## **CNOE**

**IP Address Configuration** 

## Introduction

The CNOE comes with a default IP address of 10.10.10.10. A PC on the network running Windows ME/2000/XP can very easily add an additional IP address to an existing adapter, and configure a new IP address for the CNOE using RPCSW32. RPCSW32 should be installed from the CD or downloaded from www.niobrara.com.

## Set Windows IP to the CNOE's Default IP Subnet

In the Control Panel of Windows there is an icon for Network Connections (See Figure 1). Double-click the Network Connections icon.

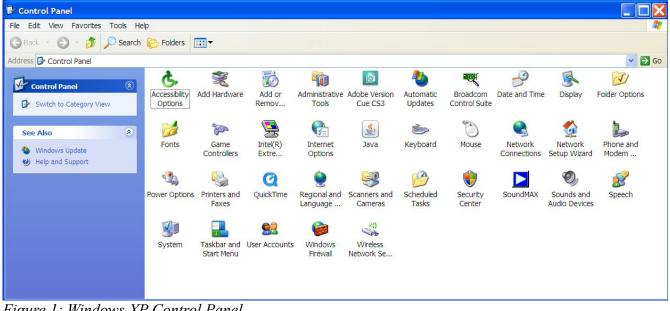


Figure 1: Windows XP Control Panel.

The Network Connections window will show various network connections and adapters for the computer being used. There may be more than one adapter depending on the system. Right-click the icon which represents the adapter connecting to the CNOE, then select Properties (See Figure 2).

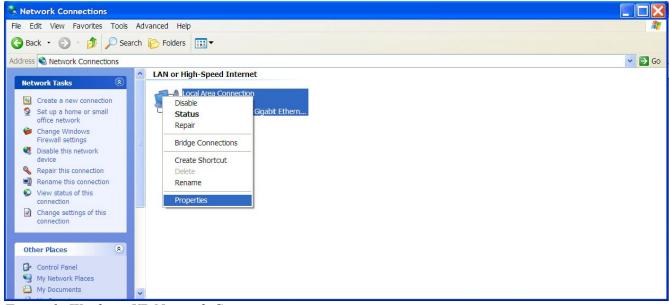


Figure 2: Windows XP Network Connections

In the Local Area Connection Properties window find Internet Protocol (TCP/IP). Select Internet Protocol (TCP/IP) and click the Properties button (See Figure 3).

eneral	Authentication	Advanced	
Connec	t using:		
<b>B</b>	Broadcom Neť	Xtreme Gigabit Ethernet	ft Configure
This co	nnection uses t	the following items:	
v 8	Network Monit	or Driver	^
		vanced Server Program	n Driver
V 8	Internet Protoc	ol (TCP/IP)	~
<			>
	Install	Uninstall	Properties
Desci	ription		
area		rol Protocol/Internet Prot col that provides commu cted networks.	
		ation area when connec connection has limited	
_			

*Figure 3: Windows XP Local Area Connection Properties.* 

In the Internet Protocol (TCP/IP) Properties window click the Use the following IP address (See Figure 4). Type in an IP address of 10.10.10.XX. XX must be some number between 0 and 255, and must not be 10. 88 is used in the case below. Subnet mask should be 255.255.255.0. It is not necessary to change the Default gateway or the DNS server addresses. Click Ok. Now the PC is set to the same subnet as the CNOE.

ternet Protocol (TCP/IP) Prop	erties
General	
	itomatically if your network supports this isk your network administrator for the
🔿 Obtain an IP address automati	ically
OUse the following IP address:	
IP address:	10 . 10 . 10 . 88
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	2 2 2
Obtain DNS server address at	utomatically
OUSE the following DNS server:	addresses:
Preferred DNS server:	
Alternate DNS server:	
	Advanced
	OK Cancel

*Figure 4: Windows XP Internet Protocol (TCP/IP) Properties.* 

## Setup CNOE using RPCSW32.exe

Double-click RPCSW32 icon to start the RPC software (See Figure 5).



The RPC software is DOS based, so it will open in a terminal window (See Figure 6). The first time the software is started, there will be an error which reads "Can't locate setup file." This happens because there is no setup file yet. Use the [F10] key to clear the error.

