



STC Test Report

Date : 2008-01-21

Page 1 of 18

No. : HM160631

Applicant (Code DAI001): Dayton Industrial Co., Ltd.
2-12 Kwai Fat Road, 11-A, Kwai Chung,
New Territories, Hong Kong.

Manufacturer: Dayton Industrial Co., Ltd.
2-12 Kwai Fat Road, 11-A, Kwai Chung,
New Territories, Hong Kong.

Description of Samples:

| | |
|---------------|----------------|
| Product: | Neuro 6.0 |
| Brand Name: | Bell Sport |
| Model Number: | Neuro 6.0 |
| FCC ID: | O4G-BELLCOMB-A |

Date Samples Received: 2007-11-22

Date Tested: 2007-11-22 to 2008-01-11

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.

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STC Test Report

Date : 2008-01-21

Page 2 of 18

No. : HM160631

CONTENT:

| | |
|---|-----------------|
| Cover | Page 1 of 18 |
| Content | Page 2-3 of 18 |
| <u>1.0</u> <u>General Details</u> | |
| 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 Sample | Page 5 of 18 |
| 1.6 Test Duration | Page 5 of 18 |
| 1.7 Country of Origin | Page 5 of 18 |
| <u>2.0</u> <u>Technical Details</u> | |
| 2.1 Investigations Requested | Page 6 of 18 |
| 2.2 Test Standards and Results Summary | Page 6 of 18 |
| <u>3.0</u> <u>Test Results</u> | |
| 3.1 Radiated Emission | Page 7-12 of 18 |

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STC Test Report

Date : 2008-01-21

Page 3 of 18

No. : HM160631

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

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STC Test Report

Date : 2008-01-21

Page 4 of 18

No. : HM160631

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

Dayton Industrial Co., Ltd.
2-12 Kwai Fat Road, 11-A, Kwai Chung,
New Territories, Hong Kong.

Manufacturer

Dayton Industrial Co., Ltd.
2-12 Kwai Fat Road, 11-A, Kwai Chung,
New Territories, Hong Kong.

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STC Test Report

Date : 2008-01-21

Page 5 of 18

No. : HM160631

1.3 Equipment Under Test [EUT]

Description of Sample

Model Name: Neuro 6.0
Manufacturer: Dayton Industrial Co., Ltd.
Brand Name: Bell Sport
Model Number: Neuro 6.0
Input Voltage: 3Vd.c. ("CR2032" button cell x 1)

1.3.1 Description of EUT Operation

The Equipment Under Test (EUT) is a Dayton Industrial Co., Ltd., Neuro 6.0, the transmission signal is frequency hopping with channel frequency range 2.456.8MHz.

1.4 Date of Order

2007-11-22

1.5 Submitted Sample(s):

1 Sample

1.6 Test Duration

2007-11-22 to 2008-01-11

1.7 Country of Origin

China

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STC Test Report

Date : 2008-01-21

Page 6 of 18

No. : HM160631

2.0 Technical Details

2.1 Investigations Requested

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

2.2 Test Standards and Results Summary Tables

| EMISSION Results Summary | | | | | | |
|---|------------------|-----------------|---------------------|-------------------------------------|--------------------------|--------------------------|
| Test Condition | Test Requirement | Test Method | Class / Severity | Test Result | | |
| | | | | Pass | Fail | N/A |
| Field Strength of Fundamental & Harmonics Emissions | FCC 47CFR 15.249 | ANSI C63.4:2003 | N/A | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Radiated Emissions | FCC 47CFR 15.209 | ANSI C63.4:2003 | N/A | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Note: N/A - Not Applicable

