

Eberle Design Ethernet Port User Manual

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Ethernet Port Quick Start Manual

Eberle Design Ethernet Port User Manual

THIS MANUAL CONTAINS TECHNICAL INFORMATION FOR THE ETHERNET PORT OF
EDI SIGNAL MONITORS with Ethernet Version 1.8 firmware.

DETAILS OF THE ECCOM OPERATION ARE DESCRIBED IN THE EDI ECCOM
OPERATIONS MANUAL (888-1000-001).

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Section 1: General

1.1 OVERVIEW

The Ethernet port of EDI signal monitors is used to transfer status and event log information between a networked Personal Computer (PC) and the monitor unit. The PC is intended to operate with EDI ECcom Signal Monitor Communications software.

The EDI ECcom software is distributed free of charge and can be obtained from the EDI web site at www.EDIttraffic.com. The current production release of ECcom is 4.2.

The networking parameters of the Ethernet port can be configured using two different methods; the EDI ECcom program (Section 2) or a standard internet browser (Section 3). Which method is used depends on the user preference. Some options may be affected by administrator issues on the PC.

Once the network parameters of the Ethernet port are set, the EDI ECcom program is then used to view monitor operational status and event logs. Note that a browser program will not provide access to the monitor status and logs.

1.2 PRODUCTION NOTES

The Ethernet network parameters are typically programmed via the Ethernet interface but can also be loaded from

the Datakey of the CMUip-2212, CMUip-212 or 2018KCLip. In these cases the EDI MonitorKey software (version 2.4 or greater) provides the tool to program the network parameters into the Datakey. This requires an installed firmware level as follows:

CMUip-2212 v0115 or greater

CMUip-212 v0122 or greater

2018KCLip v0156 or greater

Section 2: EDI ECom Method

2.1 LAN SEARCH FUNCTION

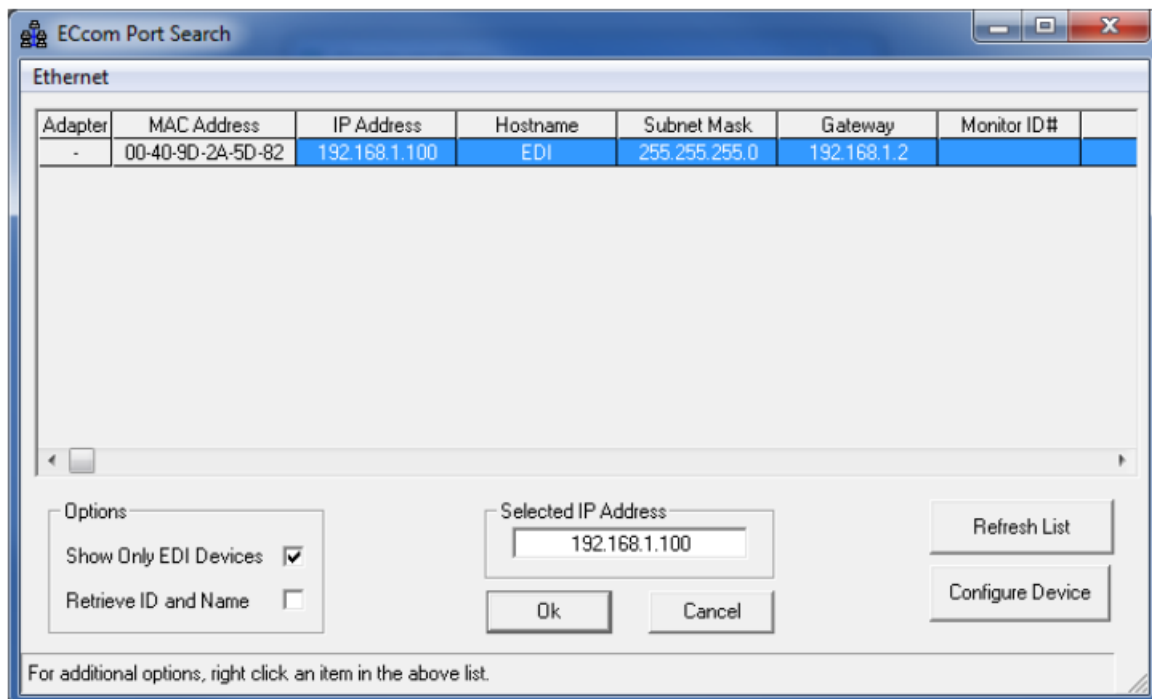
Operation of the ECom software package is described in EDI ECom Software Operations Manual and will not be covered in this manual. The EDI ECom software is available at no charge from the EDI web site at www.EDITraffic.com.

