# Measurement/Technical Report

# Intel Corporation
# Model: EtherExpress™Pro/100+Managed PCI LAN Adapter

# FCC ID: EJMNPDALBANY

# November 18, 1998

This report concerns (check one): Original Grant X Class II Change_____

Equipment Type: Class B Computing Device / LAN Adapter

Deferred grant requested per 47 CFR 0.457 (d)(1)(ii)? yes_____ no X

If yes, defer until: N/A
date

Intel Corporation agrees to notify the Commission by: N/A
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37: yes_____ no X

If no, assumed Part 15, Subpart B for unintentional radiators - new 47 CFR [10-1-92] provision.

Report prepared by:

Northwest EMC, Inc.
120 South Elliott Road, Suite 300
Newberg, OR 97132
(503) 537-0728
fax: (503) 537-0735

Report No. INTE2335

# Table of Contents

# 1.0 General Information

## 1.1 Product Description

Manufactured By..... Intel Corporation

Address..... 5200 NE Elam Young Parkway Hillsboro, OR 97124

Test Requested By: ..... Nelson H. Wong

Model .....EtherExpress™ Pro/100+ Managed PCI LAN Adapter

FCC ID..... EJMNPDALBANY

Serial Number(s).....F4C, F67, FD9

Date of Test ..... November 16, 1998 through November 18, 1998

Job Number ..... INTE2335

The Equipment Under Test (EUT) is the Intel Corporation, EtherExpress™ Pro/100+ Managed PCI LAN Adapter and EtherExpress™ Pro/100+ Managed Server Adapter, Serial Numbers F4C, F67, and FD9., PCB Model No. PB721503-004, FCC ID: EJMNPDALBANY. The EUT is a printed wire assembly containing circuitry that, when installed inside an IBM PC or compatible personal computer, provides data communications in an ethernet environment.

Hardware Description:

- Clocks/Oscillators Frequencies: Oscillator 25 MHz, 125 MHz clock

## 1.2 Related Submittals/Grants

None.

## 1.3 Tested System Details

## EUT and Peripherals

| Item | FCC ID | Description and Serial No. |
|---|---|---|
| EUT | EJMNPDALBANY | Intel Corporation EtherExpress™ Pro/100+ Managed PCI LAN Adapter, Serial No.s F4C, F67, FD9, PCB No. PB721503-004. |
| Printer | B94C2121X | Hewlett Packard Model C2121A, Serial No. US39J25029. |
| Printer | B94C2114X | Hewlett Packard Model C2114A, Serial No. MY41Q1D0Z7. |
| PS/2 Mouse | DZL33G5430 | IBM Model 33G5430, Serial No. 23-A18642. |
| Keyboard | GYUR26SK | Dell Model SK-1000REW. |
| Monitor | A3DJC-1532VMA | NEC Model JC-1532VMA-2, Serial No. 3996154NA. |
| Host PC | n/a | Gateway 2000 Model LPMINI-Desktop G6-400, Serial No. 001319813. |
| Remote System | EJMNIENDVR | Intel Model S100MTE8LC, Serial No. A05562464. |
| Remote Monitor | A3DJC-1532VMR | NEC Model JC-1532VMA-2, Serial No. 2YM57756A. |
| Remote Keyboard | D7J2196003-XX | Gateway 2000 Model 2196003, Serial No. 57051925. |
| Remote LAN Card | EJMNPDPILA8465B | Intel Pro/100, Serial No. 00ADC91F09E2. |

## Cables:

| Item | Description |
|---|---|
| Parallel Printer Cable | 1 meter in length. Shielded with braid over foil and no ferrite beads. Connected from the host PC parallel port to the parallel printer. |
| Network Cable (CAT 5) | 80 meters in length. Unshielded and no ferrite beads. Plastic RJ-45 connectors. Connected from the EUT to the remote LAN Card. |
| Serial Printer Cable | 1 meter in length. Shielded with no ferrite beads. Connected from the COM1 port of the host PC to the serial printer. |
| Video Cable | 1.8 meters in length. Shielded, with a metal backshell and one molded ferrite bead at the PC end of the cable. Permanently attached to the monitor and connected to the AGP port of the host PC. |
| Mouse Cable | 2.4 meters in length. Metal connector backshells. Permanently attached to the mouse and connected to a 9-pin to PS/2 adapter that is connected to the Host PC mouse port (supplied with the mouse). |
| Keyboard Cable | 1.2 meters in length (Coiled), with a metal connector backshell. Permanently attached to the keyboard and connected to the PS/2 keyboard port of the EUT. |
| Serial Printer DC Cable | 1.9 meters in length. No shielding and no ferrite beads. Permanently attached to the serial printer AC adapter and connected to the serial printer. |
| Serial Printer AC Cable | 1.9 meters in length. No shielding and no ferrite beads. Permanently attached to the serial printer AC adapter and connected to the AC Mains. |
| Parallel Printer DC Cable | 1.8 meters in length. No shielding and no ferrite beads. Permanently attached to the parallel printer AC adapter and connected to the AC Mains. |
| Parallel Printer AC Cable | 1.8 meters in length. No shielding and no ferrite beads. Permanently attached to the parallel printer AC adapter and connected to the AC Mains. |
| Monitor AC Cable | 1.9 meters in length. No shielding and no ferrite beads. Connected from AC input of the monitor to the AC mains. |
| EUT Power | 1.9 meters in length. No shielding and no ferrite beads. Connected form AC input of the EUT to the AC mains. |

## 1.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4 (1992). Radiated testing was performed at an antenna to EUT distance of 10 meters. Please reference Appendix I for further detail on Test Methodology.

## 1.5 Test Facility

The Open Area Test Site and conducted measurement facility used to collect the radiated and conducted data is located at

Northwest EMC, Inc.
120 South Elliott Road, Suite 300
Newberg, OR 97132
(503) 537-0728
Fax: 537-0735

The Open Area Test Site, and conducted measurement facility is located in Newberg, OR, at the address shown above. These sites have been fully described in reports filed with the FCC (Federal Communications Commission), and accepted by the FCC in letters maintained in our files.

Northwest EMC, Inc. is recognized under the United States Department of Commerce, National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP) for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. NVLAP Lab Code: 200059-0.

Northwest EMC, Inc. has been assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).

# 3.0 System Test Configuration

## 3.1 Justification

While prescanning the emissions, all operating modes of the EUT were investigated. This included all available data rates. The EUT was connected to a remote PC, via a network cable. The EUT was then set up to continuously transmit and receive data packets to the remote PC. This allowed the EUT to be fully functional for the test.

## 3.2 EUT Exercise Software

The EUT was transmitting data using ***ST.EXE*** software, operating under the ***DOS 6.1*** operating system. This allowed the EUT to continuously transmit and receive data packets to the remote PC. This software was used since it would allow full functionality to the EUT.

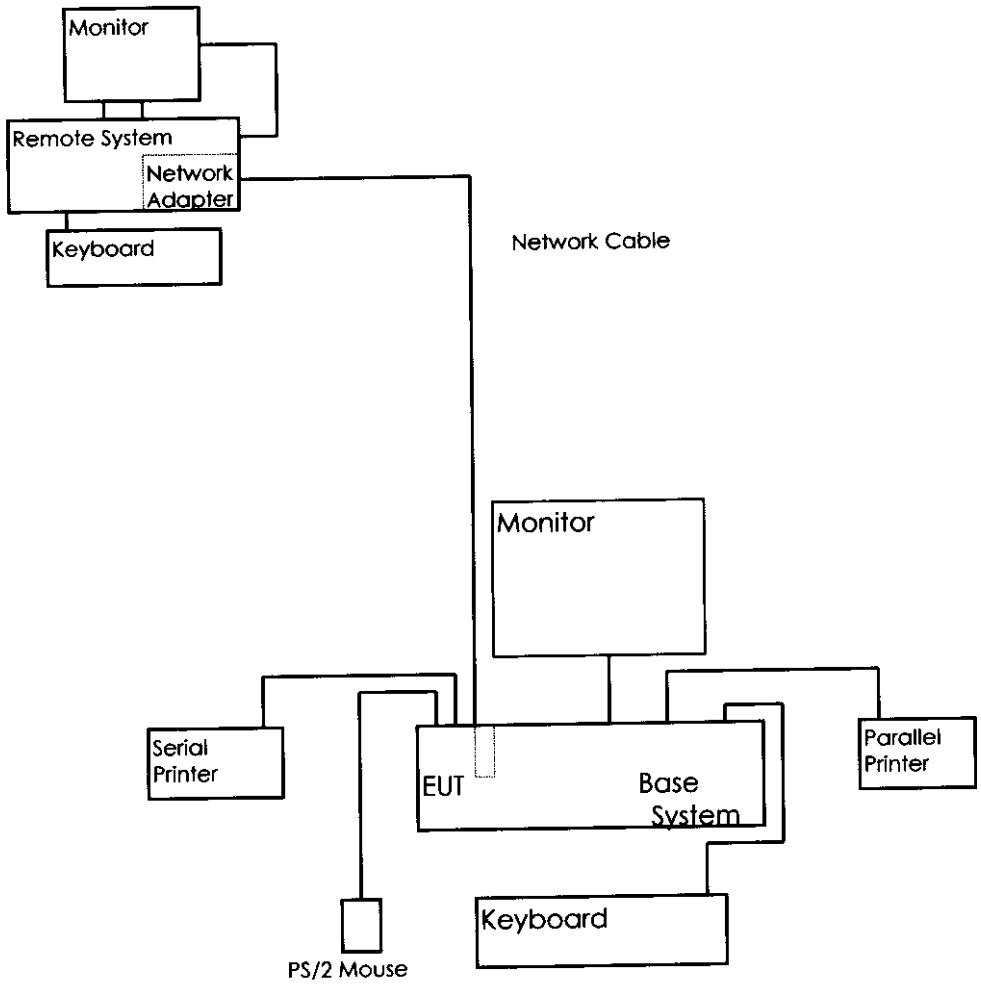
## 3.3 Special Accessories

No special accessories will be sold with the EUT.

## 3.4 Equipment Modifications

No EMI suppression devices were added or modified. The EUT was tested as delivered by the applicant.

# Figure 3.1: Configuration of Tested System



# 6.0 Conducted Emissions Data

**6.1** The initial step in collecting conducted data is a spectrum analyzer, peak scan of the entire measurement range. All signals with less than 2 dB margin are then measured using a quasi-peak detector. Complete graphs and data sheets may be referenced on the following pages. Minimum margins are listed below:

CISPR 22 Class B Specification Limits

**Serial No. F67 w/aux power cable, 10 Mbps**

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 0.422 | 35.1 | 47.4 | 12.3 | High |
| 0.418 | 34.2 | 47.5 | 13.3 | High |
| 0.425 | 34.0 | 47.4 | 13.4 | High |
| 1.243 | 32.3 | 46.0 | 13.7 | High |
| 0.311 | 35.9 | 49.9 | 14.0 | High |

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 1.243 | 33.2 | 46.0 | 12.8 | Low |
| 0.419 | 32.5 | 47.5 | 15.0 | Low |
| 0.240 | 37.1 | 52.1 | 15.0 | Low |
| 0.423 | 32.1 | 47.4 | 15.3 | Low |
| 0.426 | 31.9 | 47.3 | 15.4 | Low |

All readings listed above are Peak, using an IF Bandwidth of 9 kHz, a video filter was not used.

Judgment: Passed, minimum margin of 12.3 dB.

**Serial No. F67 w/aux power cable, 100 Mbps**

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 0.421 | 35.0 | 47.4 | 12.4 | High |
| 0.239 | 39.3 | 52.1 | 12.8 | High |
| 0.424 | 34.0 | 47.4 | 13.4 | High |
| 0.242 | 38.4 | 52.0 | 13.6 | High |
| 0.418 | 33.6 | 47.5 | 13.9 | High |

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 0.420 | 32.6 | 47.5 | 14.9 | Low |
| 0.239 | 36.9 | 52.1 | 15.2 | Low |
| 0.418 | 31.9 | 47.5 | 15.6 | Low |
| 0.426 | 31.7 | 47.3 | 15.6 | Low |
| 0.423 | 31.6 | 47.4 | 15.8 | Low |

All readings listed above are Peak, using an IF Bandwidth of 9 kHz, a video filter was not used.

Judgment: Passed, minimum margin of 12.4 dB.

# 6.0 Conducted Emissions Data con't

**Serial No. F67 w/o aux power cable, 10 Mbps**

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 0.419 | 35.8 | 47.5 | 11.7 | High |
| 0.414 | 35.5 | 47.6 | 12.1 | High |
| 0.244 | 39.8 | 52.0 | 12.2 | High |
| 0.312 | 37.4 | 49.9 | 12.5 | High |
| 0.416 | 35.0 | 47.5 | 12.5 | High |

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 1.255 | 32.8 | 46.0 | 13.2 | Low |
| 0.616 | 32.4 | 46.0 | 13.6 | Low |
| 0.418 | 33.7 | 47.5 | 13.8 | Low |
| 1.182 | 31.7 | 46.0 | 14.3 | Low |
| 0.421 | 32.7 | 47.4 | 14.7 | Low |

All readings listed above are Peak, using an IF Bandwidth of 9 kHz, a video filter was not used.

Judgment: Passed, minimum margin of 11.7 dB.

**Serial No. F67 w/o aux power cable, 100 Mbps**

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 0.622 | 36.3 | 46.0 | 9.7 | High |
| 1.251 | 35.6 | 46.0 | 10.4 | High |
| 0.418 | 35.6 | 47.5 | 11.9 | High |
| 0.416 | 35.5 | 47.5 | 12.0 | High |
| 0.244 | 38.9 | 52.0 | 13.1 | High |

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 0.618 | 32.9 | 46.0 | 13.1 | Low |
| 1.255 | 32.9 | 46.0 | 13.1 | Low |
| 0.624 | 32.5 | 46.0 | 13.5 | Low |
| 1.182 | 32.4 | 46.0 | 13.6 | Low |
| 0.621 | 32.3 | 46.0 | 13.7 | Low |

All readings listed above are Peak, using an IF Bandwidth of 9 kHz, a video filter was not used.

Judgment: Passed, minimum margin of 9.7 dB.

# 6.0 Conducted Emissions Data con't

**Serial No. F4C w/aux power cable, 10 Mbps**

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 0.424 | 34.2 | 47.4 | 13.2 | High |
| 0.422 | 33.5 | 47.4 | 13.9 | High |
| 0.420 | 33.0 | 47.4 | 14.4 | High |
| 1.255 | 31.4 | 46.0 | 14.6 | High |
| 0.427 | 32.7 | 47.3 | 14.6 | High |

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 1.247 | 31.8 | 46.0 | 14.2 | Low |
| 0.425 | 32.7 | 47.4 | 14.7 | Low |
| 13.784 | 35.3 | 50.0 | 14.7 | Low |
| 0.422 | 32.0 | 47.4 | 15.4 | Low |
| 0.970 | 29.6 | 46.0 | 16.4 | Low |

All readings listed above are Peak, using an IF Bandwidth of 9 kHz, a video filter was not used.

Judgment: Passed, minimum margin of 13.2 dB.

