



1250 Peterson Dr., Wheeling, IL 60090

Company: Motorola
Model Tested: 2400AP, 2400SM, 2400BH
Report Number: 11343

FCC Rules and Regulations / Unintentional Radiators

Class B Digital Devices

Part 15, Subpart B, Sections 15.107a & 15.109a

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

Formal Name: Canopy 2400 AL

Kind of Equipment: Wireless Digital FSK Transceiver with integral antenna.

Test Configuration: The Canopy Radio (AP/SM/BH) is connected to a 24V power supply via shielded Ethernet cable. (Tested at 120 vac, 60 Hz)

Model Number(s): 2400xx

Model(s) Tested: 2400AP, 2400SM, 2400BH

Serial Number(s): 0A003E20A152

Date of Tests: April 8, 2005

Test Conducted For: Motorola
1299 E. Algonquin Road
Schaumburg, Il 60196

NOTICE: "This report must not be used by the client to claim product endorsement by NVLAP, NIST, 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.



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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:

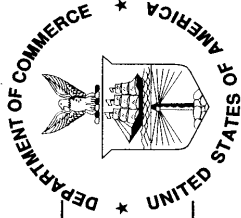
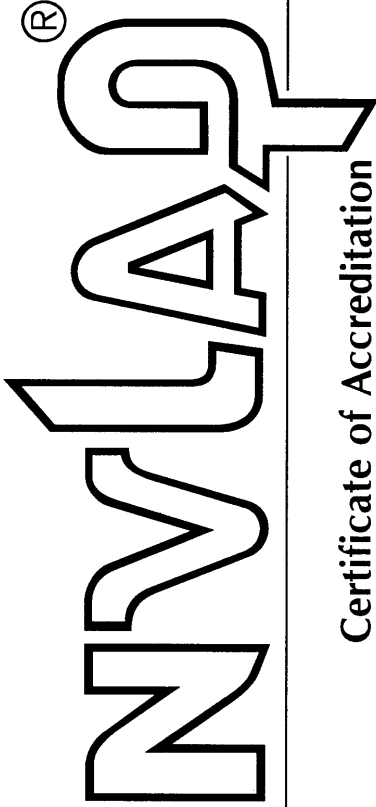
Motorola



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United States Department of Commerce
National Institute of Standards and Technology



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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

September 30, 2005

Effective through

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

NVLAP-01C (06-01)



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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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<i>NVLAP Code</i>	<i>Designation / Description</i>
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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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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<i>NVLAP Code</i>	<i>Designation / Description</i>
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 \leq 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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- 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/VCC1a 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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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, 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, Issue 1 (February 5, 2000): Licensed Radiocommunications Devices in the Band 2400 - 2483.5 MHz

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<i>NVLAP Code</i>	<i>Designation / Description</i>
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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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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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 Canopy 2400 AL, Model Number(s) 2400AP, 2400SM, 2400BH, **"meets"** the radio interference conducted emission requirements of the FCC "Rules and Regulations", Part 15, Subpart B, Sections 15.107a & 15.109a for Unintentional Radiators, Class B digital devices. The radiated emissions test was not run.

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

Text:	41
Charts:	4



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2.0 INTRODUCTION

On April 8, 2005, a series of radio frequency interference measurements was performed on Canopy 2400 AL, Model Number(s) 2400AP, 2400SM, 2400BH, Serial Number: 0A003E20A152. For Class B digital devices 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 C63.4-2003. These test procedures 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 emission requirements of the FCC Rules and Regulations, Part 15, Subpart B, Sections 15.107a & 15.109a for Unintentional Radiators, Class B digital devices.

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 C63.4-2003, Clause 7, (Figures 10a and 10b). 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 C63.4-2003, Clause 4, (Figure 2).



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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/ESI 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/ESI 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/ESI 40 Receiver as required. Above 1000 MHz, final data was taken using the Peak Detector on the Spectrum Analyzer.

The bandwidths used are specified by the FCC as stated in the American National Standards Institute, ANSI C63.4-2003, Clause 4.2. From 150 kHz to 30 MHz a bandwidth of 9 or 10 kHz was used and from 30 MHz to 1000 MHz a bandwidth of 120 kHz and above 1000 MHz, a bandwidth of 1 MHz was used.

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 CONDUCTED EMISSION MEASUREMENTS

Conducted emissions were measured over the frequency range from .15 MHz to 30 MHz in accordance with the power line measurements as specified in the American National Standards Institute, ANSI C63.4-2003, Clause 7. The 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 Class B digital devices are 66 dBuV decreasing with the logarithm of the frequency to 56 dBuV from .15 MHz to .5 MHz, remaining constant at 56 dBuV from .5 to 5 MHz and then increasing to 60 dBuV between 5 MHz to 30 MHz as stated in Section 15.107a. Average limits are 10 dB lower within the same frequency ranges.

All test measurements were made at a screen room temperature of **69°F** at **35%** relative humidity.