The SEARCH function (Menu: Setup / Comm Port / Settings – Search button) can be used to obtain a list of monitors connected to the LAN network port. The Search function runs on any system capable of sending multicast IP/UDP packets on a network. Search allows ECom to identify LAN enabled EDI monitors attached to a network by sending out a

multicast packet. The monitors respond to the multicast packet and identify themselves to the ECom program.

Note that this function is limited to a small number of monitors on the network and is primarily intended for use in a direct connect application where only one monitor is discovered.

The Show Only EDI Devices check box will cause ECom to filter the search responses to only those network devices that are configured as EDI monitors (Port Name = EDI). The Monitor ID can also be displayed. If the Retrieve ID and Name box is checked, the Monitor ID and Monitor Name will be retrieved from each identified monitor. Checking this box will slow the Search function dramatically.



Eberle Design Ethernet Port LAN SEARCH FUNCTION

Once a monitor has identified itself, the network configuration parameters may be modified if necessary by right clicking on the table entry or selecting the Configure Device button. This provides a mechanism for configuring the IP address, subnet mask, and default gateway of the monitor port. Note that the network parameters are accepted only in decimal notation; hex and octal digits are not allowed.

Configure Device

Monitor ID:

Monitor Name:

Description:

MAC Address:

Host Name:

☒ DHCP Enabled

IP Address:

Subnet Mask:

Gateway:

DNS Servers:

TCP Cmd Port:

TCP Data Port:

Eberle Design Ethernet Port Lan Configure

Section 3: Browser Method

The network parameters of the Ethernet port can be viewed and configured using a standard internet browser program.

3.1 IP ADDRESS SERVER FUNCTION

The monitor Ethernet port can automatically provide the PC with an IP network address when the PC Ethernet Adaptor is configured for DHCP (“Obtain an IP address automatically”). This mode uses a direct connection network cross-over cable between the monitor Ethernet port and a PC. With the PC Ethernet Adaptor configured for DHCP, the PC will receive a temporary IP address directly from the monitor Ethernet port when the two devices are first connected.

Once the PC has received an IP address, the browser can be opened to view the monitor configuration web page. Enter the monitor Ethernet port IP address (factory default=192.168.1.100) or the monitor Ethernet port Host Name (factory default= http://EDI- TCP) into the browser address bar. The monitor Ethernet port should respond with the Overview page (Section 4.1).

3.1.1 DETERMINING THE MONITOR ETHERNET PORT IP PROGRAMMED ADDRESS

The factory default monitor Ethernet port IP address is “192.168.1.100”. If the IP address has been changed during installation, and the programmed IP address of the monitor Ethernet port is not known, it can be determined by the following process:

1. Once the PC has received an IP address from the monitor Ethernet port address server (Section 3.1), use the Windows command line “IPCONFIG /ALL” to determine the resulting PC network adaptor IP address.
2. The programmed monitor IP address will be listed as the “DCHP Server” address. For example:
DHCP Server 192.168.1.100

Note: The received IP address of the PC will be determined by the Offered IP Address field of the DHCP settings, see section 4.7. The Offered IP Address will be 192.168.1.253 by default.

3.1.2 DETERMINING THE MONITOR ETHERNET PORT IP ADDRESS USING ECCOM

The IP address of the monitor may also be determined using the EDI ECcom software, refer to the LAN Search Function described in Section 2.1 of this manual.

