

GLOBAL TESTING & CERTIFICATION CENTRE LTD.

# FCC TEST REPORT

Application No.: 08012343 (Tx)

Rm09, 5/F Wah Wai Ind Ctr, 38-40 Au Pui Wan Street, Fotan Shatin, N.T., Hong Kong  
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## TABLE OF CONTENTS

Cover Sheet	-----	p. 1
Table of Contents	-----	p. 2
General Details	-----	p. 3 ~ p. 4
Summary of Test Results	-----	p. 5
Radiation Emission Test	-----	p. 6 ~ p. 7
Conducted Emission Test	-----	p. 8
Bandwidth Measurement	-----	p. 9 ~ p. 10
Appendix A List of Measurement Equipment	-----	p. 11
Appendix B Duty Cycle correction During 100msec	-----	p. 12 ~ p. 13
Appendix C Test Sample (Photos)	-----	p. 14 ~ p. 15

REPORT NO.: 08012343 (Tx)

DATE: 28 January, 2008

APPLICANT: Western Rivers, Inc.  
ADDRESS: 1582 North Board Street,  
Lexington,  
Tennessee 38351.

DATE OF RECEIVED: 11 January, 2008

DATE OF TESTING: 11 January, 2008 to 25 January, 2008


DESCRIPTION OF SAMPLE:  
Product: Nite Stalker  
Brand Name: Western Rivers  
Model No.: 365  
FCC ID: V32WRNS365T  
Input Voltage: DC9V (6F22 x 1)

Description of EUT Operation The EUT is a MP3 electronic game caller whose operations can be controlled by its key-pad entry or by a remote control. The remote transfers operation commands at single direction to the game caller at ISM 418MHz radio frequency in ASK modulation. The EUT is powered by 9V 6F22 size battery.

INVESTIGATION REQUESTED: FCC PART 15 SUBPART C

TEST RESULTS: See attached sheets

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 page 5 in this Test report.

  
CS Lin, EMC  
for Chief Executive

REPORT NO.: 08012343 (Tx)

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### **General Details**

#### **Test Laboratory**

GLOBAL TESTING & CERTIFICATION CENTRE LTD.  
EMC Laboratory  
Rm09, 5/F Wah Wai Ind. Ctr, 38-40 Au Pui Wan Street,  
Fotan Shatin, N.T., Hong Kong

Telephone: 852 2320 0326  
Fax: 852 2320 6287

#### **Applicant Details**

##### **Applicant**

Western Rivers, Inc.  
1582 North Board Street,  
Lexington, Tennessee 38351.

### **Manufacturer**

Suga Electronics Limited  
Units 1904-1906, 19/F,  
Chevalier Commercial Centre,  
8 Wang Hoi Road,  
Kowloon Bay, Hong Kong

REPORT NO.: 08012343 (Tx)

