



**Waltek Services (Shenzhen) Co., Ltd**  
12B, West Tower, Aidi Building, No.5003, Binhe Road, Futian  
District, Shenzhen, Guangdong, China

# TEST REPORT

FCC ID: YCR-AR-1001

Report No.: WT11062788EEF

**Applicant: China Industries Ltd. t/a Wow! Stuff.**

**Address: Creative Industries Centre, Wolverhampton Science Park,  
Wolverhampton, WV10 9TG, UK**

The following samples were submitted and identified by/on behalf of the client as:

Sample Description: Shark & Clown Fish  
Style/model No.: AR-1001 & AR-1002  
Operation Frequency: 27.145MHz  
FCC ID: YCR-AR-1001  
Sample Receiving Date: June 13, 2011  
Test Period: June 14, 2011 to June 15, 2011

<b>Test Requested:</b>	In accordance with the FCC Part 15 Subpart C, Section 15.227:2008
<b>Test Method:</b>	ANSI C63.4: 2003
<b>Test Conclusion:</b>	Based on the performed tests on the submitted samples, the results comply with the FCC Part 15 C Section 15.227 requirements.

\*\*\*\*\* For Further Details, Please Refer to the Following Page(s) \*\*\*\*\*

Signed for and on behalf of  
Waltek Services (Shenzhen) Co., Ltd

Philo zhong  
EMC Laboratory Manager

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### 3 Test Summary

Test Item	Section in CFR 47	Result
Radiated Emission (25MHz to 1GHz)	Section 15.227:2008	Passed
Occupied Bandwidth	Section 15.227:2008	Passed

*Remark: Passed: The EUT complies with the essential requirements in the standard.*

*Failed: The EUT does not comply with the essential requirements in the standard.*

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## 4 General Information

### 4.1 Client Information

<b>Applicant:</b>	China Industries Ltd. t/a Wow! Stuff.
<b>Address of Applicant:</b>	Creative Industries Centre, Wolverhampton Science Park, Wolverhampton, WV10 9TG, UK
<b>Manufacturer:</b>	EDU-SCIENCE(HK) LTD
<b>Address of Manufacturer:</b>	Suite 701, Wing on plaza, 62 Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong

### 4.2 General Description of E.U.T.

Product Name:	Shark & Clown Fish
Trade Name:	N/A
Style/model No.:	AR-1001 & AR-1002
Operation Frequency:	27.145MHz
Labeled Age Grading:	14+
Power Supply:	DC 9.0V
Power Cord:	N/A
Remark:	The EUT may have difference colours.

### 4.3 E.U.T. Environment and test modes

<b>Operating Environment:</b>	
Temperature:	25.5 °C
Humidity:	51 % RH
Atmospheric Pressure:	1016 mbar
Test mode:	Continuously Transmit
Transmitting mode:	Keep the EUT in transmitting mode

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#### 4.4 Test Location

All Emission tests were performed at:  
Waltek Services(Shenzhen) Co., Ltd. at 1/F, Fukangtai Building, West Baima Rd., Songgang  
Street, Baoan District, Shenzhen 518105, China.

#### 4.5 Other Information Requested by the Customer

None.

#### 4.6 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: IC7760A**

Waltek Services(Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration No.: IC7760A, August 3, 2010.

- **FCC – Registration No.: 880581**

Waltek Services(Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 880581, May 26, 2011.



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## 5 Equipment Used during Test

Equipment Name	Manufacturer Model	Equipment No.	Internal No	Specification	Cal. Date	Due Date	Cert. No.	Uncertainty
EMC Analyzer	Agilent/ E7405A	MY45114943	W2008001	9k-26.5GHz	Aug.03, 2010	Aug.02, 2011	WWS20 081596	±1dB
Trilog Broadband Antenne	SCHWARZBECK MESS-ELEKTROM/ VULB9163	336	W2008002	30-3000 MHz	Aug.03, 2010	Aug.02, 2011	-	±1dB
Broad-band Horn Antenna	SCHWARZBECK MESS-ELEKTROM/ BBHA9120D	667	W2008003	1-18GHz	Aug.03, 2010	Aug.02, 2011	-	f < 10 GHz : ±1dB 10GHz < f < 18 GHz : ±1.5dB
Broadband Preamplifier	SCHWARZBECK MESS-ELEKTROM/ BBV 9718	9718-148	W2008004	0.5-18GHz	Aug.03, 2010	Aug.02, 2011	-	±1.2dB
10m Coaxial Cable with N-male Connectors	SCHWARZBECK MESS-ELEKTROM/ AK 9515 H	-	-	-	Aug.03, 2010	Aug.02, 2011	-	-
10m 50 Ohm Coaxial Cable with N-plug, individual length	SCHWARZBECK MESS-ELEKTROM/ AK 9513	-	-	-	Aug.03, 2010	Aug.02, 2011	-	-
Positioning Controller	C&C LAB/ CC-C-IF	-	-	-	N/A	N/A	-	-
Color Monitor	SUNSPOT/ SP-14C	-	-	-	N/A	N/A	-	-
Active Loop Antenna 10kHz-30MHz	Beijing Dazhi / ZN30900A	-	-	10kHz-30MHz	Aug-03 -10	Aug-02 -11		±1dB

