

APPLICATION FOR VERIFICATION
On Behalf of
Grupo Gescasi, S.L.

RF Remote Control Lock
Model No.: RL

FCC ID: 2AJVF-RL-LOCK

Prepared for : Grupo Gescasi, S.L.
Address : Luis Alvarez Lencero, 3 – 1 – 13, Badajoz, Spain, 06011

Prepared by : Accurate Technology Co., Ltd.
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Report No. : ATE20162164
Date of Test : Sep 18, 2016-Oct 12, 2016
Date of Report : Oct 13, 2016

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Test Report Declaration

Applicant : Grupo Gescasi, S.L.
Manufacturer : ShenZhen XinYu Mchinery Limited.
EUT Description : RF Remote Control Lock
(A) MODEL NO.: RL
(B) SERIAL NO.: N/A
(C) POWER SUPPLY: DC 3V (Powered by Battery)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B ANSI C63.4: 2014

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 B Class B limits both radiated and conducted emissions. 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.

Date of Test : Sep 18, 2016--Oct 12, 2016
Date of Report : Oct 13, 2016

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

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

1. TEST RESULTS SUMMARY

Test Items	Test Standard	Test Results
Power Line Conducted Emission	FCC Part 15 Subpart B	N/A
Radiated Emission	FCC Part 15 Subpart B	Pass

Note: The power supply mode of the EUT is DC 3V, According to the FCC standard requirements, conducted emission is not applicable

2. GENERAL INFORMATION

2.1. Product of Device (EUT)

EUT : RF Remote Control Lock

Model Number : RL

Power Supply : DC 3V (powered by battery)

Trade name : Grupo Gescasi, S.L.

Modulation: : ASK

Antenna type : PCB antenna

Antenna gain : 0dBi

Receiver Frequency : 315MHz RX

Applicant : Grupo Gescasi, S.L.

Address : Luis Alvarez Lencero, 3 – 1 – 13, Badajoz, Spain, 06011

Manufacturer : ShenZhen XinYu Mchinery Limited.

Address : No.5 Building, D Zone, Xinxing Industrial Park, ShuTianPu Community, GongMing Town, GuangMing New District, Shenzhen,PRC

Date of sample received : Sep 18, 2016

Date of Test : Sep 18, 2016-Oct 12, 2016

2.2. Accessory and Auxiliary Equipment

REMOTE CONTROL

2.3. Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen, May 10, 2004

Listed by FCC
The Registration Number is 253065
Listed by FCC
The Registration Number is 752051

Listed by Industry Canada
The Registration Number is 5077A-1
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&D, Changyuan New Material Port, Keyuan
Rd., Science & Industry Park, Nanshan District, Shenzhen
518057, P.R. China

2.4. Measurement Uncertainty

Conducted emission expanded uncertainty : $U=2.23\text{dB}$, $k=2$
Power disturbance expanded uncertainty : $U=2.92\text{dB}$, $k=2$
Radiated emission expanded uncertainty : $U=3.08\text{dB}$, $k=2$
(9kHz-30MHz)
Radiated emission expanded uncertainty : $U=4.42\text{dB}$, $k=2$
(30MHz-1000MHz)
Radiated emission expanded uncertainty : $U=4.06\text{dB}$, $k=2$
(Above 1GHz)

3. 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	CBLU118354 0-01	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	WHKX3.6/18 G-10SS	N/A	Jan. 09, 2016	One Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/251 0-60/11SS	N/A	Jan. 09, 2016	One Year