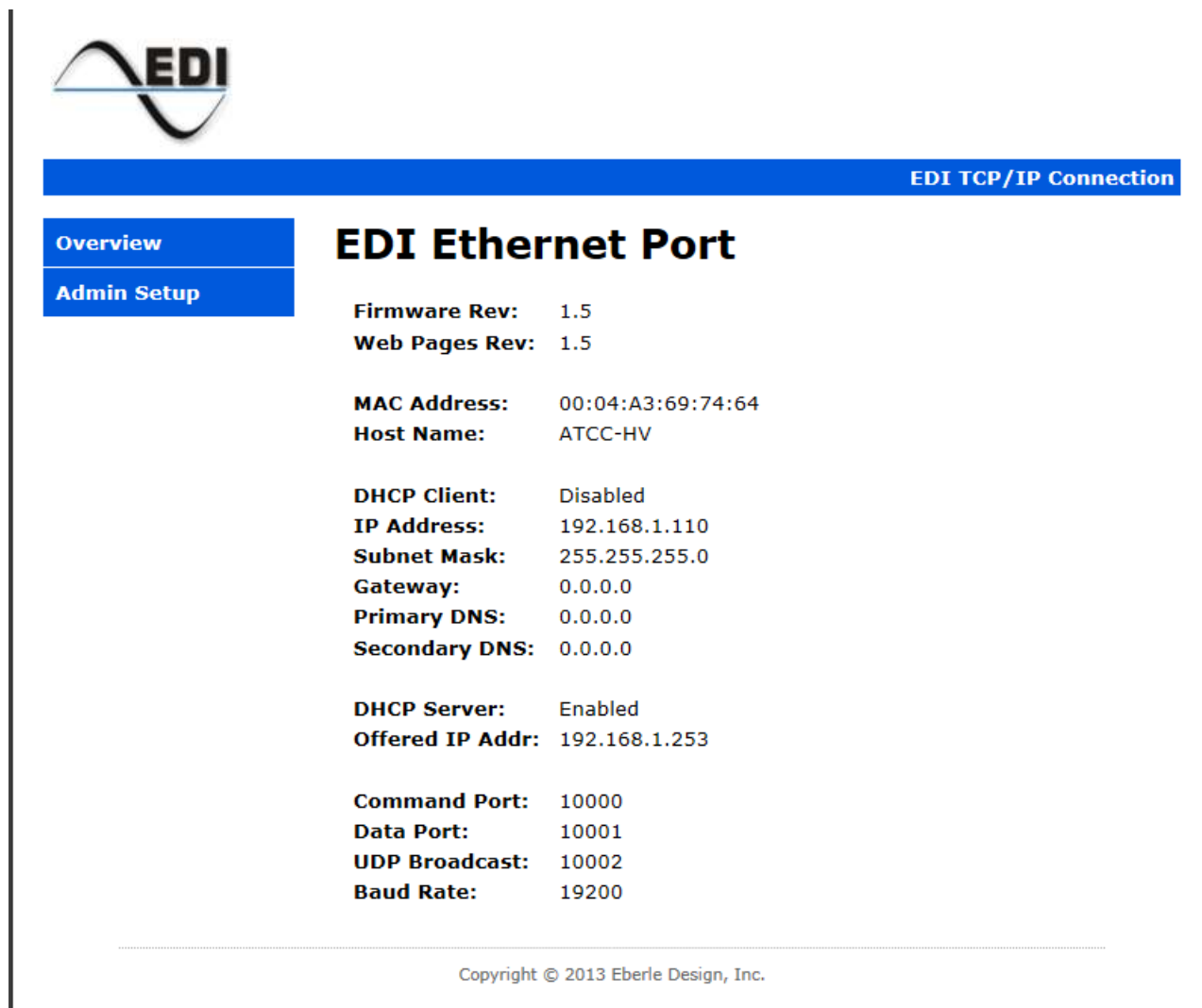
3.2 DIRECT CONNECT MODE

If DHCP mode is not set on the PC Ethernet Adaptor then the PC must be configured onto the same subnet as the monitor Ethernet port in order to connect with a browser. Once the PC is set to the monitor Ethernet port subnet range then enter the monitor Ethernet port IP address (factory default=192.168.1.100) or the monitor Ethernet port Host Name (factory default= http://EDI-TCP) into the browser address bar. The monitor Ethernet port should respond with the Overview page (Section 4.1).