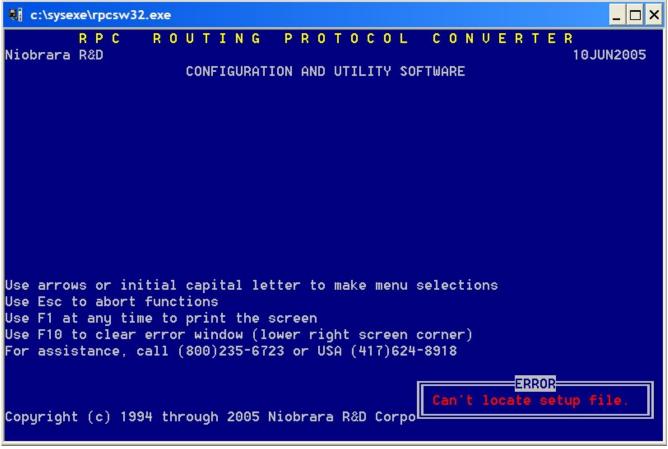


Figure 6: RPCSW32.exe

Once the error is cleared the communications configuration screen will appear (See Figure 7). Use the arrow keys to change the selection. Use the [Space Bar] to cycle through the choices in each selection.

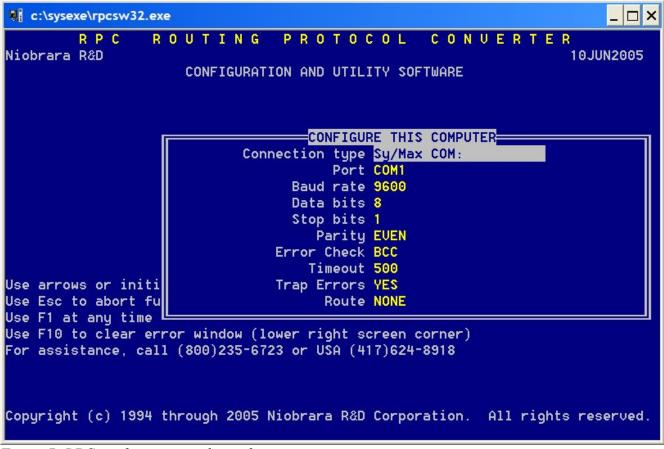


Figure 7: RPC configuration utility software.

Press the [Space Bar] to change the Connection type from Sy/Max COM: to Modbus TCP (See Figure 8). Host should be set to the current address of the CNOE, which in this case is 10.10.10.10. Port should be 502. Leave Timeout leave at 500. Leave Trap Errors at YES. Index should be 255. Press [Enter].

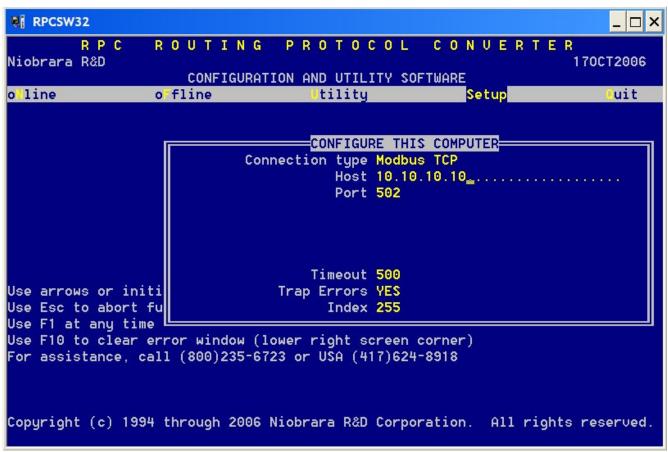


Figure 8: Using RPC software to setup the Connection type and Host IP address.

RPCSW32		_ 🗆 ×
R P C R Niobrara R&D	OUTING PROTOCOL CONVERTER 1700 CONFIGURATION AND UTILITY SOFTWARE	CT2006
oline o	fline Utility <mark>Setup</mark>	uit
	CONFIGURE THIS COMPUTER Connection type Modbus TCP Host 10.10.10 Port 502 Timeout 500	
Use arrows or initi	Trap Errors Y <mark>ES</mark>	
Use Esc to abort fu		
	ror window (lower right screen corner) 1 (800)235-6723 or USA (417)624-8918	served.

