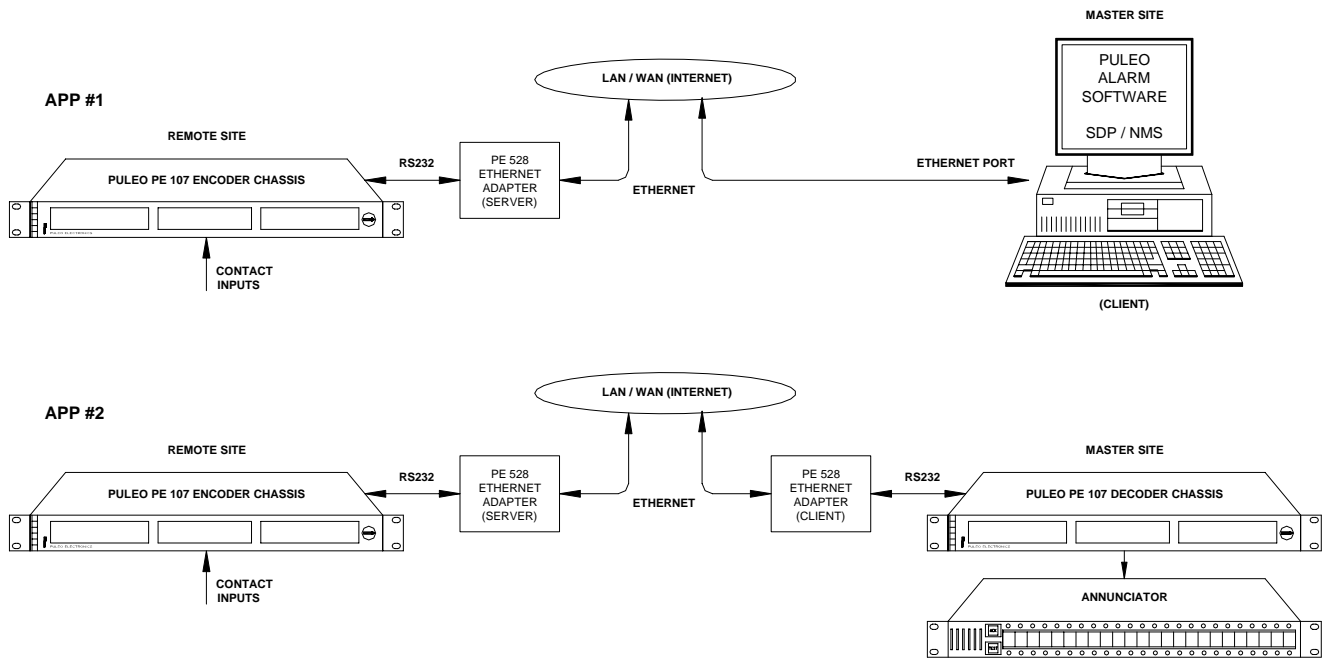


## PE 528 ETHERNET ADAPTER MANUAL



Puleo Electronics is a VAR (Value Added Reseller) for this device. Puleo has provided additional hardware, cables and pre-configured certain menu items for ease of installation. However, Networking requires a high level of expertise and experience. It is beyond the scope of this manual to explain Networking. The installer may require the assistance of the person who originally set up the Network or who maintains it. A Windows computer with Hyper Terminal (or equivalent) is required to configure the Adapter for the Network. This Application manual has been extracted from the manufacturers original manual. A full copy of the manufacturers iPocket232 manual can be downloaded at [www.precidia.com](http://www.precidia.com)

### *Applications*



There are two basic applications (many variations) using the Ethernet Adapter.

In App #1, the Computer is at the Master site receiving Alarm Encoder Data from the remote site. The Computer is the Client with an internal Ethernet card configured as detailed in the Alarm Software Manuals SDP or NMS. The remote Encoder Chassis requires an Ethernet Adapter configured as a Server.

In App #2, the Master site uses a Decoder Chassis and Annunciator to display the Alarm Encoder data from the remote. Both sites use Ethernet Adapters. The Remote Encoder site Adapter is typically configured as the Server, with the Master Decoder site Adapter configured as the Client.

Variations of App #2 include having Multiple Remote Sites or an Encoder / Decoder at both sites for full duplex communications of Alarms and Controls between Sites. In the full duplex case either site could be configured as the Server.

