

PCI20U Universal ARCNET® Card



Benefits

- Interfaces ARCNET with PCI and PCI-X bus computers
- Popular COM20022 ARCNET controller chip
- Enhanced software capabilities over earlier generation ARCNET controllers
- Node address switch selects one of 255 possible station addresses
- Variable data rates up to 10 Mbps utilizing the various EIA-485 transceiver options
- Supports coaxial and twisted-pair cabling including EIA-485
- Automatic configuration of I/O and interrupt
- High-speed I/O access to the COM20022
- Jumperless configuration
- NDIS driver or null stack driver in Windows
- No requirement for wait-state arbitration
- Compatible with Contemporary Controls' MOD HUB and AI series active hubs

Applications

- Data acquisition
- Machine control
- Test and measurement
- Process control
- Remote data acquisition

Since most PC motherboards have migrated from the +5 V PCI Bus to the +3.3 V PCI bus, universal voltage PCI NIMs are required, such as the PCI20U series of ARCNET network interface modules (NIMs). The PCI20U series links PCI and PCI-X bus compatible computers with the ARCNET local area network (LAN). In addition, the PCI20U series supports the PCI Add-in Card specification. Both standard height and half-height brackets are provided.

The PCI bus allows for jumperless configuration and Plug and Play operation (PnP). The module operates with either an NDIS driver or with a null stack driver in a Windows environment. DOS drivers will operate when used with our enabler software.

Since the PCI20U is a universal voltage PCI card it can be used in either a PCI-X slot or a conventional PCI slot. PCI-X is an enhancement to the original PCI Local Bus Specification, enabling devices to operate at speeds up to 133 MHz. If a PCI20U is installed into a bus capable of PCI-X operation, the clock remains at the 33 MHz frequency and other devices on that bus are restricted to using conventional PCI protocol.

The PCI20U incorporates the COM20022 ARCNET controller chip with enhanced features over the earlier generation ARCNET chips. New features include command chaining, sequential access to internal RAM, duplicate node ID detection and variable data rates up to 10 Mbps. Bus contention problems are minimized since the module's interrupt level and I/O base address are assigned through Plug and Play (PnP). There is no requirement for wait-state arbitration.

This device exploits the new features of the COM20022. This includes 10 Mbps communications utilizing the various EIA-485 transceiver options.

Each PCI20U module has two LEDs on the board for monitoring network operation and bus access to the module. It is equipped with an 8-position, general purpose DIP switch typically used to reassign the ARCNET node address without removing the module. Ultimately, the node address is configured via software so the DIP switch can also indicate user-defined functions such as data rate, cable interface, or master/slave status of the system.

There are several versions of the PCI20U ARCNET NIM. The PCI20U-CXB supports a 2.5 Mbps coaxial bus configuration usually requiring no hubs. The PCI20U-CXS supports a 2.5 Mbps coaxial star configuration. The PCI20U-TB5 supports 2.5 Mbps twisted-pair bus cabling using RJ-45 connectors. The EIA-485 models are supplied with a 3-position screw terminal connector. The PCI20U-485D supports non-backplane mode DC-coupled EIA-485. The PCI20U-485X provides non-backplane mode AC-coupled EIA-485 operation while the PCI20U-4000 supports backplane mode AC-coupled EIA-485 operation.

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Specifications**Environmental**

Operating temperature	0°C to +60°C
Storage temperature	-40°C to +85°C

Data Rates

PCI20U-CXB, -CXS, -TB5	2.5 Mbps
PCI20U-485D	10 Mbps, 5 Mbps, 2.5 Mbps, 1.25 Mbps, 625 kbps, 312.5 kbps, 156.25 kbps
PCI20U-4000, -485X	10 Mbps, 5 Mbps, 2.5 Mbps, 1.25 Mbps

Dimensions

2.50" x 4.72" (64 mm x 95 mm)

Shipping Weight

1 lb. (0.45 kg)

I/O Mapping

Requires 16 bytes of I/O space for COM20022 controller

Interrupt Lines

Supports PCI INTA

Compatibility

PCI20U series NIMs are fully compatible with all of Contemporary Controls (CC) ARCNET

products and PCI Bus computers

Regulatory Compliance

CE Mark, FCC Part 15 Class A

Transceiver Specifications

Transceiver	Description	Cable	Connectors	Cable Length		Max Nodes/ Bus Segment
				Min	Max	
-4000 ²	AC coupled EIA-485	IBM type 3	RJ-45	1.6 ft(.5m ¹)	262 ft (80 m)	8
-485D	DC coupled EIA-485	IBM type 3	screw	0	900 ft (274 m)	17
-485X	AC coupled EIA-485	IBM type 3	screw	0	700 ft (213 m)	13
-CXB	coaxial bus	RG-62/u	BNC	6 ft(2m ¹)	1000 ft (305 m)	8
-CXS	coaxial star	RG-62/u	BNC	0	2000 ft (610 m)	N/A
-TB5	twisted-pair bus	IBM type 3	RJ-45	6 ft(2m ¹)	400 ft (122 m)	8

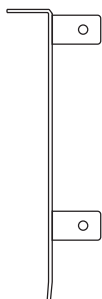
¹ This represents the minimum distance between any two nodes or between a node and a hub.² Backplane mode operation**Power Requirements**

Model	+5 V	+3.3 V	VIO
PC120U-4000	350 mA	30 mA	20 mA
PC120U-485D	350 mA	30 mA	20 mA
PC120U-485X	350 mA	30 mA	20 mA
PC120U-CXB	350 mA	30 mA	20 mA
PC120U-CXS	350 mA	30 mA	20 mA
PC120U-TB5	350 mA	30mA	20 mA

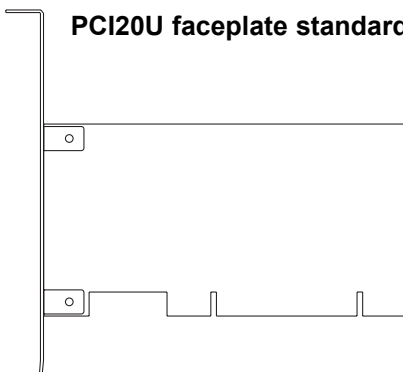
Ordering Information

Model	Description
PCI20U-4000 NIM	20022 PCI AC-coupled EIA-485 (backplane)
PCI20U-485D NIM	20022 PCI DC-coupled EIA-485 (non-backplane)
PCI20U-485X NIM	20022 PCI AC-coupled EIA-485 (non-backplane)
PCI20U-CXB NIM	20022 PCI coaxial bus
PCI20U-CXS NIM	20022 PCI coaxial star
PCI20U-TB5 NIM	20022 PCI twisted-pair bus

PCI20U faceplate (half-height)



PCI20U faceplate standard height board



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