



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

FCC Rules and Regulations / Intentional Radiators

Operational in the 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz Bands

Part 15, Subpart C, Section 15.249

THE FOLLOWING **"MEETS"** THE ABOVE TEST SPECIFICATION

Formal Name: In-Wall Dimmer  
Kind of Equipment: Wall Switch  
Test Configuration: Hard-wired installation (Tested at 120 vac, 60 Hz)  
Model Number(s): HA06  
Model(s) Tested: HA06  
Serial Number(s): NA  
Date of Tests: January 26, 27 & 28, 2004  
Test Conducted For: Intermatic Inc.  
7777 Winn Road  
Spring Grove, IL 60081

**NOTICE:** "This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government". Please see the "Additional Description of Equipment Under Test" page listed inside of this report. This report must not be reproduced (except in full), without the approval of D.L.S. Electronic Systems.



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

SIGNATURE PAGE

Report By:

Arnom C. Rowe  
Test Engineer  
EMC-001375-NE

Reviewed By:

William Stumpf  
OATS Manager

Approved By:

Brian Mattson  
General Manager

Company Official:

Intermatic Inc.



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

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United States Department of Commerce  
National Institute of Standards and Technology

**NVLAP**<sup>®</sup>

Certificate of Accreditation

ISO/IEC 17025:1999  
ISO 9002:1994

**D.L.S. ELECTRONIC SYSTEMS, INC.**  
WHEELING, IL

September 30, 2004

Effective through \_\_\_\_\_

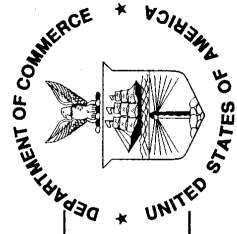
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**ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS**

*[Signature]*

For the National Institute of Standards and Technology  
NVLAP Lab Code: 100276-0

NVLAP-01C (06-01)





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 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009



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Page: 1 of 9

**ELECTROMAGNETIC COMPATIBILITY  
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**D.L.S. ELECTRONIC SYSTEMS, INC.**

1250 Peterson Drive  
 Wheeling, IL 60090-6454  
 Mr. Brian J. Mattson

Phone: 847-537-6400 Fax: 847-537-6488

E-Mail: [bmattson@dlsemc.com](mailto:bmattson@dlsemc.com)

URL: <http://www.dlsemc.com>

***NVLAP Code Designation / Description***

**Emissions Test Methods:**

- |            |   |
|------------|---|
| 12/160D21  | RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 21 - Emission of Radio Frequency Energy  |
| 12/300220a | EN 300 220-1 V1.3.1 (2000-09): Electromagnetic compatibility and Radio spectrum Matters; Short Range Devices; Radio equipment to be used in the 25 MHz to 1000 MHz frequency range with power levels ranging up to 500 mW; Part 1: Technical characteristics and test methods |
| 12/300386a | EN 300 386 V.1.2.1: Electromagnetic compatibility and radio spectrum matter (ERM); Telecommunication network equipment; Electromagnetic compatibility (EMC) requirements  |
| 12/C63.17  | ANSI C63.17-1998: American National Standard for Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communications Services (UPCS) Devices  |

September 30, 2004

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Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009



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## Scope of Accreditation



Page: 2 of 9

**ELECTROMAGNETIC COMPATIBILITY  
 AND TELECOMMUNICATIONS**

**NVLAP LAB CODE 100276-0**

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|-------------------|---|
| 12/C6317a         | ANSI C63.17-1998: American National Standard for Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communications Services (UPCS) Devices  |
| 12/CIS11          | IEC/CISPR 11 + A1 (1997), EN 55011 (1998), AS/NZS 2064 (1997), and CNS 137803 (1997): Limits and Methods of Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific, and Medical Radio-Frequency Equipment |
| 12/CIS13          | IEC/CISPR 13 (2001-04), EN 55013 (2001), AS/NZS 1053 (2001), and CNS 13439 (2001): Sound and television broadcast receivers and associated equipment - Radio disturbance characteristics - Limits and methods of measurement            |
| 12/CIS14          | CISPR 14-1 (March 30, 2000): Limits and methods of measurement of radio interference characteristics of household electrical appliances, portable tools and similar electrical apparatus - Part 1: Emissions                            |
| 12/CIS14a         | EN 55014-1 (1993) with Amendments A1 (1997) & A2 (1999)   |
| 12/CIS14d         | IEC/CISPR 14-1 (2001) and A1 (2001): Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emissions  |
| 12/CIS14e         | EN 55014-1 (2001) and A1 (2001): Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission   |

September 30, 2004

Effective through

For the National Institute of Standards and Technology



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009

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ISO/IEC 17025:1999  
ISO 9002:1994

## Scope of Accreditation



Page: 3 of 9

**ELECTROMAGNETIC COMPATIBILITY  
AND TELECOMMUNICATIONS**

**NVLAP LAB CODE 100276-0**

**D.L.S. ELECTRONIC SYSTEMS, INC.**

| <i>NVLAP Code</i> | <i>Designation / Description</i>   |
|-------------------|--|
| 12/CIS14f         | AS/NZS 1044 (2001) and A1 (2001): Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission         |
| 12/CIS14g         | CNS 13783-1 (2001) and A1 (2001): Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission         |
| 12/CIS15          | IEC/CISPR 15 (2000) + A1 (2001): Limits and methods of measurements of radio disturbance characteristics of electrical lighting and similar equipment                    |
| 12/CIS15a         | AS/NZS CISPR (2002): Limits and methods of measurements of radio disturbance characteristics of electrical lighting and similar equipment                                |
| 12/CIS15b         | CNS 13439 (2000) + A1 (2001): Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment                        |
| 12/CIS15c         | EN 55015 (2000) + A1 (2001): Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment                         |
| 12/CIS22          | IEC/CISPR 22 (1997) and EN 55022 (1998): Limits and methods of measurement of radio disturbance characteristics of information technology equipment                      |
| 12/CIS22a         | IEC/CISPR 22 (1993): Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |

September 30, 2004

Effective through

For the National Institute of Standards and Technology



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009



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## Scope of Accreditation



Page: 4 of 9

**ELECTROMAGNETIC COMPATIBILITY  
 AND TELECOMMUNICATIONS**

**NVLAP LAB CODE 100276-0**

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|-------------------|--|
| 12/CIS22b         | CNS 13438 (1997): Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment  |
| 12/EM02a          | IEC 61000-3-2, Edition 2.1 (2001-10), EN 61000-3-2 (2000), and AS/NZS 2279.1 (2000): Electromagnetic compatibility (EMC) Part 3-2: Limits - Limits for harmonic current emissions (equipment input current <= 16 A)            |
| 12/EM03           | EN 61000-3-3 (1995), IEC 61000-3-3 (1995), and AS/NZS 2279.3 (1995): EMC - Part 3: Limits - Section 3. Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current up to 16A |
| 12/F18            | FCC OST/MP-5 (1986): FCC Methods of Measurement of Radio Noise Emissions for ISM Equipment (cited in FCC Method 47 CFR Part 18 - Industrial, Scientific, and Medical Equipment)  |
| 12/FCC15b         | ANSI C63.4 (2001) with FCC Method - 47 CFR Part 15, Subpart B: Unintentional Radiators   |
| 12/FCC15c         | ANSI C63.4 (2001) with FCC Method - 47 CFR Part 15, Subpart C: Intentional Radiators   |
| 12/FCC15d         | ANSI C63.4 (2001) with FCC Method - 47 CFR Part 15, Subpart D: Unlicensed Personal Communications Service Devices  |

September 30, 2004

Effective through

For the National Institute of Standards and Technology



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009



ISO/IEC 17025:1999  
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## Scope of Accreditation



Page: 5 of 9

**ELECTROMAGNETIC COMPATIBILITY  
 AND TELECOMMUNICATIONS**

**NVLAP LAB CODE 100276-0**

**D.L.S. ELECTRONIC SYSTEMS, INC.**

| <i>NVLAP Code</i> | <i>Designation / Description</i>  |
|-------------------|---|
| 12/FCC15e         | ANSI C63.4 (2001) with FCC Method - CFR Part 15, Subpart E: Unlicensed National Information Infrastructure Service Devices                          |
| 12/T51            | AS/NZS CISPR 22 (2002) and AS/NZS 3548 (1997): Electromagnetic Interference - Limits and Methods of Measurement of Information Technology Equipment |
| 12/VCCIA          | Agreement of Voluntary Control Council for Interference by Information Technology Equipment - Technical Requirements: V-3/02.04                     |

**Immunity Test Methods:**

|           |   |
|-----------|---|
| 12/1089a  | GR-1089-CORE, Issue 3, October 2002: Electromagnetic Compatibility and Electrical Safety - Generic Criteria for Network Telecommunications Equipment (sections 2, 3.3, and 3.5) |
| 12/160D16 | RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 16 - Power Input   |
| 12/160D17 | RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 17 - Voltage Spike   |
| 12/160D18 | RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 18 - Audio Frequency Conducted Susceptibility - Power Inputs                 |

September 30, 2004



Effective through

For the National Institute of Standards and Technology





Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009



ISO/IEC 17025:1999  
 ISO 9002:1994

## Scope of Accreditation



Page: 6 of 9

**ELECTROMAGNETIC COMPATIBILITY  
 AND TELECOMMUNICATIONS**

**NVLAP LAB CODE 100276-0**

**D.L.S. ELECTRONIC SYSTEMS, INC.**

| <i>NVLAP Code</i> | <i>Designation / Description</i>  |
|-------------------|---|
| 12/160D19         | RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 19 - Induced Signal Susceptibility                           |
| 12/160D20         | RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 20 - Radio Frequency Susceptibility (Radiated and Conducted) |
| 12/160D22         | RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 22 - Lightning Induced Transient Susceptibility              |
| 12/160D25         | RTCA/DO-160D (1997): Environmental Conditions and Test Procedures for Airborne Equipment - Section 25 - Electrostatic Discharge (ESD)                           |
| 12/I01            | IEC 61000-4-2 (1995) and Amendment 1 (1998) and EN 61000-4-2: Electrostatic Discharge Immunity Test   |
| 12/I02            | IEC 61000-4-3 (1995) and Amendment 1 (1998) and EN 61000-4-3: Radiated, Radio-Frequency Electromagnetic Field Immunity Test                                     |
| 12/I03            | IEC 61000-4-4 (1995) and EN 61000-4-4: Electrical Fast Transient/Burst Immunity Test  |
| 12/I04            | IEC 61000-4-5 (1995) and EN 61000-4-5: Surge Immunity Test  |

September 30, 2004

Effective through

For the National Institute of Standards and Technology



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009



ISO/IEC 17025:1999  
 ISO 9002:1994

## Scope of Accreditation



Page: 7 of 9

### ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

NVLAP LAB CODE 100276-0

**D.L.S. ELECTRONIC SYSTEMS, INC.**

| <i>NVLAP Code</i> | <i>Designation / Description</i>  |
|-------------------|---|
| 12/I05            | IEC 61000-4-6 (1996) and EN 61000-4-6: Immunity to Conducted Disturbances, Induced Radio-Frequency Fields   |
| 12/I06            | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test  |
| 12/I07            | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests  |
| 12/J111324        | SAE J1113/24: Immunity to radiated electromagnetic fields; 10 kHz to 200 MHz - Crawford TEM cell and 10 kHz to 5 GHz - Wideband TEM cell  |
| 12/J111341        | SAE J1113/41 (1995-07): Limits and methods of measurement of radio disturbance characteristics of components and modules for the protection of receivers used on board vehicles |

### Radio Test Methods

|           |   |
|-----------|---|
| 12/RSS119 | RSS-119, Issue 6 (March 25, 2000): Land Mobile and Fixed Radio Transmitters and Receivers, 27.41 to 960 MHz |
| 12/RSS123 | RSS-123, Issue 1, Rev. 2 (November 6, 1999): Low Power Licensed Radiocommunication Devices                  |
| 12/RSS137 | RSS-137, Issue 1, Rev. 1 (September 25, 1999): Location and Monitoring Service (902 - 928 MHz)              |

September 30, 2004

Effective through

For the National Institute of Standards and Technology



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009

National Institute  
of Standards and Technology



National Voluntary  
Laboratory Accreditation Program

ISO/IEC 17025:1999  
ISO 9002:1994

## Scope of Accreditation



Page: 8 of 9

**ELECTROMAGNETIC COMPATIBILITY  
AND TELECOMMUNICATIONS**

NVLAP LAB CODE 100276-0

**D.L.S. ELECTRONIC SYSTEMS, INC.**

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- |           |  |
|-----------|--|
| 12/RSS139 | RSS-139, Issue 1 (February 5, 2000): Licensed Radiocommunications Devices in the Band 2400 - 2483.5 MHz  |
| 12/CIS15c | EN 55015 (2000) + A1 (2001): Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment |

**MIL-STD-462 : Conducted Emissions:**

- |        |                                    |
|--------|------------------------------------|
| 12/A18 | MIL-STD-461 Version E Method CE106 |
|--------|------------------------------------|

**MIL-STD-462 : Conducted Susceptibility:**

- |        |                                    |
|--------|------------------------------------|
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B13 | MIL-STD-462 Version D Method CS103 |
| 12/B25 | MIL-STD-461 Version E Method CS114 |
| 12/B26 | MIL-STD-461 Version E Method CS115 |
| 12/B27 | MIL-STD-461 Version E Method CS116 |

**MIL-STD-462 : Radiated Emissions:**

- |        |                                    |
|--------|------------------------------------|
| 12/D04 | MIL-STD-462 Version D Method RE101 |
|--------|------------------------------------|

September 30, 2004


Effective through

For the National Institute of Standards and Technology



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009




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## Scope of Accreditation



Page: 9 of 9

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**ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS** NVLAP LAB CODE 100276-0

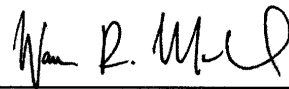
**D.L.S. ELECTRONIC SYSTEMS, INC.**

| <i>NVLAP Code</i>                             | <i>Designation / Description</i>   |
|---|------------------------------------|
| 12/D05  | MIL-STD-462 Version D Method RE102 |
| 12/D06  | MIL-STD-462 Version D Method RE103 |
| <b>MIL-STD-462 : Radiated Susceptibility:</b> |                                    |
| 12/E08  | MIL-STD-462 Version D Method RS101 |
| 12/E09  | MIL-STD-462 Version D Method RS103 |

September 30, 2004

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For the National Institute of Standards and Technology

NVLAP-01S (06-01)



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009

## TABLE OF CONTENTS

|      |   |    |
|------|---|----|
| i.   | Cover Page .....  | 1  |
| ii.  | Signature Page .....  | 2  |
| iii. | NVLAP Certificate of Accreditation .....  | 3  |
| iv.  | NVLAP Scope of Accreditation .....  | 4  |
| v.   | Table of Contents .....   | 13 |
| 1.0  | Summary of Test Report .....  | 14 |
| 2.0  | Introduction .....  | 14 |
| 3.0  | Object .....  | 14 |
| 4.0  | Test Set-Up .....   | 15 |
| 5.0  | Test Equipment .....  | 16 |
| 6.0  | Ambient Measurements .....  | 17 |
| 7.0  | Description of Test Sample .....  | 18 |
| 8.0  | Additional Description of Test Sample .....                                     | 21 |
| 9.0  | Photo Information and Test Set-Up .....   | 22 |
| 10.0 | Radiated Photos Taken During Testing .....                                      | 23 |
| 10.0 | Conducted Photos Taken During Testing .....                                     | 24 |
| 11.0 | Results of Tests .....  | 25 |
| 12.0 | Conclusion .....  | 25 |
|      | TABLE 1 – EQUIPMENT LIST .....  | 26 |
|      | Appendix A – Electric Field Radiated Emissions Test .....                       | 28 |
| 1.0  | Conducted Emission Measurements .....   | 29 |
| 1.0  | Conducted Data and Graph(s) taken during testing .....                          | 30 |
| 2.0  | Band Edge and Restrict Band Compliance .....                                    | 37 |
| 3.0  | Field Strength of Spurious Emission Measurements .....                          | 38 |
| 3.0  | Radiated Data and Graph(s) taken for Fundamental Emission Measurements .....    | 40 |
| 3.0  | Radiated Data and Graph(s) taken for Field Strength Spurious Measurements ..... | 53 |



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009

## 1.0 SUMMARY OF TEST REPORT

It was found that the In-Wall Dimmer, Model Number(s) HA06, "**meets**" the radio interference conducted and radiated emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Section 15.249 for operational in the 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz Bands.

This test report relates only to the items tested and contains the following number of pages.

Text: 65

## 2.0 INTRODUCTION

On January 26, 27 & 28, 2004, a series of radio frequency interference measurements was performed on In-Wall Dimmer, Model Number(s) HA06, Serial Number: NA. The tests were performed according to the procedures of the FCC as stated in the "Methods of Measurement of Radio-Noise Emissions for Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz" found in the American National Standards Institute, ANSI C63.4-2001. Tests were performed by personnel of D.L.S. Electronic Systems, Inc. who are responsible to Donald L. Sweeney, Senior EMC Engineer.

## 3.0 OBJECT

The purpose of this series of tests was to determine if the test sample could meet the radio frequency interference emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Sections 15.35(b), 15.37(d), 15.209 & 15.249 for Intentional Radiators operating in the Bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24-24.25 GHz.



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009

#### 4.0 TEST SET-UP

All emission tests were performed at D.L.S. Electronic Systems, Inc. and set up according to the American National Standards Institute, ANSI C63.4-2001, Section 8, (Figures 11a and 11b). The conducted tests were performed with the test item placed on a non-conductive table (table top equipment), located in the test room. Equipment normally operated on the floor was tested by placing it on the metal ground plane. The ground plane has an electrical isolation layer over its surface approximately 7mm thick. The power line supplied was connected to a dual line impedance stabilization network electrically bonded to the ground plane, located on the floor. The networks were constructed per the requirements of the American National Standards Institute, ANSI C63.4-2001, Section 4, (Figure 2).

All radiated emissions tests were performed with the test item placed on a 80 cm high rotating non-conductive table, located in the test room. Equipment normally operated on the floor was placed on a metal covered turntable which is flush with the surrounding conducting ground plane. The ground plane has an electrical isolation layer over its surface approximately 7 mm thick. The EUT is separated from the turntable ground plane by a non-conductive layer. The equipment under test was set up according to ANSI C63.4-2001, Sections 6 and 8.



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009

## 5.0 TEST EQUIPMENT (Bandwidths and Detector Function)

All preliminary data below 1000 MHz was automatically plotted using the HP Spectrum Analyzer or ESI 26/40 Fixed Tuned Receiver. The data was taken using Peak, Quasi-Peak or the Average Detector Functions as required. This information was then used to determine the frequencies of maximum emissions. Above 1000 MHz, final data was taken using the Average Detector.

Below 1000 MHz, final data was taken using the HP Spectrum Analyzer and/or ESI 26/40 Fixed Tuned Receiver. These plots were made using the Peak or Quasi-Peak Detector functions, with manual measurements performed on the questionable frequencies using the Quasi-Peak or the Average Detector Function of the Analyzer or ESI 26/40 Fixed Tuned Receiver as required. Above 1000 MHz, final data was taken using the Average Detector on the Spectrum Analyzer.

The bandwidths shown below are specified by ANSI C63.4-2001, Section 4.2.

| Frequency Range   | Bandwidth (-6 dB) |
|-------------------|-------------------|
| 10 to 150 kHz     | 200 Hz            |
| 150 kHz to 30 MHz | 9 kHz             |
| 30 MHz to 1 GHz   | 120 kHz           |
| Above 1 GHz       | 1 MHz             |

A list of the equipment used can be found in Table 1. All primary equipment was calibrated against known reference standards with a verified traceable path to NIST.





Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009

## 6.0 AMBIENT MEASUREMENTS

For emissions measurements, broadband antennas and an EMI Test Receiver with a panoramic spectrum display are used. First the frequency range is scanned and displayed on the test receiver display. Next the scanned frequency range is divided into smaller ranges, and then it is manually tuned through to determine the emissions from the EUT. A headset or loudspeaker is connected to the test receiver's AM/FM demodulated output as an aid in detecting ambient signals and finding frequencies of significant emission from the EUT. If there is any doubt as to the source of the emission, it is further investigated by rotating the EUT, or by disconnecting the power from the EUT.

The EUT is set up in its typical configuration and operated in its various modes. For tabletop systems, cables are manipulated within the range of likely configurations. For floor-standing equipment, the cables are located in the same manner as the user would install them and no further manipulation is made. If the manner of cable installation is not known, or if it changes with each installation, cables or wires for floor-standing equipment shall be manipulated to the extent possible to produce the maximum level of emissions. For each mode of operation, the frequency spectrum is monitored. Variations in antenna height, antenna polarization, EUT azimuth, and cable or wire placement (each variable within bounds specified elsewhere) are explored to produce the emissions that have the highest amplitude relative to the limit. These methods are performed to the specifications in ANSI C63.4: 2001.



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009

7.0 DESCRIPTION OF TEST SAMPLE: (See also Paragraph 8.0)

7.1 Description:

The device is an electronic dimmable wall switch, direct wired, rectangular face (decora) configuration, intended to be used to control small lighting loads. It includes an air-gap switch for disengaging power to the device, and a rocker switch for turning ON or OFF or dimming a lighting load.



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 6009

7.0 DESCRIPTION OF TEST SAMPLE: (CONT)

7.2 PHYSICAL DIMENSIONS OF EQUIPMENT UNDER TEST

Depth: 34.3mm x Width: 43.9mm x Height: 104.9mm

7.3 LINE FILTER USED:

NA

7.4 INTERNAL CLOCK FREQUENCIES:

Switching Power Supply Frequencies:

NA

Clock Frequencies:

7.376974 MHz



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## 7.0 DESCRIPTION OF TEST SAMPLE: (CONT')

### 7.5 DESCRIPTION OF ALL CIRCUIT BOARDS:

1. Power PCB: FR-4 DS, Flame class V-0,HONG TO  
MANUFACTURING FACTORY PN: 000-221857-001000, V1
2. Button and LED PCB: FR-4 DS, Flame class V-0,  
HONG TO MANUFACTURING FACTORY PN: 000-221848-010100, V0
3. RF Module PCB: FR-4 4-layer, Flame class V-0,  
Lucky View PCB (H.K.) Ltd PN: 000-010257-102110, V0



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

8.0 ADDITIONAL DESCRIPTION OF TEST SAMPLE:  
(See also Paragraph 7.0)

1: There were no changes made at D.L.S. Electronic Systems, Inc.

I certify that the above, as described in paragraph 7.0, describes the equipment tested and will be manufactured as stated.

By: \_\_\_\_\_  
Signature Title

For: \_\_\_\_\_  
Company Date



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

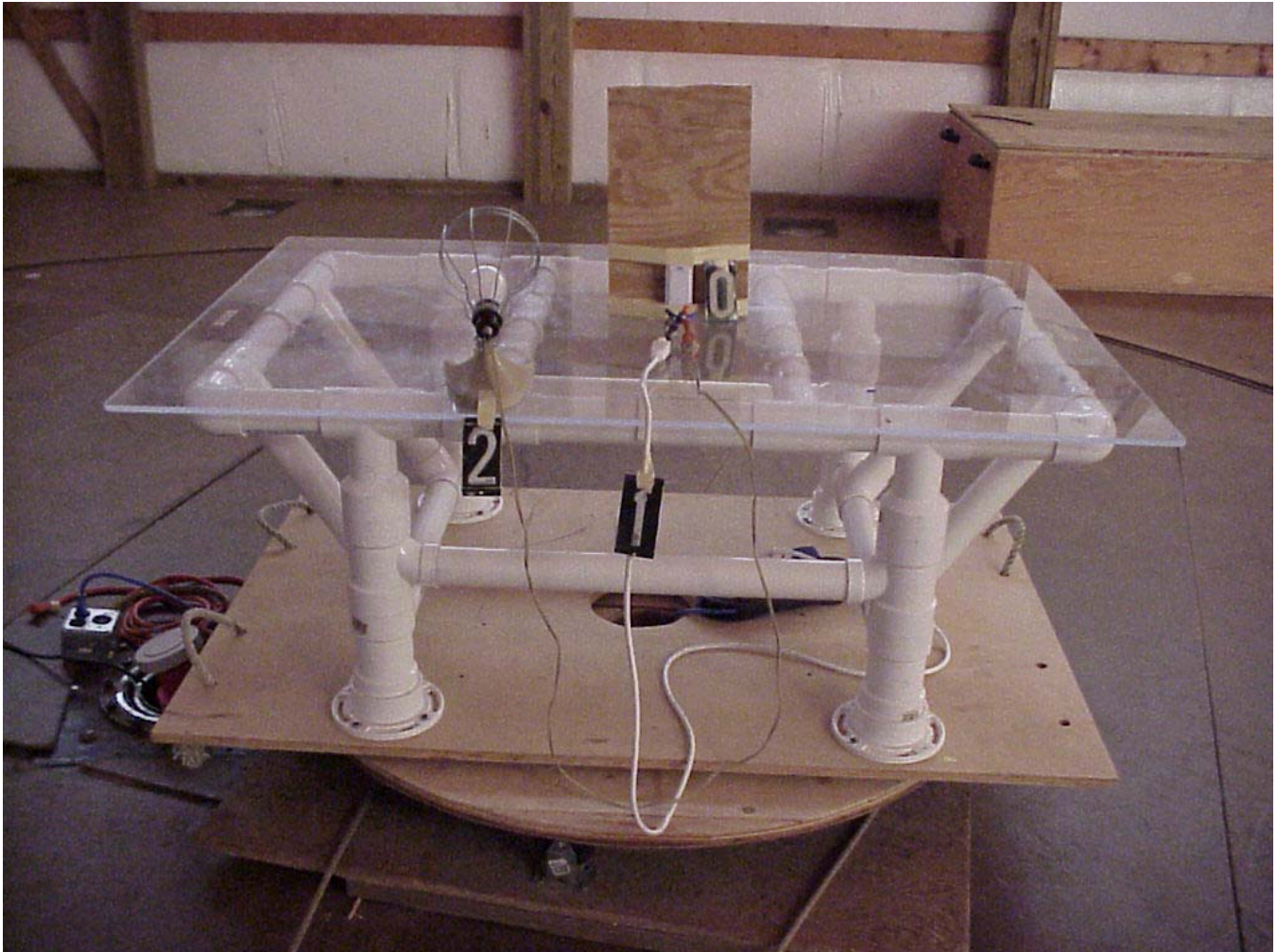
## 9.0 PHOTO INFORMATION AND TEST SET-UP