**Adapter LEDS**

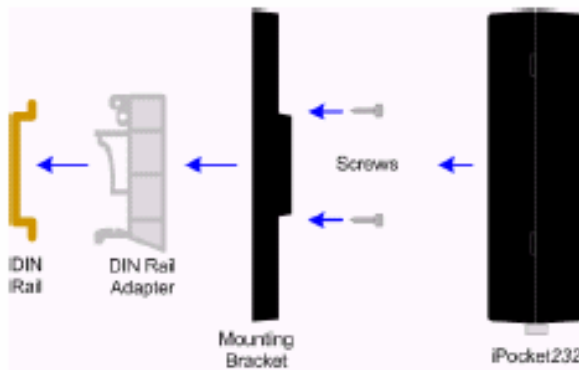
The Ethernet Adapter front panel has (4) indicator LEDS that can be used for troubleshooting. The table below shows the various modes of operation.

Function	LED	Condition	Description
Ethernet	Link	On Steady	Valid 10BaseT Ethernet Connection
	Transmit	Flashing	Unit has Control Sending Data
Serial	Transmit	Flashing	Sending/Receiving Data
		On Steady	Configuration Mode
	Status	Off	Configuration Error or Port Disabled
		Slow Flash	Idle Mode (Config OK)
		Fast Flash	Has Communicated (Config OK)
On Steady	Connected (Config OK)		



**Mounting**

The Ethernet Adapter may be mounted directly to a wall or Din Rail for wall or rack mounting using the supplied hardware. It should be located within 6 feet of the PE 106/107/108 Chassis so the supplied RS232 and power cables can connect the devices together. One Din Rail is provided per chassis. Once mounted, the unit can be easily clipped on or removed as needed.



Screws  
Two #6 x 3/8", self tapping

Note: The top of the Ethernet Adapter has a hidden recessed configuration switch. Whenever possible, allow enough clearance for the config switch to be pressed with an open paper clip, without the need to remove the unit.

**Power Cable**

**Caution:** To prevent damage, use only the properly connected Chassis cable or supplied Wall Transformer (Model SCP41-90500) to Power the device.

If the Ethernet Adapter was ordered with a PE 106/107/108 Chassis, the Adapter will be powered from the Chassis with the supplied power cable. The Wall Transformer will be used if the Chassis has no power provision, or you need to temporarily power the Adapter at a computer workstation during configuration.

**Observe Proper Polarity**

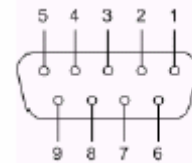


**Caution:** Red Striped wire must on (-) negative screw terminal

**RS232 Cable**

The Ethernet Adapter has a DB9 Female RS232 connector (DCE) at one end as shown.

**DCE Device**



Connect the supplied DB9M to DB9M RS232 cable between the Adapter RS232 port and the desired serial port (DTE) on the PE 106/107/108 Chassis.

**Notes:**

1. Depending on the application, the Puleo Chassis may have been wired as a DCE Device. When in doubt, check the Chassis manual or try a null modem adapter with the RS232 cable.
2. Puleo uses only female RS232 Chassis connectors. Connector gender does not indicate a DCE or DTE device.
3. Older Puleo Chassis used a DB25F connectors and require a 25 to 9 pin adapter.

**Serial Port Pinout (DB-9 Female)**

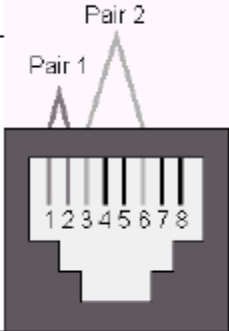
Pin	Signal	Type
1	Data Carrier Detect (DCD)	Out
2	Transmit Data (TD)	Out
3	Receive Data (RD)	In
4	Data Terminal Ready (DTR)	In
5	Signal Ground (GND)	Power
6	Data Set Ready (DSR)	Out
7	Request to Send (RTS)	In
8	Clear to Send (CTS)	Out
9	No Connect/Power	Out

### *Ethernet Cable*

A standard RJ-45 Ethernet cable (not supplied) is used to connect the Adapter to the Network. An Ethernet speed of 10Mbps is supported. When the cable is connected to your Network, the Link LED will light steady to indicate a valid connection has been made to a 10BaseT Ethernet Network.

**ETHERNET Port Pinout (RJ-45)**

Pin	Signal	Type
1	Transmit positive (TX +)	Out
2	Transmit negative (TX-)	Out
3	Receive positive (RX+)	In
4	NC	—
5	NC	—
6	Receive negative (RX-)	In
7	NC	—
8	NC	—



### *Configuration*

The Ethernet Adapter needs to be properly configured to operate on the Network. At a minimum, the following items need to be configured:

- Ethernet Setting – must be configured by user to match specific Network
- RS232 Serial Parameters – most factory configured
- Security Settings – as desired

To configure, temporarily connect the Ethernet Adapters RS232 port to the Computers serial port. The Computer should be running terminal software such as ProComm, or HyperTerminal. HyperTerminal is usually standard on all Windows computers or the latest version can be downloaded free from [www.hilgraeve.com](http://www.hilgraeve.com).