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9.0 DESCRIPTION OF TEST SAMPLE: (See also Paragraph 10.0)

7.1 Description:

The Canopy 2400 Advanced Logic Wireless Digital FSK Radio is designed for use in the 2.4GHz Band (2415MHz-2457.5MHz) with 3 separate 20MHz channels. The radio works in conjunction with a 24vDC power supply. It has a settable output power based on the regulatory requirements with a maximum EIRP of 0.9W. Backhauls can utilize an external reflector which focuses the beam from 60degrees to 6 degrees. Canopy is a point to multi-point wireless Ethernet distribution system. The back hauls (BH) are point to points connecting multi-point access points to wired Ethernet feeds (Internet Service Providers points of presence, ISP POP).



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Company: Motorola
Model Tested: 2400AP, 2400SM, 2400BH
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7.0 DESCRIPTION OF TEST SAMPLE: (CONT)

7.2 PHYSICAL DIMENSIONS OF EQUIPMENT UNDER TEST

Length: 2.75 inches Width: 8 inches Height: 0.6 inches

7.2 LINE FILTER USED:

NA

7.4 INTERNAL CLOCK FREQUENCIES:

Switching Power Supply Frequencies:

150 kHz , 132kHz

Clock Frequencies:

20 MHz, 25MHz, 40MHz, 80MHz, 160MHz



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Company: Motorola
Model Tested: 2400AP, 2400SM, 2400BH
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7.0 DESCRIPTION OF TEST SAMPLE: (CONT)

7.5 DESCRIPTION OF ALL CIRCUIT BOARDS:

- | | |
|-----------------|----------------|
| 1. Radio | PN: 84-88704-A |
| 2. Power Supply | PN: ACPS110-03 |
| 3. Power Supply | PN: ACPSSW-02 |



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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, combined with paragraph 9.0, describes the equipment tested and that the equipment will be manufactured as stated.

By: _____
Signature Title

For: _____
Company Date



1250 Peterson Dr., Wheeling, IL 60090

Company: Motorola
Model Tested: 2400AP, 2400SM, 2400BH
Report Number: 11343

9.0 PHOTO INFORMATION AND TEST SET-UP

Item 0 Canopy 2400 AL

Model Number: 2400AP, 2400SM, 2400BH, Serial Number: 0A003E20A152

Item 1 Shielded Network Power Cable with Metal Shells.

Item 2 Motorola Power Supply



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Company: Motorola
Model Tested: 2400AP, 2400SM, 2400BH
Report Number: 11343

