



## **STC Test Report**

Date : 2008-09-16

Page 1 of 18

No. : HM162445

**Applicant (NEB001):**

New Bright Industrial Co. Ltd.  
9/F, New Bright Building, 11 Sheung Yuet Road  
Kowloon Bay Hong Kong China

**Manufacturer:**

New Bright Industrial Co. Ltd.  
9/F, New Bright Building, 11 Sheung Yuet Road  
Kowloon Bay Hong Kong China

**Description of Samples:**

Product: Radio Control Toy Transmitter  
Brand Name: New Bright  
Model Number: G6D10855HK  
FCC ID: G6D10855HK

**Date Samples Received:**

2008-08-28

**Date Tested:**

2008-09-03

**Investigation Requested:**

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2006 and ANSI C63.4:2003 for FCC Certification.

**Conclusions:**

The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.

**Remarks:**

----

Dr. LEE Kam Chuen,  
ElectroMagnetic Compatibility Department  
For and on behalf of  
The Hong Kong Standards and Testing Centre Ltd.

**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Taiipo Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)



## STC Test Report

Date : 2008-09-16

Page 2 of 18

No. : HM162445

### **CONTENT:**

Cover	Page 1 of 18	
Content	Page 2-3 of 18	
<b><u>1.0</u></b>	<b><u>General Details</u></b>	
1.1	Test Laboratory	Page 4 of 18
1.2	Applicant Details	Page 4 of 18
	Applicant	
	Manufacturer	
1.3	Equipment Under Test [EUT]	Page 5 of 18
	Description of EUT operation	
1.4	Date of Order	Page 5 of 18
1.5	Submitted Samples	Page 5 of 18
1.6	Test Duration	Page 5 of 18
1.7	Country of Origin	Page 5 of 18
<b><u>2.0</u></b>	<b><u>Technical Details</u></b>	
2.1	Investigations Requested	Page 6 of 18
2.2	Test Standards and Results Summary	Page 6 of 18
<b><u>3.0</u></b>	<b><u>Test Results</u></b>	
3.1	Emission	Page 7-9 of 18
3.2	Bandwidth Measurement	Page 10-12 of 18

**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Taiipo Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Hom epage



## **STC Test Report**

Date : 2008-09-16

Page 3 of 18

No. : HM162445

### **Appendix A**

List of Measurement Equipment

Page 13 of 18

### **Appendix B**

Duty Cycle Correction During 100 msec

Page 14-16 of 18

### **Appendix C**

Photographs

Page 17-18 of 18

**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Taiipo Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Hom epage



## **STC Test Report**

Date : 2008-09-16

Page 4 of 18

No. : HM162445

### **1.0 General Details**

#### **1.1 Test Laboratory**

The Hong Kong Standards and Testing Centre Ltd.  
EMC Laboratory  
10 Dai Wang Street, Taipo Industrial Estate  
New Territories, Hong Kong

#### **1.2 Applicant Details** **Applicant**

New Bright Industrial Co. Ltd.  
9/F, New Bright Building, 11 Sheung Yuet Road  
Kowloon Bay Hong Kong China

#### **Manufacturer**

New Bright Industrial Co. Ltd.  
9/F, New Bright Building, 11 Sheung Yuet Road  
Kowloon Bay Hong Kong China

**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Taipo Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage



## **STC Test Report**

Date : 2008-09-16

Page 5 of 18

No. : HM162445

### **1.3 Equipment Under Test [EUT] Description of Sample**

Model Name:	Radio Control Toy Transmitter
Manufacturer:	New Bright Industrial Co. Ltd.
Brand Name:	New Bright
Model Number:	G6D10855HK
Input Voltage:	3Vd.c ("AA" size battery x 2)

#### **1.3.1 Description of EUT Operation**

The Equipment Under Test (EUT) is a New Bright Industrial Co. Ltd., Radio Control Toy Transmitter. The transmitter is a 2 joystick transmitter. The EUT continues to transmit while joystick is being pressed, It is pulse transmitter, Modulation by IC, and type is pulse modulation.

