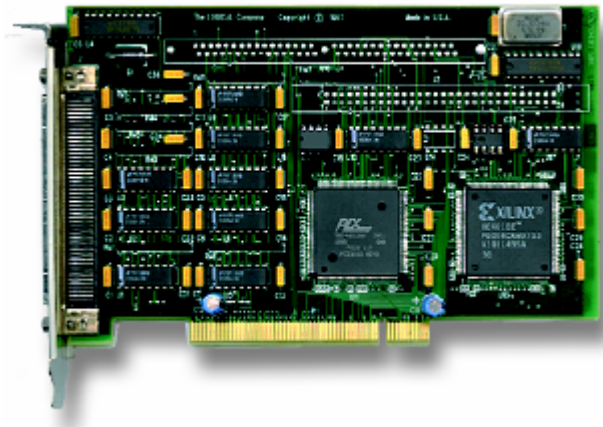


# BCI-2104

## Q-bus Adapter for the PCI Bus and PDP-11 Emulators



The BCI-2104 Q-bus Adapter enables Q-bus devices to be connected to Software Resource International's CHARON-VAX VAX emulator as well as SRI's CHARON-11 and D Bit's Ersatz11 PDP-11 emulators. The BCI-2104 supports both PIO and DMA Q-bus data transfers as well as providing support for all four Q-bus interrupt levels. BCI-2104 operation is identical to the BCI-2103 with the added feature of scatter/gather DMA support.

The BCI-2104 consists of a single slot PCI controller, a dual-width Q-bus cable adapter module, and an eight-foot shielded interconnect cable. The PCI controller is compatible with 3.3V and 5.0V PCI bus signaling. The Q-bus module installs in a Q-bus expansion chassis or user's equipment.

The BCI-2104 provides complete support for:

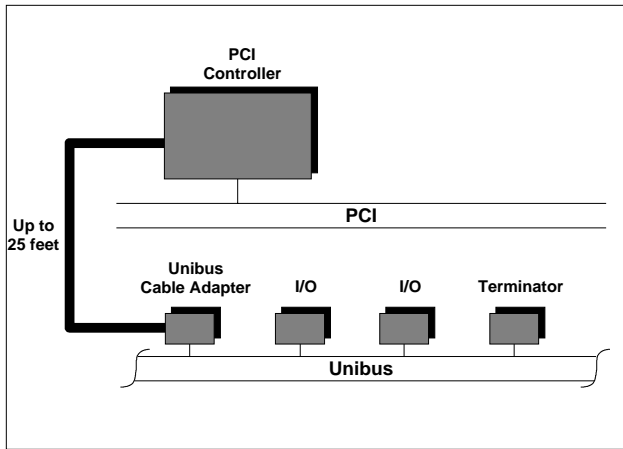
- \* Q-bus PIO data transfers including DATI, DATO, DATOB, DATIO, and DATIOB.
- \* Q-bus DMA data transfers including data word input, data word output, and data byte output.
- \* All four Q-bus interrupt levels: BIRQ4, BIRQ5, BIRQ6, and BIRQ7.

**Provides a migration path.** The BCI-2104 allows users of Q-bus systems to migrate to VAX and PDP-11 emulators and retain their existing Q-bus I/O devices without loss of function or performance.

**High performance.** Q-bus PIO and DMA data transfers occur at maximum Q-bus speeds—throughput is limited only by the Q-bus device.

**Cost savings.** The BCI-2104 provides users the choice of using lower cost, higher performance Alpha systems while retaining their existing investments in Q-bus hardware and software.

**Easy to install.** The BCI-2104 allows multiple I/O devices to be connected to a PDP-11 emulator while occupying only a single PCI slot.



## Description

### PIO Transfers

The BCI-2104 supports the five types of Q-bus PIO data transfers including DATI, DATO, DATOB, DATIO, and DATIOB. The entire Q-bus address space is available for access by a PCI host.

### DMA Transfers

The BCI-2104 provides full compatibility with the three types of Q-bus DMA data transfers including data word input, data word output, and data byte output. Single and multiple data transfers are supported.

### Interrupts

The BCI-2104 passes Q-bus interrupts to the host for service if interrupts are enabled by the host and the interrupts are higher priority than the priority established under software control. The BCI-2104 stores the 8-bit interrupt vector in an internal register that is referenced by the host to determine the interrupt service requested.

### Q-bus Termination

The BCI-2104 provides Q-bus termination for one end of the Q-bus. The user must ensure the Q-bus is terminated at the end of the Q-bus within the expansion chassis or user's equipment.

### Q-bus Parity

Q-bus parity detection and generation are not supported.

## Software Compatibility

The BCI-2104 works together with the following emulators to provide a complete software and hardware solution.

CHARON-VAX	VAX Emulator	SRI
CHARON-11	PDP-11 Emulator	SRI
Ersatz11	PDP-11 Emulator	D-Bit

## Specifications

### Physical Dimensions

PCI Controller	PCI short card, +5 volt only, measuring 6.88 in by 4.20 in (17.46 cm by 10.67 cm)
Q-bus Module	Dual-width Q-bus module, 5.19 in by 8.42 in (13.18 cm by 21.39 cm)
Adapter Panel	Double B size measuring 5.3 in by 3.3 in (13.5 cm by 8.4 cm)

Interconnect Cable 8 ft.

### Electrical

#### Power Required:

5.0 volts	3.6 amps
3.3 volts	Not used

Bus Loading 1 DC load, 2 AC loads

Bus Drive Capability 19 additional DC loads

### PCI Local Bus

Signaling*	Universal, +3.3 volt and +5 volt Addr/Data 32-bit
Clock Rate	33 MHz
Compliance	2.1

### Environmental

#### Operating Conditions:

Temperature	5° to 50° C (41° to 122° F)
Relative Humidity	20% to 80% noncondensing

#### Storage Conditions:

Temperature	-40° to 66° C (-40° to 150° F)
Relative Humidity	10% to 95% noncondensing

## Ordering Information

BCI-2104-AA	PCI controller, Q-bus module, adapter panel, 8-foot interconnect cable, flat ribbon cables, and owners manual.
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\* Revisions before A11 only provide +5 volt signaling support.

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We reserve the right to improve our products without notice.