

APPLICATION FOR CERTIFICATION
On Behalf of
LIGHTCOM TECHNOLOGY CO., LTD

Christmas Lights With Remote Controller
Model No.: 72-070, 72-071, ES72-108

Prepared for : LIGHTCOM TECHNOLOGY CO., LTD
Address : Dahou Administer District, Xiegang Town, Dongguan,
Guangdong, China

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Report Number : 201104708F
Date of Test : May 03~07, 2011
Date of Report : May 10, 2011

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APPENDIX I (Photos of EUT) (4 Pages)

TEST REPORT VERIFICATION

Applicant : LIGHTCOM TECHNOLOGY CO., LTD
Manufacturer : LIGHTCOM TECHNOLOGY CO., LTD
EUT : Christmas Lights With Remote Controller
(A) MODEL NO. : 72-070, 72-071, ES72-108
(B) SERIAL NO. : N/A
(C) POWER SUPPLY: 120V~, 60Hz, 0.04A, 4.8W
(D) TRADE MARK: N/A

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B 2010 & FCC / ANSI C63.4:2009

The device described above is tested by Anbotek Compliance Laboratory Limited 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 Anbotek Compliance Laboratory Limited 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 Anbotek Compliance Laboratory Limited

Date of Test : May 03~07, 2011



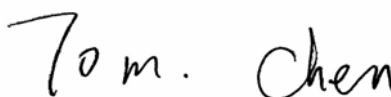
Prepared by :

(Engineer/ Well Wang)



Reviewer :

(Project Manager/ Coco Xiang)



Approved & Authorized Signer :

(Manager/ Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	: Christmas Lights With Remote Controller
Model Number	: 72-070, 72-071, ES72-108 (Note: The above samples are same except the model number , glitter & colour of appliances, so we prepare “72-070” for EMC test only.)
Test Power Supply	: 120V~, 60Hz
Applicant	: LIGHTCOM TECHNOLOGY CO., LTD
Address	: Dahou Administer District, Xiegang Town, Dongguan, Guangdong, China
Manufacturer	: LIGHTCOM TECHNOLOGY CO., LTD
Address	: Dahou Administer District, Xiegang Town, Dongguan, Guangdong, China
Date of Sample received	: May 03, 2011
Date of Test	: May 03~07, 2011

1.2. Description of Test Facility

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

CNAS - LAB Code: L3503

Anbotek Compliance Laboratory Limited., 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.: 752021

Anbotek Compliance Laboratory Limited, 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 752021, August 20, 2010

IC-Registration No.: 8058A-1

Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A-1, August 30, 2010

Test Location

All Emissions tests were performed

Anbotek Compliance Laboratory Limited. at 1/F, 1 /Build, SEC Industrial Park, No. 4 Qianhai Road, Nanshan District, Shenzhen, 518054, China

1.3. Measurement Uncertainty

Radiation Uncertainty : Ur = 4.3dB

Conduction Uncertainty : Uc =3.4dB

1.4. Test Summary

For the EUT described above. The standards used were FCC Part 15 Subpart B for Emissions.

Table 1: Tests Carried Out Under FCC Part 15 Subpart B

Standard	Test Items	Status
FCC Part 15 Subpart B	Power Line Conducted Emission Test (150kHz To 30MHz)	√
FCC Part 15 Subpart B	Radiated Emission Test (30MHz To 1000MHz)	√

√ Indicates that the test is applicable

x Indicates that the test is not applicable

2. POWER LINE CONDUCTED EMISSION MEASUREMENT

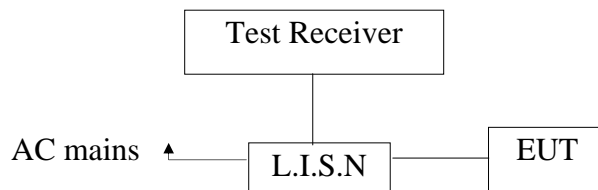
2.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2010	1 Year
2.	Two-Line V-network	Rohde & Schwarz	ENV216	10055	May 19, 2010	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	May 19, 2010	1 Year
4.	EMI Test Software	ES-K1	N/A	N/A	N/A	N/A