### **1.4 Date of Order**

2008-08-28

### **1.5 Submitted Sample(s):**

1 Sample

### **1.6 Test Duration**

2008-09-03

### **1.7 Country of Origin**

China

**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Taiipo Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Hom epage



## **STC Test Report**

Date : 2008-09-16

Page 6 of 18

No. : HM162445

### **2.0 Technical Details**

#### **2.1 Investigations Requested**

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2007 and ANSI C63.4:2003 for FCC Certification.

#### **2.2 Test Standards and Results Summary Tables**

<b>EMISSION Results Summary</b>					
Test Condition	Test Requirement	Test Method	Class / Severity	Test Result	
				Pass	Failed
Field Strength of Fundamental Emissions & Spurious Emissions	FCC 47CFR 15.235	ANSI C63.4:2003	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radiated Emissions, 30MHz to 1GHz	FCC 47CFR 15.209	ANSI C63.4:2003	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: N/A - Not Applicable

**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage



## STC Test Report

Date : 2008-09-16

Page 7 of 18

No. : HM162445

### **3.0 Test Results**

#### **3.1 Emission**

##### **3.1.1 Radiated Emissions (30 – 1000MHz)**

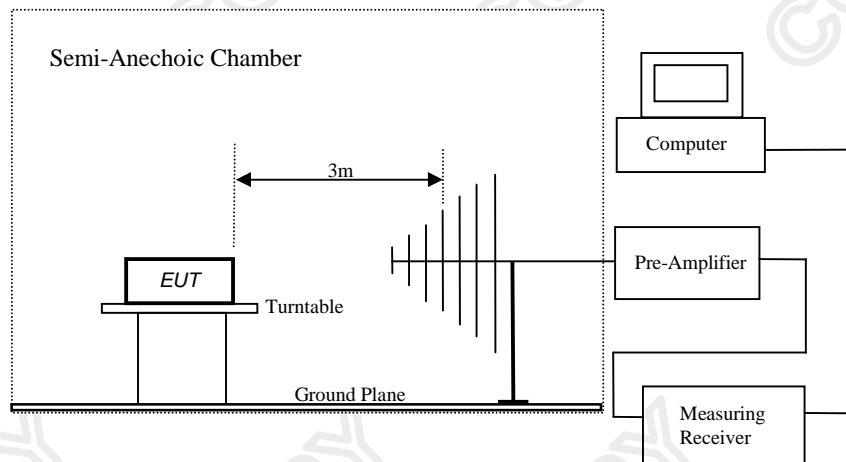
Test Requirement: FCC 47CFR 15.235  
Test Method: ANSI C63.4:2003  
Test Date: 2008-09-03  
Mode of Operation: Tx mode

#### **Test Method:**

The sample was placed 0.8m above the ground plane of Semi-Anechoic Chamber\*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

\* Semi-Anechoic Chamber located on the G/F of The Hong Kong Standards and Testing Centre Ltd. with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

#### **Test Setup:**



**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage



## STC Test Report

Date : 2008-09-16

Page 8 of 18

No. : HM162445

### Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.235]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [Peak] [ $\mu\text{V/m}$ ]	Field Strength of Fundamental Emission [Average] [ $\mu\text{V/m}$ ]
49.82-49.90	100,000	10,000

### Results:

Field Strength of Fundamental Emissions Peak Value						
Frequency MHz	Measured Level @3m dB $\mu\text{V}$	Correction Factor dB/m	Field Strength dB $\mu\text{V/m}$	Field Strength $\mu\text{V/m}$	Limit @3m $\mu\text{V/m}$	E-Field Polarity
49.86	63.4	9.7	73.1	4,518.6	100,000	Horizontal

Field Strength of Fundamental Emissions Average							
Frequency	Measured Level @3m dB $\mu\text{V}$	Adjusted by Duty Cycle	Correction Factor dB/m	Field Strength dB $\mu\text{V/m}$	Field Strength $\mu\text{V/m}$	Limit @3m $\mu\text{V/m}$	E-Field Polarity
49.86	58.9	-4.50	9.7	68.6	2,691.5	10,000	Horizontal

According to FCC 47CFR15.35, the limit on the radio frequency emissions as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.

