

FCC REPORT

Applicant: Zhejiang Yihe Sanitary Ware Co., Ltd.

Address of Applicant: District A, No. 102 East Taihe Road, Haimen street, Jiaojiang, Taizhou, Zhejiang

Equipment Under Test (EUT)

Product Name: Remote Control

Model No.: RC10-02, RC10-03

FCC ID: 2AQBG-RC10-02

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249

Date of sample receipt: 02 Jul., 2019

Date of Test: 03 Jul., to 08 Jul., 2019

Date of report issued: 09 Jul., 2019

Test Result: PASS*

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

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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2 Version

Version No.	Date	Description
00	09 Jul., 2019	Original

Prepared By:



Date:

09 Jul., 2019

Project Engineer

Check By:



Date:

09 Jul., 2019

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
Conducted Emission	15.207	N/A
Field strength of the fundamental signal	15.249 (a)(e)	Pass
Spurious emissions	15.249 (d)/15.209	Pass
20dB Occupy Bandwidth	15.215	Pass

Pass: The EUT comply with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	Zhejiang Yihe Sanitary Ware Co., Ltd.
Address:	District A, No. 102 East Taihe Road, Haimen street, Jiaojiang, Taizhou, Zhejiang
Factory:	WUXI DENVEL INTELLIGENT ELECNIC INC
Address:	Building A, NO.8 LianHe Road, WuXi, JiangSu, China

5.2 General Description of E.U.T.

Product Name:	Remote Control
Model No.:	RC10-02, RC10-03
Operation Frequency:	2407MHz~2477MHz
Channel numbers:	12
Modulation type:	GFSK
Antenna Type:	PCB antenna
Antenna gain:	2.5 dBi
Power supply:	DC 3V (2 x " AA" Battery)
Test Sample Condition:	The test samples were provided in good working order with no visible defects.
Remark:	Item No.: RC10-02, RC10-03 were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being: RC10-02 function: stop, Feminine Wash, Posterior Wash, Dryer, Flush, Nozzle forward, Strength of cleaning, Nozzle backward, Strength of cleaning, Nozzle clean, C/H Massage, Night light, Wing temp, Water temp, Seat temp, ON/OFF cover, ON/OFF seat. RC10-03 cancels the on/off cover function, on/off circle function, based on RC10-02

Operation Frequency each of channel					
Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2407MHz	4	2421MHz	8	2460MHz
1	2410MHz	5	2428MHz	9	2469MHz
2	2412MHz	6	2435MHz	10	2467MHz
3	2414MHz	7	2442MHz	11	2477MHz

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test. Channel No. 0, 7 & 11 were selected as Lowest, Middle and Highest channel.

5.3 Test mode

Transmitting mode:	Keep the EUT in transmitting mode with modulation. (New battery is used during all test)					
Pre-Test Mode: (highest channel=2407MHz)						
CCIS has verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:						
Axis	X	Y	Z			
Field Strength(dBuV/m)	79.88	86.91	82.26			
RC10-03						
Axis	X	Y	Z			
Field Strength(dBuV/m)	79.89	86.97	82.37			
Final Test Mode:						
According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup”: Z axis (see the test setup photo)						

5.4 Description of Support Units

N/A

5.5 Laboratory Facility

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

● **FCC - Registration No.: 727551**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.