Section 4: Browser Web Pages

Once a connection is made with the PC browser, the following web pages will be provided by the monitor Ethernet port. These pages can then be used to configure the monitor Ethernet port to the field application requirements.

4.1 OVERVIEW PAGE



EDI

EDI TCP/IP Connection

Overview

Admin Setup

EDI Ethernet Port

Firmware Rev: 1.5
Web Pages Rev: 1.5

MAC Address: 00:04:A3:69:74:64
Host Name: ATCC-HV

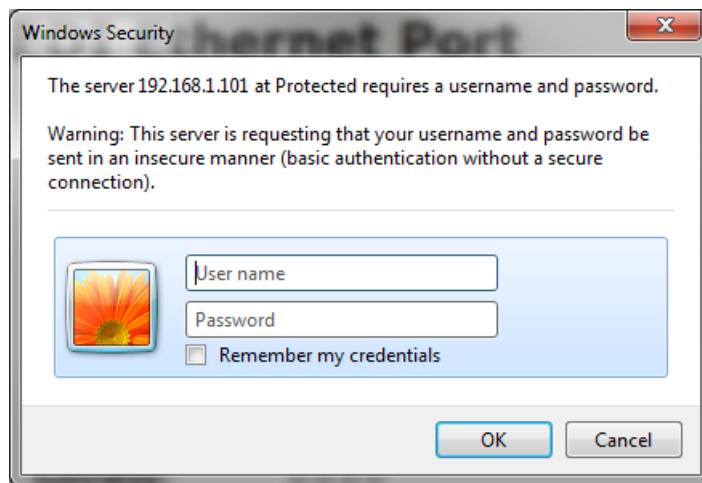
DHCP Client: Disabled
IP Address: 192.168.1.110
Subnet Mask: 255.255.255.0
Gateway: 0.0.0.0
Primary DNS: 0.0.0.0
Secondary DNS: 0.0.0.0

DHCP Server: Enabled
Offered IP Addr: 192.168.1.253

Command Port: 10000
Data Port: 10001
UDP Broadcast: 10002
Baud Rate: 19200

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To configure the monitor Ethernet port network parameters select the Admin Setup menu item from the Navigation menu on the left side of the page.



Ethernet port Admin Setup

The configuration settings of the monitor Ethernet port can be password protected using the Authentication page, Section 4.8.). If no password has been assigned then just click OK.

4.2 NETWORK SETTINGS PAGE



EDI TCP/IP Connection

Overview

Network Settings

TCP/UDP Ports

Comm Settings

NTP Server

DST Settings

Authentication

Network Settings

This page allows the configuration of the network settings.

CAUTION: Incorrect settings may cause loss of network connectivity. Make sure settings have been entered correctly before clicking on the "Save Settings" button.

Enter new network configuration settings below:

Host Name:	<input type="text" value="EDI-TCP"/>
	<input type="checkbox"/> Enable DHCP
IP Address:	<input type="text" value="192.168.1.100"/>
Subnet Mask:	<input type="text" value="255.255.255.0"/>
Gateway:	<input type="text" value="0.0.0.0"/>
Primary DNS:	<input type="text" value="0.0.0.0"/>
Secondary DNS:	<input type="text" value="0.0.0.0"/>
	<input type="button" value="Save Settings"/>

Eberle Design Ethernet Port NETWORK SETTINGS PAGE

In a static IP address mode, only the IP Address and Subnet Mask fields are required. A Gateway may also be supplied if needed. The DNS fields are typically only needed when the Time Server function is enabled (see NTP Server page, Section 4.5).

If the monitor Ethernet port is to obtain the IP address automatically from a network DHCP server instead of using a static IP address, click the Enable DHCP check box. Note that a DHCP server must be available on the local network.

Click the Save Settings button after entering the desired parameters. If the parameters are valid the Settings Saved page will be displayed.



EDI TCP/IP Connection

Overview

Network Settings

TCP/UDP Ports

Comm Settings

NTP Server

DST Settings

Authentication

Settings Saved

Settings have been saved. The EDI TCP Port needs to be restarted for changes to take effect. Restarting of the EDI TCP Port will not affect operation of the monitor. You may restart now or make other changes before restarting the port.

