DLS ELECTRONIC SYSTEMS, INC.

Company: Reliance Controls Corporation
Model Tested: 11031
Report Number: 10822

1250 Peterson Dr., Wheeling, IL 60090

FCC Rules and Regulations / Intentional Radiators

Periodic operational in the 40.66-40.70 MHz Band and above 70 MHz.

Part 15, Subpart C, Section 15.231

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

Formal Name:	Reliance Controls "The Home Protectors" Wireless Remote Flood or Freeze Warning Alarm Transmitter
Kind of Equipment:	Wireless Remote Flood or Freeze Warning Alarm
Test Configuration:	Standalone or powered by wall-mounted AC-to-DC power supply (Tested at 120 vac, 60 Hz)
Model Number(s):	11031 (part of THP 203 system, part of THP204 system)
Model(s) Tested:	11031
Serial Number(s):	NA
Date of Tests:	April 22 & June 30, 2004
Test Conducted For:	Reliance Controls Corporation 2001 Young Court Racine, Wisconsin 53404

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:

Reliance Controls Corporation

United States Department of Commerce
National Institute of Standards and Technology

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ISO/IEC 17025:1999
ISO 9002:1994

Certificate of Accreditation

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

is recognized by the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria set forth in NIST Handbook 150:2001, all requirements of ISO/IEC 17025:1999, and relevant requirements of ISO 9002:1994. Accreditation is awarded for specific services, listed on the Scope of Accreditation, for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

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NVLAP Lab Code: 100276-0

NVLAP-01C (06-01)

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1250 Peterson Dr., Wheeling, IL 60090

Company: Reliance Controls Corporation
Model Tested: 11031
Report Number: 10822

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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
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

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NVLAP Code	*Designation / Description*
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 CISPR 11 (2002), and CNS 13803 (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 CISPR 13 (2003), 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 Similiar Electrical Apparatus - Part 1: Emissions
12/CIS14a	EN 55014-1 (1993), 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

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NVLAP Code	*Designation / Description*
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 15 (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) & EN 55022 (1998) + A1(2000): Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a	IEC/CISPR 22 (1993) and EN 55022 (1994): Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1 (1995) and Amendment 2 (1996)

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NVLAP Code	*Designation / Description*
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	IEC 61000-3-3(1995); EN 61000-3-3(1995); 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

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NVLAP Code	*Designation / Description*
12/FCC15e	ANSI C63.4 (2001) with FCC Method 47 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

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NVLAP Code	*Designation / Description*
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 Dischare (ESD)
12/I01	IEC 61000-4-2, Ed. 2.1 (2001), A1, A2; EN 61000-4-2: Electrostatic Discharge Immunity Test
12/I02	IEC 61000-4-3, Ed. 2.0 (2002-03); EN 61000-4-3 (2002): Radiated Radio-Frequency Electromagnetic Field Immunity Test
12/I03	IEC 61000-4-4(1995), A1(2000), A2(2001); EN 61000-4-4: Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical Fast Transient/Burst Immunity Test
12/I04	IEC 61000-4-5, Ed. 1.1 (2001-04); EN 61000-4-5: Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test

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NVLAP Code	*Designation / Description*
12/I05	IEC 61000-4-6, Ed. 2.0 (2003-05); EN 61000-4-6: Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields
12/I06	IEC 61000-4-8, Ed. 1.1 (2001); EN 61000-4-8: Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test
12/I07	IEC 61000-4-11, Ed. 1.1 (2001-03); EN 61000-4-11: 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

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NVLAP Code	*Designation / Description*
12/RSS125	RSS-125 (March 25, 2000): Land Mobile and Fixed Radio Transmitters and Receivers, 1.705 to 50.0 MHz, Primarily Amplitude Modulated
12/RSS131	RSS-131, Issue 2 (July 2003): Zone Enhancers for the Land Mobile Service
12/RSS132	RSS-132, Issue 1 (August 2002): 800 MHz Cellular Telephones Employing New Technologies
12/RSS133	RSS-133, Issue 2, Rev. 1 (November 6, 1999): 2GHz Personal Communications Services
12/RSS134	RSS-134, Issue 1, Rev. 1 (March 25, 2000): 900 MHz Narrowband Personal Communication Service
12/RSS135	RSS-135, Issue 1 (October 26, 1996): Digital Scanner Receivers
12/RSS136	RSS-136, Issue 5 (October 2002): Land and Mobile Station Radiotelephone Transmitters and Receivers Operating in the 26.960 - 27.410 MHz General Radio Service Band
12/RSS137	RSS-137, Issue 1, Rev. 1 (September 25, 1999): Location and Monitoring Service (902 - 928 MHz)
12/RSS139	RSS-139, Isssue 1 (February 5, 2000): Licensed Radiocommunications Devices in the Band 2400 - 2483.5 MHz

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NVLAP Code	*Designation / Description*
12/RSS141	RSS-141, Issue 1 (July 2003): Aeronautical Radiocommunication Equipment in the Frequency Band 117.975 - 137 MHz
12/RSS142	RSS-142, Issue 2 (August 2002): Narrowband Multipoint Communication Systems in the 1,427 - 1,430 MHz and 1,493.5 - 1,496.5 MHz Bands
12/RSS170	RSS-170, Issue 1, Rev. 1 (November 6, 1999): Satellite Mobile Earth Stations
12/RSS191	RSS-191, Issue 2 (August 2002): Local Multipoint Communication Systems in the 28 GHz Band; Point-to-Point and Point-to-Multipoint Broadband Communication Systems in the 24 GHz and 38 GHz Bands
12/RSS192	RSS-192, Issue 1 (November 6, 1999): Fixed Wireless Access Systems in the Band 3400 - 3700 MHz
12/RSS193	RSS-193, Issue 1 (July 2003): Multipoint and Point-to-Point Communication Systems (MCS) in the Fixed Service Operating in the 2,150 - 2,160 MHz, 2,500 - 2,596 MHz and 2,686 - 2,690 MHz Bands
12/RSS210	RSS-210, Issue 5 (November 2001): Low Power Licence-Exempt Radiocommunication Devices
12/RSS212	RSS-212, Issue 1 (February 27, 1999): Test Facilities and Test Methods for Radio Equipment

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NVLAP Code	*Designation / Description*
12/RSS213	RSS-213, Issue 1 (April 24, 1999): 2 GHz Licence-Exempt Personal Communications Service Devices (PCS)
12/RSS215	RSS-215, Issue 1 (November 6, 1999): Analogue Scanner Receivers
Telecommunications Test Methods:	
12/FCC2a2	TIA/EIA 603A (2001) with 47 CFR Part 2: Public Mobile Services in 47 CFR Part 22
12/FCC2b2	TIA/EIA 603A (2001) with 47 CFR Part 2: Private Land Mobile Radio Services in 47 CFR Part 90
12/FCC2d1	TIA/EIA 603A (2001) with 47 CFR Part 2: Experimental Radio, Auxiliary, Special Broadcast and Other Program Distributional Services in 47 CFR Part 74
12/FCC2e1	TIA/EIA 603A (2001) with 47 CFR Part 2: International Fixed Public Radiocommunication Services in 47 CFR Part 23
12/CIS15c	EN 55015 (2000) + A1 (2001): Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment

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NVLAP Code	*Designation / Description*
MIL-STD-462 : Conducted Emissions:	
12/A13	MIL-STD-462 Version D Method CE101
12/A14	MIL-STD-462 Version D Method CE102
12/A16	MIL-STD-461 Version E Method CE101
12/A17	MIL-STD-461 Version E Method CE102
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

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NVLAP Code	*Designation / Description*
MIL-STD-462 : Radiated Emissions:	
12/D04	MIL-STD-462 Version D Method RE101
12/D05	MIL-STD-462 Version D Method RE102
12/D06	MIL-STD-462 Version D Method RE103
MIL-STD-462 : Radiated Susceptibility:	
12/E08	MIL-STD-462 Version D Method RS101
12/E09	MIL-STD-462 Version D Method RS103

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1.0 SUMMARY OF TEST REPORT

It was found that the Reliance Controls "The Home Protectors" Wireless Remote Flood or Freeze Warning Alarm Transmitter, Model Number(s) 11031, **"meets"** the radio interference conducted and radiated emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Section 15.231 for periodic operational in the 40.66-40.70 MHz Band and above 70 MHz.