10.0 CONDUCTED PHOTOS TAKEN DURING TESTING



Canopy 2400 – Domestic Supply



1250 Peterson Dr., Wheeling, IL 60090

Company: Motorola
Model Tested: 2400AP, 2400SM, 2400BH
Report Number: 11343

10.0 CONDUCTED PHOTOS TAKEN DURING TESTING



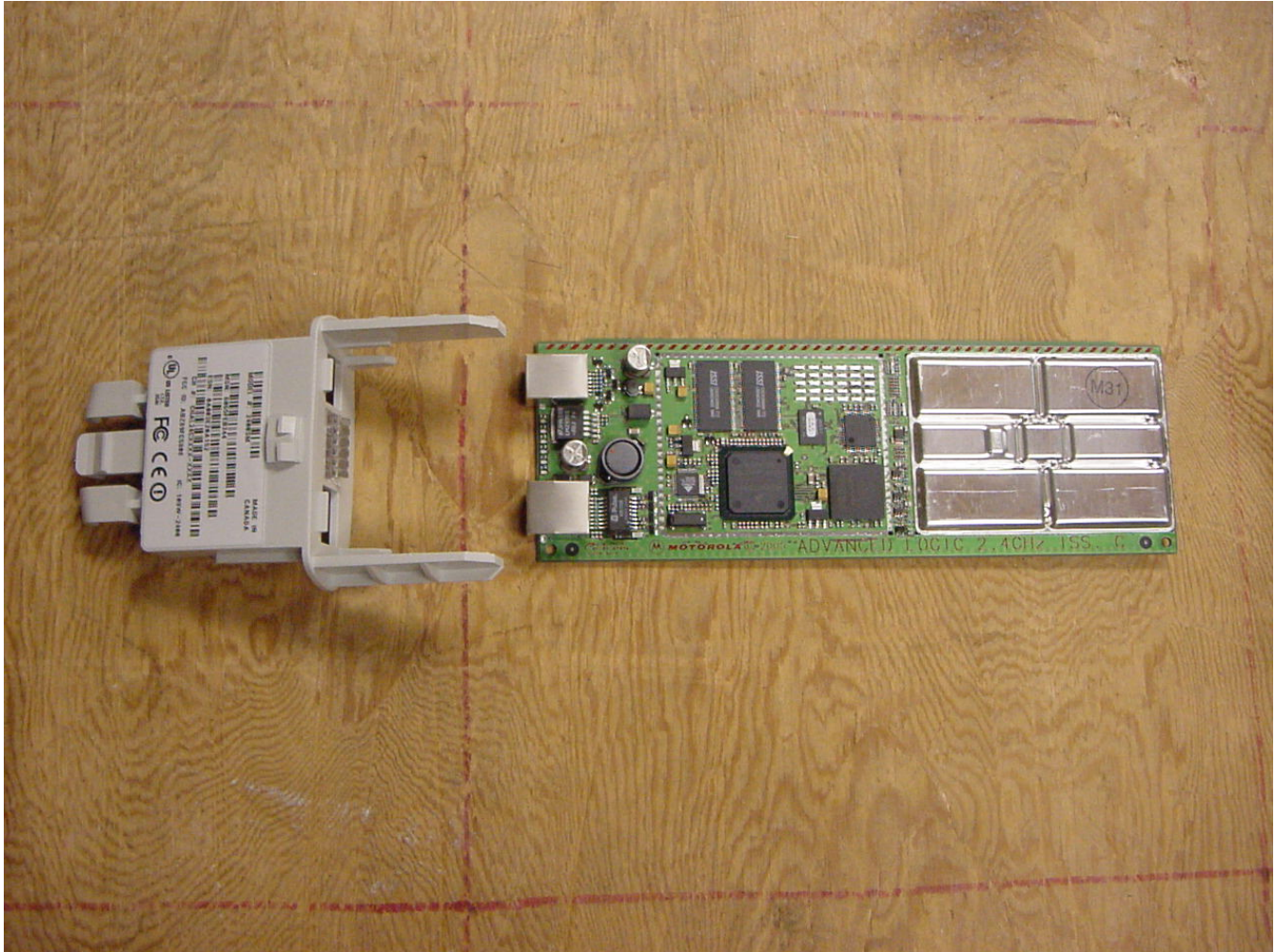
Canopy 2400 – Phihong Supply



1250 Peterson Dr., Wheeling, IL 60090

Company: Motorola
Model Tested: 2400AP, 2400SM, 2400BH
Report Number: 11343

10.0 CONDUCTED PHOTOS TAKEN DURING TESTING



Canopy 2400 Circuit Board – Front



1250 Peterson Dr., Wheeling, IL 60090

Company: Motorola
Model Tested: 2400AP, 2400SM, 2400BH
Report Number: 11343

10.0 CONDUCTED PHOTOS TAKEN DURING TESTING



Canopy 2400 Circuit Board – Back



1250 Peterson Dr., Wheeling, IL 60090

Company: Motorola
Model Tested: 2400AP, 2400SM, 2400BH
Report Number: 11343

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. Those points on the emission charts shown with a yellow mark are background frequencies which were verified during testing.

12.0 CONCLUSION

It was found that the Canopy 2400 AL, Model Number(s) 2400AP, 2400SM, 2400BH **"meets"** the radio interference conducted emission requirements of the FCC Rules and Regulations, Part 15, Subpart B, Sections 15.107a & 15.109a for Unintentional Radiators, Class B digital devices. The radiated emissions test was not run.



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Company: Motorola
 Model Tested: 2400AP, 2400SM, 2400BH
 Report Number: 11343

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	12/05
Quasi-Peak Adapter	Hewlett/Packard	85650A	2043A00121	10 kHz – 1 GHz	12/05
Spectrum Analyzer	Hewlett/Packard	8566B	2421A00452	100 Hz – 22 GHz	9/05
Quasi-Peak Adapter	Hewlett/Packard	85650A	2043A00450	10 kHz – 1 GHz	9/05
Spectrum Analyzer	Hewlett/Packard	8591A	3009A00700	9 kHz – 1.8 GHz	3/06
Receiver	Electrometrics	EMC-30	44168	10 kHz – 1 GHz	10/05
Receiver	Rohde & Schwarz	ESI 26	837491/010	20 Hz – 26 GHz	1/06
Receiver	Rohde & Schwarz	ESI 40	837808/006	20 Hz – 40 GHz	10/05
Receiver	Rohde & Schwarz	ESI 40	837808/005	20 Hz – 40 GHz	2/06
Antenna	EMCO	3104C	00054891	20 MHz – 200 MHz	2/06
Antenna	Electrometrics	LPA-25	1114	200 MHz – 1 GHz	2/06
Antenna	EMCO	3104C	00054892	20 MHz – 200 MHz	3/06

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



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Company: Motorola
 Model Tested: 2400AP, 2400SM, 2400BH
 Report Number: 11343

