FCC Test Report

Report No.: AGC11581012SZ02F1

FCC ID	:	YI6RL-0313B
PRODUCT DESIGNATION	:	PIR MOTION LIGHT & Alarm
BRAND NAME	:	RL
TEST MODEL	:	RL-0313B
CLIENT	:	GUANGDONG ROULE ELECTRONICS CO., LTD
DATE OF ISSUE	:	Dec .10, 2010
STANDARD(S)	:	FCC Part 15 Rules

Attestation of ***G***lobal ***C***ompliance Co., Ltd.

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1. VERIFICATION OF COMPLIANCE

Equipment Under Test:	PIR MOTION LIGHT & Alarm
Model Name:	RL-0313B
Model Difference:	N/A
Brand Name:	RL
Applicant:	GUANGDONG ROULE ELECTRONICS CO., LTD No.12,Pingdong 3rd Road, Nanping Industry Community, Zhuhai City, GuangDong, China
Manufacturer:	GUANGDONG ROULE ELECTRONICS CO., LTD No.12,Pingdong 3rd Road, Nanping Industry Community, Zhuhai City, GuangDong, China
Type of Test:	FCC Class B
Measurement Procedure:	ANSI C63.4: 2003
File Number:	AGC11581012SZ02F1
Date of test:	Dec. 02, 2010 to Dec.10, 2010
Deviation:	None
Condition of Test Sample:	Normal

The above equipment was tested by Attestation Of Global Compliance Co., Ltd. For compliance with the requirements set forth in the FCC Rules and Regulations Part 15, the measurement procedure according to ANSI C63.4:2003 This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Checked By : Jekey Zhang

Jekey Zhang Dec.10, 2010

Authorized By :

King Zhang Dec.10, 2010

2. PRODUCT INFORMATION

Equipment Under Test:	PIR MOTION LIGHT & Alarm					
FCC ID	YI6RL-0313B					
Housing Type:	Plastic					
Rating Voltage:	DC 6.0V(4*1.5V) by battery					
Receive frequency:	433.9MHz (only one channel)					
Description of EUT	It is only Receive, and isn't transmit					
Size of EUT:	**Length**	11.8cm	**width**	6.2cm	**height**	4.3cm

I/O Port Information (☐Applicable ☒Not Applicable)

I/O Port of EUT			
I/O Port Type	**Q'TY**	**Cable**	**Tested with**
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3. TEST FACILITY

Location:	1F, No.2 Building, Huafeng No.1 Technical, Industrial Park, Sanwei, Xixiang, Baoan District, Shenzhen, China.
Description:	There is one 3m semi-anechoic chamber for final test, the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4 and CISPR 22/EN 55022 requirements.
Site Filing:	FCC register No.: 259865
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4 requirements that meet industry regulatory agency and accreditation agency requirement.
Ground Plane:	Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For radiated emission test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.

4. SUPPORT EQUIPMENT LIST

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
--	--	--	--	--	--
--	--	--	--	--	--

**Note: All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

Grounding: Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.

5. SYSTEM DESCRIPTION

ALARM MODE:

1.The switch to Alarm location

2.The EUT begins to work ,alarm sound and flashing red light are working

3. Make sure the EUT operates normally during the test.

LIGHT MODE:

1.The switch to Light location

2. The light begins to work.

3. Make sure the EUT operates normally during the test.

6. FCC LINE CONDUCTED EMISSION TEST (N/A)

6.1. TEST EQUIPMENT OF LINE CONDUCTED EMISSION TEST

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4440A	N/A	06/29/2010	06/28/2011
EMI Test Receiver	R&S	--	N/A	06/29/2010	06/28/2011
LISN	R&S	ESH3-Z5	838979/009	06/29/2010	06/28/2011

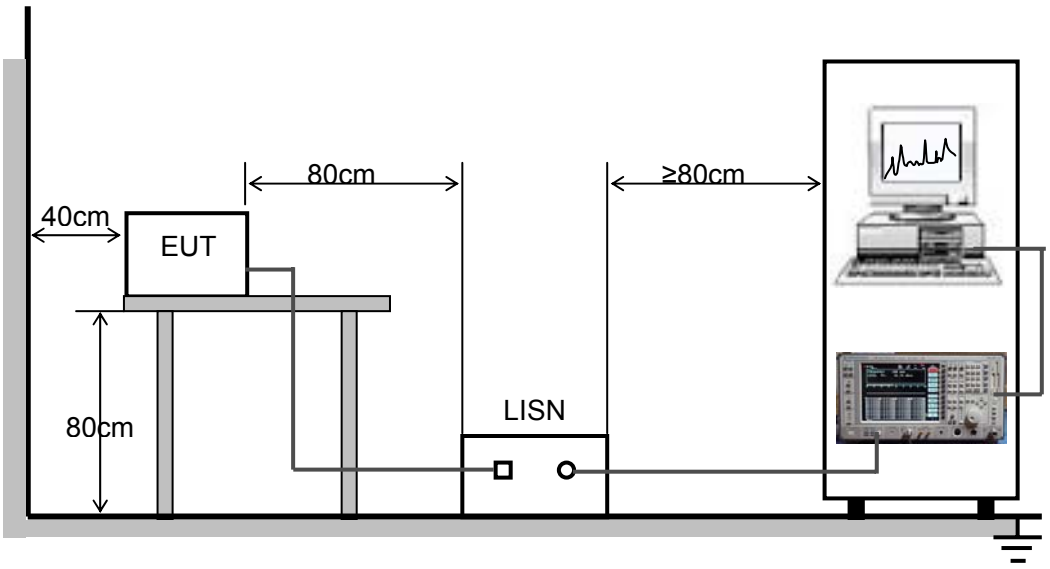
6.2 .LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

**Note: 1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

6.3. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



6.4. PROCEDURE OF LINE CONDUCTED EMISSION TEST

1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2) Support equipment, if needed, was placed as per ANSI C63.4.
3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4) The EUT received power through a Line Impedance Stabilization Network (LISN) that was grounded to the protect earth.
5) All support equipments received AC120V power from a second LISN, if any.
6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8) During the above scans, the emissions were maximized by cable manipulation.
9) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions.
10) Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
11) The test data of the worst case condition(s) was reported on the Summary Data page.