**Serial No. F4C w/aux power cable, 100 Mbps**

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 18.443 | 42.1 | 50.0 | 7.9 | High |
| 0.809 | 36.1 | 46.0 | 9.9 | High |
| 0.582 | 35.3 | 46.0 | 10.7 | High |
| 15.816 | 39.1 | 50.0 | 10.9 | High |
| 1.313 | 34.8 | 46.0 | 11.2 | High |

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 0.810 | 42.5 | 46.0 | 3.5 | Low |
| 1.822 | 42.5 | 46.0 | 3.5 | Low |
| 0.584 | 41.4 | 46.0 | 4.6 | Low |
| 4.519 | 41.1 | 46.0 | 4.9 | Low |
| 18.417 | 44.6 | 50.0 | 5.4 | Low |

All readings listed above are Peak, using an IF Bandwidth of 9 kHz, a video filter was not used.

Judgment: Passed, minimum margin of 3.5 dB.

# 6.0 Conducted Emissions Data con't

**Serial No. FD9 w/aux power cable, 10 Mbps**

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 0.420 | 35.0 | 47.5 | 12.5 | High |
| .0424 | 34.7 | 47.4 | 12.7 | High |
| 0.422 | 34.3 | 47.4 | 13.1 | High |
| 0.419 | 34.1 | 47.5 | 13.4 | High |
| 1.243 | 32.3 | 46.0 | 13.7 | High |

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 1.243 | 32.7 | 46.0 | 13.3 | Low |
| 13.704 | 36.3 | 50.0 | 13.7 | Low |
| 0.422 | 32.9 | 47.4 | 14.5 | Low |
| 0.243 | 36.9 | 52.0 | 15.1 | Low |
| 0.242 | 36.9 | 52.0 | 15.1 | Low |

All readings listed above are Peak, using an IF Bandwidth of 9 kHz, a video filter was not used.

Judgment: Passed, minimum margin of 12.5 dB.

**Serial No. FD9 w/aux power cable, 100 Mbps**

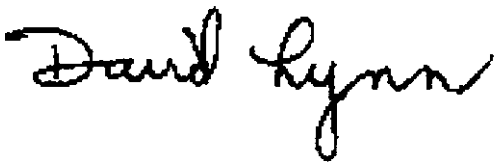
| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 13.704 | 36.9 | 50.0 | 13.1 | High |
| 0.420 | 34.2 | 47.4 | 13.2 | High |
| 0.422 | 34.0 | 47.4 | 13.4 | High |
| 0.418 | 34.0 | 47.5 | 13.5 | High |
| 0.423 | 33.9 | 47.4 | 13.5 | High |

| Frequency (MHz) | Measured Level (dBuV) | Limit (dBuV) | Margin (dB)* | Lead |
|---|---|---|---|---|
| 0.976 | 32.7 | 46.0 | 13.3 | Low |
| 0.973 | 32.7 | 46.0 | 13.3 | Low |
| .0422 | 33.9 | 47.4 | 13.5 | Low |
| 1.243 | 31.5 | 46.0 | 14.5 | Low |
| 0.241 | 37.5 | 52.1 | 14.6 | Low |

All readings listed above are Peak, using an IF Bandwidth of 9 kHz, a video filter was not used.

Judgment: Passed, minimum margin of 13.1 dB.

**Test Personnel:**



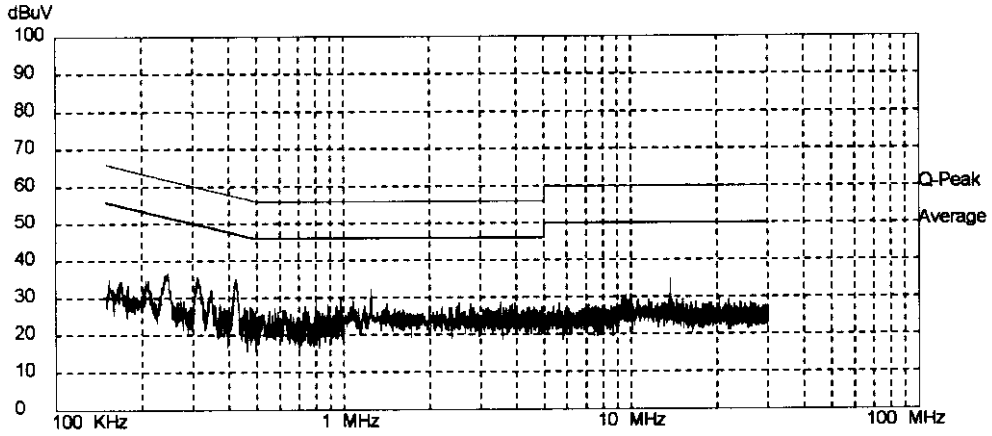
Type/Printer Name: David Lynn

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F67, w/aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 16:35:14
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1088
Run #3, U2=SC, RP3=NO, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) High Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 0.422 | 15.1 | High | 20.0 | 35.1 | 47.4 | -12.3 |
| 0.418 | 14.2 | High | 20.0 | 34.2 | 47.5 | -13.3 |
| 0.425 | 14.0 | High | 20.0 | 34.0 | 47.3 | -13.3 |
| 1.243 | 10.8 | High | 21.5 | 32.3 | 46.0 | -13.7 |
| 0.311 | 15.9 | High | 20.0 | 35.9 | 49.9 | -14.0 |
| 0.313 | 15.3 | High | 20.0 | 35.3 | 49.9 | -14.6 |
| 13.704 | 13.3 | High | 21.7 | 35.0 | 50.0 | -15.0 |
| 0.245 | 16.8 | High | 20.0 | 36.8 | 51.9 | -15.1 |
| 0.244 | 16.6 | High | 20.0 | 36.6 | 52.0 | -15.4 |
| 0.309 | 14.6 | High | 20.0 | 34.6 | 50.0 | -15.4 |
| 0.426 | 11.9 | High | 20.0 | 31.9 | 47.3 | -15.4 |
| 0.314 | 14.1 | High | 20.0 | 34.1 | 49.9 | -15.8 |
| 0.975 | 10.2 | High | 20.0 | 30.2 | 46.0 | -15.8 |
| 0.239 | 16.2 | High | 20.0 | 36.2 | 52.1 | -15.9 |
| 0.241 | 16.1 | High | 20.0 | 36.1 | 52.1 | -16.0 |
| 0.415 | 10.8 | High | 20.0 | 30.8 | 47.5 | -16.7 |
| 0.413 | 10.8 | High | 20.0 | 30.8 | 47.6 | -16.8 |
| 1.074 | 7.7 | High | 21.5 | 29.2 | 46.0 | -16.8 |
| 0.346 | 12.1 | High | 20.0 | 32.1 | 49.1 | -17.0 |
| 0.800 | 8.9 | High | 20.0 | 28.9 | 46.0 | -17.1 |

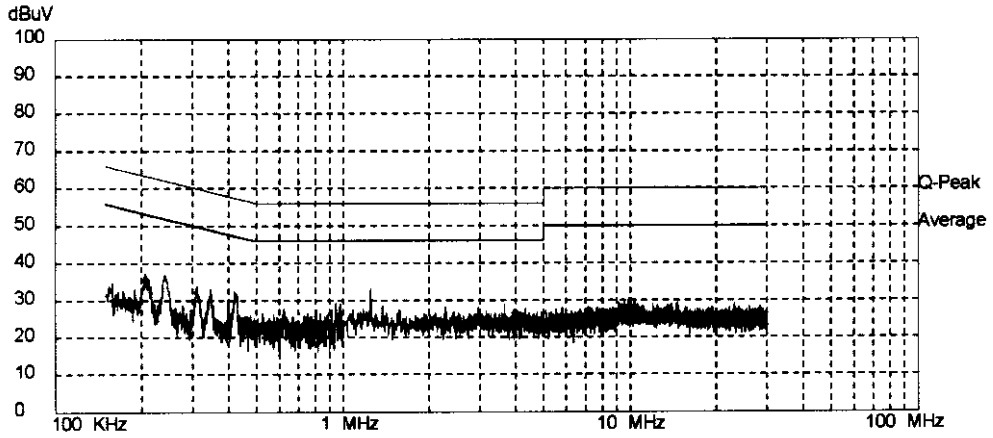
David Lynn

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F67, w/aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 16:37
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1088
Run #3, U2=SC, RP3=NO, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) Low Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 1.243 | 11.7 | Low | 21.5 | 33.2 | 46.0 | -12.8 |
| 0.419 | 12.5 | Low | 20.0 | 32.5 | 47.5 | -15.0 |
| 0.240 | 17.1 | Low | 20.0 | 37.1 | 52.1 | -15.0 |
| 0.423 | 12.1 | Low | 20.0 | 32.1 | 47.4 | -15.3 |
| 0.426 | 11.9 | Low | 20.0 | 31.9 | 47.3 | -15.4 |
| 0.424 | 11.9 | Low | 20.0 | 31.9 | 47.4 | -15.5 |
| 0.242 | 16.4 | Low | 20.0 | 36.4 | 52.0 | -15.6 |
| 0.238 | 16.5 | Low | 20.0 | 36.5 | 52.2 | -15.7 |
| 0.310 | 14.1 | Low | 20.0 | 34.1 | 50.0 | -15.9 |
| 0.345 | 13.2 | Low | 20.0 | 33.2 | 49.1 | -15.9 |
| 0.244 | 16.0 | Low | 20.0 | 36.0 | 52.0 | -16.0 |
| 0.204 | 17.4 | Low | 20.0 | 37.4 | 53.4 | -16.0 |
| 0.207 | 16.8 | Low | 20.0 | 36.8 | 53.3 | -16.5 |
| 0.942 | 9.4 | Low | 20.0 | 29.4 | 46.0 | -16.6 |
| 0.308 | 13.4 | Low | 20.0 | 33.4 | 50.0 | -16.6 |
| 0.346 | 12.2 | Low | 20.0 | 32.2 | 49.1 | -16.9 |
| 3.653 | 7.5 | Low | 21.6 | 29.1 | 46.0 | -16.9 |
| 0.973 | 9.1 | Low | 20.0 | 29.1 | 46.0 | -16.9 |
| 0.211 | 16.2 | Low | 20.0 | 36.2 | 53.2 | -17.0 |
| 0.349 | 11.9 | Low | 20.0 | 31.9 | 49.0 | -17.1 |

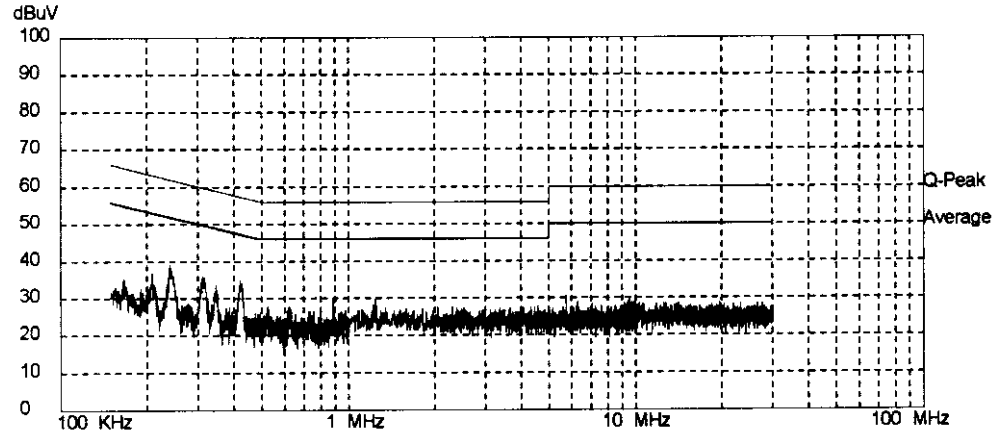
David Lynn

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F67, w/aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 16:46
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 100Mbps, 1024 pkt, Pulse H1068
Run #3, U2=SC, RP3=NO, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) High Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 0.421 | 15.0 | High | 20.0 | 35.0 | 47.4 | -12.4 |
| 0.239 | 19.3 | High | 20.0 | 39.3 | 52.1 | -12.8 |
| 0.424 | 14.0 | High | 20.0 | 34.0 | 47.4 | -13.4 |
| 0.242 | 18.4 | High | 20.0 | 38.4 | 52.0 | -13.6 |
| 0.418 | 13.6 | High | 20.0 | 33.6 | 47.5 | -13.9 |
| 0.312 | 16.0 | High | 20.0 | 36.0 | 49.9 | -13.9 |
| 0.315 | 15.8 | High | 20.0 | 35.8 | 49.8 | -14.0 |
| 0.417 | 13.1 | High | 20.0 | 33.1 | 47.5 | -14.4 |
| 0.310 | 15.5 | High | 20.0 | 35.5 | 50.0 | -14.5 |
| 0.308 | 14.6 | High | 20.0 | 34.6 | 50.0 | -15.4 |
| 0.345 | 13.6 | High | 20.0 | 33.6 | 49.1 | -15.5 |
| 0.246 | 16.3 | High | 20.0 | 36.3 | 51.9 | -15.6 |
| 0.415 | 11.9 | High | 20.0 | 31.9 | 47.5 | -15.6 |
| 0.428 | 11.5 | High | 20.0 | 31.5 | 47.3 | -15.8 |
| 0.884 | 10.0 | High | 20.0 | 30.0 | 46.0 | -16.0 |
| 0.413 | 11.5 | High | 20.0 | 31.5 | 47.6 | -16.1 |
| 0.317 | 13.6 | High | 20.0 | 33.6 | 49.8 | -16.2 |
| 1.239 | 8.3 | High | 21.5 | 29.8 | 46.0 | -16.2 |
| 0.209 | 17.0 | High | 20.0 | 37.0 | 53.2 | -16.2 |
| 0.347 | 12.5 | High | 20.0 | 32.5 | 49.0 | -16.5 |