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6 Test Result & Measurement Data	
6.1 Radiated Emission	
Test Requirement:	FCC Part15 C Section 15.227
Test Method:	ANSI C63.4: 2003
Measurement Distance:	3m (Semi-Anechoic Chamber)
Requirements:	Carrier Power will not exceed 80dBuV/m at 3m (Average).
	Out of band emissions shall not exceed:
	40.0 dBuV/m between 30MHz & 88MHz
	43.5 dBuV/m between 88MHz & 216MHz
	46.0 dBuV/m between 216MHz & 960MHz
	54.0 dBuV/m between 960MHz & 1000MHz
Detector:	25MHz to 30MHz RBW=9KHz VBW=30KHz
	30MHz to 1000MHz RBW=100KHz VBW=300KHz
	Above 1000MHz RBW=1MHz VBW=3MHz
Test Procedure:	1. The EUT is placed on a turntable, which is 0.8m above ground plane. 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. 3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance. 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. 6. Repeat above procedures until the measurements for all frequencies are complete. 7. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
Test Result:	The unit does meet the FCC Part 15 C Section 15.227 requirements.
<b>27.145MHz Mode</b>	
Test Procedure: For testing performed with the loop antenna, testing was performed in accordance to ANSI C63.4: 2003, section 8.2.1. The center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.	



### 6.1.1 Intentional emission

Test Frequency (MHz)	Peak (dB $\mu$ V/m)		Limits (dB $\mu$ V/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
27.145	68.45	56.36	100.00	31.55	43.64

Test Frequency (MHz)	Average (dB $\mu$ V/m)		Limits (dB $\mu$ V/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
27.145	65.63	54.52	80.00	14.37	25.48

### 6.1.2 Other emissions (QP)

#### Vertical

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	54.2900	23.25	20.29	43.54	46.00	-2.46	QP
2	81.4350	20.21	23.24	43.45	46.00	-2.55	QP

#### Horizontal

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	54.2900	20.32	20.29	40.61	46.00	-5.39	QP
2	81.4350	18.25	23.24	41.49	46.00	-4.51	QP

#### Remark:

- (1).when the margin more than 10dB, the data would not show in the test report.
- (2).According to 15.35 (b) When average radiated emission measurements are specified in the regulations, including emission measurements below 1000 MHz, there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules, e.g., see Section 15.255.



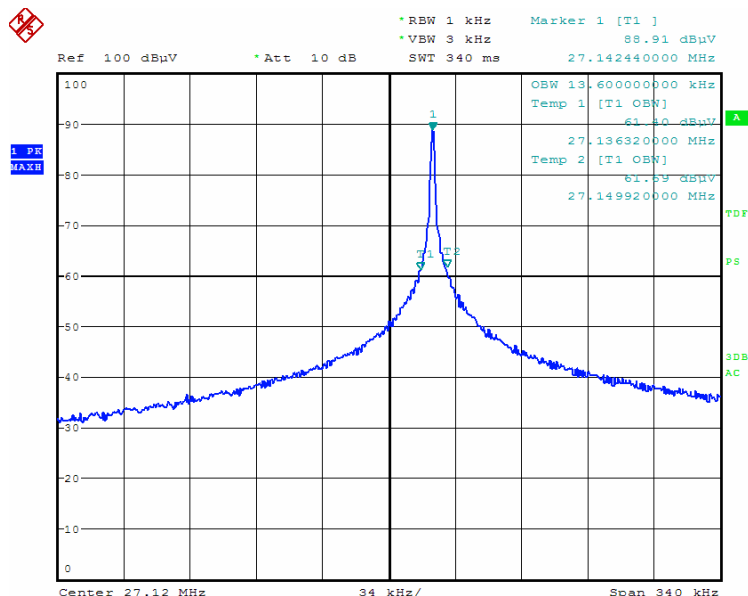


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6.2 Occupied Bandwidth	
Test Requirement:	FCC Part 15 C Section 15.215 (C)
Test Method:	ANSI C63.4: 2003
Frequency range:	Operation within the band 26.960 – 27.280 MHz
Requirements:	Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the 20 dB bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.
Method of measurement:	The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector. The vertical Scale is set to 10dB per division. The horizontal scale is set to 34KHz per division.
Test Result:	The unit does meet the FCC Part 15 C Section 15.215 requirements.