TABLE 1 – EQUIPMENT LIST

Test Equipment	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Due Dates
Antenna	Electrometrics	3146	1205	200 MHz – 1 GHz	3/06
Antenna	EMCO	3104C	97014785	20 MHz – 200 MHz	2/06
Antenna	EMCO	3146	97024895	200 MHz – 1 GHz	2/06
Antenna	EMCO	3115	2479	1 GHz – 18 GHz	4/05
Antenna	EMCO	3115	99035731	1 GHz – 18 GHz	4/05
Antenna	Rohde & Schwarz	HUF-Z1	829381001	20 MHz – 1 GHz	2/06
Antenna	Rohde & Schwarz	HUF-Z1	829381005	20 MHz – 1 GHz	2/06
LISN	Solar	8012-50-R-24-BNC	8305116	10 MHz – 30 MHz	8/05
LISN	Solar	8012-50-R-24-BNC	814548	10 MHz – 30 MHz	8/05
LISN	Solar	9252-50-R-24-BNC	961019	10 MHz – 30 MHz	12/05
LISN	Solar	9252-50-R-24-BNC	971612	10 MHz – 30 MHz	11/05
LISN	Solar	9252-50-R-24-BNC	92710620	10 MHz – 30 MHz	7/05

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



1250 Peterson Dr., Wheeling, IL 60090

Company: Motorola
Model Tested: 2400AP, 2400SM, 2400BH
Report Number: 11343

APPENDIX A

“CONDUCTED DATA

AND

CHARTS TAKEN DURING TESTING”

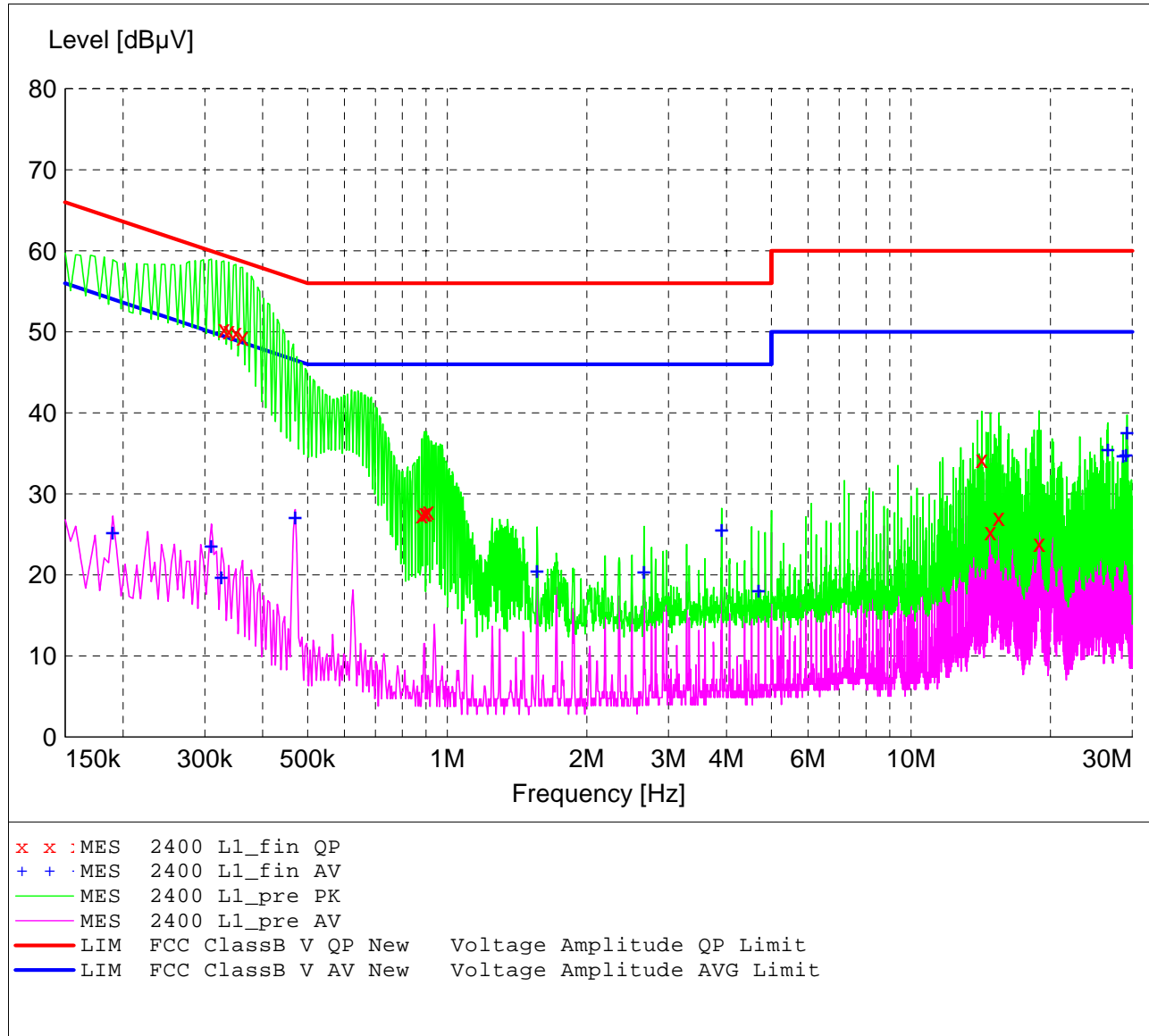
FCC Part 15 Class B

Voltage Mains Test

EUT: Canopy 2400 Rev C
 Manufacturer: Motorola
 Operating Condition: 69 deg. F, 35% R.H.
 Test Site: DLS O.F. Screen Room
 Operator: Tim O
 Test Specification: 120 VAC @ 60 Hz
 Comment: Line 1
 Date: 04-08-2005