MEASURING INSTRUMENT AND SETTING

The following table is the setting of receiver.

Receiver Parameter	Setting
Attenuation	10dB
Start Frequency	0.15MHz
Stop Frequency	30MHz
6dB bandwidth	9KHz for QP
IF bandwidth	9KHz for AV

6.5 TEST RESULT OF LINE CONDUCTED EMISSION TEST (N/A)

N/A

7. FCC RADIATED EMISSION TEST

7.1. TEST EQUIPMENT OF RADIATED EMISSION

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	R&S	--	N/A	06/29/2010	06/28/2011
AMPLIFIER	EM	EM30180	0607030	06/29/2010	06/28/2011
LOG ANTENNA	A.H.	SAS-521-4	128	06/29/2010	06/28/2011
HORN ANTENNA	EM	EM-AH-10180	N/A	06/29/2010	06/28/2011
LOOP ANTENNA	R&S	HM525	--	06/29/2010	06/28/2011
CABLE	TIME MICROWAVE	LMR-400	N/A	06/29/2010	06/28/2011

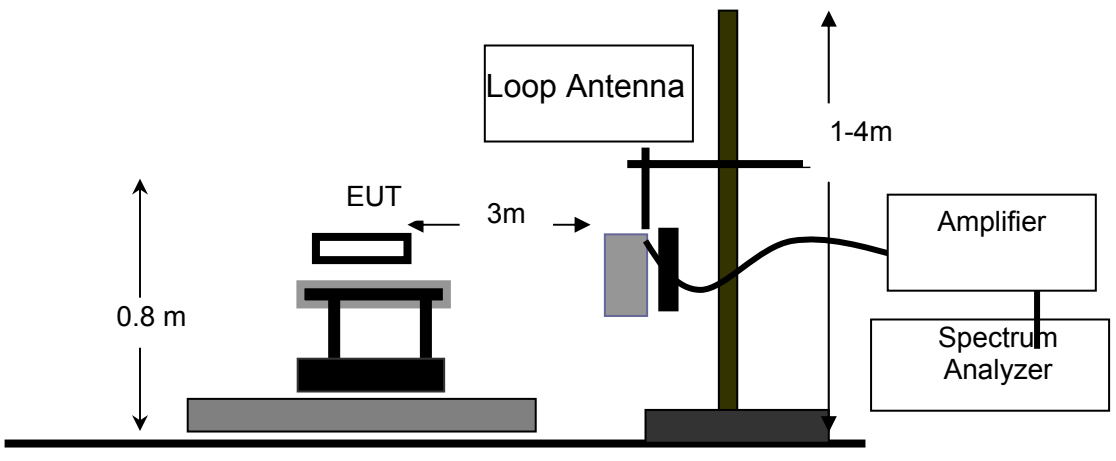
7.2. LIMITS OF RADIATED EMISSION TEST

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (uV/m)
0.009~0.490	300	2400/F(KHz)
0.490~1.705	30	24000/F(KHz)
1.705~30	30	30
30~88	3	100
88~216	3	150
216~960	3	200
Above 960	3	500

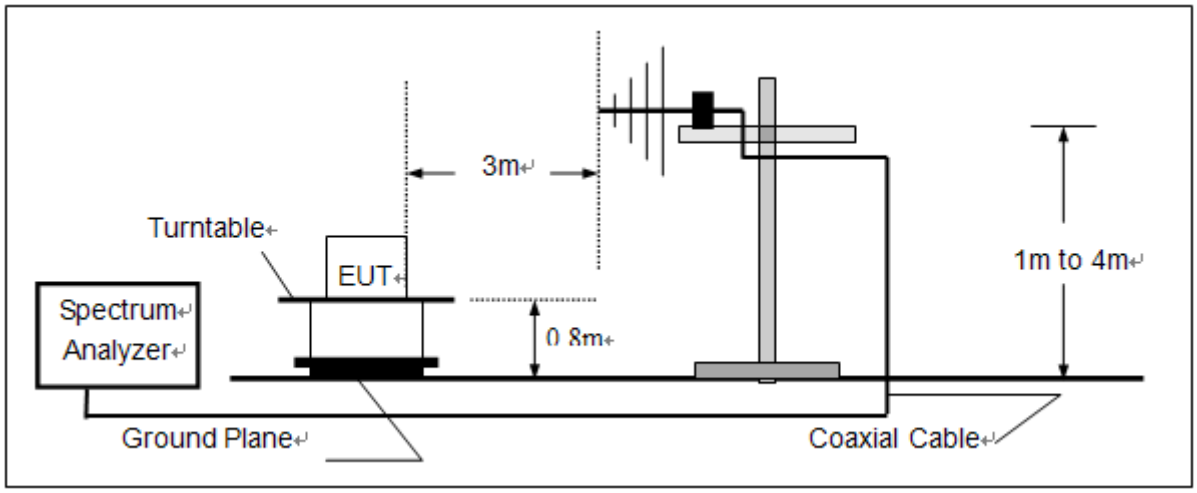
**Note: The lower limit shall apply at the transition frequency.