2.2. Block Diagram of Test Setup

2.2.1. Block diagram of connection between the EUT and simulators



(EUT: Christmas Lights With Remote Controller)

2.3. Power Line Conducted Emission Limits (FCC Part 15 Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

2.4. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

EUT : Christmas Lights With Remote Controller
Model Number : 72-070
Applicant : LIGHTCOM TECHNOLOGY CO., LTD

2.5. Operating Condition of EUT

- 2.5.1. Setup the EUT and simulator as shown as Section 2.2.
- 2.5.2. Turn on the power of all equipment.
- 2.5.3. Let the EUT work in test mode (On) and measure it.

2.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.4: 2009 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

The test result are reported on Section 2.7.

2.7. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150kHz to 30 MHz is investigated.

The test curves are shown in the following pages.

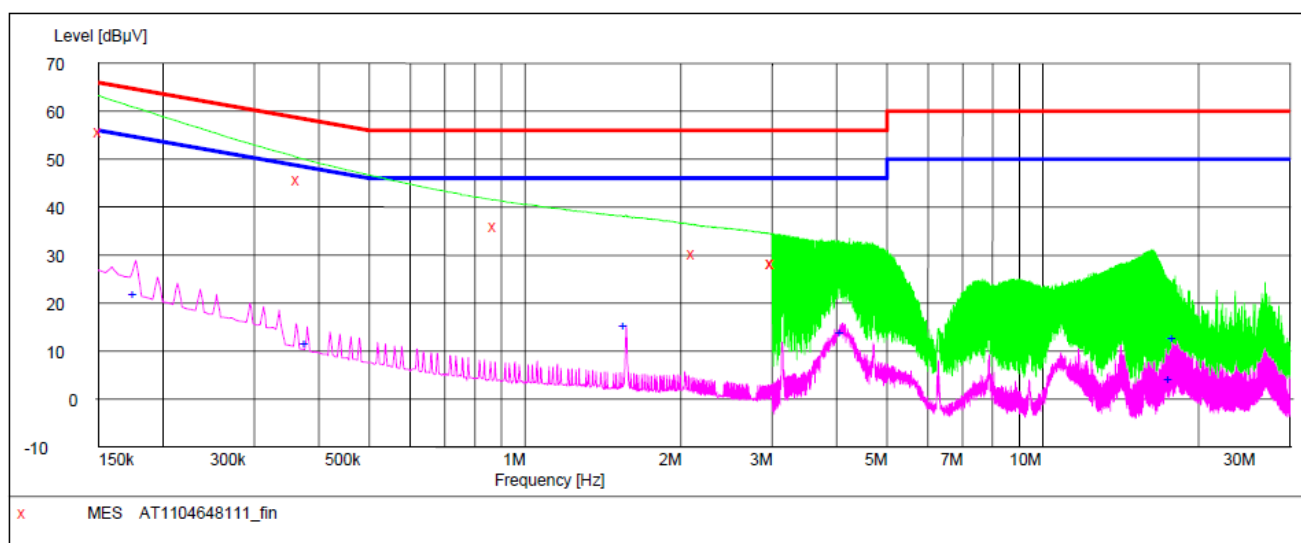
FCC ID: ZJA-72070

CONDUCTED EMISSION TEST DATA

EUT: Christmas Lights With Remote Controller M/N:72-070
 Operating Condition: ON
 Test Site: 1# Shielded Room
 Operator: WELL WANG
 Test Specification: 120V~, 60Hz
 Comment: L
 Tem:25°C Hum:50%

SCAN TABLE: "Voltage (150K~30M) FIN"

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1104648111_fin"**

5/3/2011 10:59AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	55.00	10.2	66	11.0	QP	L1	GND
0.366000	45.80	10.2	59	12.8	QP	L1	GND
0.879000	36.20	10.2	56	19.8	QP	L1	GND
2.125500	30.60	10.4	56	25.4	QP	L1	GND
3.013500	28.50	10.4	56	27.5	QP	L1	GND
3.022500	28.50	10.4	56	27.5	QP	L1	GND