Restart Now

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Eberle Design Ethernet Port Save Settings Image

For the network settings to take effect the TCP Port will need to be restarted. Click on the Restart Now button and the EDI TCP Port restarted screen will be displayed.

**Overview****Network Settings****TCP/UDP Ports****Comm Settings****NTP Server****DST Settings****Authentication**

EDI TCP Port restarted

The EDI TCP Port has restarted to configure itself with your new settings.

Your unit is now located at: <http://EDI-TCP/> (192.168.1.100)

Reconnection Instructions

1. Did you change the hostname, or IP?

It is necessary to clear the address caches in your web browser and OS. From the command prompt in Windows, enter "nbtstat -R" to clear the hostname cache, close your current web browser, open a new web browser, and then try to access the web address above.

2. Did you try the IP address?

Try accessing the web page at the IP address specified. (ex: enter "http://192.168.1.100/" into your browser). If this fails, then the IP address you set is not reachable. Try the step below.

3. Still not working?

You can restore the EDI TCP Port to factory defaults by installing the REBOOT jumper and powering up the unit, then removing the REBOOT jumper and again power up the unit.

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Eberle Design Ethernet Port restarted screen

Once the EDI TCP Port restarted screen is displayed a short delay will be needed for the PC to reestablish the connection to the monitor Ethernet port. Note: The monitor Ethernet port will restart in a few seconds, however the PC may require 5 to 30 seconds for the connection to be reestablished. The PC may also require its Ethernet port to be reset. This can be accomplished by disconnecting the Ethernet cable from the PC for a few seconds and then reconnecting the cable if needed.

4.3 TCP / UDP PORTS PAGE

The Command Port, Data Port, and UDP Broadcast port settings should not be changed unless network requirements dictate other settings. The Data Port field (factory default=10001) must always match the IP PORT setting of the ECcom program.



Overview

Network Settings

TCP/UDP Ports

Comm Settings

NTP Server

DST Settings

Authentication

TCP/UDP Ports

This page allows the configuration of the TCP and UDP ports which are used to communicate with the PC.

CAUTION: These settings should not be changed unless a known conflict exists between this port and another application on the PC. An incorrect setting will prevent communication with the PC. If a change is necessary, the PC must also be changed to match the port settings of this device.

Enter new port settings below:

Command Port:	<input type="text" value="10000"/>
Data Port:	<input type="text" value="10001"/>
UDP Broadcast:	<input type="text" value="10002"/>
<input type="button" value="Save Settings"/>	

Communications

Port Select

☐ EIA-232 ☒ LAN Rx Timeout sec

EIA-232 Port

Baud Rate: ☐ 1200 ☐ 2400 ☐ 4800 ☒ 9600

Parity: ☐ None ☒ Even ☐ Odd

COM Port Number: COM

Options: DTR Enable ☐

LAN Port

IP Address: Search

IP Port: Test

OK Cancel Default

4.4 COMM SETTINGS PAGE

The Baud Rate setting must not be changed from the factory default 19200 setting. This field is intended for other applications beyond the monitor Ethernet port.



Overview

Network Settings

TCP/UDP Ports

Comm Settings

NTP Server

DST Settings

Authentication

Comm Settings

This page allows the configuration of the internal connection between the EDI TCP Port and the monitor.

CAUTION: This setting should not be changed unless the monitor configuration has also been changed. An incorrect setting will prevent communication with the monitor.

Enter new comm settings below:

Baud Rate:	19200 ▼
<input type="button" value="Save Settings"/>	

Eberle Design Ethernet Port COMM SETTINGS PAGE

4.5 NTP SERVER PAGE

The NTP Server parameters are used to configure the Simple Network Time Protocol (SNTP) service. When this service is enabled, it will synchronize the monitor time clock with the time received from a time server. A time server must be connected to the local network or access to a time server on the WEB must be provided.



Overview

Network Settings

TCP/UDP Ports

Comm Settings

NTP Server

DST Settings

Authentication

NTP Server Settings

This page allows the configuration of the NTP (Network Time Protocol) Server settings. The specified time server is used as a time base for the Monitor. Enter your time zone as an offset to UTC (Coordinated Universal Time). Changing Leap Seconds adjusts the number of seconds reported from a time server.