### Remarks:

Correction Factor includes Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB

### The Hong Kong Standards and Testing Centre Ltd.

10 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage





## STC Test Report

Date : 2008-09-16

Page 9 of 18

No. : HM162445

### Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range [MHz]	Quasi-Peak Limits [ $\mu\text{V/m}$ ]
30-88	100
88-216	150
216-960	200
Above 960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

### Results:

Radiated Emissions Quasi-Peak						
Frequency MHz	Measured Level @3m dB $\mu\text{V}$	Correction Factor dB/m	Field Strength dB $\mu\text{V/m}$	Field Strength $\mu\text{V/m}$	Limit @3m $\mu\text{V/m}$	E-Field Polarity
99.72	17.5	10.1	27.6	24.0	150	Horizontal
149.58	< 1.0	10.3	< 11.3	< 3.7	150	Vertical
199.44	8.2	11.6	19.8	9.8	150	Horizontal
243.30	17.2	13.6	30.8	34.7	200	Horizontal
249.30	< 1.0	15.9	< 16.9	< 7.0	200	Vertical
299.16	< 1.0	15.3	< 16.3	< 6.5	200	Vertical
349.02	< 1.0	17.2	< 18.2	< 8.1	200	Vertical
398.88	< 1.0	17.3	< 18.3	< 8.2	200	Vertical
448.74	< 1.0	20.5	< 21.5	< 11.9	200	Vertical
498.60	< 1.0	20.6	< 21.6	< 12.0	200	Vertical

### Remarks:

No further spurious emissions found between lowest internal frequency and 30MHz.

Correction Factor includes Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB

### The Hong Kong Standards and Testing Centre Ltd.

10 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage



## **STC Test Report**

Date : 2008-09-16

Page 10 of 18

No. : HM162445

### **3.2 20dB Bandwidth of Fundamental Emission**

Test Requirement:	FCC 47 CFR 15.235
Test Method:	ANSI C63.4:2003 (Section 13.1.7)
Test Date:	2008-09-03
Mode of Operation:	On mode

#### **Test Method:**

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

#### **Test Setup:**

As Test Setup of clause 3.1.1 in this test report.

