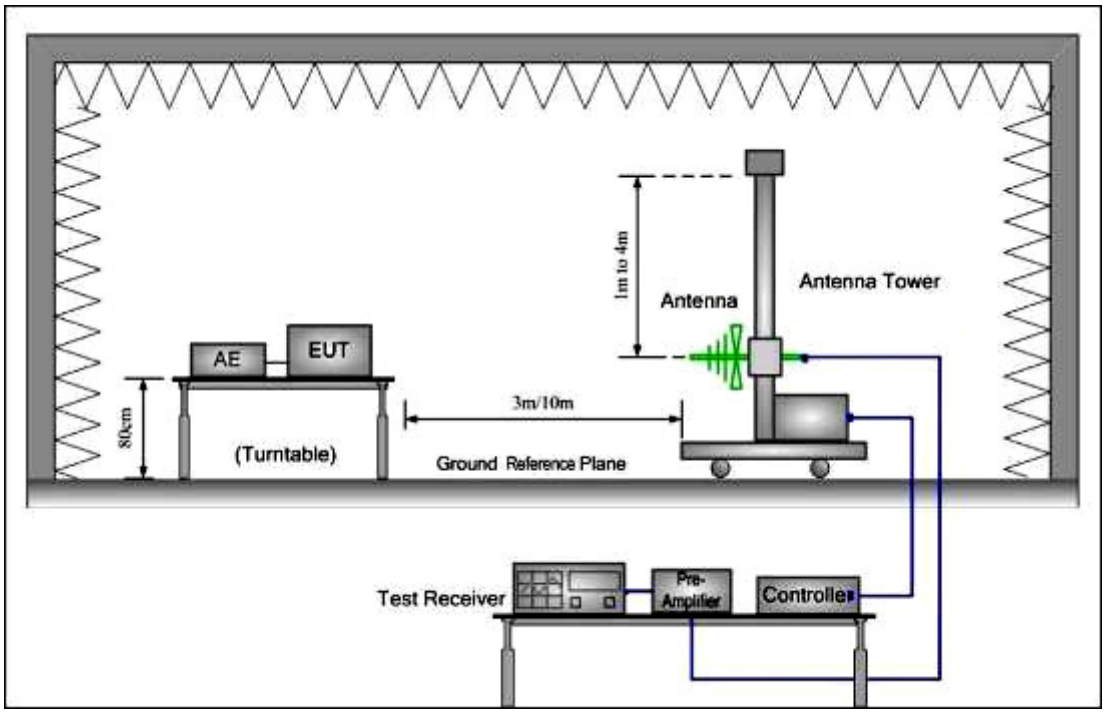
Class / Limit: Class B

Frequency range MHz	Quasi-peak limits dB (μV/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960	54
At transitional frequencies the lower limit applies.	

7.1.1 E.U.T. Operation

EUT Operation: Test the EUT in motor running mode and cohere mode (with an unmodulated CW signal to the receiver).