4. RADIATED EMISSION MEASUREMENT

4.1. Block Diagram of Test Setup

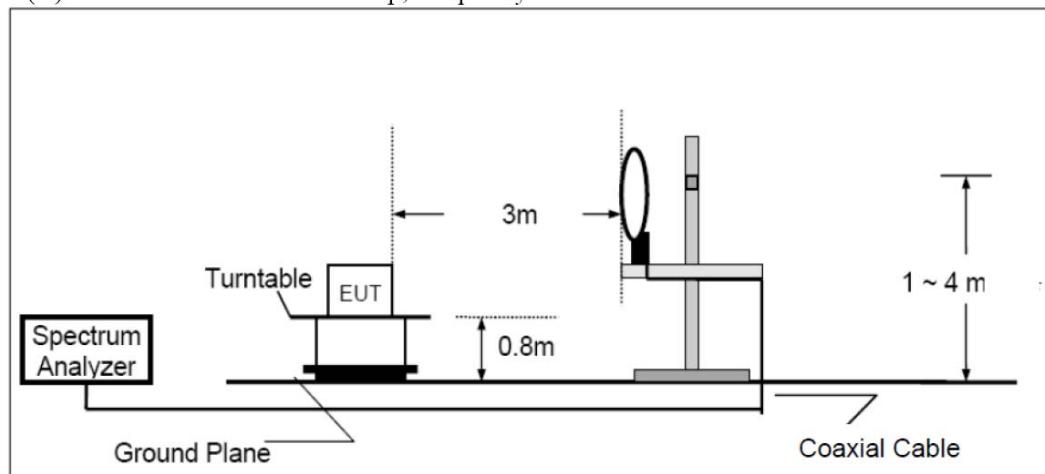
4.1.1. Block diagram of connection between the EUT and simulators



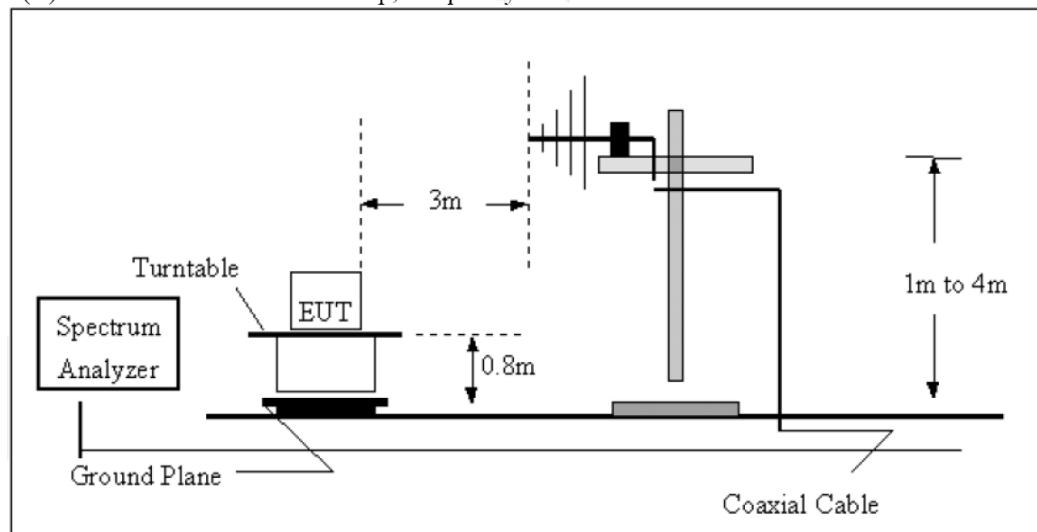
(EUT: RF Remote Control Lock)

