CAN card Tools

URL <u>http://www.copleycontrols.com/motion/cantools/cancard/</u> contains the link to the card drivers, firmware, and CANview software.

Installing PCI CAN card

Step 1 Load CAN Card Drivers

The files CANcard.inf and copleycan.sys can be placed in a temporary file such as the desktop for locating with the Windows New Hardware Found Wizard.





Step 2 Install the CAN Card

Shutdown windows and turn the power off and Install the CAN Card.



Image of PCI CAN card installed in PC slot. Card default has jumper installed for 121 Ohms termination.



Image of CAN1 (channel 0) connected with CAN Kit DB-9 to RJ45 adapter. Note: Last node on CAN network must also have 121 Ohms termination installed.

Turn the power ON and New Hardware will be detected.



Windows will run Found New Hardware Wizard.

Found New Hardware Wizard				
	Welcome to the Found New Hardware Wizard This wizard helps you install a device driver for a herdware device.			
	C Back Next > Cancel			

Hit Next.

Found New Hardware Wizard
Install Hardware Device Drivers A device driver is a software program that enables a hardware device to work with an operating system.
This wiperd will complete the installation for this device: PCI Device A device driver is a software program that makes a hardware device work, Windows
needs driver files for your new device. To locate driver files and complete the installation click Next. What do you want the wizard to do? (* [gearch for a suitable driver for my device (recommended]
Esplay a list of the known drivers for this device so that I can choose a specific driver
<u>< ₿</u> ack <u>N</u> est> Cancel

Select Search.



Select Specify a location.

Found Nev	w Hardware Wizard	×
2	Insert the manufacturer's installation disk into the drive selected, and then click OK.	OK Cancel
	Copy manufacturer's files from: C:\Desktop\CANcardTools	Browse

Browse for the Drivers that you have placed on your PC.



If you put them on the desktop then look in the desktop folder.



Select CANcard.inf

Found New Hardware Wizard
Driver Files Search Results The wizard has finished searching for driver files for your hardware device.
The wizerd found a driver for the following device:
2 PCI Device
Windows found a driver for this device. To install the driver Windows found, click Next.
c:\documents and settings\dcrumlish\desktop\cancardtools\cancard.inf
< Back. Next > Cancel





Hit Finish.

Windows Device Manager

The Windows Device Manager can be used to view the CANcard on your PC.

🚇 Device Manager	
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🖻 🕮 CAN Cards	
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Copley Co	ntrols CAN card P	roperties		? ×
General	Driver Resource	s		
	Copley Controls C	AN card		
	Device type:	CAN Cards		
	Manufacturer:	Copley Control:	s Corp	
	Location:	PCI Slot 4 (PCI	bus 2, device 11,	, function 0)
Device status This device is working properly. If you are having problems with this device, click Troubleshooter to start the troubleshooter. Troubleshooter				
Device Use th	usage: is device (enable)			•
			ОК	Cancel

CME2 over Copley CAN Card

CME2 V4.2 or greater, available on the web, can recognize the Copley CAN card if the CAN card drivers are installed.

Step 1 Connecting Drives

Connect the CAN cable from the CAN Card to the first drive and then to any additional drives on the CAN network. Make sure the CAN card and last drive have termination installed. Set the drive node ID with switch (Xenus, AccelNet Panel, StepNet Panel, and Micro Development Kit.) or with jumpers on the signal connector. (AccelNet Micro Panel ACJ J5 +5V to IN6 bit 0 to IN9 bit 4, Xenus Micro Panel XSJ tbd)



Step 2 Connect CME2

Use CME2 tools\Communication Wizard to select CAN communication.

Communications Wizard				
Configure CAN Network				
C <u>A</u> N Card: Copley				
C <u>h</u> annel: 0				
Bit <u>R</u> ate: 1Mbit/s				
< <u>B</u> ack <u>F</u> inish <u>C</u> ancel				

Select Copley, Channel 0 (if cable connected to bottom CAN 1 port), and 1Mbit/s default.

CME2 will scan all 127 possible nodes and identify any found nodes.



CME2 will upload drive parameters and display CAN tree, CAN Network node address, and CANopen State. The CAN Configuration screen can then be used to change settings if required. See CME2 Software manual for more details.

CML and CMO with Copley CAN Card

CML 1.07.20 or greater and CMO 2.1 or greater, available on the web, can recognize the Copley CAN card if the CAN card drivers are installed. See CMO Programmers manual and CANopen Programmers manual for more details.

CAN View

The CANview is now used to download firmware to the CAN Card. The Copley CAN monitor is able to view CAN messages and perform diagnostics on the CANopen network.

View Messages

CANview Main Window		
File Tools View Help		
🖿 🥥 🕨 🗖 🗶 🟹 👘		
# Time 17817 69585458 17818 69586622 17819 69586805 17820 69587964 17821 69593762 17823 69595087 17824 69595087 17825 69596411 17826 69597575 17827 695976764 17828 69598927 17829 69599089 17830 69600257	ID Value 0x00000581 SDO<-1: 0x00000601 SDO>1: 0x00000581 SDO<-1: 0x00000581 SDO<-1:	OK Start block upload of Serial command P Serial command handler is 0x000100 set Serial command handler to 0x002d0c OK Start block upload of Serial command P start get data response get more data upload data set Serial command handler to 0x00320c OK Start block upload of Serial command P start get data response get more data
17831 59600406	0x00000581 SDO(-1:	upload data

Monitor bus

CAN Hardware Configuration
CAN Hardware CAN details Bit Rate: Tx Errors: 0 Rx Errors: 0 Open Handles: 0 Status: Port Opened Loading: 2.7% Monitor
OK Cancel

The CANview will show us the bus loading. The CAN bus can run well above 90% with no lost messages. If cables are greater than 20 meters at 1 mega bit or if stub lengths are greater than several inches, or if terminating resistors are not properly installed, we may see frame errors. (Tx, Rx, or open handles)

Network Analysis

CAN bus analyze	r	×		
Port:	Card 0, port 0	<		
Falling edge delay:	168 ns			
Rising edge delay:	170 ns			
ACK falling delay:	377 ns			
ACK rising delay:	586 ns			
Results:	Looks good	\leq		
Start Cancel				

The CANview will show us the approximate time for sending message to the furthest node and back. The results will be analyzed for good margin, low margin, or possible problem.

CAN Card Firmware

New firmware can be downloaded to the CAN card using the CANview program available on the web in the CANcardTools.zip file. New firmware will be required to take advantage of any new features.

To download firmware, select Tools\CANHardware to view the CAN Hardawre Configuration screen.

CAN Hardware Configura	tion		×
CAN Hardware	CAN details		1
	Card type:	CAN-PCI-02 - rev 2	
	Serial Number:	8066688	
	Firmware Version:	0.01.05	
	Driver Version:	unknown	
	Update Firmware	Update Driver	
OK Cance	el		

Press Update Firmware and select desired firmware.

Select firmware	file			<u>? ×</u>
Look in:	🔁 cancard	•	+ 🗈 💣 🎟	
History Desktop My Documents	acancard_0.1.05	S.ccf Type: CCF File Size: 82.9 KB		
My Computer	File name: Files of type:	cancard_0.1.05.ccf .ccf files (*.ccf)	•	Open Cancel
		- open as read-only		11.