ECMG Worldwide Certification Solutions
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EMI Test Report

On Model Name: Receiver
Model Numbers: BL-R001 – BL-R015
Brand Name: Baoxiang

FCC ID: WWWBLR001-R015

Prepared for Wenzhou Baoxiang Electrical Co., Ltd.

According to FCC Part 15, Class B

Test Report #:	*WEN-0810-8076-FCC-Rx*
Prepared by:	*Chris Huang*
Reviewed by:	*Harry Zhao*
QC Manager:	*Paul Chen*

Test Report Released by: Paul J. Chen _____ *2008, December 5*

Paul Chen *Date*

Test Location

Tests performed in a Certified ANSI Semi-Anechoic Chamber and Shielded Room performed testing.

Test Site Location: *ECMG Worldwide Certification Solution, Inc. (China)*
Building 2, 1298 Lian Xi Road,
Pu Dong New Area, Shanghai,
P.R. China 201204
Tel: *86-21-51909300*
Fax: *86-21-51909333*
FCC Registration Number: *172634*

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Administrative Data

Test Sample : Receiver

Model Numbers : BL-R001 – BL-R015

Model Tested : BL-R001

Brand Name : Baoxiang

Serial Number : Engineering Sample

Date Tested : 2008, December 5th

Applicant : Wenzhou Baoxiang Electrical Co., Ltd.
No.1, 132 Alley, West Road of Transverse Street,
Wenzhou Economic Development Zone,
Zhejiang, China

Telephone : 86-577-28818072

Fax : 86-577-28818073

Manufacturer : Wenzhou Baoxiang Electrical Co., Ltd.
No.1, 132 Alley, West Road of Transverse Street, Wenzhou Economic Development Zone, Zhejiang, China

EUT Description

Wenzhou Baoxiang Electrical Co., Ltd. model tested BL-R001 (referred to as the EUT in this report) is a Receiver. It can receive the 315MHz signal and then drive relay to control the motor load.

The highest frequency operated by the EUT is 315MHz, according to FCC 15.33(b), the frequency range tested is from 30MHz – 2000MHz.

The EUT is DC 12 V battery powered.

Type of Deriver

The models BL-R001 – BL-R015 means the models listed below: BL-R001, BL-R002, BL-R003, BL-R004, BL-R005, BL-R006, BL-R007, BL-R008, BL-R009, BL-R010, BL-R011, BL-R012, BL-R013, BL-R014, BL-R015.

All the models have identical principle of circuits and the layout except the case for different plastic shape.

Test Summary

The Electromagnetic Compatibility requirements on model BL-R001 for this test are stated below. All results listed in this report relate exclusively to this above-mentioned model as the Equipment under Test. This report confers no approval or endorsement upon any other component, host or subsystem used in the test set-up.

Emission Tests				
Specifications	***Description***	***Test Results***	***Test Point***	***Remark***
FCC Part 15.107 (150kHz – 30MHz)	*Conducted Emission*	*N/A* *The EUT is 12V DC battery powered, AC conducted emission test is not applicable.*		
FCC Part 15.109 (30MHz – 2000MHz)	*Radiated Emission*	***For BL-R001:*** *Passed by 9.84 dB of QP*	*Enclosure*	*Attachment 1*

Test Mode Justification

This device complies with Part 15 Class B of the FCC rules. The system was tested in the activating mode.

EUT Exercise Software

The EUT doesn't use any software during the test.

Equipment Modification

Any modifications installed previous to testing by Wenzhou Baoxiang Electrical Co., Ltd. will be incorporated in each production model sold or leased in United States.

There were no modifications installed by ECMG Worldwide Certification Solution, Inc (China) test personnel.