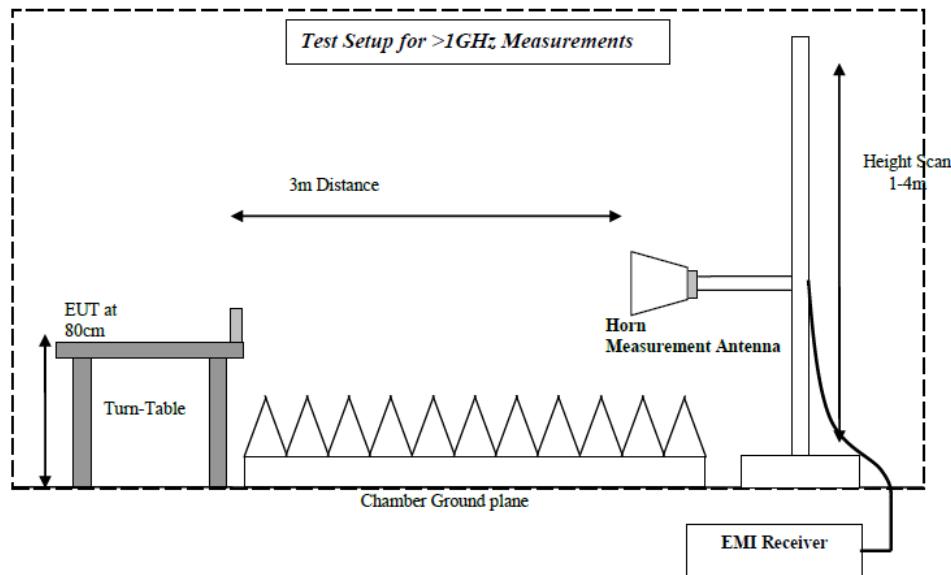
4.1.2. Semi-Anechoic Chamber Test Setup Diagram

(A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency 30-1000MHz





4.2.The Emission Limit For Section 15.109 (a)

4.2.1.Radiation Emission Measurement Limits According to Section 15.109 (a).

Frequency MHz	Distance Meters	Field Strengths Limit	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V/m})$
30-88	3	100	40.0
88-216	3	150	43.5
216-960	3	200	46.0
960-1000	3	500	54.0

Remark: (1) Emission level $\text{dB}(\mu\text{V}) = 20 \log \text{Emission level } \mu\text{V/m}$.
 (2) The smaller limit shall apply at the cross point between two frequency bands.
 (3) Distance is the distance in meters between the measuring instrument antenna and the closest point of any part of the device or system.

4.3.EUT Configuration 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.RF Remote Control Lock

Model Number: RL

Serial Number: N/A

Manufacturer: ShenZhen XinYu Mchninery Limited.

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 test mode (Rx) and measure it.

4.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. 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 bilog 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 interface cables must be manipulated according to ANSI C63.4: 2014 on radiated emission measurement.

The bandwidth of test receiver is set at 120 kHz in 30-1000 MHz, and 1 MHz in 1000-4000 MHz.

The frequency range from 30MHz to 4000MHz is checked.

4.6.Radiated Emission Noise Measurement Result

PASS.

From 9kHz to 30MHz

Frequency (MHz)	Quasi Peak (dB μ V/m)	Azimuth	Polarity (H/V)	Factors (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2.02	40.55	36	H	-54.15	69.5	-28.95
14.25	35.22	205	H	-52.01	69.5	-34.28
3.68	42.74	352	V	-53.27	69.5	-26.76
17.35	36.24	15	V	-51.25	69.5	-33.26

Part 15 Section 15.31(f)(2) (9kHz-30MHz)

Limit at 3m=Limit at 300m-40*log(300(m)/3(m))

Limit at 3m=Limit at 30m-40*log(30(m)/3(m))