MEASUREMENT RESULT: "AT1104648111_fin2"

5/3/2011 10:59AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.177000	22.00	10.2	55	32.6	AV	L1	GND
0.379500	11.50	10.2	48	36.8	AV	L1	GND
1.567500	15.20	10.4	46	30.8	AV	L1	GND
4.107000	14.00	10.5	46	32.0	AV	L1	GND
17.656500	4.30	10.9	50	45.7	AV	L1	GND
17.994000	12.70	10.9	50	37.3	AV	L1	GND

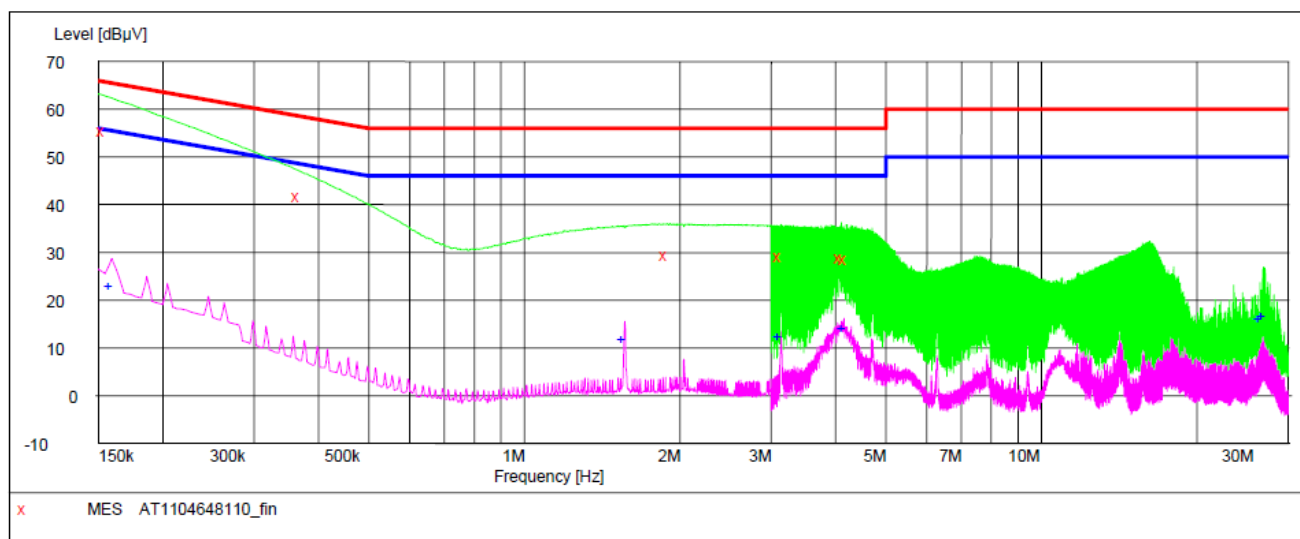
FCC ID: ZJA-72070

CONDUCTED EMISSION TEST DATA

EUT: Christmas Lights With Remote Controller M/N:72-070
 Operating Condition: ON
 Test Site: 1# Shielded Room
 Operator: WELL WANG
 Test Specification: 120V~, 60Hz
 Comment: N
 Tem:25°C Hum:50%

SCAN TABLE: "Voltage(150K~30M) FIN"

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1104648110_fin"**

5/3/2011 10:55AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	55.30	10.2	66	10.7	QP	N	GND
0.366000	41.80	10.2	59	16.8	QP	N	GND
1.887000	29.50	10.4	56	26.5	QP	N	GND
3.130500	29.20	10.4	56	26.8	QP	N	GND
4.107000	28.90	10.5	56	27.1	QP	N	GND
4.183500	28.80	10.5	56	27.2	QP	N	GND

MEASUREMENT RESULT: "AT1104648110_fin2"