**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Taiipo Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage



## STC Test Report

Date : 2008-09-16

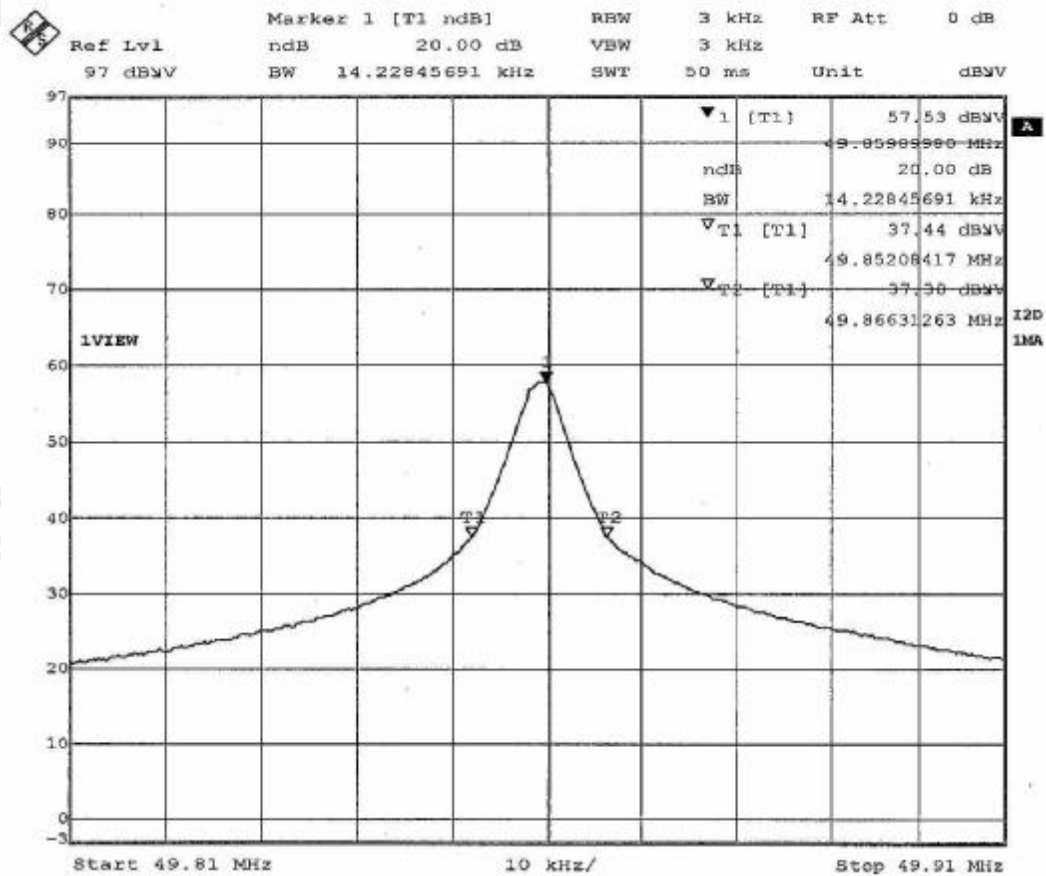
Page 11 of 18

No. : HM162445

### Limits for 20dB Bandwidth of Fundamental Emission:

Frequency Range [MHz]	20dB Bandwidth [KHz]	FCC Limits [MHz]
49.86	14.23	within 49.82-49.90