Above 30MHz

Model Number: RL									
Test mode: RX									
Horizontal		No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
		1	244.2321	27.94	-10.60	17.34	46.00	-28.66	QP
		2	285.9778	28.19	-9.39	18.80	46.00	-27.20	QP
		3	361.7139	28.25	-7.26	20.99	46.00	-25.01	QP
		4	495.9344	28.40	-4.53	23.87	46.00	-22.13	QP
		5	580.7026	29.73	-2.55	27.18	46.00	-18.82	QP
		6	729.3583	29.76	-0.64	29.12	46.00	-16.88	QP
Vertical		No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
		1	119.0180	27.12	-13.06	14.06	43.50	-29.44	QP
		2	199.2855	26.85	-12.28	14.57	43.50	-28.93	QP
		3	239.1473	27.31	-10.67	16.64	46.00	-29.36	QP
		4	355.4273	28.52	-7.36	21.16	46.00	-24.84	QP
		5	495.9344	28.47	-4.53	23.94	46.00	-22.06	QP
		6	607.7867	28.97	-2.24	26.73	46.00	-19.27	QP
Above 1G									
Horizontal		No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
		1	1255.272	46.96	-12.29	34.67	74.00	-39.33	peak
		2	1554.014	45.23	-10.99	34.24	74.00	-39.76	peak
		3	1837.826	45.76	-9.65	36.11	74.00	-37.89	peak
		4	2122.846	45.05	-8.47	36.58	74.00	-37.42	peak
		5	2716.973	45.18	-6.26	38.92	74.00	-35.08	peak
		6	3125.311	45.76	-4.38	41.38	74.00	-32.62	peak
Vertical		No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
		1	1281.648	46.25	-12.24	34.01	74.00	-39.99	peak
		2	1437.937	45.78	-11.64	34.14	74.00	-39.86	peak
		3	1858.321	46.13	-9.57	36.56	74.00	-37.44	peak
		4	2173.470	45.73	-8.35	37.38	74.00	-36.62	peak
		5	2758.722	44.93	-6.09	38.84	74.00	-35.16	peak
		6	3151.416	45.36	-4.35	41.01	74.00	-32.99	peak

Below 1GHz



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Job No.: ding #821

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: DC 3V

Test item: Radiation Test

Date: 16/10/12/

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 14/39/09

EUT: RF Remote Control Lock

Engineer Signature:

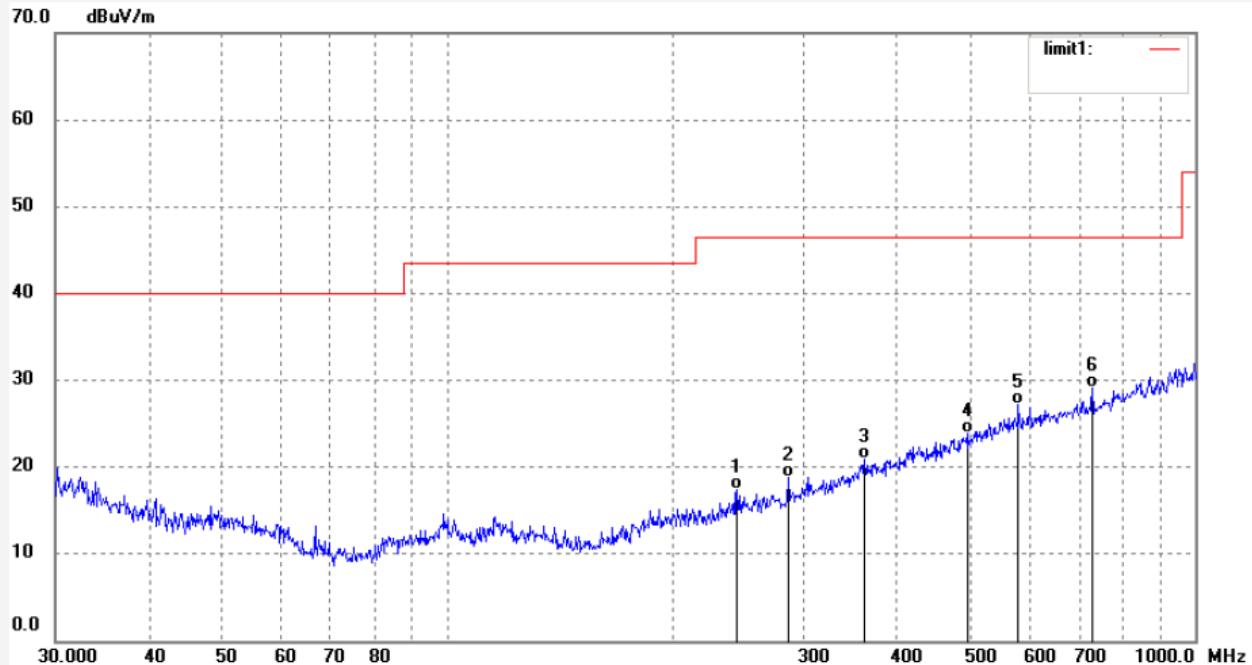
Mode: RX

Distance: 3m

Model: Remock Lockey

Manufacturer: XINYU

Note: Report NO.:ATE20162164



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	244.2321	27.94	-10.60	17.34	46.00	-28.66	QP			
2	285.9778	28.19	-9.39	18.80	46.00	-27.20	QP			
3	361.7139	28.25	-7.26	20.99	46.00	-25.01	QP			
4	495.9344	28.40	-4.53	23.87	46.00	-22.13	QP			
5	580.7026	29.73	-2.55	27.18	46.00	-18.82	QP			
6	729.3583	29.76	-0.64	29.12	46.00	-16.88	QP			

Job No.: ding #820

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: DC 3V

Test item: Radiation Test

Date: 16/10/12/

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 14:38:33

EUT: RF Remote Control Lock

Engineer Signature:

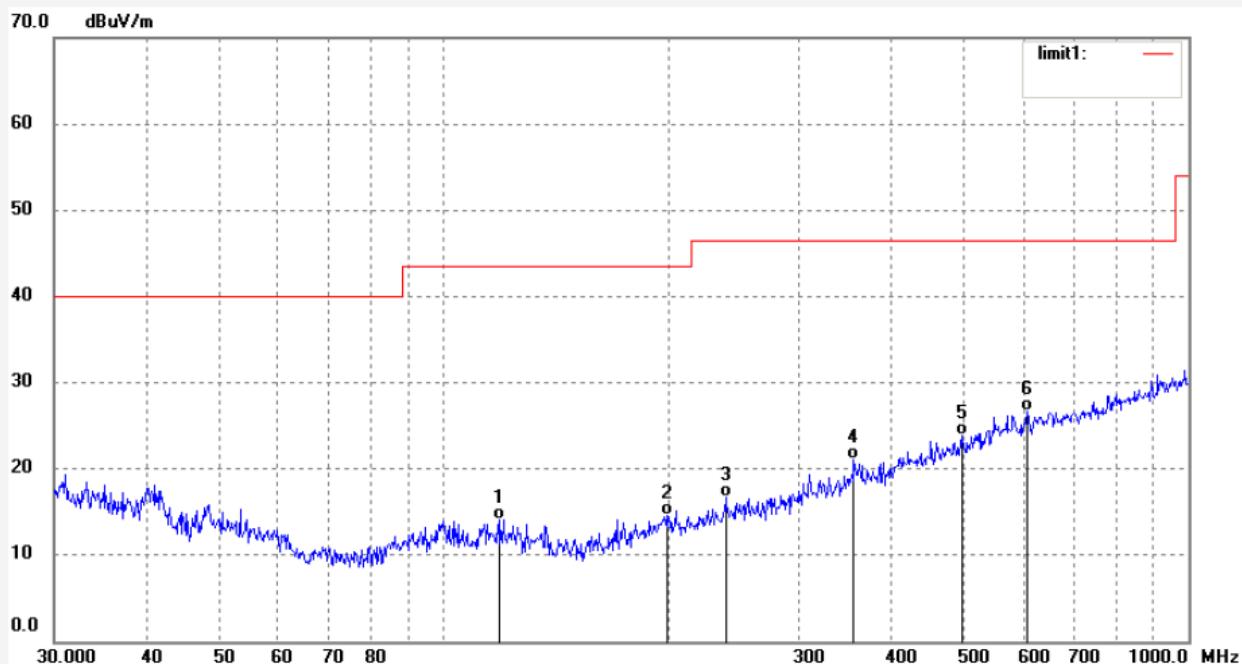
Mode: RX

Distance: 3m

Model: Remock Lockey

Manufacturer: XINYU

Note: Report NO.:ATE20162164



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	119.0180	27.12	-13.06	14.06	43.50	-29.44	QP			
2	199.2855	26.85	-12.28	14.57	43.50	-28.93	QP			
3	239.1473	27.31	-10.67	16.64	46.00	-29.36	QP			
4	355.4273	28.52	-7.36	21.16	46.00	-24.84	QP			
5	495.9344	28.47	-4.53	23.94	46.00	-22.06	QP			
6	607.7867	28.97	-2.24	26.73	46.00	-19.27	QP			

Above 1GHz



ACCURATE TECHNOLOGY CO., LTD.

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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

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Job No.: DING #823

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 23 C / 48 %

EUT: RF Remote Control Lock

Mode: RX

Model: RL

Manufacturer: XINYU

Polarization: Horizontal

Power Source: DC 3V

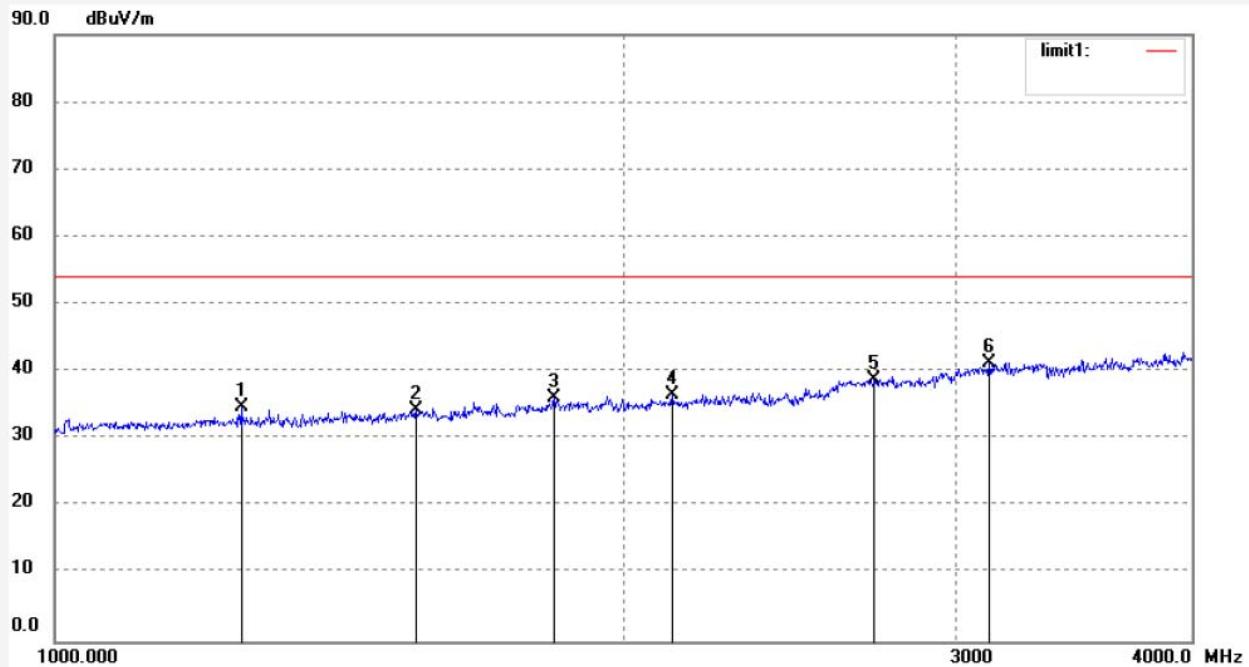
Date: 2016/10/12

Time: 16:52:29

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20162164



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1255.272	46.96	-12.29	34.67	74.00	-39.33	peak			
2	1554.014	45.23	-10.99	34.24	74.00	-39.76	peak			
3	1837.826	45.76	-9.65	36.11	74.00	-37.89	peak			
4	2122.846	45.05	-8.47	36.58	74.00	-37.42	peak			
5	2716.973	45.18	-6.26	38.92	74.00	-35.08	peak			
6	3125.311	45.76	-4.38	41.38	74.00	-32.62	peak			