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STC Test Report

Date : 2008-01-21

Page 7 of 18

No. : HM160631

3.0 Test Results

3.1 Emission

3.1.1 Radiated Emissions

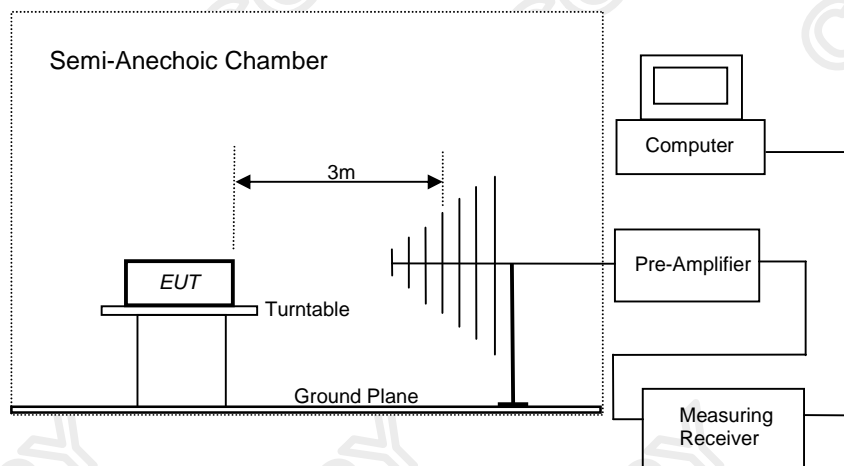
Test Requirement: FCC 47CFR 15.249 & 15.209
Test Method: ANSI C63.4:2003
Test Date: 2008-01-11
Mode of Operation: Tx mode (Speed Transmitter)

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 HKSTC with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

Test Setup:



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STC Test Report

Date : 2008-01-21

Page 8 of 18

No. : HM160631

Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:

| Frequency Range of Fundamental [MHz] | Field Strength of Fundamental Emission [microvolts/meter] | Field Strength of Harmonics Emission [microvolts/meter] |
|---|--|--|
| 902-928 | 50,000 [Average] | 500 [Average] |
| 2400-2483.5 | 50,000 [Average] | 500 [Average] |

Results of On Mode (Speed Transmitter): Pass

| Field Strength of Fundamental Emissions Peak Value | | | | | | |
|---|------------------------------------|-----------------------------------|--------------------------------|-----------------------------|------------------------|------------------|
| Frequency MHz | Measured Level @3m dB μ V/m | Correction Factor dB μ V/m | Field Strength dB μ V/m | Field Strength μ V/m | Limit @3m μ V/m | E-Field Polarity |
| 2456.8 | 34.8 | 30.1 | 64.9 | 1,757.9 | 50,000 | Horizontal |
| * 4913.6 | No Emission Detected | | | | 500 | Vertical |
| * 7370.4 | | | | | 500 | Vertical |
| 9827.2 | | | | | 500 | Vertical |
| * 12284.0 | | | | | 500 | Vertical |
| 14740.8 | | | | | 500 | Vertical |
| 17197.6 | | | | | 500 | Vertical |
| * 19654.4 | | | | | 500 | Vertical |
| * 22111.2 | | | | | 500 | Vertical |
| 24568.0 | | | | | 500 | Vertical |

| Field Strength of Fundamental Emissions Average Value | | | | | | |
|--|--------------------------------------|-----------------------------------|--------------------------------|-----------------------------|------------------------|------------------|
| Frequency MHz | Calculated Level @3m dB μ V/m | Correction Factor dB μ V/m | Field Strength dB μ V/m | Field Strength μ V/m | Limit @3m μ V/m | E-Field Polarity |
| 2456.8 | 14.8 | 30.1 | 44.9 | 175.8 | 50,000 | Horizontal |

Remarks:

- *: Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000 MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

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STC Test Report

Date : 2008-01-21

Page 9 of 18

No. : HM160631

Limits for Radiated Emissions [FCC 47 CFR 15.209]:

| Frequency Range [MHz] | Quasi-Peak Limits [$\mu\text{V}/\text{m}$] |
|--------------------------|---|
| 30-88 | 100 |
| 88-216 | 150 |
| 216-960 | 200 |
| Above960 | 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 of On Mode (Speed Transmitter): PASS

| Radiated Emissions Quasi-Peak | | | | | | |
|----------------------------------|---|------------------------------|--|---|-------------------------------------|---------------------|
| Frequency MHz | Measured Level @3m dB μV | Correction Factor dB/m | Field Strength dB $\mu\text{V}/\text{m}$ | Field Strength $\mu\text{V}/\text{m}$ | Limit @3m $\mu\text{V}/\text{m}$ | E-Field Polarity |
| 4914.3 | 8.4 | 35.2 | 43.6 | 151.4 | 500 | Horizontal |

Remarks:

Correction Factor includes Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

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STC Test Report

Date : 2008-01-21

Page 10 of 18

No. : HM160631

3.2 Bandwidth of Fundamental Emission

Test Requirement: FCC 47 CFR 15.249
Test Method: ANSI C63.4:2003
Test Date: 2008-01-11
Mode of Operation: On mode (Speed Transmitter)

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.