DATE: 28 January, 2008

### Technical Details

#### Investigations Requested

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

#### Test Standards and Results Summary Tables

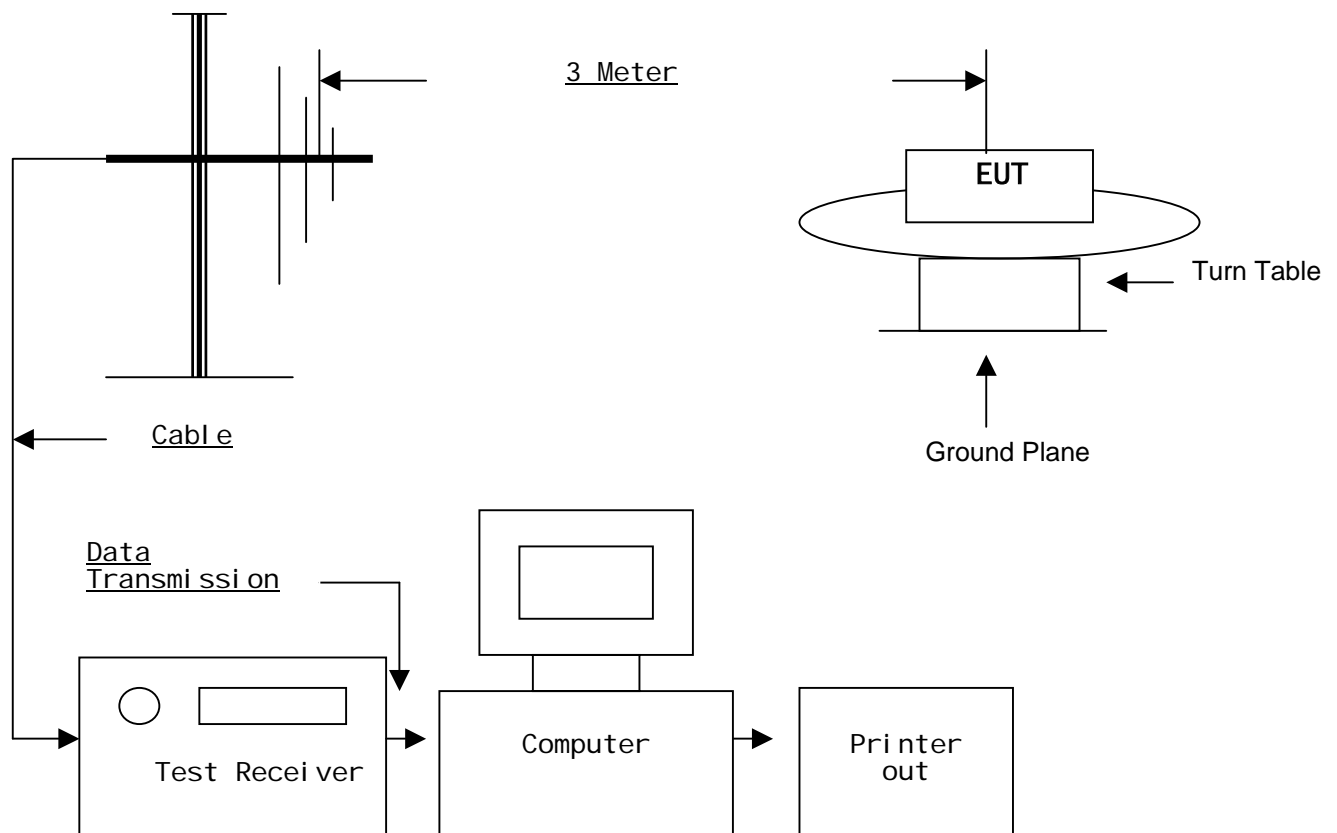
EMISSION Results Summary					
Test Condition	Test Requirement	Test Method	Test Result		
			Pass	Failed	N/A
Radiated Emissions,	FCC 47CFR 15.231	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conducted Emissions on AC, 0.15MHz to 30MHz	FCC 47CFR 15.207	ANSI C63.4:2003	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: N/A – Not Applicable

## Test Results

### Emi ssi on

#### Radi ation Emi ssi on Measurement Setup di agram:



#### Test Method:

The sample was placed 0.8m above the ground plane on the OATS\*. 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.

\*. OATS [Open Area Test Site] located at GTC with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules. With Registration Number: 493655

REPORT NO.: 08012343 (Tx)

DATE: 28 January, 2008

## Radiation Emissions Measurement

Appl. : Western Rivers, Inc.  
Model : 365  
Operation: TX Mode

Test Requirement: FCC 47CFR 15.231  
Test Method: ANSI C63.4: 2003  
Test Date: 2008-01-19

### Results:

Fundamental Frequency [MHz]	Field Strength Of Fundamental dBuV	Field Strength of harmonics and Spurious Emissions (dBuV/m @3m)
40.66 to 40.70	67.04	47.04
70 to 130	61.94	41.94
130 to 174	61.94 to 71.48	41.94 to 51.48
174 to 260	71.48	51.48
260 to 470	71.48 to 81.94	51.48 to 61.94
470 and above	81.94	61.94

The limit for average field strength dBuV/m for the fundamental frequency= 80.28dBuV/m. No fundamental is allowed in the restricted bands.

The limit for average field strength dBuV/m for the harmonics and spurious frequencies= 60.28 dBuV/m. Spurious in the restricted bands must be less than 54 dBuV/m or 15.209.

Radiated Emissions Average						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Duty Cycle Factor dB	Field Strength dBuV/m	Limit @3m dBuV/m	E-Field Polarity
418.0	65.0	18.7	-10.9	72.8	80	Vertical
836.0	28.0	26.0	-10.9	43.1	60	Horizontal
1254.0	20.0	26.1	-10.9	35.2	60	Horizontal
1672.0	20.0	28.3	-10.9	37.4	60	Horizontal
2090.0	16.0	28.6	-10.9	33.7	60	Horizontal
2508.0	14.0	29.0	-10.9	32.1	60	Horizontal
2926.0	10.0	30.5	-10.9	29.6	60	Horizontal
3344.0	9.0	30.9	-10.9	29.0	60	Horizontal

Remarks:  
Correction Factor included Antenna Factor and Cable Attenuation.