5/3/2011 10:55AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.159000	23.10	10.2	56	32.4	AV	N	GND
1.563000	11.70	10.4	46	34.3	AV	N	GND
3.135000	12.40	10.4	46	33.6	AV	N	GND
4.156500	14.10	10.5	46	31.9	AV	N	GND
26.656500	16.20	11.0	50	33.8	AV	N	GND
27.043500	16.60	11.0	50	33.4	AV	N	GND

3. RADIATED EMISSION MEASUREMENT

3.1 Test Equipment

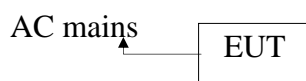
The following test equipments are used during the radiated emission measurement:

3.1.1. For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2010	1 Year
2.	Bilog Antenna	Schwarzbeck	VULB9163	100015	May 17, 2010	1 Year
3.	Pre-amplifier	Compliance Direction	PAP-0203	22008	May 19, 2010	1 Year
4.	EMI Test Software	SHURPLE	N/A	N/A	N/A	N/A
5.	Coaxial cable	ANBOTEK	N/A	N/A	N/A	N/A

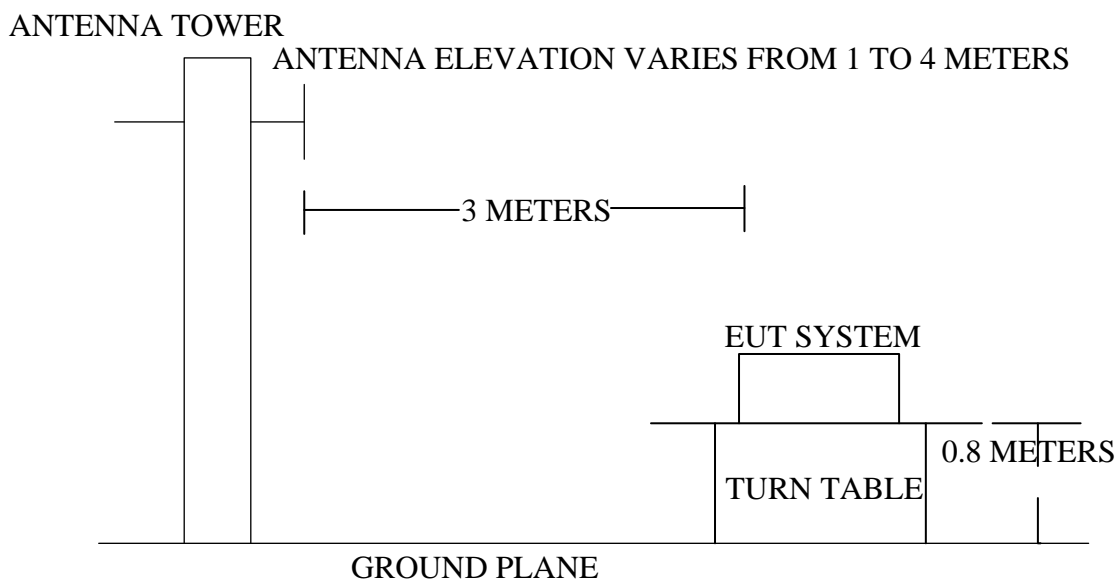
3.2. Block Diagram of Test Setup

3.2.1. Block diagram of connection between the EUT and simulators



(EUT: Christmas Lights With Remote Controller)

3.2.2. Anechoic Chamber Test Setup Diagram



(EUT: Christmas Lights With Remote Controller)

3.3. Radiated Emission Limit (Subpart B Class B)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
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.

3.4. EUT Configuration on Measurement

The following equipments are 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.

EUT : Christmas Lights With Remote Controller
 Model Number : 72-070
 Applicant : LIGHTCOM TECHNOLOGY CO., LTD

3.5. Operating Condition of EUT

- 3.5.1. Setup the EUT as shown in Section 3.2.
- 3.5.2. Let the EUT work in test mode (On) and measure it.

3.6. Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table 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. 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 C63.4:2009 on radiated emission measurement.