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

Text: 58

2.0 INTRODUCTION

On April 22 & June 30, 2004, a series of radio frequency interference measurements was performed on Reliance Controls "The Home Protectors" Wireless Remote Flood or Freeze Warning Alarm Transmitter, Model Number(s) 11031, 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 15.33, 15.35, 15.205, 15.209 & 15.231 for Intentional Radiators operating in the Band 40.66-40.70 and above 70 MHz.

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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).

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.

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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.

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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.

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

7.1 Description:

The transmitter module includes an internal temperature sensor and an external water sensor. When either of the sensors is activated, the alert code generator is activated. It reads the alert code from the code selector and synthesizes the code to be transmitted. It also triggers the power amplifier to the on-state for a brief period of time (~ 0.5 sec), at which time the oscillator signal is modulated by the alert code, and the resultant is amplified and provided to the transmitting antenna for transmission. The transmitting antenna consists of a circuit board trace. No external antenna is used.

The 203 Strobe Warning System consists of (1) PN: 11031 Transmitter and (1) 11032 Flood Strobe Receiver. The THP 204 Audible Warning System consists of (1) PN: 11031 Transmitter and (1) 11033 Flood Audio Receiver

7.2 PHYSICAL DIMENSIONS OF EQUIPMENT UNDER TEST

Length: 4.6" x Width: 2.7" x Height: 1.3"

7.3 LINE FILTER USED:

NA

7.4 INTERNAL CLOCK FREQUENCIES:

Switching Power Supply Frequencies:

NA

Clock Frequencies:

315 MHz

7.5 DESCRIPTION OF ALL CIRCUIT BOARDS:

1. Transmitter PN: 11031 rev 3

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

1: There were no additional descriptions noted at the time of test.

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

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9.0 PHOTO INFORMATION AND TEST SET-UP

Item 0 Reliance Controls "The Home Protectors" Wireless Remote Flood or Freeze Warning Alarm Transmitter
Model Number: 11031 Serial Number: NA

Item 1 Probe

Item 2 Test Fixture (not part of EUT)

Item 3 Radio Shack AC Power Supply CAT No: 273-1767A

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10.0 RADIATED PHOTOS TAKEN DURING TESTING

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10.0 RADIATED PHOTOS TAKEN DURING TESTING

10.0 CONDUCTED PHOTOS TAKEN DURING TESTING

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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 Reliance Controls "The Home Protectors" Wireless Remote Flood or Freeze Warning Alarm Transmitter, Model Number(s) 11031 **"meets"** the radio interference conducted and radiated emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Section 15.231 for periodic operational in the 40.66-40.70 MHz Band and above 70 MHz.

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	2/05
Quasi-Peak Adapter	Hewlett/ Packard	85650A	2043A00450	10 kHz – 1 GHz	2/05
Spectrum Analyzer	Hewlett/ Packard	8591A	3009A00700	9 kHz – 1.8 GHz	3/05
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	2/05
Antenna	Electrometrics	LPA-25	1114	200 MHz – 1 GHz	3/05
Antenna	EMCO	3104C	00054892	20 MHz – 200 MHz	3/05

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

TABLE 1 – EQUIPMENT LIST

Test Equipment	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Due Dates
Antenna	Electrometrics	3146	1205	200 MHz – 1 GHz	3/05
Antenna	EMCO	3104C	97014785	20 MHz – 200 MHz	2/05
Antenna	EMCO	3146	97024895	200 MHz – 1 GHz	3/05
Antenna	EMCO	3115	2479	1 GHz – 18 GHz	8/04
Antenna	EMCO	3115	99035731	1 GHz – 18 GHz	4/05
Antenna	Rohde & Schwarz	HUF-Z1	829381001	20 MHz – 1 GHz	2/05
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.

APPENDIX A

TEST PROCEDURE

Part 15, Subpart C, Section 15.231e

ELECTRIC FIELD RADIATED EMISSIONS TEST

ELECTRONIC SYSTEMS, INC.
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

TEST PROCEDURE

ELECTRIC FIELD RADIATED EMISSIONS TEST

1.0 PULSED OPERATION (Duty Cycle Correction Factor)

The radiated emission tests made at D.L.S. Electronic Systems, Inc. for the Reliance Controls "The Home Protectors" Wireless Remote Flood or Freeze Warning Alarm Transmitter, Model Number 11031, are shown by the graphs on the following pages. The actual total "on time" during the 100 msec is 41.082 sec with a total "off time" of 58.918 msec resulting in a **7.73 Duty Cycle Correction Factor**.

To find the actual "on time" during the 100 msec period, the data word is multiplied by the number of data words per 100 msec, yielding actual on time. Taking this number and dividing it by the 100 msec period gives us the Duty Cycle. We than take the Log of the Duty Cycle and multiply it by 20. This gives us the Duty Cycle Correction Factor. The following method was used to determine the Duty Cycle Correction Factor:

Total on time during 100 msec.

1.002 sec/pulse on time * 41 pulses = 41.082 sec (data word on time)

41.082 sec (data on time) + 0 sec (data on time) = 41.082 sec total "on time"

41.082 sec (total "on time") / 100 msec = 410.82 Duty Cycle

20*LOG10 410.82 = **7.73 dB Duty Cycle Correction Factor**

NOTE:

For pulsed operation, the switches were set to generate their maximum "on" time, and measurements were made with the peak detector. As stated in Docket 86-422, the duty cycle of the pulse is determined from the total "on" time for the worst case condition during 100 msec. Using the percentage of the total "on" time over a 100 msec period, the total absolute average value was determined. As stated in Section 3, a maximum of 20 dB can be used.

See the following pages for the graphs of the actual measurements that were made:

ELECTRONIC SYSTEMS, INC.