7.1.2 Test Setup and Procedure



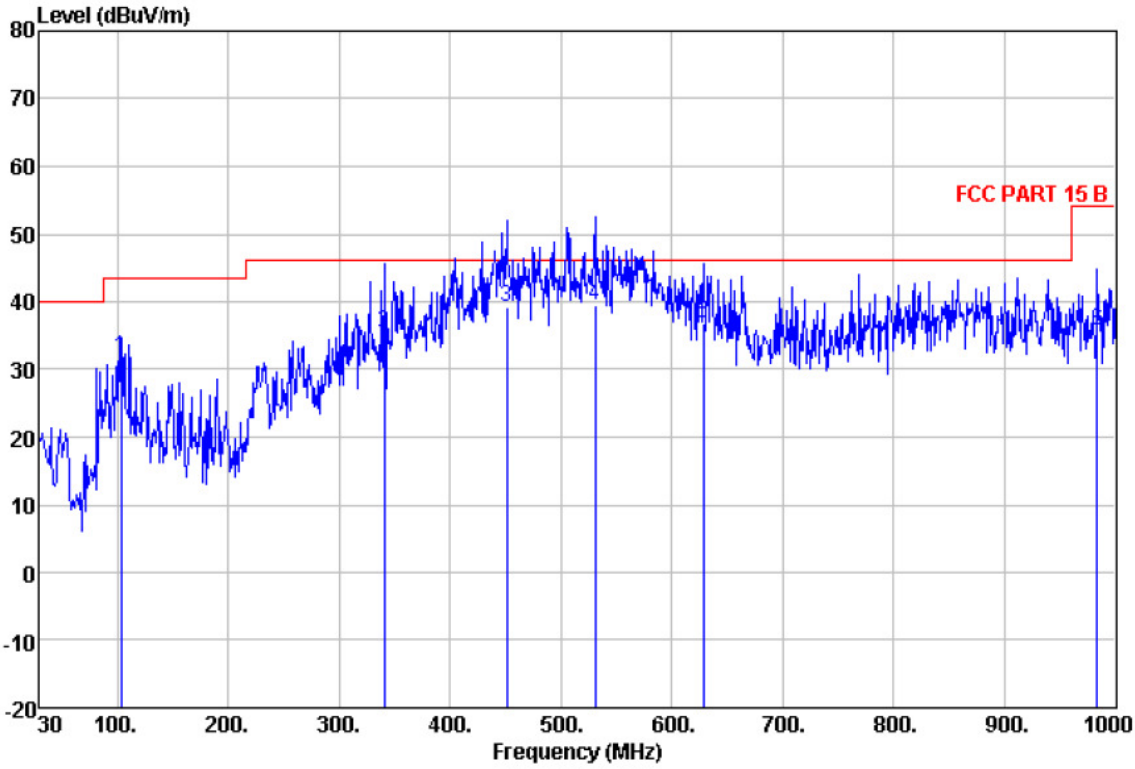
1. The radiated emissions test was conducted in a semi-anechoic chamber.
2. Biconical and log periodic antenna was used for the frequency range from 30MHz to 1GHz
3. The EUT was connected to nominal power supply through a mains power outlet which was bonded to the ground reference plane; The mains cables were draped to the ground reference plane. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. For super-regenerative receiver, A signal generator was used to radiate an unmodulated CW signa at its operating frequency in order to “cohere” or to resolve the individual components of the characteristic broadband emissions from the receiver.
5. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT.
6. The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

7.1.3 Measurement Data

Motor running mode

Vertical:

Peak scan



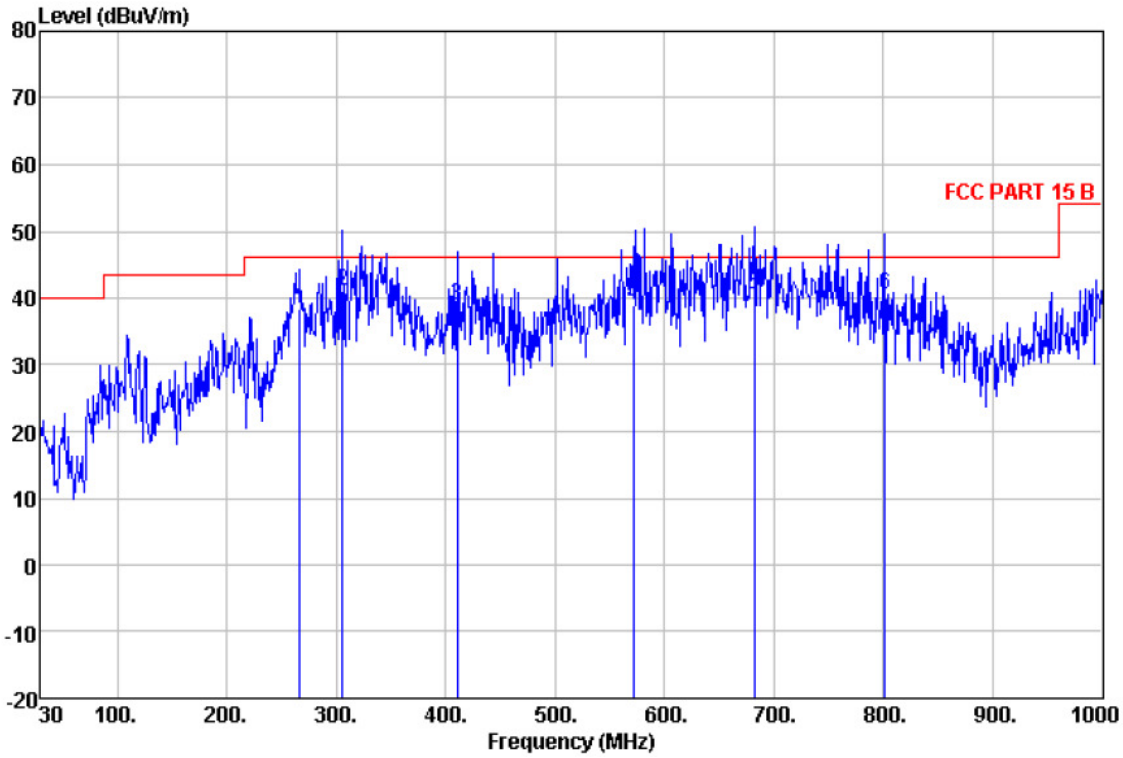
Quasi-peak measurement

Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Over Limit	Limit Line	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dB	dBuV/m	
103.720	46.58	11.43	26.57	0.22	31.66	-11.84	43.50	QP
340.400	46.47	13.96	26.03	1.17	35.57	-10.43	46.00	QP
450.980	48.42	16.24	26.89	1.31	39.08	-6.92	46.00	QP
530.520	47.30	17.90	27.15	1.48	39.53	-6.47	46.00	QP
628.490	43.43	18.80	27.21	1.70	36.72	-9.28	46.00	QP
983.510	38.88	21.37	26.58	2.16	35.83	-18.17	54.00	QP

Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor.

Horizontal:

Peak scan



Quasi-peak measurement

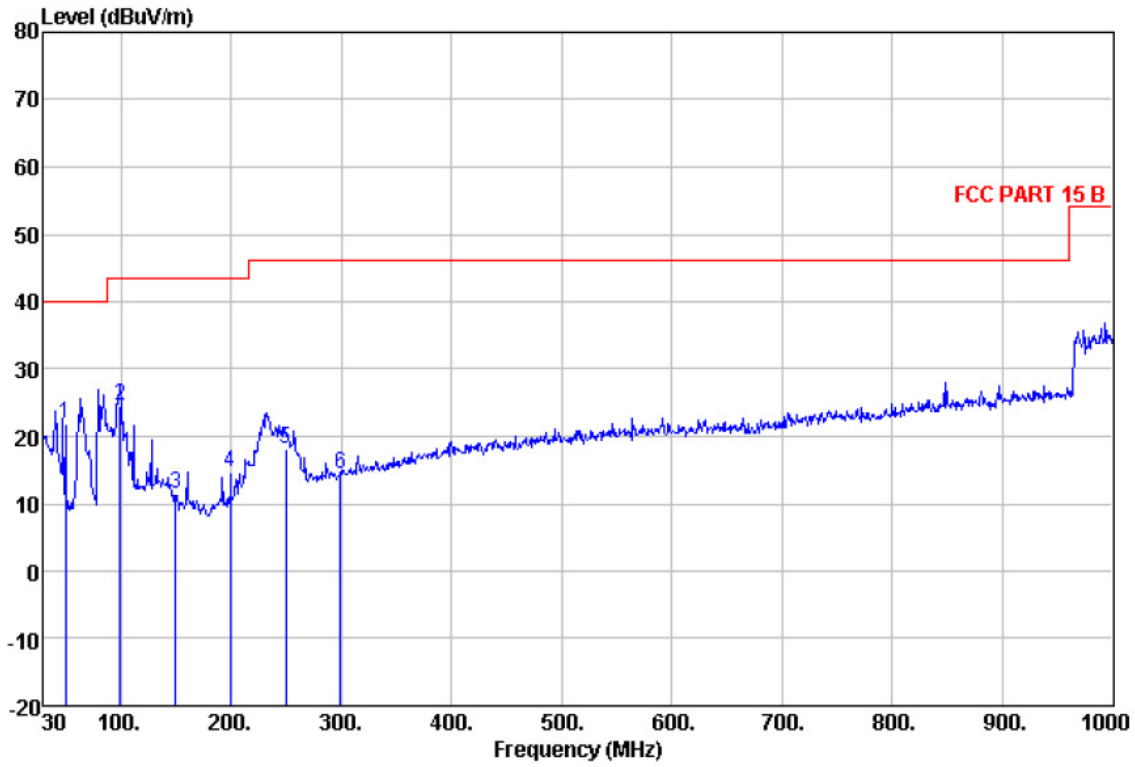
Freq	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Over Limit	Limit Line	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dB	dBuV/m	
266.680	51.16	12.30	25.95	0.83	38.34	-7.66	46.00	QP
305.480	53.02	12.93	25.83	1.00	41.12	-4.88	46.00	QP
410.240	47.97	16.40	26.52	1.21	39.06	-6.94	46.00	QP
571.260	46.22	18.40	27.22	1.47	38.87	-7.13	46.00	QP
681.840	47.26	18.62	27.11	1.85	40.62	-5.38	46.00	QP
801.150	45.79	20.12	27.05	1.71	40.57	-5.43	46.00	QP

Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor.

