APPLICATION CERTIFICATION
On Behalf of
A&H Design Group, Ltd.

Wireless remote control vibrator
Model No.: BV-002 BLK, BV-002 PUR

FCC ID: 2AG2K-BV-001TX

Prepared for	:	A&H Design Group, Ltd.
Address	:	Suite 608, Tower One, Harbour Centre1 Hok Cheung Street, Hung Hom ,Kowloon, Hong Kong
Prepared by	:	ACCURATE TECHNOLOGY CO., LTD
Address	:	F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China Tel: (0755) 26503290 Fax: (0755) 26503396

Report No.	:	ATE20152702 002
Date of Original Test	:	Dec 21, 2015-Dec 24, 2015
Date of new Test	:	Apr 25, 2016-May 05, 2016
Date of Report REV.0	:	Dec 24, 2015
Date of Report REV.2	:	May 06, 2016

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Description Page

Test Report Certification

Applicant	:	A&H Design Group, Ltd.
Manufacturer	:	TOPARC Technology(Shenzhen)Co.,Ltd.
Product	:	Wireless remote control vibrator
Model No.	:	BV-002 BLK, BV-002 PUR (Note: they are identical in interior structure, electrical circuits and components, and Product model is different because of different Color of product appearance. So we prepare the BV-002 BLK for test.)
Trade name	:	N/A

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.231a
ANSI C63.10-2013

The device described above is tested by ACCURATE TECHNOLOGY CO., LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.231a. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO., LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO., LTD.

The original report number is ATE20152702. The key components of the wireless module are not changed. After evaluation, Radiated Emission is need to be retested.

Date of Original Test :	Dec 21, 2015-Dec 24, 2015
Date of NEW Test :	Apr 25, 2016-May 05, 2016
Date of Report REV.0 :	Dec 24, 2015
Date of Report REV.2 :	May 06, 2016

Prepared by : Tim Zhang
(Tim.zhang, Engineer)

Approved & Authorized Signer : Sean Liu
(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	Wireless remote control vibrator
Model Number	:	BV-002 BLK, BV-002 PUR
Power Supply	:	DC 3V(Powered by battery)
Modulation:	:	ASK
antenna gain	:	0dBi
TX Frequency	:	433.92MHz
Type of Antenna	:	PCB antenna
Applicant	:	A&H Design Group, Ltd.
Address	:	Suite 608, Tower One, Harbour Centre1 Hok Cheung Street, Hung Hom ,Kowloon, Hong Kong
Manufacturer	:	TOPARC Technology(Shenzhen)Co., Ltd.
Address	:	1/2F, 12 Building, Lianchuang Park, Bulan Road, Buji Town, Longgang District, Shenzhen City, Guangdong Province, P.R. China 518114
Date of new sample received	:	Apr 25, 2016
Date of new Test	:	Apr 25, 2016--May 05, 2016

1.2.Description of Test Facility

EMC Lab	:	Accredited by TUV Rheinland Shenzhen Listed by FCC The Registration Number is 752051 Listed by Industry Canada The Registration Number is 5077A-2 Accredited by China National Accreditation Committee for Laboratories The Certificate Registration Number is L3193
Name of Firm	:	ACCURATE TECHNOLOGY CO., LTD
Site Location	:	F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China

1.3.Measurement Uncertainty

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Cal. Interval
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 09, 2016	One Year
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 09, 2016	One Year
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 09, 2016	One Year
Pre-Amplifier	Rohde&Schwarz	CBLU1183540-01	3791	Jan. 09, 2016	One Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 14, 2016	One Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 14, 2016	One Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 14, 2016	One Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan. 14, 2016	One Year
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 09, 2016	One Year
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 09, 2016	One Year
Highpass Filter	Wainwright Instruments	WHKX3.6/18G-10SS	N/A	Jan. 09, 2016	One Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2485-2375/2510-60/11SS	N/A	Jan. 09, 2016	One Year

3. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
Section 15.207	Conducted Emission	N/A
Section 15.231(b)	Radiated Emission	Compliant
Section 15.231(c)	20dB Bandwidth	Compliant
Section 15.231(a)(1)	Release Time Measurement	Compliant
Section 15.203	Antenna Requirement	Compliant

The product is a manually operated transmitter.
Section 15.231 (a) (2), (3), (4) and (5) are not applicable.
Note: The power supply mode of the EUT is DC 3V, According to the FCC standard requirements, conducted emission is not applicable.