SCAN TABLE: "FCC ClassB Voltage"

Short Description:			FCC Class B Voltage			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	LISN DLS#128
			Average			



MEASUREMENT RESULT: "2400 L1_fin QP"

4/8/2005 9:19AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.330000	50.40	10.4	60	9.0	---	---
0.338000	50.20	10.4	59	9.0	---	---
0.350000	49.90	10.3	59	9.1	---	---
0.362000	49.40	10.3	59	9.3	---	---
0.882000	27.40	10.3	56	28.6	---	---
0.894000	27.70	10.3	56	28.3	---	---
0.902000	27.70	10.3	56	28.3	---	---
0.910000	27.90	10.2	56	28.1	---	---
14.214000	34.30	10.7	60	25.7	---	---
14.842000	25.30	10.8	60	34.7	---	---
15.466000	27.10	10.8	60	32.9	---	---
18.902000	23.90	10.9	60	36.1	---	---

MEASUREMENT RESULT: "2400 L1_fin AV"

4/8/2005 9:19AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.190000	25.30	11.0	54	28.8	---	---
0.310000	23.70	10.5	50	26.2	---	---
0.326000	19.80	10.4	50	29.8	---	---
0.470000	27.20	10.3	47	19.3	---	---
1.562000	20.60	10.3	46	25.4	---	---
2.658000	20.50	10.4	46	25.5	---	---
3.906000	25.70	10.4	46	20.3	---	---
4.690000	18.20	10.5	46	27.8	---	---
26.610000	35.60	11.2	50	14.4	---	---
28.686000	34.80	11.2	50	15.2	---	---
29.114000	34.90	11.2	50	15.1	---	---
29.234000	37.70	11.2	50	12.3	---	---

