

FCC TEST REPORT
for
SHANGHAI CCLEE MODEL CO., LTD
2.4GHZ REMOTE CONTROL

Model No. : C £ F0902, 55602

FCC ID : YFE-F0902

Operating Frequency : 2402-2403MHz

Applicant : SHANGHAI CCLEE MODEL CO., LTD
1289# JIASONG[M], HUAXIN TOWN, QINGPU DISTRICT,
SHANGHAI P.R.CHINA

Regulation : ***FCC Part 15.249 Subpart C***

Prepared by : Shenzhen AOV Testing Technology Co., Ltd.
2-6/F, No.5, Yuantou Lane , Tanglang, Taoyuan Street,
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Test Date : May 10-20, 2010

Date of Report : May 20, 2010

TABLE OF CONTENT

Description	Page
Test Report Declaration	
1. GENERAL INFORMATION	4
1.1 General Information	4
1.2 Test Facility	4
1.3 Test Instrument Used	5
2. RADIATION INTERFERENCE	6
2.1 Rules Part No.	6
2.2 Limits	6
2.3 Test Procedure	6
2.4 Test Result	7
3. BAND EDGE	9
3.1 Rules Part No.	9
3.2 Limits	9
3.3 Test Procedure	10
3.4 Test Result	11
4. ANTENNA REQUIREMENT	12
5. PHOTOGRAPH OF TEST	13

TEST REPORT DECLARATION

Applicant : SHANGHAI CCLEE MODEL CO., LTD
Manufacturer : SHANGHAI CCLEE MODEL CO., LTD
EUT Description : 2.4GHZ REMOTE CONTROL

Test Procedure Used:
FCC Part 15.249 Subpart C

The E. U. T. listed below has been completed RFI testing by Shenzhen AOV Testing Technology Co., Ltd at the test site of Bontek Compliance Testing Laboratory Ltd. And the Interference emissions can pass **FCC Part 15** limitations.

The test configurations and the facility comply with the radiated site criteria in **ANSI C63.4-2003**.

Date of Test:

May 10-20, 2010

Prepared by:



Project Engineer

Reviewer :



Project Manager

1. GENERAL INFORMATION

1.1 General Information

Description : SHANGHAI CCLEE MODEL CO., LTD

Number of Channels : 2CH(2402MHz, 2403MHz)

Model No. : C £ F0902, 55602

Applicant : SHANGHAI CCLEE MODEL CO., LTD
1289# JIASONG[M], HUAXIN TOWN, QINGPU
DISTRICT, SHANGHAI P.R.CHINA

Manufacturer : SHANGHAI CCLEE MODEL CO., LTD
1289# JIASONG[M], HUAXIN TOWN, QINGPU
DISTRICT, SHANGHAI P.R.CHINA

1.2 Test Facility

Test Firm : Bontek Compliance Testing Laboratory Ltd.
Certificated by FCC, Registration No.: 338263

Address : FL.1, Building H-3, Hua Qiao Cheng East Industrial Area
Qiaocheng East Road, Nanshan, Shenzhen, P.R.China

Tel : 86-755-86337020

Fax : 86-755-86337028

1.3 Test Instrument Used

No.	Equipment	Manufacturer	Model No.	S/N	Calibrator date
1.	EMI Test Receiver	R&S	ESCI	100687	2010-2-22
2.	EMI Test Receiver	R&S	FSU	BCT-019	2010-2-22
3.	Amplifier	HP	8447D	1937A02492	2010-2-22
4.	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-324	2010-2-22
5.	Horn Antenna	SCHWARZBECK	BBHA9120A	B08000991-0001	2010-2-27
6.	High Field Biconical Antenna	ELECTRO-METRICS	EM-6913	166	2010-2-22
7.	Log Periodic Antenna	ELECTRO-METRICS	EM-6950	811	2010-2-22
8.	Remote Active Vertical Antenna	ELECTRO-METRICS	EM-6892	304	2010-2-22
9.	Teo Line Single Phase Module	SCHWARZBECK	NSLK8128	D-69250	2010-2-22
10.	Positioning Controller	C&C	CC-C-1F	MF7802113	2010-2-22
11.	Triple-Loop Antenna	EVERFINE	LLA-2	607004	2010-2-27
12.	10dB attenuator	SCHWARZBECK	MTAIMP-136	R65.90.0001#06	2010-2-22

2. RADIATION INTERFERENCE

2.1.Rules Part No.