● **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

5.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,

Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

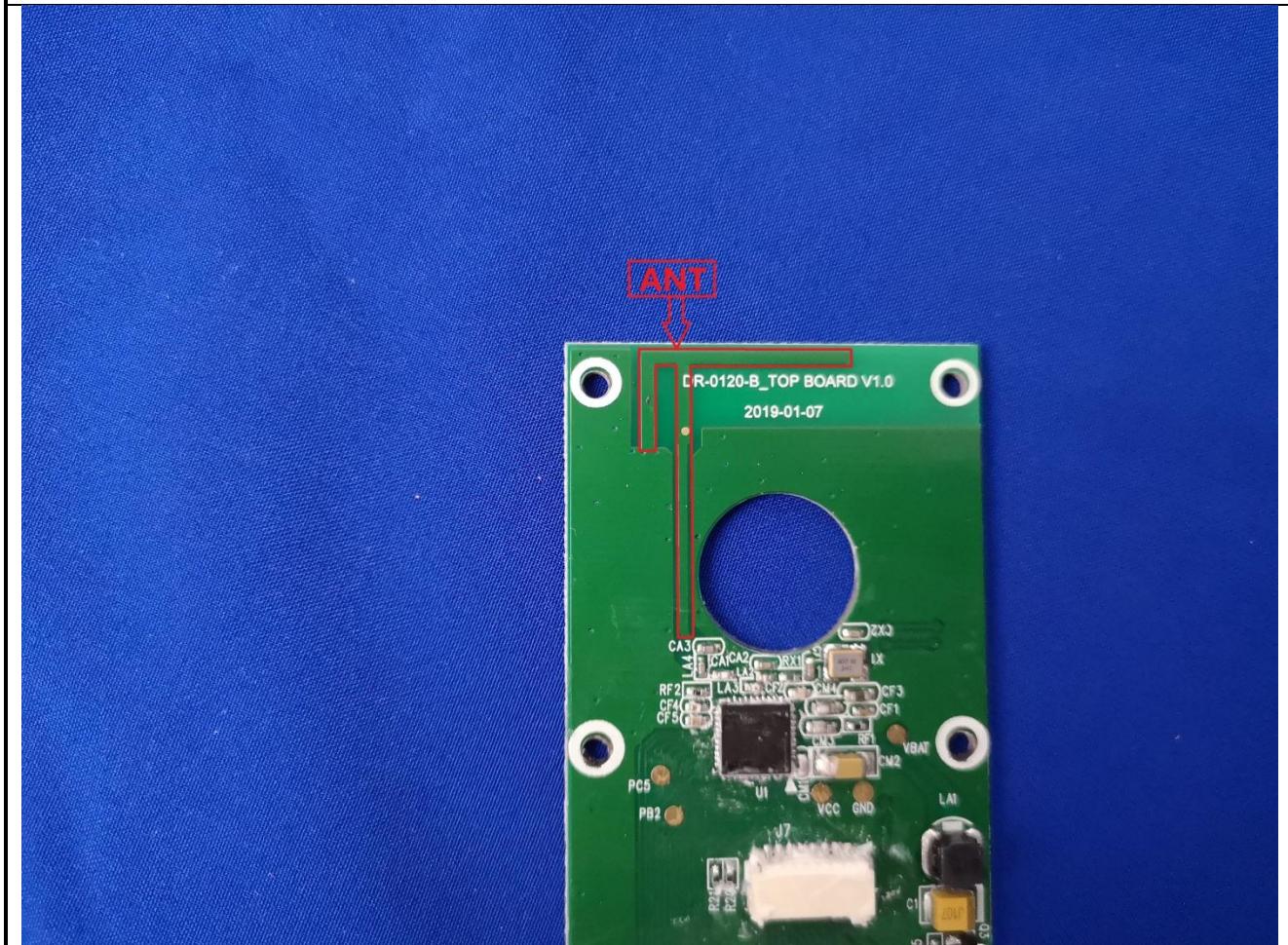
5.7 Test Instruments list

Radiated Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-18-2019	03-17-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-18-2019	03-17-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-22-2017	06-21-2020
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-21-2018	11-20-2019
Loop Antenna	SCHWARZBECK	FMZB 1519 B	00044	03-18-2019	03-17-2020
EMI Test Software	AUDIX	E3	Version: 6.110919b		
Pre-amplifier	HP	8447D	2944A09358	03-18-2019	03-17-2020
Pre-amplifier	CD	PAP-1G18	11804	03-18-2019	03-17-2020
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-18-2019	03-17-2020
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-21-2018	11-20-2019
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-18-2019	03-17-2020
Simulated Station	Anritsu	MT8820C	6201026545	03-18-2019	03-17-2020
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-18-2019	03-17-2020
Cable	MICRO-COAX	MFR64639	K10742-5	03-18-2019	03-17-2020
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-18-2019	03-17-2020

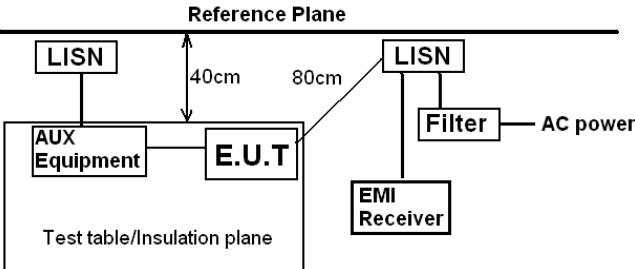
6 Test results and Measurement Data

6.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement:	<p><i>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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</i></p>
E.U.T Antenna:	<p><i>The antenna is PCB antenna which cannot detachable . The best case gain of the antenna is 2.5 dBi.</i></p>

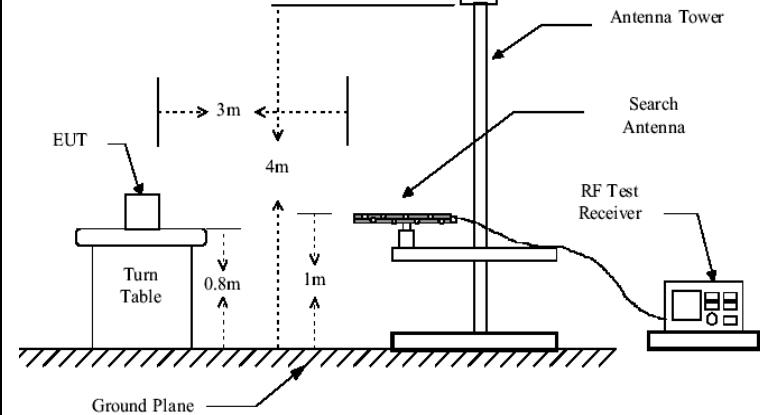
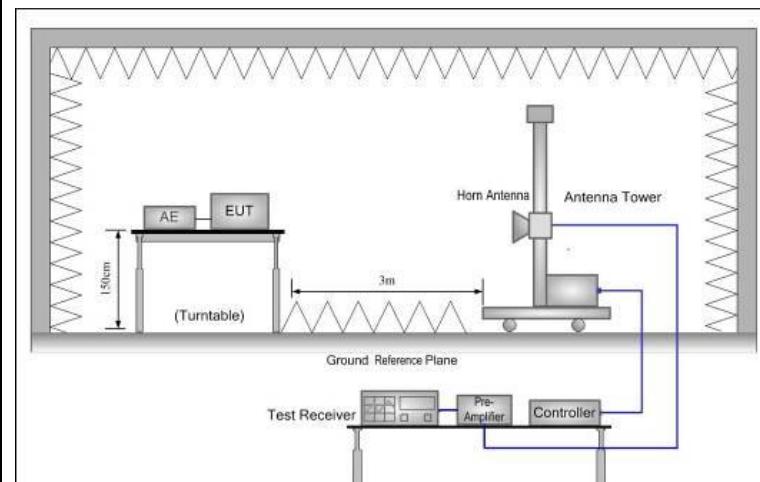


6.2 Conducted Emission

Test Requirement:	FCC Part 15 B Section 15.207		
Test Method:	ANSI C63.4:2014		
Test Frequency Range:	150kHz to 30MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9kHz, VBW=30kHz		
Limit:	Frequency range (MHz)	Limit (dB μ V)	
		Quasi-peak	Average
		0.15-0.5	66 to 56*
		0.5-5	56
		0.5-30	46
	* Decreases with the logarithm of the frequency.		
Test setup:	 <p>Reference Plane</p> <p>LISN</p> <p>AUX Equipment</p> <p>E.U.T</p> <p>Test table/Insulation plane</p> <p>EMI Receiver</p> <p>Filter</p> <p>AC power</p> <p>80cm</p> <p>40cm</p> <p>Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>		
Test procedure	<ol style="list-style-type: none"> 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). They provide a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement. 		
Test Instruments:	Refer to section 5.9 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	The power supply of the EUT is by the "AA" Battery, so not need to be tested.		