The test data for 20dB bandwidth, Release Time and ducy cycle. please refer to the original report ATE20152702.

All normal using modes of the normal function were tested but only the worst test data of the worst mode is recorded by this report.

4. THE FIELD STRENGTH OF RADIATION EMISSION

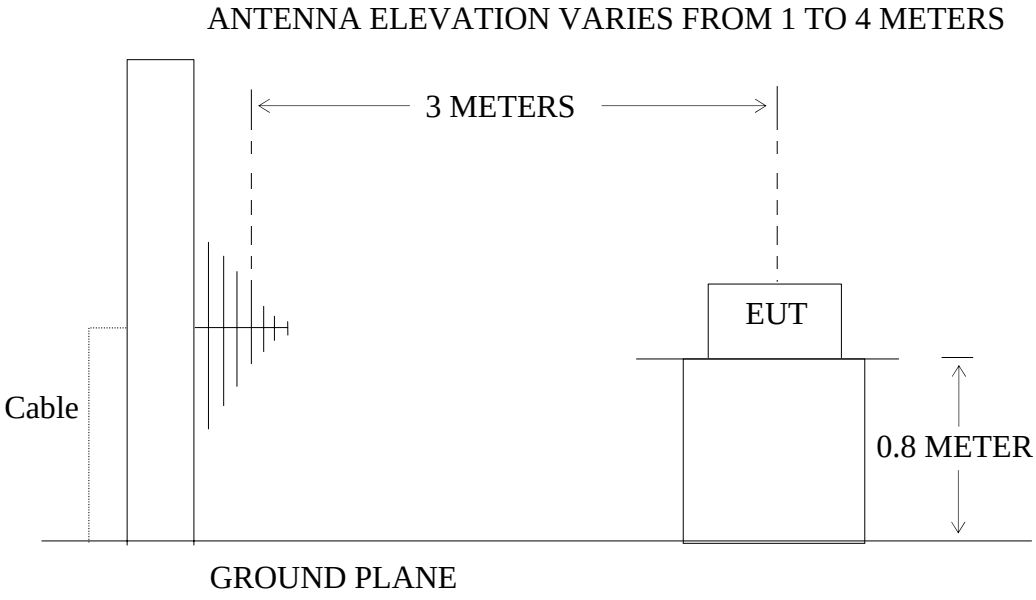
4.1.Block Diagram of Test Setup

4.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: Wireless remote control vibrator)

4.1.2.Semi-Anechoic Chamber Test Setup Diagram



(EUT: Wireless remote control vibrator)

4.2. The Field Strength of Radiation Emission Measurement Limits

4.2.1. Radiation Emission Measurement Limits According to FCC Part 15 Section 15.231(b)

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [Average] [μV/m]	Field Strength of Spurious Emission [Average] [μV/m]
40.66-40.70	2250	225
70-130	1250	125
130-174	1250-3750	125-375
174-260	3750	375
260-470	3750-12500	375-1250
Above 470	12500	1250

Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 MHz, uV/m at 3 meters = 56.81818(F) - 6136.3636; for the band 260-470 MHz, uV/m at 3 meters = 41.6667(F) - 7083.3333. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.

4.2.2. Restricted Band Radiation Emission Measurement Limits According to FCC part 15 Section 15.205 and Section15.209.

4.3. Configuration of EUT on Measurement

The following equipment is installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.3.1. Wireless remote control vibrator (EUT)

Model Number : BV-002 BLK
Serial Number : N/A
Manufacturer : TOPARC Technology(Shenzhen)Co.,Ltd.

4.4. Operating Condition of EUT

4.4.1. Setup the EUT and simulator as shown as Section 4.1.

4.4.2. Turn on the power of all equipment.

4.4.3. Let the EUT work in TX mode measure it.

4.5. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 120 kHz in 30-1000 MHz, and 1 MHz in 1000-5000 MHz.

The frequency range from 30 MHz to 5000 MHz is checked.

4.6. The Field Strength of Radiation Emission Measurement Results

PASS.

The frequency range 30MHz to 5000MHz is investigated.