Test System Details

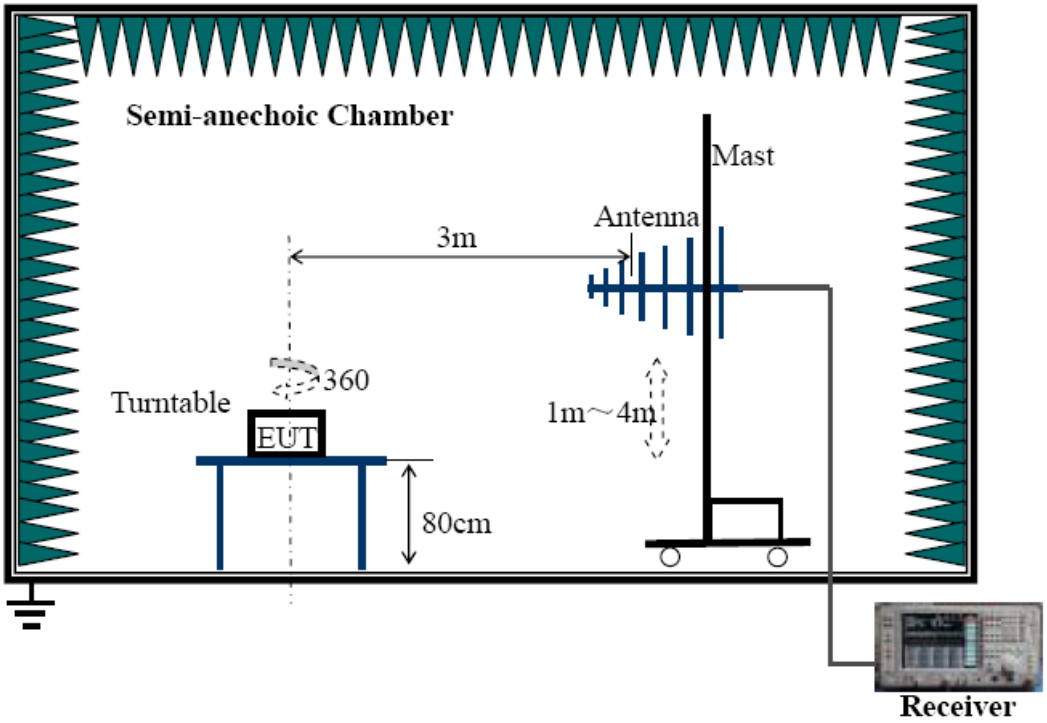
EUT	
Model Numbers:	BL-R001 – BL-R015
Model Tested:	BL-R001
Brand Name:	Baoxiang
Input Voltage:	12V DC
Serial Number:	Engineering Sample
Description:	Receiver
Manufacturer:	Wenzhou Baoxiang Electrical Co., Ltd.

EUT Power Supply
N/A

Support Equipment					
Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
Signal Generator	HP	8648C	33623A03709	11/29/07	11/28/08

Cable Description
N/A

Configuration of Tested System



ATTACHMENT 1 - RADIATED EMISSION TEST RESULTS

CLIENT:	Wenzhou Baoxiang Electrical Co., Ltd.	**TEST REFERENCE:**	FCC Part 15 Subpart B, Class B
MODEL TESTED:	BL-R001	**PRODUCT:**	Receiver
SERIAL NO.:	Engineering Sample	**EUT DESIGNATION:**	Receiver
TEMPERATURE:	22°C	**HUMIDITY:**	54%
ATM PRESSURE:	101.7Pa	**GROUNDING:**	None
TESTED BY:	Cloud Feng	**DATE OF TEST:**	2008, December 5