6.3 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.249 and 15.209									
Test Method:	ANSI C63.10: 2013									
Test Frequency Range:	30MHz to 25000MHz									
Test site:	Measurement Distance: 3m									
Receiver setup:	Frequency	Detector	RBW	VBW	Remark					
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value					
	Above 1GHz	Peak	1MHz	3MHz	Peak Value					
Limit: (Field strength of the fundamental signal)	Frequency		Limit (dBuV/m @3m)		Remark					
	2400-2483.5MHz		94.00		Average Value					
			114.00		Peak Value					
Limit: (Spurious Emissions)	Frequency	Limit (dBuV/m @3m)			Remark					
	30MHz-88MHz	40.00			Quasi-peak Value					
	88MHz-216MHz	43.50			Quasi-peak Value					
	216MHz-960MHz	46.00			Quasi-peak Value					
	960MHz-1GHz	54.00			Quasi-peak Value					
	Above 1GHz	54.00			Average Value					
		74.00			Peak Value					
Limit: (outside of the specified frequency band)	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.									
Test Procedure:	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna 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. 4. 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. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 									

<p>Test setup:</p>	<p>Below 1GHz</p>  <p>Above 1GHz</p> 
<p>Test Instruments:</p>	<p>Refer to section 5.7</p>
<p>Test mode:</p>	<p>Refer to section 5.3</p>
<p>Test results:</p>	<p>Passed</p>

6.3.1 Field Strength Of The Fundamental Signal

RC10-02:

Peak value							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2407	53.36	27.13	4.71	85.2	114.00	-28.80	Vertical
	55.07	27.13	4.71	86.91	114.00	-27.09	Horizontoal
2442	52.13	27.13	4.71	83.97	114.00	-30.03	Vertical
	54.25	27.13	4.71	86.09	114.00	-27.91	Horizontoal
2477	52.48	27.13	4.71	84.32	114.00	-29.68	Vertical
	54.64	27.13	4.71	86.48	114.00	-27.52	Horizontoal
Average value							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2407	49.14	27.13	4.71	80.98	94.00	-13.02	Vertical
	50.86	27.13	4.71	82.7	94.00	-11.30	Horizontoal
2442	48.04	27.13	4.71	79.88	94.00	-14.12	Vertical
	50.15	27.13	4.71	81.99	94.00	-12.01	Horizontoal
2477	48.23	27.13	4.71	80.07	94.00	-13.93	Vertical
	50.19	27.13	4.71	82.03	94.00	-11.97	Horizontoal

NOTE: Field strength of the fundamental signal test, RBW >20dB BW, VBW>=3XRBW.

RC10-03:

Peak value							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2407	53.52	27.13	4.71	85.36	114.00	-28.64	Vertical
	55.13	27.13	4.71	86.97	114.00	-27.03	Horizontoal
2442	52.31	27.13	4.71	84.15	114.00	-29.85	Vertical
	54.52	27.13	4.71	86.36	114.00	-27.64	Horizontoal
2477	52.63	27.13	4.71	84.47	114.00	-29.53	Vertical
	54.87	27.13	4.71	86.71	114.00	-27.29	Horizontoal
Average value							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2407	49.25	27.13	4.71	81.09	94.00	-12.91	Vertical
	50.76	27.13	4.71	82.60	94.00	-11.40	Horizontoal
2442	48.44	27.13	4.71	80.28	94.00	-13.72	Vertical
	50.12	27.13	4.71	81.96	94.00	-12.04	Horizontoal
2477	48.33	27.13	4.71	80.17	94.00	-13.83	Vertical
	50.06	27.13	4.71	81.90	94.00	-12.10	Horizontoal

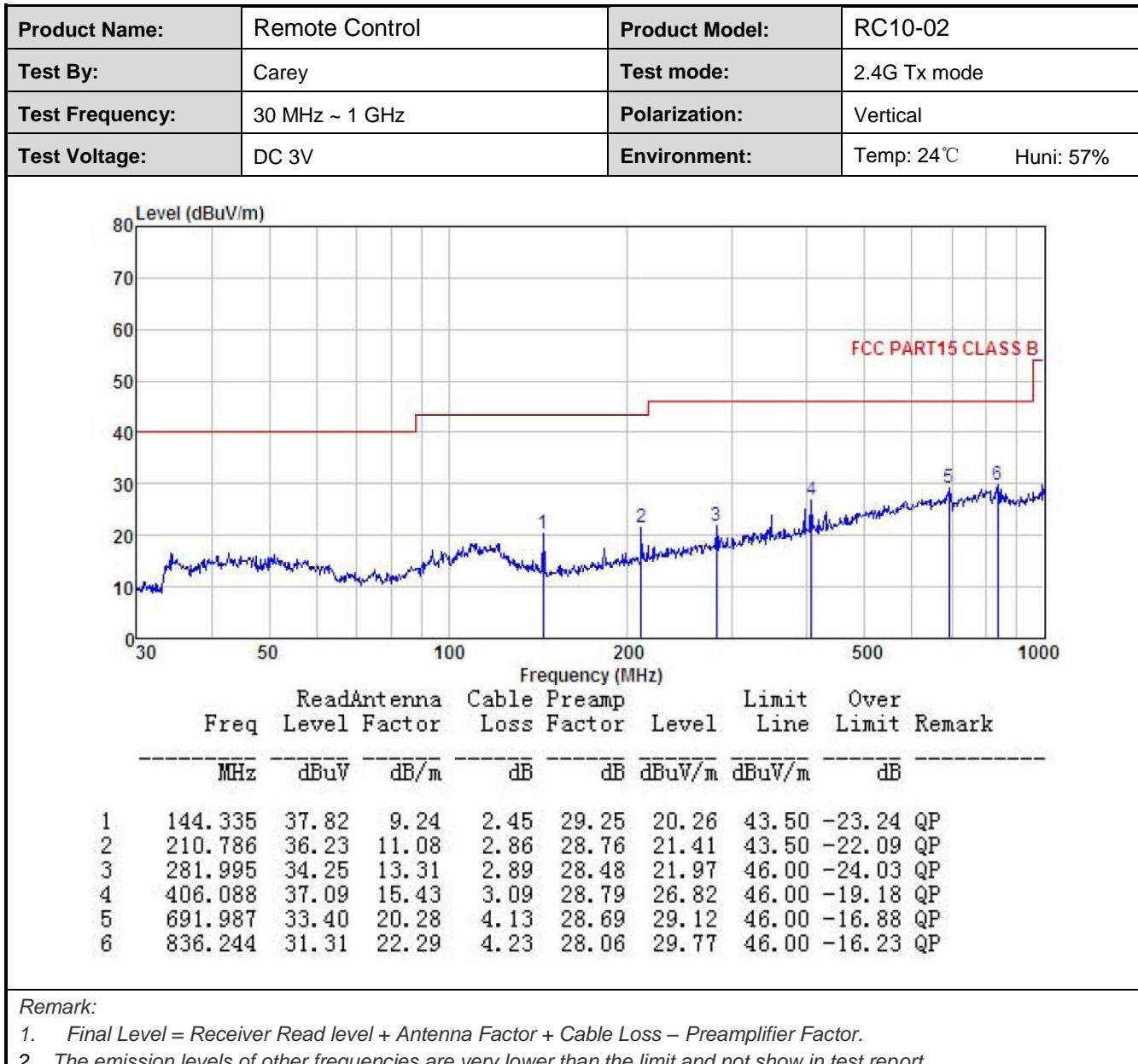
NOTE: Field strength of the fundamental signal test, RBW >20dB BW, VBW>=3XRBW.