REPORT NO.: 08012343 (Tx)

DATE: 28 January, 2008

## Conducted Emission on AC (0.15MHz to 30MHz)

Appl. : Western Rivers, Inc.  
Model : 365  
Operation: N/A

Test Requirement: FCC 47CFR 15.207  
Test Method: ANSI C63.4: 2003  
Test Date: N/A

Results: N/A

The EUT is operated by a single source of internal battery power [located in the battery compartment], therefore power line conducted emission was deemed unnecessary.



REPORT NO.: 08012343 (Tx)

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## Occupied Bandwidth

Appl. : Western Rivers, Inc.  
Model : 365  
Operation: TX mode

**Test Requirement:** FCC 47CFR 15.231 (C)  
The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating between 70 and 900MHz. Bandwidth is determined at the points 20dB down from the modulated carrier.

$$418.00\text{MHz} * 0.0025 = 1.045 \text{ MHz}$$
$$1.045 \text{ MHz} / 2 = \pm 522.5$$

**Test Date:** 2008-01-14

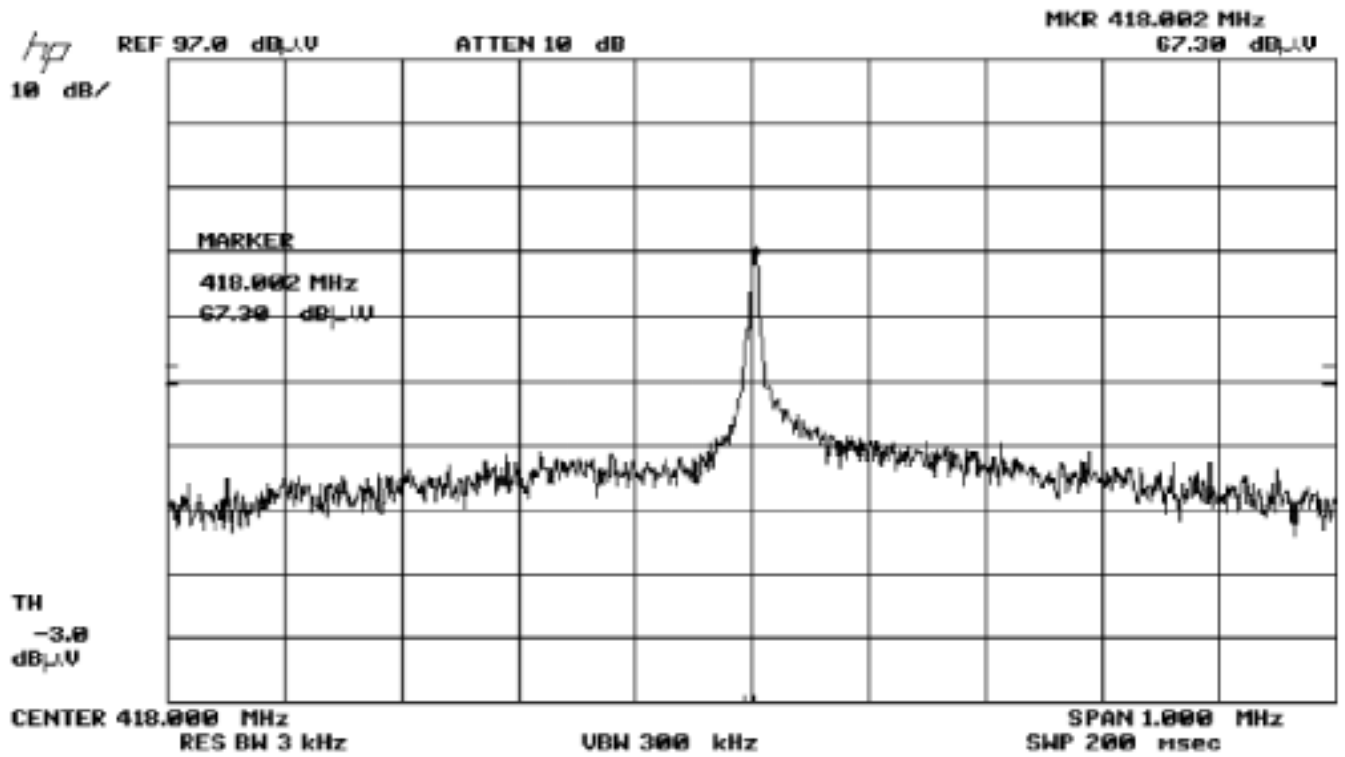
### **Test Method:**

A small sample of the transmitter output was fed into the spectrum analyzer and the plot in exhibit 9 was generated. The vertical scale is set to 10dB per division: the horizontal scale is set to 100kHz per division.

The Graphs in the following pages represents the emissions taken for the device.

REPORT NO.: 08012343 (Tx)

DATE: 28 January, 2008



REPORT NO.: 08012343 (Tx)

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## **APPENDIX A**

### **LIST OF MEASUREMENT EQUIPMENT**

<b><u>Equi. No.</u></b>	<b><u>Equipment</u></b>	<b><u>Manufacturer</u></b>	<b><u>Model No.</u></b>	<b><u>Serial No.</u></b>	<b><u>Calibration Date</u></b>	<b><u>Due Date</u></b>
E005	EMI Test Receiver	Rohde & Schwarz	ESVP	893417/019	21 Sep 2007	20 Sep 2008