Cohere mode

Vertical:

Peak scan



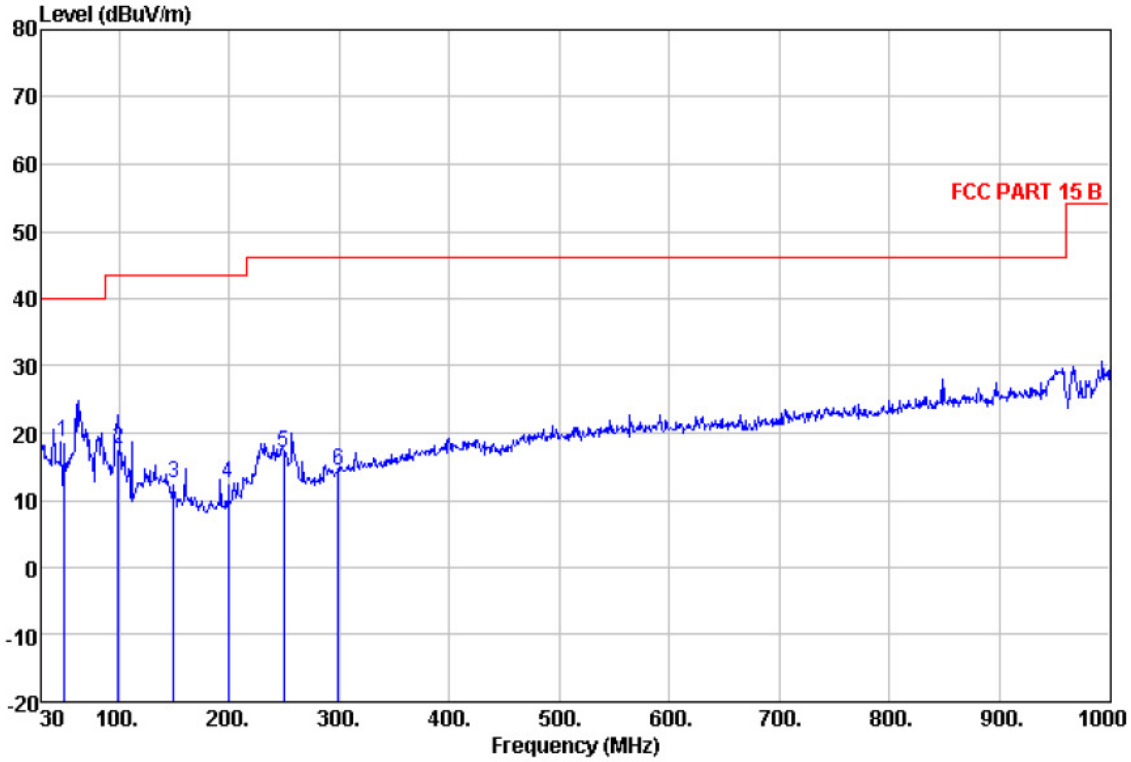
Quasi-peak measurement

Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Over Limit	Limit Line	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dB	dBuV/m	
49.860	42.73	6.34	27.88	0.70	21.89	-18.11	40.00	QP
99.720	40.44	10.80	27.68	1.00	24.56	-18.94	43.50	QP
149.580	28.16	9.57	27.43	1.20	11.50	-32.00	43.50	QP
199.440	31.75	8.86	27.24	1.30	14.67	-28.83	43.50	QP
249.300	32.17	11.55	27.15	1.60	18.17	-27.83	46.00	QP
299.160	27.14	12.60	27.07	1.80	14.47	-31.53	46.00	QP

Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor.

Horizontal:

Peak scan



Quasi-peak measurement

Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Over Limit	Limit Line	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dB	dBuV/m	
49.860	39.54	6.34	27.88	0.70	18.70	-21.30	40.00	QP
99.720	33.52	10.80	27.68	1.00	17.64	-25.86	43.50	QP
149.580	29.13	9.57	27.43	1.20	12.47	-31.03	43.50	QP
199.440	29.67	8.86	27.24	1.30	12.59	-30.91	43.50	QP
249.300	31.15	11.55	27.15	1.60	17.15	-28.85	46.00	QP
299.160	27.11	12.60	27.07	1.80	14.44	-31.56	46.00	QP

Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor.

7.2 Radiated Emissions above 1 GHz

N/A: Not applicable. Since Highest frequency generated or used in the device or on which the device operates or tunes (MHz) is less than 108 MHz. The spectrum was investigated up to 1 GHz.

--End of Report--