### 20dB Bandwidth of Fundamental Emission



### The Hong Kong Standards and Testing Centre Ltd.

10 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage



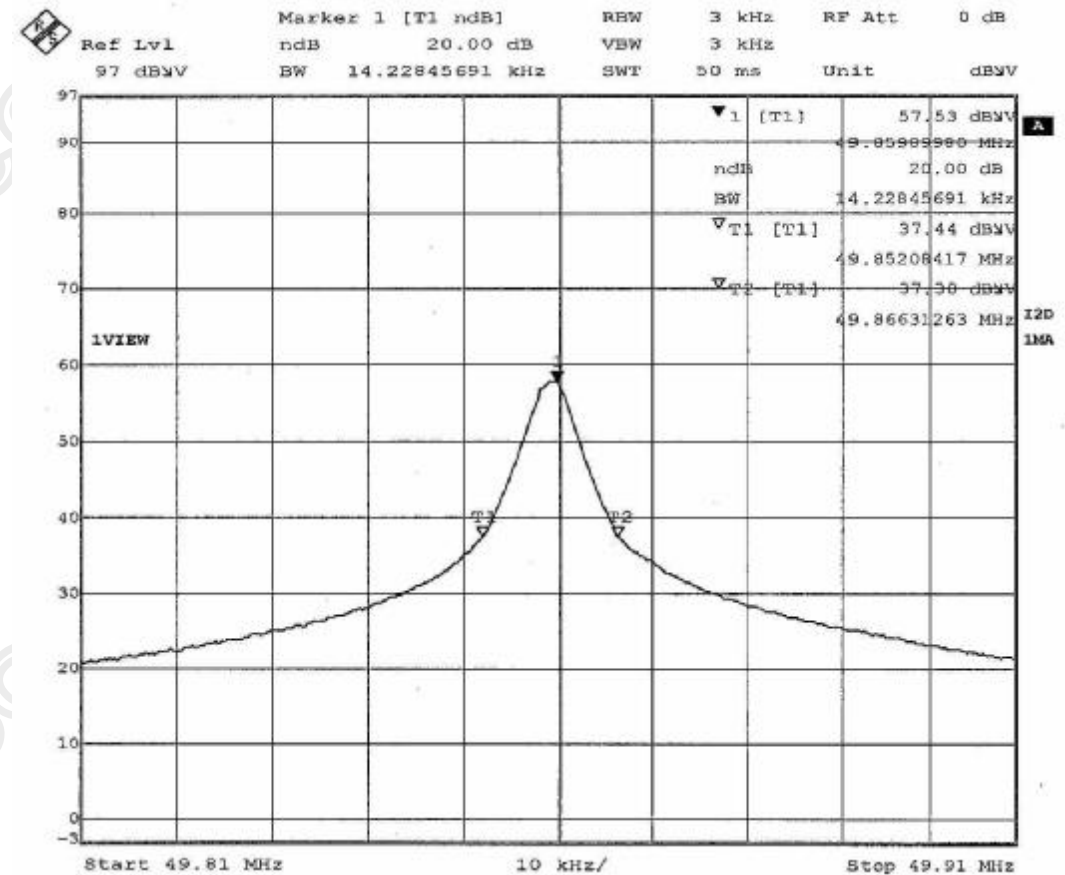
## STC Test Report

Date : 2008-09-16

Page 12 of 18

No. : HM162445

### 20dB Bandwidth of Fundamental Emission



The Hong Kong Standards and Testing Centre Ltd.

10 Dai Wang Street, Taiipo Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Hom epage



## STC Test Report

Date : 2008-09-16

Page 13 of 18

No. : HM162445

### Appendix A

#### List of Measurement Equipment

##### Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A
EM216	MINI MAST SYSTEM	EMCO	2075	00026842	N/A	N/A
EM217	ELECTRIC POWERED TURNABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-Linggren	FACT-3	--	2006/05/02	2009/05/02
EM174	BICONILOG ANTENNA	EMCO	3142C	00029071	2008/01/24	2009/01/24
EM181	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB7	100072	2008/06/16	2009/06/16
EM022	LOOP ANTENNA	EMCO	6502	1189-2424	2006/07/26	2009/07/26

#### Remarks:-

CM Corrective Maintenance  
N/A Not Applicable or Not Available  
TBD To Be Determined

**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Taiipo Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage



## STC Test Report

Date : 2008-09-16

Page 14 of 18

No. : HM162445

### Appendix B

#### Duty Cycle Correction During 100msec

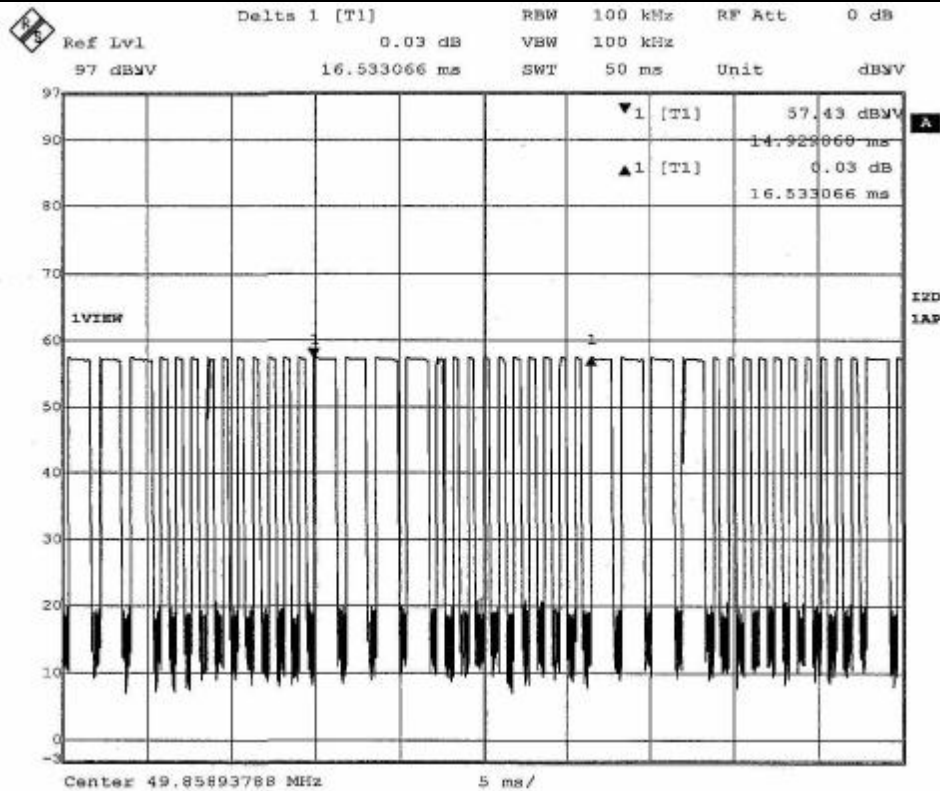
Each function key sends a different series of characters, but each packet period (16.53msec) never exceeds a series of 4 long (1.36msec) and 10 short (0.441msec) pulses. Assuming any combination of short and long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered  $(4 \times 1.36) + (10 \times 0.441)$  msec per 16.53msec = 59.6% duty cycle. Figure A through C show the characteristics of the pulse train for one of these functions.