1250 Peterson Dr., Wheeling, IL 60090

Company: Reliance Controls Corporation
Model Tested: 11031
Report Number: 10822

GRAPH(S) TAKEN OF THE PULSED OPERATION

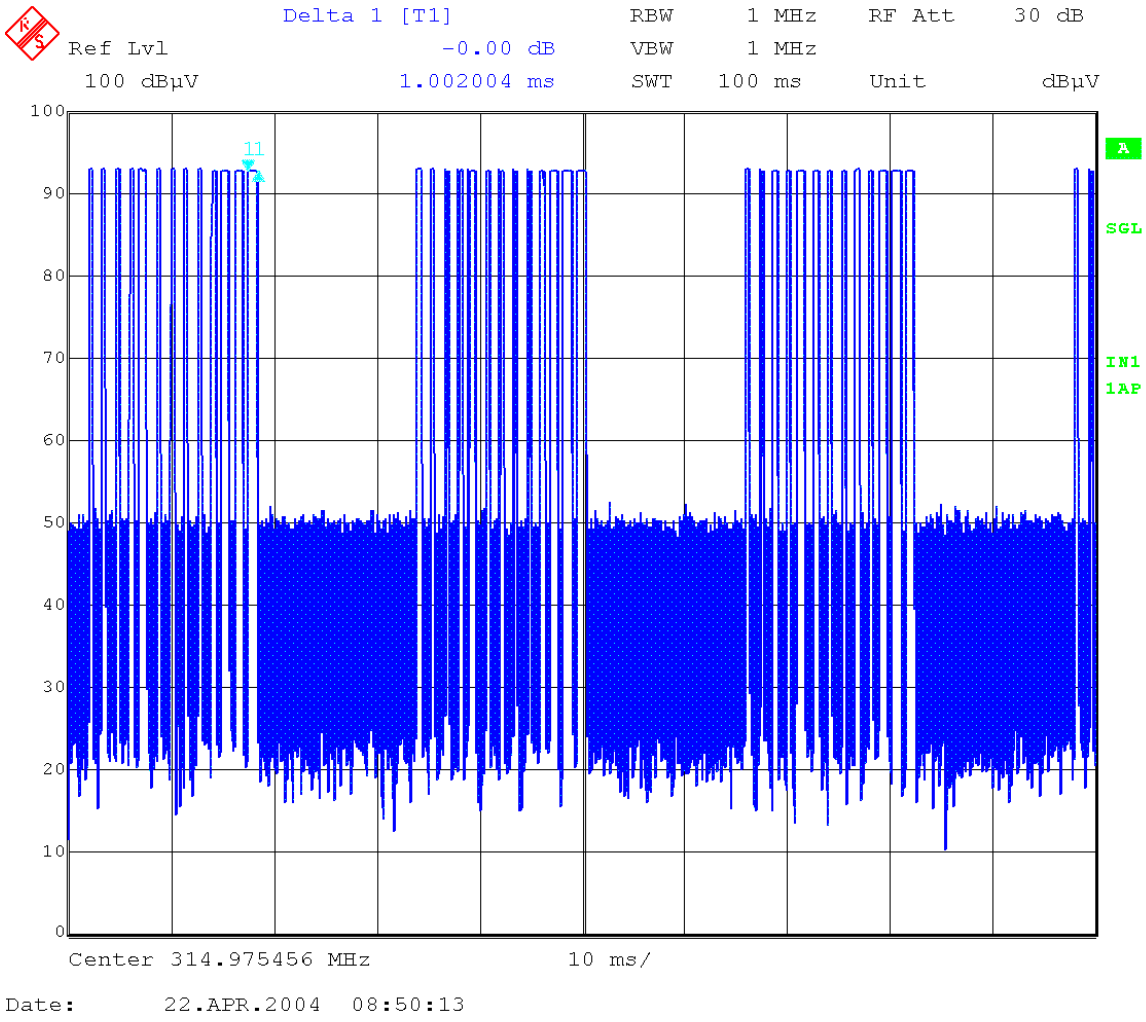
PART 15.231

GRAPHS TAKEN OF THE PULSE TRAIN SHOWING THE FOLLOWING:

1. Number of Bits per Data Word
2. Number of Pulses per 100 msec
3. Off Time between Data Words
4. Data Word On Time

1250 Peterson Dr., Wheeling, IL 60090

Company: Reliance Controls
Model: THP201
Operator: Craig Brandt
Date of test: 04-22-04
Test: Pulse Desensitization (duty cycle correction factor)



41 pulses @ 1.002 ms each = 41.082 ms ON time.
20 log (41.082 ms / 100 ms) = correction factor of 7.72 dB

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APPENDIX A

TEST PROCEDURE

ELECTRIC FIELD RADIATED EMISSIONS TEST

2.0 BANDWIDTHS

The bandwidth of the transmitter shall be confined to the following specifications as specified in Section 15.231c & d:

40.66 MHz to 40.7 MHz	±.01% within the band edges
70 MHz to 900 MHz	.25% of the center frequency
Above 900 MHz	.50% of the center frequency

The bandwidth is determined at the points 20 dB down from the modulated carrier.

As shown by the graph(s) on the following page(s), the bandwidth for the Reliance Controls "The Home Protectors" Wireless Remote Flood or Freeze Warning Alarm Transmitter was measured at 22.19282 kHz, which meets the above specification. With a fundamental frequency of 314.9562 MHz, the FCC Bandwidth limit is 78.739 kHz when multiplying the fundamental by 0.25%, with a margin of 56.546 kHz.

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GRAPH(S) TAKEN OF THE BANDWIDTH EMISSIONS

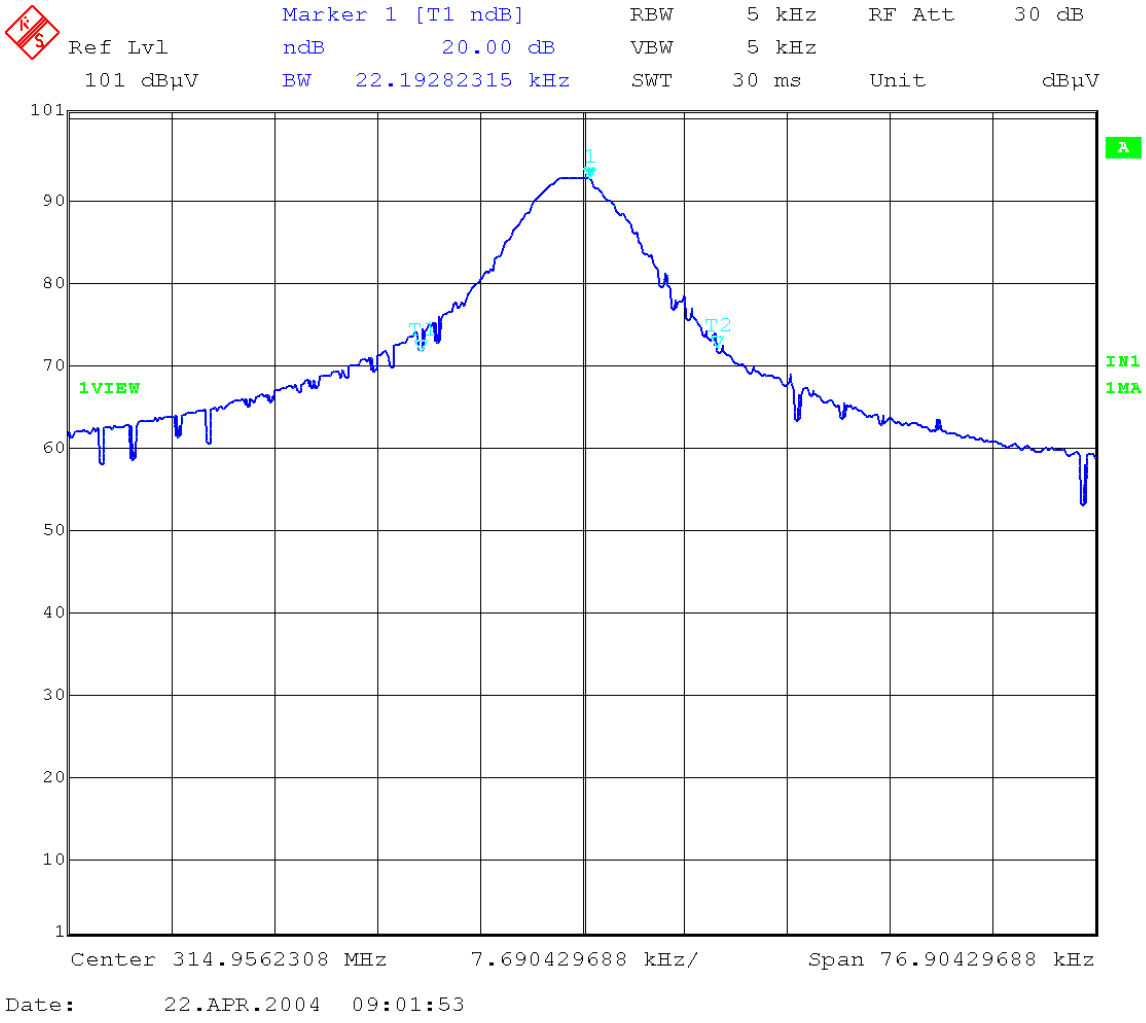
PART 15.231c & d

ELECTRONIC SYSTEMS, INC.

1250 Peterson Dr., Wheeling, IL 60090

Company: Reliance Controls Corporation
Model Tested: 11031
Report Number: 10822

Company: Reliance Controls
Model: THP201
Operator: Craig Brandt
Date of test: 04-22-04
Test: 20 dB Bandwidth
Limit: 0.25% of center frequency = 787 kHz



ELECTRONIC SYSTEMS, INC.
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

TEST PROCEDURE

ELECTRIC FIELD RADIATED EMISSIONS TEST

3.0 FIELD STRENGTH OF SPURIOUS EMISSION MEASUREMENTS - SECTION 15.231e

For operation in the band 40.66 to 40.70 MHz and above 70 MHz the field strength of any emissions within this band shall not exceed the following table at a distance of 3 meters as specified in FCC, Part 15, Section 15.231(e), based on the average value of the measured emissions. The limits are shown in the following table.

Fundamental Frequency in MHz	Field Strength of Fundamental (uV/m at 3m)	Field Strength of Harmonics (uV/m at 3m)
40.66 to 40.70	2250 (67.04 dBuV)	225 (47.04 dBuV)
70 to 130	1250 (61.94 dBuV)	125 (41.94 dBuV)
130 to 174	1250 (61.94 dBuV) to 3750 (71.48 dBuV)	125 (41.94 dBuV) to 375 (51.48 dBuV)
174 to 260	3750 (71.48 dBuV)	375 (51.48 dBuV)
260 to 470	3750 (71.48 dBuV) to 12500 (81.84 dBuV)	375 (51.48 dBuV) to 1250 (61.94 dBuV)
470 and above	12500 (81.84 dBuV)	1250 (61.94 dBuV)

NOTE:

Preliminary radiation measurements may have been performed at a 3 meter or ten meter test distance. The frequency range from 30 MHz to 1000 MHz was scanned at receive antenna heights from one to four meters, and with a 360° rotation of the EUT. Plots were made and the worst-case emissions were recorded.