EUT:	Wireless remote control vibrator		
Model No.:	BV-002 BLK	Power Supply:	DC 3V
Test Mode:	TX	Test Engineer:	Star

Frequency (MHz)	Reading (dBμV/m)	Factor Corr.	Average Factor	Result(dBμV/m)		Limit(dBμV/m)		Margin(dB)		Polarization
	PEAK	(dB)	(dB)	AV	PEAK	AV	PEAK	AV	PEAK	
433.92	**86.56**	**-5.96**	**-7.91**	**72.69**	**80.60**	**80.82**	**100.82**	**-8.13**	**-20.22**	Horizontal
651.94	44.22	-2.40	/	/	41.82(QP)	/	46.00(QP)	/	-4.18	
867.84	41.99	1.04	**-7.91**	35.12	43.03	60.82	80.82	-25.70	-37.79	
1304.158	62.18	-12.19	**-7.91**	42.08	49.99	54.00	74.00	-11.92	-24.01	
1733.995	58.50	-10.39	**-7.91**	40.20	48.11	54.00	74.00	-13.80	-25.89	
2605.477	53.15	-6.71	**-7.91**	38.53	46.44	54.00	74.00	-15.47	-27.56	
433.92	**86.70**	**-5.96**	**-7.91**	**72.83**	**80.74**	**80.82**	**100.82**	**-7.99**	**-20.08**	Vertical
651.94	45.13	-2.40	/	/	42.73(QP)	/	46.00(QP)	/	-3.27	
867.84	41.96	1.04	**-7.91**	35.09	43.00	60.82	80.82	-25.73	-37.82	
1304.158	62.90	-12.19	**-7.91**	42.80	50.71	54.00	74.00	-11.20	-23.29	
1733.995	59.82	-10.39	**-7.91**	41.52	49.43	54.00	74.00	-12.48	-24.57	
2478.672	54.73	-7.37	**-7.91**	39.45	47.36	54.00	74.00	-14.55	-26.64	

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

   Result = Reading + Corrected Factor

   Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain
3. FCC Limit for Average Measurement = 41.6667(433.92)-7083.3333 = 10996.6812 μV/m =80.82 μV/m
4. The spectral diagrams in appendix I display the measurement of peak values.
5. Average value= PK value + Average Factor (duty factor)

6. If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

7. The EUT is tested radiation emission in three axes(X,Y,Z). The worst emissions are reported in three axes.

8. Pulse Desensitization Correction Factor

Pulse Width (PW) = 1.38ms

2/PW = 2/1.38ms = 1.45kHz

RBW (100 kHz) > 2/PW (1.45 kHz)

Therefore PDCF is not needed

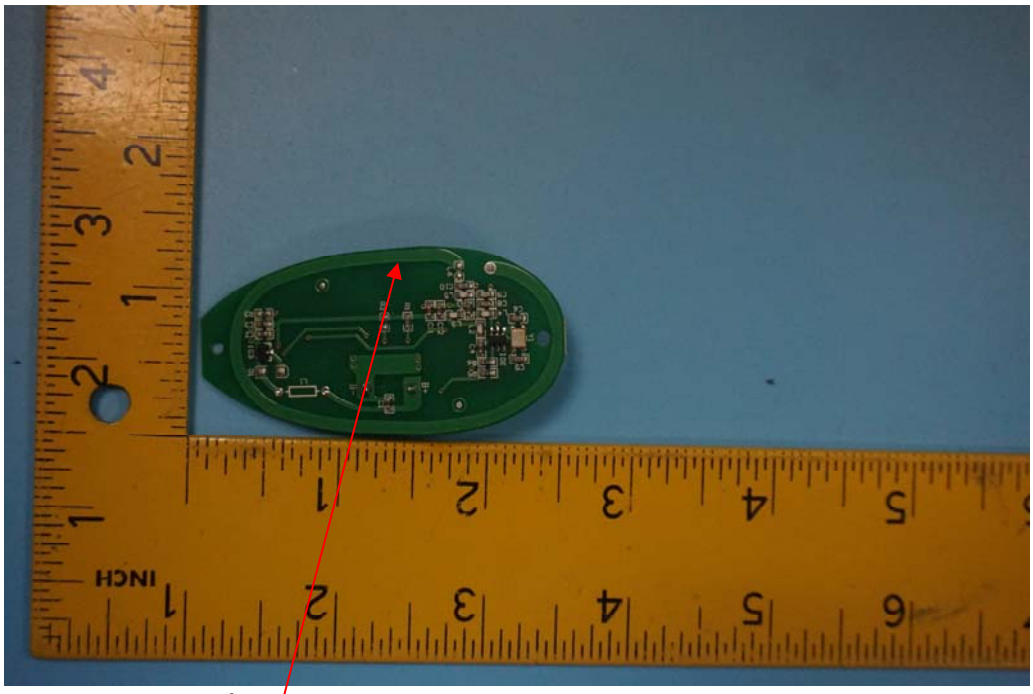
5. ANTENNA REQUIREMENT

5.1. The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

5.2. Antenna Construction

Device is equipped with PCB antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna

APPENDIX I
(Test Curves)

ACCURATE TECHNOLOGY CO., LTD.
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Site: 2# Chamber
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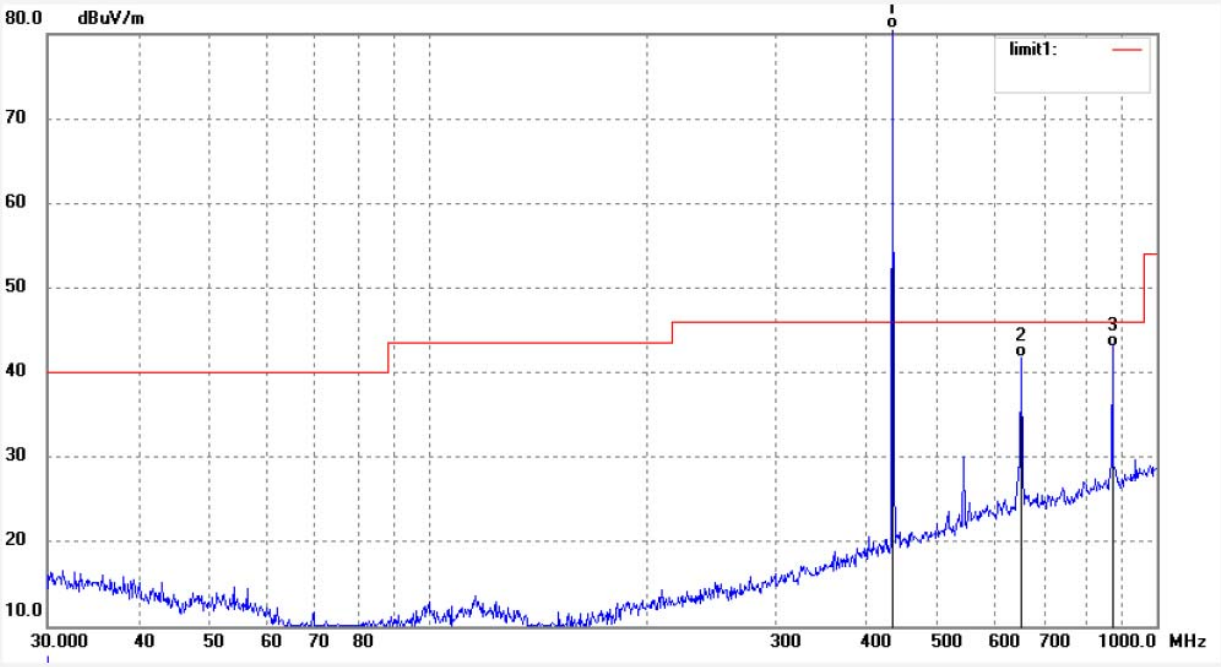
Job No.: RICKY #771	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 16/05/04/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 17:56:35
EUT: Wireless remote control vibrator	Engineer Signature:
Mode: TX	Distance: 3m
Model: BV-002 BLK	
Manufacturer: TOPARC	

Note: Report NO.:ATE20152702 002



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	433.9200	86.56	-5.96	80.60			Peak			
2	651.9415	44.22	-2.40	41.82	46.00	-4.18	QP			
3	867.8400	41.99	1.04	43.03			Peak			