Item 0 In-Wall Dimmer

Model Number: HA06 Serial Number: NA

1250 Peterson Dr., Wheeling, IL 60090

## 10.0 RADIATED PHOTOS TAKEN DURING TESTING



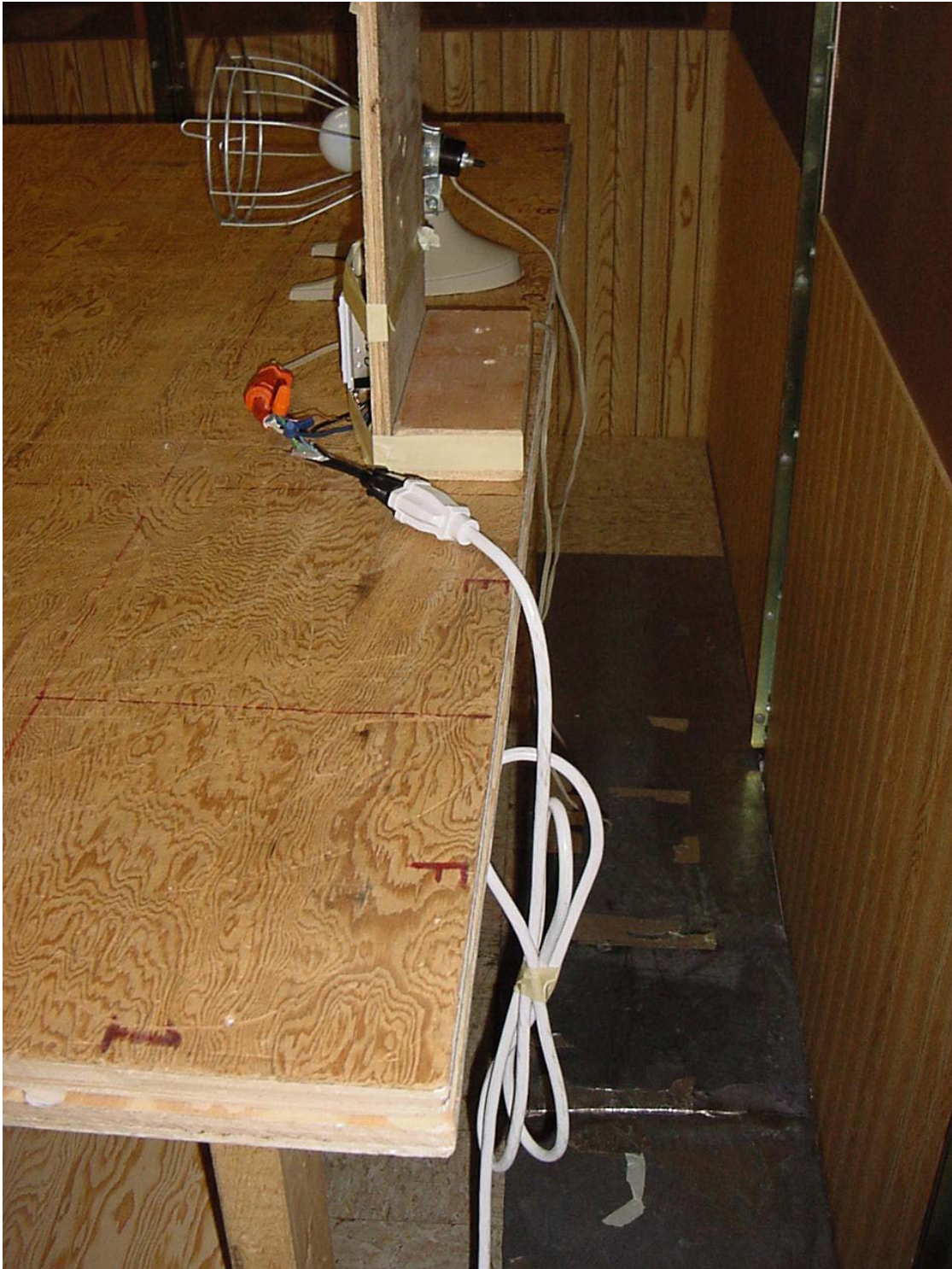




Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## 10.0 CONDUCTED PHOTOS TAKEN DURING TESTING







Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## 11.0 RESULTS OF TESTS

The radio interference emission charts results can be seen on the pages at the end of this report. Data sheets indicating the test measurements taken during testing can also be found at the end of this report. Points on the emission charts shown with a yellow mark are background frequencies that were verified during testing.

## 12.0 CONCLUSION

It was found that the In-Wall Dimmer, Model Number(s) HA06 "**meets**" the radio interference conducted and radiated emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Section 15.249 for operational in the 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz Bands.



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

TABLE 1 – EQUIPMENT LIST

| Test Equipment     | Manufacturer    | Model Number | Serial Number | Frequency Range  | Cal Due Dates |
|--------------------|-----------------|--------------|---------------|------------------|---------------|
| Spectrum Analyzer  | Hewlett/Packard | 8566B        | 2240A002041   | 100 Hz – 22 GHz  | 10/04         |
| Quasi-Peak Adapter | Hewlett/Packard | 85650A       | 2043A00121    | 10 kHz – 1 GHz   | 10/04         |
| Spectrum Analyzer  | Hewlett/Packard | 8566B        | 2421A00452    | 100 Hz – 22 GHz  | 2/04          |
| Quasi-Peak Adapter | Hewlett/Packard | 85650A       | 2043A00450    | 10 kHz – 1 GHz   | 2/04          |
| Spectrum Analyzer  | Hewlett/Packard | 8591A        | 3009A00700    | 9 kHz – 1.8 GHz  | 3/04          |
| Receiver           | Electrometrics  | EMC-30       | 44168         | 10 kHz – 1 GHz   | 9/04          |
| Receiver           | Rohde & Schwarz | ESI 26       | 837491/010    | 20 Hz – 26 GHz   | 11/04         |
| Receiver           | Rohde & Schwarz | ESI 40       | 837808/006    | 20 Hz – 40 GHz   | 12/04         |
| Receiver           | Rohde & Schwarz | ESI 40       | 837808/005    | 20 Hz – 40 GHz   | 12/04         |
| Antenna            | EMCO            | 3104C        | 00054891      | 20 MHz – 200 MHz | 2/04          |
| Antenna            | Electrometrics  | LPA-25       | 1114          | 200 MHz – 1 GHz  | 3/04          |
| Antenna            | EMCO            | 3104C        | 00054892      | 20 MHz – 200 MHz | 3/04          |

All primary equipment is calibrated against known reference standards with a verified traceable path to NIST.



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

TABLE 1 – EQUIPMENT LIST

| Test Equipment | Manufacturer    | Model Number     | Serial Number | Frequency Range  | Cal Due Dates |
|----------------|-----------------|------------------|---------------|------------------|---------------|
| Antenna        | Electrometrics  | 3146             | 1205          | 200 MHz – 1 GHz  | 3/04          |
| Antenna        | EMCO            | 3104C            | 97014785      | 20 MHz – 200 MHz | 2/04          |
| Antenna        | EMCO            | 3146             | 97024895      | 200 MHz – 1 GHz  | 3/04          |
| Antenna        | EMCO            | 3115             | 2479          | 1 GHz – 18 GHz   | 8/04          |
| Antenna        | EMCO            | 3115             | 99035731      | 1 GHz – 18 GHz   | 4/04          |
| Antenna        | Rohde & Schwarz | HUF-Z1           | 829381001     | 20 MHz – 1 GHz   | 2/04          |
| Antenna        | Rohde & Schwarz | HUF-Z1           | 829381005     | 20 MHz – 1 GHz   | 8/04          |
| LISN           | Solar           | 8012-50-R-24-BNC | 8305116       | 10 MHz – 30 MHz  | 8/04          |
| LISN           | Solar           | 8012-50-R-24-BNC | 814548        | 10 MHz – 30 MHz  | 8/04          |
| LISN           | Solar           | 9252-50-R-24-BNC | 961019        | 10 MHz – 30 MHz  | 12/04         |
| LISN           | Solar           | 9252-50-R-24-BNC | 971612        | 10 MHz – 30 MHz  | 10/04         |
| LISN           | Solar           | 9252-50-R-24-BNC | 92710620      | 10 MHz – 30 MHz  | 7/04          |

All primary equipment is calibrated against known reference standards with a verified traceable path to NIST.



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

### TEST PROCEDURE

Part 15, Subpart C, Section 15.249a-e

**OPERATION WITHIN THE BAND 902-928 MHz, 2400-2483.5 MHz,  
5725-5875 MHz, and 24.0-24.25 GHz MHz**



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

### 1.0 CONDUCTED EMISSION MEASUREMENTS

Conducted emissions were measured over the frequency range from 150 kHz to 30 MHz in accordance with the power line measurements as specified in FCC Part 15, Subpart C, Section 15.207 & ANSI C63.4-2000. Since the device is operated from the public utility lines, the 120 Vac, 60 Hz power leads, high (hot) and low (neutral) sides, were measured by connecting the measuring equipment to the appropriate meter terminal of the LISN. During the test, the cables were placed and items moved (when appropriate) to maximize emissions. All signals were then recorded. The allowed levels for Intentional Radiators which is designed to connected to the public utility (AC) power line shall not exceed 250 uV (47.96 dBuV) from 150 kHz to 30 MHz

#### **NOTE:**

All test measurements were made at a screen room temperature of **68°F** at **22%** relative humidity.



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

# CONDUCTED DATA AND GRAPH(S) TAKEN DURING TESTING

## PART 15.207



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**FCC Part 15 Class B**

**Voltage Mains Test**

EUT: HA06 300 Watt wall switch  
 Manufacturer: Intermatic  
 Operating Condition: 68 deg. F, 22% R.H.  
 Test Site: DLS OF Screen Room  
 Operator: Craig Brandt  
 Test Specification: 120 VAC, 60 Hz  
 Comment: Line 1  
 Date: 1-28-04