Remarks:

Duty Cycle Correction =  $20\log(0.596) = -4.5\text{dB}$

The following figures [Figure A to Figure B] show the characteristics of the pulse train for one of these functions.

Figure A [Pulse Train]



The Hong Kong Standards and Testing Centre Ltd.

10 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage



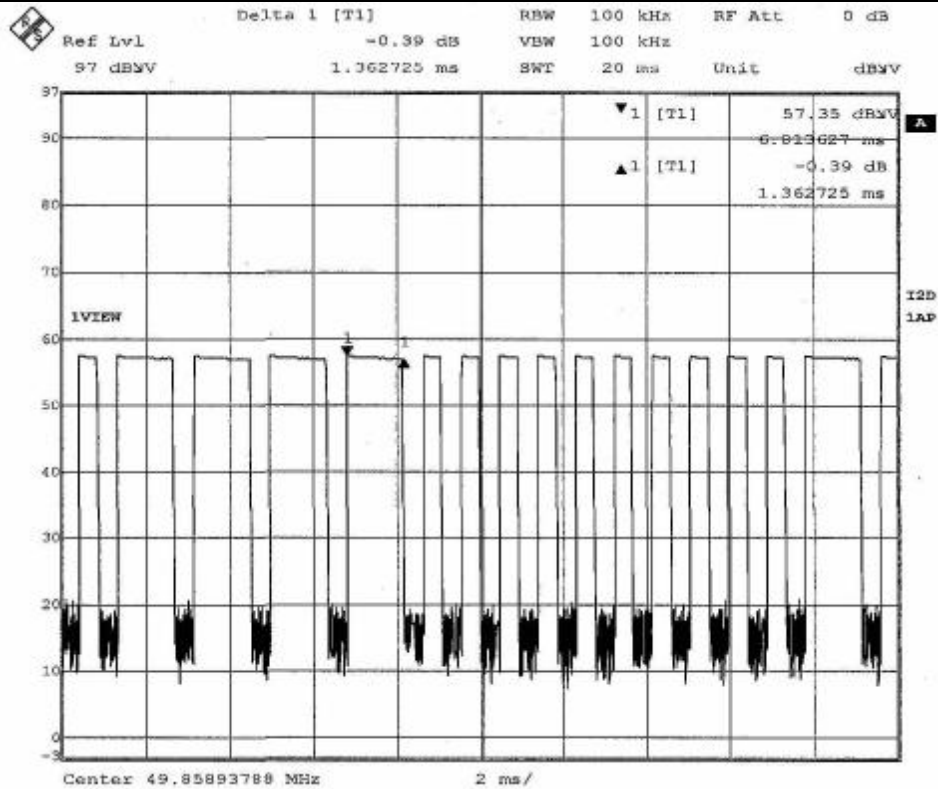
## STC Test Report

Date : 2008-09-16

Page 15 of 18

No. : HM162445

Figure B [Long Pulse period]



**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage



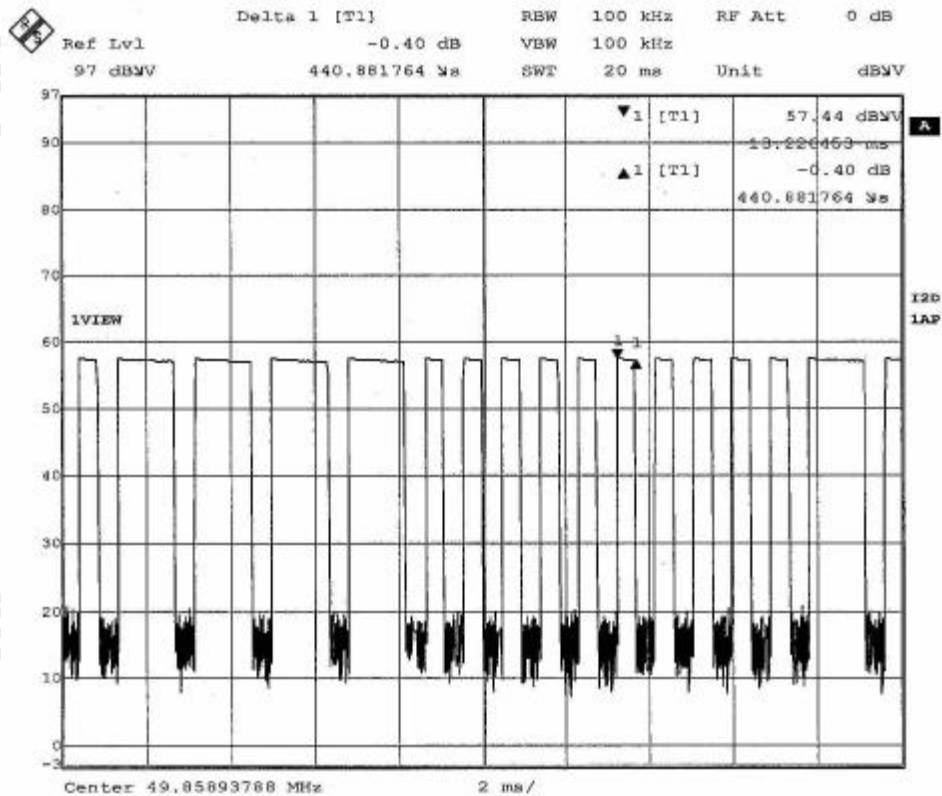
## STC Test Report

Date : 2008-09-16

Page 16 of 18

No. : HM162445

Figure B [Short Pulse period]



**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage





## **STC Test Report**

Date : 2008-09-16

Page 17 of 18

No. : HM162445

### **Appendix C**

#### **Photographs of EUT**

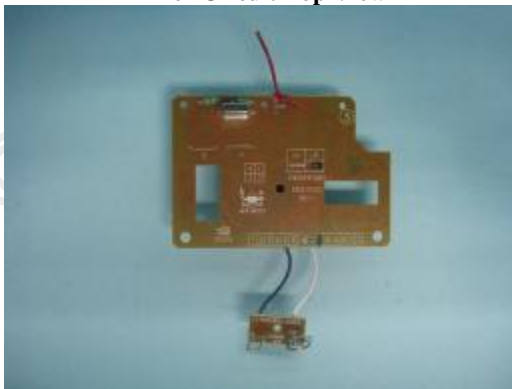
**Front View of the product**



**Rear View of the product**



**Inner Circuit Top View**



**Inner Circuit Bottom View**



**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage



## **STC Test Report**

Date : 2008-09-16

Page 18 of 18

No. : HM162445

### **Photographs of EUT**

**Measurement of Radiated Emission Test Set Up**



**\*\*\*\*\* End of Test Report \*\*\*\*\***

**The Hong Kong Standards and Testing Centre Ltd.**

10 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: [www.hkstc.org](http://www.hkstc.org) E-mail: [hkstc@hkstc.org](mailto:hkstc@hkstc.org)

This report shall not be reproduced unless with prior written approval from The Hong Kong Standards and Testing Centre Ltd.  
For Conditions of Issuance of this test report, please refer to the overleaf or Homepage