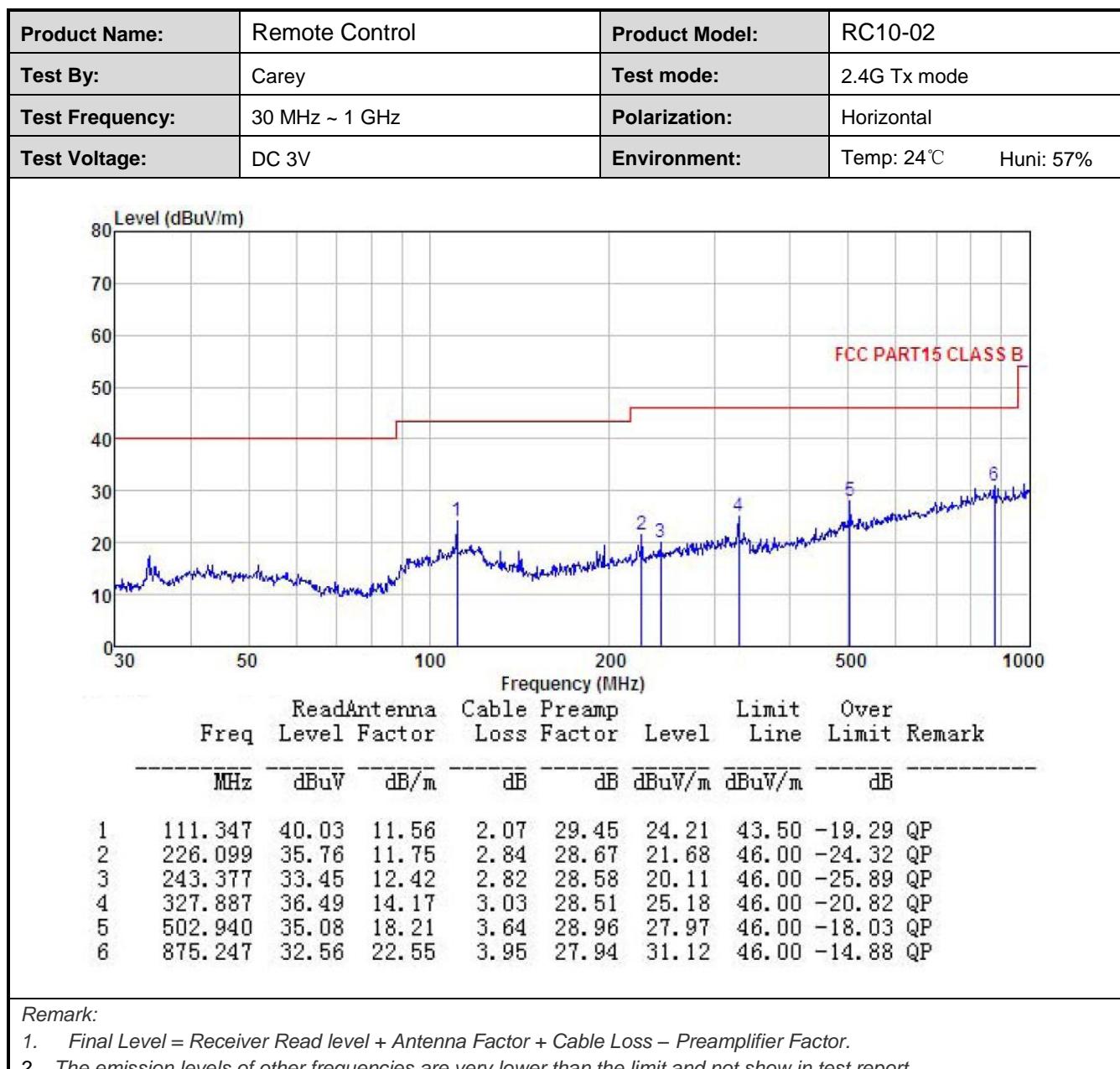
6.3.2 Spurious Emissions

Measurement Data (worst case):

RC10-02

Below 1GHz:

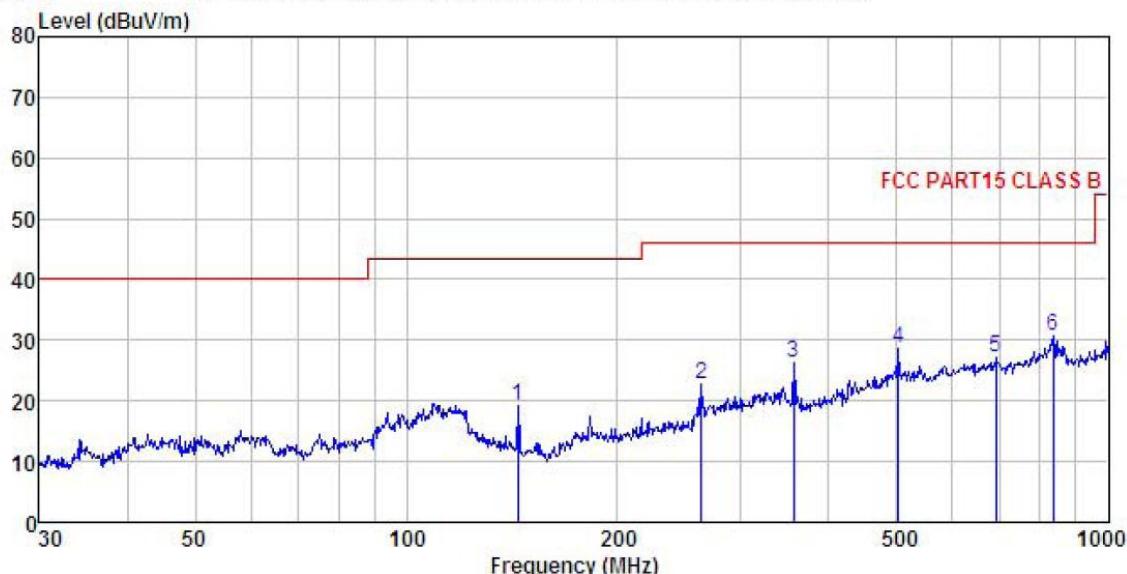




RC10-03

Below 1GHz:

Product Name:	Remote Control	Product Model:	RC10-03
Test By:	Carey	Test mode:	2.4G Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Vertical
Test Voltage:	DC 3V	Environment:	Temp: 24°C Huni: 57%



Freq MHz	ReadAntenna Level Factor		Cable Loss Factor		Preamp Level		Limit dBuV/m	Line dBuV/m	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	dB	
1	144.335	36.82	9.24	2.45	29.25	19.26	43.50	43.50	-24.24	QP
2	262.896	35.60	12.95	2.84	28.52	22.87	46.00	46.00	-23.13	QP
3	356.676	37.12	14.69	3.10	28.59	26.32	46.00	46.00	-19.68	QP
4	502.940	35.71	18.21	3.64	28.96	28.60	46.00	46.00	-17.40	QP
5	691.987	31.40	20.28	4.13	28.69	27.12	46.00	46.00	-18.88	QP
6	836.244	32.31	22.29	4.23	28.06	30.77	46.00	46.00	-15.23	QP

Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are very lower than the limit and not show in test report.

Product Name:	Remote Control	Product Model:	RC10-03
Test By:	Carey	Test mode:	2.4G Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Horizontal
Test Voltage:	DC 3V	Environment:	Temp: 24°C Huni: 57%

FCC PART15 CLASS B

Freq MHz	ReadAntenna Level Factor		Cable Preamp Loss Factor		Limit Line dBuV/m	Over Limit dB	Over Limit Remark
	MHz	dBuV	dB/m	dB			
1 260.144	35.64	12.89	2.84	28.52	22.85	46.00	-23.15 QP
2 352.943	37.24	14.64	3.10	28.57	26.41	46.00	-19.59 QP
3 459.114	36.65	16.84	3.27	28.89	27.87	46.00	-18.13 QP
4 566.622	34.00	18.78	3.91	29.05	27.64	46.00	-18.36 QP
5 627.274	33.46	19.62	3.90	28.85	28.13	46.00	-17.87 QP
6 737.071	32.45	20.55	4.31	28.53	28.78	46.00	-17.22 QP

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

RC10-02

Above 1GHz

Test channel: Lowest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4814.00	49.74	31.62	6.81	41.82	46.35	74.00	-27.65	Vertical
4814.00	49.07	31.62	6.81	41.82	45.68	74.00	-28.32	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4814.00	38.48	31.62	6.81	41.82	35.09	54.00	-18.91	Vertical
4814.00	38.95	31.62	6.81	41.82	35.56	54.00	-18.44	Horizontal
Test channel: Middle channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4884.00	51.46	31.72	6.86	41.84	48.20	74.00	-25.80	Vertical
4884.00	49.31	31.72	6.86	41.84	46.05	74.00	-27.95	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4884.00	41.12	31.72	6.86	41.84	37.86	54.00	-16.14	Vertical
4884.00	39.55	31.72	6.86	41.84	36.29	54.00	-17.71	Horizontal
Test channel: Highest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4954.00	53.76	31.84	6.91	41.87	50.64	74.00	-23.36	Vertical
4954.00	50.47	31.84	6.91	41.87	47.35	74.00	-26.65	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4954.00	44.56	31.84	6.91	41.87	41.44	54.00	-12.56	Vertical
4954.00	40.94	31.84	6.91	41.87	37.82	54.00	-16.18	Horizontal

Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are very lower than the limit and not show in test report.