E003	Spectrum Analyzer With Q/P	Tektronix	2712	B034039	21 Sep 2007	20 Sep 2008
E004	RF Preselector	Tektronix	2706	B010649	21 Sep 2007	20 Sep 2008
E057	EMI Test Receiver	Rohde & Schwarz	ESVP	863112/007	17 Aug 2007	16 Aug 2008
E084	Spectrum Analyzer	Hewlett Packard	HP 8568B	3001A04930	07 Jul 2006	06 Jul 2008
E085	Displayer of Spectrum Analyzer	Hewlett Packard	HP 85662A	2033A01841	07 Sep 2006	06 Sep 2008
E086	Quasi-Peak Adaptor	Hewlett Packard	HP 85650A	2527A00785	07 Sep 2006	06 Sep 2008
E090	RF Signal Generator	Rohde & Schwarz	SMX	832566/005	04 Mar 2007	03 Mar 2008
E001	Antenna System	Schwarzbeck	D-6917	UHALP9107	04 Mar 2007	03 Mar 2008
E002	Antenna System	Schwarzbeck	VHA9103	VHA91031253	04 Mar 2007	03 Mar 2008
E008	LISN	EMCO	3825/2	1115	20 Sep 2005	19 Sep 2008
E115	Limiter 50 Ohm DC~1800MHz	Hewlett Packard	11867A	-----	04 Mar 2007	03 Mar 2008
E100	Turntable	Chi oce Way	TB1200	51112	-----	-----
E006	RF Signal Generator	Fluke	6060A	3880007	04 Mar 2007	03 Mar 2008
E092	Antenna Tripole	IT&T	UH800100	A05011	04 Mar 2007	03 Mar 2008
E098	Pre-Amplifier	Hewlett Packard	8447D	2944A09089	04 Mar 2007	03 Mar 2008
E099	Antenna Mast	Schwarzbeck	AM9014	-----	-----	-----
E113	Spectrum Analyzer	Hewlett Packard	HP8566B	2747A05483	07 Sep 2006	06 Sep 2008

## APPENDIX B

### Duty Cycle Correction During 100msec

Each function key sends a different series of characters, but each packet period (35.2msec) never exceeds a series of 1 long (4.9msec) and 17 short (300usec) pulses. Assuming any combination of short and long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered  $1 \times 4.9\text{msec} + 17 \times 300\text{usec}$  per  $35.2\text{msec} = 28.4\%$  duty cycle. Figure A through C show the characteristics of the pulse train for one of these functions.