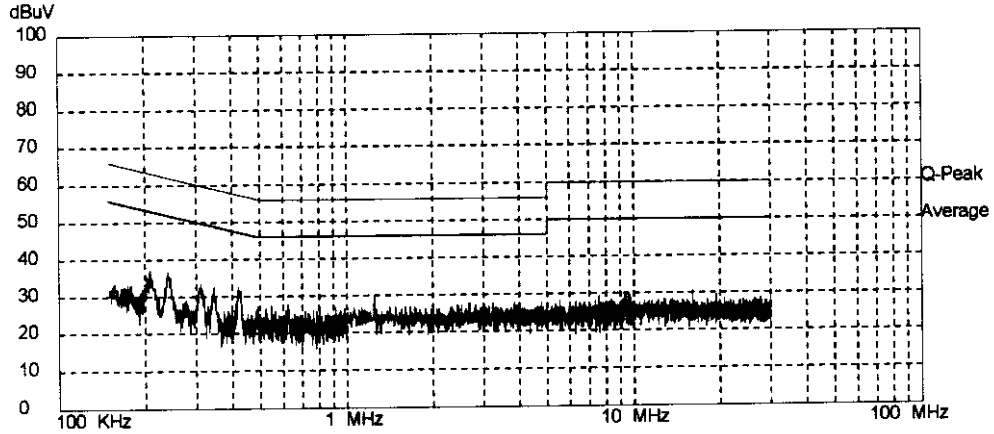
David Lynn

## Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F67, w/aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 16:42:57
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 100Mbps, 1024 pkt, Pulse H1088
Run #3, U2=SC, RP3=NO, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) Low Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 0.420 | 12.6 | Low | 20.0 | 32.6 | 47.4 | -14.8 |
| 0.239 | 16.9 | Low | 20.0 | 36.9 | 52.1 | -15.2 |
| 0.418 | 11.9 | Low | 20.0 | 31.9 | 47.5 | -15.6 |
| 0.426 | 11.7 | Low | 20.0 | 31.7 | 47.3 | -15.6 |
| 0.423 | 11.6 | Low | 20.0 | 31.6 | 47.4 | -15.8 |
| 1.247 | 8.6 | Low | 21.5 | 30.1 | 46.0 | -15.9 |
| 0.207 | 17.4 | Low | 20.0 | 37.4 | 53.3 | -15.9 |
| 0.345 | 12.8 | Low | 20.0 | 32.8 | 49.1 | -16.3 |
| 0.310 | 13.6 | Low | 20.0 | 33.6 | 50.0 | -16.4 |
| 0.243 | 15.3 | Low | 20.0 | 35.3 | 52.0 | -16.7 |
| 0.237 | 15.5 | Low | 20.0 | 35.5 | 52.2 | -16.7 |
| 0.241 | 15.0 | Low | 20.0 | 35.0 | 52.1 | -17.1 |
| 0.417 | 10.0 | Low | 20.0 | 30.0 | 47.5 | -17.5 |
| 0.308 | 12.2 | Low | 20.0 | 32.2 | 50.0 | -17.8 |
| 0.343 | 11.3 | Low | 20.0 | 31.3 | 49.1 | -17.8 |
| 0.203 | 15.5 | Low | 20.0 | 35.5 | 53.5 | -18.0 |
| 0.210 | 15.2 | Low | 20.0 | 35.2 | 53.2 | -18.0 |
| 0.315 | 11.8 | Low | 20.0 | 31.8 | 49.8 | -18.0 |
| 3.829 | 6.3 | Low | 21.6 | 27.9 | 46.0 | -18.1 |
| 2.674 | 6.3 | Low | 21.6 | 27.9 | 46.0 | -18.1 |

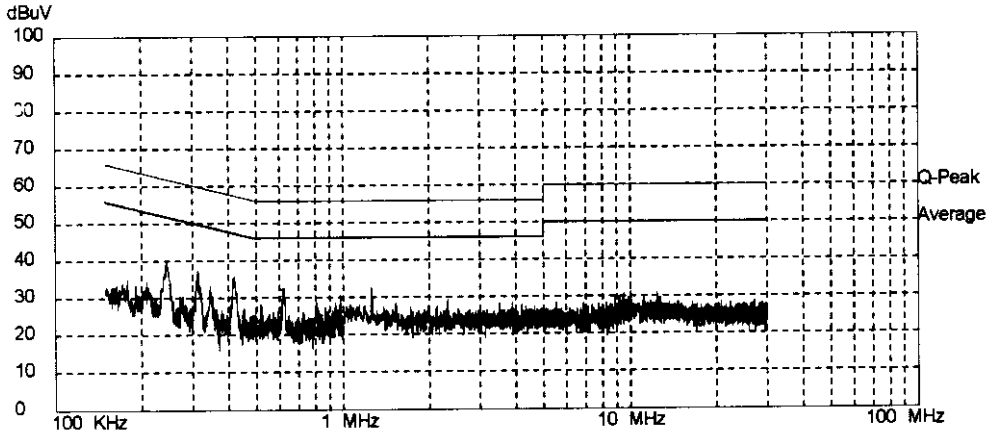
David Lynn

## Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F67, w/o aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 18:47
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1088
Run #4, U2=SC, RP3=NO, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) High Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 0.419 | 15.8 | High | 20.0 | 35.8 | 47.5 | -11.7 |
| 0.414 | 15.5 | High | 20.0 | 35.5 | 47.6 | -12.1 |
| 0.244 | 19.8 | High | 20.0 | 39.8 | 52.0 | -12.2 |
| 0.312 | 17.4 | High | 20.0 | 37.4 | 49.9 | -12.5 |
| 0.416 | 15.0 | High | 20.0 | 35.0 | 47.5 | -12.5 |
| 0.242 | 19.1 | High | 20.0 | 39.1 | 52.0 | -12.9 |
| 0.617 | 12.8 | High | 20.0 | 32.8 | 46.0 | -13.2 |
| 1.255 | 11.2 | High | 21.5 | 32.7 | 46.0 | -13.3 |
| 0.245 | 18.5 | High | 20.0 | 38.5 | 51.9 | -13.4 |
| 0.621 | 12.5 | High | 20.0 | 32.5 | 46.0 | -13.5 |
| 0.310 | 16.3 | High | 20.0 | 36.3 | 50.0 | -13.7 |
| 0.421 | 13.5 | High | 20.0 | 33.5 | 47.4 | -13.9 |
| 0.246 | 17.7 | High | 20.0 | 37.7 | 51.9 | -14.2 |
| 0.423 | 12.5 | High | 20.0 | 32.5 | 47.4 | -14.9 |
| 0.240 | 16.8 | High | 20.0 | 36.8 | 52.1 | -15.3 |
| 0.977 | 10.6 | High | 20.0 | 30.6 | 46.0 | -15.4 |
| 0.346 | 13.2 | High | 20.0 | 33.2 | 49.1 | -15.9 |
| 0.316 | 13.4 | High | 20.0 | 33.4 | 49.8 | -16.4 |
| 0.426 | 10.9 | High | 20.0 | 30.9 | 47.3 | -16.4 |
| 0.317 | 13.3 | High | 20.0 | 33.3 | 49.8 | -16.5 |

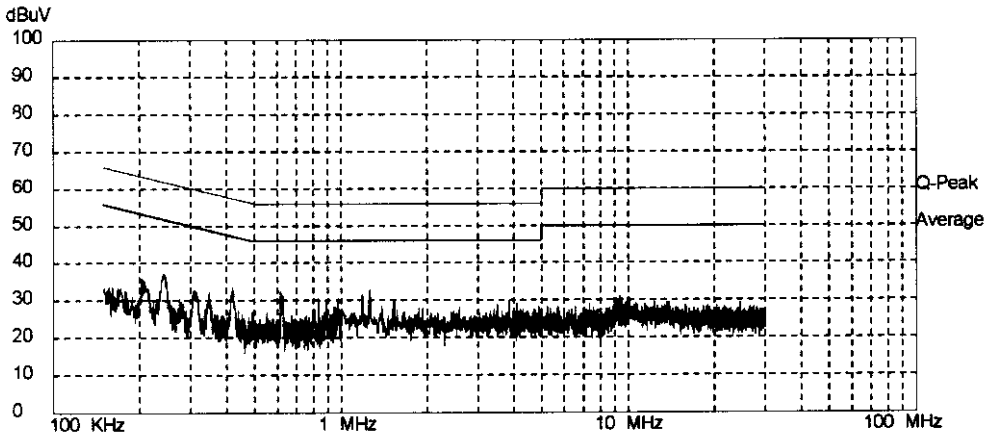
David Lynn

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F67, w/o aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 18:44:39
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1088
Run #4, U2=SC, RP3=NO, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) Low Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 1.255 | 11.3 | Low | 21.5 | 32.8 | 46.0 | -13.2 |
| 0.616 | 12.4 | Low | 20.0 | 32.4 | 46.0 | -13.6 |
| 0.418 | 13.7 | Low | 20.0 | 33.7 | 47.5 | -13.8 |
| 1.182 | 10.2 | Low | 21.5 | 31.7 | 46.0 | -14.3 |
| 0.242 | 17.3 | Low | 20.0 | 37.3 | 52.0 | -14.7 |
| 0.421 | 12.7 | Low | 20.0 | 32.7 | 47.4 | -14.7 |
| 0.626 | 11.2 | Low | 20.0 | 31.2 | 46.0 | -14.8 |
| 0.243 | 17.1 | Low | 20.0 | 37.1 | 52.0 | -14.9 |
| 0.422 | 12.5 | Low | 20.0 | 32.5 | 47.4 | -14.9 |
| 0.240 | 16.7 | Low | 20.0 | 36.7 | 52.1 | -15.4 |
| 0.974 | 10.6 | Low | 20.0 | 30.6 | 46.0 | -15.4 |
| 0.833 | 10.6 | Low | 20.0 | 30.6 | 46.0 | -15.4 |
| 0.415 | 12.1 | Low | 20.0 | 32.1 | 47.5 | -15.4 |
| 0.246 | 16.3 | Low | 20.0 | 36.3 | 51.9 | -15.6 |
| 1.523 | 8.9 | Low | 21.5 | 30.4 | 46.0 | -15.6 |
| 0.624 | 10.4 | Low | 20.0 | 30.4 | 46.0 | -15.6 |
| 0.413 | 11.6 | Low | 20.0 | 31.6 | 47.6 | -16.0 |
| 0.620 | 10.0 | Low | 20.0 | 30.0 | 46.0 | -16.0 |
| 1.247 | 8.5 | Low | 21.5 | 30.0 | 46.0 | -16.0 |
| 0.239 | 16.1 | Low | 20.0 | 36.1 | 52.1 | -16.0 |

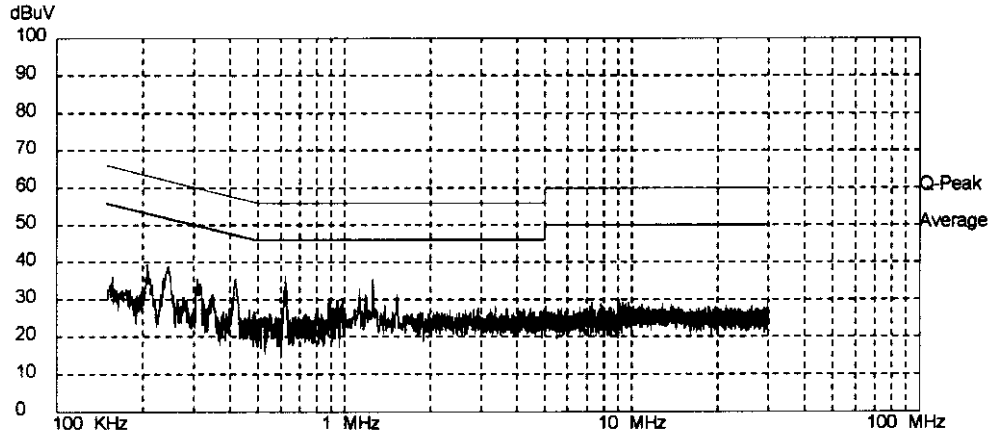
David Lynn

## Northwest EMC, Inc.

Ver 5.4e, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F67, w/o aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Data/Time:** 11-18-1998 18:51:45
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 100Mbps, 1024 pkt, Pulse H1088
Run #4, U2=SC, RP3=NO, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) High Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 0.622 | 16.3 | High | 20.0 | 36.3 | 46.0 | -9.7 |
| 1.251 | 14.1 | High | 21.5 | 35.6 | 46.0 | -10.4 |
| 0.418 | 15.6 | High | 20.0 | 35.6 | 47.5 | -11.9 |
| 0.416 | 15.5 | High | 20.0 | 35.5 | 47.5 | -12.0 |
| 0.244 | 18.9 | High | 20.0 | 38.9 | 52.0 | -13.1 |
| 0.413 | 14.5 | High | 20.0 | 34.5 | 47.6 | -13.1 |
| 1.126 | 11.4 | High | 21.5 | 32.9 | 46.0 | -13.1 |
| 0.628 | 12.6 | High | 20.0 | 32.6 | 46.0 | -13.4 |
| 0.627 | 12.6 | High | 20.0 | 32.6 | 46.0 | -13.4 |
| 0.420 | 14.0 | High | 20.0 | 34.0 | 47.4 | -13.4 |
| 0.615 | 12.4 | High | 20.0 | 32.4 | 46.0 | -13.6 |
| 0.242 | 18.3 | High | 20.0 | 38.3 | 52.0 | -13.7 |
| 0.205 | 19.5 | High | 20.0 | 39.5 | 53.4 | -13.9 |
| 0.421 | 13.5 | High | 20.0 | 33.5 | 47.4 | -13.9 |
| 0.241 | 17.8 | High | 20.0 | 37.8 | 52.1 | -14.3 |
| 0.308 | 15.6 | High | 20.0 | 35.6 | 50.0 | -14.4 |
| 0.247 | 17.4 | High | 20.0 | 37.4 | 51.9 | -14.5 |
| 1.178 | 9.9 | High | 21.5 | 31.4 | 46.0 | -14.6 |
| 1.523 | 9.8 | High | 21.5 | 31.3 | 46.0 | -14.7 |
| 0.315 | 14.3 | High | 20.0 | 34.3 | 49.8 | -15.5 |

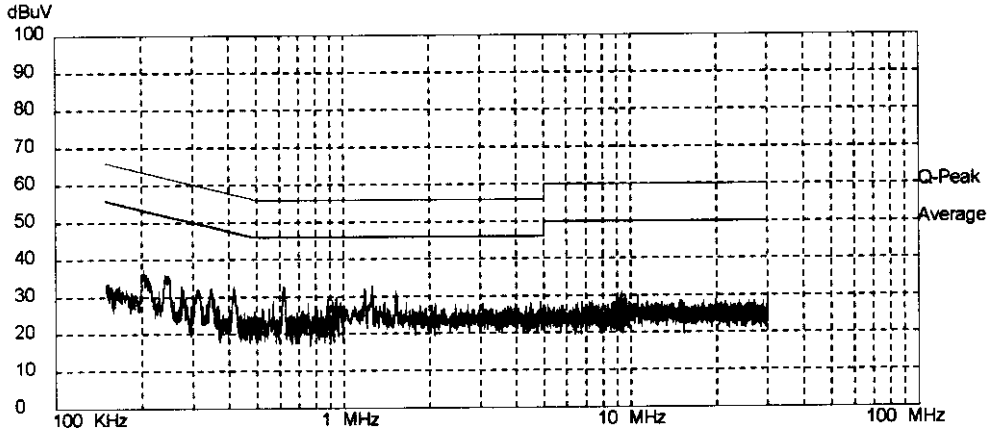
David Lynn

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F67, w/o aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 18:54
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 100Mbps, 1024 pkt, Pulse H1088
Run #4, U2=SC, RP3=NO, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) Low Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 0.618 | 12.9 | Low | 20.0 | 32.9 | 46.0 | -13.1 |
| 1.255 | 11.4 | Low | 21.5 | 32.9 | 46.0 | -13.1 |
| 0.624 | 12.5 | Low | 20.0 | 32.5 | 46.0 | -13.5 |
| 1.182 | 10.9 | Low | 21.5 | 32.4 | 46.0 | -13.6 |
| 0.621 | 12.3 | Low | 20.0 | 32.3 | 46.0 | -13.7 |
| 1.523 | 10.2 | Low | 21.5 | 31.7 | 46.0 | -14.3 |
| 0.615 | 11.6 | Low | 20.0 | 31.6 | 46.0 | -14.4 |
| 0.415 | 13.1 | Low | 20.0 | 33.1 | 47.5 | -14.4 |
| 0.416 | 12.5 | Low | 20.0 | 32.5 | 47.5 | -15.0 |
| 0.419 | 12.1 | Low | 20.0 | 32.1 | 47.5 | -15.4 |
| 0.942 | 10.0 | Low | 20.0 | 30.0 | 46.0 | -16.0 |
| 0.239 | 16.1 | Low | 20.0 | 36.1 | 52.1 | -16.0 |
| 0.245 | 15.8 | Low | 20.0 | 35.8 | 51.9 | -16.1 |
| 0.242 | 15.9 | Low | 20.0 | 35.9 | 52.0 | -16.1 |
| 0.202 | 17.4 | Low | 20.0 | 37.4 | 53.5 | -16.1 |
| 0.246 | 15.7 | Low | 20.0 | 35.7 | 51.9 | -16.2 |
| 0.248 | 15.4 | Low | 20.0 | 35.4 | 51.8 | -16.4 |
| 0.880 | 9.5 | Low | 20.0 | 29.5 | 46.0 | -16.5 |
| 0.345 | 12.5 | Low | 20.0 | 32.5 | 49.1 | -16.6 |
| 0.939 | 9.3 | Low | 20.0 | 29.3 | 46.0 | -16.7 |