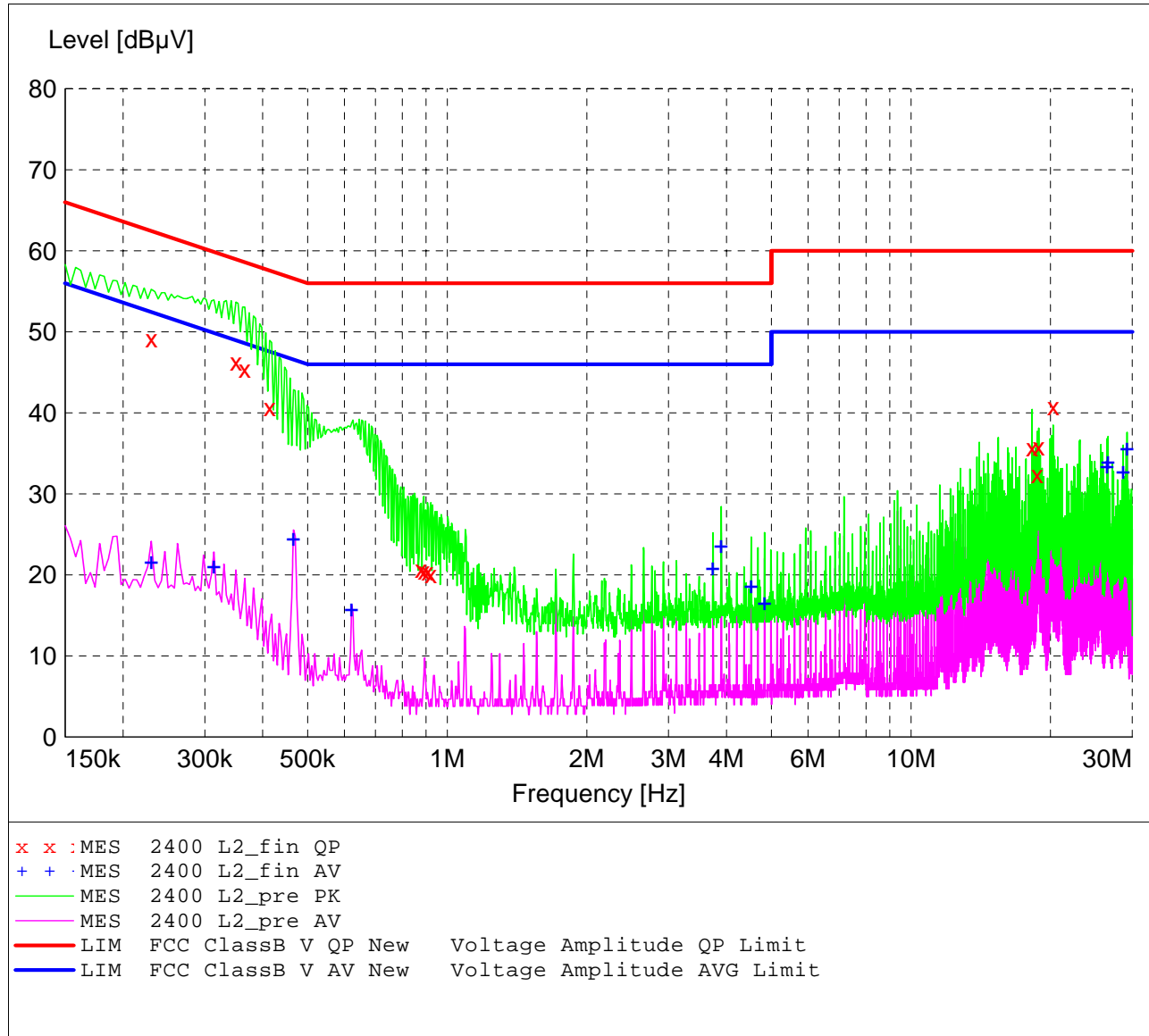
FCC Part 15 Class B

Voltage Mains Test

EUT: Canopy 2400 Rev C
 Manufacturer: Motorola
 Operating Condition: 69 deg. F, 35% R.H.
 Test Site: DLS O.F. Screen Room
 Operator: Tim O
 Test Specification: 120 VAC @ 60 Hz
 Comment: Line 2
 Date: 04-08-2005

SCAN TABLE: "FCC ClassB Voltage"

Short Description:			FCC Class B Voltage			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	LISN DLS#128
			Average			



MEASUREMENT RESULT: "2400 L2_fin QP"

4/8/2005 9:25AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.230000	49.20	10.7	62	13.3	---	---
0.350000	46.30	10.3	59	12.7	---	---
0.366000	45.40	10.3	59	13.2	---	---
0.414000	40.70	10.3	58	16.9	---	---
0.878000	20.70	10.3	56	35.3	---	---
0.890000	20.50	10.3	56	35.5	---	---
0.906000	20.40	10.2	56	35.6	---	---
0.922000	20.10	10.2	56	35.9	---	---
18.242000	35.70	11.0	60	24.3	---	---
18.706000	32.40	10.9	60	27.6	---	---
18.862000	35.80	10.9	60	24.2	---	---
20.258000	40.80	10.9	60	19.2	---	---

MEASUREMENT RESULT: "2400 L2_fin AV"

4/8/2005 9:25AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.230000	21.70	10.7	52	30.7	---	---
0.314000	21.20	10.5	50	28.7	---	---
0.466000	24.60	10.3	47	22.0	---	---
0.622000	15.90	10.3	46	30.1	---	---
3.742000	20.90	10.4	46	25.1	---	---
3.898000	23.70	10.4	46	22.3	---	---
4.522000	18.70	10.4	46	27.3	---	---
4.834000	16.60	10.5	46	29.4	---	---
26.486000	33.50	11.2	50	16.5	---	---
26.610000	34.10	11.2	50	15.9	---	---
28.686000	32.80	11.2	50	17.2	---	---
29.234000	35.70	11.2	50	14.3	---	---