Remarks:

Duty Cycle Correction  $= 20\text{Log}(0.284) = -10.9\text{dB}$

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

**Figure A [Pulse Train]**

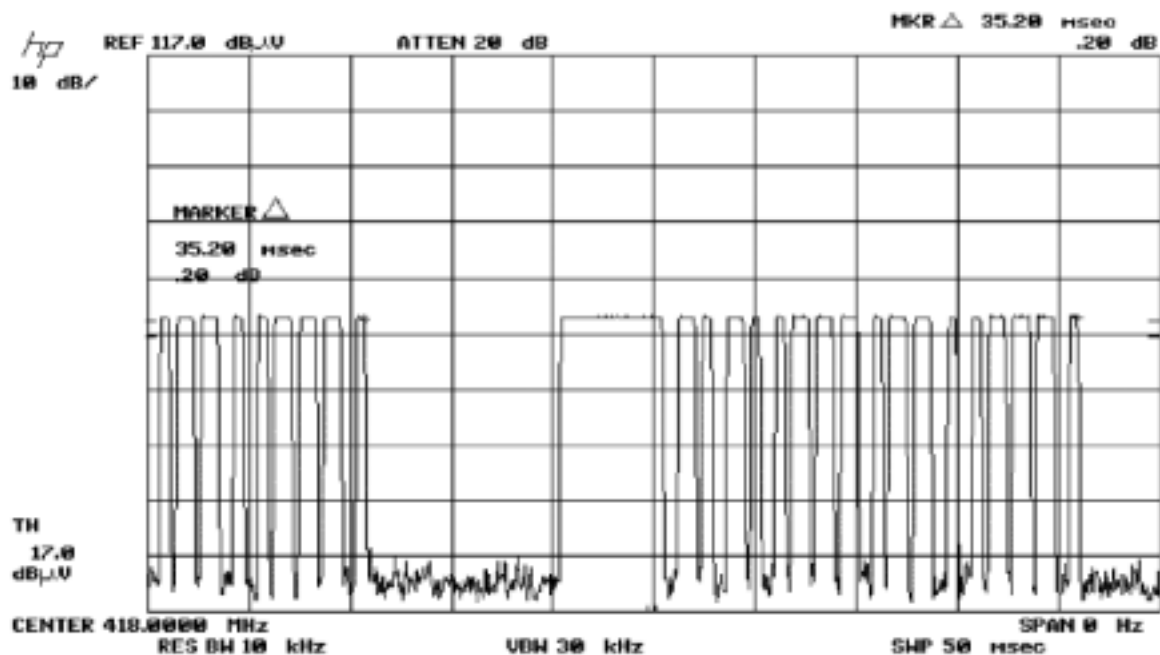


Figure B [Long Pulse]

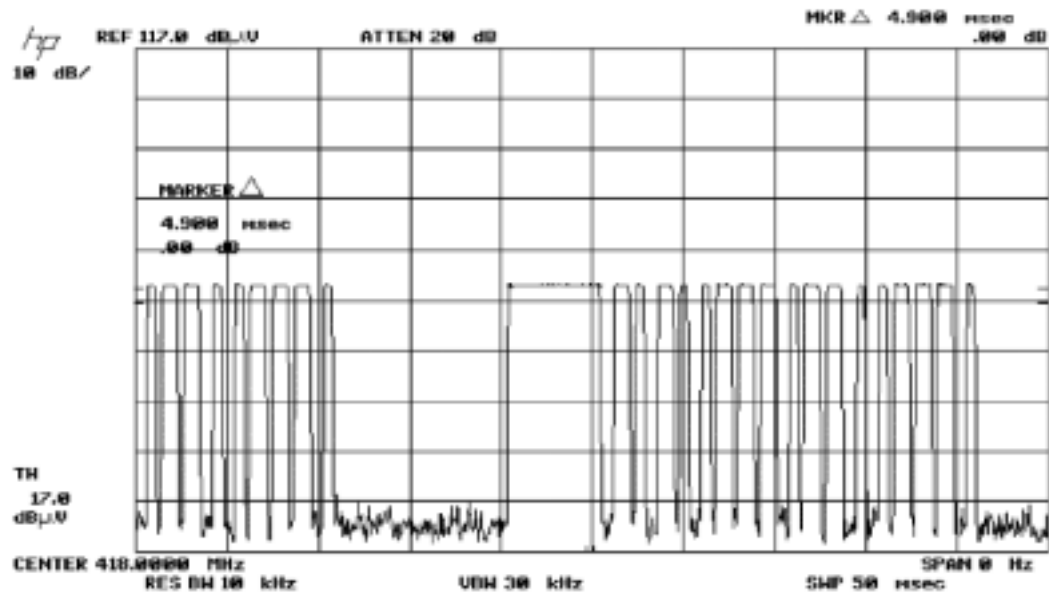
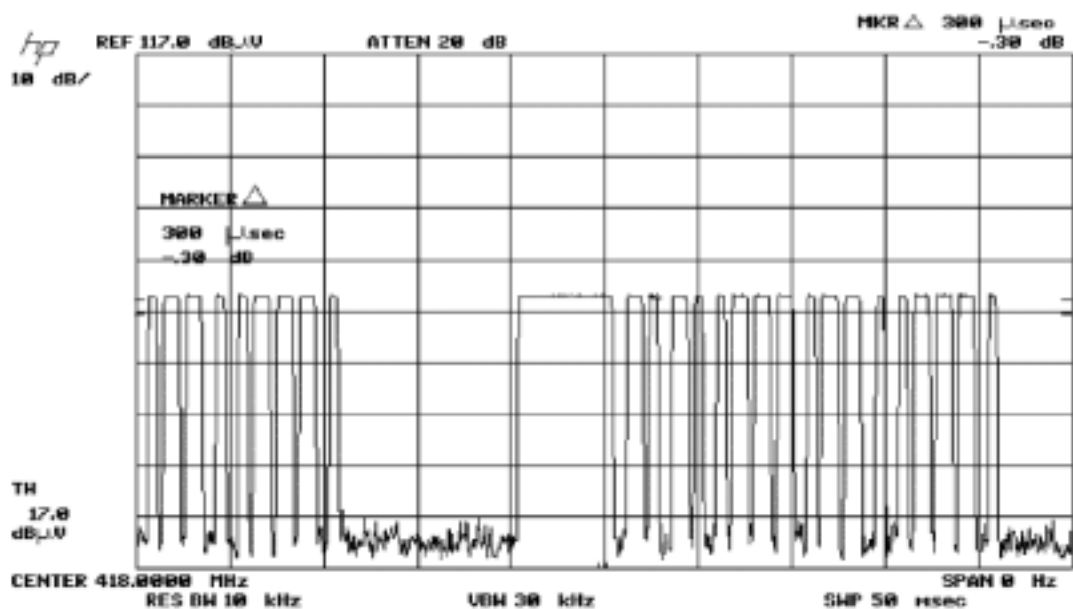