7.3 BLOCK DIAGRAM OF RADIATED EMISSION TEST

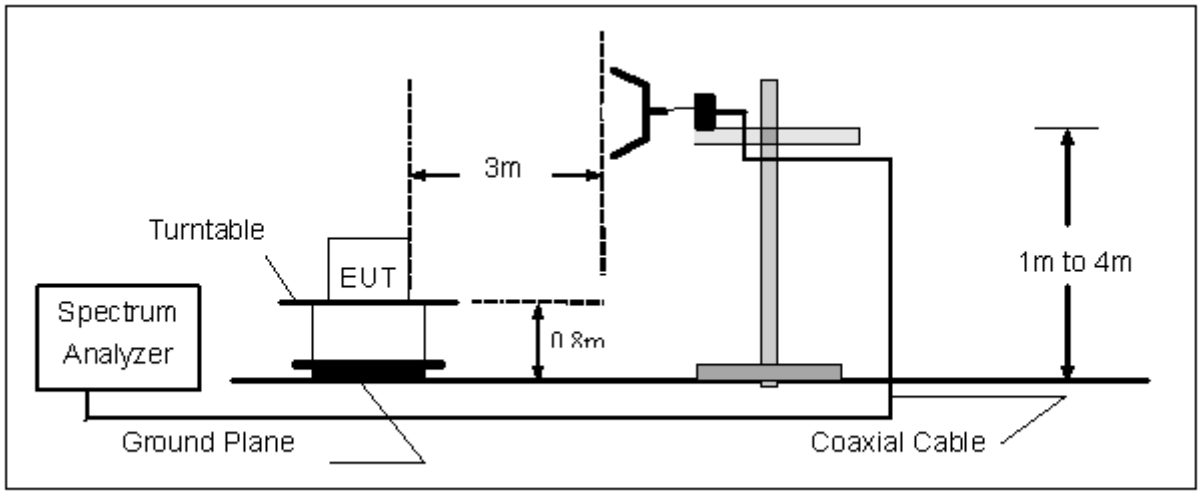
FOR RADIATED EMISSION BELOW 30MHz



FOR RADIATED EMISSION 30MHz~1GHz



FOR RADIATED EMISSION 1GHz~6GHz



7.4 PROCEDURE OF RADIATED EMISSION TEST

1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2) Support equipment, if needed, was placed as per ANSI C63.4.
3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4) The EUT received DC 6.0V from battery. All support equipments received AC 120V/60Hz power from socket under the turntable, if any.
5) The antenna was placed at 3 meter away from the EUT as stated in FCC Part 15. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
6) The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
7) The test mode(s) were scanned during the test:
8) Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented.

The following table is the setting of spectrum analyzer and receiver.

Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	1GHz~6GHz/RB 1MHz for Peak

7.5 TEST RESULT OF RADIATED EMISSION TEST

TEST RESULT OF RADIATED EMISSION TEST (9KHz ~30MHz)

Distance	3m	Test Date:	Dec.09, 2010
Temperature:	25°C	Tested by:	Jekey Zhang
Humidity:	55 % RH		

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

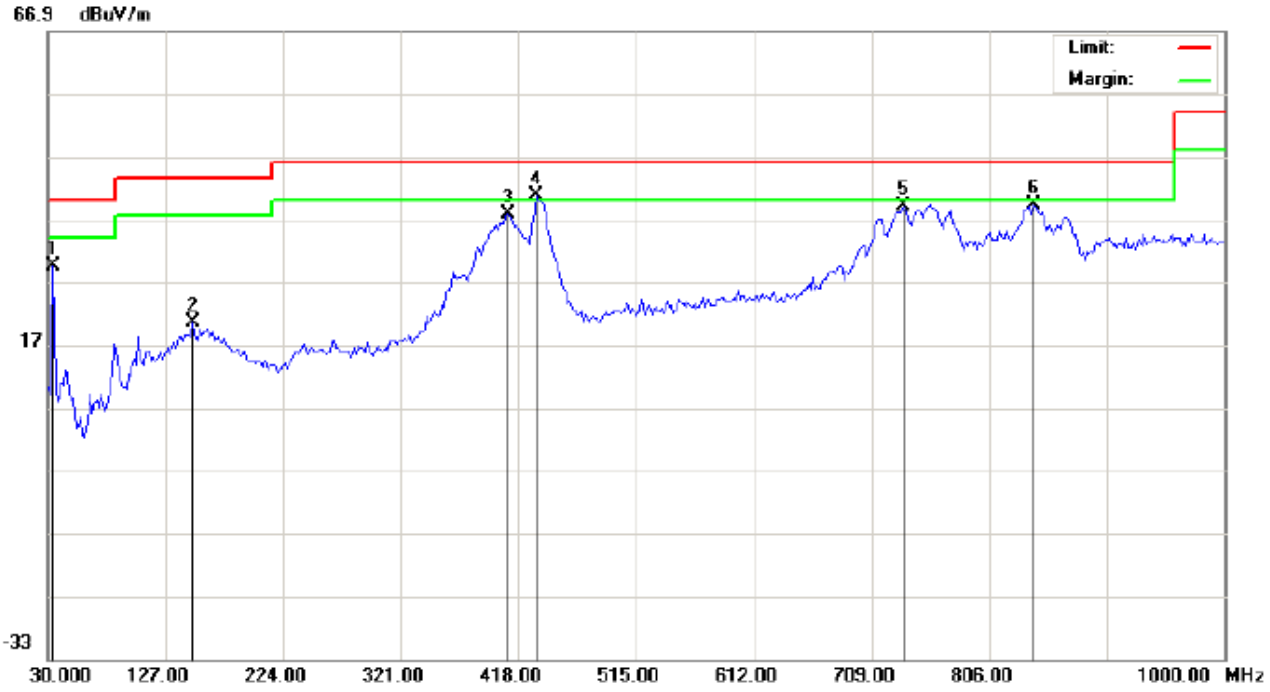
Distance extrapolation factor = 20 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

TEST RESULT OF RADIATED EMISSION TEST (30MHz ~1GHz)

Operation Mode:	ALARM MODE	Test Date:	Dec.09, 2010
Temperature:	25°C	Tested by:	Jekey Zhang
Humidity:	55 % RH	Polarity:	--