**SCAN TABLE: "FCC ClassB Voltage"**

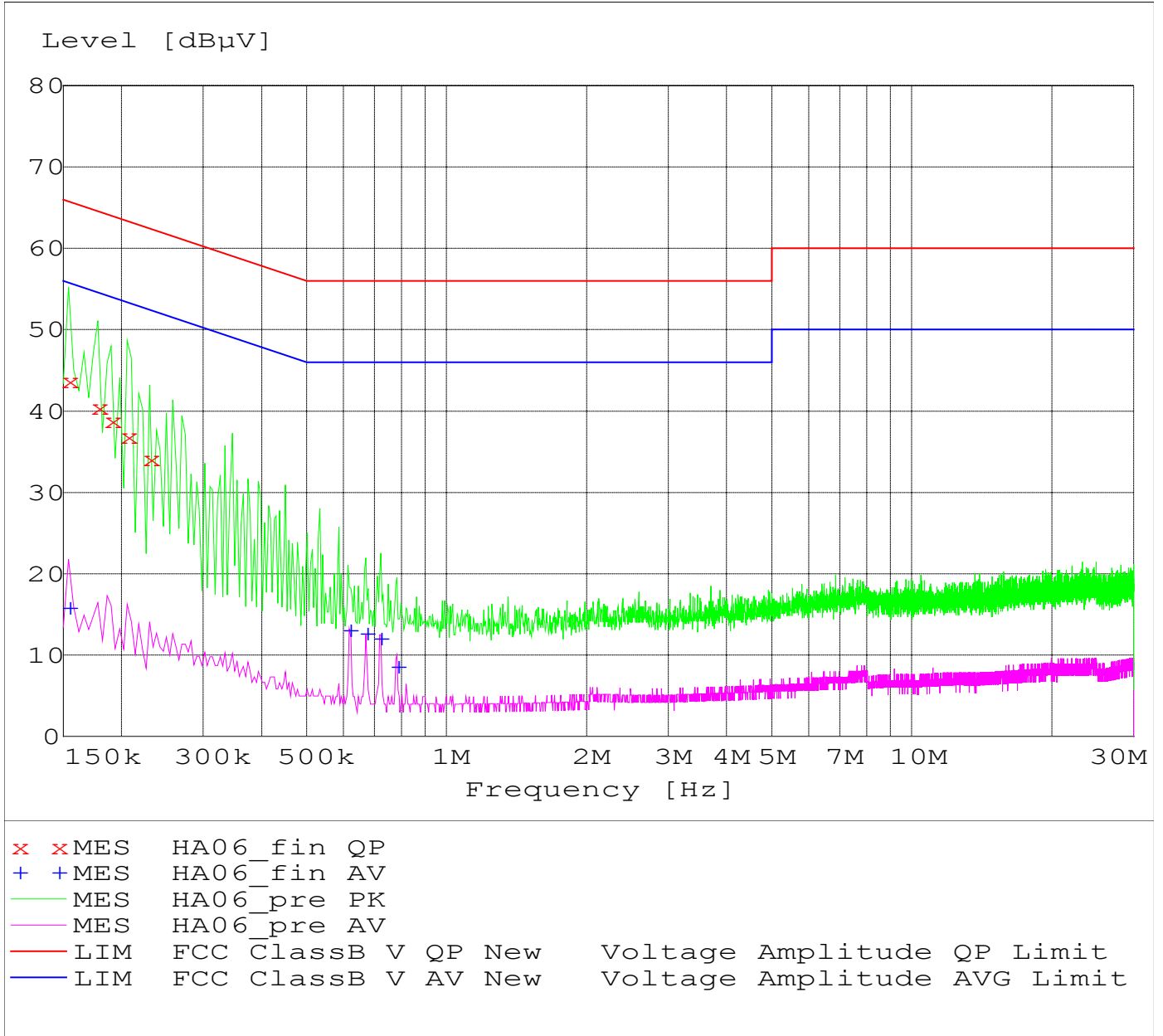
| Short Description: FCC Class B Voltage |           |         |                    |         |        |             |
|--|-----------|---------|--------------------|---------|--------|-------------|
| Start                                  | Stop      | Step    | Detector           | Meas.   | IF     | Transducer  |
| Frequency                              | Frequency | Width   |                    | Time    | Bandw. |             |
| 150.0 kHz                              | 30.0 MHz  | 4.0 kHz | MaxPeak<br>Average | 10.0 ms | 9 kHz  | LISN 961019 |



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A







Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**MEASUREMENT RESULT: "HA06\_fin QP"**

1/28/2004 9:38AM

| Frequency<br>MHz | Level<br>dB $\mu$ V | Transd<br>dB | Limit<br>dB $\mu$ V | Margin<br>dB | Line | PE  |
|------------------|---------------------|--------------|---------------------|--------------|------|-----|
| 0.154000         | 43.70               | 11.7         | 66                  | 22.1         | 1    | --- |
| 0.178000         | 40.50               | 11.4         | 65                  | 24.1         | 1    | --- |
| 0.190000         | 38.90               | 11.3         | 64                  | 25.1         | 1    | --- |
| 0.206000         | 36.90               | 11.1         | 63                  | 26.4         | 1    | --- |
| 0.230000         | 34.20               | 11.0         | 62                  | 28.2         | 1    | --- |

**MEASUREMENT RESULT: "HA06\_fin AV"**

1/28/2004 9:38AM

| Frequency<br>MHz | Level<br>dB $\mu$ V | Transd<br>dB | Limit<br>dB $\mu$ V | Margin<br>dB | Line | PE  |
|------------------|---------------------|--------------|---------------------|--------------|------|-----|
| 0.154000         | 15.80               | 11.7         | 56                  | 40.0         | 1    | --- |
| 0.618000         | 13.00               | 10.5         | 46                  | 33.0         | 1    | --- |
| 0.670000         | 12.60               | 10.5         | 46                  | 33.4         | 1    | --- |
| 0.718000         | 12.00               | 10.4         | 46                  | 34.0         | 1    | --- |
| 0.782000         | 8.60                | 10.4         | 46                  | 37.4         | 1    | --- |



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**FCC Part 15 Class B**

**Voltage Mains Test**

EUT: HA06 300 W wall switch  
 Manufacturer: Intermatic  
 Operating Condition: 68 deg. F, 22% R.H.  
 Test Site: DLS OF Screen Room  
 Operator: Craig Brandt  
 Test Specification: 120 VAC, 60 Hz  
 Comment: Line 2  
 Date: 1-28-04

**SCAN TABLE: "FCC ClassB Voltage"**

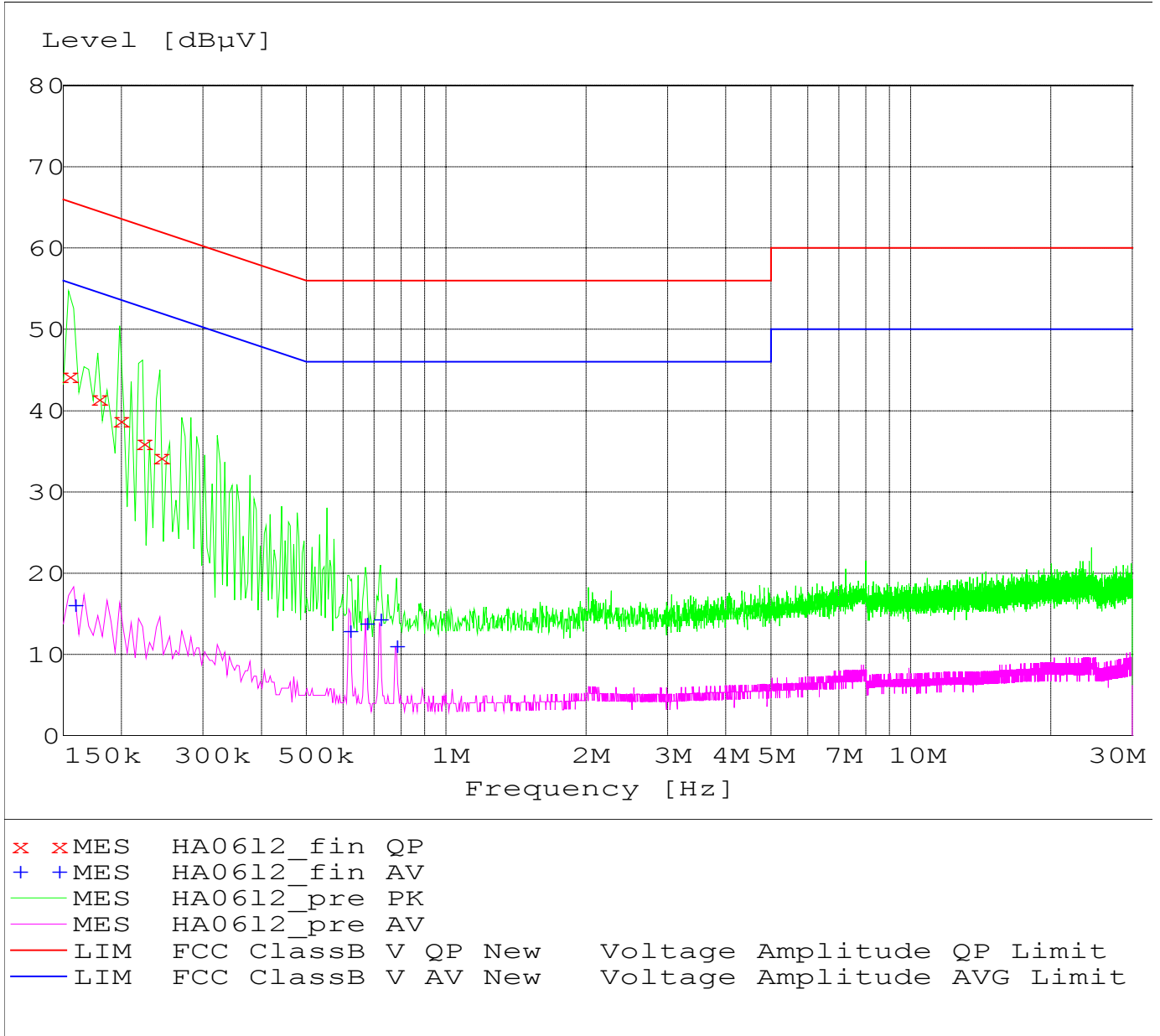
|                    |                     |         |          |         |        |             |
|--------------------|---------------------|---------|----------|---------|--------|-------------|
| Short Description: | FCC Class B Voltage |         |          |         |        |             |
| Start              | Stop                | Step    | Detector | Meas.   | IF     | Transducer  |
| Frequency          | Frequency           | Width   |          | Time    | Bandw. |             |
| 150.0 kHz          | 30.0 MHz            | 4.0 kHz | MaxPeak  | 10.0 ms | 9 kHz  | LISN 961019 |
|                    |                     |         | Average  |         |        |             |



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A





Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**MEASUREMENT RESULT: "HA06I2\_fin QP"**

1/28/2004 9:51AM

| Frequency<br>MHz | Level<br>dBµV | Transd<br>dB | Limit<br>dBµV | Margin<br>dB | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|------|-----|
| 0.154000         | 44.30         | 11.7         | 66            | 21.5         | 2    | --- |
| 0.178000         | 41.60         | 11.4         | 65            | 23.0         | 2    | --- |
| 0.198000         | 38.80         | 11.2         | 64            | 24.9         | 2    | --- |
| 0.222000         | 36.10         | 11.1         | 63            | 26.6         | 2    | --- |
| 0.242000         | 34.30         | 11.0         | 62            | 27.7         | 2    | --- |

**MEASUREMENT RESULT: "HA06I2\_fin AV"**

1/28/2004 9:51AM

| Frequency<br>MHz | Level<br>dBµV | Transd<br>dB | Limit<br>dBµV | Margin<br>dB | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|------|-----|
| 0.158000         | 16.00         | 11.6         | 56            | 39.6         | 2    | --- |
| 0.618000         | 12.80         | 10.5         | 46            | 33.2         | 2    | --- |
| 0.670000         | 13.80         | 10.5         | 46            | 32.2         | 2    | --- |
| 0.718000         | 14.30         | 10.4         | 46            | 31.7         | 2    | --- |
| 0.778000         | 11.00         | 10.4         | 46            | 35.0         | 2    | --- |



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

### 2.0 BAND EDGE AND RESTRICT BAND COMPLIANCE

The field strength of any emissions appearing outside the 902 to 928 MHz band shall not exceed the general radiated emissions limits as stated Section 15.209. The fundamental from the In-Wall Dimmer transmitter shall not be inside the restrict band 960 to 1240 MHz.

NOTE: See radiated data taken of the Fundamental Emissions on pages 41 to 52.



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

### 3.0 FIELD STRENGTH OF SPURIOUS EMISSION MEASUREMENTS (SECTION 15.249a-d)

The radiated measurements made at D.L.S. Electronic Systems, Inc., for the In-Wall Dimmer, Model Number: HA06, are shown in tabulated and graph form. Preliminary radiation measurements were performed at a 3 meter test distance with the limits adjusted linearly when required. The frequency range from 30 MHz to over 960 MHz, depending upon the fundamental frequency as stated in Part 15.33a, was automatically scanned and plotted at various angles.

Measurements for the In-Wall Dimmer were made up to 10000 MHz, in accordance with Section 15.33a for Intentional Radiators with a fundamental frequency of 908.42 MHz. For intentional radiators, the frequency range to be investigated is determined by the lowest radio frequency generated by the device without going below 30 MHz, up to at least the tenth harmonic of the highest fundamental frequency or 10 GHz, whichever is lower. At those frequencies where significant signals were detected, measurements were made over the entire frequency range specified in FCC Part 15, Subpart C, Section 15.249 at the open field test site, located at Genoa City, Wisconsin, FCC file number **31040/SIT**. When required, levels were extrapolated from 10 meters to 3 meters using a linear extrapolation.

All signals in the frequency range of 30 MHz to 2000 MHz were measured with a Biconical Antenna or tuned dipoles and from 200 MHz to 1000 MHz, a Log Periodic or Tuned Dipoles were used. From 1000 MHz to 10 GHz Horn Antennas were used. During the test the equipment was rotated and the antenna was raised and lowered from 1 meter to 4 meters to find the maximum level of emissions. In order to find maximum emissions, the cables were moved through all the positions the equipment would be expected to experience in the field. The EUT, peripheral equipment and cables were configured to meet the conditions in ANSI C63.4-2000, Clauses 6 & 8. Tests were made with the receive antenna(s) in both the horizontal and vertical planes of polarization. In each case, the table was rotated to find the maximum emissions.