As stated in 15.35b the 20 dB peak-to-average limit is applicable to all devices measured using an average detector.

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DATA AND GRAPH(S) TAKEN OF CONDUCTED EMISSIONS

PART 15.231c & d

FCC Part 15 Class B

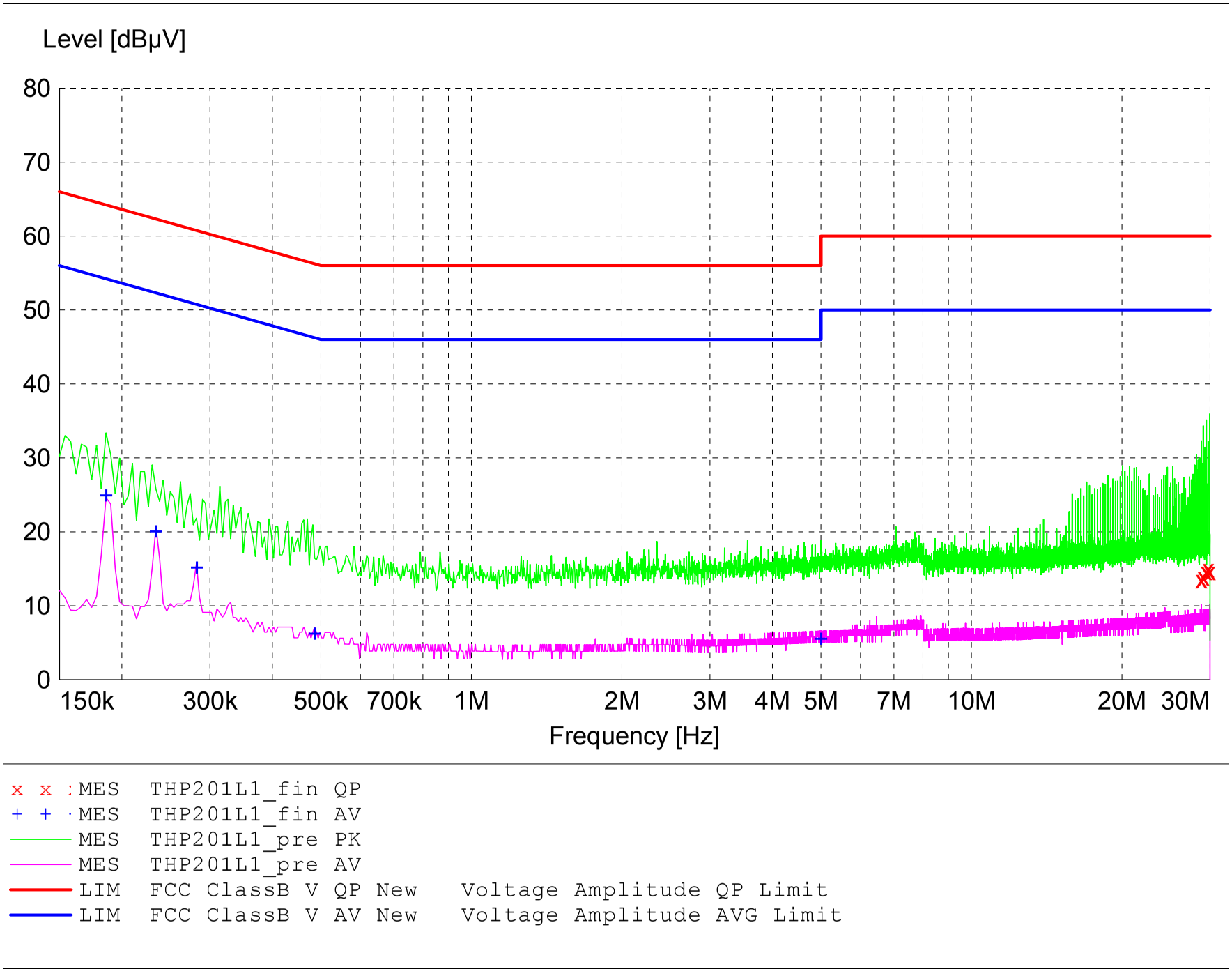
Voltage Mains Test

EUT:	THP201
Manufacturer:	Reliance Controls
Operating Condition:	73 deg. F, 34% R.H.
Test Site:	DLS OF Screen Room
Operator:	Craig Brandt
Test Specification:	120 VAC, 60 Hz
Comment:	Line 1
	Date: 4/22/04

SCAN TABLE: "FCC ClassB Voltage"

Short Description: FCC Class B Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	LISN DLS#128


Level [dBµV]
80
70
60
50
40
30
20
10
0
150k
300k
500k
700k
1M
2M
3M
4M
5M
7M
10M
20M
30M
Frequency [Hz]
x x : MES THP201L1_fin QP
+ + · MES THP201L1_fin AV
MES THP201L1_pre PK
MES THP201L1_pre AV
LIM FCC ClassB V QP New Voltage Amplitude QP Limit
LIM FCC ClassB V AV New Voltage Amplitude AVG Limit

MEASUREMENT RESULT: "THP201L1_fin QP"

4/22/2004 12:16PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
28.858000	13.50	12.2	60	46.5	1	---
29.074000	13.90	12.2	60	46.1	1	---
29.514000	14.60	12.2	60	45.4	1	---
29.734000	15.00	12.2	60	45.0	1	---
29.950000	14.60	12.2	60	45.4	1	---

MEASUREMENT RESULT: "THP201L1_fin AV"

4/22/2004 12:16PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.186000	24.90	11.1	54	29.4	1	---
0.234000	20.00	10.8	52	32.3	1	---
0.282000	15.10	10.6	51	35.6	1	---
0.486000	6.20	10.4	46	40.1	1	---
4.998000	5.50	10.6	46	40.5	1	---