TEST RESULT OF RADIATED EMISSION TEST - HORIZONTAL



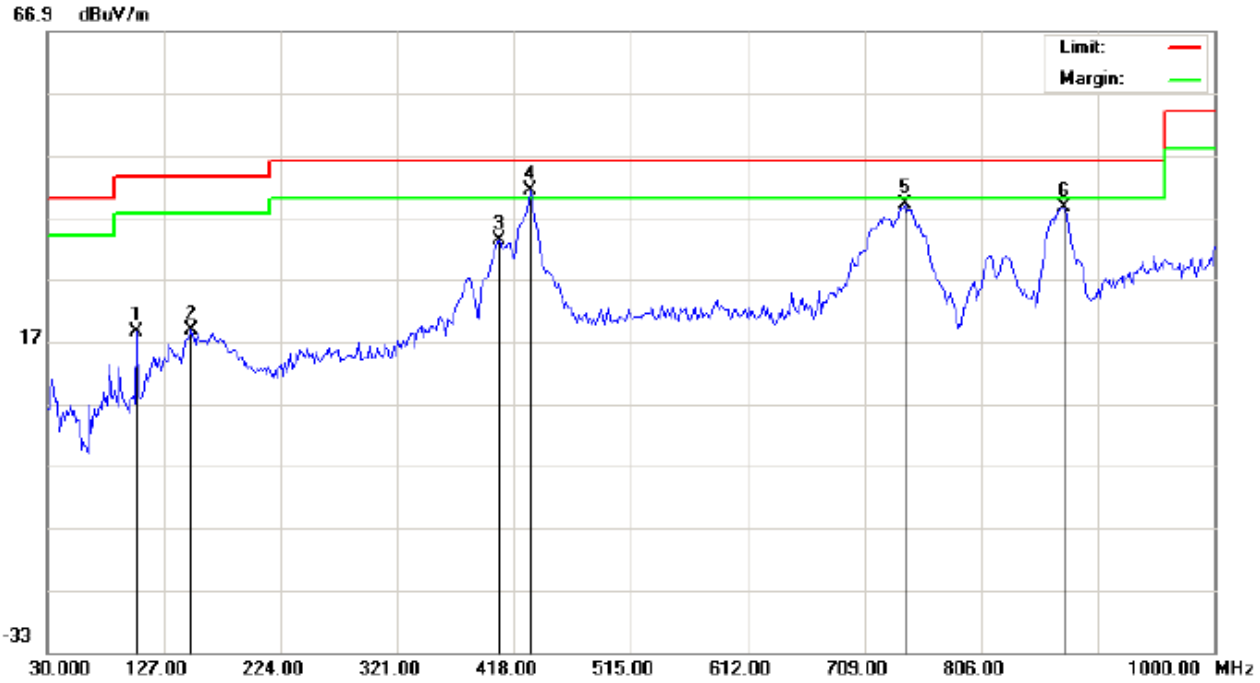
Site: site #1
Limit: FCC Class B 3M Radiation
EUT: PIR Motion Light & Alarm
M/N: RL-0313B
Mode: ALARM
Note:

Polarization: *Horizontal*
Power: DC 6V
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		34.8500	18.59	10.96	29.55	40.00	-10.45	peak			
2		149.6333	0.21	20.30	20.51	43.50	-22.99	peak			
3		409.9167	16.70	21.13	37.83	46.00	-8.17	peak			
4	*	432.5500	19.30	21.47	40.77	46.00	-5.23	peak			
5		734.8667	12.02	27.13	39.15	46.00	-6.85	peak			
6		843.1833	8.35	30.99	39.34	46.00	-6.66	peak			

TEST RESULT OF RADIATED EMISSION TEST -VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: PIR Motion Light & Alarm
M/N: RL-0313B
Mode: ALARM
Note:

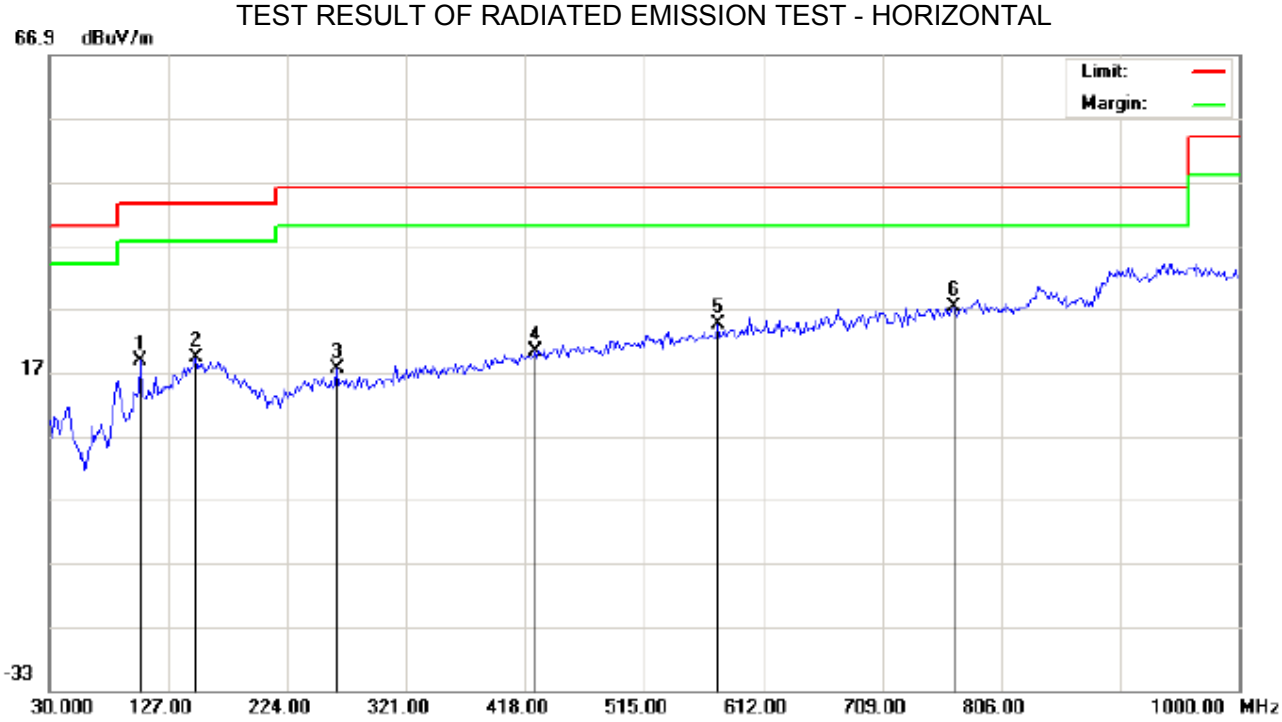
Polarization: *Vertical*
Power: DC 6V
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		104.3667	7.57	11.05	18.62	43.50	-24.88	peak			
2		149.6333	-1.44	20.23	18.79	43.50	-24.71	peak			
3		405.0667	12.40	20.98	33.38	46.00	-12.62	peak			
4	*	430.9333	19.78	21.46	41.24	46.00	-4.76	peak			
5		742.9500	11.53	27.48	39.01	46.00	-6.99	peak			
6		875.5167	8.45	30.14	38.59	46.00	-7.41	peak			