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Date : 2008-01-21

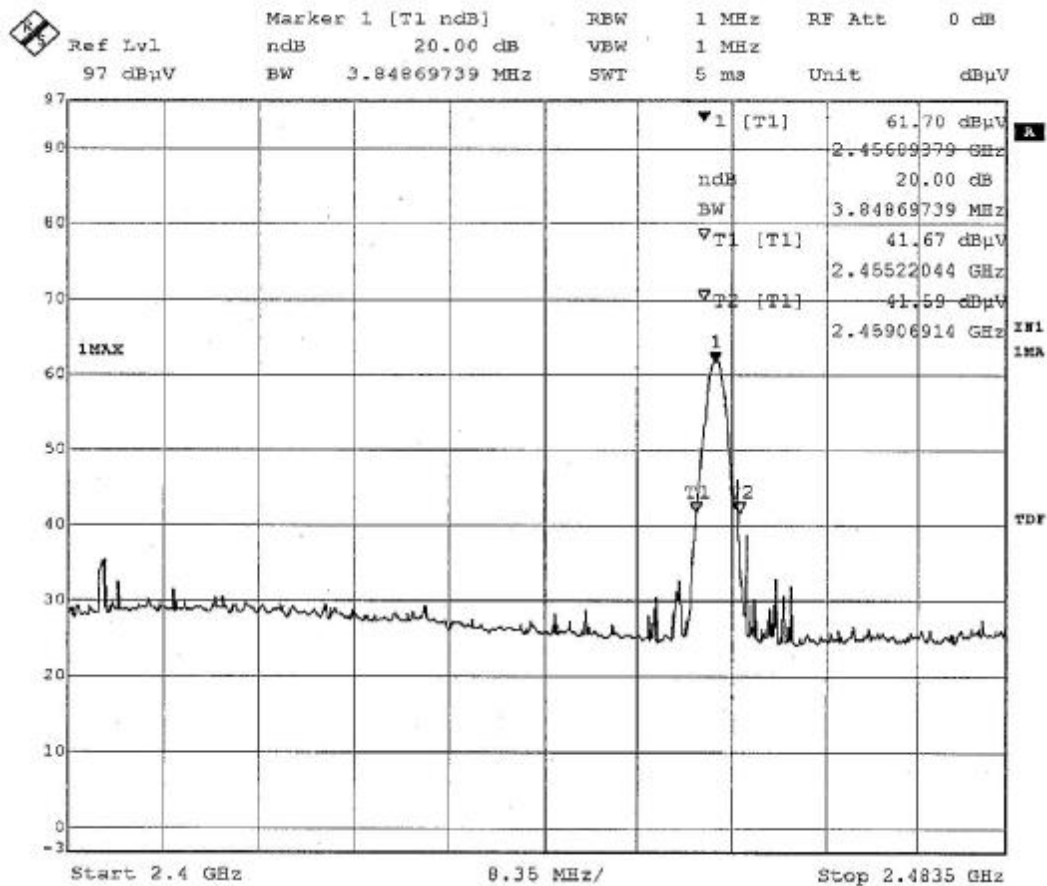
Page 11 of 18

No. : HM160631

Limits for Bandwidth of Fundamental Emission:

| Frequency Range [MHz] | Bandwidth [KHz] |
|--------------------------|--------------------|
| 2456.8 | 3.84 |