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

3.0 FIELD STRENGTH OF SPURIOUS EMISSION MEASUREMENTS (CON'T)

For operation in the bands 902 to 928 MHz, 2400 to 2483.5 MHz, 5725 to 5875 MHz, and 24.0 to 24.25 GHz the field strength of any emissions within this band shall not exceed the field strength levels specified in the following table as stated in FCC, Part 15, Section 15.249(a).

| Frequency range in MHz | Field Strength of Fundamental millivolts/meter | Field Strength of Fundamental dBuV/meter | Field Strength of Harmonics microvolts/meter | Field Strength of Harmonics dBuV/meter |
|------------------------|--|--|--|--|
| 902 to 928             | 50   | 93.98                                    | 500  | 53.98                                  |
| 2400 to 2483.5         | 50   | 93.98                                    | 500  | 53.98                                  |
| 5725 to 5875           | 50   | 93.98                                    | 500  | 53.98                                  |
| 24000 to 24250         | 250  | 107.96                                   | 2500   | 67.96                                  |

Field strength limits are at a distance of 3 meters. The emission limits shown are based on measurement instrumentation employing an average detector.

Emissions radiated outside of the specified frequency bands, except for harmonics are attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Preliminary radiated emission measurements were performed at a 3 meter test distance. The frequency range from 30 MHz to 1000 MHz was automatically scanned and plotted at various angles.

**NOTE:**

All radiated emissions measurements were made at a test room temperature of **68°F** at **27%** relative humidity.



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

**RADIATED DATA AND GRAPH(S) TAKEN FOR**

**FUNDAMENTAL EMISSION MEASUREMENTS**

**PART 15.249**





Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

# FCC Class B 3 Meter

## Electric Field Strength

EUT: HA06  
Manufacturer: Intermatic  
Operating Condition: 68 deg. F.; 27% R.H.  
Test Site: Site 2  
Operator: Craig Brandt  
Test Specification:  
Comment: Continuous Transmit Mode  
Date:1-26-04

### TEXT: "Site 2 MidV 3M"

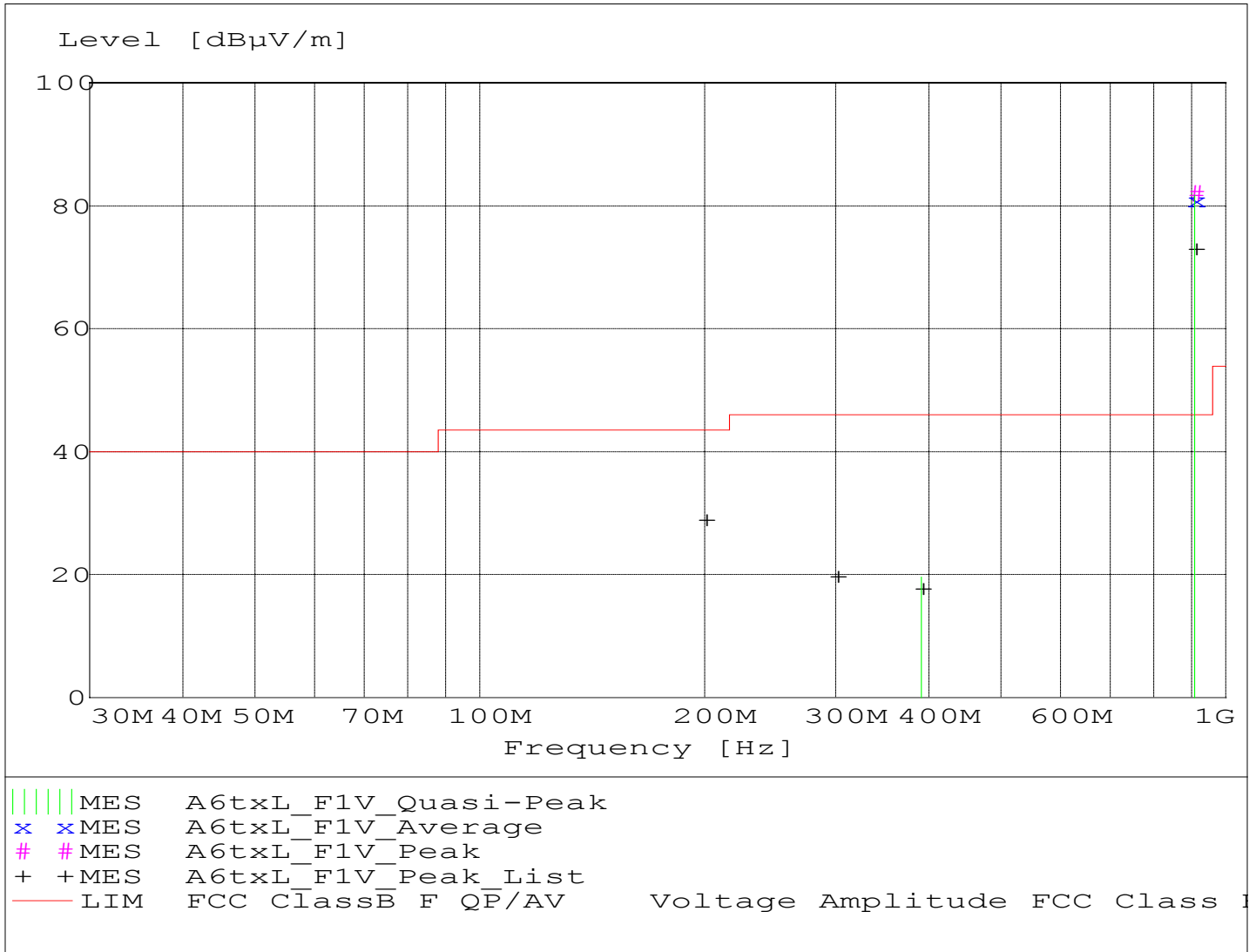
Short Description: Test Set-up Vert30-1000MHz  
TEST EQUIPMENT: Receiver --- Rohde & Schwarz ESI 40 SN: 837808/005  
Antennas ---  
Biconical -- EMCO 3104C SN: 0005-4892  
Log Periodic -- Electro Metrics LPA-25 SN: 1205  
Pre-Amp --- Rohde & Schwarz TS-PR10 SN: 032001/004  
TEST SET-UP: EUT Measured at 3 Meters with VERTICAL Antenna Polarization



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A





Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**MEASUREMENT RESULT: "A6txL\_F1V\_Final"**

1/27/04 12:56PM

| Frequency<br>MHz | Level<br>dB $\mu$ V | Antenna<br>Factor<br>dB $\mu$ V/m | System<br>Loss<br>dB | Total<br>Level<br>dB $\mu$ V/m | Limit<br>dB $\mu$ V/m | Margin<br>dB | Height<br>Ant.<br>m | EUT<br>Angle<br>deg | Final<br>Detector | Comment     |
|------------------|---------------------|-----------------------------------|----------------------|--------------------------------|-----------------------|--------------|---------------------|---------------------|-------------------|-------------|
| 908.42           | 77.30               | 23.03                             | -18.4                | 81.9                           | 46.0                  | -35.9        | 1.20                | 315                 | MAX PEAK          | Fundamental |
| 908.42           | 77.07               | 23.03                             | -18.4                | 81.7                           | 46.0                  | -35.7        | 1.20                | 315                 | QUASI-PEAK        | Fundamental |
| 908.42           | 76.22               | 23.03                             | -18.4                | 80.9                           | 46.0                  | -34.9        | 1.20                | 315                 | AVERAGE           | Fundamental |
| 390.98           | 25.68               | 15.36                             | -21.4                | 19.6                           | 46.0                  | 26.4         | 1.00                | 0                   | QUASI-PEAK        | None        |



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

### FCC Class B 3 Meter

#### Electric Field Strength

EUT: HA06  
Manufacturer: Intermatic  
Operating Condition: 68 deg. F.; 27% R.H.  
Test Site: Site 2  
Operator: Craig Brandt  
Test Specification:  
Comment: Continuous Transmit Mode  
Date:1-26-04

#### TEXT: "Site 2 MidH 3M"

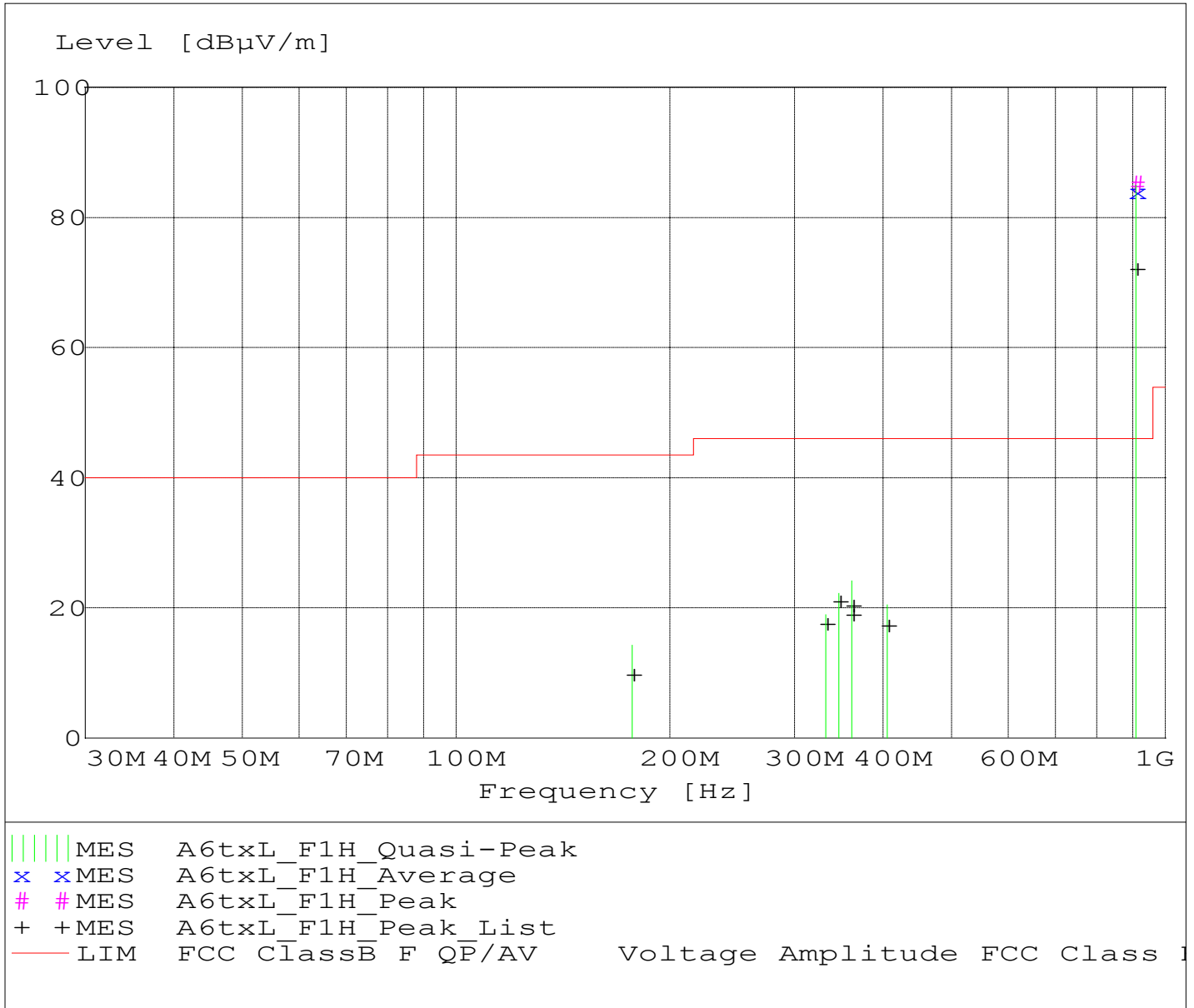
Short Description: Test Set-up Horz30-1000MHz  
TEST EQUIPMENT: Receiver --- Rohde & Schwarz ESI 40 SN: 837808/005  
  
Antennas ---  
Biconical -- EMCO 3104C SN: 0005-4892  
Log Periodic -- Electro Metrics LPA-25 SN: 1205  
  
Pre-Amp --- Rohde & Schwarz TS-PR10 SN: 032001/004  
  
TEST SET-UP: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A





Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**MEASUREMENT RESULT: "A6txL\_F1H\_Final"**