FCC Part 15 Class B

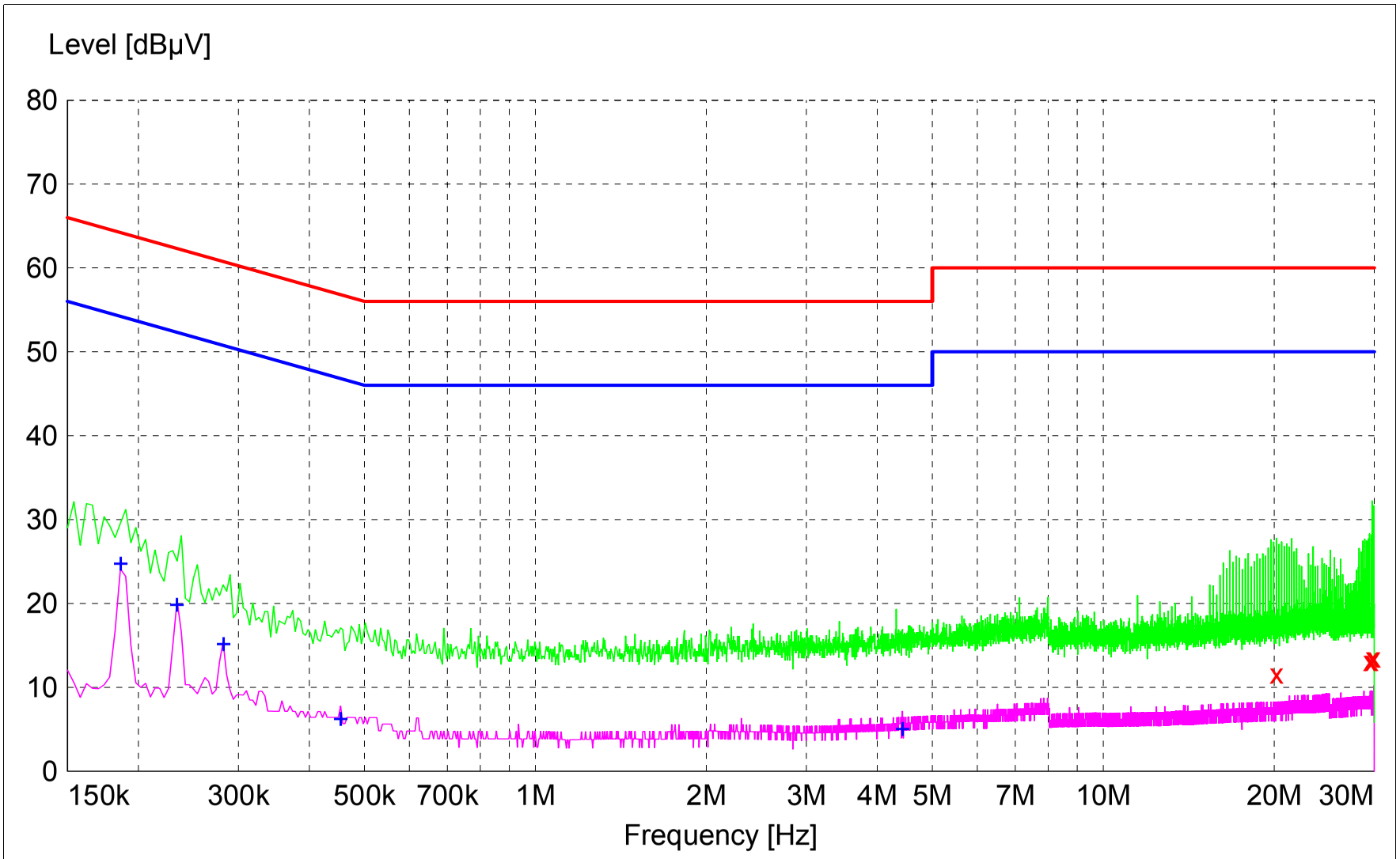
Voltage Mains Test

EUT:	THP201
Manufacturer:	Reliance Controls
Operating Condition:	73 deg. F, 34% R.H.
Test Site:	DLS OF Screen Room
Operator:	Craig Brandt
Test Specification:	120 VAC, 60 Hz
Comment:	Line 2
	Date: 4/22/04

SCAN TABLE: "FCC ClassB Voltage"

Short Description: FCC Class B Voltage

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	LISN DLS#128



x x : MES THP201L2_fin QP
\+ + · MES THP201L2_fin AV
MES THP201L2_pre PK
MES THP201L2_pre AV
LIM FCC ClassB V QP New Voltage Amplitude QP Limit
LIM FCC ClassB V AV New Voltage Amplitude AVG Limit

MEASUREMENT RESULT: "THP201L2_fin QP"

4/22/2004 12:21PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
20.178000	11.60	11.5	60	48.4	1	---
29.442000	13.10	12.2	60	46.9	1	---
29.658000	13.10	12.2	60	46.9	1	---
29.746000	13.50	12.2	60	46.5	1	---
29.962000	13.50	12.2	60	46.5	1	---

MEASUREMENT RESULT: "THP201L2_fin AV"

4/22/2004 12:21PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.186000	24.70	11.1	54	29.5	1	---
0.234000	19.80	10.8	52	32.5	1	---
0.282000	15.10	10.6	51	35.7	1	---
0.454000	6.20	10.4	47	40.6	1	---
4.430000	5.00	10.4	46	41.0	1	---

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GRAPH(S) TAKEN OF FUNDAMENTAL AND SPURIOUS EMISSIONS

PART 15.231c & d

FCC Part 15 Class B

Electric Field Strength

```
EUT:                  THP201
Manufacturer:         Reliance Controls
Operating Condition: 70 deg. F; 60% R.H.
Test Site:            DLS OF Site 3
Operator:             Craig Brandt
Test Specification:
Comment:
                      Date: 06/30/04
```

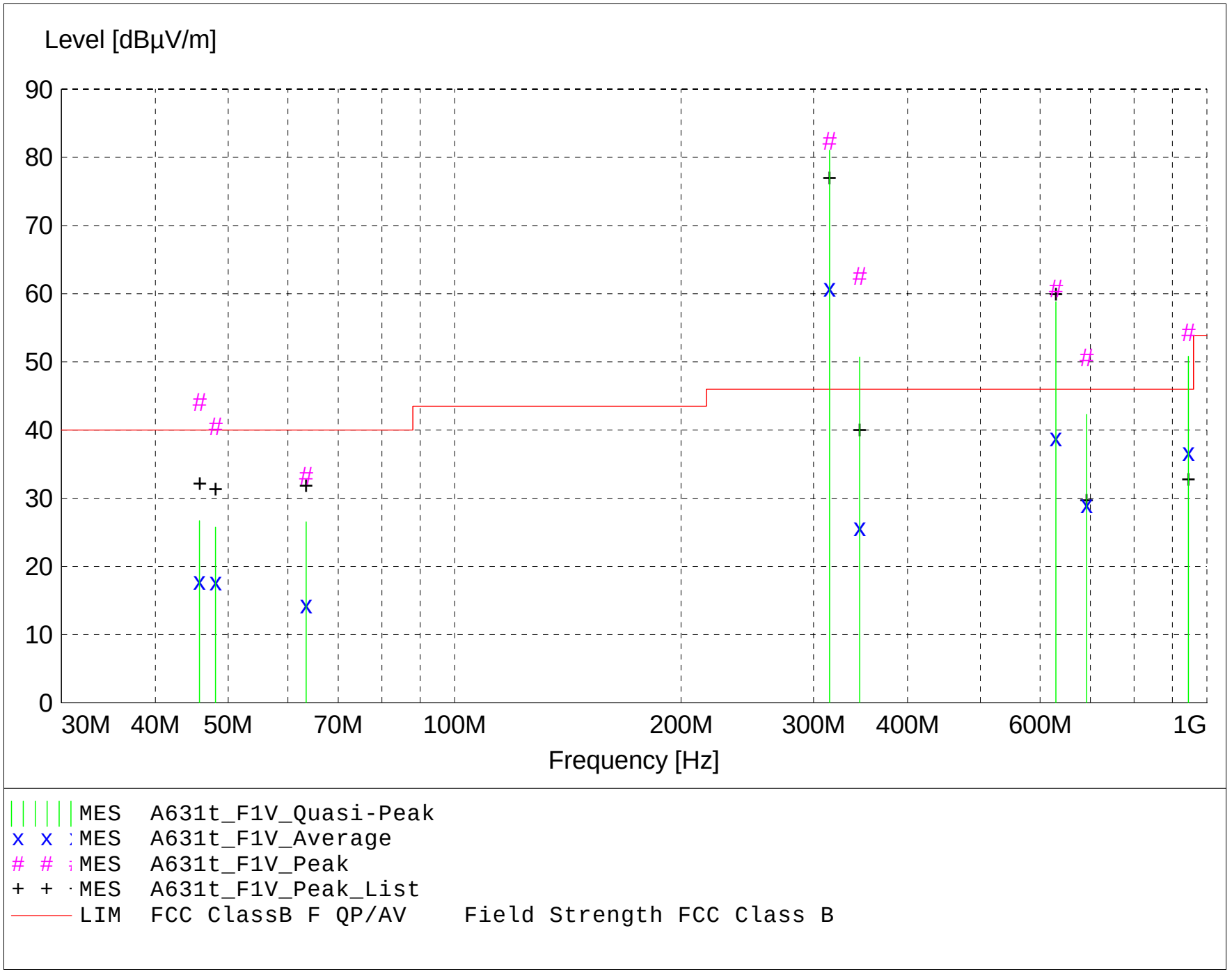
TEXT: "Site 3 MidV 3M"

```
  Short Description:            Test Set-up Vert30-1000MHz
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 26 SN: 837491/010

                Antennas ---
                Biconical    -- EMCO 3104C SN: 9701-4785
                Log Periodic -- EMCO 3146  SN: 9702-4895

                Pre-Amp  --- Rohde&Schwarz TS-PR10 SN: 032001/005

TEST SET-UP:    EuT Measured at 3 Meters with VERTICAL Antenna Polarisation
```