15.249

2.2.Limits

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
902 - 928 MHz	50	500
2400 - 2483.5 MHz	50 (94)	500 (54)
5725 - 5875 MHz	50	500
24.0 - 24.25 GHz	250	2500

The field strength of any emissions radiated on any frequency outside of the fundamental band shall not exceed the general radiated emission limits in Section 15.209.

Frequency of (MHz)	Emission Field Strength (microvolts/meter)
30 - 88	100 (40)
88 - 216	150 (43.5)
216 - 960	200 (46.0)
Above 960	500 (54.0)

2.3.Test Procedure

ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES:

The EUT is placed on a turned table that is 0.8 meter above the ground. The turned table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna that is mounted on the antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (log periodical antenna and horn antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on test.

The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz.

The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental.

2.4. Test Result

PASS

Low Channel: 2402MHz

Field Strength of Fundamental:

Horizontal:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
2402.4400	93.50	82.80(AV)	94.00	11.20

Vertical:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
2402.4400	95.70	81.30(AV)	94.00	12.70

Field Strength of Spurious Emission:

Horizontal:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
47.4600	24.60	---	40.00	15.40
95.9600	24.00	---	43.50	19.50
103.7200	25.30	---	43.50	18.20
225.9400	24.40	---	46.00	21.60
544.1000	30.70	---	46.00	15.30
4731.9500	49.44	41.30(AV)	54.00	12.70
14681.9500	44.16	40.70(AV)	54.00	13.30
17843.5000	47.46	41.00(AV)	54.00	13.00

Vertical:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
51.3400	22.50	---	40.00	17.50
94.0200	22.70	---	43.50	20.80
101.7800	24.30	---	43.50	19.20
208.4800	22.80	---	43.50	20.70
540.2200	29.80	---	46.00	16.20
3996.8800	41.39	40.02(AV)	54.00	13.98
6883.0600	42.78	42.50(AV)	54.00	11.50
14152.0000	43.70	43.20(AV)	54.00	10.80

High Channel: 2403MHz

Field Strength of Fundamental:

Horizontal:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
2403.7300	92.90	81.00(AV)	94.00	13.00

Vertical:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
2403.7000	97.10	82.50(AV)	94.00	11.50

Field Strength of Spurious Emission:

Horizontal:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
39.7000	23.70	---	40.00	16.30
95.9600	24.10	---	43.50	19.40
123.1200	26.50	---	43.50	17.00
179.3800	24.30	---	43.50	19.20
551.8600	31.20	---	46.00	14.80
4801.9500	49.34	42.02(AV)	54.00	11.98
14596.7400	46.05	40.18(AV)	54.00	13.82
17895.5200	45.60	43.30(AV)	54.00	10.70

Vertical:

Frequency (MHz)	PK (dBuV/m)	Read Level (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)
30.0000	21.30	---	40.00	18.70
92.0800	24.30	---	43.50	19.20
123.2000	25.10	---	43.50	18.40
179.3800	24.80	---	43.50	18.70
542.1600	30.70	---	46.00	15.30
4801.9600	47.60	40.40(AV)	54.00	13.60
11768.2200	45.30	40.10(AV)	54.00	13.90
14596.7400	46.08	43.00(AV)	54.00	11.00

3. BAND EDGE

3.1. Rules Part No.

15.249

3.2. Limits

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 50dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

3.3. Test Procedure

Record the response of frequency waveform when the EUT was working by a spectrum analyzer or EMI Receiver. Low and high channel were tested