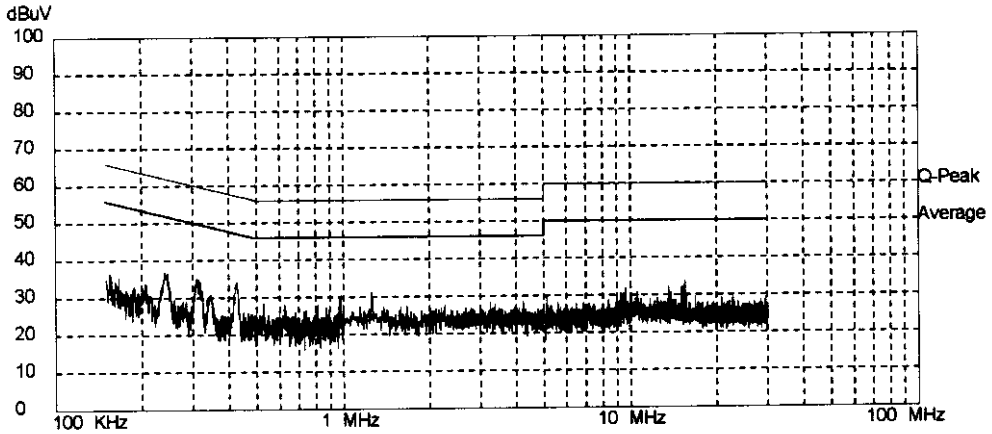
David Lynn

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F4C, w/aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 14:18
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1012
Run #1, U2=CMD, RP3=NO, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) High Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 0.424 | 14.2 | High | 20.0 | 34.2 | 47.4 | -13.2 |
| 0.422 | 13.5 | High | 20.0 | 33.5 | 47.4 | -13.9 |
| 0.420 | 13.0 | High | 20.0 | 33.0 | 47.4 | -14.4 |
| 1.255 | 9.9 | High | 21.5 | 31.4 | 46.0 | -14.6 |
| 0.427 | 12.7 | High | 20.0 | 32.7 | 47.3 | -14.6 |
| 0.314 | 15.0 | High | 20.0 | 35.0 | 49.9 | -14.9 |
| 0.309 | 15.1 | High | 20.0 | 35.1 | 50.0 | -14.9 |
| 0.429 | 12.2 | High | 20.0 | 32.2 | 47.3 | -15.1 |
| 0.317 | 14.6 | High | 20.0 | 34.6 | 49.8 | -15.2 |
| 0.240 | 16.9 | High | 20.0 | 36.9 | 52.1 | -15.2 |
| 0.312 | 14.6 | High | 20.0 | 34.6 | 49.9 | -15.3 |
| 0.245 | 16.5 | High | 20.0 | 36.5 | 51.9 | -15.4 |
| 0.973 | 10.3 | High | 20.0 | 30.3 | 46.0 | -15.7 |
| 0.308 | 14.1 | High | 20.0 | 34.1 | 50.0 | -15.9 |
| 0.242 | 16.0 | High | 20.0 | 36.0 | 52.0 | -16.0 |
| 0.971 | 9.9 | High | 20.0 | 29.9 | 46.0 | -16.1 |
| 15.505 | 12.1 | High | 21.7 | 33.8 | 50.0 | -16.2 |
| 0.418 | 11.1 | High | 20.0 | 31.1 | 47.5 | -16.4 |
| 0.417 | 11.0 | High | 20.0 | 31.0 | 47.5 | -16.5 |
| 0.319 | 13.2 | High | 20.0 | 33.2 | 49.7 | -16.5 |

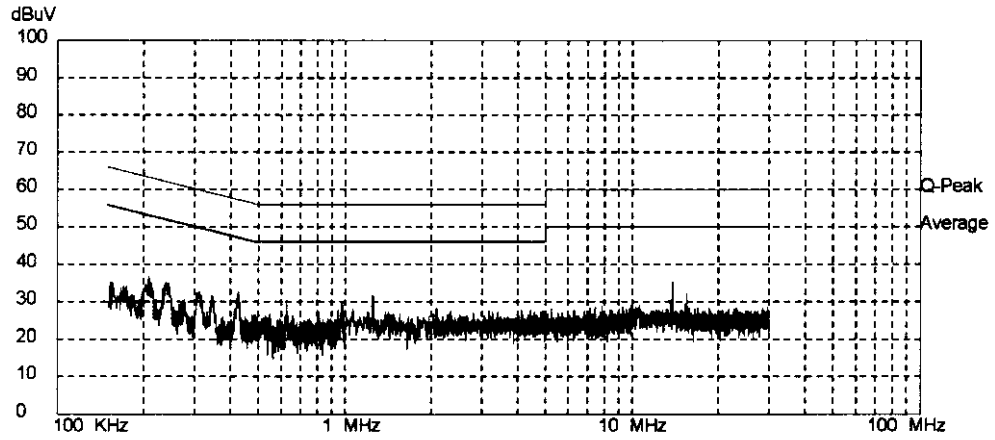
David Lynn

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F4C, w/aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 14:22
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1012
Run #1, U2=CMD, RP3=NO, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) Low Line**
Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 1.247 | 10.3 | Low | 21.5 | 31.8 | 46.0 | -14.2 |
| 0.425 | 12.7 | Low | 20.0 | 32.7 | 47.3 | -14.6 |
| 13.784 | 13.6 | Low | 21.7 | 35.3 | 50.0 | -14.7 |
| 0.422 | 12.0 | Low | 20.0 | 32.0 | 47.4 | -15.4 |
| 0.970 | 9.6 | Low | 20.0 | 29.6 | 46.0 | -16.4 |
| 0.421 | 11.0 | Low | 20.0 | 31.0 | 47.4 | -16.4 |
| 0.208 | 16.8 | Low | 20.0 | 36.8 | 53.3 | -16.5 |
| 0.626 | 9.4 | Low | 20.0 | 29.4 | 46.0 | -16.6 |
| 0.975 | 9.4 | Low | 20.0 | 29.4 | 46.0 | -16.6 |
| 0.244 | 15.0 | Low | 20.0 | 35.0 | 52.0 | -17.0 |
| 0.238 | 15.2 | Low | 20.0 | 35.2 | 52.2 | -17.0 |
| 0.241 | 14.9 | Low | 20.0 | 34.9 | 52.1 | -17.2 |
| 0.312 | 12.7 | Low | 20.0 | 32.7 | 49.9 | -17.2 |
| 0.344 | 11.8 | Low | 20.0 | 31.8 | 49.1 | -17.3 |
| 0.429 | 9.9 | Low | 20.0 | 29.9 | 47.3 | -17.4 |
| 0.344 | 11.7 | Low | 20.0 | 31.7 | 49.1 | -17.4 |
| 0.206 | 15.9 | Low | 20.0 | 35.9 | 53.4 | -17.5 |
| 0.979 | 8.5 | Low | 20.0 | 28.5 | 46.0 | -17.5 |
| 0.347 | 11.5 | Low | 20.0 | 31.5 | 49.0 | -17.5 |
| 2.085 | 6.9 | Low | 21.5 | 28.4 | 46.0 | -17.6 |

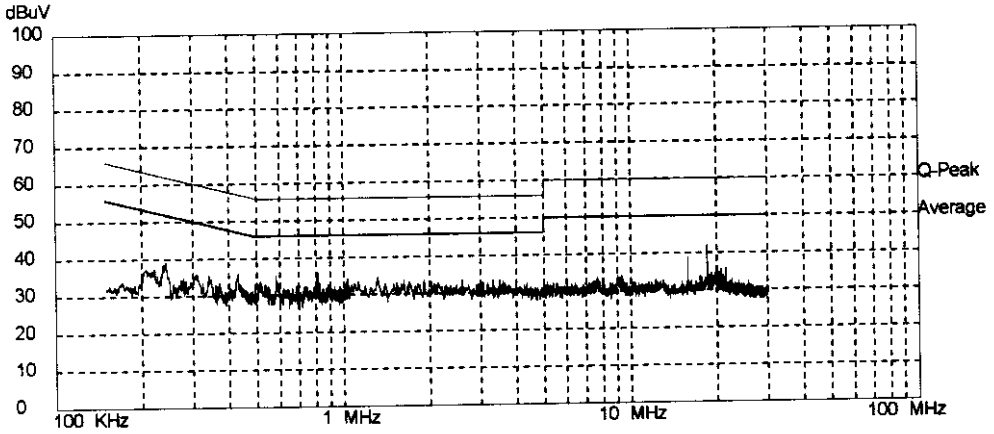
David Lynn

Ver 5.4a, Jan 1997

## Northwest EMC, Inc.

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F4C
**Manufacturer:** Intel
**Job Number:** INTE2363
**Date/Time:** 11-27-1998 09:58:45
**Tested By:** Jeff Jackson, HL01
**Comments:** PC System #1, running ST, random data, 100Mbps, 1024 pkt, Pulse H1012
Run #3, U2=CMD, RP3=NO, 120VAC, 60 Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) High Line** Peak data.



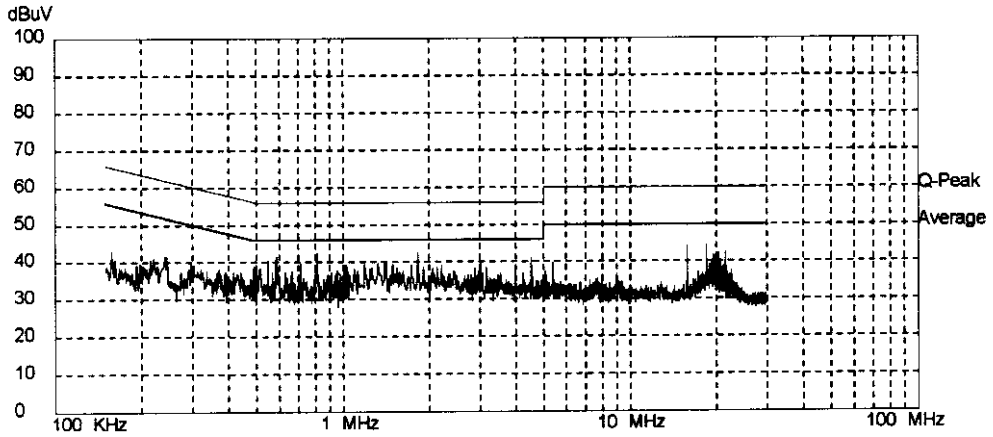

| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 18.443 | 22.1 | High | 20.0 | 42.1 | 50.0 | -7.9 |
| 0.809 | 16.1 | High | 20.0 | 36.1 | 46.0 | -9.9 |
| 0.582 | 15.3 | High | 20.0 | 35.3 | 46.0 | -10.7 |
| 15.816 | 19.1 | High | 20.0 | 39.1 | 50.0 | -10.9 |
| 1.313 | 14.8 | High | 20.0 | 34.8 | 46.0 | -11.2 |
| 0.429 | 16.0 | High | 20.0 | 36.0 | 47.3 | -11.3 |
| 1.029 | 14.4 | High | 20.0 | 34.4 | 46.0 | -11.6 |
| 0.513 | 14.1 | High | 20.0 | 34.1 | 46.0 | -11.9 |
| 0.814 | 14.1 | High | 20.0 | 34.1 | 46.0 | -11.9 |
| 1.023 | 13.9 | High | 20.0 | 33.9 | 46.0 | -12.1 |
| 1.614 | 13.9 | High | 20.0 | 33.9 | 46.0 | -12.1 |
| 2.589 | 13.7 | High | 20.0 | 33.7 | 46.0 | -12.3 |
| 1.905 | 13.7 | High | 20.0 | 33.7 | 46.0 | -12.3 |
| 0.585 | 13.7 | High | 20.0 | 33.7 | 46.0 | -12.3 |
| 0.598 | 13.5 | High | 20.0 | 33.5 | 46.0 | -12.5 |
| 3.316 | 13.4 | High | 20.0 | 33.4 | 46.0 | -12.6 |
| 1.126 | 13.4 | High | 20.0 | 33.4 | 46.0 | -12.6 |
| 3.492 | 13.4 | High | 20.0 | 33.4 | 46.0 | -12.6 |
| 0.822 | 13.3 | High | 20.0 | 33.3 | 46.0 | -12.7 |
| 1.687 | 13.3 | High | 20.0 | 33.3 | 46.0 | -12.7 |

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F4C
**Manufacturer:** Intel
**Job Number:** INTE2363
**Date/Time:** 11-27-1998 10:16:44
**Tested By:** Jeff Jackson, HL01
**Comments:** PC System #1, running ST, random data, 100Mbps, 1024 pkt, Pulse H1012
Run #4, U2=CMD, RP3=NO, 120VAC, 60 Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) Low Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 0.810 | 22.5 | Low | 20.0 | 42.5 | 46.0 | -3.5 |
| 1.822 | 22.5 | Low | 20.0 | 42.5 | 46.0 | -3.5 |
| 0.584 | 21.4 | Low | 20.0 | 41.4 | 46.0 | -4.6 |
| 4.519 | 21.1 | Low | 20.0 | 41.1 | 46.0 | -4.9 |
| 18.417 | 24.6 | Low | 20.0 | 44.6 | 50.0 | -5.4 |
| 0.548 | 20.6 | Low | 20.0 | 40.6 | 46.0 | -5.4 |
| 15.816 | 24.4 | Low | 20.0 | 44.4 | 50.0 | -5.6 |
| 3.015 | 19.9 | Low | 20.0 | 39.9 | 46.0 | -6.1 |
| 1.324 | 19.6 | Low | 20.0 | 39.6 | 46.0 | -6.4 |
| 0.710 | 19.6 | Low | 20.0 | 39.6 | 46.0 | -6.4 |
| 1.396 | 19.6 | Low | 20.0 | 39.6 | 46.0 | -6.4 |
| 1.490 | 19.5 | Low | 20.0 | 39.5 | 46.0 | -6.5 |
| 1.189 | 19.5 | Low | 20.0 | 39.5 | 46.0 | -6.5 |
| 1.728 | 19.3 | Low | 20.0 | 39.3 | 46.0 | -6.7 |
| 2.205 | 19.2 | Low | 20.0 | 39.2 | 46.0 | -6.8 |
| 1.012 | 19.2 | Low | 20.0 | 39.2 | 46.0 | -6.8 |
| 3.980 | 18.9 | Low | 20.0 | 38.9 | 46.0 | -7.1 |
| 0.488 | 19.0 | Low | 20.0 | 39.0 | 46.2 | -7.2 |
| 1.905 | 18.7 | Low | 20.0 | 38.7 | 46.0 | -7.3 |
| 1.541 | 18.6 | Low | 20.0 | 38.6 | 46.0 | -7.4 |

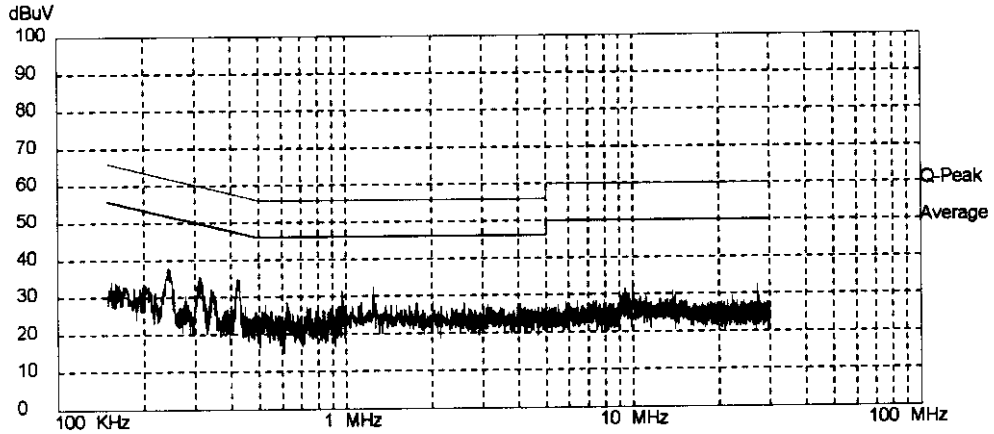
Jeffrey E. Jackson

Northwest EMC, Inc.

Ver 5.4e, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** FD9, w/aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 16:12:40
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1138
Run #2, U2=CMD, RP3=YES, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) High Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 0.420 | 15.0 | High | 20.0 | 35.0 | 47.4 | -12.4 |
| 0.424 | 14.7 | High | 20.0 | 34.7 | 47.4 | -12.7 |
| 0.422 | 14.3 | High | 20.0 | 34.3 | 47.4 | -13.1 |
| 0.419 | 14.1 | High | 20.0 | 34.1 | 47.5 | -13.4 |
| 1.243 | 10.8 | High | 21.5 | 32.3 | 46.0 | -13.7 |
| 0.242 | 18.0 | High | 20.0 | 38.0 | 52.0 | -14.0 |
| 0.311 | 15.6 | High | 20.0 | 35.6 | 49.9 | -14.3 |
| 0.244 | 17.6 | High | 20.0 | 37.6 | 52.0 | -14.4 |
| 0.970 | 11.5 | High | 20.0 | 31.5 | 46.0 | -14.5 |
| 0.313 | 15.3 | High | 20.0 | 35.3 | 49.9 | -14.6 |
| 0.240 | 17.5 | High | 20.0 | 37.5 | 52.1 | -14.6 |
| 0.426 | 12.0 | High | 20.0 | 32.0 | 47.3 | -15.3 |
| 0.315 | 14.4 | High | 20.0 | 34.4 | 49.8 | -15.4 |
| 0.309 | 14.3 | High | 20.0 | 34.3 | 50.0 | -15.7 |
| 0.415 | 11.7 | High | 20.0 | 31.7 | 47.5 | -15.8 |
| 0.239 | 15.8 | High | 20.0 | 35.8 | 52.1 | -16.3 |
| 0.319 | 13.2 | High | 20.0 | 33.2 | 49.7 | -16.5 |
| 0.306 | 13.2 | High | 20.0 | 33.2 | 50.1 | -16.9 |
| 0.248 | 14.8 | High | 20.0 | 34.8 | 51.8 | -17.0 |
| 0.973 | 8.9 | High | 20.0 | 28.9 | 46.0 | -17.1 |

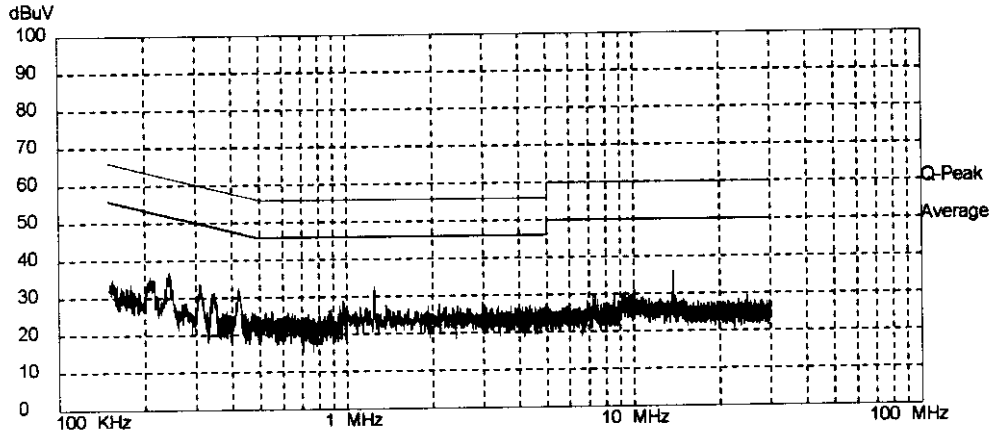
David Lynn

Ver 5.4a, Jan 1997

## Northwest EMC, Inc.

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** FD9, w/aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 16:16
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1138
Run #2, U2=CMD, RP3=YES, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) Low Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 1.243 | 11.2 | Low | 21.5 | 32.7 | 46.0 | -13.3 |
| 13.704 | 14.6 | Low | 21.7 | 36.3 | 50.0 | -13.7 |
| 0.422 | 12.9 | Low | 20.0 | 32.9 | 47.4 | -14.5 |
| 0.243 | 16.9 | Low | 20.0 | 36.9 | 52.0 | -15.1 |
| 0.242 | 16.9 | Low | 20.0 | 36.9 | 52.0 | -15.1 |
| 0.417 | 12.1 | Low | 20.0 | 32.1 | 47.5 | -15.4 |
| 0.419 | 11.5 | Low | 20.0 | 31.5 | 47.5 | -16.0 |
| 0.309 | 13.9 | Low | 20.0 | 33.9 | 50.0 | -16.1 |
| 0.311 | 13.7 | Low | 20.0 | 33.7 | 49.9 | -16.2 |
| 0.237 | 15.8 | Low | 20.0 | 35.8 | 52.2 | -16.4 |
| 0.239 | 15.4 | Low | 20.0 | 35.4 | 52.1 | -16.7 |
| 0.969 | 9.0 | Low | 20.0 | 29.0 | 46.0 | -17.0 |
| 0.972 | 8.7 | Low | 20.0 | 28.7 | 46.0 | -17.3 |
| 0.977 | 8.6 | Low | 20.0 | 28.6 | 46.0 | -17.4 |
| 0.207 | 15.9 | Low | 20.0 | 35.9 | 53.3 | -17.4 |
| 0.346 | 11.5 | Low | 20.0 | 31.5 | 49.1 | -17.6 |
| 2.963 | 6.8 | Low | 21.6 | 28.4 | 46.0 | -17.6 |
| 0.427 | 9.7 | Low | 20.0 | 29.7 | 47.3 | -17.6 |
| 0.346 | 11.3 | Low | 20.0 | 31.3 | 49.1 | -17.8 |
| 2.093 | 6.5 | Low | 21.5 | 28.0 | 46.0 | -18.0 |

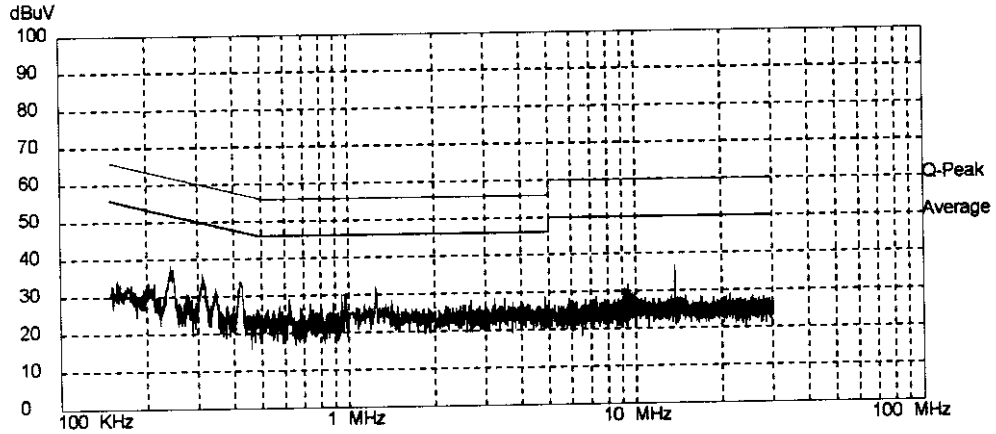
David Lynn

Ver 5.4a, Jan 1997

## Northwest EMC, Inc.

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** FD9, w/aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 16:23
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 100Mbps, 1024 pkt, Pulse H1138
Run #2, U2=CMD, RP3=YES, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) High Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 13.704 | 15.2 | High | 21.7 | 36.9 | 50.0 | -13.1 |
| 0.420 | 14.2 | High | 20.0 | 34.2 | 47.4 | -13.2 |
| 0.422 | 14.0 | High | 20.0 | 34.0 | 47.4 | -13.4 |
| 0.418 | 14.0 | High | 20.0 | 34.0 | 47.5 | -13.5 |
| 0.423 | 13.9 | High | 20.0 | 33.9 | 47.4 | -13.5 |
| 0.311 | 16.4 | High | 20.0 | 36.4 | 49.9 | -13.5 |
| 0.242 | 18.4 | High | 20.0 | 38.4 | 52.0 | -13.6 |
| 1.239 | 10.6 | High | 21.5 | 32.1 | 46.0 | -13.9 |
| 0.425 | 13.1 | High | 20.0 | 33.1 | 47.3 | -14.2 |
| 0.245 | 17.5 | High | 20.0 | 37.5 | 51.9 | -14.4 |
| 0.241 | 17.4 | High | 20.0 | 37.4 | 52.1 | -14.7 |
| 0.313 | 14.7 | High | 20.0 | 34.7 | 49.9 | -15.2 |
| 0.417 | 12.1 | High | 20.0 | 32.1 | 47.5 | -15.4 |
| 0.973 | 10.5 | High | 20.0 | 30.5 | 46.0 | -15.5 |
| 0.415 | 12.0 | High | 20.0 | 32.0 | 47.5 | -15.5 |
| 0.314 | 14.1 | High | 20.0 | 34.1 | 49.9 | -15.8 |
| 0.428 | 11.5 | High | 20.0 | 31.5 | 47.3 | -15.8 |
| 0.946 | 10.1 | High | 20.0 | 30.1 | 46.0 | -15.9 |
| 0.316 | 13.7 | High | 20.0 | 33.7 | 49.8 | -16.1 |
| 0.309 | 13.6 | High | 20.0 | 33.6 | 50.0 | -16.4 |

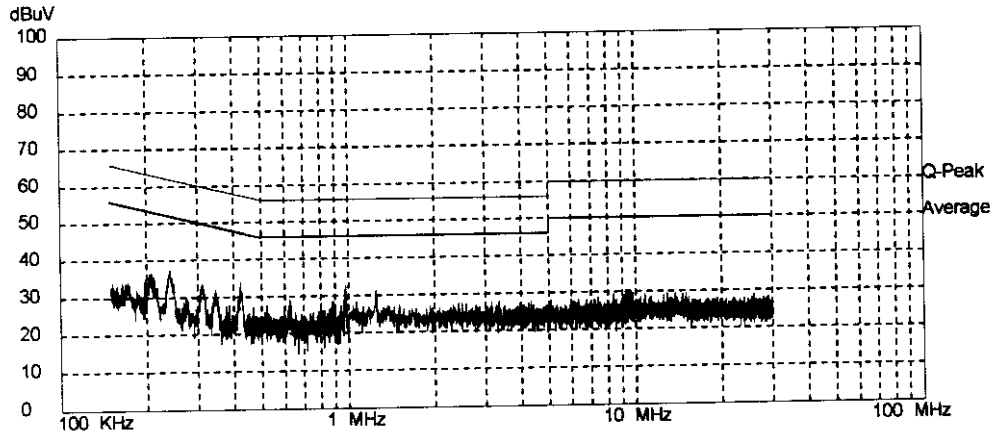
David Lynn

Ver 5.4a, Jan 1997

## Northwest EMC, Inc.

**Equipment Tested:** PB721503-004 P1LA84xxx
**Serial Number:** FD9, w/aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-18-1998 16:20:16
**Tested By:** David Lynn, TE03
**Comments:** PC System #1, running ST, random data, 100Mbps, 1024 pkt, Pulse H1138
Run #2, U2=CMD, RP3=YES, 120VAC, 60Hz mains

**CISPR 22 Class B Conducted Emissions Limit (Average) Low Line** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Power Line | Correction Factor (dB/m) | Adjusted Level (dBuV) | Spec Limit (dBuV) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 0.976 | 12.7 | Low | 20.0 | 32.7 | 46.0 | -13.3 |
| 0.973 | 12.7 | Low | 20.0 | 32.7 | 46.0 | -13.3 |
| 0.422 | 13.9 | Low | 20.0 | 33.9 | 47.4 | -13.5 |
| 1.243 | 10.0 | Low | 21.5 | 31.5 | 46.0 | -14.5 |
| 0.241 | 17.5 | Low | 20.0 | 37.5 | 52.1 | -14.6 |
| 0.970 | 11.2 | Low | 20.0 | 31.2 | 46.0 | -14.8 |
| 0.968 | 10.9 | Low | 20.0 | 30.9 | 46.0 | -15.1 |
| 0.238 | 16.4 | Low | 20.0 | 36.4 | 52.2 | -15.8 |
| 0.423 | 11.4 | Low | 20.0 | 31.4 | 47.4 | -16.0 |
| 0.425 | 11.2 | Low | 20.0 | 31.2 | 47.3 | -16.1 |
| 0.311 | 13.5 | Low | 20.0 | 33.5 | 49.9 | -16.4 |
| 0.244 | 15.3 | Low | 20.0 | 35.3 | 52.0 | -16.7 |
| 0.208 | 16.5 | Low | 20.0 | 36.5 | 53.3 | -16.8 |
| 0.418 | 10.6 | Low | 20.0 | 30.6 | 47.5 | -16.9 |
| 0.309 | 13.1 | Low | 20.0 | 33.1 | 50.0 | -16.9 |
| 0.624 | 9.1 | Low | 20.0 | 29.1 | 46.0 | -16.9 |
| 0.236 | 15.3 | Low | 20.0 | 35.3 | 52.2 | -16.9 |
| 0.204 | 16.4 | Low | 20.0 | 36.4 | 53.4 | -17.0 |
| 0.345 | 12.0 | Low | 20.0 | 32.0 | 49.1 | -17.1 |
| 0.966 | 8.9 | Low | 20.0 | 28.9 | 46.0 | -17.1 |

David Lynn

# 7.0 Radiated Emissions Data

**7.1** The following data lists the most significant emission frequencies, total (corrected) levels, and specification margins. Correction factors, antenna height, table azimuth, etc., are contained in the data sheets immediately following. Explanation of the correction factors is given in paragraph 7.2 of this report. Complete graphs and data sheets may be referenced on the following pages. Minimum margins are listed below:

CISPR 22 Class B Specification Limits

**Serial No. F67 w/aux power cable, 10 Mbps**

| Frequency (MHz) | Detection | Total Level (dBuV/m) | Limit (dBuV/m) | Margin (dB)* | Polarization |
|---|---|---|---|---|---|
| 340.025 | QP | 36.4 | 37.0 | 0.6 | Vertical |
| 157.501 | QP | 26.7 | 30.0 | 3.3 | Horizontal |
| 171.819 | QP | 26.1 | 30.0 | 3.8 | Horizontal |
| 59.990 | QP | 24.1 | 30.0 | 5.9 | Vertical |
| 200.456 | QP | 22.8 | 30.0 | 7.2 | Vertical |
| 300.022 | QP | 29.4 | 37.0 | 7.6 | Vertical |

Judgment: Passed, minimum margin of 0.6 dB.