Level [dBµV/m]
90
80
70
60
50
40
30
20
10
0
30M
40M
50M
70M
100M
200M
300M
400M
600M
1G
Frequency [Hz]
MES A631t_F1V_Quasi-Peak
MES A631t_F1V_Average
MES A631t_F1V_Peak
MES A631t_F1V_Peak_List
LIM FCC ClassB F QP/AV Field Strength FCC Class B

MEASUREMENT RESULT: "A631t_F1V_Final"

7/1/2004 1:19PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
45.785000	30.70	11.80	1.6	44.1	40.0	-4.1	1.00	0	MAX PEAK	None
45.785000	13.31	11.80	1.6	26.7	40.0	13.3	1.00	0	QUASI-PEAK	None
45.785000	4.42	11.80	1.6	17.8	40.0	22.2	1.00	0	AVERAGE	None
48.085000	26.93	11.93	1.7	40.5	40.0	-0.5	1.00	0	MAX PEAK	None
48.085000	12.18	11.93	1.7	25.8	40.0	14.2	1.00	0	QUASI-PEAK	None
48.085000	4.18	11.93	1.7	17.8	40.0	22.2	1.00	0	AVERAGE	None
63.480000	22.47	8.94	1.9	33.3	40.0	6.7	1.00	0	MAX PEAK	None
63.480000	15.70	8.94	1.9	26.5	40.0	13.5	1.00	0	QUASI-PEAK	None
63.480000	3.58	8.94	1.9	14.4	40.0	25.6	1.00	0	AVERAGE	None
314.910000	62.45	16.06	3.9	82.4	46.0	-36.4	2.50	315	MAX PEAK	Fundamental
314.910000	61.10	16.06	3.9	81.0	46.0	-35.0	2.50	315	QUASI-PEAK	Fundamental
314.910000	40.92	16.06	3.9	60.8	46.0	-14.8	2.50	315	AVERAGE	Fundamental
345.440000	43.78	14.86	4.0	62.6	46.0	-16.6	2.00	315	MAX PEAK	None
345.440000	31.88	14.86	4.0	50.7	46.0	-4.7	2.00	315	QUASI-PEAK	None
345.440000	6.87	14.86	4.0	25.7	46.0	20.3	2.00	315	AVERAGE	None
629.840000	36.07	19.03	5.7	60.8	46.0	-14.8	1.00	135	MAX PEAK	None
629.840000	34.13	19.03	5.7	58.8	46.0	-12.8	1.00	135	QUASI-PEAK	None
629.840000	14.20	19.03	5.7	38.9	46.0	7.1	1.00	135	AVERAGE	None
692.180000	23.52	21.22	5.9	50.6	46.0	-4.6	1.00	135	MAX PEAK	None
692.180000	15.17	21.22	5.9	42.3	46.0	3.7	1.00	135	QUASI-PEAK	None
692.180000	1.96	21.22	5.9	29.1	46.0	16.9	1.00	135	AVERAGE	None
944.770000	24.47	22.77	7.1	54.3	46.0	-8.3	1.00	315	MAX PEAK	None
944.770000	20.99	22.77	7.1	50.8	46.0	-4.8	1.00	315	QUASI-PEAK	None
944.770000	6.88	22.77	7.1	36.7	46.0	9.3	1.00	315	AVERAGE	None

FCC Part 15 Class B

Electric Field Strength

EUT: THP201
Manufacturer: Reliance Controls
Operating Condition: 70 deg. F; 60% R.H.
Test Site: DLS OF Site 3
Operator: Craig Brandt
Test Specification:
Comment:
Date: 06/30/04

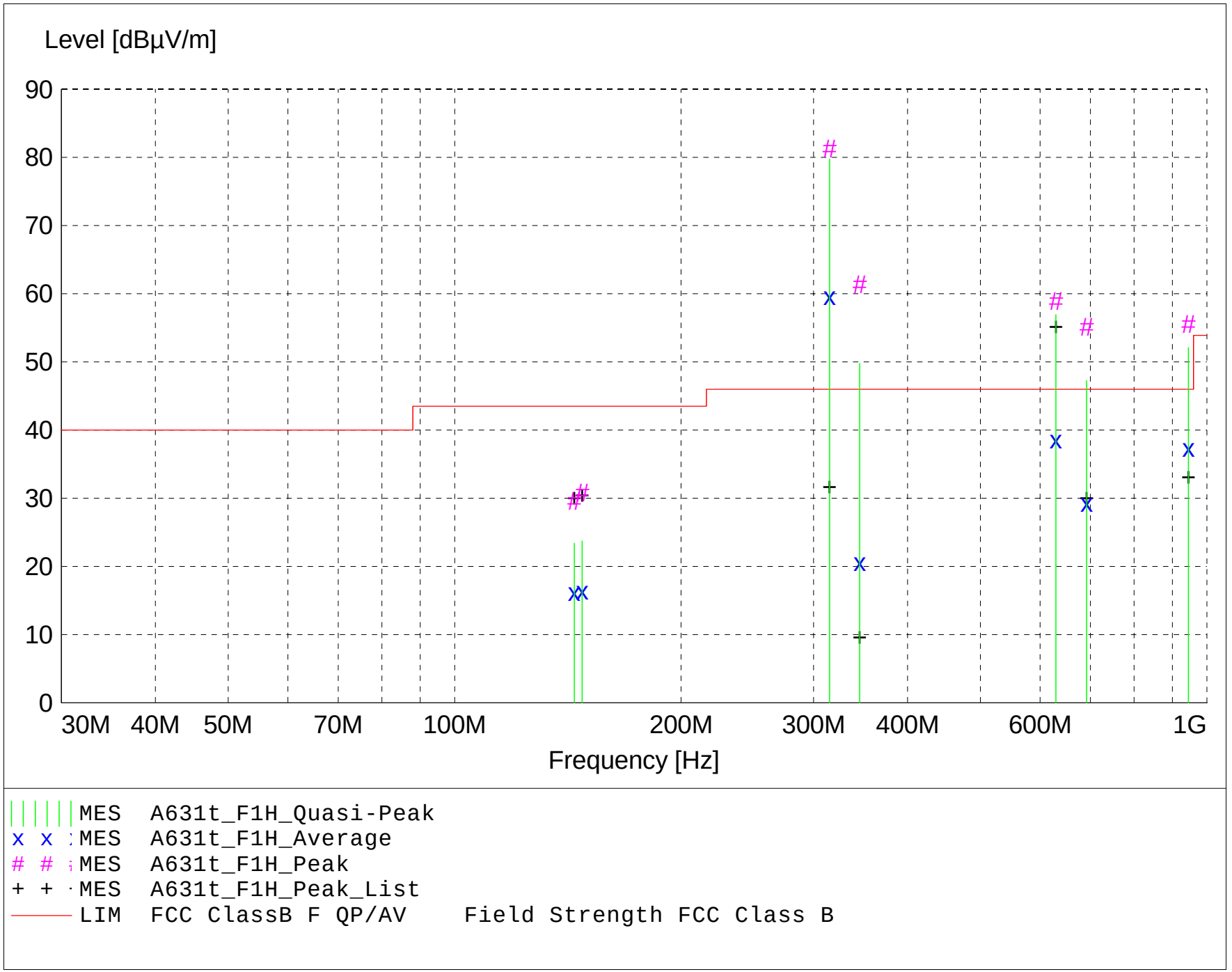
TEXT: "Site 3 MidH 3M"

Short Description: Test Set-up Horz30-1000MHz
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006

Antennas ---
Biconical -- EMCO 3104C SN: 9701-4785
Log Periodic -- EMCO 3146 SN: 9702-4895

Pre-Amp --- Rohde&Schwarz TS-PR10 SN: 032001/005

TEST SET-UP: EuT Measured at 3 Meters with HORIZONTAL Antenna Polarisation


Level [dBµV/m]
90
80
70
60
50
40
30
20
10
0
30M
40M
50M
70M
100M
200M
300M
400M
600M
1G
Frequency [Hz]
MES A631t_F1H_Quasi-Peak
MES A631t_F1H_Average
MES A631t_F1H_Peak
MES A631t_F1H_Peak_List
LIM FCC ClassB F QP/AV Field Strength FCC Class B

MEASUREMENT RESULT: "A631t_F1H_Final"