Configure the terminal software with the following settings:

- COM Port: Match the actual Computers port # connected to Adapter, Example: COM1, COM2, ...
- Baud: 9600
- Data Bits: 8
- Parity: None
- Stop Bits: 1
- Flow Control: None

Using a paper clip or similar item, press and hold the recessed CONFIG button down on the Adapter for several seconds until the initial Configuration screen appears as shown.

Note: After (4) minutes of no keyboard activity, the unit will exit the configuration mode and any changes will be lost.

**Initial Configuration Screen**

```
Precidia                               i Pocket232 Configuration                               v4.03.00
-----
Device Settings:
1) Ethernet:                            0.0.0.0
2) Serial Port:                          Transparent
*) Save Current Configuration
-) Exit Configuration (no save)
$) Security Settings
#) System Settings
?) Refresh this Screen
```

Change which option?

*If this screen does not appear, check the RS232 cable connection and verify that HyperTerminal has been properly configured for the communications parameters.*

**IP Address, Mask, Gateway Info**

The IP Address is a unique identifier for computers or devices on a TCP/IP Network. It consists of four numbers from 0 to 255, separated by periods.

The Subnet Mask is used to determine what subnet an IP Address belongs to. The mask allows a router to determine the Network and Host Addresses, and forward data packets correctly.

The Gateway Address is used if the Adapter will be communicating with a device not on the local subnet. If the destination is within the LAN and can be accessed without passing through a router, leave this field all zeros (0.0.0.0); otherwise enter the routers gateway address.

**Important: To create a stable connection between sites, Puleo recommends that you manually assign an IP Address to all Ethernet Adapters. Do not use your Network DHCP Server to automatically assign the Ethernet settings!**

Note: When assigning Static IP addresses, make sure you assign an address that is not in use by any other device on the Network. A good practice is to use addresses below the starting address that the DHCP Server can assign.

## PE 106/107/108 TDM Series

Press 1 for the Ethernet Settings Sub-menu as shown.

### Ethernet Settings Sub-menu

Precidia i Pocket232 Configuration v4.03.00	
Device Settings:	Ethernet Settings:
1) Ethernet: 192.168.1.80	A) IP Address: 192.168.1.80
2) Serial Port: Transparent	B) Subnet Mask: 255.255.255.0
* ) Save Current Configuration	C) Gateway: 0.0.0.0
-) Exit Configuration (no save)	Additional Gateway:
\$) Security Settings	D) Network Address: 0.0.0.0
#) System Settings	E) Network Mask: 0.0.0.0
? ) Refresh this Screen	F) Gateway: 0.0.0.0

Change which option?

Press A to enter the IP address.

Example 192.168.1.80 and press Enter.

Press B to enter the Subnet Mask for that IP address.

Example 255.255.255.0 and press Enter.

Press C to enter the Gateway IP address.

Example 192.168.1.98 and press Enter.

Type 7 to refresh the screen and verify all your changes.

(Additional Gateway information is an advanced feature typically not used.)

### Telnet Info

*You can skip over this section and continue configuring the Adapter in the Local mode, or use the preferred Remote Telnet mode. The Telnet mode allows you to verify the Adapter Network IP you just assigned, and to troubleshoot and make configuration changes without moving cables. A detailed Telnet Guide is available at [www.precidia.com/products/documentation.html](http://www.precidia.com/products/documentation.html)*

Before exiting the Local Configuration mode, you must configure the Adapter to accept a Telnet connection.

Press \$ for Security Settings:

Press B for Remote Password:

Enter your Password (password is case sensitive)

Press \* to Save and Exit Local Configuration mode

Disconnect Adapter RS232 cable to computer and reconnect to PE 106/107/108 Chassis

Verify Adapters Network cable connection

On a Computer with Network Access,

Use Windows/DOS Telnet program to Login to the Adapters IP and continue configuration over Network.

Press 2 for the Serial Port Settings Sub-menu as shown.

### Serial Port Sub-menu

## PE 106/107/108 TDM Series

Precidia		i Pocket232 Configuration		v4.03.00	
Device Settings:			Serial Port Settings:		
1) Ethernet:	192.168.1.80	A) Protocol:	Transparent (srv)		
2) Serial Port:	Transparent	B) Port Setting:	1200 bps 7N1 [no]		
		C) Connection Control:	Automatic		
		D) Local Port:	9999		
		E) Remote IP:	0.0.0.0		
		F) Remote Port:	0		
		G) Fallback IP:	0.0.0.0		
		H) Fallback Port:	0		
* ) Save Current Configuration		I) Packet Prefix:	none		
-) Exit Configuration (no save)		J) Max Inter-Char Delay:	0		
\$) Security Settings		K) Preferred Packet Size:	0		
#) System Settings		L) Initial String:	(not set)		
? ) Refresh this Screen					

Change which option?