1/27/04 12:47PM

| Frequency<br>MHz | Level<br>dB $\mu$ V | Antenna<br>Factor<br>dB $\mu$ V/m | System<br>Loss<br>dB | Total<br>Level<br>dB $\mu$ V/m | Limit<br>dB $\mu$ V/m | Margin<br>dB | Height<br>Ant.<br>m | EuT<br>Angle<br>deg | Final<br>Detector | Comment     |
|------------------|---------------------|-----------------------------------|----------------------|--------------------------------|-----------------------|--------------|---------------------|---------------------|-------------------|-------------|
| 908.42           | 80.55               | 23.03                             | -18.4                | 85.2                           | 46.0                  | -39.2        | 1.00                | 225                 | MAX PEAK          | Fundamental |
| 908.42           | 80.29               | 23.03                             | -18.4                | 84.9                           | 46.0                  | -38.9        | 1.00                | 225                 | QUASI-PEAK        | Fundamental |
| 908.42           | 79.35               | 23.03                             | -18.4                | 84.0                           | 46.0                  | -38.0        | 1.00                | 225                 | AVERAGE           | Fundamental |
| 361.47           | 30.88               | 14.79                             | -21.5                | 24.1                           | 46.0                  | 21.9         | 1.00                | 45                  | QUASI-PEAK        | None        |
| 361.48           | 30.68               | 14.79                             | -21.5                | 23.9                           | 46.0                  | 22.1         | 1.00                | 45                  | QUASI-PEAK        | None        |
| 346.71           | 29.04               | 14.75                             | -21.6                | 22.2                           | 46.0                  | 23.8         | 1.00                | 45                  | QUASI-PEAK        | None        |
| 405.73           | 26.16               | 15.55                             | -21.3                | 20.4                           | 46.0                  | 25.6         | 1.00                | 270                 | QUASI-PEAK        | None        |
| 331.95           | 25.89               | 14.81                             | -21.7                | 19.0                           | 46.0                  | 27.0         | 1.00                | 315                 | QUASI-PEAK        | None        |
| 177.05           | 21.51               | 15.39                             | -22.6                | 14.2                           | 43.5                  | 29.3         | 1.70                | 0                   | QUASI-PEAK        | None        |



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

# FCC Class B 3 Meter

## Electric Field Strength

EUT: HA06  
Manufacturer: Intermatic  
Operating Condition: 68 deg. F.; 28% R.H.  
Test Site: Site 2  
Operator: Craig Brandt  
Test Specification: 120 V AC 60 Hz  
Comment: Continuous Receive Mode  
Date:1-27-04

## TEXT: "Site 2 MidV 3M"

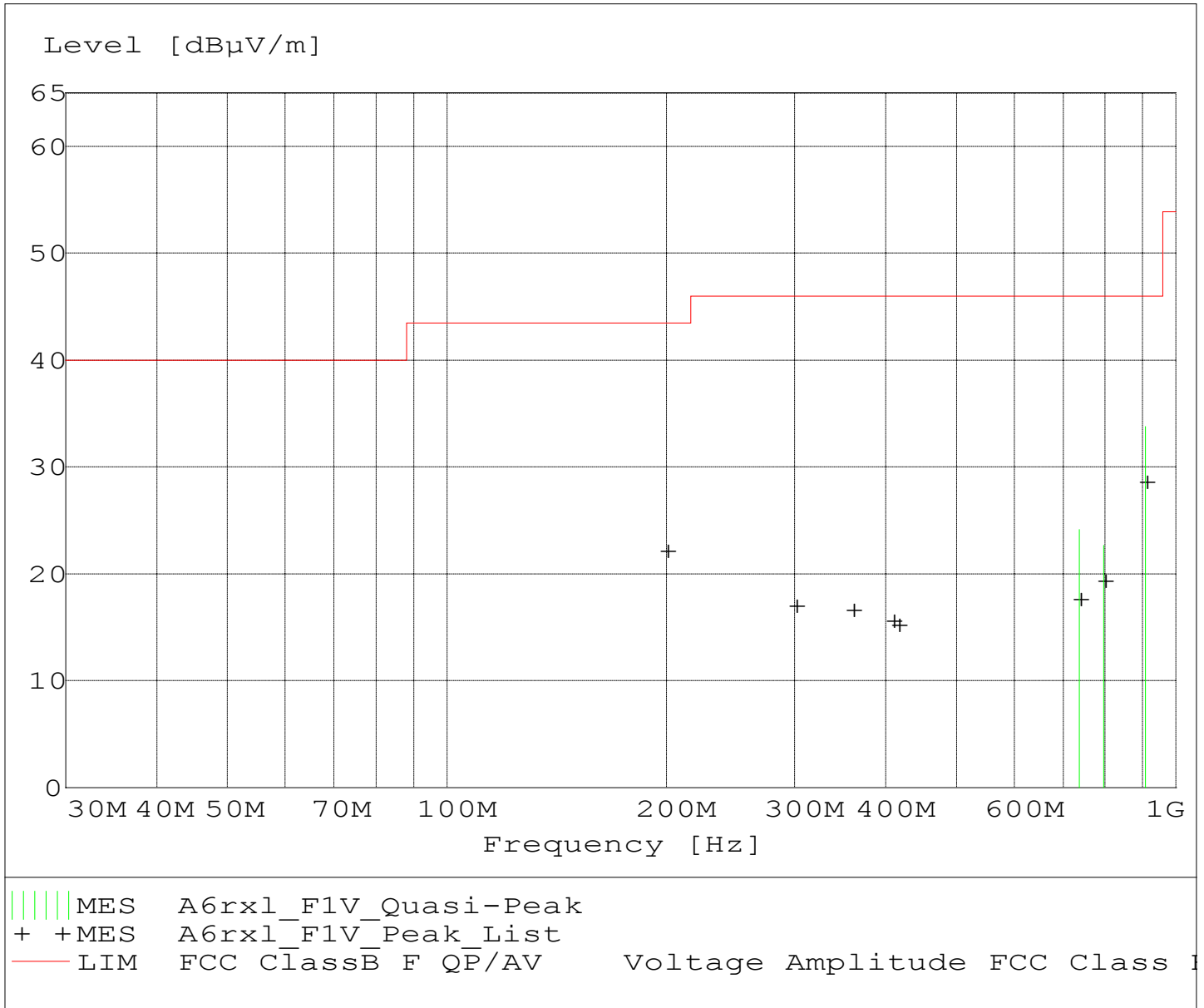
Short Description: Test Set-up Vert30-1000MHz  
TEST EQUIPMENT: Receiver --- Rohde & Schwarz ESI 40 SN: 837808/005  
  
Antennas ---  
Biconical -- EMCO 3104C SN: 0005-4892  
Log Periodic -- Electro Metrics LPA-25 SN: 1205  
  
Pre-Amp --- Rohde & Schwarz TS-PR10 SN: 032001/004  
  
TEST SET-UP: EUT Measured at 3 Meters with VERTICAL Antenna Polarization



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A







Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**MEASUREMENT RESULT: "A6rx1\_F1V\_Final"**

1/27/04 2:41PM

| Frequency<br>MHz | Level<br>dB $\mu$ V | Antenna<br>Factor<br>dB $\mu$ V/m | System<br>Loss<br>dB | Total<br>Level<br>dB $\mu$ V/m | Limit<br>dB $\mu$ V/m | Margin<br>dB | Height<br>Ant.<br>m | EUT<br>Angle<br>deg | Final<br>Detector | Comment |
|------------------|---------------------|-----------------------------------|----------------------|--------------------------------|-----------------------|--------------|---------------------|---------------------|-------------------|---------|
| 908.270000       | 29.14               | 23.02                             | -18.4                | 33.8                           | 46.0                  | 12.2         | 1.00                | 0                   | QUASI-PEAK        | None    |
| 737.680000       | 22.14               | 21.28                             | -19.3                | 24.1                           | 46.0                  | 21.9         | 1.00                | 0                   | QUASI-PEAK        | None    |
| 796.680000       | 20.06               | 21.47                             | -18.9                | 22.6                           | 46.0                  | 23.4         | 1.00                | 0                   | QUASI-PEAK        | None    |



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

# FCC Class B 3 Meter

## Electric Field Strength

EUT: HA06  
Manufacturer: Intermatic  
Operating Condition: 68 deg. F.; 28% R.H.  
Test Site: Site 2  
Operator: Craig Brandt  
Test Specification: 120 V AC 60 Hz  
Comment: Continuous Receive Mode  
Date:1-27-04

## TEXT: "Site 2 MidH 3M"

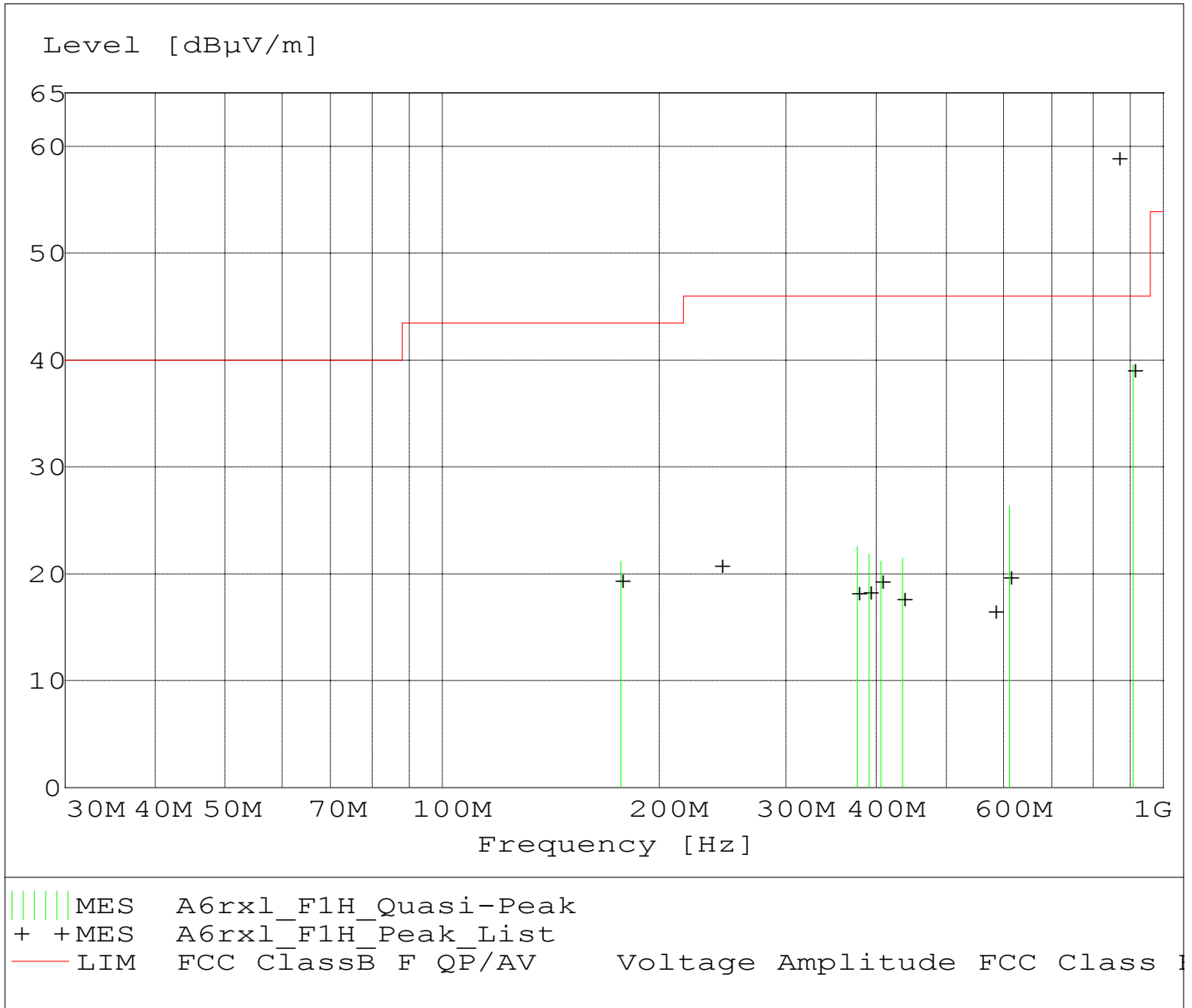
Short Description: Test Set-up Horz30-1000MHz  
TEST EQUIPMENT: Receiver --- Rohde & Schwarz ESI 40 SN: 837808/005  
  
Antennas ---  
Biconical -- EMCO 3104C SN: 0005-4892  
Log Periodic -- Electro Metrics LPA-25 SN: 1205  
  
Pre-Amp --- Rohde & Schwarz TS-PR10 SN: 032001/004  
  
TEST SET-UP: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A





Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**MEASUREMENT RESULT: "A6rx1\_F1H\_Final"**