All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz.

The EUT is tested in 9*6*6 Chamber.

The frequency range from 30MHz to 2000MHz is checked.

The test mode (On) is tested in chamber and all the test results are listed in Section 3.7.

3.7. Radiated Emission Measurement Results

PASS.

Test data see the following pages.

FCC ID: ZJA-72070

**Anbotek Compliance Laboratory Limited**

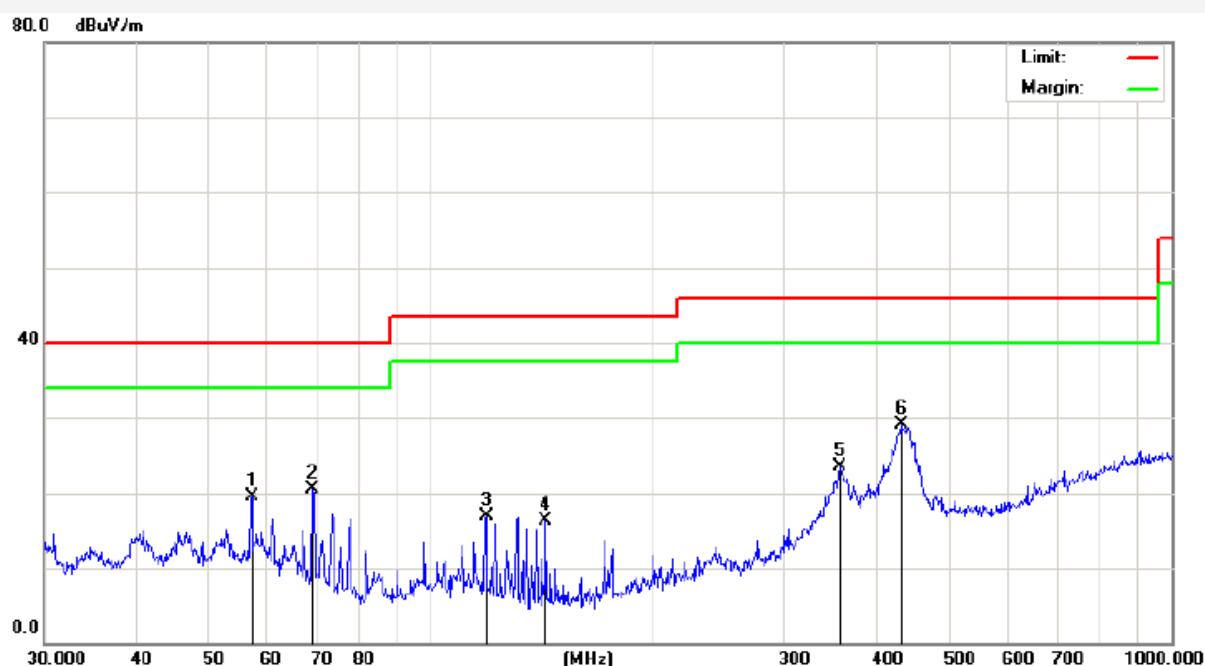
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Http://www.anbotek.com

Job No.:	AT1104648F	Polarization:	Horizontal
Standard:	(RE)FCC Part 15_class B_3m	Power Source:	AC 120V, 60Hz
Test item:	Radiation Test	Date:	2011/05/03
Temp.(C)/Hum.(%RH):	24.3(°C)/55%RH	Time:	14:36:40
EUT:	Christmas Lights With Remote Controller	Test By:	Well Wang
Model:	72-070	Distance:	3m
Note:	ON		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	57.1914	44.74	-25.25	19.49	40.00	-20.51	peak			
2	69.1141	49.47	-28.98	20.49	40.00	-19.51	peak			
3	118.6014	46.93	-29.94	16.99	43.50	-26.51	peak			
4	142.8243	48.38	-32.10	16.28	43.50	-27.22	peak			
5	356.6758	45.91	-22.31	23.60	46.00	-22.40	peak			
6	431.0316	49.83	-20.78	29.05	46.00	-16.95	peak			