Press [N] when asked to save this configuration to a startup file (See Figure 9).

Figure 9: Write setup to startup file?

Arrow over to the oFfline menu or press the [F] key. Arrow down to Edit configuration in memory or press the [E] key (See Figure 10).

RPCSW32				_ 🗆 ×
<mark>R P C</mark> Niobrara R&D		<b>PROTOCO</b>	) L CONVERTE SOFTWARE	R 170CT2006
o <mark>l</mark> line	oFfline	<pre>Utility</pre>	Setup	uit
Use arrows or in Use Esc to abort Use F1 at any ti Use F10 to clear For assistance, Copyright (c) 19	edit Modbus ro edit Auto scar edit ethernet edit TCP routi Send memory to Fetch memory f Print configur Delete configu Copy offline t Quit offline f	ory to disk tion in memory uting table I/O scan table ng module from module ration in memory ration file to module flash functions	u selections n corner) 1624-8918 prporation. All right	s reserved.

Figure 10: RPC oFfline menu

Use this screen to set up the Ethernet port. Use the arrow keys to move the selection bar to the Ethernet port. Drop is not used, and may be left at zero. Ethernet cannot be changed. Protocol should be Modbus/TCP. IP Address, Subnet Mask, and Default Gate addresses should be set to match the network (See Figure 11 for example settings). The rest of the values may be left as they are. Press the [Escape] key to exit this screen and return to the main menu.

R P C R O U T I N G P R O T O C O L C O N U E R T E R Niobrara R&D 170CT200 CONFIGURATION AND UTILITY SOFTWARE Press F2 for heiler ETHERNET PORT 1 PORT 2 BACKPLANE Drop 0 2 102 1 On Ethernet YES NO NO NO Protocol MODBUS/TCP DUAL SLAVE MODBUS ASCII IP Address 206.223.51.74 9600 9600 Subnet Mask 255.255.255.0 EUEN EUEN Default Gate 206.223.51.1 8 7
CONFIGURATION AND UTILITY SOFTWAREPress F2 for he.ETHERNETPORT 1PORT 2BACKPLANEDrop021021On EthernetYESNONONOProtocolMODBUS/TCPDUAL SLAVEMODBUS ASCIIIP Address206.223.51.7496009600Subnet Mask255.255.255.0EVENEVEN
ETHERNETPORT 1PORT 2BACKPLANEDrop021021On EthernetYESNONONOProtocolMODBUS/TCPDUAL SLAVEMODBUS ASCIIIP Address206.223.51.7496009600Subnet Mask255.255.255.0EVENEVEN
On Ethernet YES NO NO NO Protocol MODBUS/TCP DUAL SLAVE MODBUS ASCII IP Address 206.223.51.74 9600 9600 Subnet Mask 255.255.255.0 EVEN EVEN
Protocol MODBUS/TCP DUAL SLAVE MODBUS ASCII IP Address 206.223.51.74 9600 9600 Subnet Mask 255.255.255.0 EVEN EVEN
IP Address 206.223.51.74 9600 9600 Subnet Mask 255.255.255.0 EVEN EVEN
Subnet Mask 255.255.255.0 EVEN EVEN
Default Gate 206.223.51.187
Buffer Limit 32 16 16
MBAP TCP Port 502
TCP Backoff 100
Downstream Timeout 1100
Quiet Timeout 600
IP Framing Ethernet II
BOOTP/DHCP OFF/OFF
MAC Address 00-00-00-ED-00

Figure 11: Example settings for IP, Subnet Mask and Default Gate Addresses

Navigate to oFfline menu, choose Send memory to module, and press [Enter] (See Figure 12).