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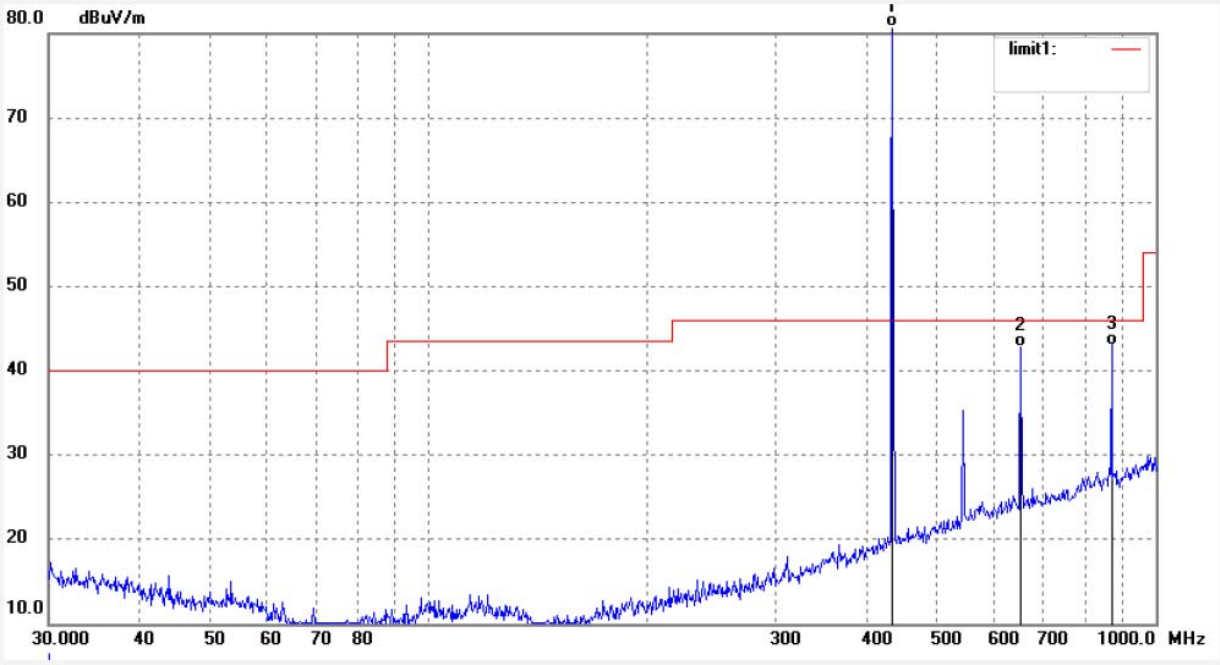
Job No.: RICKY #772	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 16/05/04/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 17:59:11
EUT: Wireless remote control vibrator	Engineer Signature:
Mode: TX	Distance: 3m
Model: BV-002 BLK	
Manufacturer: TOPARC	

Note: Report NO.:ATE20152702 002



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	433.9200	86.70	-5.96	80.74			Peak			
2	651.9415	45.13	-2.40	42.73	46.00	-3.27	QP			
3	867.8400	41.96	1.04	43.00			Peak			

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Site: 2# Chamber
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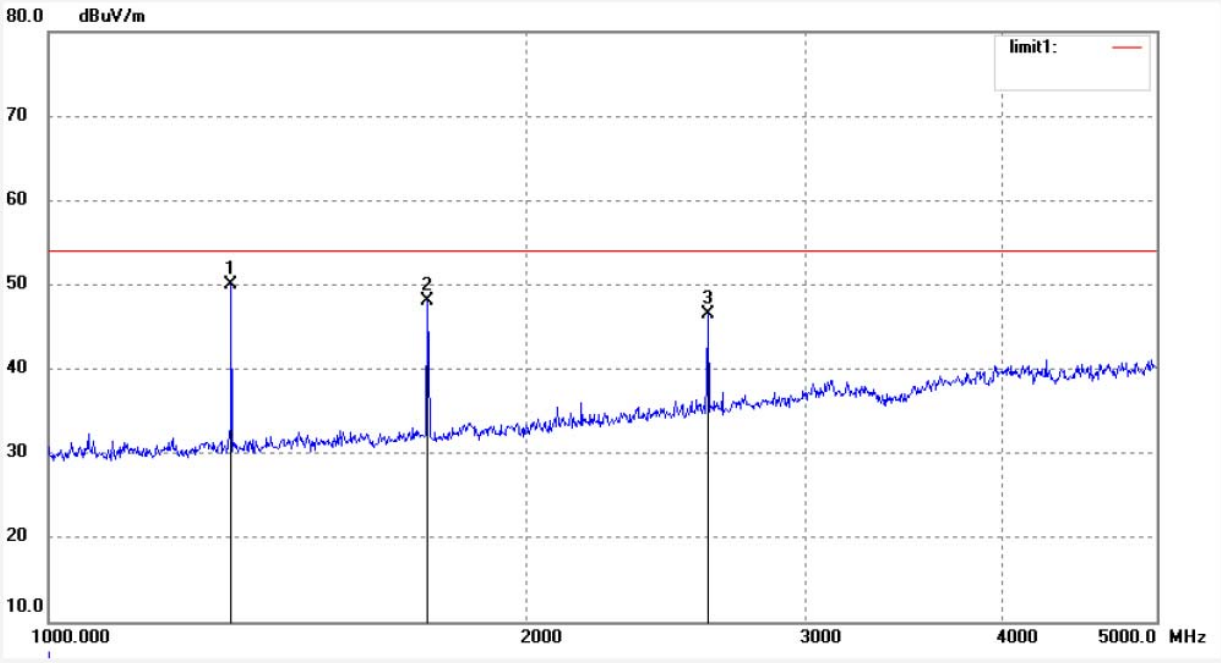
Job No.: RICKY #770	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 2016/05/04
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 17:54:04
EUT: Wireless remote control vibrator	Engineer Signature:
Mode: TX	Distance: 3m
Model: BV-002 BLK	
Manufacturer: TOPARC	