Operation Mode:	LIGHT MODE	Test Date:	Dec.09, 2010
Temperature:	25°C	Tested by:	Jekey Zhang
Humidity:	55 % RH	Polarity:	--

TEST RESULT OF RADIATED EMISSION TEST - HORIZONTAL



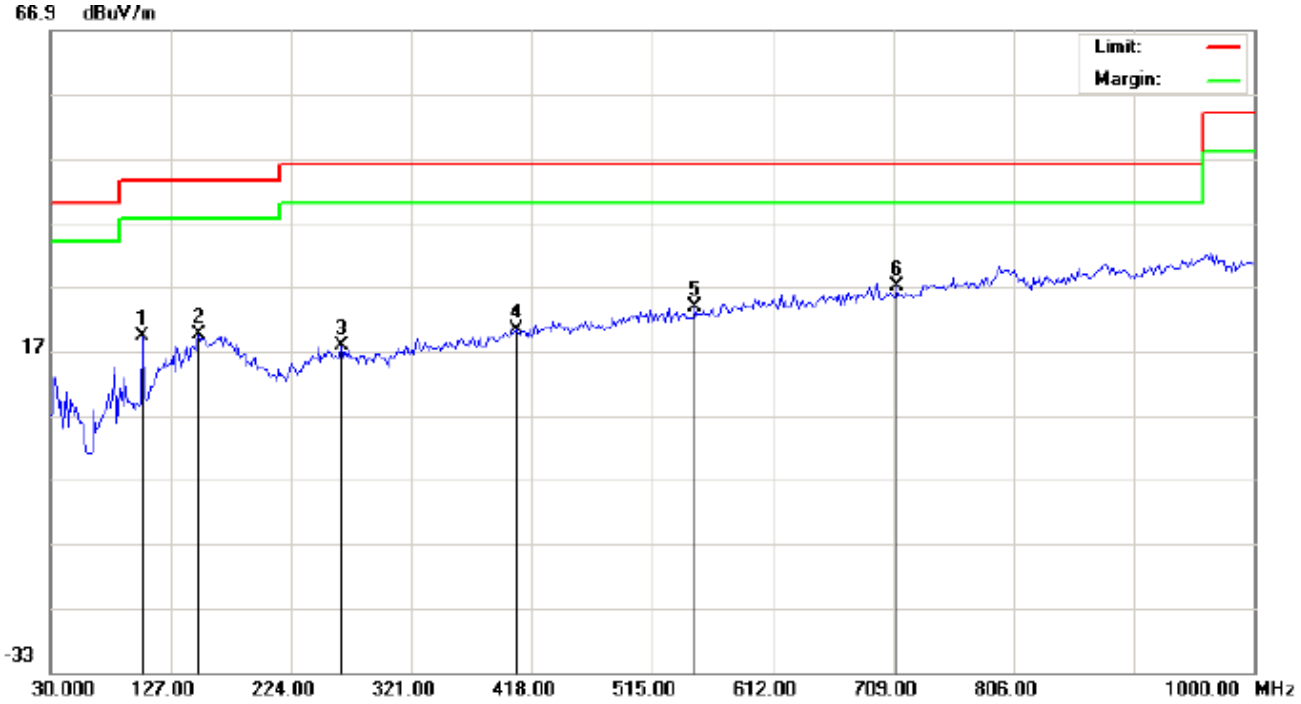
Site: site #1
Limit: FCC Class B 3M Radiation
EUT: PIR Motion Light & Alarm
M/N: RL-0313B
Mode: Light
Note:

Polarization: *Horizontal*
Power: DC 6V
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		104.3667	2.83	15.90	18.73	43.50	-24.77	peak			
2		149.6333	-1.02	20.30	19.28	43.50	-24.22	peak			
3		264.4167	0.50	16.94	17.44	46.00	-28.56	peak			
4		426.0833	-1.07	21.45	20.38	46.00	-25.62	peak			
5		574.8167	0.04	24.49	24.53	46.00	-21.47	peak			
6	*	767.2000	-0.59	27.76	27.17	46.00	-18.83	peak			

TEST RESULT OF RADIATED EMISSION TEST --VERTICAL



Site: site #1
Limit: FCC Class B 3M Radiation
EUT:PIR Motion Light & Alarm
M/N: RL-0313B
Mode: Light
Note:

Polarization: *Vertical*
Power: DC 6V
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		104.3667	8.24	11.05	19.29	43.50	-24.21	peak			
2		149.6333	-0.82	20.23	19.41	43.50	-24.09	peak			
3		264.4167	0.59	17.23	17.82	46.00	-28.18	peak			
4		405.0667	-0.59	20.98	20.39	46.00	-25.61	peak			
5		548.9500	0.07	23.70	23.77	46.00	-22.23	peak			
6	*	712.2333	0.80	26.32	27.12	46.00	-18.88	peak			

TEST RESULT OF RADIATED EMISSION TEST (1GHz ~6GHz)

Operation Mode:	ALARM MODE	Test Date:	Dec.09, 2010
Temperature:	25°C	Tested by:	Jekey Zhang
Humidity:	55 % RH	Polarity:	--

RESULTS:

Freq.	Antenna	Reading	Total Factor	Radaiated	Limit	Margin	State
(MHz)	Polarity	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	P/F
1308.000	H	27.92	16.49	44.41	54	-9.59	PASS
1553.000	H	28.55	17.89	46.44	54	-7.56	PASS
--	H	--	--	--	--	--	PASS
6000.000	H	--	--	--	--	--	PASS
1205.000	V	27.91	16.41	44.32	54	-9.68	PASS
1725.000	V	28.24	18.12	46.36	54	-7.64	PASS
--	V	--	--	--	--	--	PASS
6000.000	V	--	--	--	--	--	PASS

Note:

"-"indicate the test value is mush lower to limit

Operation Mode:	LIGHT MODE	Test Date:	Dec.09, 2010
Temperature:	25°C	Tested by:	Jekey Zhang
Humidity:	55 % RH	Polarity:	--

RESULTS:

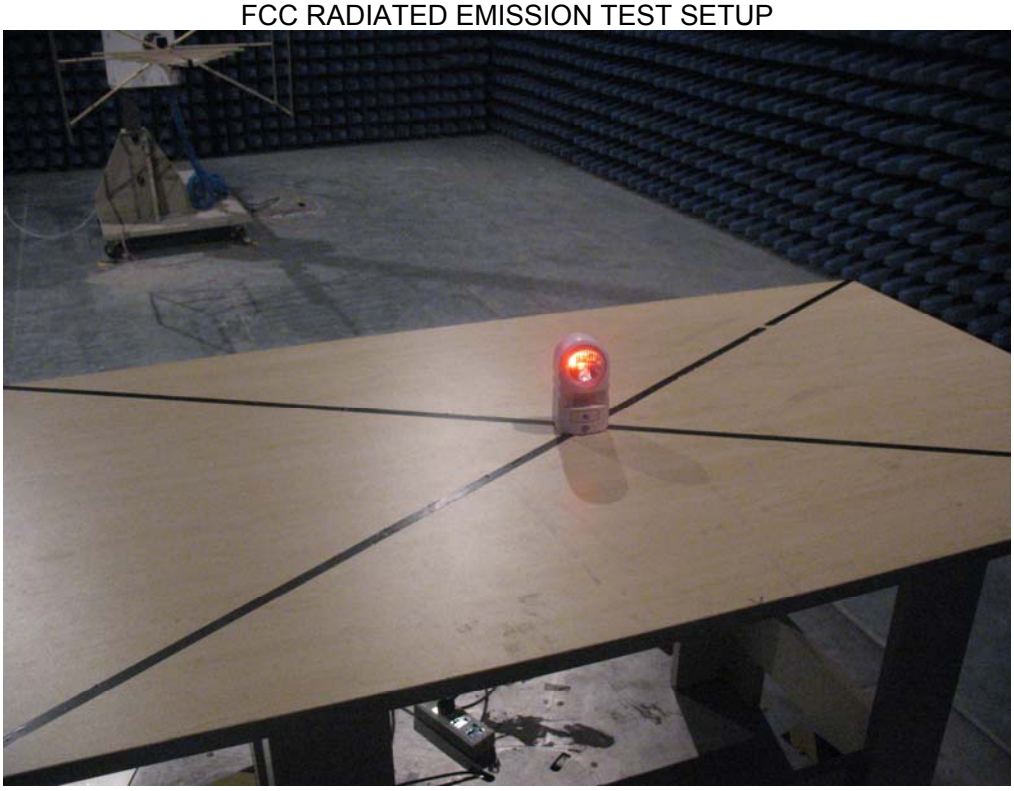
Freq.	Antenna	Reading	Total Factor	Radaiated	Limit	Margin	State
(MHz)	Polarity	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	P/F
1435.000	H	28.61	19.92	48.53	54	-5.47	PASS
1838.000	H	28.41	20.58	48.99	54	-5.01	PASS
--	H	--	--	--	--	--	PASS
6000.000	H	--	--	--	--	--	PASS
1162.000	V	27.94	17.41	45.35	54	-8.64	PASS
1605.000	V	28.19	19.87	48.06	54	-5.94	PASS
--	V	--	--	--	--	--	PASS
6000.000	V	--	--	--	--	--	PASS

Note:

"-"indicate the test value is mush lower to limit

APPENDIX 1
PHOTOGRAPHS OF TEST SETUP

FCC RADIATED EMISSION TEST SETUP



APPENDIX 2
PHOTOGRAPHS OF EUT

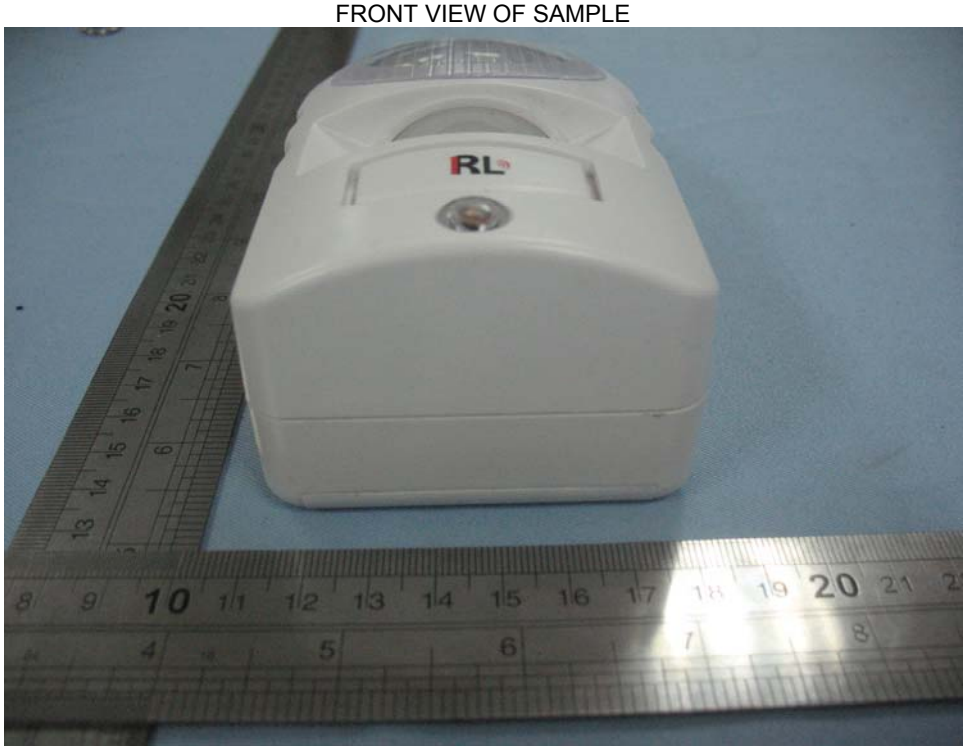
TOP VIEW OF SAMPLE

BOTTOM VIEW OF SAMPLE

LEFT VIEW OF SAMPLE

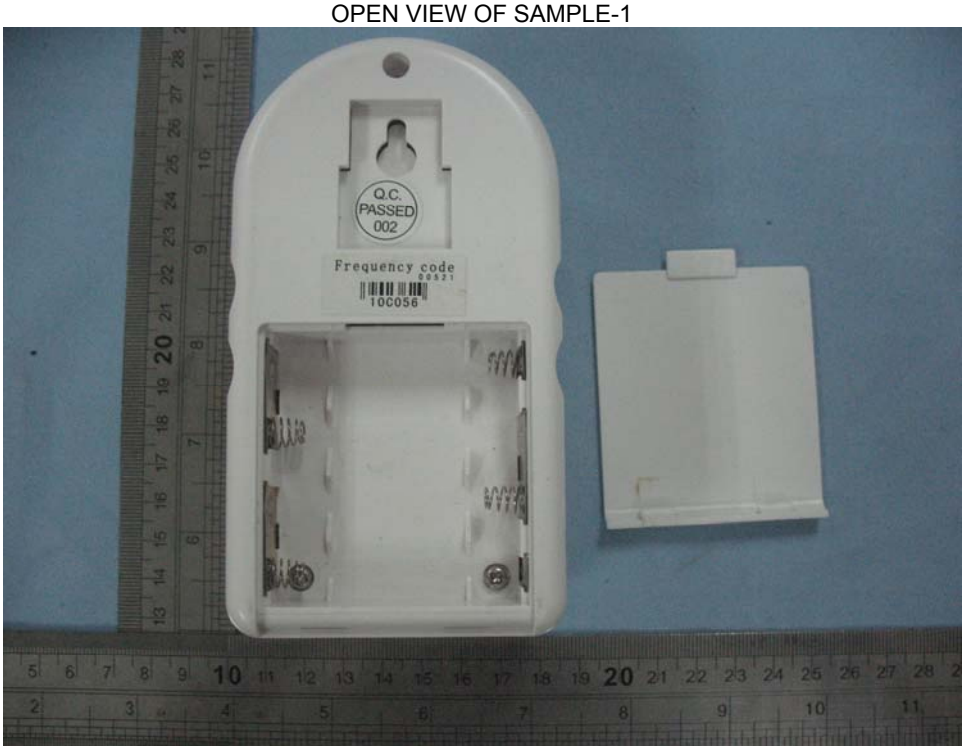
RIGHT VIEW OF SAMPLE