7/1/2004 1:26PM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
144.174000	14.92	12.03	2.7	29.6	43.5	13.9	2.00	180	MAX PEAK	None
144.174000	8.73	12.03	2.7	23.4	43.5	20.1	2.00	180	QUASI-PEAK	None
144.174000	1.58	12.03	2.7	16.3	43.5	27.2	2.00	180	AVERAGE	None
147.770000	16.09	12.00	2.7	30.8	43.5	12.7	2.00	180	MAX PEAK	None
147.770000	9.04	12.00	2.7	23.7	43.5	19.8	2.00	180	QUASI-PEAK	None
147.770000	1.82	12.00	2.7	16.5	43.5	27.0	2.00	180	AVERAGE	None
314.910000	61.34	16.06	3.9	81.3	46.0	-35.3	1.00	30	MAX PEAK	Fundamental
314.910000	59.85	16.06	3.9	79.8	46.0	-33.8	1.00	30	QUASI-PEAK	Fundamental
314.910000	39.69	16.06	3.9	59.6	46.0	-13.6	1.00	30	AVERAGE	Fundamental
345.440000	42.59	14.86	4.0	61.4	46.0	-15.4	1.00	225	MAX PEAK	None
345.440000	30.96	14.86	4.0	49.8	46.0	-3.8	1.00	225	QUASI-PEAK	None
345.440000	1.81	14.86	4.0	20.6	46.0	25.4	1.00	225	AVERAGE	None
629.840000	34.25	19.03	5.7	59.0	46.0	-13.0	1.00	225	MAX PEAK	None
629.840000	32.24	19.03	5.7	56.9	46.0	-10.9	1.00	225	QUASI-PEAK	None
629.840000	13.90	19.03	5.7	38.6	46.0	7.4	1.00	225	AVERAGE	None
692.180000	27.97	21.22	5.9	55.1	46.0	-9.1	1.00	225	MAX PEAK	None
692.180000	20.13	21.22	5.9	47.2	46.0	-1.2	1.00	225	QUASI-PEAK	None
692.180000	2.20	21.22	5.9	29.3	46.0	16.7	1.00	225	AVERAGE	None
944.770000	25.68	22.77	7.1	55.5	46.0	-9.5	1.00	45	MAX PEAK	None
944.770000	22.27	22.77	7.1	52.1	46.0	-6.1	1.00	45	QUASI-PEAK	None
944.770000	7.48	22.77	7.1	37.3	46.0	8.7	1.00	45	AVERAGE	None

FCC Part 15 Class B

Electric Field Strength

EUT: THP201
Manufacturer: Reliance Controls
Operating Condition: 70 deg F; 60% R.H.
Test Site: D.L.S. O.F. Site 3
Operator: Craig Brandt
Test Specification:
Comment:
Date: 06/30/04

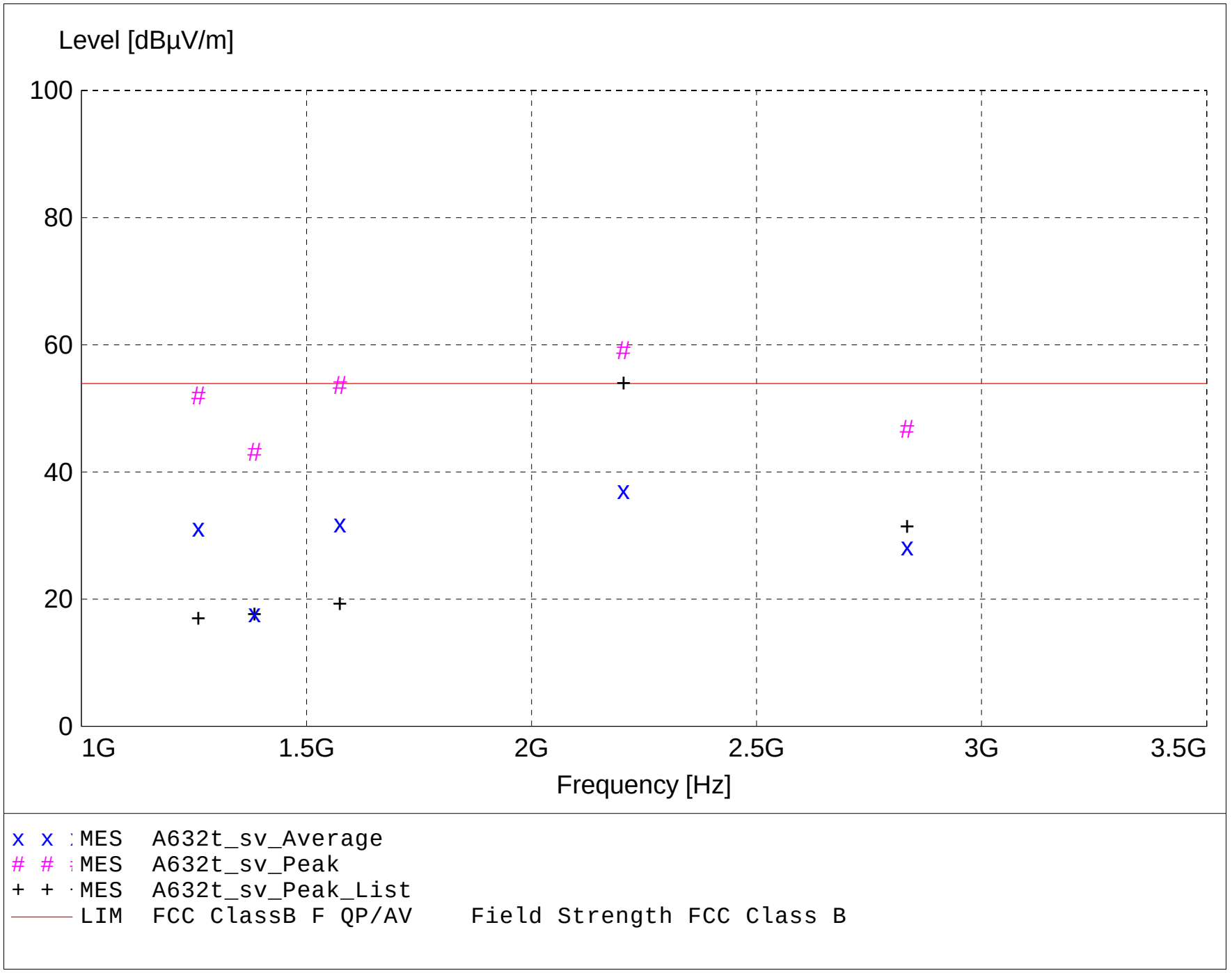
TEXT: "Site 3 5731&184 V3M"

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

Horn Antenna --- EMCO 3115 SN: 9903-5731

Pre-Amps ---
1 - 10 GHz -- Miteq AMF-6D-010100-50 SN: 682425
10 - 18 GHz -- Miteq AMF-6F-100200-50-10P SN: 668382

TEST SET-UP: EuT Measured at 3 Meters with VERTICAL Antenna Polarisation


Level [dBµV/m]
100
80
60
40
20
0
1G
1.5G
2G
2.5G
3G
3.5G
Frequency [Hz]
x x MES A632t_sv_Average
MES A632t_sv_Peak
+ + MES A632t_sv_Peak_List
LIM FCC ClassB F QP/AV Field Strength FCC Class B

MEASUREMENT RESULT: "A632t_sv_Final"

6/30/2004 11:08AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
2204.550000	70.91	28.01	-39.8	59.1	53.9	-5.2	2.20	90	MAX PEAK	None
1574.650000	68.66	25.73	-40.8	53.6	53.9	0.3	1.00	270	MAX PEAK	None
1259.700000	68.28	24.87	-41.2	52.0	53.9	1.9	1.20	180	MAX PEAK	None
2834.400000	57.29	29.60	-40.1	46.8	53.9	7.1	1.00	180	MAX PEAK	None
1384.500000	59.43	25.15	-41.5	43.1	53.9	10.8	1.00	225	MAX PEAK	None
2204.550000	48.91	28.01	-39.8	37.1	53.9	16.8	2.20	90	AVERAGE	None
1574.650000	46.90	25.73	-40.8	31.9	53.9	22.0	1.00	270	AVERAGE	None
1259.700000	47.44	24.87	-41.2	31.2	53.9	22.7	1.20	180	AVERAGE	None
2834.400000	38.73	29.60	-40.1	28.2	53.9	25.7	1.00	180	AVERAGE	None
1384.500000	34.12	25.15	-41.5	17.8	53.9	36.1	1.00	225	AVERAGE	None