**Note: Items B and C have been factory configured to match PE 106/107/108 Encoder / Decoder board communication parameters and should not be changed.**

### Protocol Info

The Adapter supports several different Protocol modes. For Puleo Applications only the following modes should be used:

**Transparent:** No alterations or parsing of the Encoder / Decoder RS232 data stream. Data is collected based on the preferred packet size and transmitted as a single frame.

**TCP-Server:** Uses TCP communications channel for Encoder / Decoder data stream once connection is established. Server cannot initiate connection. Typically used at Remote Site Adapter.

**TCP-Client:** Uses TCP communications channel for Encoder / Decoder data stream once connection is established. Client initiates connection. Typically used at Master Site Adapter.

Press A to enter the Protocol.

- Choose D3  
(Transparent Server) If this Adapter for Remote Encoder site as shown in App #1 or #2.
- Choose D2  
(Transparent Client) If this Adapter for Master Decoder site as shown in App #2.

Example D3 and press Enter.

### Local / Remote Port Info

The Local Port is the port number that the Server listens for incoming connections.

The Remote Port is the Port number that the Client initiates a connection to.

A pair of Ethernet Adapters forming a point-to-point connection must have identical port numbers entered as Local on the Server and Remote for the Client.

## *PE 106/107/108 TDM Series*

---

Port numbers are somewhat arbitrary. If possible pick an obscure number that will help identify that the device is yours.

*Caution: Some Networks may Block access to certain Port numbers. Verify that the number you choose is not Blocked.*

If this Adapter is configured as the Server (srv)  
Choose D to enter the Local Port # and Press Enter.  
Example: Local Port = 9999, Remote Port = 0

If this Adapter is configured as the Client (cln)  
Choose F to enter the Remote Port # and Press Enter.  
Example: Remote Port = 9999, Local Port = 0

### **Remote IP Address Info**

The Remote IP Address is the Address that the Client is attempting to connect to. This must be entered into the Client Adapter. The Server Adapter Remote IP is typically left all zeros (0.0.0.0) which indicates it will accept a connection from any Client, or a specific Client IP can be entered to limit it.

If this Adapter is configured as the Server (srv)  
Recommended that Remote IP be left all zeros (0.0.0.0)

If this Adapter is configured as the Client (cln)  
Choose E to enter the Remote IP Address and Press Enter.  
Example: Remote IP = 192.168.1.80

The other Serial Settings not covered on considered Advanced features and are typically not used.

Type 7 to refresh the screen and verify all your changes. Make any changes as necessary.

Type \* to Save Changes and exit the Configuration mode.

**\*\*\*\* Repeat the Configuration Steps for the remaining Adapters in your System. \*\*\*\***

### ***Operation***

If correctly configured, the equipment should establish a connection and communicate between sites. This can take up to a minute or two depending on your Network.

Troubleshooting Network problems can be a difficult task. Puleo PE 106/107/108 Chassis can be brought to one site and tested back to back with RS232 cables and Null Modems. Notebooks running

## *PE 106/107/108 TDM Series*

---

HyperTerminal at each end could be connected to the Ethernet Adapters RS232 ports to bypass and rule out the Puleo equipment. Ethernet Adapters could all be placed all on one LAN and tested Locally eliminating Router, Gateway, and Network Filter problems.

If communications is not established, check the following:

- All PE 106/107/108 Chassis are powered-up with the PC boards showing the correct Status LEDS
- All Ethernet Adapters are powered-up, have been correctly configured with RS232 and RJ45 cables connected.
- Ethernet Link LED “On” indicating a valid Ethernet connection
- Ping each Adapters IP Address or use Telnet to establish a connection over the Network with each Adapter
- Check Adapter Logs and Router Logs to see if connection attempted  
To access the Adapter Log,  
Open your browser  
Type **http://Adapter IP Address/ log.html** in the address bar

If the problem still exists a full set of troubleshooting instructions is available in the full iPocketRS232 manual from the manufacturer at [www.precidia.com](http://www.precidia.com)

### **Important Note:**

A Client PE 528 always initiates a connection with a Server PE 528 based on the Server’s IP Address. However, once that connection is established, the Client learns and remembers the Server’s Hardware ID (serial number). If you later replace or substitute the Server with another unit with an identical IP Address, the Client must be powered off and on to re-establish the connection with the replacement Server since it has a different Hardware ID.