The graph as below: represents the emissions take for this device.



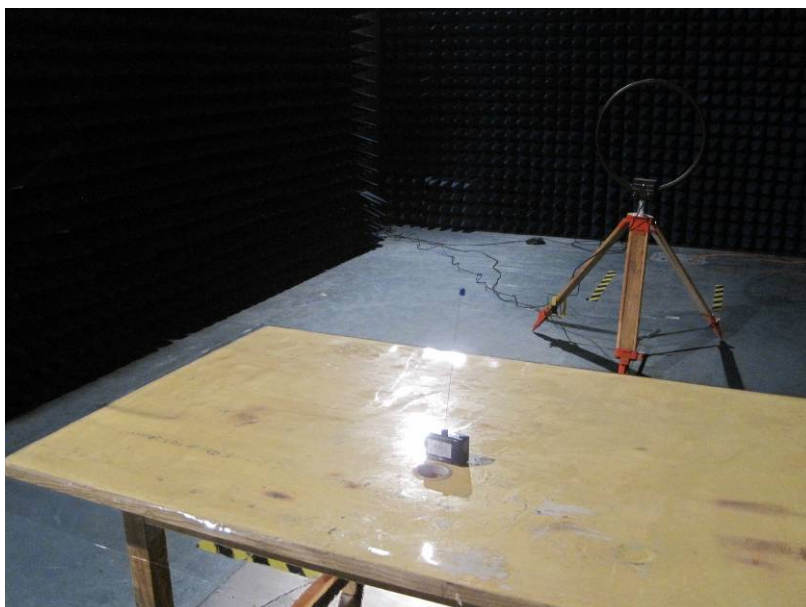
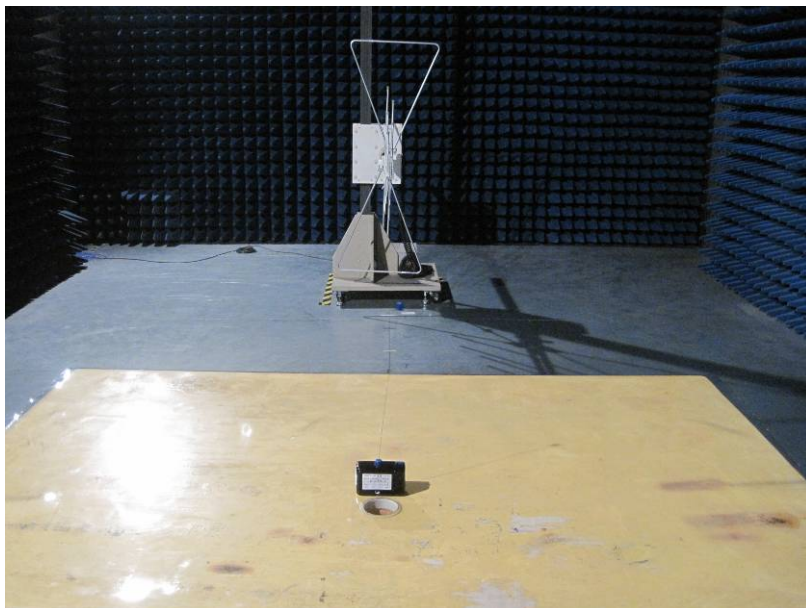


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## 7 Photographs - Test Setup