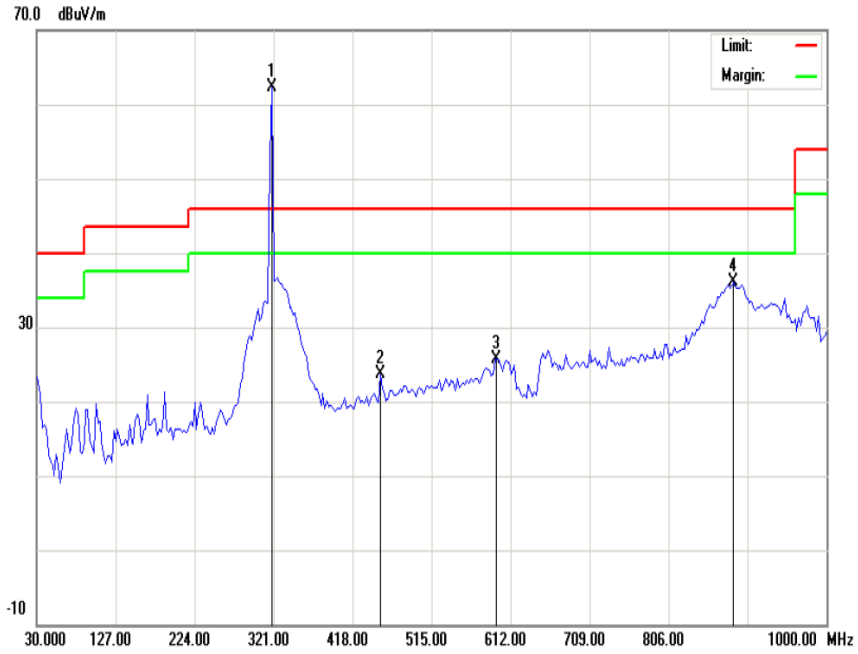
SETUP METHOD:	ANSI C63.4-2003
TEST PROCEDURE:	a. The EUT was placed on a rotatable table with 0.8 meters above ground. b. The EUT was set 3 meters from the interference-receiving antenna, which was mounted on the top of a variable height antenna tower. c. The antenna was varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarizations of the antenna were set to make measurement. d. For each suspected emission the EUT was arranged to its worst case and then change the antenna tower height (from 1M to 4M) and turn table (from 0 degree to 360 degree) to find the maximum reading. e. If the emission level of the EUT in peak mode was 20 dB lower than the specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be tested using the quasi-peak method below 1GHz in about six maximal points and the results will be reported. f. A signal generator, not the matching transmitter, shall be used to radiate an unmodulated CW signal to a superregenerative 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. Explanation of the Correction Factor are given as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Receiver Factor CF = Cable Attenuation Factor AG = Amplifier Gain
TESTED RANGE:	30MHz to 2000MHz
TEST VOLTAGE:	12V DC

CONTINUE ON TO THE NEXT PAGE…

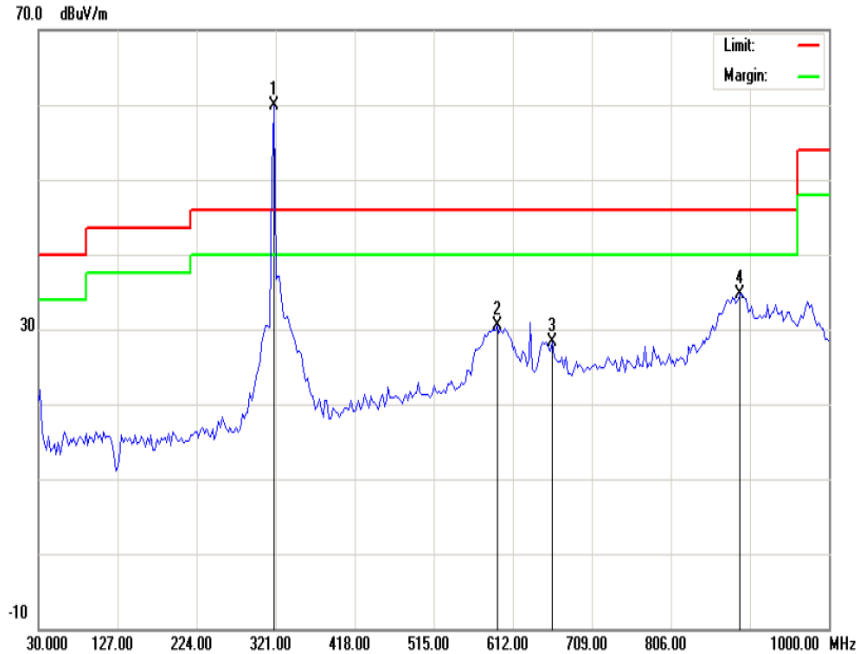
RESULTS:	**For BL-R001:** The EUT meets the requirements of test reference for Radiated Emissions on horizontal polarization by 9.84 dB at 886.02 MHz. The test results relate only to the equipment under test provided by client.
CHANGES OR MODIFICATIONS:	There were no modifications installed by ECMG Worldwide Certification Solution, Inc (China) test personnel.
M. UNCERTAINTY:	Freq. $\pm$ 2x10^{-7} x Center Freq., Amp $\pm$ 2.6 dB