Time Zones: PST = -8, MST = -7, CST = -6, EST = -5.

Note: Time is requested from the time server whenever the "Save Settings" button is pressed or the Query Interval expires. For optimal operation, the Query Interval should be set to less than 12 hours.

Last update from a time server: *** Waiting for time server... ***

Enter new time server settings below:

NTP Enable:	<input checked="" type="checkbox"/> Query Time Server
Time Zone:	<input type="text" value="-7"/> Hours
Leap Seconds:	<input type="text" value="3"/> Seconds
NTP Server:	<input type="text" value="north-america.pool.ntp.org"/>
NTP Port:	<input type="text" value="123"/>
Query Interval:	<input type="text" value="10"/> Minutes
Retry Interval:	<input type="text" value="14"/> Seconds
Query Timeout:	<input type="text" value="6"/> Seconds
Update Monitor:	<input checked="" type="checkbox"/> Update Monitor's Time
<input type="button" value="Save Settings"/>	

Eberle Design Ethernet Port NTP SERVER PAGE

Leap seconds are changed occasionally by IERS. The value of 3 seconds is accurate as of 2013. If the time from the network time server seems to be off by a second or two, this parameter can be adjusted to compensate. The NTP Server entry may be the name or the IP address of the time server. The Query Interval is the time between queries to the time server. Query Timeout is the amount of time to wait for a reply from the time server. Retry Interval is the amount of time to wait before sending one query after a failed attempt to contact the time server. When the Update Monitor's Time setting is checked, the monitor time clock is updated each time that there is a successful reply from the time server.

4.6 DST SETTINGS

When enabled, the DST Settings are used to configure a Daylight Savings Time adjustment to the time from a time server. Therefore, the NTP Server must be enabled before these settings can have an effect.



Overview

Network Settings

TCP/UDP Ports

Comm Settings

NTP Server

DST Settings

Authentication

DST Settings

This page allows the configuration of Daylight Savings Time settings.

Set Week to the week of the month then set Day = day of the week. Set Week = 5 to set the last week of the month. To enter a day of the month, set Week = 0 then set Day = day of the month. Note: These DST settings apply only to time from an NTP server and do not affect DST settings in the monitor.

Local time: *** Waiting for time server... ***

Enter new daylight savings time settings below:

DST Enable:	<input checked="" type="checkbox"/> Daylight Savings Time
DST Offset:	<input type="text" value="60"/> Minutes
Starting Date:	Mar, 2nd Sun at 2 AM
Month (1-12)	<input type="text" value="3"/>
Week (1-5, 0)	<input type="text" value="2"/>
Day (1-7, 1-31)	<input type="text" value="1"/>
Hour (0-23)	<input type="text" value="2"/> Standard Time
Ending Date:	Nov, 1st Sun at 1 AM
Month (1-12)	<input type="text" value="11"/>
Week (1-5, 0)	<input type="text" value="1"/>
Day (1-7, 1-31)	<input type="text" value="1"/>
Hour (0-23)	<input type="text" value="1"/> Standard Time
<input type="button" value="Save Settings"/>	


Eberle Design Ethernet Port DST SETTINGS

DST Offset is the number of minutes to adjust Standard Time when Daylight Savings Time is in effect. The Starting and Ending dates specify when to begin applying the DST Offset, and when to stop applying the offset. The Month is the month of the year (1 to 12). Week specifies which week of the month that DST starts and ends. 1 st through 4 th weeks are specified as 1 to 4. Week 5 specifies the last week of the month. When Week is set to zero, Day specifies the day of the month. When Week is not equal to zero, the Day specifies the day of the week with Sunday equal to one, and Saturday equal to seven. Hour equals the hour of the day to start or end DST with midnight equal to zero. The Starting Date and Ending Date fields will be updated after the Save Settings button is selected. At the time this manual was written, the default Daylight Savings Time settings are for the United States as shown above. DST starts on the 2 nd Sunday in March at 2 AM and ends on the 1 st Sunday in November at 1 AM Standard time (2 AM DST).