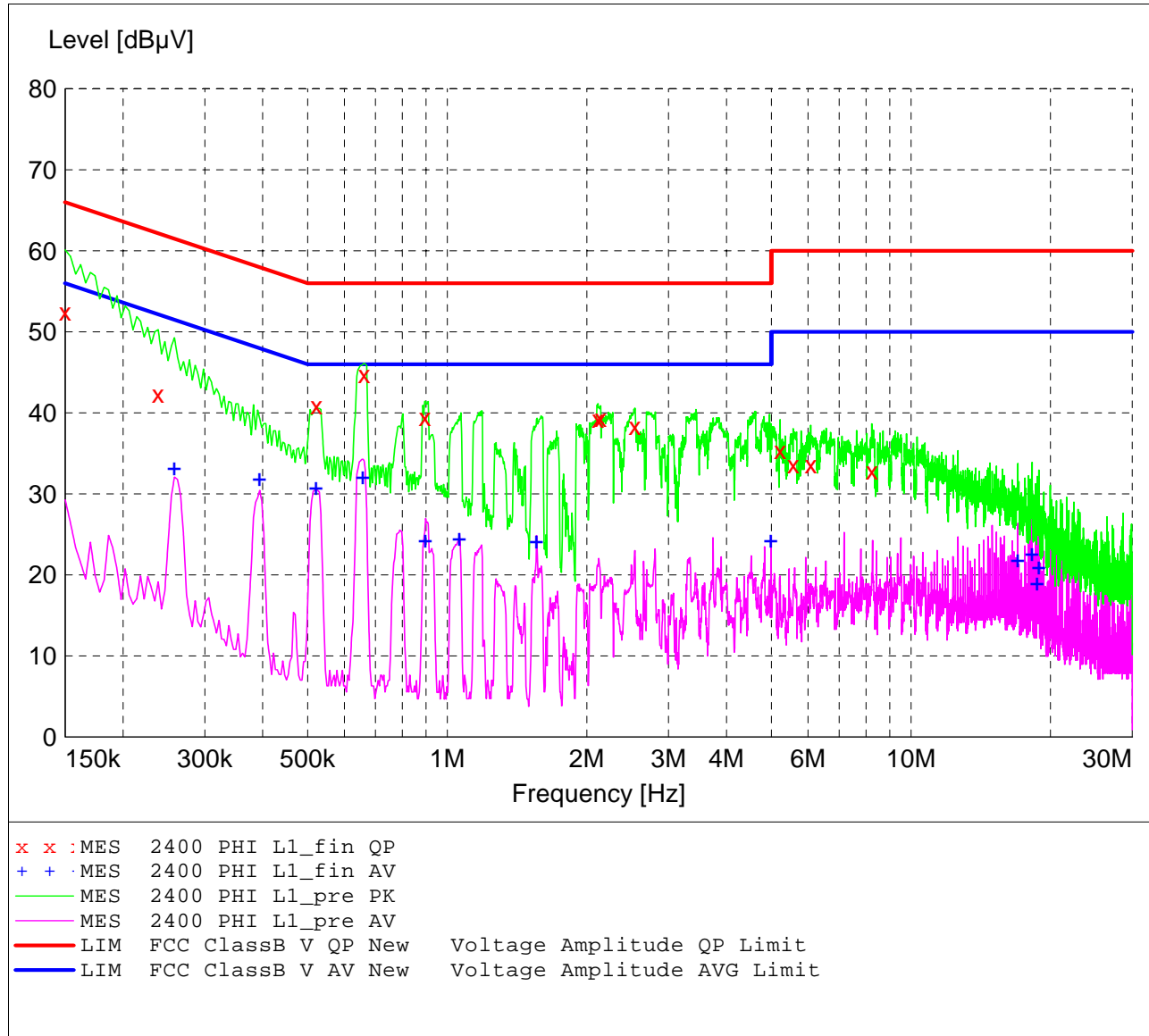
FCC Part 15 Class B

Voltage Mains Test

EUT: Canopy 2400 Rev C
 Manufacturer: Motorola
 Operating Condition: 69 deg. F, 35% R.H.
 Test Site: DLS O.F. Screen Room
 Operator: Tim O
 Test Specification: 120 VAC @ 60 Hz PHIHONG Supply
 Comment: Line 1
 Date: 04-08-2005

SCAN TABLE: "FCC ClassB Voltage"

Short Description:			FCC Class B Voltage			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	LISN DLS#128
			Average			



MEASUREMENT RESULT: "2400 PHI L1_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150000	52.50	11.5	66	13.5	---	---
0.238000	42.30	10.7	62	19.8	---	---
0.522000	40.90	10.3	56	15.1	---	---
0.662000	44.80	10.3	56	11.2	---	---
0.894000	39.40	10.3	56	16.6	---	---
2.114000	39.20	10.4	56	16.8	---	---
2.142000	39.30	10.4	56	16.7	---	---
2.538000	38.40	10.3	56	17.6	---	---
5.222000	35.40	10.5	60	24.6	---	---
5.570000	33.60	10.5	60	26.4	---	---
6.078000	33.60	10.5	60	26.4	---	---
8.230000	32.90	10.6	60	27.1	---	---

MEASUREMENT RESULT: "2400 PHI L1_fin AV"

4/8/2005 9:46AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.258000	33.30	10.7	52	18.2	---	---
0.394000	32.00	10.3	48	16.0	---	---
0.522000	30.90	10.3	46	15.1	---	---
0.658000	32.20	10.3	46	13.8	---	---
0.898000	24.30	10.3	46	21.7	---	---
1.062000	24.60	10.3	46	21.4	---	---
1.558000	24.20	10.3	46	21.8	---	---
4.990000	24.40	10.5	46	21.6	---	---
16.998000	21.90	10.9	50	28.1	---	---
18.246000	22.70	11.0	50	27.3	---	---
18.714000	19.00	10.9	50	31.0	---	---
18.870000	21.00	10.9	50	29.0	---	---