RC10-03

Above 1GHz

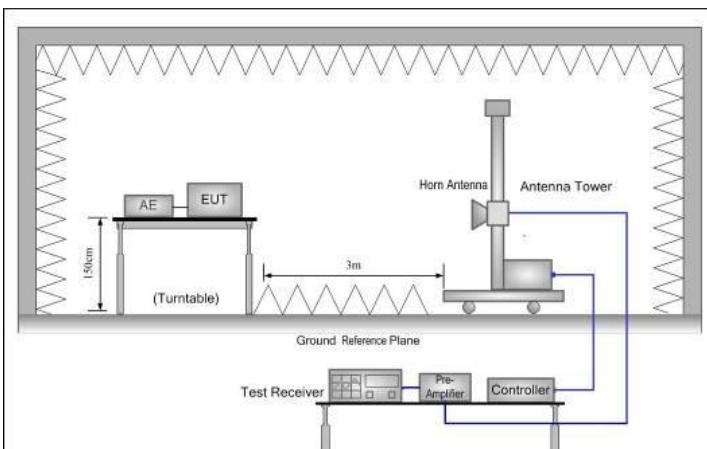
Test channel: Lowest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4814.00	50.29	31.62	6.81	41.82	46.90	74.00	-27.10	Vertical
4814.00	49.21	31.62	6.81	41.82	45.82	74.00	-28.18	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4814.00	39.67	31.62	6.81	41.82	36.28	54.00	-17.72	Vertical
4814.00	38.84	31.62	6.81	41.82	35.45	54.00	-18.55	Horizontal
Test channel: Middle channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4884.00	51.17	31.72	6.86	41.84	47.91	74.00	-26.09	Vertical
4884.00	49.32	31.72	6.86	41.84	46.06	74.00	-27.94	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4884.00	41.24	31.72	6.86	41.84	37.98	54.00	-16.02	Vertical
4884.00	39.57	31.72	6.86	41.84	36.31	54.00	-17.69	Horizontal
Test channel: Highest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4954.00	54.46	31.84	6.91	41.87	51.34	74.00	-22.66	Vertical
4954.00	50.07	31.84	6.91	41.87	46.95	74.00	-27.05	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4954.00	44.55	31.84	6.91	41.87	41.43	54.00	-12.57	Vertical
4954.00	40.56	31.84	6.91	41.87	37.44	54.00	-16.56	Horizontal

Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are very lower than the limit and not show in test report.

6.3.3 Band Edge

Radiated Emission Method

Test Requirement:	FCC Part 15 C Section 15.205 and 15.209										
Test Method:	ANSI C63.10: 2013										
Test Frequency Range:	2.3GHz to 2.5GHz										
Test Distance:	3m										
Receiver setup:	Frequency	Detector	RBW	VBW	Remark						
	Above 1GHz	Peak	1MHz	3MHz	Peak Value						
Limit:	Frequency	Limit (dBuV/m @3m)		Remark							
	Above 1GHz	54.00		Average Value							
Test Procedure:		<ol style="list-style-type: none"> The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. The antenna 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. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 									
Test setup:											
Test Instruments:	Refer to section 5.7 for details										
Test mode:	Refer to section 5.3 for details										
Test results:	Passed										

RC10-02:

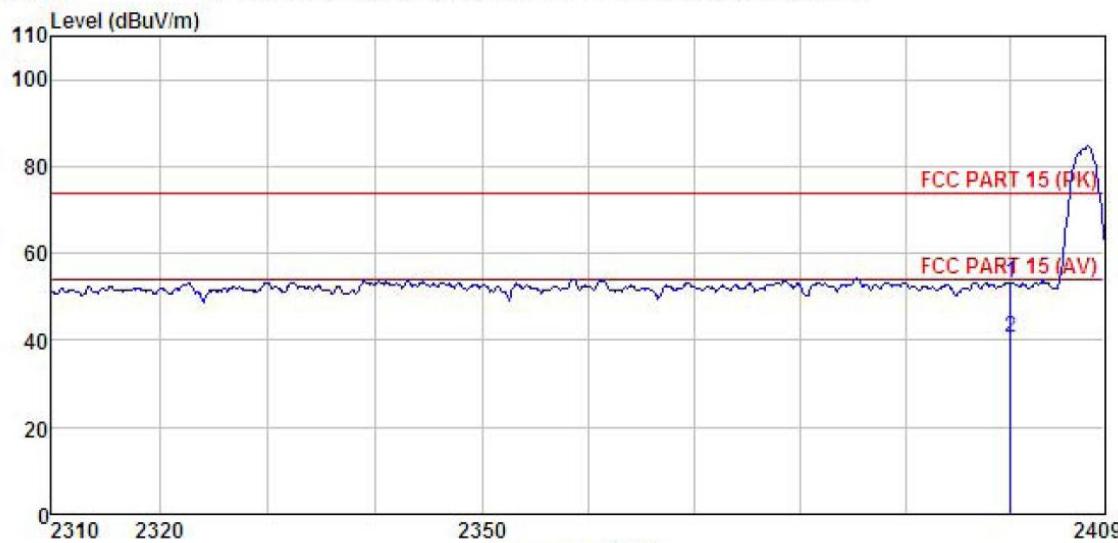
Product Name:	Remote Control	Product Model:	RC10-02
Test By:	Carey	Test mode:	2.4G-Tx mode
Test Channel:	Lowest channel	Polarization:	Vertical
Test Voltage:	DC 3V	Environment:	Temp: 24°C Huni: 57%

Freq	ReadAntenna		Cable		Preamp	Loss	Factor	Level	Limit	Line	Over	Limit	Remark
	MHz	Level	Antenna	Preamp									
1	2400.000	20.47	27.11	4.70	0.00	52.28	74.00	-21.72	Peak				
2	2400.000	8.89	27.11	4.70	0.00	40.70	54.00	-13.30	Average				

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product Name:	Remote Control	Product Model:	RC10-02
Test By:	Carey	Test mode:	2.4G-Tx mode
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	DC 3V	Environment:	Temp: 24°C Huni: 57%



Freq	ReadAntenna		Cable		Preamp Level	Limit Level	Over Line	Over Limit	Over Remark
	MHz	dBuV	Level Factor	Cable Loss Factor					
1	2400.000	21.41	27.11	4.70	0.00	53.22	74.00	-20.78	Peak
2	2400.000	8.92	27.11	4.70	0.00	40.73	54.00	-13.27	Average

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product Name:	Remote Control	Product Model:	RC10-02
Test By:	Carey	Test mode:	2.4G-Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	DC 3V	Environment:	Temp: 24°C Huni: 57%

