



**SGS-CSTC Standards
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Report No.: SHEM111200165202
Page: 1 of 12

EMC TEST REPORT

Application No.: SHEM111200165202

Applicant: Jiangsu Tianying Environmental Protection Technology Co., Ltd

Equipment Under Test (EUT):

NOTE: The following sample(s) submitted was/were identified on behalf of the client as

EUT Name: Light Fountain Show

Model Name: GT-200-ULSF

FCC ID: A8N-GT-200-ULSF1

Standards: FCC Part 15 Subpart B

Date of Receipt: January 6, 2011

Date of Test: January 9, 2012 to January 11, 2012

Date of Issue: January 21, 2012

Test Result :	PASS*
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* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Tony Wu
E&E Section Manager
SGS-CSTC (Shanghai) Co., Ltd.

Neil Zhang
E&E Project Engineer
SGS-CSTC (Shanghai) Co., Ltd.

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2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission*	FCC Part 15 Subpart B	ANSI C63.4: 2009	Class B	PASS
Conducted Emission 150KHz-30MHz	FCC Part 15 Subpart B	ANSI C63.4: 2009	Class B	N/A

Ψ N/A –Not Applicable

Note 1*: The highest frequency of the internal sources of the EUT is less than 108MHz, the measurement shall only be made up to 1GHz.



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4 General Information

4.1 Client Information

Applicant: Jiangsu Tianying Environmental Protection Technology Co.,Ltd
 Address of Applicant: No.268, Huanghai Road(West) , Hai'an Town, Nantong City , Jiangsu Province, China
 Manufacturer: KIRIN OPTO- ELECTRONICS(JIANGSU)CO.,LTD
 Address of Manufacturer: No.268, Huanghai Road(West), Hai'an Town, Nantong City , Jiangsu Province, China

4.2 General Description of E.U.T.

EUT Name: Light Fountain Show
 Model No.: GT-200-ULSF
 Product Description: The equipment under test (EUT) is a receiver for a fountain and underwater light show operating at 49.860MHz. The EUT is powered by a 1.5V*4 battery pack. The remote control and EUT has an ON/OFF switch. After switch ON the EUT, it can be turn to the fountain and underwater light show function.

4.3 Details of E.U.T.

Power Supply: Battery 1.5Vx 4
 Power Cord: N/A

4.4 Description of Support Units

Name / Function	Model No.	Remark
N/A	N/A	N/A

4.5 Standards Applicable for Testing

The standards used were FCC Part 15B: 2010.

Table 1 : Tests Carried Out Under FCC Part 15: 2010

Standard	Status
FCC Part 15 Subpart B: 2010	✓
FCC Part 15 Subpart B: 2010	✗

✗ Indicates that the test is not applicable
 ✓ Indicates that the test is applicable

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4.6 Abnormalities from Standard Conditions

None.

4.7 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.
Tel: +86 21 6191 5666 Fax: +86 21 6191 5655

4.8 Test Facility

Test Confident level of **SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.** is recognized, certified, or accredited by the following organizations

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2014-07-26.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2012-03-17.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2014-09-20.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3172 and C-3514 respectively. Date of Registration: 2009-11-30. Date of Expiry: 2012-03-17.

4.9 Measurement Uncertainty



According to CISPR 16-4-2.

Test Item	Frequency Range	Measurement Uncertainty
Conducted Emission	150KHz – 30MHz	3.5dB
Radiated Emission	30MHz – 1000MHz	4.0dB

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5 Equipment Used during Test

Radiated Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2011-06-03	2012-06-02
2	Antenna	SCHWARZBECK	VULB9168	9168-313	2011-06-03	2012-06-02
3	CONTROLLER	INNCO	CO200	474	/	/
4	Antenna	SCHWARZBECK	BBHA9120D	9120D-679	2011-06-03	2012-06-02
5	Single generator	Rohde & Schwarz	SMR40	100555	2011-06-04	2012-06-03

General Equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	Digital pressure meter	YONGZHI	DYM3-01	101012	2011-11-16	2012-11-14
2	Digital Multimeter	FLUKE	17B	10560713	2011-09-07	2012-09-06
3	Temperature& humidity recorder	ShangHai weather meter work	ZJ 1-2B	0805126	2011-07-29	2012-07-28



6 Emission Test Results

6.1 Radiated Emissions, 30MHz to 1GHz

Test Requirement:	FCC Part 15B: 2010
Test Method:	ANSI C63.4: 2009
Test Date:	November 14, 2011
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Class:	Class B
Detector:	Peak for pre-scan (120kHz resolution bandwidth)
Result:	PASS