20dB Bandwidth of Fundamental Emission



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STC Test Report

Date : 2008-01-21

Page 13 of 18

No. : HM160631

Appendix A

List of Measurement Equipment

Radiated Emission

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL | DUE CAL |
|---------|----------------------------|-----------------|-----------|------------|-------------|------------|
| EM020 | HORN ANTENNA | ETS-LINGGREN | 3115 | 4032 | 2006/07/11 | 2008/07/11 |
| EM022 | LOOP ANTENNA | ETS-LINGGREN | 6502 | 1189-2424 | 2006/07/26 | 2008/07/26 |
| EM181 | EMI TEST RECEIVER | ROHDE & SCHWARZ | ESIB 7 | 100072 | 22007/06/08 | 2008/06/08 |
| EM215 | MULTIDEVICE CONTROLER | ETS-LINGGREN | 2090 | 00024676 | N/A | N/A |
| EM216 | MINI MAST SYSTEM | ETS-LINGGREN | 2075 | 00026842 | N/A | N/A |
| EM217 | ELECTRIC POWERED TURNTABLE | ETS-LINGGREN | 2088 | 00029144 | N/A | N/A |
| EM218 | ANECHOIC CHAMBER | ETS-LINGGREN | FACT-3 | -- | 2007/05/02 | 2008/05/02 |
| EM219 | BICONILOG ANTENNA | ETS-LINGGREN | 3142C | 00029071 | 2006/02/01 | 2008/02/01 |
| EM229 | EMI TEST RECEIVER | ROHDE & SCHWARZ | ESIB 40 | 100248 | 2007/07/11 | 2008/07/11 |

Remarks:-

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

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STC Test Report

Date : 2008-01-21

Page 14 of 18

No. : HM160631

Appendix B

Duty Cycle Correction During 100msec

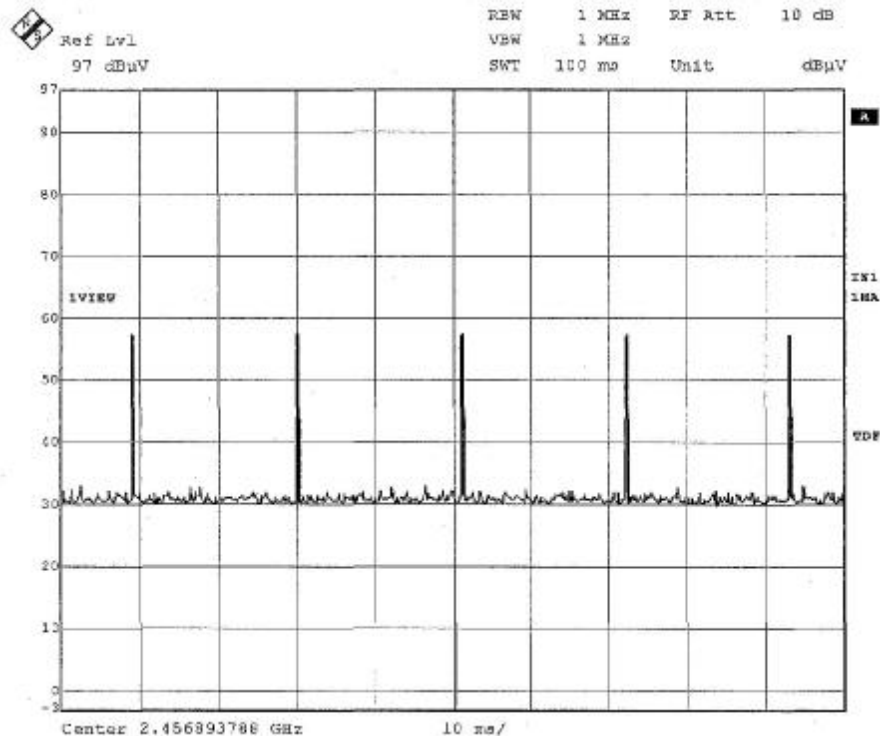
Each function key sends a different series of characters, but each pulse period (87.1 μ sec) never exceeds a series of 5 long (190.38 μ sec) and 5 short (180.36 μ sec) pulses. Assuming any combination of short and long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered $5 \times 190.38 \mu\text{sec}$ per $87.1 \text{msec} = 0.01\%$ duty cycle. Figure A through C show the characteristics of the pulse train for one of these functions.

Remarks:

Duty Cycle Correction = $20 \log(0.01) = -39.2 \text{dB}$

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

Figure A [Pulse Train]