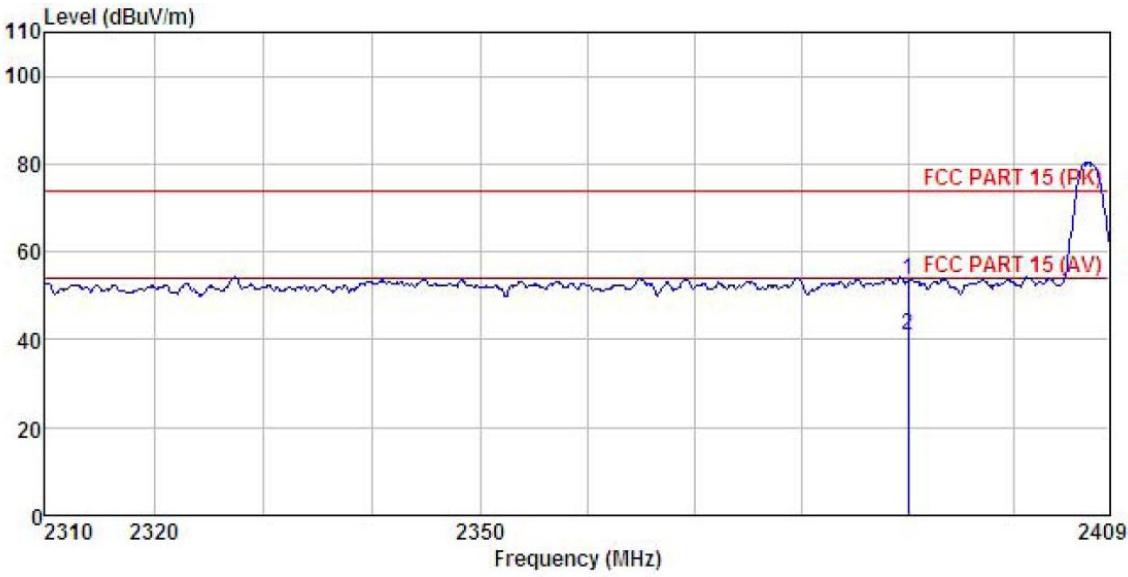
Freq	Read	Antenna	Cable	Preamp	Limit	Over	Over	
MHz	dBuV	dB/m	Loss	Level	dBuV/m	Line	Line	
1	2483.500	21.52	27.36	4.81	0.00	53.69	74.00	-20.31 Peak
2	2483.500	9.42	27.36	4.81	0.00	41.59	54.00	-12.41 Average

Remark:

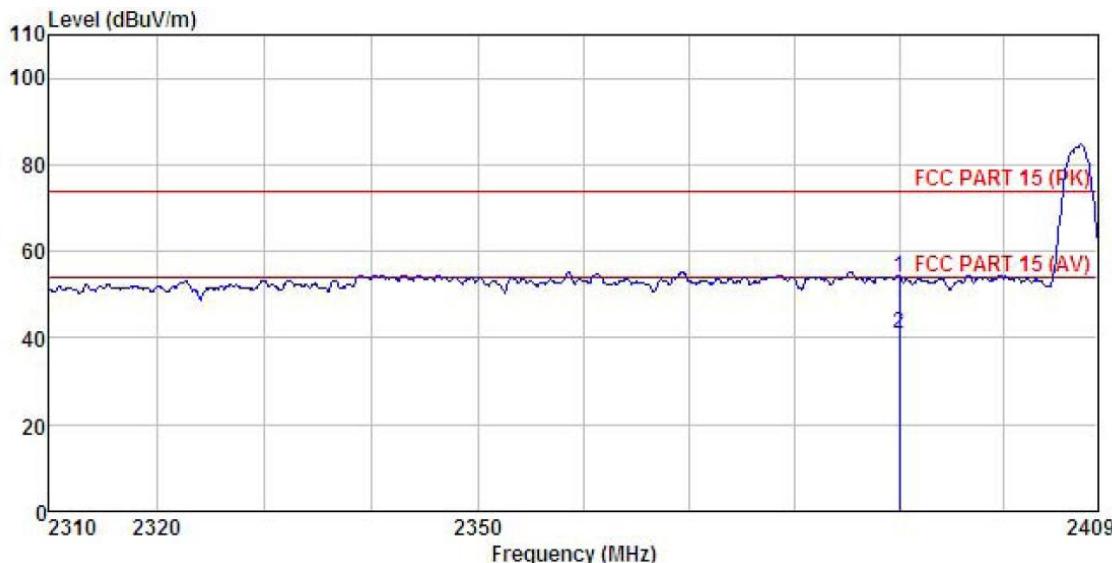
1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product Name:	Remote Control		Product Model:	RC10-02																																																									
Test By:	Carey		Test mode:	2.4G-Tx mode																																																									
Test Channel:	Highest channel		Polarization:	Horizontal																																																									
Test Voltage:	DC 3V		Environment:	Temp: 24°C Huni: 57%																																																									
<table border="1"> <thead> <tr> <th rowspan="2">Freq</th> <th colspan="2">ReadAntenna</th> <th colspan="2">Cable</th> <th rowspan="2">Preamp</th> <th rowspan="2">Level</th> <th rowspan="2">Limit</th> <th rowspan="2">Over</th> <th rowspan="2">Line</th> <th rowspan="2">Limit</th> <th rowspan="2">Remark</th> </tr> <tr> <th>Frequency (MHz)</th> <th>Level</th> <th>Antenna Factor</th> <th>Cable Loss</th> <th>dB</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dBuV/m</th> <th>dB</th> </tr> <tr> <th>MHz</th> <th>dBuV</th> <th>dB/m</th> <th>dB</th> <th>dB</th> <th>dB</th> <th>dB</th> <th>dB</th> <th>dB</th> <th>dB</th> <th>dB</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2483.500</td> <td>22.08</td> <td>27.35</td> <td>4.81</td> <td>0.00</td> <td>54.24</td> <td>74.00</td> <td>-19.76</td> <td>Peak</td> <td></td> </tr> <tr> <td>2</td> <td>2483.500</td> <td>9.18</td> <td>27.35</td> <td>4.81</td> <td>0.00</td> <td>41.34</td> <td>54.00</td> <td>-12.66</td> <td>Average</td> <td></td> </tr> </tbody> </table>								Freq	ReadAntenna		Cable		Preamp	Level	Limit	Over	Line	Limit	Remark	Frequency (MHz)	Level	Antenna Factor	Cable Loss	dB	dBuV/m	dBuV/m	dBuV/m	dB	MHz	dBuV	dB/m	dB	1	2483.500	22.08	27.35	4.81	0.00	54.24	74.00	-19.76	Peak		2	2483.500	9.18	27.35	4.81	0.00	41.34	54.00	-12.66	Average								
Freq	ReadAntenna		Cable		Preamp	Level	Limit		Over	Line	Limit	Remark																																																	
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2	2483.500	9.18	27.35	4.81	0.00	41.34	54.00	-12.66	Average																																																				
<p><i>Remark:</i></p> <ol style="list-style-type: none"> Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor. The emission levels of other frequencies are very lower than the limit and not show in test report. 																																																													