FCC ID: ZJA-72070

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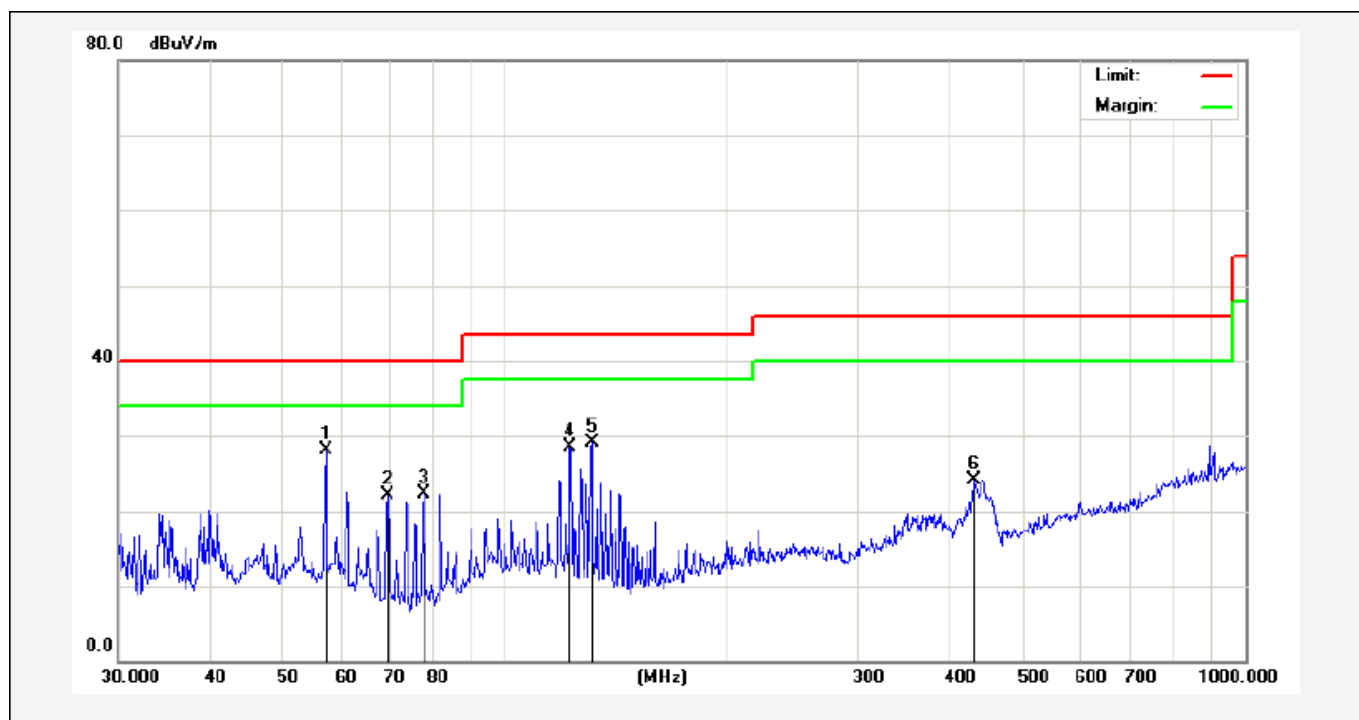
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Fax: (86)755-26014772

Http://www.anbotek.com

Job No.:	AT1104648F	Polarization:	Vertical
Standard:	(RE)FCC Part 15_class B_3m	Power Source:	AC 120V, 60Hz
Test item:	Radiation Test	Date:	2011/05/03
Temp.(C)/Hum.(%RH):	24.3(°C)/55%RH	Time:	14:41:58
EUT:	Christmas Lights With Remote Controller	Test By:	Well Wang
Model:	72-070	Distance:	3m
Note:	ON		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	57.1914	53.35	-25.25	28.10	40.00	-11.90	peak			
2	69.3568	51.23	-29.08	22.15	40.00	-17.85	peak			
3	77.5928	52.12	-29.75	22.37	40.00	-17.63	peak			
4	122.4040	53.80	-25.38	28.42	43.50	-15.08	peak			
5	130.8369	55.61	-26.54	29.07	43.50	-14.43	peak			
6	429.5228	43.97	-19.80	24.17	46.00	-21.83	peak			