Figure C [Short Pulse]



## APPENDIX C

### Photos of EUT

Front View of the product



Rear View of the product



Component Side View

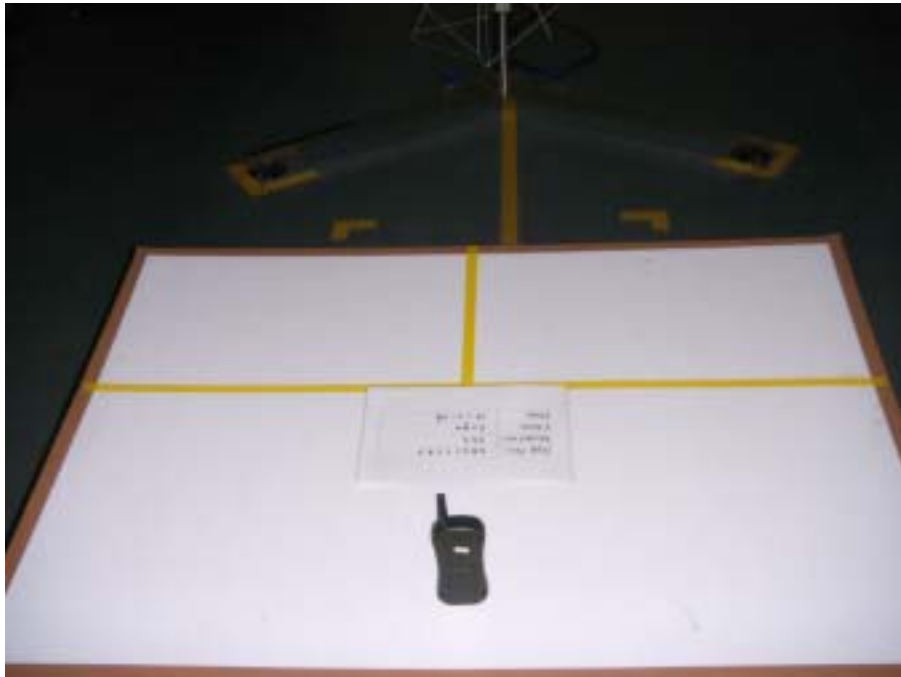


Copper Side View



## Photos of EUT

### Measurement of Radiated Emission Test Set up



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