RPCSW32				_ 🗆 ×
<mark>R P C</mark> Niobrara R&D		PROTOCO	) L CONVERTE 'SOFTWARE	R 170CT2006
o line	oFfline	Utility	Setup	uit
Use arrows or in Use Esc to abort Use F1 at any ti Use F10 to clear For assistance, Copyright (c) 19	edit Modbus ro edit Auto scan edit ethernet edit TCP routi end memory to Fetch memory f Print configur Delete configu Copy offline t Quit offline f	ory to disk tion in memory table I/O scan table ng module rom module ation in memory ration file o module flash unctions 723 or USA (417)	u selections n corner) 1624-8918 orporation. All righ	ts reserved.

Figure 12: Send memory to module.

The screen will read "Sending port 0" (See Figure 13). The software then loses communications with the CNOE. This happens because the first port address to change is the Ethernet port. Press [Esc].

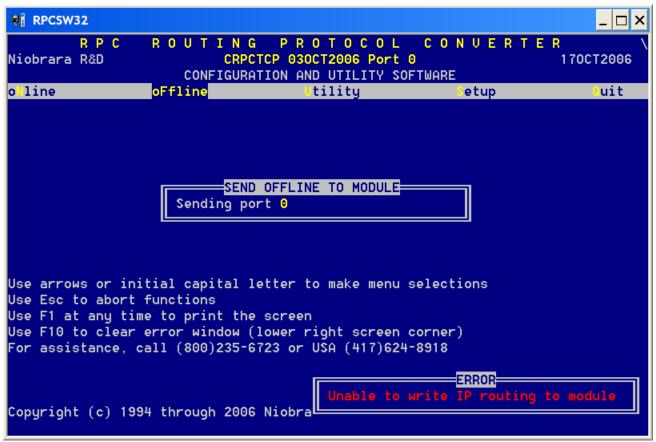


Figure 13: Error received on Send memory to module.

Set the PC's TCP/IP address back to its original configuration. Then, using RPC software, go to Setup menu, then Serial communications, and change the Host to the value set in the offline setup (See the example in Figure 14). To ensure the rest of the setup is sent to the CNOE, Navigate to oFfline menu, choose Send memory to module, and press [Enter].

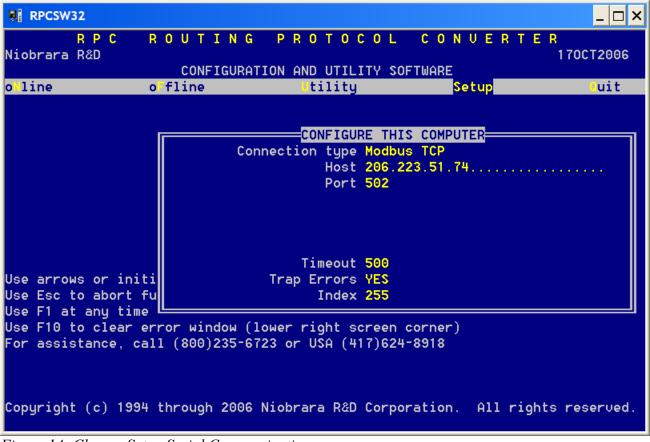


Figure 14: Change Setup Serial Communications

The CNOE's address is now configured. Once all the configuration is complete, write the configuration to EEPROM from the utility menu (See Figure 15).

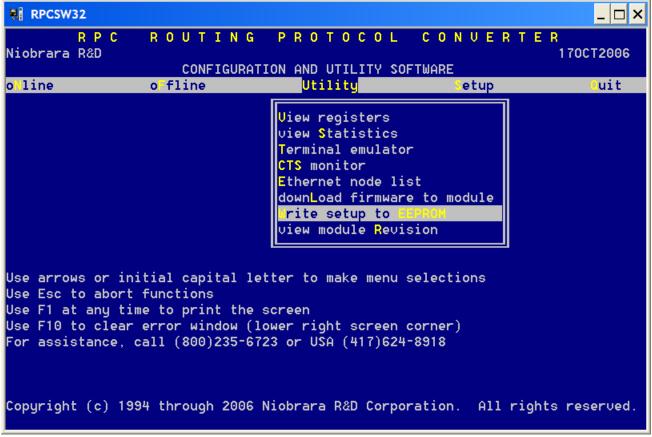


Figure 15: Write setup to EEPROM