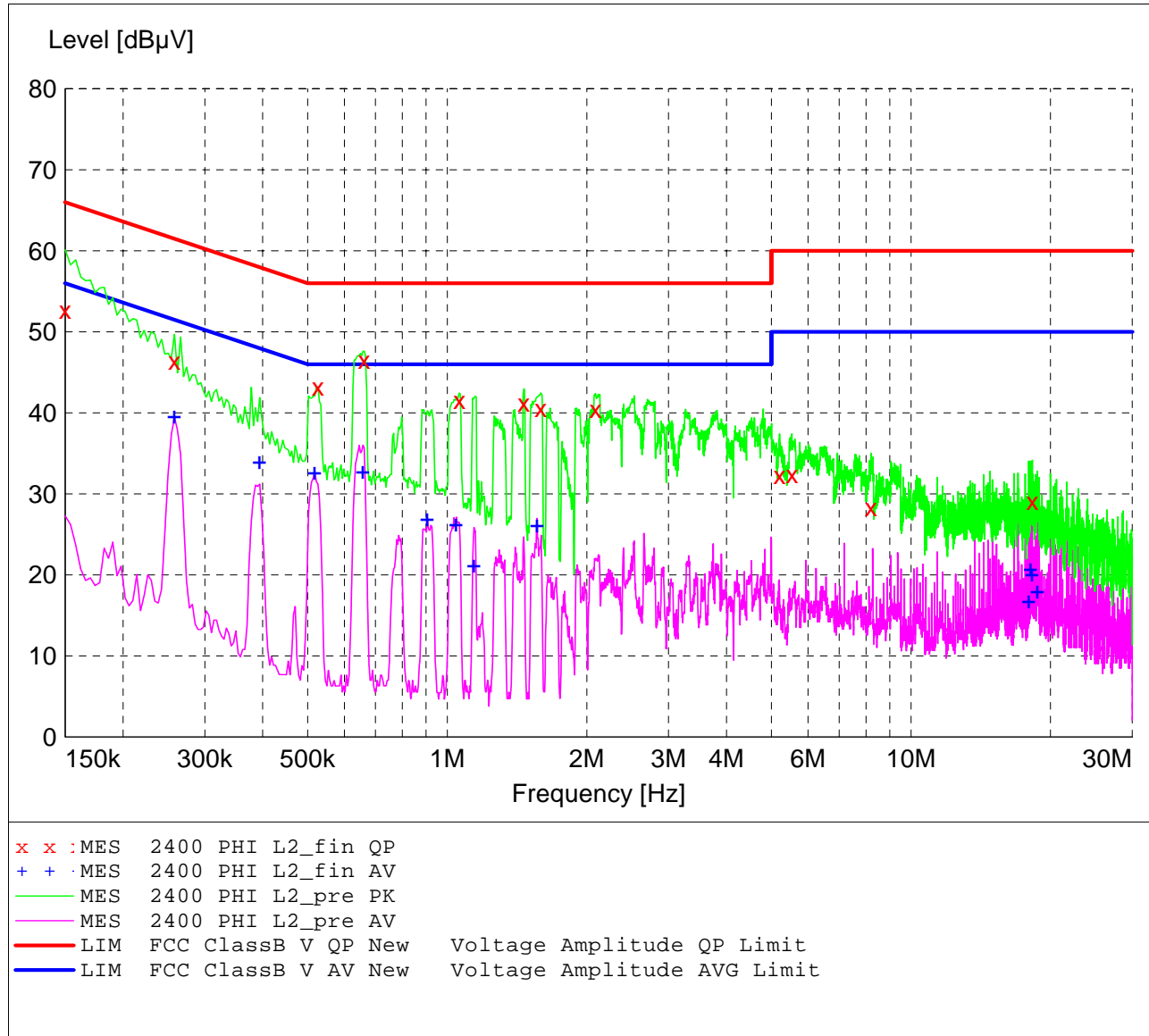
FCC Part 15 Class B

Voltage Mains Test

EUT: Canopy 2400 Rev C
 Manufacturer: Motorola
 Operating Condition: 69 deg. F, 35% R.H.
 Test Site: DLS O.F. Screen Room
 Operator: Tim O
 Test Specification: 120 VAC @ 60 Hz PHIHONG Supply
 Comment: Line 2
 Date: 04-08-2005

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 DLS#128
			Average			



MEASUREMENT RESULT: "2400 PHI L2_fin QP"

4/8/2005 9:39AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150000	52.70	11.5	66	13.3	---	---
0.258000	46.40	10.7	62	15.1	---	---
0.526000	43.20	10.3	56	12.8	---	---
0.662000	46.50	10.3	56	9.5	---	---
1.062000	41.50	10.3	56	14.5	---	---
1.462000	41.20	10.3	56	14.8	---	---
1.590000	40.60	10.3	56	15.4	---	---
2.086000	40.40	10.3	56	15.6	---	---
5.206000	32.30	10.5	60	27.7	---	---
5.538000	32.40	10.5	60	27.6	---	---
8.202000	28.30	10.5	60	31.7	---	---
18.262000	29.10	11.0	60	30.9	---	---

MEASUREMENT RESULT: "2400 PHI L2_fin AV"

4/8/2005 9:39AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.258000	39.70	10.7	52	11.8	---	---
0.394000	34.00	10.3	48	13.9	---	---
0.518000	32.70	10.3	46	13.3	---	---
0.658000	32.90	10.3	46	13.1	---	---
0.906000	27.00	10.2	46	19.0	---	---
1.046000	26.30	10.2	46	19.7	---	---
1.142000	21.30	10.3	46	24.7	---	---
1.562000	26.20	10.3	46	19.8	---	---
17.950000	16.90	11.0	50	33.1	---	---
18.106000	20.80	11.0	50	29.2	---	---
18.262000	20.20	11.0	50	29.8	---	---
18.730000	18.10	10.9	50	31.9	---	---