



**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, 10<sup>th</sup> 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

FCC ID : TMRJJCL

Page 1 of 13



## **TEST REPORT**

Report No. : AF021001-001

Date : 2005 October 13

### **Table of Contents**

1	General Information.....	3
1.1	General Description .....	3
1.2	Location of the test site.....	4
1.3	List of measuring equipment .....	5
2	Description of the radiated emission test.....	6
2.1	Test Procedure .....	6
2.2	Test Result .....	6
2.3	Radiated Emission Measurement Data.....	7
2.3	Radiated Emission Measurement Data.....	8
2.3	Radiated Emission Measurement Data.....	9
3	Description of the Line-conducted Test .....	10
3.1	Test Procedure .....	10
3.2	Test Result .....	10
3.3	Graph and Table of Conducted Emission Measurement Data.....	10
4	Photograph.....	11
4.1	Photographs of the Test Setup for Radiated Emission and Conduction Emission.....	11
4.2	Photographs of the External and Internal Configurations of the EUT .....	11
5	Supplementary document .....	12
6	Appendices .....	13



## **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 quasipeak 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 (dB $\mu$ V/m)	Antenna and Cable factor (dB)	Field Strength (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/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 (dB $\mu$ V/m)	Antenna and Cable factor (dB)	Field Strength (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/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 (dB $\mu$ V/m)	Antenna and Cable factor (dB)	Field Strength (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/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:

<b>Document</b>	<b>Filename</b>
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 \*\*\*\*\*