4.7 DHCP SERVER

The DHCP Server parameters configure the single address DHCP function of the Ethernet port. The monitor Ethernet port can automatically provide the PC with an IP network address when the PC Ethernet Adaptor is

configured for DHCP ("Obtain an IP address automatically"). With the PC Ethernet Adaptor configured for DHCP, the PC will receive a temporary IP address directly from the monitor Ethernet port when the two devices are first connected.



EDI TCP/IP Connection

Overview

Network Settings

TCP/UDP Ports

Comm Settings

NTP Server

DST Settings

DHCP Server

Authentication

DHCP Server

This page allows the configuration of the DHCP server (Dynamic Host Configuration Protocol).

The IP address offered to a connecting PC needs to be an unused IP address in the local network. When more than one EDI Ethernet device is attached, each EDI device should offer its own unique IP address so that a conflict cannot occur.

CAUTION: Disabling the DHCP Server will prevent a direct connection to a PC with DHCP enabled. The PC will have to be configured manually using a static IP address.

Enter the DHCP server configuration below:

Note: The Subnet mask is used to combine the most significant octets of the IP address with the least significant octets of the Leased IP field to create the offered IP address.

DHCP Server:

☒ Enable DHCP Server

IP Address:

192.168.1.100

Subnet Mask:

255.255.255.0

Leased IP:

Offered IP Addr:

192.168.1.253

Save Settings

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Eberle Design Ethernet Port DHCP SERVER

The Leased IP parameter determines the IP address to be offered to the PC. The Subnet Mask is used to combine the most significant octets of the IP Address with the least significant octets of the Leased IP field to create the Offered IP Address.

4.8 AUTHENTICATION PAGE

The Authentication parameters are used to configure the Username and Password fields if password protection is desired. The Password field is case sensitive. Only one Username is supported.

**Overview****Network Settings****TCP/UDP Ports****Comm Settings****NTP Server****DST Settings****Authentication**

Authentication

This page allows the configuration of username and password for protected forms.

Username and Password must be printable characters. A space between words is allowed. Leading and trailing spaces are ignored.

Username:	<input type="text"/>
Password:	<input type="password"/>
Re-enter:	<input type="password"/>
<input type="button" value="Save Settings"/>	

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Eberle Design Ethernet Port AUTHENTICATION PAGE

If a Username and Password have not been saved then no entry is required. To remove a previously saved Username and Password, clear all fields and click Save Settings.

Section 5: Factory Defaults

5.1 DEFAULTS

The factory default parameters of the monitor Ethernet port are as follows:

DHCP Client	Disabled
IP Address	192.168.1.100
Subnet Mask	255.255.255.0
Gateway	0.0.0.0
Command Port Number	10000
Data Port Number	10001
Host Name	EDI-TCP
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0
NTP Enable	Disabled
DHCP Server	Enabled
Leased IP	255.255.255.253

5.2 RESET TO FACTORY DEFAULT

The monitor Ethernet port can be set back to the Factory Default values of Section 5.1 using the following method:

1. On the Ethernet daughter board of the monitor, locate the two-pin header labeled "REBOOT".
2. Short the two-pin header pins with a jumper and cycle power on the monitor (Off to On to Off).
3. Remove the jumper.

Note: While the REBOOT jumper is installed a warning message will be displayed on the Web pages.



EDI TCP/IP Connection

Overview

Admin Setup

EDI Ethernet Port

*** WARNING ***

REBOOT jumper is installed!
Remove jumper **now** to allow normal operation to occur.

Firmware Rev: 1.4.0
Web Pages Rev: 1.4

MAC Address: 00:04:A3:00:00:31
Host Name: EDI-TCP

DHCP Client: Disabled
IP Address: 192.168.1.100
Subnet Mask: 255.255.255.0
Gateway: 0.0.0.0
Primary DNS: 0.0.0.0
Secondary DNS: 0.0.0.0

DHCP Server: Enabled
Offered IP Addr: 192.168.1.253

Command Port: 10000
Data Port: 10001
UDP Broadcast: 10002
Baud Rate: 19200

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Eberle Design Ethernet Port User RESET TO FACTORY DEFAULT

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