FCC ID: ZJA-72070

**Anbotek Compliance Laboratory Limited**

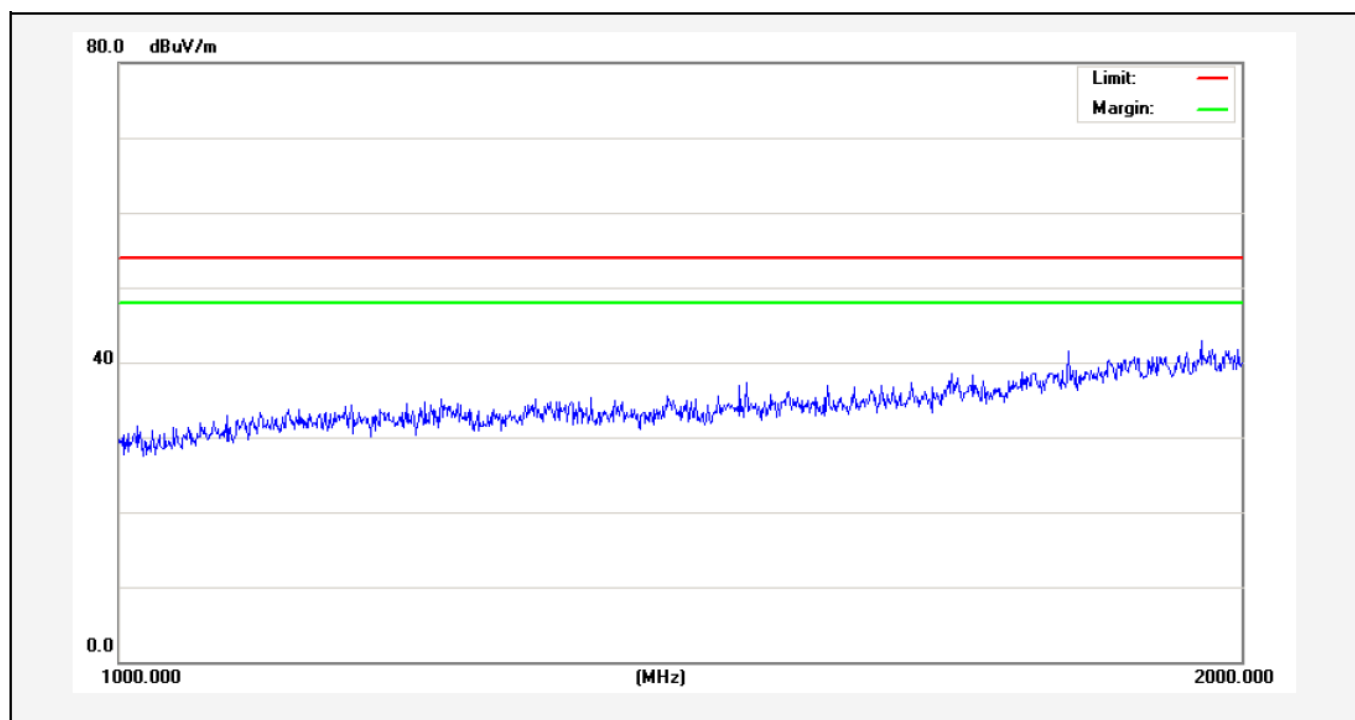
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Nanshan District, Shenzhen, 518054, China

Tel: (86)755-26014771

Fax: (86)755-26014772

Http://www.anbotek.com

Job No.:	AT1104648F	Polarization:	Horizontal
Standard:	(RE)FCC Part 15_class B_3m	Power Source:	AC 120V, 60Hz
Test item:	Radiation Test	Date:	2011/05/03
Temp.(C)/Hum.(%RH):	24.3(°C)/55%RH	Time:	14:45:10
EUT:	Christmas Lights With Remote Controller	Test By:	Well Wang
Model:	72-070	Distance:	3m
Note:	ON		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
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FCC ID: ZJA-72070