1/27/04 2:51PM

| Frequency<br>MHz | Level<br>dB $\mu$ V | Antenna<br>Factor<br>dB $\mu$ V/m | System<br>Loss<br>dB | Total<br>Level<br>dB $\mu$ V/m | Limit<br>dB $\mu$ V/m | Margin<br>dB | Height<br>Ant.<br>m | EUT<br>Angle<br>deg | Final<br>Detector | Comment |
|------------------|---------------------|-----------------------------------|----------------------|--------------------------------|-----------------------|--------------|---------------------|---------------------|-------------------|---------|
| 908.27           | 34.94               | 23.02                             | -18.4                | 39.6                           | 46.0                  | 6.4          | 1.00                | 45                  | QUASI-PEAK        | None    |
| 612.27           | 27.96               | 18.67                             | -20.3                | 26.3                           | 46.0                  | 19.7         | 1.50                | 45                  | QUASI-PEAK        | None    |
| 177.04           | 28.43               | 15.39                             | -22.6                | 21.2                           | 43.5                  | 22.3         | 2.00                | 315                 | QUASI-PEAK        | None    |
| 376.22           | 29.05               | 14.95                             | -21.5                | 22.5                           | 46.0                  | 23.5         | 1.00                | 45                  | QUASI-PEAK        | None    |
| 390.98           | 27.88               | 15.36                             | -21.4                | 21.8                           | 46.0                  | 24.2         | 1.00                | 30                  | QUASI-PEAK        | None    |
| 435.26           | 26.94               | 15.83                             | -21.3                | 21.5                           | 46.0                  | 24.5         | 1.00                | 45                  | QUASI-PEAK        | None    |
| 405.74           | 26.94               | 15.55                             | -21.3                | 21.2                           | 46.0                  | 24.8         | 1.00                | 30                  | QUASI-PEAK        | None    |



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**RADIATED DATA AND GRAPH(S) TAKEN FOR**

**FIELD STRENGTH**

**SPURIOUS EMISSION MEASUREMENTS**

**PART 15.209**



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

### FCC Class B 3 Meter

#### Electric Field Strength

EUT: HA06  
Manufacturer: Intermatic  
Operating Condition: 68 deg. F.; 27% R.H.  
Test Site: Site 2  
Operator: Craig Brandt  
Test Specification:  
Comment: Continuous Transmit Mode  
Date:1-26-04

#### TEXT: "Site 2 6204&106 V3M"

Short Description: Test Set-up Vert1GHz-  
TEST EQUIPMENT: Receiver --- Rohde & Schwarz ESI 40 SN: 837808/006

Horn Antenna --- ETS 3115 SN: 6204

Pre-Amps ---

|               |                            |                |
|---------------|----------------------------|----------------|
| 1 - 10 GHz    | -- Miteq AMF-6D-010100-50  | SN: 213976     |
| 10 - 18 GHz   | -- Miteq AMF-6B-100200-50  | SN: 313936     |
| 18 - 26.5 GHz | -- Miteq AMF-8B-180265-40  | SN: 438727     |
| 26.5 - 40 GHz | -- Rohde & Schwarz TS-PR40 | SN: 052002/025 |

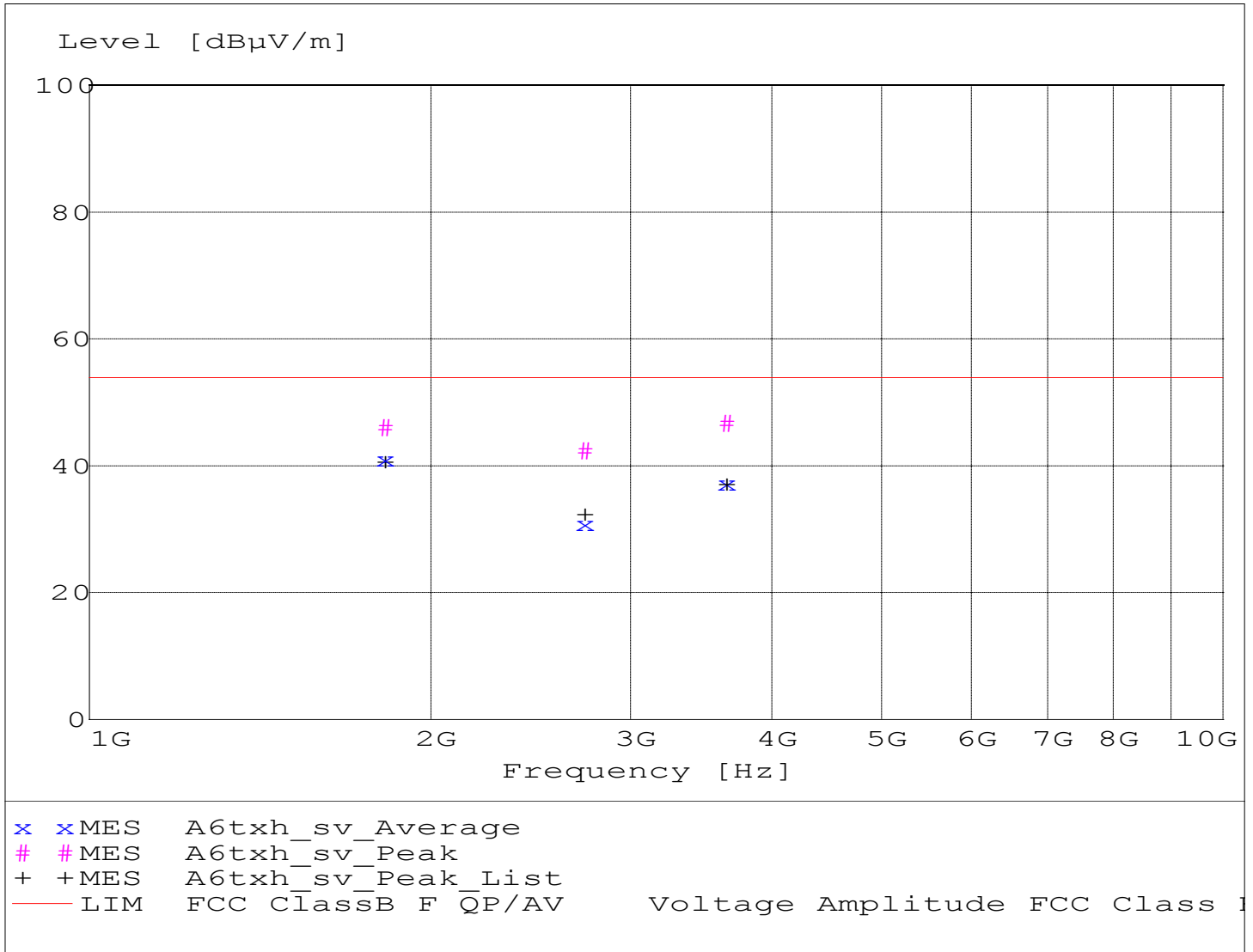
TEST SET-UP: EUT Measured at 3 Meters with VERTICAL Antenna Polarization



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A





Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**MEASUREMENT RESULT: "A6txh\_sv\_Final"**

1/26/04 10:34AM

| Frequency<br>MHz | Level<br>dBμV | Antenna<br>Factor<br>dBμV/m | System<br>Loss<br>dB | Total<br>Level<br>dBμV/m | Limit<br>dBμV/m | Margin<br>dB | Height<br>Ant.<br>m | EUT<br>Angle<br>deg | Final<br>Detector | Comment |
|------------------|---------------|-----------------------------|----------------------|--------------------------|-----------------|--------------|---------------------|---------------------|-------------------|---------|
| 3633.65          | 50.42         | 31.70                       | -35.5                | 46.7                     | 53.9            | 7.2          | 1.00                | 315                 | MAX PEAK          | None    |
| 1816.85          | 54.62         | 27.65                       | -36.2                | 46.1                     | 53.9            | 7.8          | 1.00                | 225                 | MAX PEAK          | None    |
| 2725.25          | 48.46         | 29.74                       | -35.8                | 42.4                     | 53.9            | 11.5         | 1.00                | 0                   | MAX PEAK          | None    |
| 1816.85          | 49.59         | 27.65                       | -36.2                | 41.0                     | 53.9            | 12.9         | 1.00                | 225                 | AVERAGE           | None    |
| 3633.65          | 40.94         | 31.70                       | -35.5                | 37.2                     | 53.9            | 16.7         | 1.00                | 315                 | AVERAGE           | None    |
| 2725.25          | 36.96         | 29.74                       | -35.8                | 30.9                     | 53.9            | 23.0         | 1.00                | 0                   | AVERAGE           | None    |





Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

### *FCC Class B 3 Meter*

## Electric Field Strength

EUT: HA06  
Manufacturer: Intermatic  
Operating Condition: 68 deg. F.; 27% R.H.  
Test Site: Site 2  
Operator: Craig Brandt  
Test Specification:  
Comment: Continuous Transmit Mode  
Date:1-26-04

### ***TEXT: "Site 2 6204&106 H3M"***

Short Description: Test Set-up Horz1GHz-  
TEST EQUIPMENT: Receiver --- Rohde & Schwarz ESI 40 SN: 837808/006

Horn Antenna --- ETS 3115 SN: 6204

Pre-Amps ---

1 - 10 GHz -- Miteq AMF-6D-010100-50 SN: 213976  
10 - 18 GHz -- Miteq AMF-6B-100200-50 SN: 313936  
18 - 26.5 GHz -- Miteq AMF-8B-180265-40 SN: 438727  
26.5 - 40 GHz -- Rohde & Schwarz TS-PR40 SN: 052002/025

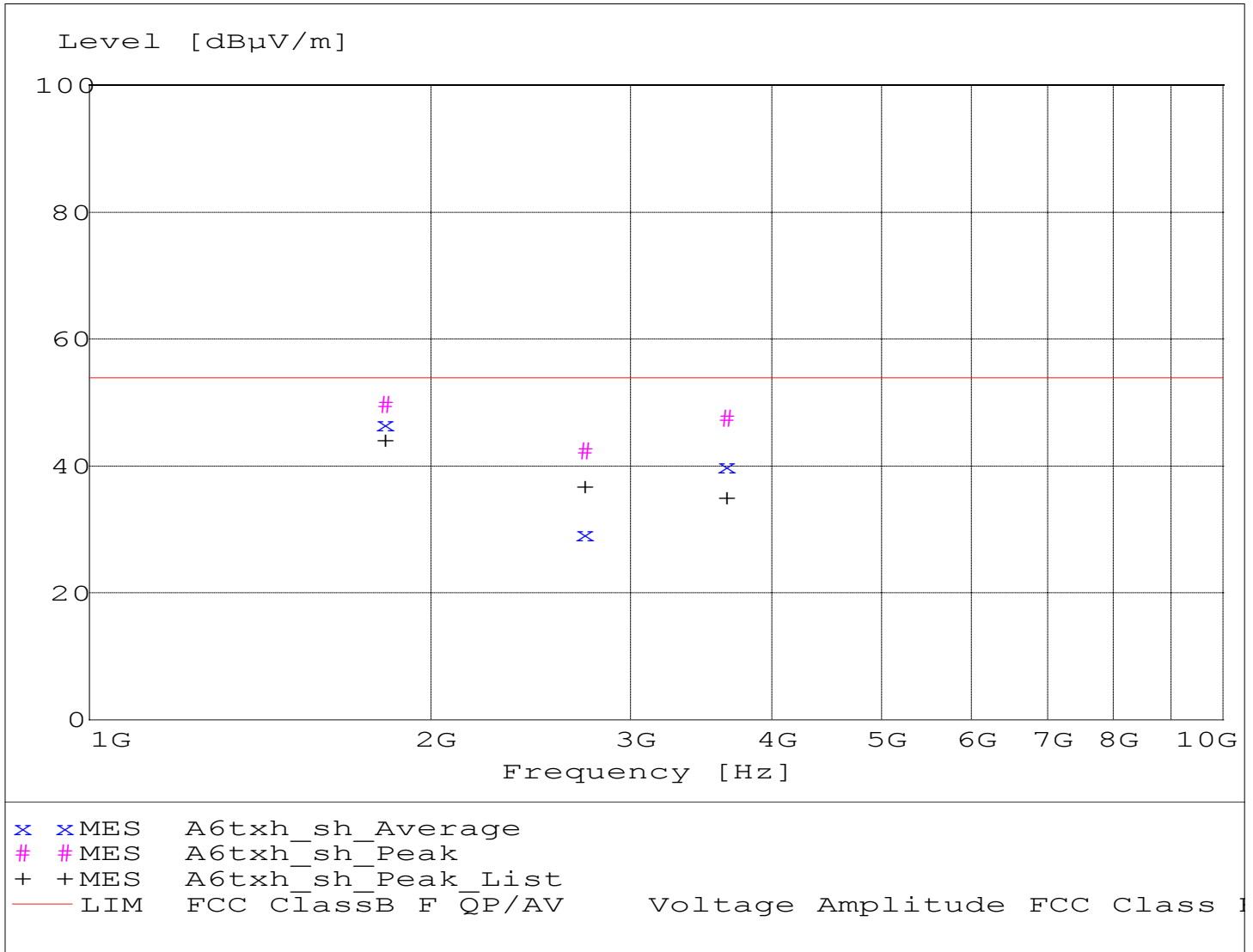
TEST SET-UP: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A





Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**MEASUREMENT RESULT: "A6txh\_sh\_Final"**