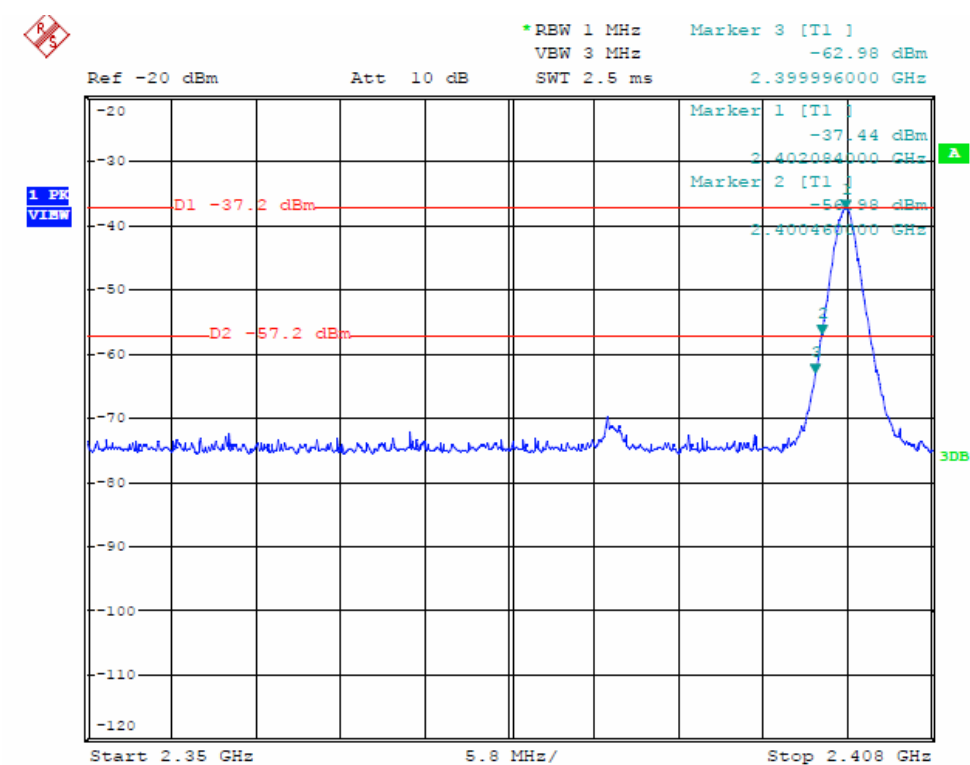
Set 1MHz RBW and 1MHz VBW when use PK detector.

Set 1MHz RBW and 10 Hz VBW when use AV detector.

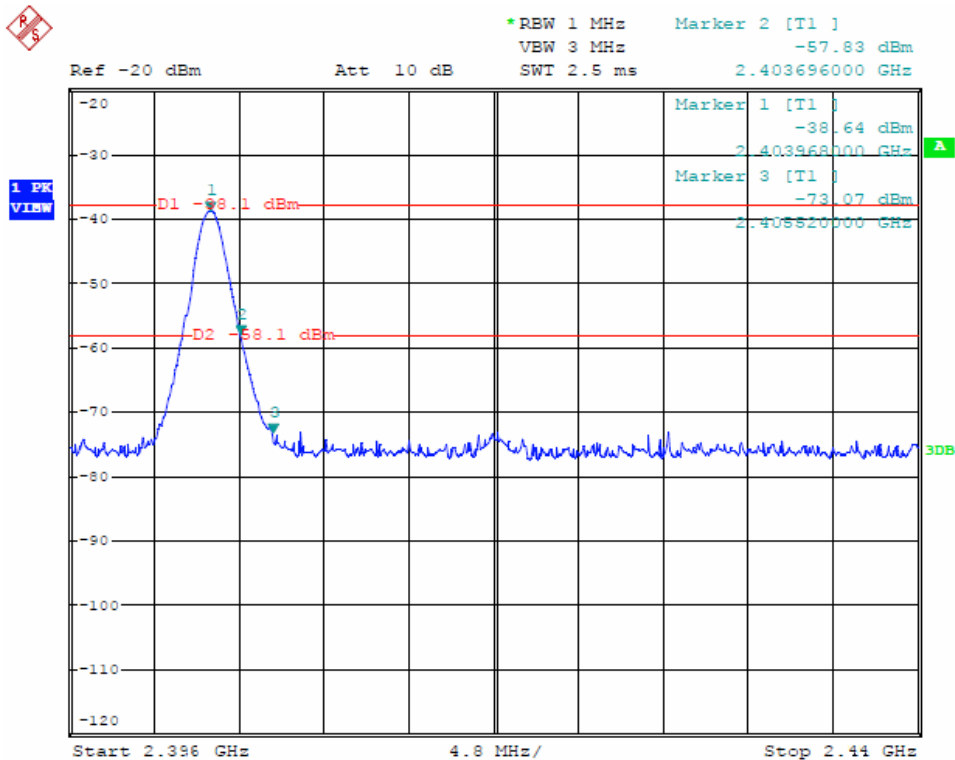
3.4. Test Result

PASS

Low Channel: 2402MHz



High Channel: 2403MHz



4. ANTENNA REQUIREMENT

According to Section 15.203, 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 EUT has no antenna connector for printed antenna. Therefore the EUT complies with Section 15.203 of the FCC rules.

5. PHOTOGRAPH OF TEST

Radiated Emission test

(Below 1GHz)



(Above 1GHz)