For BL-R001:

30MHz – 1GHz



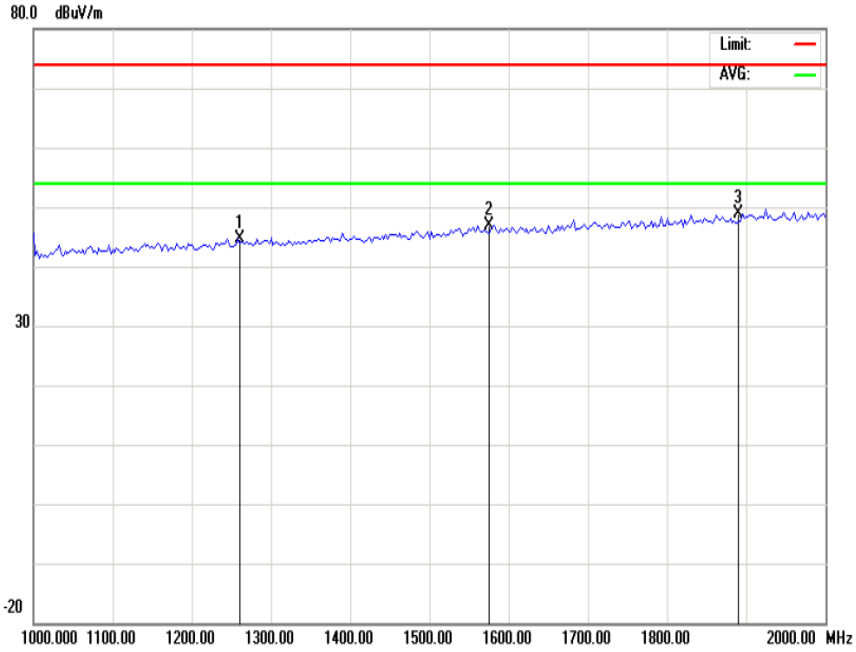
Field strength Emission Plot (Peak, Max Hold Mode Horizontal)



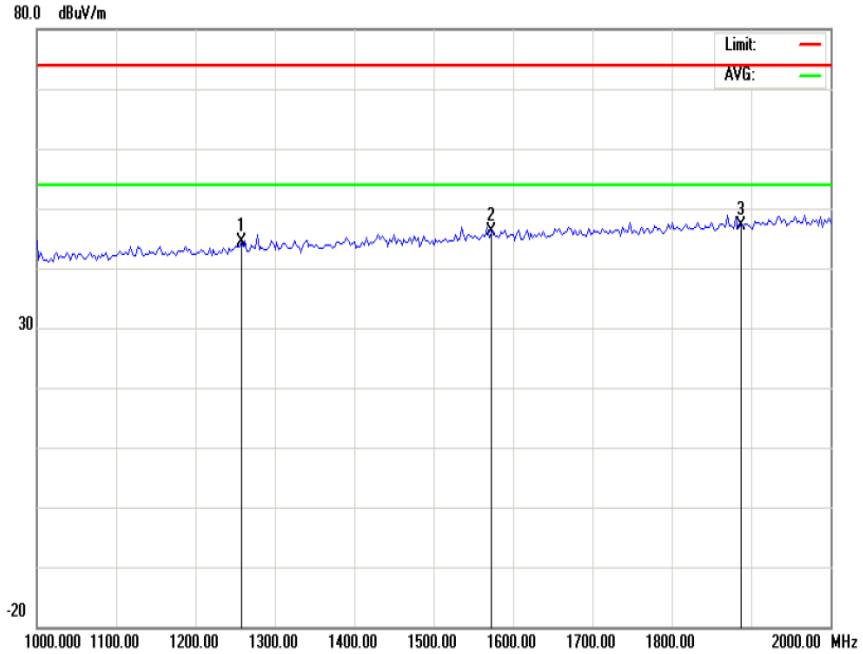
Field strength Emission Plot (Peak, Max Hold Mode Vertical)