1/26/04 10:48AM

| Frequency<br>MHz | Level<br>dBµV | Antenna<br>Factor<br>dBµV/m | System<br>Loss<br>dB | Total<br>Level<br>dBµV/m | Limit<br>dBµV/m | Margin<br>dB | Height<br>Ant.<br>m | EUT<br>Angle<br>deg | Final<br>Detector | Comment |
|------------------|---------------|-----------------------------|----------------------|--------------------------|-----------------|--------------|---------------------|---------------------|-------------------|---------|
| 1816.85          | 58.24         | 27.65                       | -36.2                | 49.7                     | 53.9            | 4.2          | 1.00                | 270                 | MAX PEAK          | None    |
| 3633.65          | 51.31         | 31.70                       | -35.5                | 47.5                     | 53.9            | 6.4          | 2.00                | 0                   | MAX PEAK          | None    |
| 1816.85          | 55.14         | 27.65                       | -36.2                | 46.6                     | 53.9            | 7.3          | 1.00                | 270                 | AVERAGE           | None    |
| 2725.25          | 48.46         | 29.74                       | -35.8                | 42.4                     | 53.9            | 11.5         | 1.00                | 270                 | MAX PEAK          | None    |
| 3633.65          | 43.86         | 31.70                       | -35.5                | 40.1                     | 53.9            | 13.8         | 2.00                | 0                   | AVERAGE           | None    |
| 2725.25          | 35.43         | 29.74                       | -35.8                | 29.4                     | 53.9            | 24.5         | 1.00                | 270                 | AVERAGE           | None    |



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

## APPENDIX A

# FCC Class B 3 Meter

## Electric Field Strength

EUT: HA06  
Manufacturer: Intermatic  
Operating Condition: 68 deg. F.; 28% R.H.  
Test Site: Site 2  
Operator: Craig Brandt  
Test Specification: 120 V AC 60 Hz  
Comment: Continuous Receive Mode  
Date:1-27-04

## TEXT: "Site 2 6204&106 V3M"

Short Description: Test Set-up Vert1GHz-  
TEST EQUIPMENT: Receiver --- Rohde & Schwarz ESI 40 SN: 837808/006

Horn Antenna --- ETS 3115 SN: 6204

Pre-Amps ---

|               |                            |                |
|---------------|----------------------------|----------------|
| 1 - 10 GHz    | -- Miteq AMF-6D-010100-50  | SN: 213976     |
| 10 - 18 GHz   | -- Miteq AMF-6B-100200-50  | SN: 313936     |
| 18 - 26.5 GHz | -- Miteq AMF-8B-180265-40  | SN: 438727     |
| 26.5 - 40 GHz | -- Rohde & Schwarz TS-PR40 | SN: 052002/025 |

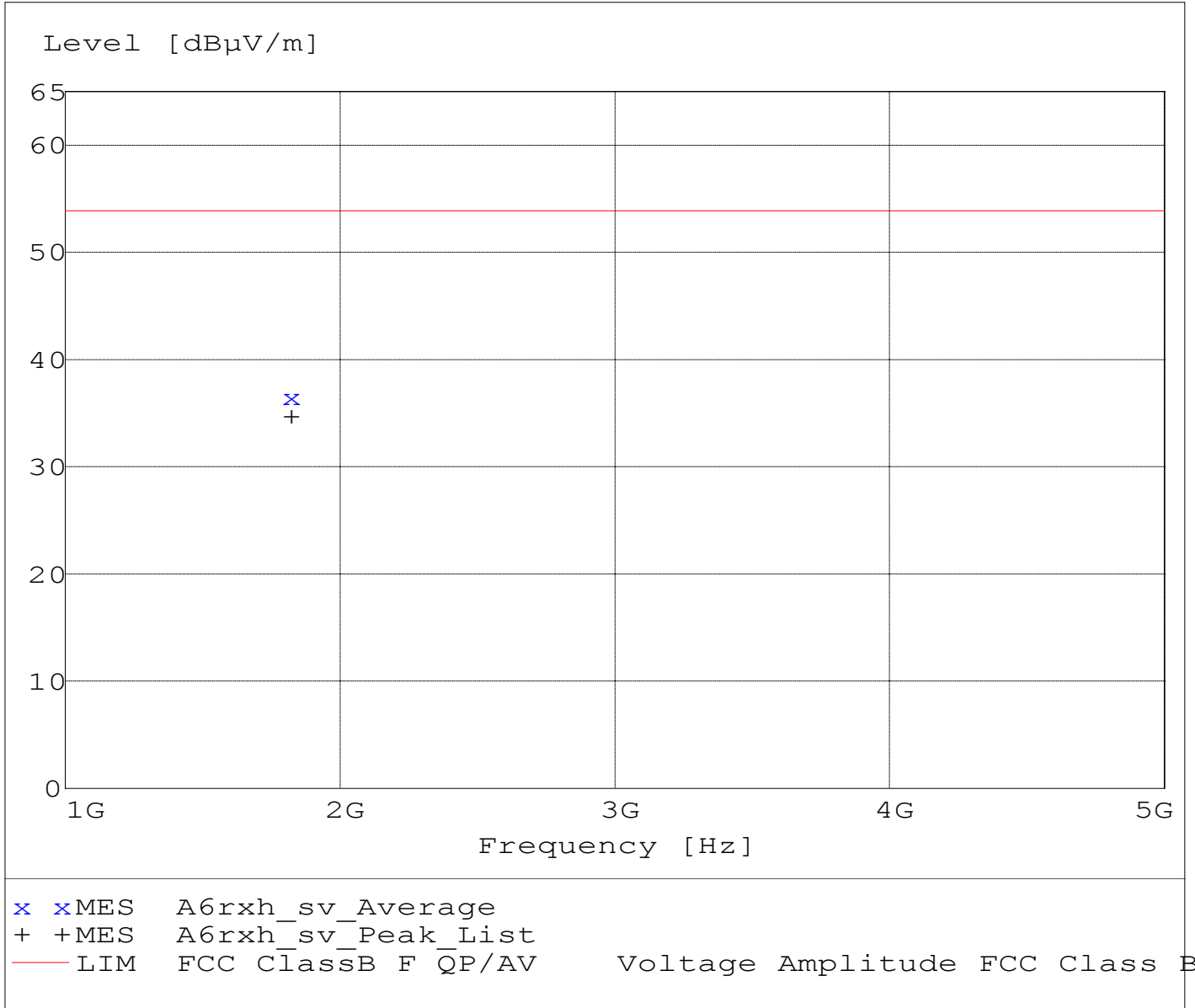
TEST SET-UP: EUT Measured at 3 Meters with VERTICAL Antenna Polarization



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A





Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**MEASUREMENT RESULT: "A6rxh\_sv\_Final"**

1/27/04 3:05PM

| Frequency | Level      | Antenna | System | Total | Limit        | Margin | Height    | EuT          | Final    | Comment |
|-----------|------------|---------|--------|-------|--------------|--------|-----------|--------------|----------|---------|
| MHz       | dB $\mu$ V | Factor  | Loss   | Level | dB $\mu$ V/m | dB     | Ant.<br>m | Angle<br>deg | Detector |         |
| 1816.6    | 45.05      | 27.65   | -36.2  | 36.5  | 53.9         | 17.4   | 1.00      | 90           | AVERAGE  | None    |



Company: Intermatic Inc.  
 Model Tested: HA06  
 Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**FCC Class B 3 Meter**

**Electric Field Strength**

EUT: HA06  
 Manufacturer: Intermatic  
 Operating Condition: 68 deg. F.; 28% R.H.  
 Test Site: Site 2  
 Operator: Craig Brandt  
 Test Specification: 120 V AC 60 Hz  
 Comment: Continuous Receive Mode  
 Date:1-27-04

**TEXT: "Site 2 6204&106 H3M"**

Short Description: Test Set-up Horz1GHz-  
 TEST EQUIPMENT: Receiver --- Rohde & Schwarz ESI 40 SN: 837808/006

Horn Antenna --- ETS 3115 SN: 6204

Pre-Amps ---

|               |                            |                |
|---------------|----------------------------|----------------|
| 1 - 10 GHz    | -- Miteq AMF-6D-010100-50  | SN: 213976     |
| 10 - 18 GHz   | -- Miteq AMF-6B-100200-50  | SN: 313936     |
| 18 - 26.5 GHz | -- Miteq AMF-8B-180265-40  | SN: 438727     |
| 26.5 - 40 GHz | -- Rohde & Schwarz TS-PR40 | SN: 052002/025 |

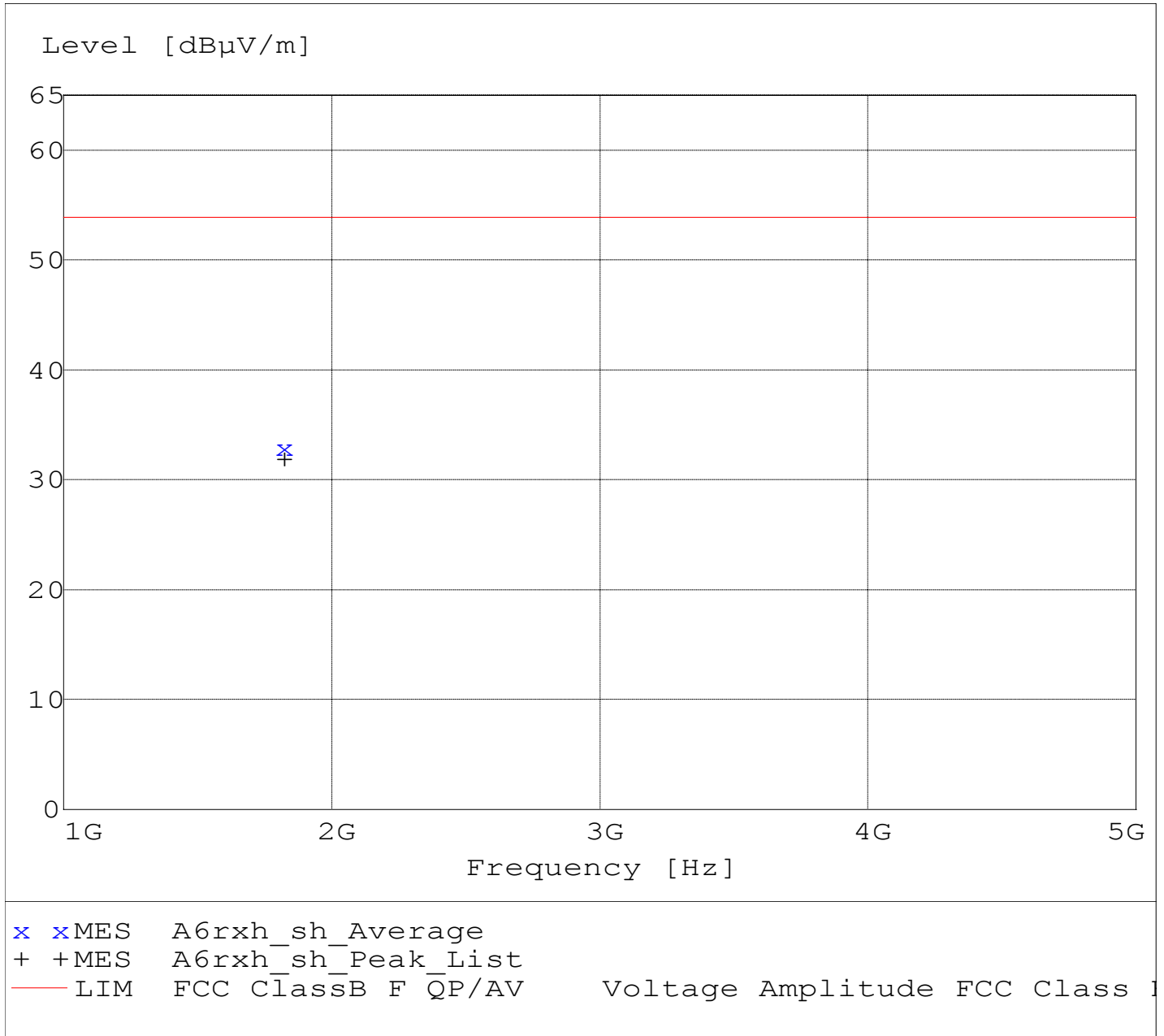
TEST SET-UP: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization



Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

### APPENDIX A







Company: Intermatic Inc.  
Model Tested: HA06  
Report Number: 10549

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

**MEASUREMENT RESULT: "A6rxh\_sh\_Final"**

1/27/04 3:15PM

| Frequency | Level      | Antenna      | System | Total        | Limit        | Margin | Height | EUT   | Final    | Comment |
|-----------|------------|--------------|--------|--------------|--------------|--------|--------|-------|----------|---------|
| Hz        | dB $\mu$ V | Factor       | Loss   | Level        | dB $\mu$ V/m | dB     | Ant.   | Angle | Detector |         |
|           |            | dB $\mu$ V/m | dB     | dB $\mu$ V/m | dB $\mu$ V/m |        | m      | deg   |          |         |
| 1816.5    | 41.49      | 27.65        | -36.2  | 33.0         | 53.9         | 20.9   | 1.00   | 135   | AVERAGE  | None    |