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## 8 Photographs - EUT

### 8.1 EUT-Front View



### 8.2 EUT-Back View



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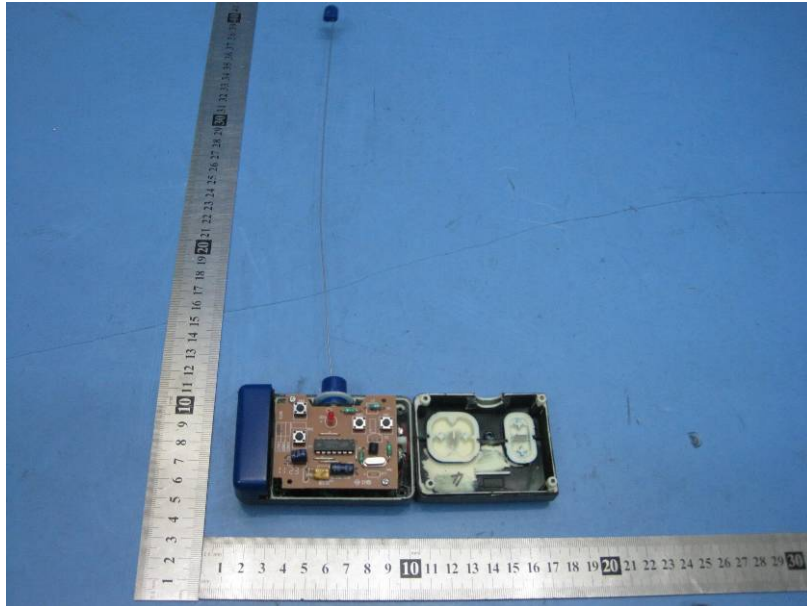


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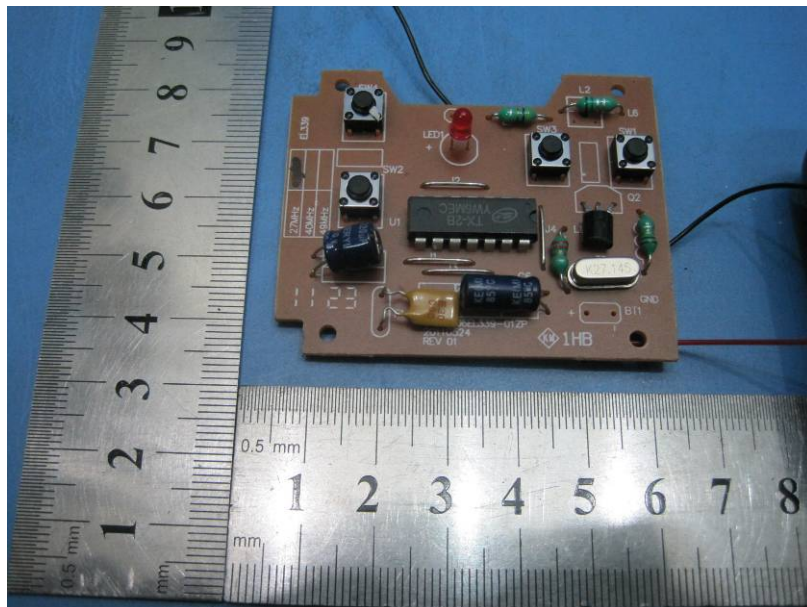
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### 8.3 EUT-Open View



### 8.4 PCB-Front View



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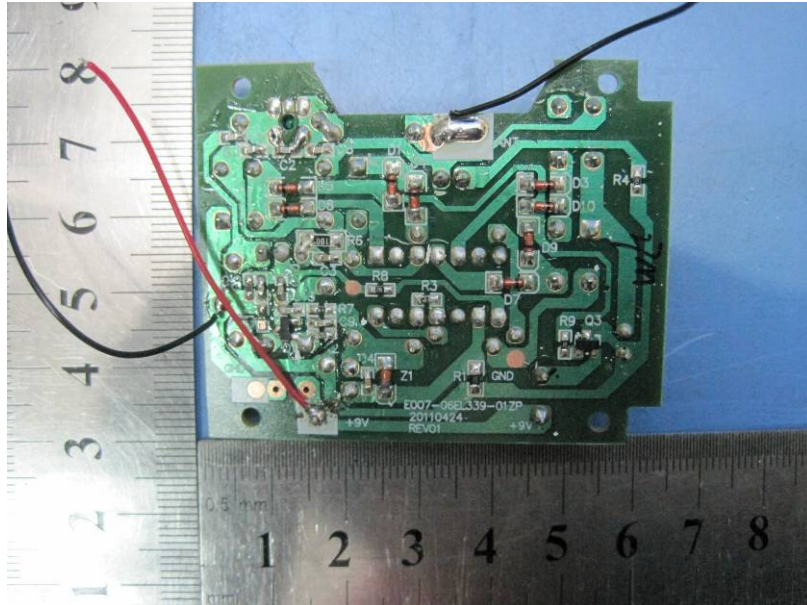


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## 8.5 PCB-Back View



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## 9 FCC ID Label

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1)this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Label must not be a stick-on paper. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT  
EUT Top View/ proposed FCC Label Location



=== End of Test Report ===

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