FRONT VIEW OF SAMPLE

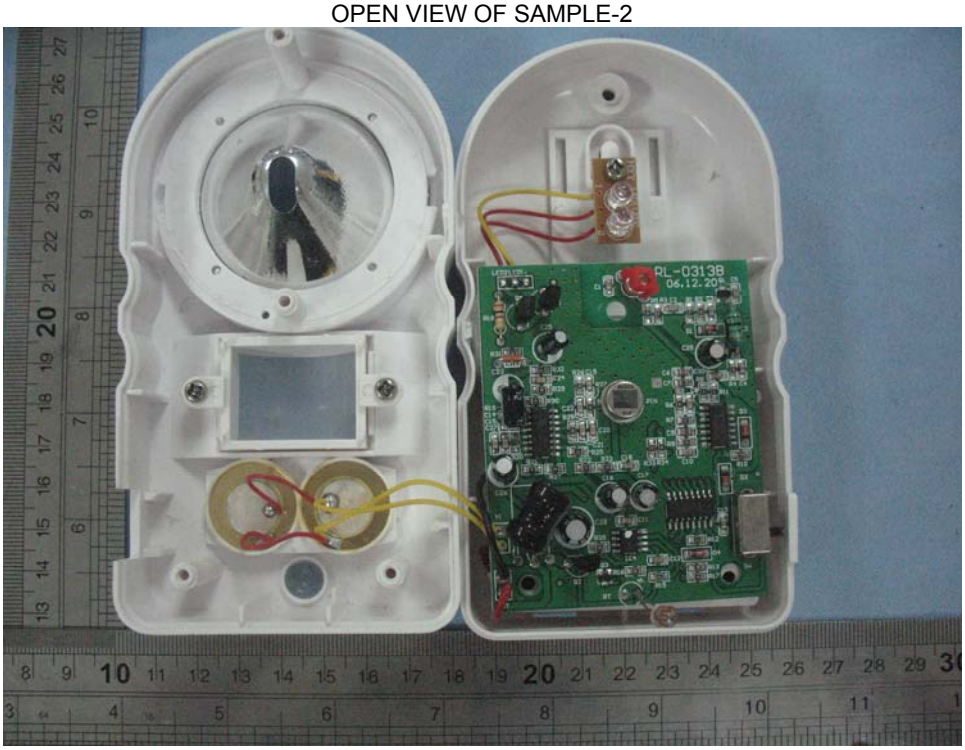


BACK VEIW OF SAMPLE

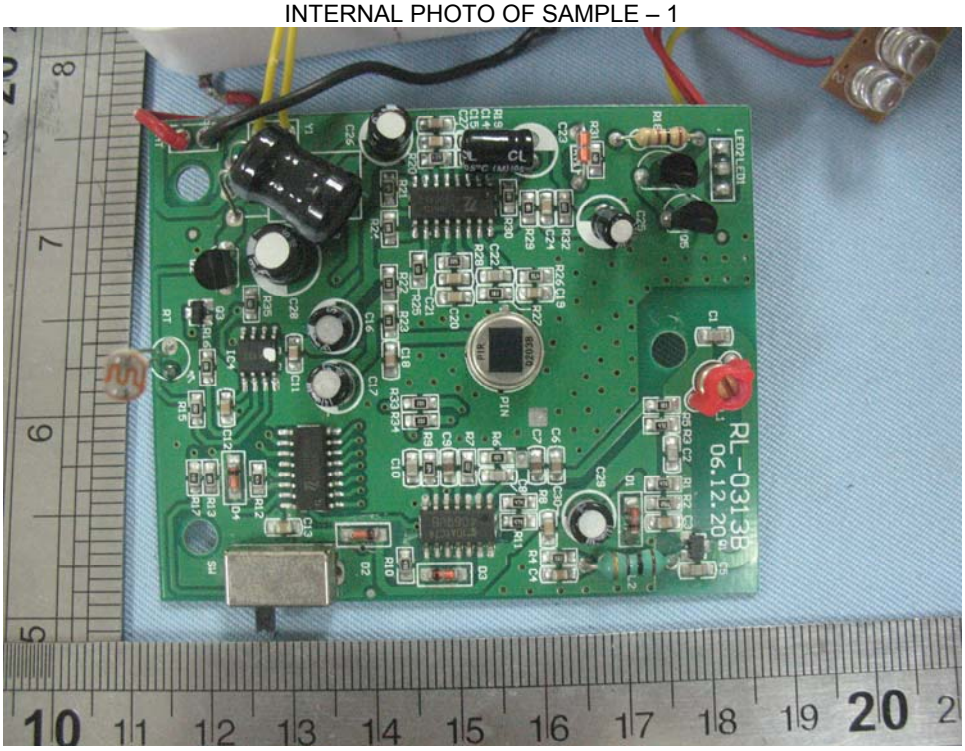
OPEN VIEW OF SAMPLE-1



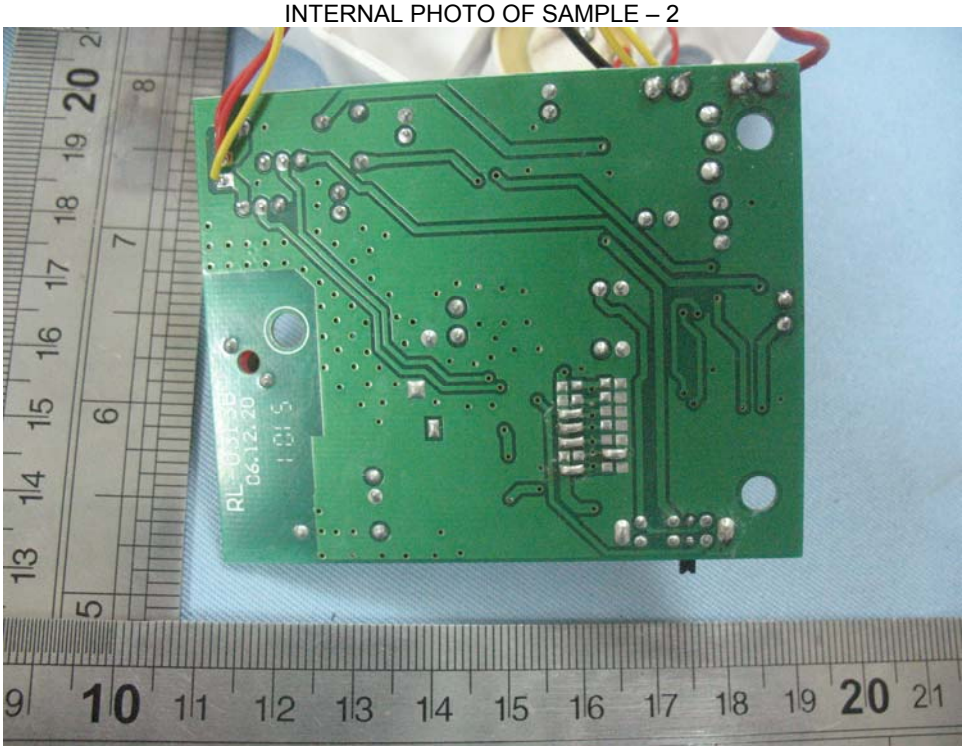
OPEN VIEW OF SAMPLE-2



INTERNAL PHOTO OF SAMPLE – 1



INTERNAL PHOTO OF SAMPLE – 2



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