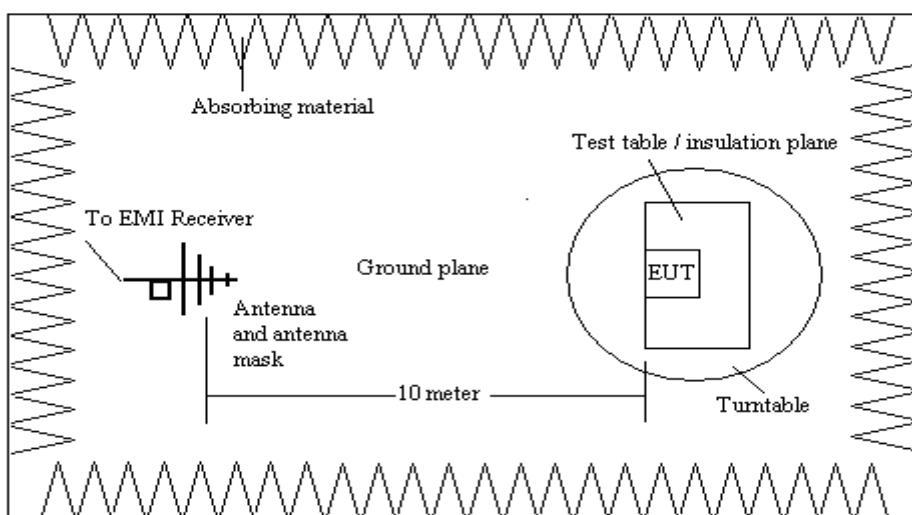
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 21.0 °C Humidity: 50 % RH Atmospheric Pressure: 1006 mbar

EUT Operation: Test EUT in working mode, which supplied by battery only. Fountain and underwater light show function turn on.

6.1.2 Test setup



6.1.3 Measurement Data

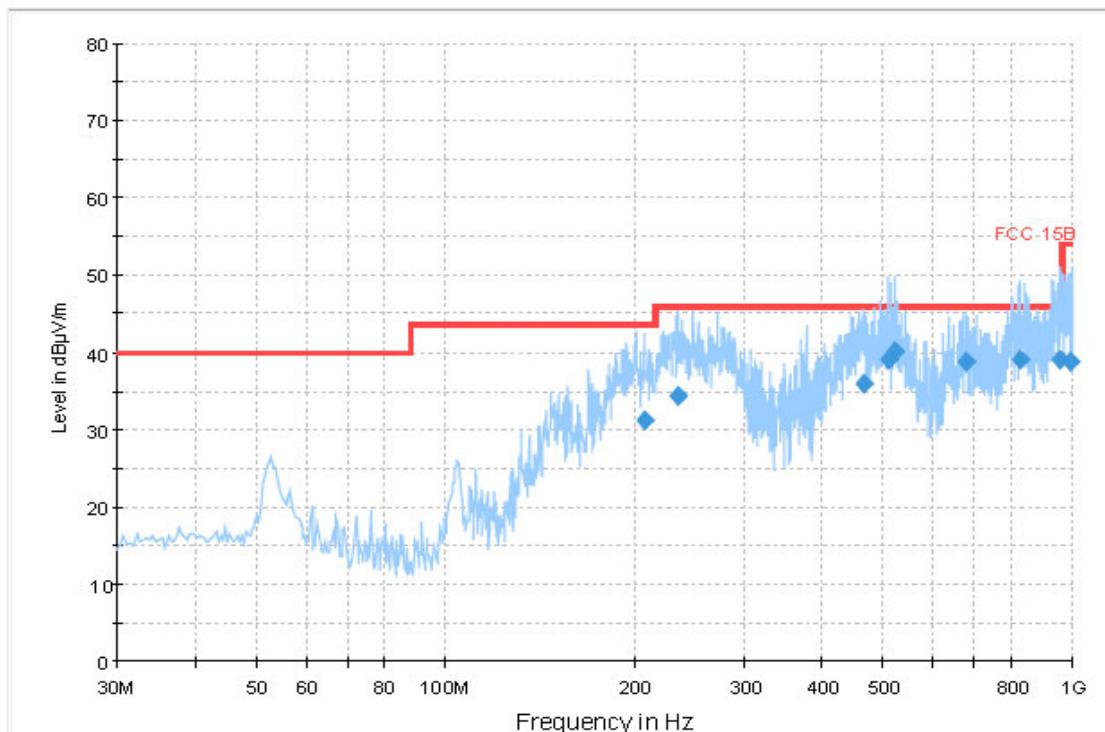
Note: Red limit line - Quasi-peak limit;
Blue plots - Peak detector scan plots.

