CMA Testing and Certification Laboratories
廠商會檢定中心

TEST REPORT

Report No.	:	AF021001-001	Date :	2005 October 13
Application No.	:	LF213762(0)		
Applicant	:	Artix Industries Company Ltd Unit 1006, 10th Floor, Hung Tai industrial Building, 37-39 Hung To Road, Kwun Tong, Kowloon, Hong Kong		
Sample Description	:	One(1) submitted sample(s) stated to be: AM/FM WEATHERBAND LANTERN RADIO of Model No. JJCL Rating : 4 x 1.5V D size battery and 1 x 1.5V AAA size battery DC 6V Testing Voltage : AC 120V No. of submitted sample : One (1) piece(s)		
Date Received	:	2005 August 19		
Test Period	:	2005 August 19 – 2005 October 13		
Test Requested	:	FCC Part 15 Certification.		
Test Method	:	FCC Rules and Regulations Part 15 – July 2004 ANSI C63.4 – 2003		
Test Result	:	See attached sheet(s) from page 2 to 13.		
Conclusion	:	The submitted sample was found to comply with requirement of FCC Part 15 Subpart B.		

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____

Danny Chui
EMC Engineer - EL. Division

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, Hong Kong.
Tel: (852) 2698 8198 Fax: (852) 2695 4177 E-mail: info@cmatcl.com Web Site: http://www.cmatcl.com

CMA Testing and Certification Laboratories
廠商會檢定中心

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

Table of Contents

Room 1302, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, Hong Kong.
Tel: (852) 2698 8198 Fax: (852) 2695 4177 E-mail: info@cmatcl.com Web Site: http://www.cmatcl.com

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

Test Result :

1 General Information

1.1 General Description

The equipment under test (EUT) is a standalone multi-function product and is powered by one DC 6V, 4 x 1.5V D size battery and 1.5V AAA size battery. The EUT is an AM/FM/WB, Clock, Mosquito Repeller and Flashlight Fluorescent Lantern.

The brief circuit description is listed as follows:

- IC1 and associated circuit act as AM/FM/WB Radio
- IC6 and associated circuit act as Clock
- Q5, T6, U1, U3 and U4 and associated circuit act as Lamp and Fluorescent Lantern.
- IC2, Q2 and associated circuit act as Siren Sound
- Q1, Q3 and associated circuit act as Mosquito Repeller

A brief circuit description is saved with filename : OpDes.pdf

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

Test Result :

1.2 Location of the test site

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003. A Semi-Anechoic Chamber Testing Site is set up for investigation and located at :

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
New Territories,
Hong Kong.

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2003. A shielded room is located at :

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
New Territories,
Hong Kong.

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

Test Result :

1.3 List of measuring equipment

Equipment	Manufacturer	Model No.	Serial No.	Calibration Certification No.
EMI Test Receiver	R&S	ESCS30	100001	S43284
Broadband Antenna	Schaffner	CBL6112B	2692	CA3025
Signal Generator	IFR	2023B	202302/938	S43098
LISN	R&S	ESH3-Z5	100038	S43377
LISN	R&S	ESH3-Z5	100010	S43101
Pulse Limiter	R&S	ESH3-Z2	100001	S43325
Biconical Antenna	R&S	HK116	837414/004	2GB05000535-0001
Loop Antenna	EMCO	6502	00056620	49906

Support Equipment: AC/DC Adaptor (AC 120 / DC 6V supplied by CMA)

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

Test Result :

2 Description of the radiated emission test

2.1 Test Procedure

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is placed 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1 m above the ground.

The device was rotated through three orthogonal axes to determine which attitude and configuration produce the highest emission during measurement.

2.2 Test Result

The emissions meeting the requirement of section 15.109 are based on measurements employing the CISPR qusai-peak detector below 1000MHz and average detector for frequencies above 1000MHz

It was found that the EUT meet the FCC requirement.

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

Test Result :

2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Mode: Weather Band

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
169.914	H	29.5	9.2	38.7	43.5	-4.8
170.143	H	27.2	9.2	36.4	43.5	-7.1
171.784	H	26.3	9.2	35.5	43.5	-8.0
339.829	H	9.1	14.9	24.0	46.0	-22.0
340.306	H	8.0	14.9	22.9	46.0	-23.1
343.568	H	8.9	14.9	23.8	46.0	-22.2

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

Test Result :

2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Mode: FM

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
98.946	H	28.2	11.0	39.2	43.5	-4.3
109.100	H	24.3	12.4	36.7	43.5	-6.8
118.668	H	25.7	12.4	38.1	43.5	-5.4
197.850	H	11.5	9.7	21.2	43.5	-22.3
218.194	H	9.9	13.9	23.8	46.0	-22.2
237.336	H	9.0	13.9	22.9	46.0	-23.1

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

Test Result :

2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Mode: Flash Light, Lantern, Mosquito Repeller and Clock

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
30.120	H	16.9	15.6	32.5	40.0	-7.5
35.180	H	15.2	12.9	28.1	40.0	-11.9
50.987	H	15.3	5.7	21.0	40.0	-19.0
100.018	H	11.9	12.4	24.3	43.5	-19.2
120.908	H	13.2	11.9	25.1	43.5	-18.4
157.818	H	14.1	10.4	24.5	43.5	-19.0
178.010	H	13.5	9.2	22.7	43.5	-20.8

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

Test Result :

3 Description of the Line-conducted Test

3.1 Test Procedure

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2003. The EUT was setup as described in the procedures, and both lines were measured.

3.2 Test Result

The result showed that the EUT met the FCC requirement.

3.3 Graph and Table of Conducted Emission Measurement Data

For electronic filing, the document are saved with filename TestRpt2.pdf

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

Test Result :

4 Photograph

4.1 Photographs of the Test Setup for Radiated Emission and Conduction Emission

For electronic filing, the photos are saved with filename TSup1.jpg to TSup5.jpg

4.2 Photographs of the External and Internal Configurations of the EUT

For electronic filing, the photos are saved with filename ExPho1.jpg to ExPho2.jpg and InPho1.jpg to InPho12.jpg

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

Test Result :

5 Supplementary document

The following document were submitted by applicant, and for electronic filing, the document are saved with the following filenames:

Document	Filename
ID Label/Location	LabelSmp1.jpg and LabelSmp2.jpg
Block Diagram	BlkDia.pdf
Schematic Diagram	Schem.pdf
Users Manual	UserMan.pdf
Operational Description	OpDes.pdf

TEST REPORT

Report No. : AF021001-001 Date : 2005 October 13

6 Appendices

A1	Photos of the set-up of Radiated Emissions	1	Page
A2	Photos of the set-up of Conducted Emissions	2	Pages
A3	Photos of External Configurations	1	Page
A4	Photos of Internal Configurations	6	Pages
A5	ID Label/Location	1	Page
A6	Conducted Emission Test Result	2	Pages
A7	Block Diagram	1	Page
A8	Schematics	1	Page
A9	User Manual	2	Pages
A10	Operation Description	1	Page

***** End of Report *****