DigiBoard Nu/Xi

Intelligent Serial Communications for the Apple Macintosh®

The DigiBoard Nu/Xi is an intelligent, high-speed communications board designed especially for the Macintosh. With both AU/X and MacOS support, the Nu/Xi provides a complete and powerful serial communication solution for the Macintosh Quadra and Apple's other NuBus-based Macintosh computers.

Built around a Motorola 68000 microprocessor, the Nu/Xi integrates seamlessly with Apple's Macintosh architecture, making multiuser access, multipoint data acquisition and factory and office automation easier, faster and more cost-effective. The Nu/Xi is available in four- and eight-port configurations and supports up to 32 industry standard RS-232 asynchronous serial ports in a single system. The number of ports depends on the number of available NuBus slots in your system. Each of these channels supports full modem control and hardware handshaking and are ideal for terminals, printers, modems, plotters, data acquisition equipment and other asynchronous serial peripherals.

The DigiBoard Nu/Xi offers the option of maintaining two synchronous serial ports on each board. With four high-speed direct memory access (DMA) channels, the board can be configured to provide two full duplex DMA synchronous channels—ideal for mainframe connections of for use with synchronous serial peripherals. The specialized cabling needed for this configuration is included with the board at no extra charge.

DigiBoard
The Smartest Connection You Can Make

Built for Speed

The DigiBoard Nu/Xi features a host of features which, in combination, make it one of the fastest and most reliable serial communications subsystems available for the Macintosh. A 12MHz Motorola 68000 microprocessor powers the board, relieving the host CPU of most of the processor-intensive overhead associated with serial communications. The board features 256Kbytes of 32-bit dual-ported RAM for data buffering. This optimized memory allows both the board's own microprocessor and the host system's CPU to read from and write to that RAM, allowing quick communications between the board and the host CPU and providing exceptionally fast data transfer rates. These capabilities are brought together into a high-performance whole by DigiBoard's own Front End Processor/Operating System (FEP/OS) code.

The synergy of these features provides serial speeds of between 50bps and 115Kbps. The FEP/OS supports and maintains speeds of 38.4Kbps across all available channels concurrently.

Firmware Features

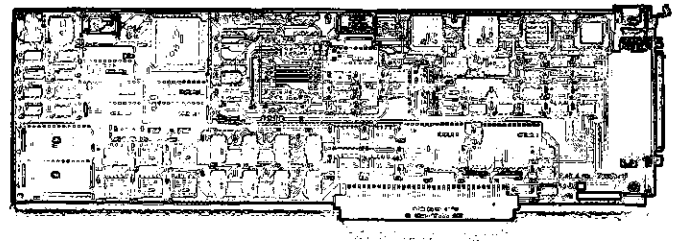
On-board software, stored in up to 128Kbytes of quick-access ROM, maintains both power-on diagnostics and the FEP/OS code in an easily accessible format. The FEP/OS code relieves the host of many of the tasks associated with running a multiuser system. The included terminal drivers use streams technology, allowing a mix and match of protocol modules to hook together programs, devices and networks. The modules, which can perform a wide variety of tasks—from echoing keystrokes to supporting SNA—improve performance and lower the processing demands placed on the host CPU.

NuBus Features

The NuBus is a 37.5Mbps, 32-bit backplane that offers cost-effective performance and high-precision, high-quality design. It is the NuBus architecture that enables the DigiBoard Nu/Xi to communicate with the host processor via its on-board dual-ported memory. System interrupts are handled by the NuBus non-master request line, an interrupt-handling mechanism for non-bus master boards.

Hardware Features

The Nu/Xi is available in either four-channel (DigiBoard Nu/4i) or eight-channel (DigiBoard Nu/8i) configurations. Each channel can function as a standard RS-232 asynchronous serial line—two of these channels can be assigned to function as synchronous serial lines. Each line supports full hardware handshaking (CTS, RTS, DSR, DTR) and full modem control (RI, DCD). The synchronous lines support full hardware handshaking and full modem control in addition to external timing clocks



(TRxC, RTxC). Each asynchronous channel offers independently selectable data transfer rates, ranging from 50bps to 115Kbps, as well as independently definable character widths, stop-bits and parity.

The Nu/Xi provides three programmable 16-bit timers that aid in real-time clock applications, time interval measurement and periodic interrupt programming. Provisions are also included which allow user-programmed routines to be downloaded to and run directly on the Nu/Xi's on-board processor.

DB-25 Pinout Scheme

Pin #	Signal	Description
02	SOUT	Serial Out
03	SIN	Serial In
04	RTS	Request to Send
05	CTS	Clear to Send
06	DSR	Data Set Ready
07	GND	Signal ground
08	DCD	Data Carrier Detect
20	DTR	Data Terminal Ready
22	RI	Ring Indicator
Additional pins for the synchronous cable		
15	TRxC	Transmit/Receive Clocks
17	RTxC	Receive/Transmit Clocks

Connectors

The serial lines from the DigiBoard Nu/Xi terminate in standard DB-25 male connectors. The DB-25 pinout scheme follows:

Warranty and Technical Support

DigiBoard products have a field failure rate of less than one-half-of-one-percent. What's more, DigiBoard products carry a "Five Year Real-World" warranty, so users can be sure that they will have a fully functional board for the lifetime of their system. And, when looking for help, DigiBoard technical support is as close as the phone. The DigiBoard technical support staff is made up of system integrators, who know how important responsive, knowledgeable assistance can be.

For more information, contact your DigiBoard sales representative at 612-943-9020 or 800-344-4273 or write DigiBoard at 6400 Flying Cloud Drive, Eden Prairie, MN 55344.

Features/Specifications

DigiBoard Nu/Xi

- 12MHz 68000 microprocessor
- 63450 four-channel DMA controller
- 6840 programmable timer module
- 256Kbytes of dual-ported, zero wait-state RAM
- Up to 128Kbytes of ROM

Dimensions

Length	12.875 in (32.7 cm)
Height	0.6 in (1.5 cm)
Width	4.0 in (10.2 cm)
Weight	1.25 lb (0.5 kg)

Power Requirements

+5 vdc, 1.2Amps maximum

+12 vdc, 250mA maximum

-12 vdc, 250mA maximum

Environmental Requirements

Ambient temp.	50°F to 130°F(10°C to 50°C)
Humidity	5% to 90%
Air movement	30 CFM forced
Altitude	0 to 12,000 ft(0 to 3660 m)

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