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Horizontal:

FCC15 B RE 30M-1 GHz



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)
952.276000	39.2	1000.000	120.000	131.0	H	148.0	3.0	6.8
677.184000	38.8	1000.000	120.000	100.0	H	270.0	-0.5	7.2
523.148000	40.0	1000.000	120.000	100.0	H	278.0	-3.6	6.0
207.891520	31.2	1000.000	120.000	100.0	H	267.0	-11.8	12.3
235.441920	34.5	1000.000	120.000	146.0	H	250.0	-10.4	11.5
463.802080	35.8	1000.000	120.000	201.0	H	180.0	-4.6	10.2
510.023200	39.0	1000.000	120.000	189.0	H	127.0	-3.7	7.0
824.193760	39.2	1000.000	120.000	100.0	H	114.0	1.6	6.8
995.842880	38.8	1000.000	120.000	210.0	H	174.0	3.5	15.2

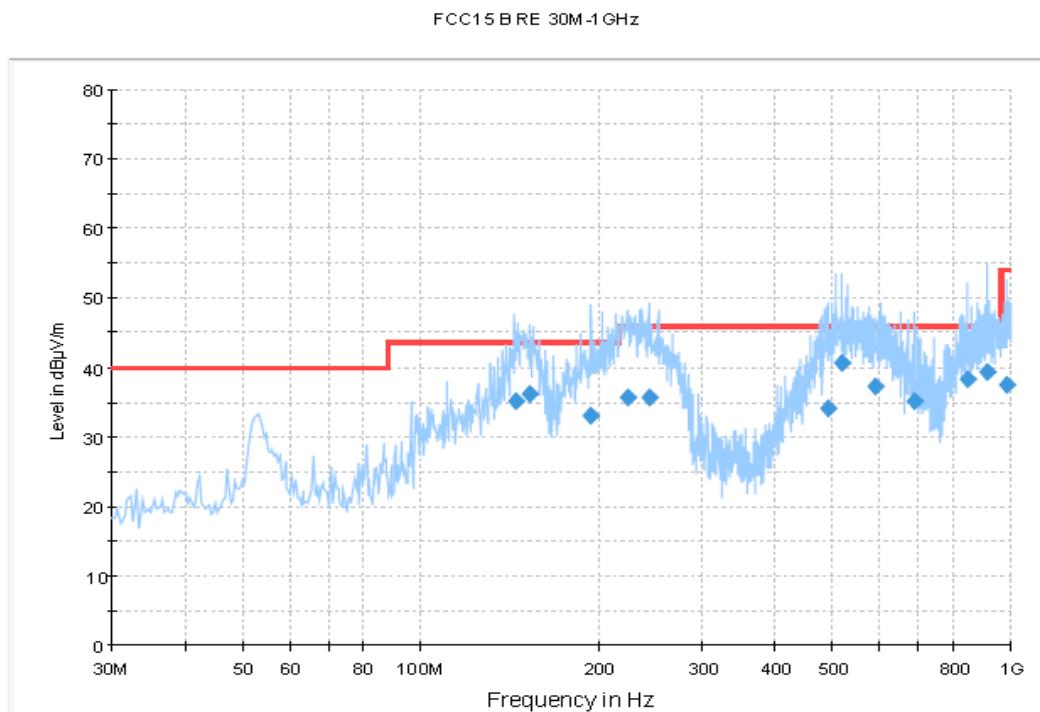
(continuation of the "Final Result 1" table from column 9 ...)

Frequency (MHz)	Limit (dB μ V/m)	Comment
952.276000	46.0	
677.184000	46.0	
523.148000	46.0	
207.891520	43.5	
235.441920	46.0	
463.802080	46.0	
510.023200	46.0	
824.193760	46.0	
995.842880	54.0	

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Vertical:



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)
987.584000	37.5	1000.000	120.000	100.0	V	208.0	3.4	16.5
689.212000	35.1	1000.000	120.000	185.0	V	214.0	-0.5	10.9
589.108000	37.2	1000.000	120.000	100.0	V	286.0	-2.4	8.8
224.000000	35.8	1000.000	120.000	210.0	V	210.0	-11.1	10.2
153.384000	36.1	1000.000	120.000	100.0	V	253.0	-8.1	7.4
489.780000	34.1	1000.000	120.000	100.0	V	280.0	-4.6	11.9
145.525600	35.2	1000.000	120.000	100.0	V	240.0	-8.4	8.3
193.776800	32.9	1000.000	120.000	100.0	V	219.0	-11.7	10.6
244.751360	35.6	1000.000	120.000	221.0	V	84.0	-10.2	10.4
517.001760	40.6	1000.000	120.000	100.0	V	57.0	-3.6	5.4
845.537760	38.4	1000.000	120.000	182.0	V	68.0	1.8	7.6
911.569920	39.4	1000.000	120.000	115.0	V	25.0	2.8	6.6

(continuation of the "Final Result 1" table from column 9 ...)