RC10-03:

Product Name:	Remote Control		Product Model:	RC10-03																													
Test By:	Carey		Test mode:	2.4G-Tx mode																													
Test Channel:	Lowest channel		Polarization:	Vertical																													
Test Voltage:	DC 3V		Environment:	Temp: 24°C Huni: 57%																													
																																	
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MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB																											
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Product Name:	Remote Control	Product Model:	RC10-03
Test By:	Carey	Test mode:	2.4G-Tx mode
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	DC 3V	Environment:	Temp: 24°C Huni: 57%



Freq MHz	Read Level dBuV	Antenna Factor dB/m	Cable Loss Factor dB	Preamp Level dB	Limit dBuV/m	Over Line dB	Over Limit dB	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1 2390.000	22.37	27.08	4.69	0.00	54.14	74.00	-19.86	Peak
2 2390.000	9.11	27.08	4.69	0.00	40.88	54.00	-13.12	Average

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. 2400MHz and 2390MHz all have been tested, Only worse case is reported.

Product Name:	Remote Control	Product Model:	RC10-03
Test By:	Carey	Test mode:	2.4G-Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	DC 3V	Environment:	Temp: 24°C Huni: 57%

Level (dBuV/m)

Frequency (MHz)

FCC PART 15 (PK)

FCC PART 15 (AV)

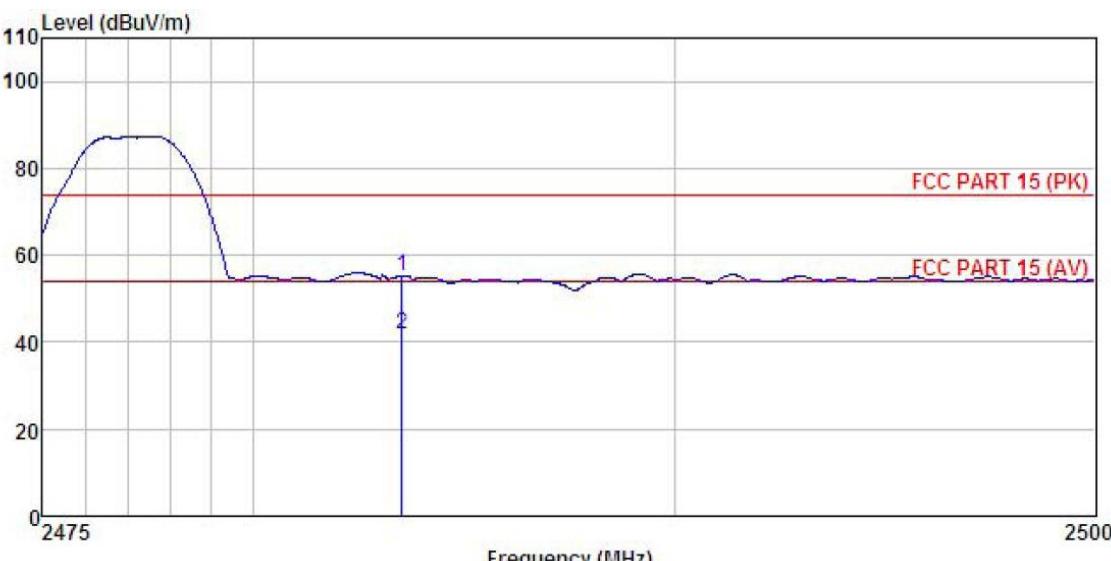
2475 2500

0 20 40 60 80 100 110

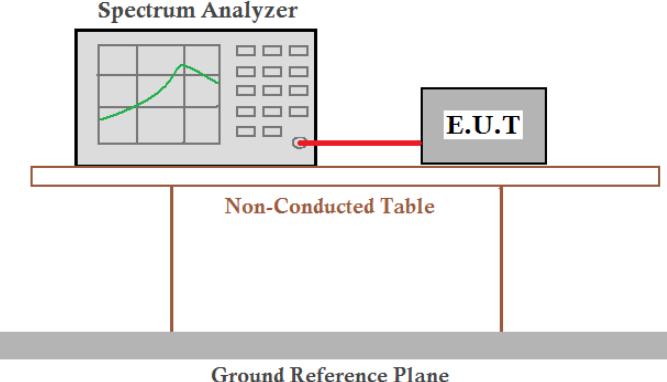
Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over Line Limit	Over Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 2483.500	22.52	27.36	4.81	0.00	54.69	74.00	-19.31	Peak
2 2483.500	9.53	27.36	4.81	0.00	41.70	54.00	-12.30	Average

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product Name:	Remote Control	Product Model:	RC10-03																										
Test By:	Carey	Test mode:	2.4G-Tx mode																										
Test Channel:	Highest channel	Polarization:	Horizontal																										
Test Voltage:	DC 3V	Environment:	Temp: 24°C Huni: 57%																										
																													
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Freq MHz	Read Antenna Level Factor	Cable Loss Factor	Preamp Level dB					Limit				Over Line Limit	Over Line Limit Remark																
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<p><i>Remark:</i></p> <ol style="list-style-type: none"> Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor. The emission levels of other frequencies are very lower than the limit and not show in test report. 																													

6.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part 15 C Section 15.215
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=30 kHz, VBW=100 kHz, detector=Peak
Limit:	N/A
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Transmitting mode
Test results:	Pass

Measurement Data:

20dB Occupy Bandwidth (MHz)			
Lowest channel	Middle channel	Highest	Highest
1.57	1.58	1.59	

Test plot as follows:

