

OPERATIONS MANUAL

PCM-NE2000

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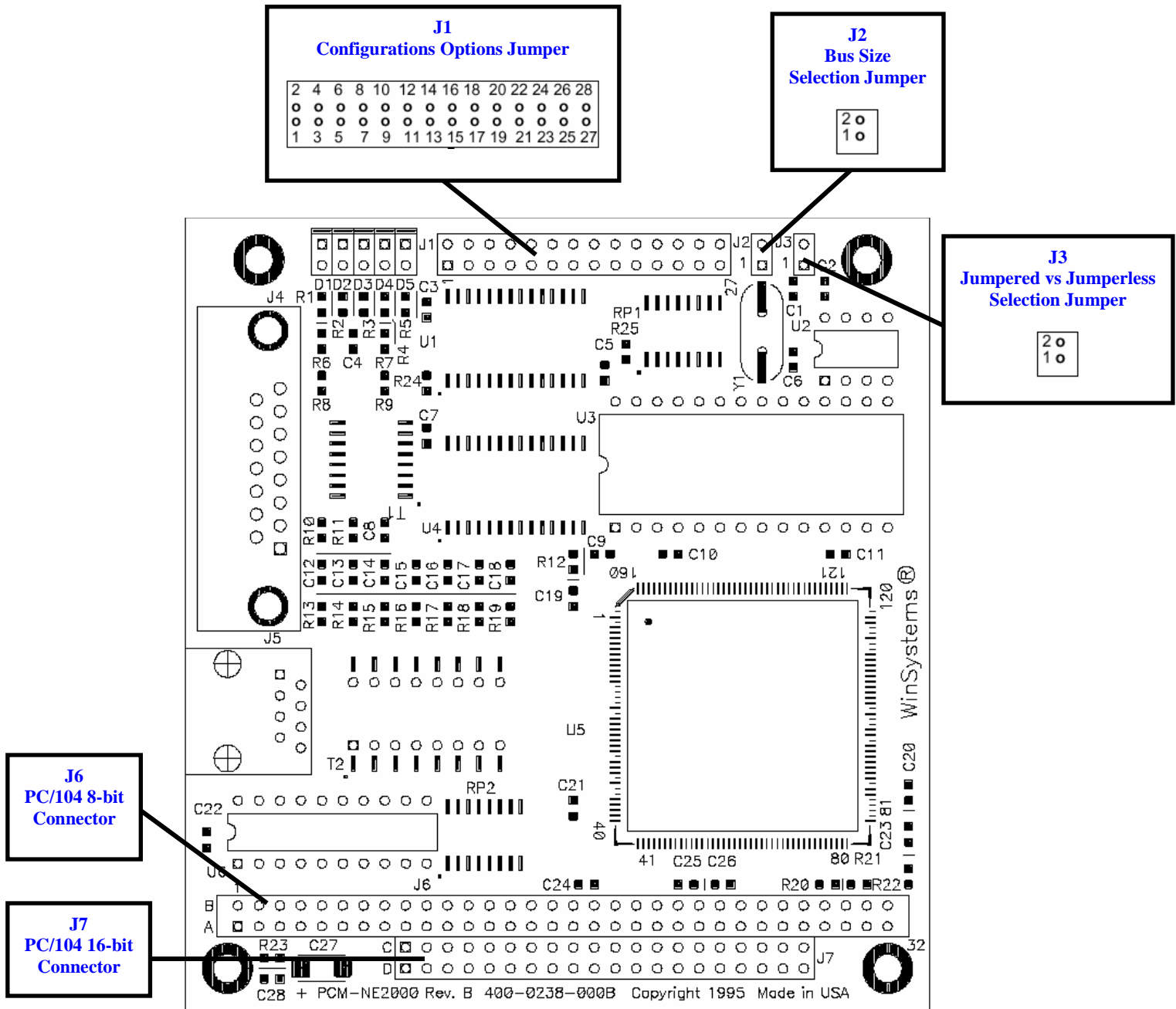
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Visual Index – Quick Reference

For the convenience of the user, a copy of the Visual Index has been provided with direct links to connector and jumper configuration data.



1 General Information

1.1 FEATURES

- NE2000 Compatible PC/104 Ethernet Controller
- Uses National AT/LANTIC™ High Integration Controller
- 802.3 Ethernet Compliant with 10BASE5 and 10BASE-T support
- +5Volt only required in 10BASE-T Mode
- Can be configured via jumpers or jumperless through configuration software
- Onboard EEPROM stores configuration information
- Boot ROM socket for Diskless Network access

1.2 General Description

The PCM-NE2000 is a PC/104 Ethernet adapter which is software compatible with the Novell NE2000 ISA bus Ethernet card. This compatibility allows the use of a wealth of driver software existing for the NE2000. Nearly all Network software vendors and real-time O/S vendors support the NE2000 architecture directly or with drivers they supply themselves. Support includes Netware, Lantastic, Windows for Work Groups, Windows 95, QNX, and a host of others.

The PCM-NE2000 can be configured either by using the onboard jumper block or can be used in a software-configured “jumperless” mode.

The supplied utility/driver diskette includes the configuration utility as well as ODI, NDIS, and Packet drivers.

1.3 Ethernet Overview

Ethernet is the most widely installed LAN standard for connecting personal computers and workstations with information resources, servers, and other peripherals.

The 10MBS Ethernet CSMA/CD (Carrier Sense Multiple Access with Collision Detection) protocol defines how a node will gain access to the network. The node first monitors the media to ensure that no transmissions are in progress (Carrier Sense). The node may then decide to transmit (Multiple Access). If more than one node decides to transmit simultaneously, then a collision will occur. All nodes will be able to detect this condition (Collision Detection), stop their transmissions, and retry after a random period of time.

Ethernet physical layer specifications include 10BASE5 which defines the use of thick, double-shielded coax in a bus topology. 10BASE2 defines the use of thin coax in a bus configuration. 10BASE-T defines the use of unshielded twisted pair cable in a star configuration. The table on the following page contrasts the three most common Ethernet media types.

Parameter	10BASE5	10BASE2	10BASE-T
Designator	Thick Coax	Thin Coax	Twisted-Pair
Segment Length	500 Meters	185 Meters	100 Meters Nominal
Topology	BUS (Multi-Point)	BUS (Multi-Point)	Star (point-to-point)
Cable Type	0.4" Diam. 50 OHM Double Shielded COAX (RG11)	0.2" Diam. 50 OHM Single Shield COAX (RG58)	24 Guage 100 OHM Twisted-Pair
Connection	Precision TAP	BNC "T"	8-pin RJ-45

1.3.1 National DP83905 AT/LANTIC™ Controller

The PCM-NE2000 incorporates the National Semiconductor DP83905 AT/LANTIC™ Local Area Network Twisted-Pair Interface Controller (See complete datasheet reprint in Appendix C).

The AT/LANTIC™ Controller is a CMOS VLSI device used in the implementation of CSMA/CD local area networks. Unique to the AT/LANTIC™ is the integration of the entire bus interface for PC-AT ISA and PC/104 bus systems. Hardware and software selectable options allow the AT/LANTIC™ to be configured to be software compatible to either an NE2000 or an EtherCard PLUS 16™. Supported network interfaces include 10BASE5 or 10BASE2 via an external transceiver connected to its AUI port, and twisted-pair Ethernet (10BASE-T) using the onboard transceiver. The AT/LANTIC™ provides the Ethernet Media Access Control (MAC), Encode-Decode (ENDEC) with an AUI interface, and 10BASE-T transceiver functions in accordance with the IEEE 802.3 standards.

This functional block incorporates the receiver, transmitter, collision, heartbeat, loop-back, jabber, and link integrity blocks as defined in the standard. The transceiver when combined with the equalization resistors, transmit/receive filters, and pulse transformers provide a complete physical interface from the AT/LANTIC™ Controller's ENDEC module and the twisted pair medium.

The integrated ENDEC module allows the Manchester encoding and decoding via a differential transceiver and phase lock loop decoder at 10 Mbit/sec. Also included are a collision detect translator and diagnostic loopback capability. The ENDEC module interfaces directly to the transceiver module, and also provides a fully IEEE compliant AUI (Attachment Unit Interface) for connection to other media transceivers.

The Media Access Control (MAC) function is provided by the Network Interface Control module (NIC) which provides simple and efficient packet transmission and reception control by means of off-board memory which can be accessed either through an I/O port or mapped into the system memory map.

1.4 SPECIFICATIONS

1.4.1 Electrical

Bus Interface: PCM-NE2000-8 PC/104 8-Bit stackthrough
PCM-NE2000-16 PC/104 16-Bit stackthrough

Power Requirements: +5V +/-5% at 100mA. typ.
+12V +/-5% for AUI use only

1.4.2 Mechanical

Dimensions: 3.6" X 3.8" X 0.6"

PC Board : FR4 Epoxy glass with 2 signal layers and 2 power planes with screened component legend and plated through holes.

Jumpers : 0.025" square posts on 0.10" centers.

Connectors : 10BASE-T - RJ45
10BASE2 - DB15M

1.4.3 Environmental

Operating Temperature : -40° to +85° C

Non-Condensing relative Humidity : 5% to 95%

2

PCM-NE2000 Technical Reference

2.1 Introduction

This section of the manual is intended to provide sufficient information regarding the configuration and usage of the PCM-NE2000 PC/104 Ethernet module. WinSystems maintains a Technical Support Group to help answer questions regarding the configuration and usage of the board. For answers to questions not adequately addressed in this manual contact Technical Support at (817) 274-7553 between 8AM and 5PM Central Time. Technical support can also be requested by mail or via FAX at (817) 548-1358.

The PCM-NE2000 is designed to offer flexible, high-performance, networking capability for the PC/104 bus. It is available with either an 8-bit or 16-bit interface for maximum flexibility and performance.

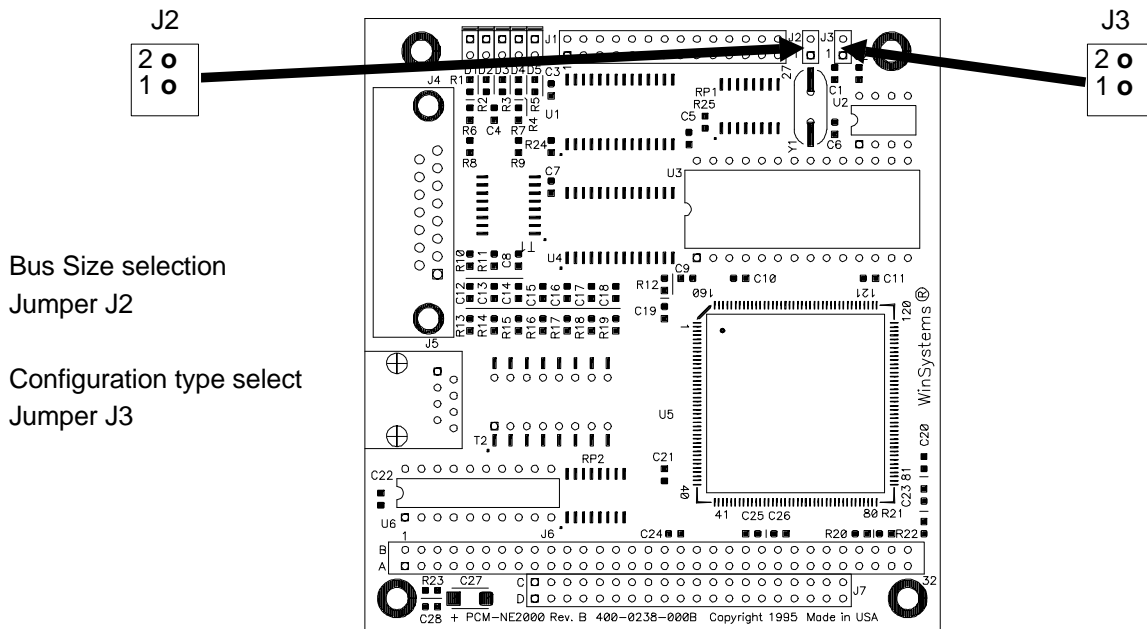
The PCM-NE2000 uses the National DP83905 high integration Ethernet Controller described in section 1. A complete datasheet reprint for the AT/LANTIC™ DP83905 is reprinted in APPENDIX C for users requiring detailed information.

The PCM-NE2000 supports direct connection to 10BASE5 networks via its AUI connector at J4. Using third party transceivers connected to the AUI port it is possible to also support 10BASE2 (Thin Ethernet) or 10BASE-F (Fiber-optic Ethernet). Support for twisted-pair 10BASE-T is provided directly through the RJ45 connector at J5.

An onboard EEPROM holds the Ethernet Address and optional configuration information. This allows for “jumperless” configuration using software to configure the board for it's operating mode, media type, I/O address, interrupt, etc. A software utility “Pluscfg” is provided to configure the module. Refer to Section 2.11 for use of the configuration program. The PCM-NE2000 also supports “jumped” configuration usable for non-DOS applications where the configuration utility is not usable.

Probably the PCM-NE2000's most attractive features is the software compatibility with the industry standard NE2000 architecture. This compatibility virtually assures the availability of supporting software and drivers for everything from Netware to Windows 95. Although a number of drivers are provided with the PCM-NE2000, on the driver/utility diskette, the board is fully compatible with any software or drivers written for the NE2000 architecture.

2.2 Bus Size Selection



The PCM-NE2000 is supplied in either of 2 models the PCM-NE2000-8 is supplied for 8-bit PC/104 usage and the PCM-NE2000-16 is supplied for use with 16-bit PC/104 systems. The jumper block at J2 should be configured as shown below for the proper board type.



Note : The PCM-NE2000-16 can be used in an 8-bit mode by simply setting the J2 jumper to the 8-bit mode. However, the PCM-NE2000-8 should never be jumpered for 16-bit mode or improper operation will result.

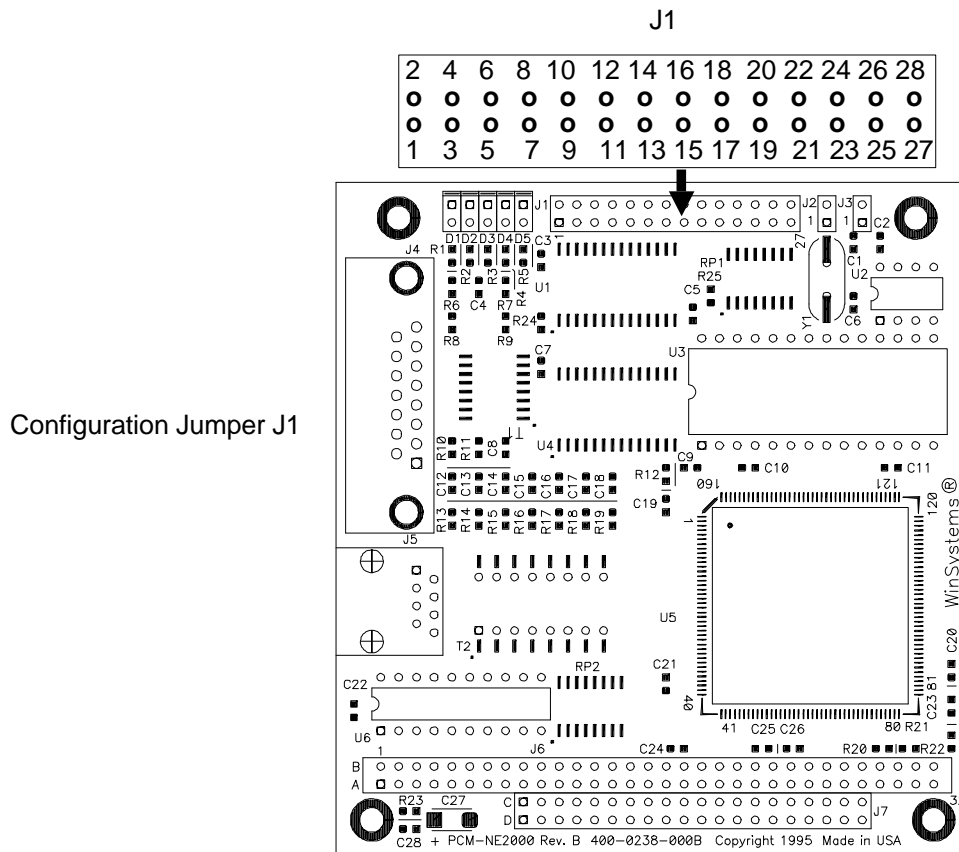
2.3 Jumpered vs. Jumperless Mode

The PCM-NE2000 can be configured either through the jumper block at J1 (detailed in later sections) or via the configuration information stored in the onboard EEPROM. The source for the configuration information is made at jumper J3 as shown below:



NOTE : The choice of “jumpered” or “jumperless” is totally exclusive. This means that if “jumperless” mode is selected all of the jumpers on J1 are ignored and the configuration information comes totally from the EEPROM. Similarly, if “jumpered” mode is selected the information in the EEPROM (Except for the Ethernet Address) is ignored.

The following sections detail the J1 jumpering when the “jumpered” mode is selected.

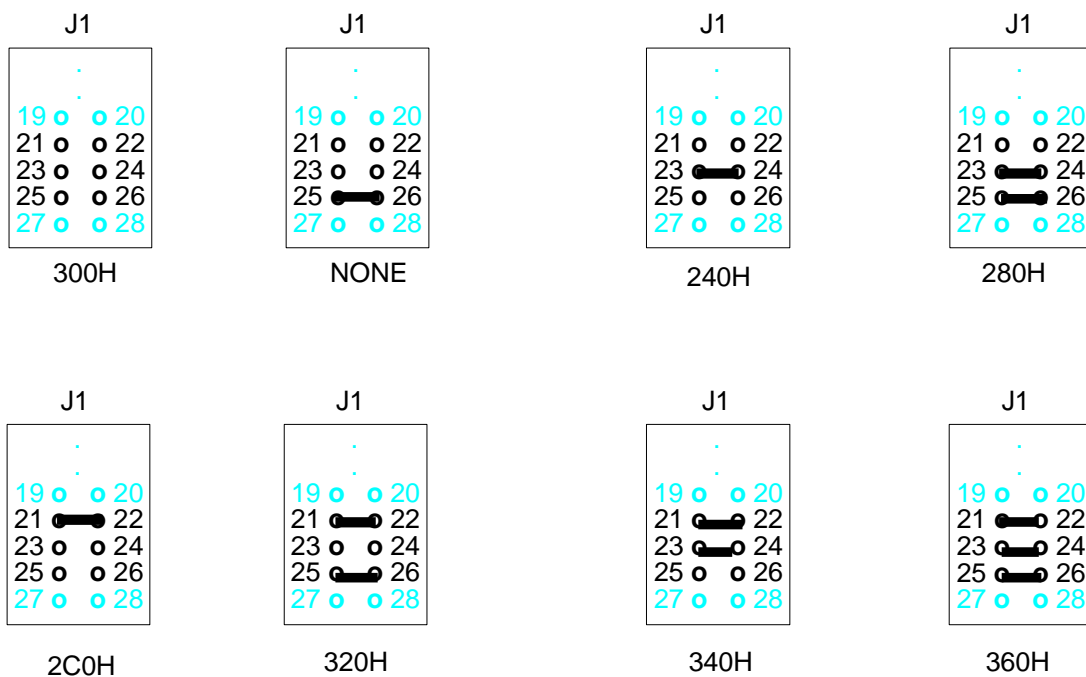


2.4 I/O Port Selection

The PCM-NE2000 uses 32 consecutive I/O address in the 80X86 I/O space. The base address is selected using three pins on the J1 configuration jumper. The choices available are :

- 240H
- 280H
- 2C0H
- 300H
- 320H
- 340H
- 360H

The proper jumpering for each of these choices is shown in the following illustrations.

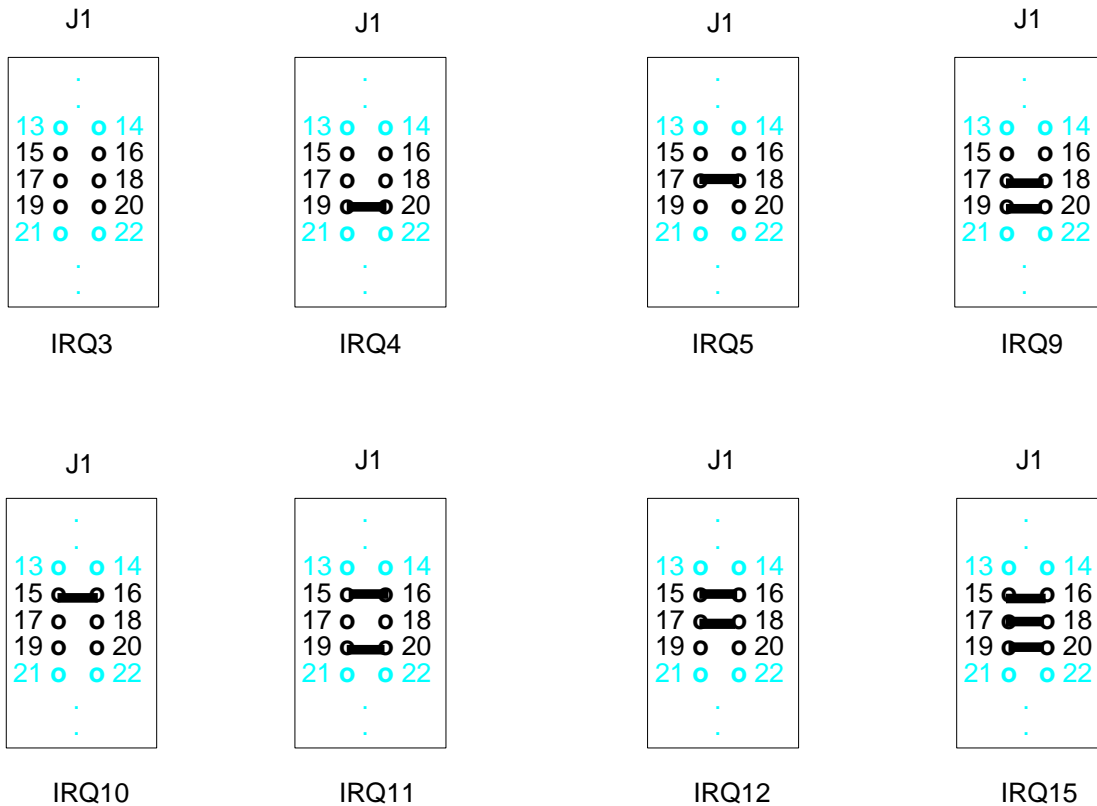


2.5 Interrupt Selection

The PCM-NE2000 needs an interrupt line for signaling various conditions to the software driver. There are 8 possible choices (4 on the 8-bit version) as shown here :

- IRQ 3
- IRQ 4
- IRQ 5
- IRQ 9
- IRQ 10
- IRQ 11
- IRQ 12
- IRQ 15

The proper jumpering for the three relevant jumper positions corresponding to the available interrupt choices are shown here :



2.6 I/O vs. Shared Memory Mode

The buffer RAM within the PCM-NE2000 can be accessed in either of 2 ways. In the typical NE2000 compatible mode, the RAM is accessed through the NIC via I/O ports. An alternate access scheme is available using the shared memory mode. In this mode the board is software compatible with the WD8013EBT from Standard Microsystems (formerly Western Digital). In this mode a 32K window in the PC adapter space is used to access packet memory. The address of this window is controlled by the driver. For NE2000 compatibility the I/O mode is selected. The jumpering for each of the access modes is shown below :

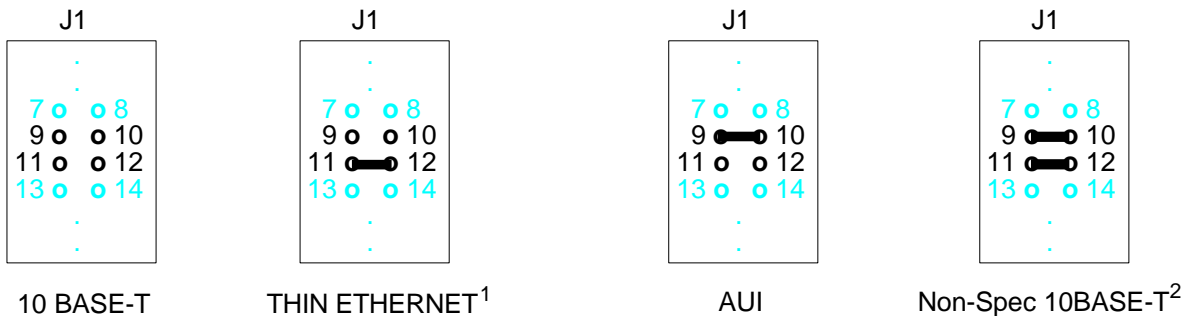


2.7 Media Type Selection

The media type is also jumper selectable via 2 pins on J1. The available choices are:

- Twisted-Pair 10BASE-T
- Thin Ethernet Coax¹
- AUI
- Twisted-Pair 10BASE-T Reduced Squelch²

The J1 jumpering for each of the options is shown below.



¹The Thin Ethernet mode is not usable with the PCM-NE2000. If Thin Ethernet is required it is necessary to select the AUI mode and to use an external transceiver.

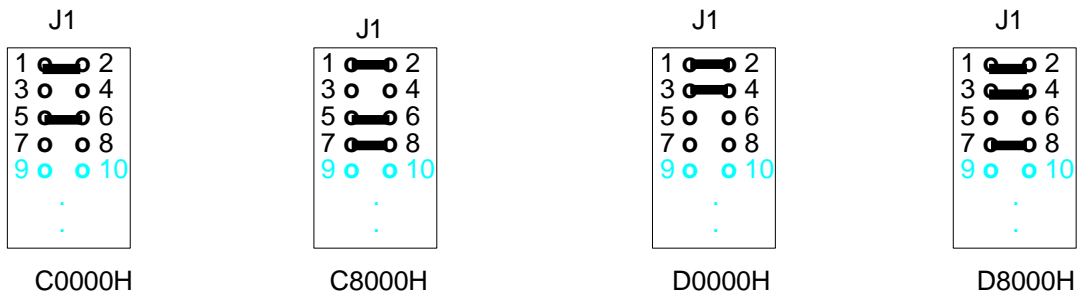
²The non-spec Twisted-pair mode with reduced squelch levels allows the use of longer cable lengths than specified in the twisted-pair specification, or the use of cable with higher losses.

2.8 Boot ROM Selection

The PCM-NE2000 supports the use of the remote boot feature available with Novell and some other operating systems by providing a BIOS Extension boot ROM socket. A user supplied ROM may be installed into U3. The ROM should be a 32K X 8 device of 150nS or faster (type 27C256). The address of the ROM can be selected via a set of jumpers on J1. The addresses available are :

C0000H
 C8000H
 D0000H
 D8000H

The correct jumpering for each of the supported addresses is shown here :



Note : Jumper combinations other than those shown will not result in proper recognition of the ROM. With no jumpers installed the ROM is disabled.

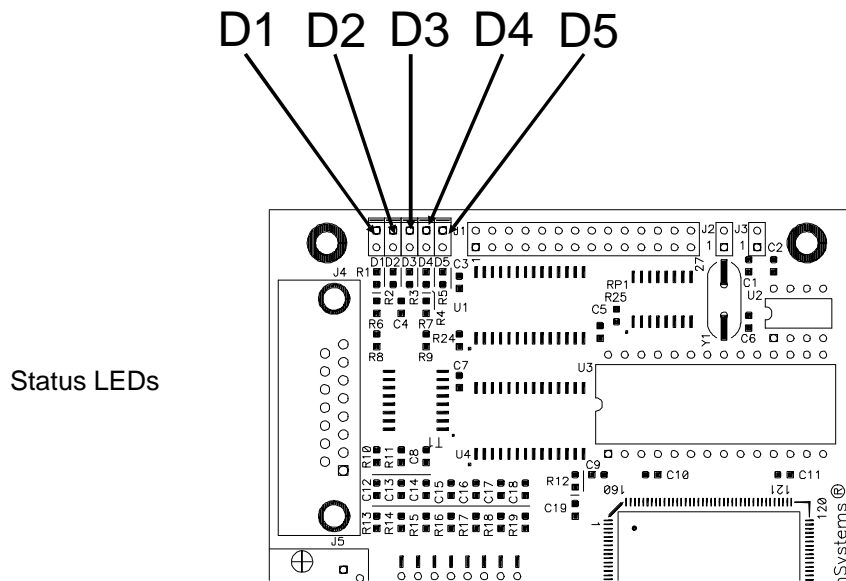
2.9 Compatible Vs Enhanced Mode

The PCM-NE2000 uses two 32K byte buffer RAMS on board. In compatible mode only 8K of each RAM (Total of 8K or 16K depending on 8-bit or 16-bit mode) is accessible to the driver. When the non-compatible mode is chosen the full 32K is available from each RAM. This Enhanced mode is generally supported by the supplied AT/LANTIC drivers but may not be usable with generic NE2000 software or drivers. When in doubt, choose the compatible mode.

The J1 jumpering for the compatible and enhanced modes are shown here :



2.10 Status LEDs



Status LEDs

There are four LEDs installed on the PCM-NE2000. These status LEDs give visual indication as to the status of the board. The color, location, and general description of each of the status LEDs follows :

- D1 GREEN - Transmit activity
- D2 GREEN - Receive activity (All packets on network)
- D3 RED - Collision
- D4 YELLOW - Link Integrity, or testing disabled
- D5 YELLOW - Twisted-pair polarity reversed

2.11 PlusCfg Configuration Utility

When the "jumperless mode is selected (See Section 2.3), the configuration is made via software which is then saved to the onboard EEPROM. PLUSCFG.EXE along with MESSAGE.MSG can be run from the provided floppy or can be copied to a hard disk. From the DOS command line PLUSCFG.EXE is executed by typing :

```
pluscfg [Enter]
```

The configuration program will load and display the basic menu and configuration screen. If any AT/LANTIC™, or NE2000 adapters are recognized they will be displayed in a window on the right side of the screen as shown on the following page:

WinSystems Thick/Thin/TPI August 20, 1993 11:34PM	PLUSCFG V1.17	AT/LANTIC Configuration Software
CONFIGURATION Configure New Adapter Display/Change Adapter Configuration Diagnostics Quit and Return to DOS		AT/LANTIC ADAPTERS I/O Port Mode IRQ 0x320 I/O Port 10 0x360 I/O Port 5
***** Make Selection using arrow keys and <enter> ***** ***** Scroll through options using <tab> *****		

From the main menu choose the desired function. Each of the main menu choices will be discussed in the following sections.

2.11.1 **Configure New Adapter**

This screen is used to configure an installed adapter that is not present in the window on the right side of the screen. Typically this would be a board that had it's I/O port set to "None".

Two choices are provided to configure the new adapter.

The "Configure New Adapter Automatically" will search out an unconfigured adapter if present, survey the system, and make automatic choices for I/O address and interrupts for what it believes are free for use. The system will then display a series of configuration options to the user. These options include :

Adapter Architecture - I/O Port or Shared Memory
Select Cable Interface - Thin Ethernet or Thick Ethernet or 10BASE-T

The second prompt will only be presented if there is no active cable attached or the program is unable to determine the media type.

WinSystems Thick/Thin/TPI August 20, 1993 11:34PM	PLUSCFG V1.17	AT/LANTIC Configuration Software									
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center; margin: 0;">CONFIGURATION</p> <p style="text-align: center; margin: 5px 0;">CONFIGURE NEW ADAPTER</p> <p style="margin: 5px 0;">Configure New Adapter Automatically</p> <p style="margin: 5px 0;">Configure New Adapter Manually</p> <p style="margin: 5px 0;">Return to previous menu</p> </div>		<p style="text-align: center; margin: 0;">AT/LANTIC ADAPTERS</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">I/O Port</th> <th style="text-align: left; border-bottom: 1px solid black;">Mode</th> <th style="text-align: left; border-bottom: 1px solid black;">IRQ</th> </tr> </thead> <tbody> <tr> <td style="border-bottom: 1px solid black;">0x320</td> <td style="border-bottom: 1px solid black;">I/O Port</td> <td style="border-bottom: 1px solid black;">10</td> </tr> <tr> <td style="border-bottom: 1px solid black;">_____</td> <td></td> <td></td> </tr> </tbody> </table>	I/O Port	Mode	IRQ	0x320	I/O Port	10	_____		
I/O Port	Mode	IRQ									
0x320	I/O Port	10									

<p>***** Make Selection using arrow keys and <enter> *****</p> <p>***** Scroll through options using <tab> *****</p>											

The "Configure New Adapter Manually" presents a screen similar to the one shown below :

WinSystems Thick/Thin/TPI August 20, 1993 11:34PM	PLUSCFG V1.17	AT/LANTIC Configuration Software												
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center; margin: 0;">CONFIGURATION</p> <p style="text-align: center; margin: 5px 0;">CONFIGURE NEW ADAPTER MANUALLY</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Novell Configuration</td> <td style="padding: 2px;">- None</td> </tr> <tr> <td style="padding: 2px;">I/O Base Address</td> <td style="padding: 2px;">- 0x240</td> </tr> <tr> <td style="padding: 2px;">Interrupt assignment</td> <td style="padding: 2px;">- IRQ3</td> </tr> <tr> <td style="padding: 2px;">Physical Media</td> <td style="padding: 2px;">- TPI (10BaseT)</td> </tr> <tr> <td style="padding: 2px;">Adapter Architecture</td> <td style="padding: 2px;">- I/O Port</td> </tr> <tr> <td style="padding: 2px;">Boot Prom</td> <td style="padding: 2px;">- No Boot Prom</td> </tr> </table> <p style="margin: 5px 0;">Advanced Configuration Options</p> <p style="margin: 5px 0;">Temporarily Change Configuration</p> <p style="margin: 5px 0;">Save Configuration</p> <p style="margin: 5px 0;">Return to previous menu</p> </div>		Novell Configuration	- None	I/O Base Address	- 0x240	Interrupt assignment	- IRQ3	Physical Media	- TPI (10BaseT)	Adapter Architecture	- I/O Port	Boot Prom	- No Boot Prom	<p>AT/LANTIC ADAPTERS</p>
Novell Configuration	- None													
I/O Base Address	- 0x240													
Interrupt assignment	- IRQ3													
Physical Media	- TPI (10BaseT)													
Adapter Architecture	- I/O Port													
Boot Prom	- No Boot Prom													
<p>***** Make Selection using arrow keys and <enter> *****</p> <p>***** Scroll through options using <tab> *****</p>														

Use the up and down arrow keys and the tab key to change the displayed configuration to what is desired and then select "Save Configuration" to program the EEPROM with the selected choices.

Note: PLUSCFG will not allow selection of I/O ports, interrupts, or memory addresses that it believes are being used by other hardware in the system. If PLUSCFG refuses to allow a desired selection for what you know are valid choices, it will be necessary to use the "jumpered" mode described earlier, for configuration.

2.11.2 Display/Change Adapter Configuration

This option of the main menu presents the same screen as shown for the "Configure New Adapter Manually". Use the up and down arrow keys and the tab key to alter the configuration as desired and then select "Save Configuration" to program the EEPROM with the new information.

Note: PLUSCFG will not allow selection of I/O ports, interrupts, or memory addresses that it believes are being used by other hardware in the system. If PLUSCFG refuses to allow a desired selection for what you know are valid choices, it will be necessary to use the "jumpered" mode described earlier, for configuration.

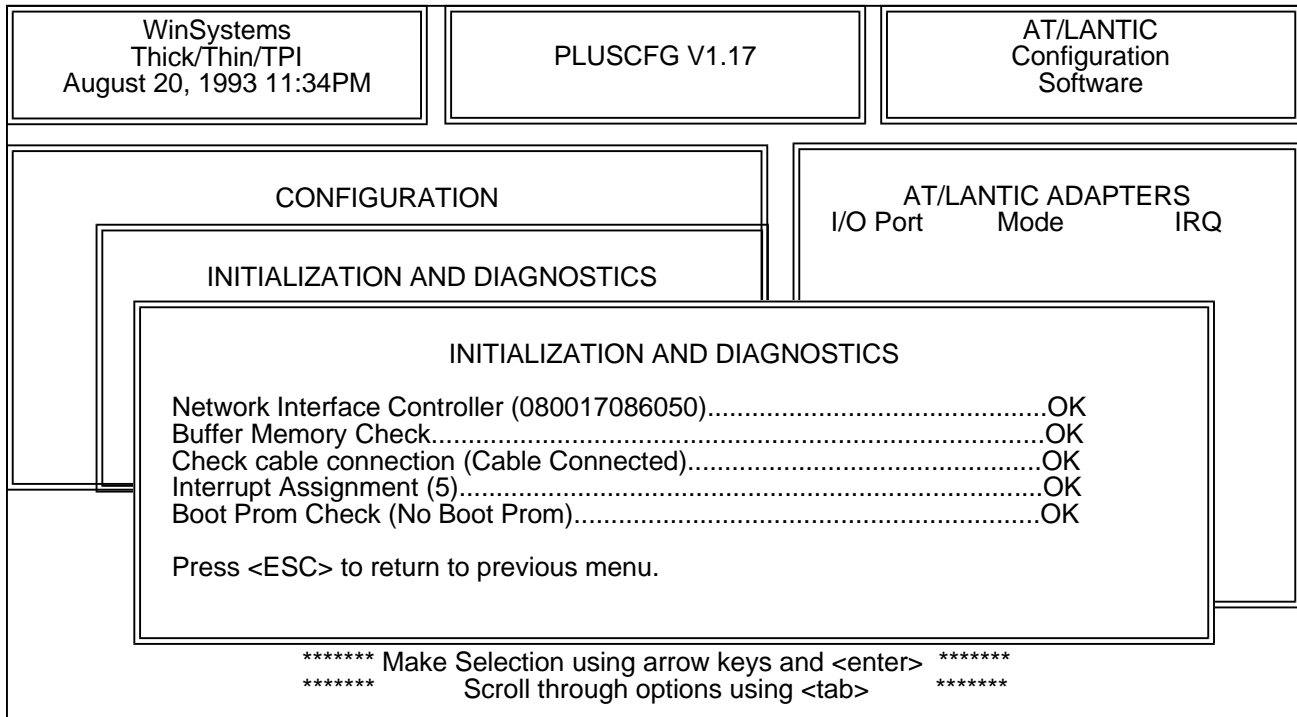
2.11.3 Diagnostics

This third choice from the main menu allows the selection from the diagnostics sub menu as shown in this screen below :

WinSystems Thick/Thin/TPI August 20, 1993 11:34PM	PLUSCFG V1.17	AT/LANTIC Configuration Software												
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; text-align: center;">CONFIGURATION</div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">INITIALIZATION AND DIAGNOSTICS</p> <p>Adapter Initialization & disagnostics Advanced Network Diagnostics</p> <p style="text-align: center;">Return to previous menu</p> </div>		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">AT/LANTIC ADAPTERS</th> </tr> <tr> <th style="text-align: left;">I/O Port</th> <th style="text-align: left;">Mode</th> <th style="text-align: left;">IRQ</th> </tr> </thead> <tbody> <tr> <td>0x320</td> <td>I/O Port</td> <td>10</td> </tr> <tr> <td>0x360</td> <td>I/O Port</td> <td>5</td> </tr> </tbody> </table>	AT/LANTIC ADAPTERS			I/O Port	Mode	IRQ	0x320	I/O Port	10	0x360	I/O Port	5
AT/LANTIC ADAPTERS														
I/O Port	Mode	IRQ												
0x320	I/O Port	10												
0x360	I/O Port	5												
<p>***** Make Selection using arrow keys and <enter> *****</p> <p>***** Scroll through options using <tab> *****</p>														

2.11.4 Adapter Initialization & Diagnostics

This choice initializes the selected adapter and confirms I/O address, interrupt, media type, etc. The adapter should be connected to the network cable at this time. A sample screen is shown below :



NOTE : The Initialization & Diagnostics must be run and pass before any of the Advanced diagnostics can be executed.

2.11.5 Advanced Network Diagnostics

The Advanced Network Diagnostics menu is shown on the following page.

Three choices are provided for Advanced Network Diagnostics.

2.11.6 Setup as a Master Station.

This enables the board under test to be set up as the Master. The master will initiate testing. The Slave must be enabled prior to starting the Master.

The system will then request a packet repetition length and after entered will begin the test.

WinSystems Thick/Thin/TPI August 20, 1993 11:34PM	PLUSCFG V1.17	AT/LANTIC Configuration Software
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<div style="text-align: center; border: 1px solid black; padding: 5px; margin-bottom: 5px;">CONFIGURATION</div> <div style="text-align: center; border: 1px solid black; padding: 5px; margin-bottom: 5px;">INITIALIZATION AND DIAGNOSTICS</div> <div style="text-align: center; border: 1px solid black; padding: 5px;"> <p>ADVANCED NETWORK DIAGNOSTICS</p> <p>Set up as a master station.. Setup as a slave station. Show packets on network.</p> <p>Return to previous menu</p> </div>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3" style="text-align: center;">AT/LANTIC ADAPTERS</th> </tr> <tr> <th style="text-align: left;">I/O Port</th> <th style="text-align: left;">Mode</th> <th style="text-align: left;">IRQ</th> </tr> <tr> <td>0x320</td> <td>I/O Port</td> <td>10</td> </tr> <tr> <td>0x360</td> <td>I/O Port</td> <td>5</td> </tr> </table>	AT/LANTIC ADAPTERS			I/O Port	Mode	IRQ	0x320	I/O Port	10	0x360	I/O Port	5
AT/LANTIC ADAPTERS													
I/O Port	Mode	IRQ											
0x320	I/O Port	10											
0x360	I/O Port	5											

***** Make Selection using arrow keys and <enter> *****
 ***** Scroll through options using <tab> *****

2.11.7 Set up as Slave Station

This choice should be made for a known good board. It will echo back across the network all packets initiated by the Master.

2.11.8 Show Packets On Network

This option displays in HEX and ASCII packets as they are received from the network. A sample screen is shown below :

WinSystems Thick/Thin/TPI August 20, 1993 11:34PM	PLUSCFG V1.17	AT/LANTIC Configuration Software
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<p style="text-align: center;">RECEIVED PACKET CONTENTS</p> <p style="text-align: center;">Received Status : 01 Next Pointer : 54 Receiver Length : 1493 Destination 0040F698A3E6 Source : 0040F6988448 Length/Type : 05C3 Hex HW CRC : D703A649 SW CRC : NORMAL</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <pre> 0450 98 7D D0 40 03 00 00 00 01 00 00 00 00 00 01 04 0460 51 33 33 87 02 01 00 00 00 04 00 20 44 6F 63 2D 0470 06 00 F0 76 41 47 44 53 54 4D 00 00 00 40 E1 7A 0480 74 BF 05 00 02 77 4D 44 54 47 53 00 04 00 0C 77 0490 41 43 50 52 0E 00 14 77 41 43 44 49 4E 4F 50 52 04A0 53 54 55 58 4F 47 0E 00 26 77 41 43 44 49 4E 4F 04B0 50 52 53 54 55 58 4D 47 0C 00 38 77 49 54 45 4D 04C0 20 4B 45 59 0C 00 54 77 56 41 4C 49 44 20 54 52 04D0 23 23 23 59 0C 00 54 77 56 41 4C 49 44 20 54 53 04E0 41 4E 53 3A 07 00 64 77 23 23 23 2C 23 23 23 52 </pre> </td> <td style="width: 50%; vertical-align: top;"> <pre> ..}.@..... Q33.....(Doc- ..vAGDSTM...@.z t...wMDTGS...w ACPR...wACDINO STUXMG..&aACDINO PRSTUXMG..8wiTEM KEY ..Hw###, ###Y...TwALID.TR ANS:...dw###,###R </pre> </td> </tr> </table> <p style="text-align: center; margin-top: 10px;">Press <ESC> when finished examining receive packet</p>	<pre> 0450 98 7D D0 40 03 00 00 00 01 00 00 00 00 00 01 04 0460 51 33 33 87 02 01 00 00 00 04 00 20 44 6F 63 2D 0470 06 00 F0 76 41 47 44 53 54 4D 00 00 00 40 E1 7A 0480 74 BF 05 00 02 77 4D 44 54 47 53 00 04 00 0C 77 0490 41 43 50 52 0E 00 14 77 41 43 44 49 4E 4F 50 52 04A0 53 54 55 58 4F 47 0E 00 26 77 41 43 44 49 4E 4F 04B0 50 52 53 54 55 58 4D 47 0C 00 38 77 49 54 45 4D 04C0 20 4B 45 59 0C 00 54 77 56 41 4C 49 44 20 54 52 04D0 23 23 23 59 0C 00 54 77 56 41 4C 49 44 20 54 53 04E0 41 4E 53 3A 07 00 64 77 23 23 23 2C 23 23 23 52 </pre>	<pre> ..}.@..... Q33.....(Doc- ..vAGDSTM...@.z t...wMDTGS...w ACPR...wACDINO STUXMG..&aACDINO PRSTUXMG..8wiTEM KEY ..Hw###, ###Y...TwALID.TR ANS:...dw###,###R </pre>	
<pre> 0450 98 7D D0 40 03 00 00 00 01 00 00 00 00 00 01 04 0460 51 33 33 87 02 01 00 00 00 04 00 20 44 6F 63 2D 0470 06 00 F0 76 41 47 44 53 54 4D 00 00 00 40 E1 7A 0480 74 BF 05 00 02 77 4D 44 54 47 53 00 04 00 0C 77 0490 41 43 50 52 0E 00 14 77 41 43 44 49 4E 4F 50 52 04A0 53 54 55 58 4F 47 0E 00 26 77 41 43 44 49 4E 4F 04B0 50 52 53 54 55 58 4D 47 0C 00 38 77 49 54 45 4D 04C0 20 4B 45 59 0C 00 54 77 56 41 4C 49 44 20 54 52 04D0 23 23 23 59 0C 00 54 77 56 41 4C 49 44 20 54 53 04E0 41 4E 53 3A 07 00 64 77 23 23 23 2C 23 23 23 52 </pre>	<pre> ..}.@..... Q33.....(Doc- ..vAGDSTM...@.z t...wMDTGS...w ACPR...wACDINO STUXMG..&aACDINO PRSTUXMG..8wiTEM KEY ..Hw###, ###Y...TwALID.TR ANS:...dw###,###R </pre>		

2.11.9 Quit and return to DOS

This main menu option exits Pluscfg and returns you to the DOS prompt.

2.12 PC/104 Bus Pin Definitions

The J6 and J7 PC/104 bus connector pin definitions are shown here :

J6		J7	
GND	B1 ○ ○ A1	GND	C0 ○ ○ D0
RESET	B2 ○ ○ A2	SBHE	C1 ○ ○ D1
+5V	B3 ○ ○ A3	LA23	C2 ○ ○ D2
IRQ9	B4 ○ ○ A4	LA22	C3 ○ ○ D3
-5V	B5 ○ ○ A5	LA21	C4 ○ ○ D4
DRQ2	B6 ○ ○ A6	LA20	C5 ○ ○ D5
-12V	B7 ○ ○ A7	LA19	C6 ○ ○ D6
OWS	B8 ○ ○ A8	LA18	C7 ○ ○ D7
+12V	B9 ○ ○ A9	LA17	C8 ○ ○ D8
GND	B10 ○ ○ A10	MEMR	C9 ○ ○ D9
MEMW	B11 ○ ○ A11	MEMW	C10 ○ ○ D10
MEMR	B12 ○ ○ A12	SD8	C11 ○ ○ D11
IOW	B13 ○ ○ A13	SD9	C12 ○ ○ D12
IOR	B14 ○ ○ A14	SD10	C13 ○ ○ D13
DACK3	B15 ○ ○ A15	SD11	C14 ○ ○ D14
DRQ3	B16 ○ ○ A16	SD12	C15 ○ ○ D15
DACK1	B17 ○ ○ A17	SD13	C16 ○ ○ D16
DRQ1	B18 ○ ○ A18	SD14	C17 ○ ○ D17
REFRESH	B19 ○ ○ A19	SD15	C18 ○ ○ D18
SYSCLK	B20 ○ ○ A20	KEY	C19 ○ ○ D19
IRQ7	B21 ○ ○ A21		
IRQ6	B22 ○ ○ A22		
IRQ5	B23 ○ ○ A23		
IRQ4	B24 ○ ○ A24		
IRQ3	B25 ○ ○ A25		
DACK2	B26 ○ ○ A26		
TC	B27 ○ ○ A27		
BALE	B28 ○ ○ A28		
+5V	B29 ○ ○ A29		
OSC	B30 ○ ○ A30		
GND	B31 ○ ○ A31		
GND	B32 ○ ○ A32		
		IOCHK	
		BD7	
		BD6	
		BD5	
		BD4	
		BD3	
		BD2	
		BD1	
		BD0	
		IOCHRDY	
		AEN	
		SA19	
		SA18	
		SA17	
		SA16	
		SA15	
		SA14	
		SA13	
		SA12	
		SA11	
		SA10	
		SA9	
		SA8	
		SA7	
		SA6	
		SA5	
		SA4	
		SA3	
		SA2	
		SA1	
		SA0	
		GND	
			GND
			MEMCS16
			IOCS16
			IRQ10
			IRQ11
			IRQ12
			IRQ15
			IRQ14
			DACK0
			DRQ0
			DACK5
			DRQ5
			DACK6
			DRQ6
			DACK7
			DRQ7
			+5V
			MASTER
			GND
			GND

2.13 Connector Jumper Summary

Connector/ Jumper	Description	Page Reference
J1	Configuration Options Jumper	2-3
J2	Bus Size Selection Jumper	2-2
J3	Jumpered vs Jumperless select jumper	2-3
J4	AUI Connector	N/A
J5	RJ-45 10BASE-T connector	N/A
J6	PC/104-8 Bus Connector	2-14
J7	PC/104-16 Bus Connector	2-14

APPENDIX

DP83905 AT/LANTIC™ Controller Datasheet Reprint

Printable datasheet in PDF format

[DP83905_ATLANTIC_.pdf](#)

Cable Drawings

Part Number	Description
CBL-147-1	16-pin ribbon to 15-pin D-Sub AUI adapter cable

Software

Drivers for NE2000 Ethernet Controller

[NE2000.ZIP](#)



Telephone: 817-274-7553 . . Fax: 817-548-1358
<http://www.winsystems.com> . . E-mail: info@winsystems.com

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1. Description and quantity of the product(s) to be returned including its serial number.
2. Reason for the return.
3. Invoice number and date of purchase (if available), and original purchase order number.
4. Name, address, telephone and FAX number of the person making the request.
5. Do not debit WinSystems for the repair. WinSystems does not authorize debits.

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