Note: Report NO.:ATE20152702 002



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1304.158	62.18	-12.19	49.99	74.00	-24.01	peak			
2	1733.995	58.50	-10.39	48.11	74.00	-25.89	peak			
3	2605.477	53.15	-6.71	46.44	74.00	-27.56	peak			

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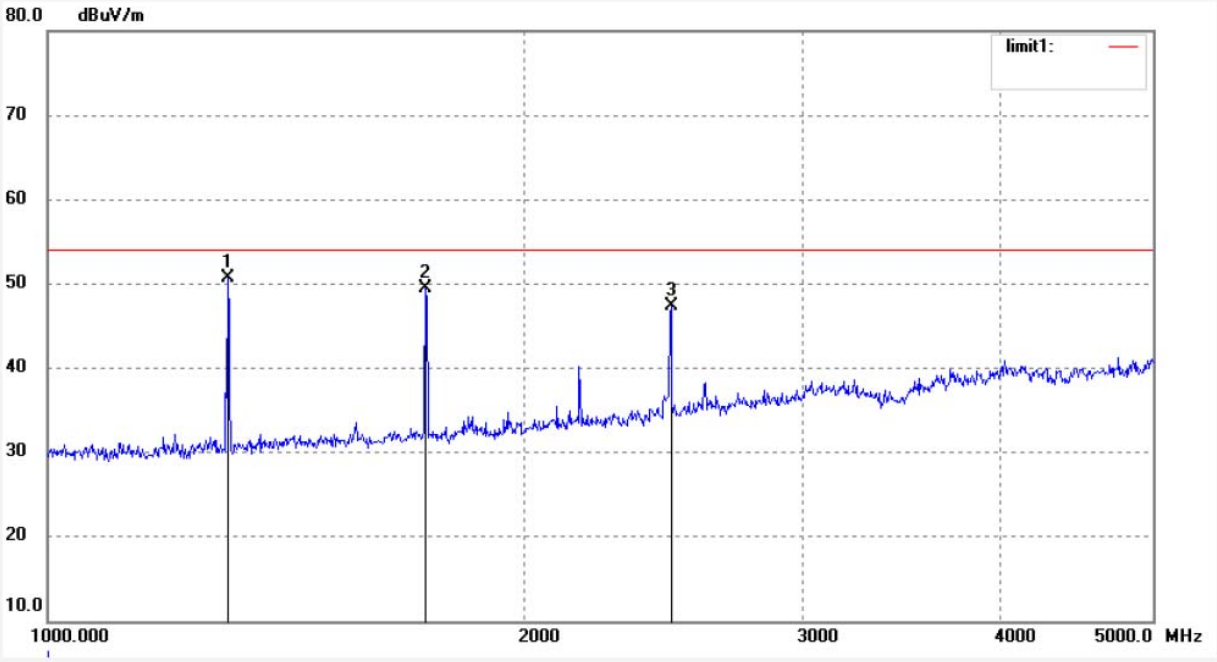
Job No.: RICKY #769	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 2016/05/04
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 17:53:01
EUT: Wireless remote control vibrator	Engineer Signature:
Mode: TX	Distance: 3m
Model: BV-002 BLK	
Manufacturer: TOPARC	

Note: Report NO.:ATE20152702 002



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1304.158	62.90	-12.19	50.71	74.00	-23.29	peak			
2	1733.995	59.82	-10.39	49.43	74.00	-24.57	peak			
3	2478.672	54.73	-7.37	47.36	74.00	-26.64	peak			