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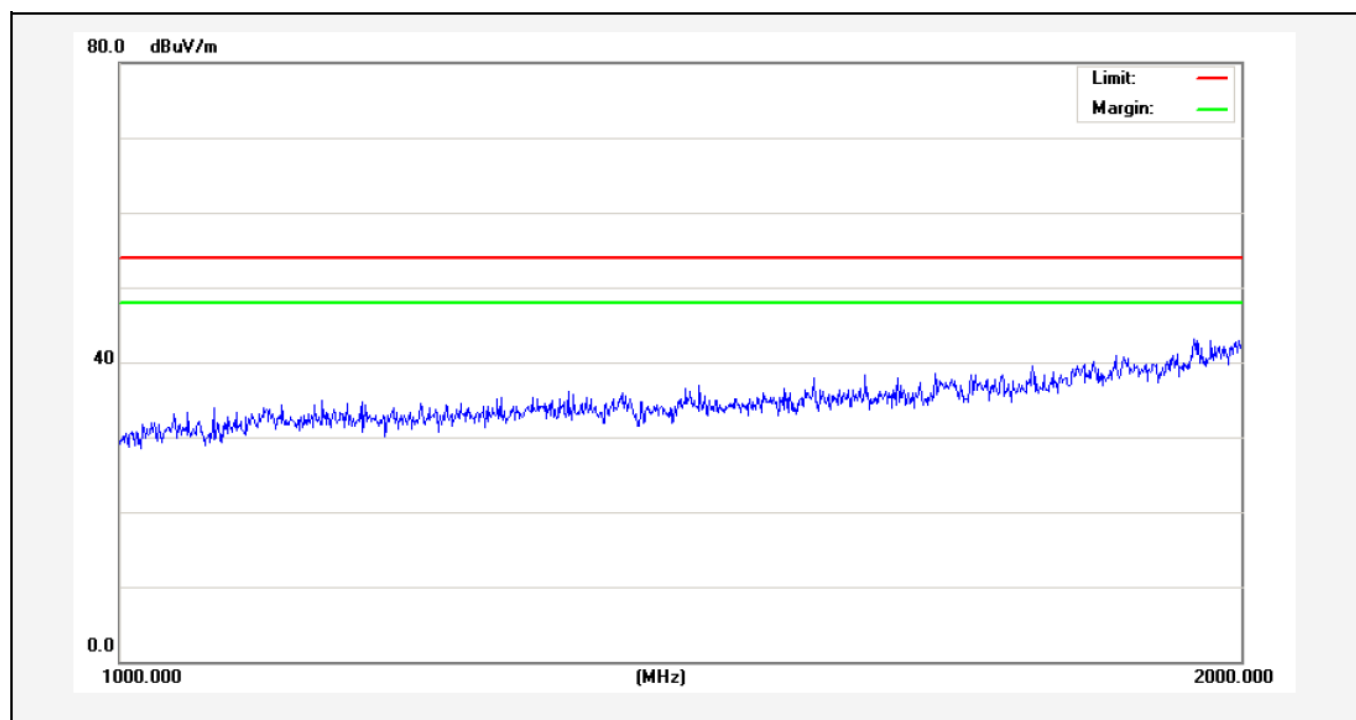
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Tel: (86)755-26014771

Fax: (86)755-26014772

Http://www.anbotek.com

Job No.:	AT1104648F	Polarization:	Vertical
Standard:	(RE)FCC Part 15_class B_3m	Power Source:	AC 120V, 60Hz
Test item:	Radiation Test	Date:	2011/05/03
Temp.(C)/Hum.(%RH):	24.3(°C)/55%RH	Time:	14:48:12
EUT:	Christmas Lights With Remote Controller	Test By:	Well Wang
Model:	72-070	Distance:	3m
Note:	ON		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
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