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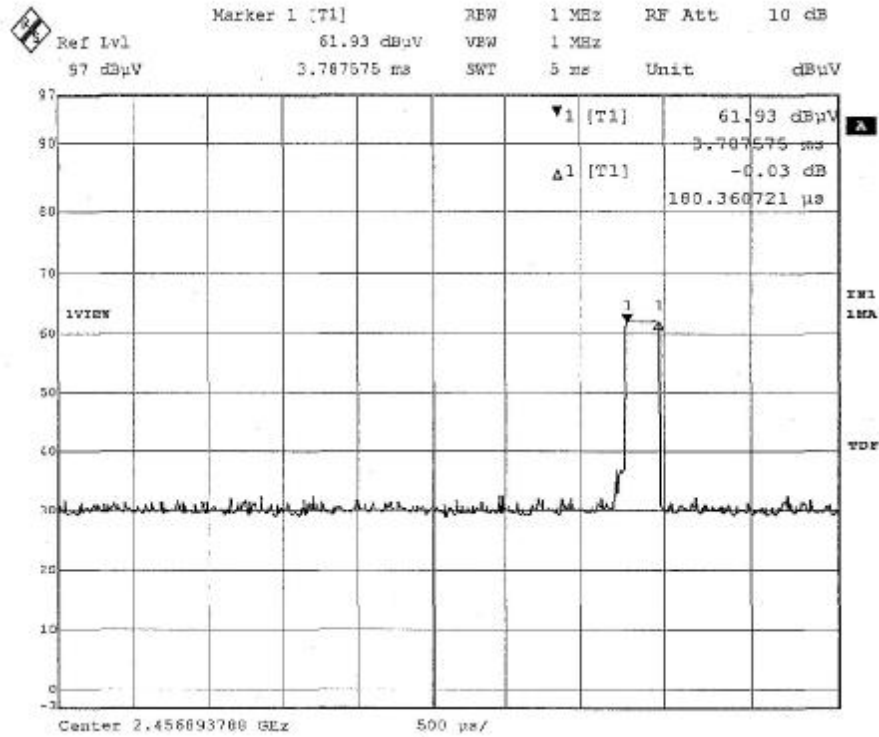
STC Test Report

Date : 2008-01-21

Page 15 of 18

No. : HM160631

Figure B [Short Pulse]



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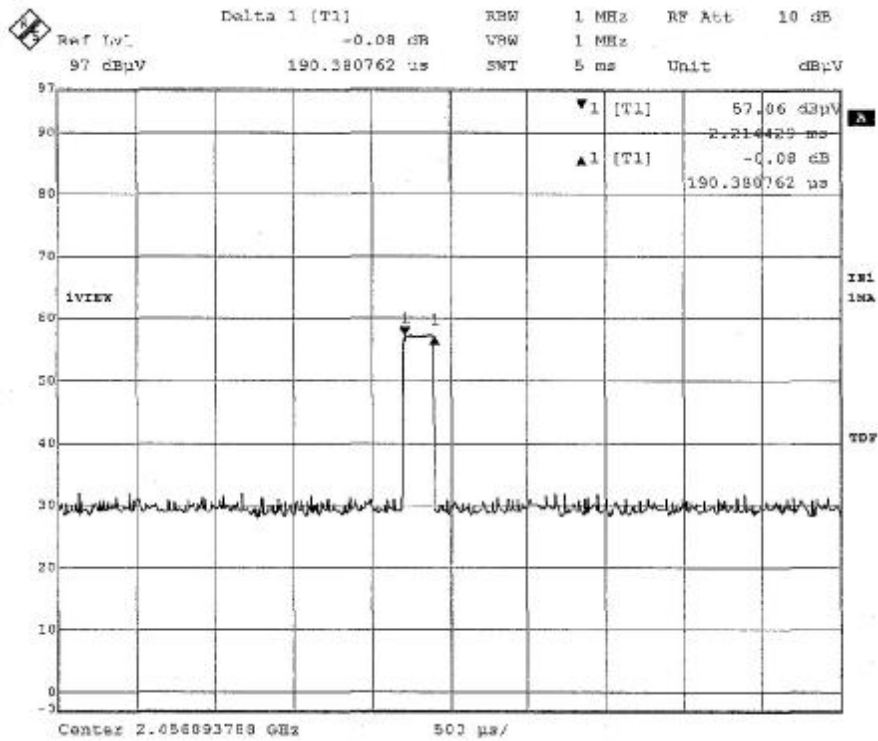
STC Test Report

Date : 2008-01-21

Page 16 of 18

No. : HM160631

Figure C [Long Pulse]



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STC Test Report

Date : 2008-01-21

Page 17 of 18

No. : HM160631

Appendix C

Photographs of EUT

Front View of the product



Rear View of the product



Inner Circuit Top View



Inner Circuit Bottom View



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STC Test Report

Date : 2008-01-21

Page 18 of 18

No. : HM160631

Photographs of EUT

Measurement of Radiated Emission Test Set Up



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