FCC Part 15 Class B

Electric Field Strength

EUT: THP201
Manufacturer: Reliance Controls
Operating Condition: 70 deg F; 60% R.H.
Test Site: D.L.S. O.F. Site 3
Operator: Craig Brandt
Test Specification:
Comment:
Date: 06/30/04

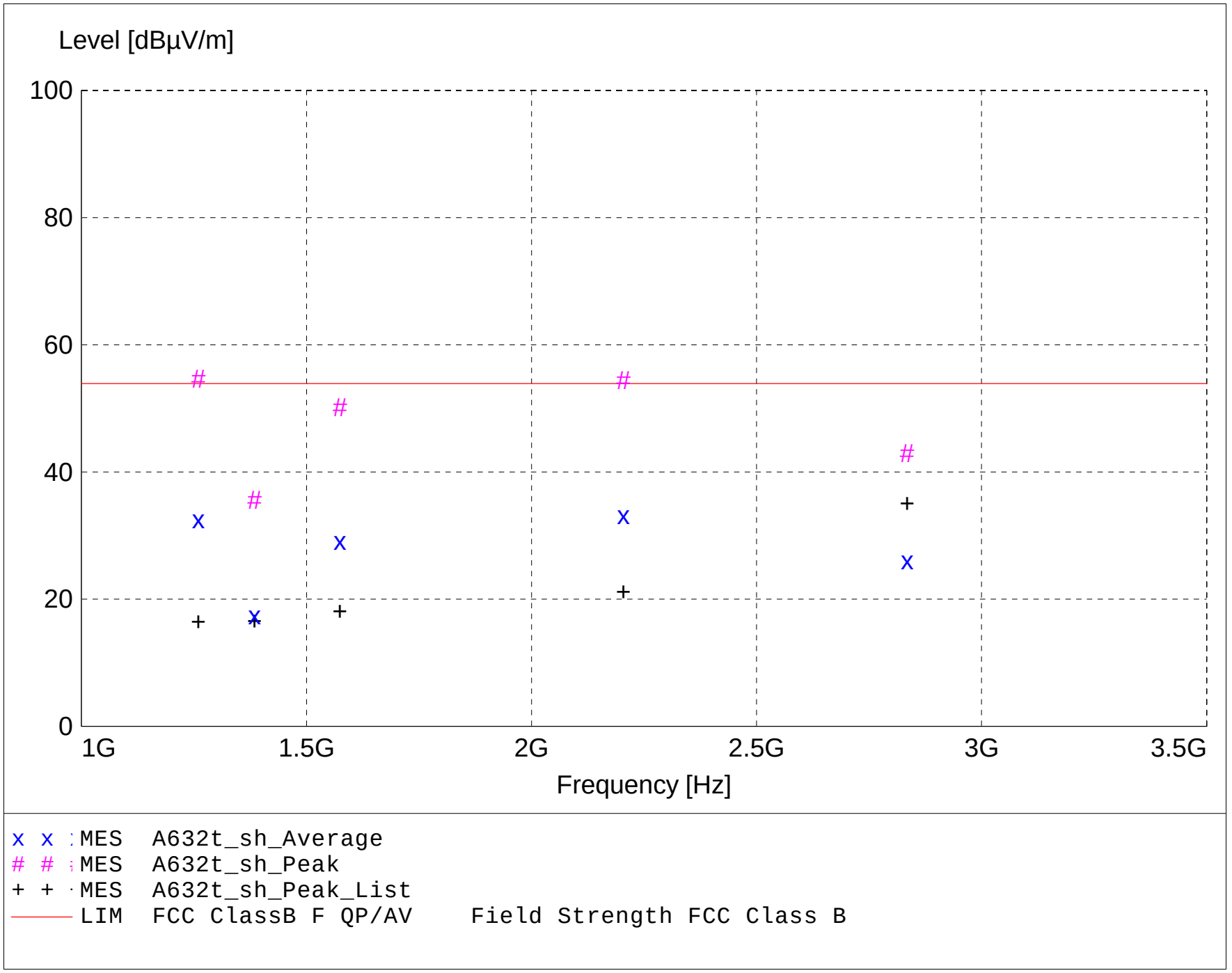
TEXT: "Site 3 5731&184 H3M"

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

Horn Antenna --- EMCO 3115 SN: 9903-5731

Pre-Amps ---
1 - 10 GHz -- Miteq AMF-6D-010100-50 SN: 682425
10 - 18 GHz -- Miteq AMF-6F-100200-50-10P SN: 668382

TEST SET-UP: EuT Measured at 3 Meters with HORIZONTAL Antenna Polarisation


Level [dBµV/m]
100
80
60
40
20
0
1G
1.5G
2G
2.5G
3G
3.5G
Frequency [Hz]
x x MES A632t_sh_Average
MES A632t_sh_Peak
+ + MES A632t_sh_Peak_List
LIM FCC ClassB F QP/AV Field Strength FCC Class B

MEASUREMENT RESULT: "A632t_sh_Final"

6/30/2004 11:23AM

Frequency	Level	Antenna Factor	System Loss	Total Level	Limit	Margin	Height Ant.	EuT Angle	Final Detector	Comment
MHz	dBµV	dBµV/m	dB	dBµV/m	dBµV/m	dB	m	deg		
1259.700000	70.91	24.87	-41.2	54.6	53.9	-0.7	1.10	180	MAX PEAK	None
2204.550000	66.16	28.01	-39.8	54.4	53.9	-0.5	1.50	225	MAX PEAK	None
1574.650000	65.15	25.73	-40.8	50.1	53.9	3.8	1.10	225	MAX PEAK	None
2834.400000	53.38	29.60	-40.1	42.9	53.9	11.0	1.50	180	MAX PEAK	None
1384.500000	51.88	25.15	-41.5	35.5	53.9	18.4	1.10	90	MAX PEAK	None
2204.550000	44.95	28.01	-39.8	33.2	53.9	20.7	1.50	225	AVERAGE	None
1259.700000	48.75	24.87	-41.2	32.5	53.9	21.4	1.10	180	AVERAGE	None
1574.650000	44.11	25.73	-40.8	29.1	53.9	24.8	1.10	225	AVERAGE	None
2834.400000	36.53	29.60	-40.1	26.0	53.9	27.9	1.50	180	AVERAGE	None
1384.500000	33.71	25.15	-41.5	17.4	53.9	36.5	1.10	90	AVERAGE	None

ELECTRONIC SYSTEMS, INC.
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

TEST PROCEDURE

ELECTRIC FIELD RADIATED EMISSIONS TEST

4.0 RESTRICTED BANDS

As stated in Section 15.205a, the fundamental emission from the Reliance Controls "The Home Protectors" Wireless Remote Flood or Freeze Warning Alarm Transmitter shall not fall within any of the bands listed below:

Frequency in MHz	Frequency in MHz	Frequency in MHz	Frequency in GHz
.0900 to .1100	162.0125 to 167.17	2310.0 to 2390	9.30 to 9.50
.4900 to .5100	167.7200 to 173.20	2483.5 to 2500	10.60 to 12.70
2.1735 to 2.1905	240.000 to 285.00	2655.0 to 2900	13.25 to 13.40
8.362 to 8.3660	322.200 to 335.40	3260.0 to 3267	14.47 to 14.50
13.36 to 13.410	399.900 to 410.00	3332.0 to 3339	15.35 to 16.20
25.50 to 25.670	608.000 to 614.00	3345.8 to 3358	17.70 to 21.40
37.50 to 38.250	960.000 to 1240.00	3600.0 to 4400	22.01 to 23.13
73.00 to 75.500	1300.000 to 1427.00	4500.0 to 5250	23.60 to 24.00
108.00 to 121.94	1435.000 to 1626.50	5350.0 to 5450	31.20 to 31.80
123.00 to 138.00	1660.000 to 1710.00	7250.0 to 7750	36.43 to 36.50
149.90 to 150.00	1718.800 to 1722.20	8025.0 to 8500	ABOVE 38.60
156.70 to 156.90	2200.000 to 2300.00	9000.0 to 9200	

NOTE:

The noise floor within the Restricted Bands for the EMC Receiver and HP Spectrum Analyzer will typically lay 20 dB below the limit.