30MHz-1GHz							
Horizontal							
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected QP Level dB(uV/m)**	**3 Meter Limits dB(uV/m)**	**Margin (dB)**	**Angle of Turner (degree)**	**Height of Tower (cm)**
1	451.95	18.94	23.64	46.00	-22.36	184	107
2	595.02	20.77	25.64	46.00	-20.36	127	100
3	886.02	24.96	36.16	46.00	-9.84	233	106
Vertical							
Signal	**Frequency (MHz)**	**Factor (dB)**	**Corrected QP Level dB(uV/m)**	**3 Meter Limits dB(uV/m)**	**Margin (dB)**	**Angle of Turner (degree)**	**Height of Tower (cm)**
1	592.60	20.75	30.43	46.00	-15.57	183	109
2	660.50	21.95	28.37	46.00	-17.63	83	100
3	890.88	25.01	34.73	46.00	-11.27	73	100
Set-up/Configuration: ANSI C63.4-2003							
Comments: The 315MHz is from the signal generator to cohere the receiver under test.							
Note: All readings are quasi-peak unless stated otherwise, using a QPA bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.							

1GHz- 2GHz



Horizontal Radiated Emission Plot (Peak, Max Hold Mode)



Vertical Radiated Emission Plot (Peak, Max Hold Mode)

1GHz-2GHz

Horizontal

Signal	Frequency (MHz)	Factor (dB)	Corrected PK Level (dBuV/m)	3 Meter PK Limits (dB uV/m)	Margin (dB)	Corrected AV Level (dBuV/m)	3 Meter AV Limits (dBuV/m)	Margin (dB)
1	1258.70	24.60	44.40	74.00	-29.60	32.30	54.00	-21.70
2	1573.40	26.60	46.10	74.00	-27.90	36.00	54.0	-18.00
3	1888.20	28.50	46.70	74.00	-27.30	37.5	54.0	-16.50

Vertical

Signal	Frequency (MHz)	Factor (dB)	Corrected PK Level (dBuV/m)	3 Meter PK Limits (dB uV/m)	Margin (dB)	Corrected AV Level (dBuV/m)	3 Meter AV Limits (dBuV/m)	Margin (dB)
1	1258.74	24.60	44.40	74.00	-29.60	37.60	54.00	-16.40
2	1573.46	26.60	45.80	74.00	-28.20	41.20	54.00	-12.80
3	1888.20	28.50	46.50	74.00	-27.50	41.40	54.00	-12.60

Note: All readings are peak and average unless stated otherwise, using a bandwidth of 1000kHz, with a 30 ms sweep time. A video filter was not used.

Test Equipment	Manufacturer	Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP	85462A	3650A00363	11/28/08	11/27/09
Broadband Antenna	Sunol	JB5	A110503	11/28/08	11/27/09
Signal Generator	HP	8648C	33623A03709	11/28/08	11/27/09

Note: All testing were performed using internationally recognized standards. All test instruments were calibrated.

SIGNED BY: Cloud Feng _____ **REVIEWED BY:** Hang Zhao _____

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