Job No.: DING #822

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: DC 3V

Test item: Radiation Test

Date: 2016/10/12

Temp.(C)/Hum.(%) 23 C / 48 %

Time: 16:51:31

EUT: RF Remote Control Lock

Engineer Signature:

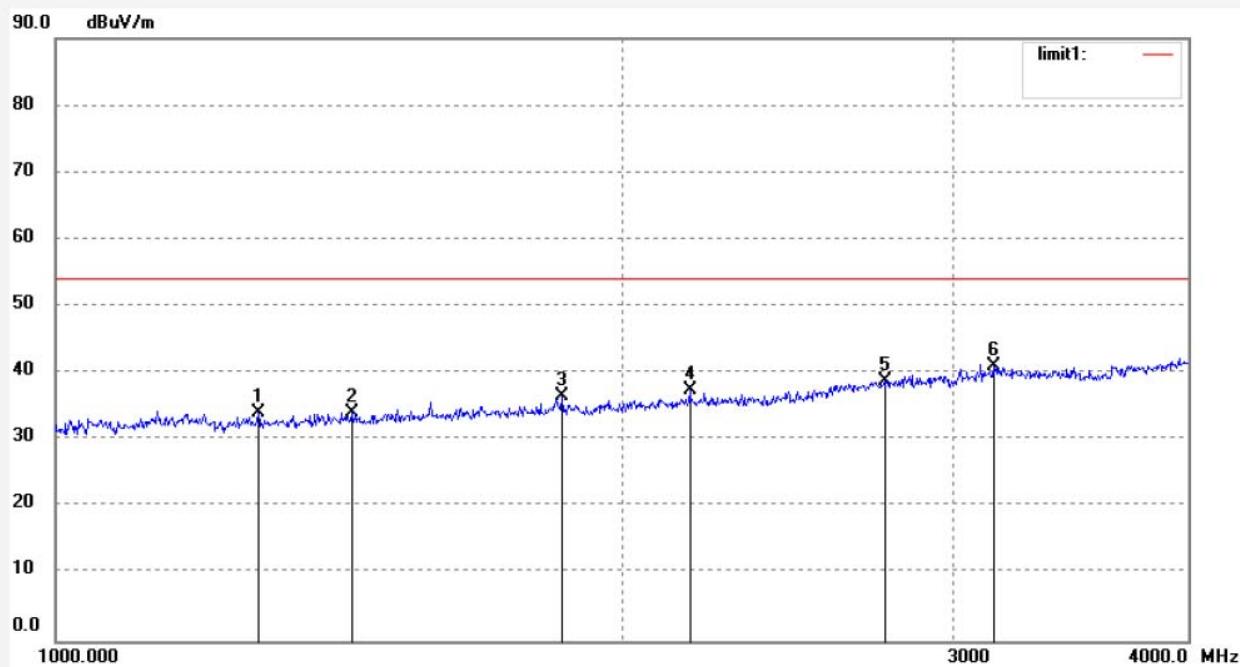
Mode: RX

Distance: 3m

Model: RL

Manufacturer: XINYU

Note: Report NO.:ATE20162164



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1281.648	46.25	-12.24	34.01	74.00	-39.99	peak			
2	1437.937	45.78	-11.64	34.14	74.00	-39.86	peak			
3	1858.321	46.13	-9.57	36.56	74.00	-37.44	peak			
4	2173.470	45.73	-8.35	37.38	74.00	-36.62	peak			
5	2758.722	44.93	-6.09	38.84	74.00	-35.16	peak			
6	3151.416	45.36	-4.35	41.01	74.00	-32.99	peak			

5. PHOTOGRAPHS OF THE EUT