Frequency (MHz)	Limit (dB μ V/m)	Comment
987.584000	54.0	
689.212000	46.0	
589.108000	46.0	
224.000000	46.0	
153.384000	43.5	
489.780000	46.0	
145.525600	43.5	
193.776800	43.5	
244.751360	46.0	
517.001760	46.0	
845.537760	46.0	
911.569920	46.0	

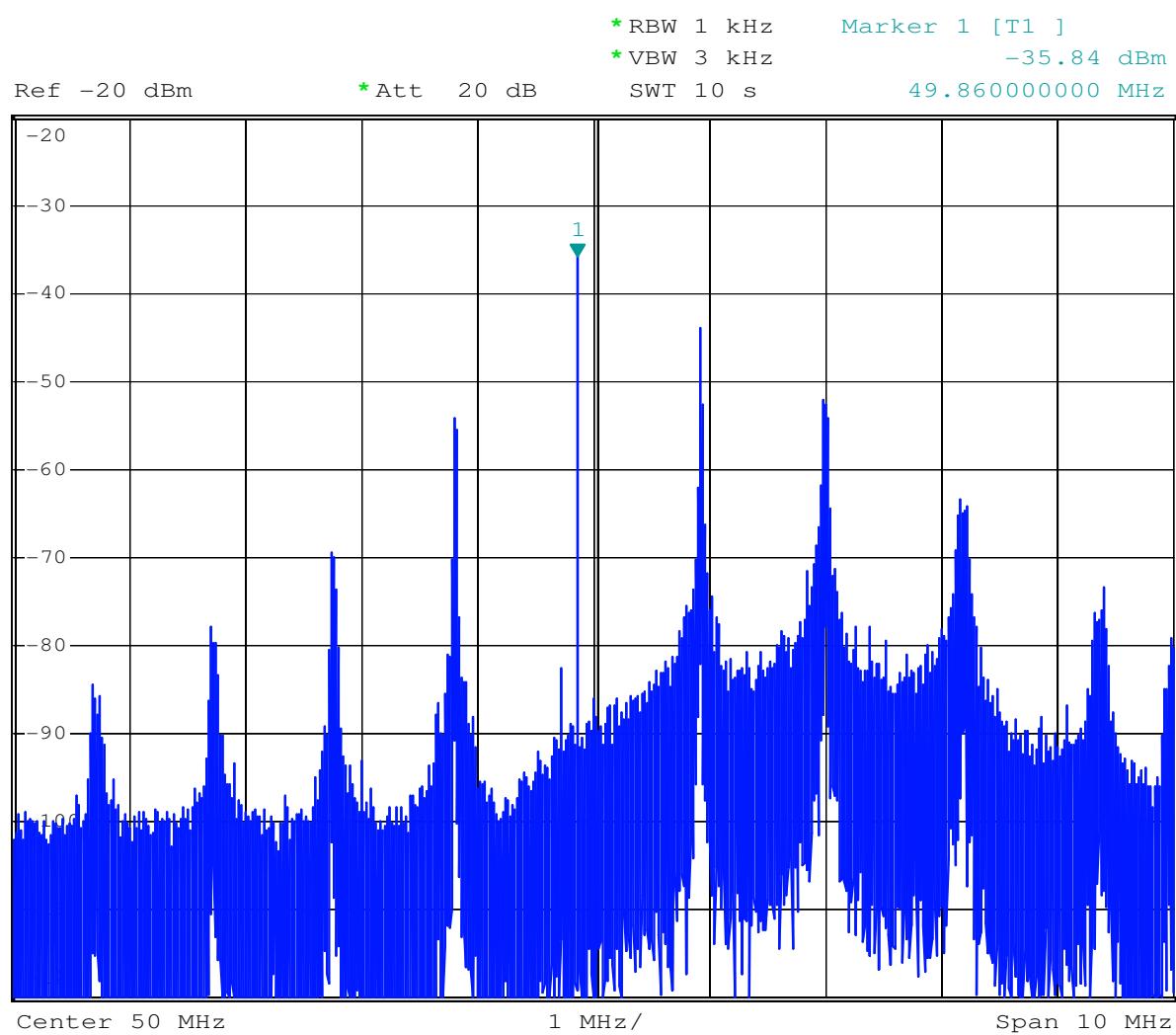
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Receiver working description

Super-regenerative receiver

A signal generator, not the matching transmitter, shall be used to radiate an unmodulated CW signal to a super-regenerative receiver at its operating frequency in order to "cohere" or to resolve the individual components of the characteristic broadband emissions from such a receiver. The level of the signal may need to be increased for this to occur.





7 EQUIPMENT UNDER TEST PICTURES

7.1.1 Radiated Emission Test Setup





7.1.2 EUT Constructional Details

Front View



Back View



For the EUT internal construction, the photographs are saved with filename: internal photos.pdf.

THE END OF REPORT

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