**Serial No. F67 w/aux power cable, 100 Mbps**

| Frequency (MHz) | Detection | Total Level (dBuV/m) | Limit (dBuV/m) | Margin (dB)* | Polarization |
|---|---|---|---|---|---|
| 166.048 | QP | 20.2 | 30.0 | 9.8 | Vertical |
| 800.622 | QP | 25.5 | 37.0 | 11.5 | Horizontal |
| 166.048 | QP | 18.4 | 30.0 | 11.6 | Vertical |
| 800.622 | QP | 23.9 | 37.0 | 13.1 | Horizontal |

Judgment: Passed, minimum margin of 9.8 dB.

**Serial No. F4C w/aux power cable, 10 Mbps**

| Frequency (MHz) | Detection | Total Level (dBuV/m) | Limit (dBuV/m) | Margin (dB)* | Polarization |
|---|---|---|---|---|---|
| 60.000 | QP | 28.2 | 30.0 | 1.8 | Vertical |
| 200.456 | QP | 27.5 | 30.0 | 2.5 | Horizontal |
| 200.456 | QP | 23.0 | 30.0 | 7.0 | Vertical |
| 60.000 | QP | 15.3 | 30.0 | 14.7 | Horizontal |

Judgment: Passed, minimum margin of 1.8 dB.

# 7.0 Radiated Emissions Data con't

**Serial No. F4C w/aux power cable, 10 Mbps**

| Frequency (MHz) | Detection | Total Level (dBuV/m) | Limit (dBuV/m) | Margin (dB)* | Polarization |
|---|---|---|---|---|---|
| 300.049 | QP | 32.7 | 37.0 | 4.3 | Horizontal |
| 300.051 | QP | 31.0 | 37.0 | 6.0 | Vertical |
| 460.029 | QP | 30.9 | 37.0 | 6.1 | Horizontal |
| 460.060 | QP | 28.4 | 37.0 | 8.6 | Vertical |
| 157.019 | QP | 18.6 | 30.0 | 11.4 | Vertical |
| 157.019 | QP | 12.8 | 30.0 | 17.2 | Horizontal |

Judgment: Passed, minimum margin of 4.3 dB.

**Serial No. FD9 w/o aux power cable, 10 Mbps**

| Frequency (MHz) | Detection | Total Level (dBuV/m) | Limit (dBuV/m) | Margin (dB)* | Polarization |
|---|---|---|---|---|---|
| 640.037 | QP | 34.1 | 37.0 | 2.9 | Vertical |
| 640.037 | QP | 33.2 | 37.0 | 3.8 | Horizontal |

Judgment: Passed, minimum margin of 2.9 dB.

**Test Personnel:**

Mark W. Daley

Type/Printed Name: Mark Daley

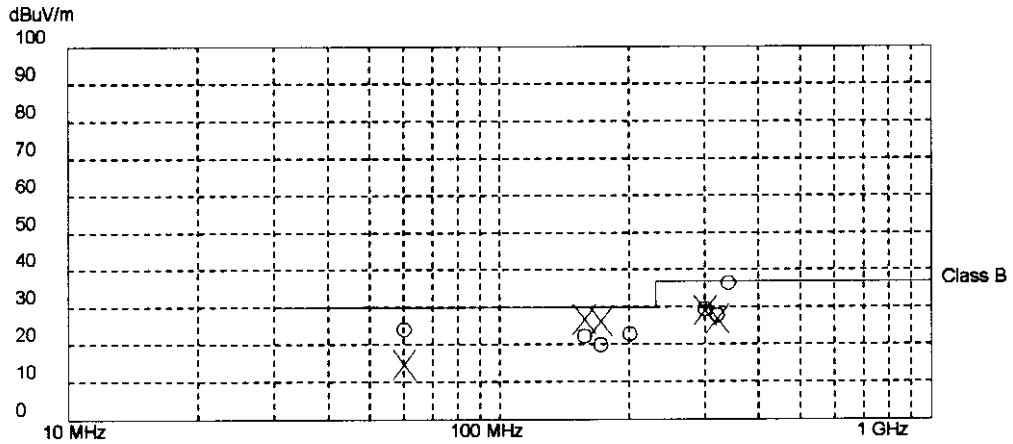
## Northwest EMC, Inc.

Version 5.2, Jan. 1998

| | |
|---|---|
| **EUT Name:** | **PB721503-004 PILA84xxx** |
| **Serial Number:** | **F67, w/aux pwr cable** |
| **Manufacturer:** | **Intel** |
| **Job Number:** | **INTE2335** |
| **Test Date:** | **11-18-1998** |
| **Tested By:** | **David Lynn, TE03, 10mOATS** |
| **Test Distance:** | **10 meters.** |
| **Comments:** | **PC system #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1088 Run #1, U2=SC, RP3=NO** |

**Horizontal= X**
**Vertical = O**

**CISPR 22 Class B (10 meter limit)**




| Frequency (MHz) | Meter Reading (dBuV) | Detector | Antenna Factor (dB/m) | Antenna Horizontal Vertical | Preamp Gain (dB) | Cable Loss (dB) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Table Azimuth (degree) | Antenna Height (meters) | Compared (To Limit) (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 340.025 | 48.1 | QP | 14.3 | VLPA | 31.7 | 5.7 | 36.4 | 37.0 | 0.0 | 1.0 | -0.6 |
| 157.501 | 39.0 | QP | 15.6 | HBIC | 31.7 | 3.8 | 26.7 | 30.0 | 0.0 | 4.0 | -3.3 |
| 171.819 | 40.8 | QP | 15.1 | HBIC | 32.0 | 2.3 | 26.1 | 30.0 | 0.0 | 3.0 | -3.8 |
| 59.990 | 44.0 | QP | 9.3 | VBIC | 31.7 | 2.5 | 24.1 | 30.0 | 209.0 | 1.0 | -5.9 |
| 200.456 | 41.0 | QP | 11.3 | VLPA | 32.0 | 2.5 | 22.8 | 30.0 | 45.0 | 1.0 | -7.2 |
| 300.022 | 41.1 | QP | 14.5 | VLPA | 31.6 | 5.4 | 29.4 | 37.0 | 0.0 | 1.0 | -7.6 |
| 157.501 | 34.4 | QP | 15.6 | VBIC | 31.7 | 3.8 | 22.1 | 30.0 | 120.0 | 1.0 | -7.9 |
| 300.022 | 40.8 | QP | 14.5 | HLPA | 31.6 | 5.4 | 29.1 | 37.0 | 299.0 | 2.8 | -7.9 |
| 320.023 | 39.5 | QP | 14.2 | VLPA | 31.6 | 5.6 | 27.7 | 37.0 | 352.0 | 1.0 | -9.3 |
| 320.023 | 38.6 | QP | 14.2 | HLPA | 31.6 | 5.6 | 26.8 | 37.0 | 317.0 | 4.0 | -10.2 |
| 171.819 | 34.4 | QP | 15.1 | VBIC | 32.0 | 2.3 | 19.8 | 30.0 | 180.0 | 1.0 | -10.2 |
| 59.990 | 34.6 | QP | 9.3 | HBIC | 31.7 | 2.5 | 14.7 | 30.0 | 0.0 | 1.0 | -15.3 |

Temperature 50F 80% Humidity

David Lynn

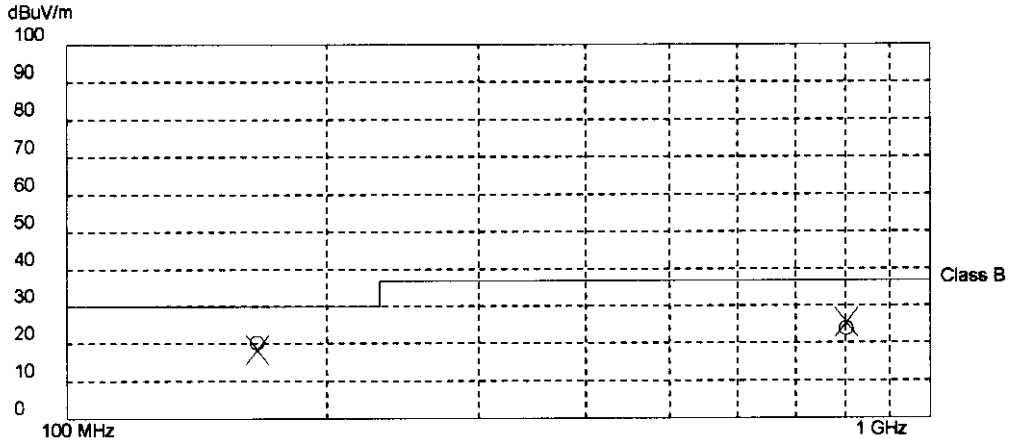
## Northwest EMC, Inc.

Version 5.2, Jan. 1998

| | |
|---|---|
| **EUT Name:** | **PB721503-004 PILA84xxx** |
| **Serial Number:** | **F67, w/ aux pwr cable** |
| **Manufacturer:** | **Intel** |
| **Job Number:** | **INTE2335** |
| **Test Date:** | **11-17-1998** |
| **Tested By:** | **Mark Daley, EL02** |
| **Test Distance:** | **10 meters.** |
| **Comments:** | **PC system #1, running ST, random data, 100Mbps, 1024 pkt, Pulse H1088 Run #7, U2=SC, RP3=NO** |

**Horizontal= X**
**Vertical = O**

**CISPR 22 Class B (10 meter limit)**




| Frequency (MHz) | Meter Reading (dBuV) | Detector | Antenna Factor (dB/m) | Antenna Horizontal Vertical | Preamp Gain (dB) | Cable Loss (dB) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Table Azimuth (degree) | Antenna Height (meters) | Compared (To Limit) (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 166.048 | 35.9 | QP | 14.1 | VBIC | 32.1 | 2.3 | 20.2 | 30.0 | 230.0 | 1.0 | -9.8 |
| 800.622 | 29.6 | QP | 21.8 | HLPA | 32.2 | 6.3 | 25.5 | 37.0 | 90.0 | 1.0 | -11.5 |
| 166.048 | 34.1 | QP | 14.1 | HBIC | 32.1 | 2.3 | 18.4 | 30.0 | 0.0 | 3.0 | -11.6 |
| 800.622 | 28.0 | QP | 21.8 | VLPA | 32.2 | 6.3 | 23.9 | 37.0 | 90.0 | 1.0 | -13.1 |

Temperature 70F 60% Humidity

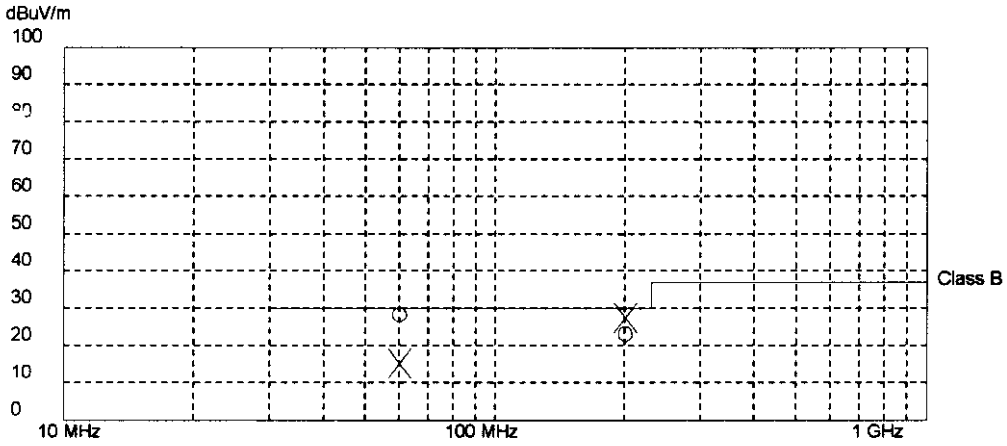
Mark W. Daley

## Northwest EMC, Inc.

Version 5.2, Jan. 1998

| | | |
|---|---|---|
| **EUT Name:** | **PB721503-004 PILA84xxx** | **Horizontal= X** |
| **Serial Number:** | **F4C, w/aux pwr cable** | **Vertical = O** |
| **Manufacturer:** | **Intel** | |
| **Job Number:** | **INTE2335** | |
| **Test Date:** | **11-18-1998** | |
| **Tested By:** | **David Lynn, TE03, 10mOATS** | |
| **Test Distance:** | **10 meters.** | |
| **Comments:** | **PC system #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1012** | |
| | **Run #2, U2=CMD, RP3=NO** | |

**CISPR 22 Class B (10 meter limit)**




| Frequency (MHz) | Meter Reading (dBuV) | Detector | Antenna Factor (dB/m) | Antenna Horizontal Vertical | Preamp Gain (dB) | Cable Loss (dB) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Table Azimuth (degree) | Antenna Height (meters) | Compared (To Limit) (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 60.000 | 48.1 | QP | 9.3 | VBIC | 31.7 | 2.5 | 28.2 | 30.0 | 0.0 | 1.0 | -1.8 |
| 200.456 | 45.7 | QP | 11.3 | HLPA | 32.0 | 2.5 | 27.5 | 30.0 | 0.0 | 3.0 | -2.5 |
| 200.456 | 41.2 | QP | 11.3 | VLPA | 32.0 | 2.5 | 23.0 | 30.0 | 90.0 | 1.0 | -7.0 |
| 60.000 | 35.2 | QP | 9.3 | HBIC | 31.7 | 2.5 | 15.3 | 30.0 | 0.0 | 1.0 | -14.7 |

Temperature 50F 80% Humidity

David Lynn

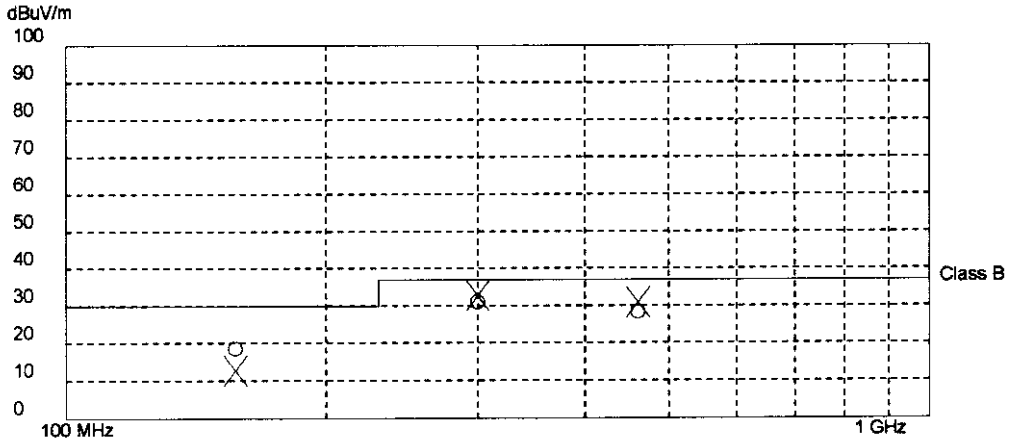
## Northwest EMC, Inc.

Version 5.2, Jan. 1998

| | |
|---|---|
| **EUT Name:** | **PB721503-004 PILA84xxx** |
| **Serial Number:** | **F4C, w/o aux pwr cable** |
| **Manufacturer:** | **Intel** |
| **Job Number:** | **INTE2335** |
| **Test Date:** | **11-18-1998** |
| **Tested By:** | **David Lynn, TE03, 10mOATS** |
| **Test Distance:** | **10 meters.** |
| **Comments:** | **PC system #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1012 Run #3, U2=CMD, RP3=NO** |

**Horizontal= X**
**Vertical = O**

**CISPR 22 Class B (10 meter limit)**




| Frequency (MHz) | Meter Reading (dBuV) | Detector | Antenna Factor (dB/m) | Antenna Horizontal Vertical | Preamp Gain (dB) | Cable Loss (dB) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Table Azimuth (degree) | Antenna Height (meters) | Compared (To Limit) (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 300.049 | 44.4 | QP | 14.5 | HLPA | 31.6 | 5.4 | 32.7 | 37.0 | 343.0 | 3.1 | -4.3 |
| 300.051 | 42.7 | QP | 14.5 | VLPA | 31.6 | 5.4 | 31.0 | 37.0 | 336.0 | 1.0 | -6.0 |
| 460.029 | 41.5 | QP | 17.0 | HLPA | 31.9 | 4.3 | 30.9 | 37.0 | 180.0 | 2.0 | -6.1 |
| 460.060 | 36.2 | QP | 16.7 | VLPA | 31.3 | 6.8 | 28.4 | 37.0 | 0.0 | 1.0 | -8.6 |
| 157.019 | 31.0 | QP | 15.6 | VBIC | 31.7 | 3.7 | 18.6 | 30.0 | 0.0 | 1.0 | -11.4 |
| 157.019 | 25.2 | QP | 15.6 | HBIC | 31.7 | 3.7 | 12.8 | 30.0 | 0.0 | 1.0 | -17.2 |

Temperature 50F 80% Humidity

David Lynn

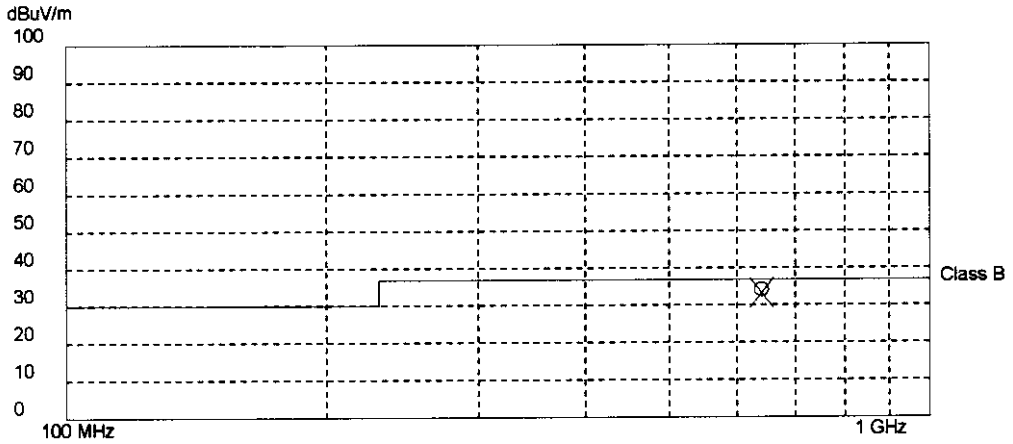
## Northwest EMC, Inc.

Version 5.2, Jan. 1998

| | |
|---|---|
| **EUT Name:** | **PB721503-004 PILA84xxx** |
| **Serial Number:** | **FD9, w/o aux pwr cable** |
| **Manufacturer:** | **Intel** |
| **Job Number:** | **INTE2335** |
| **Test Date:** | **11-17-1998** |
| **Tested By:** | **Mark Daley, EL02** |
| **Test Distance:** | **10 meters.** |
| **Comments:** | **PC system #1, running ST, random data, 10Mbps, 1024 pkt, Pulse H1138 Run #24, U2=CMD, RP3=YES** |

**Horizontal= X**
**Vertical = O**

**CISPR 22 Class B (10 meter limit)**




| Frequency (MHz) | Meter Reading (dBuV) | Detector | Antenna Factor (dB/m) | Antenna Horizontal Vertical | Preamp Gain (dB) | Cable Loss (dB) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Table Azimuth (degree) | Antenna Height (meters) | Compared (To Limit) (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 640.037 | 40.6 | QP | 20.1 | VLPA | 32.0 | 5.4 | 34.1 | 37.0 | 180.0 | 2.0 | -2.9 |
| 640.037 | 39.7 | QP | 20.1 | HLPA | 32.0 | 5.4 | 33.2 | 37.0 | 150.0 | 1.9 | -3.8 |

Temperature 70F 60% Humidity

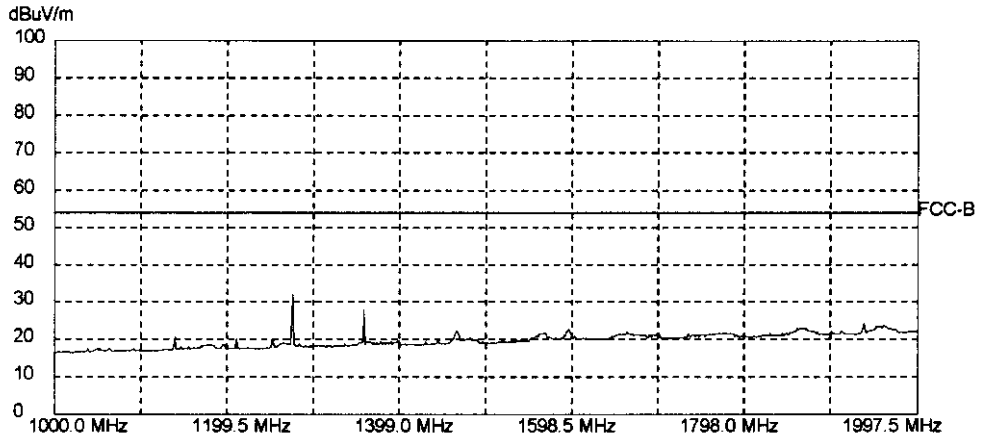
Mark W. Daley

## Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F4C, W/ Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-17-1998 08:44:53
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 10Mbps, 1024 pkt, pulse H1012
Run #1, U2=CMD, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data.



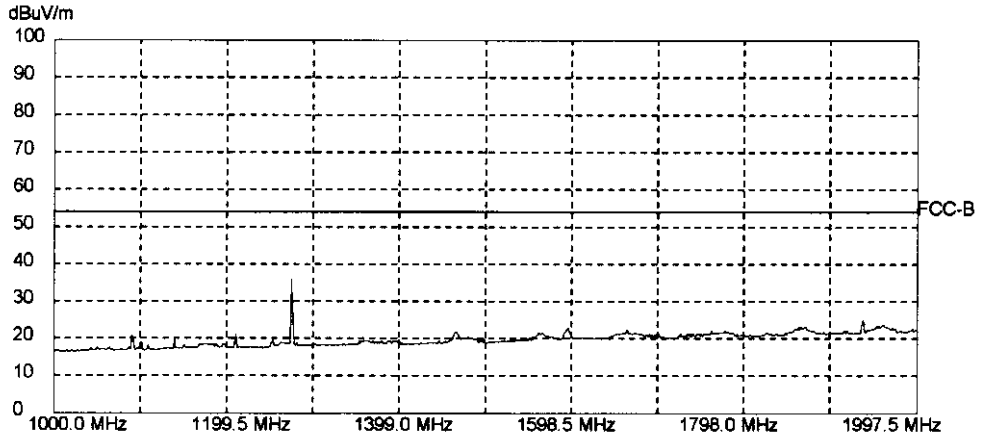

| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 1275.000 | 37.1 | Ver. | -4.9 | 32.2 | 54.0 | -21.8 |

Mark W. Daley

Northwest EMC, Inc. Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F4C, W/ Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-17-1998 08:52:05
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 100Mbps, 1024 pkt, pulse H1012
Run #2, U2=CMD, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 1273.750 | 40.9 | Hor. | -4.9 | 36.0 | 54.0 | -18.0 |

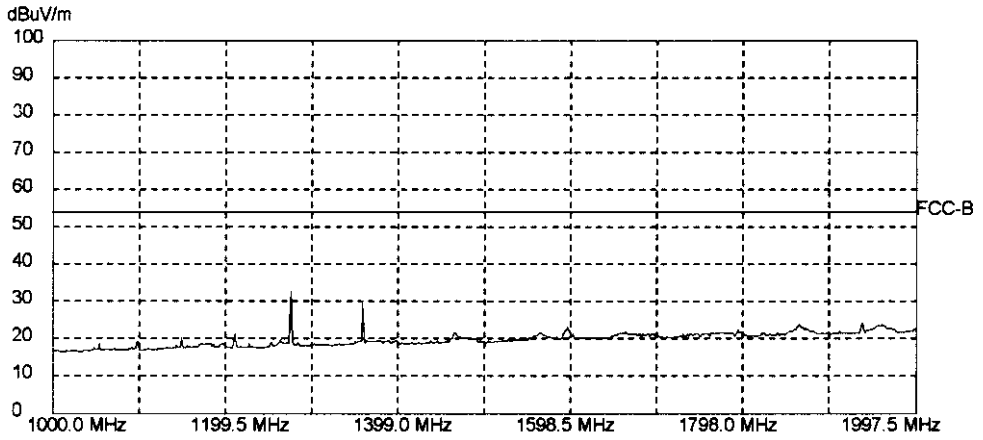
Mark W. Daley

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F4C, w/o Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-17-1998 08:59:55
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 10Mbps, 1024 pkt, pulse H1012
Run #2, U2=CMD, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data.



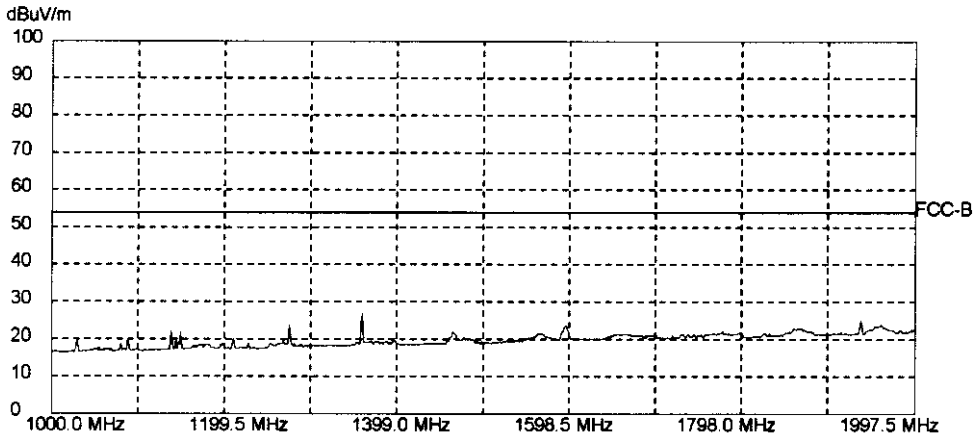

| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 1275.000 | 37.6 | Ver. | -4.9 | 32.7 | 54.0 | -21.3 |
| 1357.500 | 33.8 | Hor. | -4.4 | 29.4 | 54.0 | -24.6 |

Mark W. Daley

Northwest EMC, Inc. Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F4C, w/o Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-17-1998 09:05:18
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 100Mbps, 1024 pkt, pulse H1012
Run #3, U2=CMD, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|

No Data above the report threshold

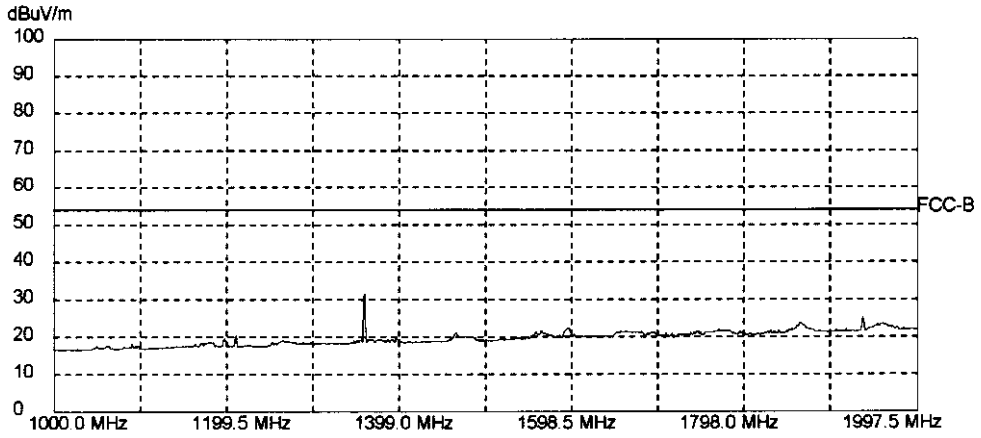
Mark W. Daley

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F67, w/ Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-17-1998 09:48:30
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 10Mbps, 1024 pkt, pulse H1088
Run #9, U2=SC, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data



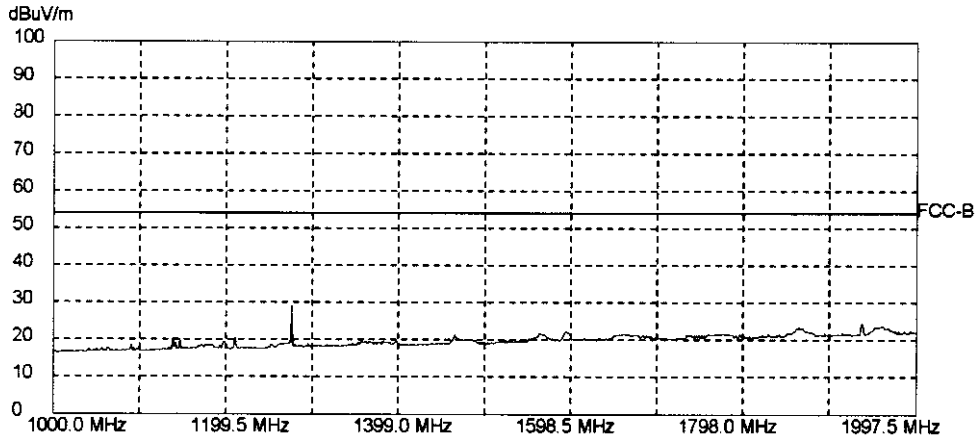

| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 1358.750 | 36.1 | Hor. | -4.4 | 31.7 | 54.0 | -22.3 |

Mark W. Daley

Northwest EMC, Inc. Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F67, w/ Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-17-1998 09:58:46
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 100Mbps, 1024 pkt, pulse H1088
Run #10, U2=SC, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 1275.000 | 34.0 | Hor. | -4.9 | 29.1 | 54.0 | -24.9 |

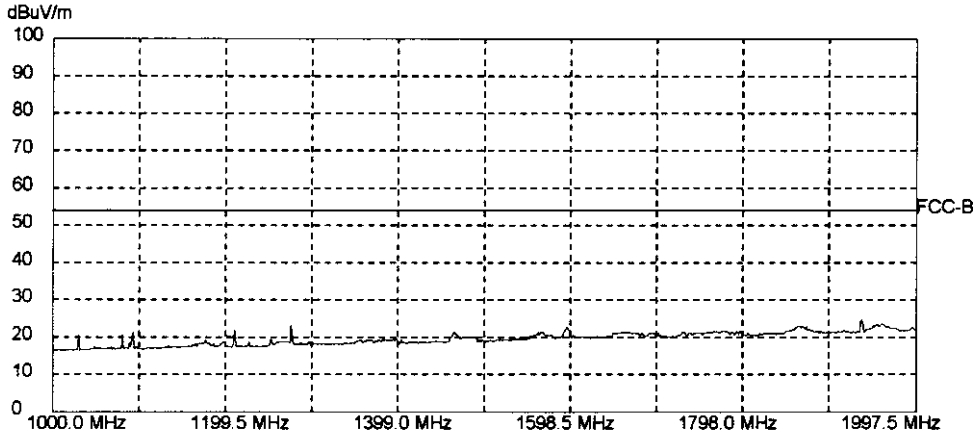
Mark W. Daley

## Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PtLA84xxx
**Serial Number:** F67, w/o Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-17-1998 10:07:41
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 10Mbps, 1024 pkt, pulse H1088
Run #11, U2=SC, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|

No Data above the report threshold

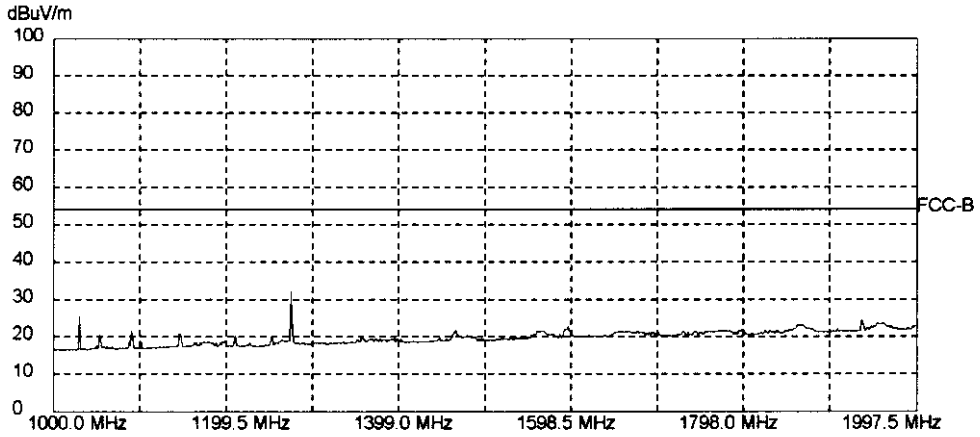
Mark W. Daley

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** F67, w/o Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Data/Time:** 11-17-1998 10:14:19
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 100Mbps, 1024 pkt, pulse H1088
Run #12, U2=SC, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 1273.750 | 37.1 | Hor. | -4.9 | 32.2 | 54.0 | -21.8 |
| 1030.000 | 31.4 | Hor. | -5.9 | 25.5 | 54.0 | -28.5 |
| 1934.984 | 26.1 | Ver. | -1.8 | 24.3 | 54.0 | -29.7 |

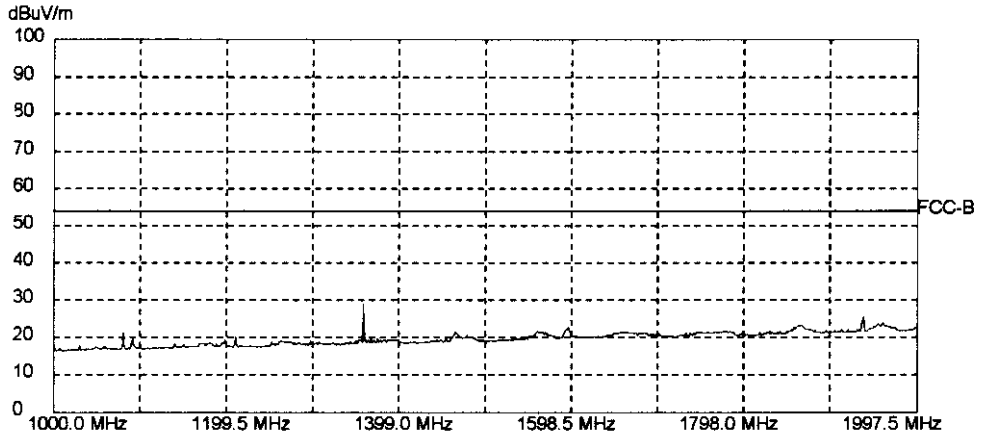
Mark W. Daley

## Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** FD9, w/ Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-17-1998 09:30:58
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 10Mbps, 1024 pkt, pulse H1012
Run #7, U2=CMD, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|

No Data above the report threshold

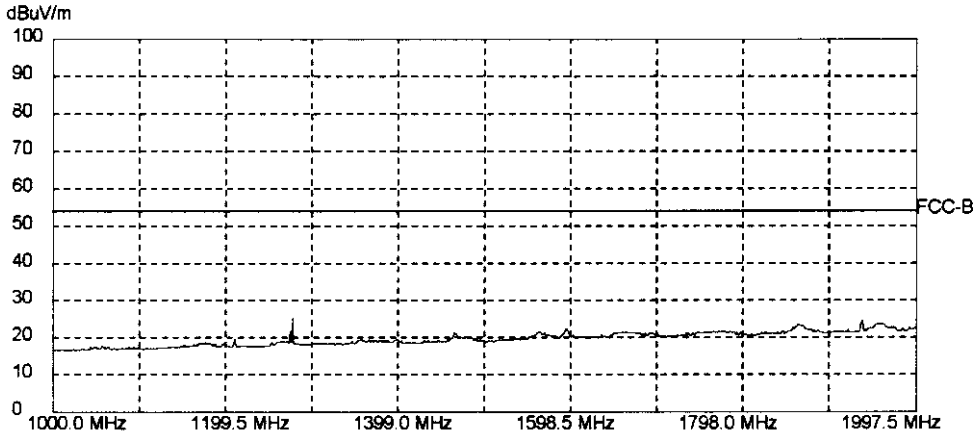
Mark W. Daley

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** FD9, w/ Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Data/Time:** 11-17-1998 09:36:41
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 100Mbps, 1024 pkt, pulse H1012
Run #8, U2=CMD, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|

No Data above the report threshold

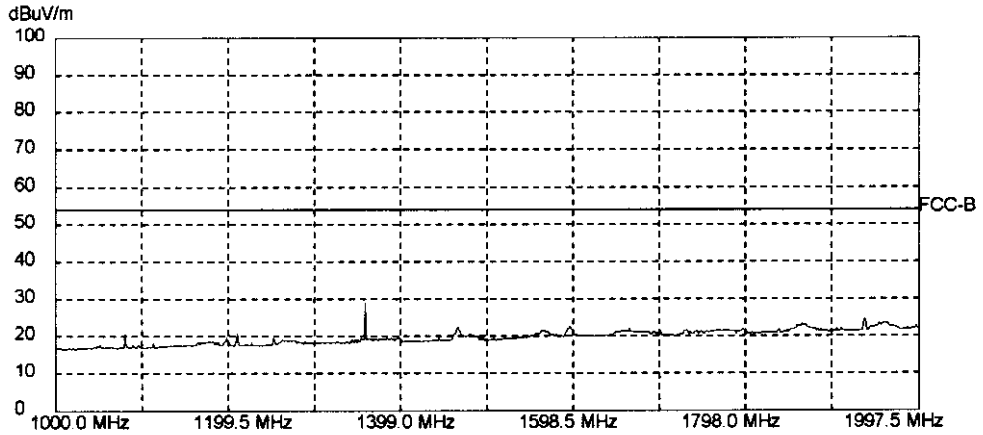
Mark W. Daley

## Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** FD9, w/o Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-17-1998 09:15:41
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 10Mbps, 1024 pkt, pulse H1012
Run #5, U2=CMD, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|

No Data above the report threshold

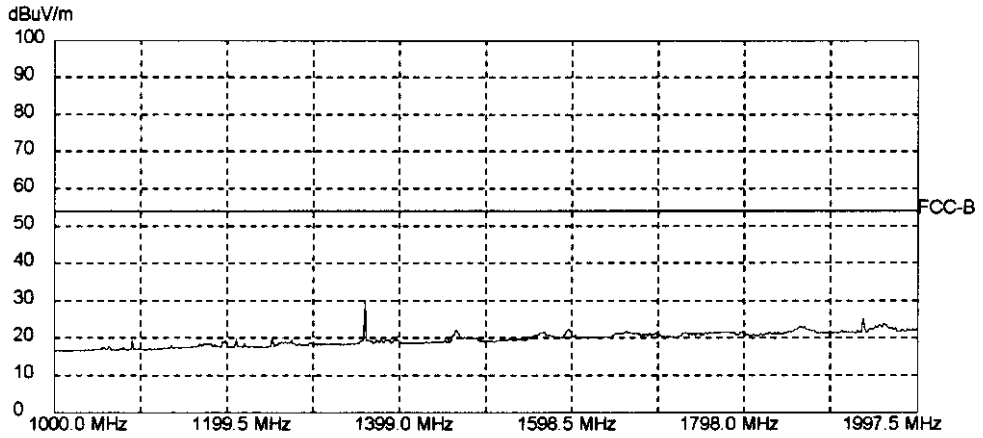
Mark W. Daley

Northwest EMC, Inc.

Ver 5.4a, Jan 1997

**Equipment Tested:** PB721503-004 PILA84xxx
**Serial Number:** FD9, w/o Aux pwr cable
**Manufacturer:** Intel
**Job Number:** INTE2335
**Date/Time:** 11-17-1998 09:22:27
**Tested By:** Mark Daley, EL01
**Test Distance:** 3
**Comments:** PC system #1, running ST, random data, 100Mbps, 1024 pkt, pulse H1012
Run #6, U2=CMD, RP3=NO

**FCC Class B Radiated Specification Limit (3 meter)** Peak data.




| Frequency (MHz) | Meter Reading (dBuV) | Antenna Horizontal Vertical | Correction Factor (dB/m) | Adjusted Level (dBuV/m) | Spec Limit (dBuV/m) | Compared To Limit (dB) |
|---|---|---|---|---|---|---|
| 1358.750 | 34.6 | Hor. | -4.4 | 30.2 | 54.0 | -23.8 |

Mark W. Daley

## 7.2 Field Strength Calculations

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured level. The basic equation with a sample calculation is as follows:
FS = RA + AF + CF - AG

where : FS = Field Strength

RA = Measured Level

AF = Antenna Factor

CF = Cable Attenuation Factor

AG = Amplifier Gain

Assume a receiver reading of 52.5 dBuV is obtained. The Antenna Factor of 7.4 and a Cable Factor of 1.1 is added. The Amplifier Gain of 29 dB is subtracted, giving a field strength of 32 dBuV/meter.

FS = 52.5 + 7.4 + 1.1 - 29 = 32 dBuV/meter
Level in uV/m = Common Antilogarithm [(32 dBuV/m)/20] = 39.8 uV/m

## 7.3 Measurement Bandwidths

Peak Data

150 kHz - 30 MHz ..... 10 kHz
30 MHz - 1000 MHz ..... 100 kHz
1000 MHz - 2000 MHz ..... 1000 kHz

Quasi-peak Data

150 kHz - 30 MHz ..... 9 kHz
30 MHz - 1000 MHz ..... 120 kHz

All radiated measurements are quasi-peak unless otherwise stated. A video filter was not used.
All conducted measurements are peak unless otherwise stated. A video filter was not used.

# 8.0 Measurement Equipment

| Instrument | Model | Serial No. | Freq Range | Last Cal | Cal Due |
|---|---|---|---|---|---|
| Spectrum Analyzer | HP 8567A | 2718A00358 | 10 kHz - 1.5 GHz | 04/21/98 | 04/21/99 |
| Spectrum Analyzer | HP 8594E | 3543A02557 | 9 kHz – 2.9 GHz | 04/03/98 | 04/03/99 |
| Quasi Peak Adapter | HP 85650A | 2811A01175 | 10 kHz - 1000 MHz | 02/20/98 | 02/20/99 |
| LISN | Solar 9252-50-24-BNC | 971602 | 10 kHz - 50 MHz | 04/09/98 | 04/09/99 |
| LISN | Solar 9252-50-24-BNC | 971623 | 10 kHz - 50 MHz | 04/22/98 | 04/22/99 |
| Log Periodic Antenna | EMCO 3146 | 9212-3486 | 200 MHz - 1000 MHz | 01/31/98 | 01/31/99 |
| Bicon Antenna | EMCO 3104 | 1240 | 30 MHz - 200 MHz | 01/31/98 | 01/31/99 |
| Pre-Amplifier | AR LN1000A | 15224 | 100 kHz - 1300 MHz | 07/20/98 | 07/20/99 |
| Pre-Amplifer | Miteq | 565125 | 0.5 GHz – 18 GHz | 06/15/98 | 06/15/99 |
| Horn Antenna | EMCO 3115 | 9710-5305 | 1 GHz – 18 GHz | 04/21/97 | 04/21/99 |

# Appendix I: Measurement Procedures

Each frequency was measured in both the horizontal and vertical antenna polarization's.

The EUT position was maximized for each frequency, for both the horizontal and vertical antenna polarization's, using a remotely controlled turntable.

The antenna height was varied from 1 - 4 meters at each frequency, for both the horizontal and vertical positions to maximize the emission level.

The cable and peripheral positions were manipulated to ensure maximum levels at each frequency for both horizontal and vertical antenna polarization's.

Measurements 30 MHz - 1000 MHz are made at an antenna to EUT distance of 10 meters.

Measurements 1000 MHz - 2000 MHz are made at an antenna to EUT distance of 3 meters.