## 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 <u>www.niobrara.com</u>.

## 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).

Local	Area Conne	ction Properties	? 🔀
General	Authentication	Advanced	
Connec	ct using:		
<b>E</b>	Broadcom NetX	(treme Gigabit Ethernet f	Configure
This co	nnection uses th	ne following items:	
	Network Monito	or Driver	^
<b>N</b> 9	Broadcom Adv	anced Server Program Dr	iver
	Internet Protoco	bl (TCP/IP)	
<			>
	Install	Uninstall	Properties
Desci	ription		
Trar area dive	nsmission Contro a network protoc erse interconnec	ol Protocol/Internet Protoco ol that provides communic ted networks.	ol. The default wide ation across
Sho	w icon in notifica	ation area when connected	
Voti	fy me when this	connection has limited or n	no connectivity
		Oł	K Cancel

*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.

You can get IP settings assigned at capability. Otherwise, you need to a appropriate IP settings.	utomatically if your network supports this isk your network administrator for the
Obtain an IP address automat	ically
OUse the following IP address:	
IP address:	10 . 10 . 10 . 88
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	
Obtain DNS server address a	utomatically
OUse the following DNS server	addresses:
Preferred DNS server:	r = r = r
Alternate DNS server:	
	Advanced

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 console program, 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	Index 255	
Use F1 at any time Use F10 to clear ern For assistance, cal: CONFIR Write setup to st	ror window (lower right screen corner) L (800)235-6723 or USA (417)624-8918 Lartup file? Lartup file? Lobrara R&D Corporation. All rights res	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	ROUTIN CONFIGUE	G 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, c Copyright (c) 195	ead from dis Write from me Edit configur edit Modbus r edit Auto sca edit ethernet edit TCP rout Send memory t Fetch memory t Fetch memory Delete configu Copy offline Quit offline	sk to memory emory to disk ration in memory routing an table : I/O scan table ring co module from module from module from module from tile to module flash functions r6723 or USA (417)	u selections n corner) 624-8918 rporation. 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.

RPCSW32						_ 🗆 ×
R P C Niobrara R&D	R O U T I N CONFIGUR	G PROT ATION AND UT	OCOL	C O N U	ERTER Press F2	170CT2006 for help.
	ETHERNET	PORT 1	PORT 2	BACKPL	ANE	
Drop	Θ	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	EVEN	EVEN			
Default Gate	206.223.51.1	8	7			
		_1	1			
Buffer Limit	32	16	16			
MBAP TCP Port TCP Backoff Downstream Tim Quiet Timeout IP Framing BOOTP/DHCP MAC Address	502 100 eout 1100 600 Ethernet II OFF/OFF 00-00-00-00-ED-0	0				

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	R O U T I N G CONFIGURAT	P R O T O C O	L CONVERTER Software	170CT2006
o line	oFfline	Utility	<mark>S</mark> etup	uit
Use arrows or in Use Esc to abort Use F1 at any ti Use F10 to clear- For assistance, c Copyright (c) 199	Read from disk Write from memo Edit configurat edit Modbus rou edit Auto scan edit ethernet I edit TCP routin end memory to Fetch memory fr Print configura Delete configur Copy offline to Quit offline fu Fall (800)235-67	to memory ry to disk ion in memory ting table /O scan table 9 module om module tion in memory ation file module flash nctions 23 or USA (417)6 Niobrara R&D Cor	u selections n corner) 24-8918 poration. All rights	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 ethernet port is the first port to change. 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 setup to EEPROM" from the "Utility" menu (See Figure 15).

RPCSW32				_ 🗆 ×
R P Niobrara R&D	C ROUTING CONFIGURATI	PROTOCOL CON AND UTILITY SC	CONVERT DFTWARE	E R 170CT2006
o <mark>N</mark> line	o fline	Utility	Setup	uit
Use arrows o Use Esc to a Use F1 at an Use F10 to c For assistan	r initial capital let bort functions y time to print the s lear error window (lo ce, call (800)235-672	View registers view Statistics Terminal emulato CTS monitor Ethernet node li downLoad firmwar rite setup to view module Revi ster to make menu screen ower right screen 23 or USA (417)624	or ist re to module EPROM ision selections corner) +-8918	
Copyright (c	) 1994 through 2006 M	lioprara R&D Corpo	pration. All rig	ghts reserved.

Figure 15: Write setup to EEPROM