

## FEATURES

- Ethernet 10/100 RJ45 connector for interfacing to CPU or network
- 48 or 24 channel high-current TTL digital I/O lines
- Compatible with industry standard I/O racks such as Grayhill, Opto 22, Western Reserve Controls, etc.
- Eight-bit ports software selectable for inputs or outputs
- All 48 digital I/O lines buffered with 32mA source / 64mA sink current capabilities
- Jumper selectable I/O pulled up to 5V (via 10KΩ) for contact monitoring, pulled down to ground or floating
- Resettable 0.5A fused +5VDC output per I/O connector
- OEM version (board only), features PC/104 size and mounting compatibility
- Small, (4" x 4" x 1.7") rugged, steel industrial enclosure

## FACTORY OPTIONS

- Low voltage (LVTTTL) for 3.3V systems
- Board only version with no enclosure
- Extended operating temperature -40°C to +80°C
- Available in a RoHS compliant version



## FUNCTIONAL DESCRIPTION

This Ethernet I/O board is an ideal solution for adding portable, easy-to-install digital I/O capabilities to any computer or network with an available connection.

The board features 48- or 24- bits of TTL-compatible digital I/O with high-current capabilities. Each eight bit digital port can be programmed to accept inputs or to drive outputs. Power is supplied to the card via an included AC/DC regulated 5VDC external power adapter. The I/O wiring connections are via two or one industry standard 50-pin connectors. For external circuits, fused +5VDC power is available at pin 49 of each I/O connector. The resettable fuse is rated at 0.5A.

All I/O lines are buffered by a type 74ABT543A tristate buffer transceiver capable of sourcing 32 mA or sinking 64 mA. The buffers are configured under program control for input or output. Jumper selected resistors permit user configuration of I/O lines for pull-up (to +5 VDC), pull-down (to ground) or floating depending on the application requirement. Pull-ups are useful for contact monitoring and assure that there are no erroneous outputs at power-up until the card is initialized by system software.

## OEM ETH/104 FORM FACTOR

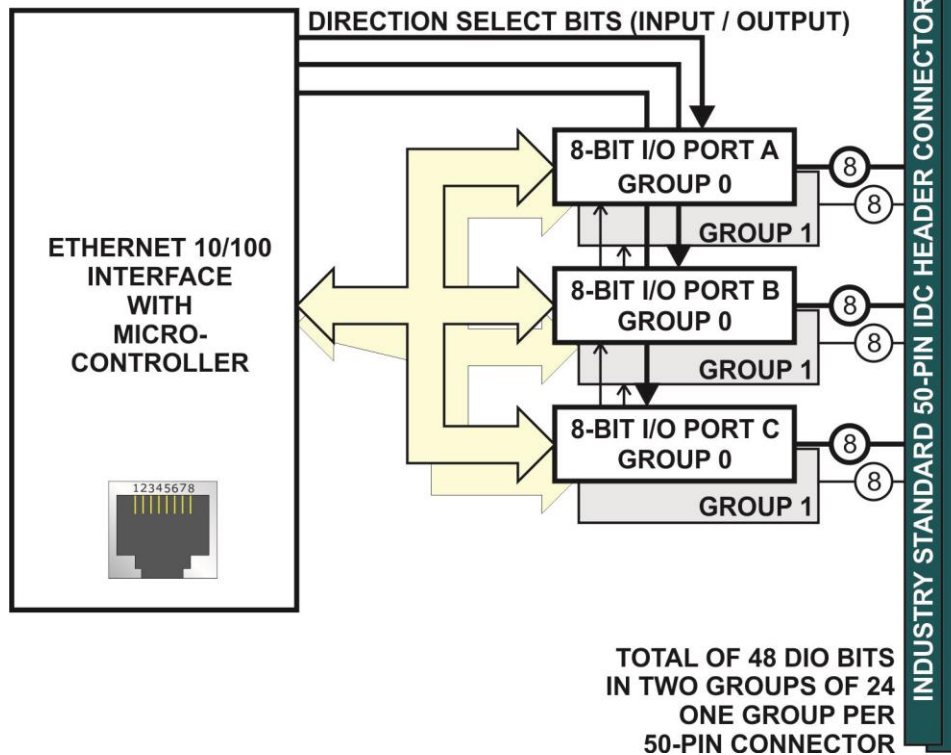
The OEM (board only) version is perfect for a variety of embedded applications. What makes the OEM option unique is that its PCB size and pre-drilled mounting holes match the PC/104 form factor (without the bus connections). This ensures easy installation using standard standoffs inside most enclosures or systems. The board can be added to any PC/104, PCI-104, or PCI/104-Express stack by connecting it to an available 10/100 base T port typically plentiful on embedded CPU form factors such as EBX, EPIC, and PC/104. The ETH-DIO-48 and ETH-DIO-24 OEM board can also be installed using standoffs inside other enclosures or systems.

## ACCESSORIES

Available accessories include flat ribbon cables and DIN-rail mountable screw terminal boards. Also available is our low cost IIB-24 which will add optical isolation to any standard 24-channel digital I/O port on a 50 pin connector.

## SOFTWARE

Because of Ethernet's ubiquitous nature, these boards are supported for use in all operating systems -- including Windows, Linux, Unix, iOS, Android, -- even Raspberry PI, etc. The software package includes a free Linux and Windows software package with sample programs and source code in C#, Delphi, Visual Basic, and Visual C++ for Windows. Also provided is a graphical setup program in Windows and extensive ethernet-packet level API documentation. Third party application support includes a Windows standard DLL interface usable from the most popular application programs. Embedded OS support includes Windows Embedded Standard.

**BLOCK DIAGRAM****SPECIFICATIONS****Digital I/O (TTL Compatible)**

Channels / Groups: 48 or 24 in 8-bit groups

**Inputs:**

Logic High: 2.0 VDC minimum, 5.5 VDC max.

Logic Low: -0.5 VDC minimum, 0.8 VDC max.

Bias Resistors: 10K  $\Omega$ **Outputs:**

Logic High: 2.0 VDC minimum, source 32 mA

Logic Low: 0.55 VDC maximum, sink 64 mA

Sample rate: Up to 2500 round-trip DI/O Read/Write transactions per second

*Note: performance is critically affected by network traffic***Bus Type**Ethernet 10/100 Base T, Auto-detecting  
1.5kV isolation**Environmental**

Operating Temp.: 0°C to 70°C (Extended Temp -40°C to +80°C)

Storage Temp.: -40°C to +85°C

Humidity: 5%-90% RH, non-condensing

**Mechanical**

Board Dimension: 3.550 x 3.775 inches

Box Dimension: 4.00 x 4.00 x 1.7 inches

Connectors: I/O: Dual row 0.1" 50 pin shrouded headers with grounds on all even pins

DC power jack: 2.0mm positive center post

Screw terminals available via enclosure cutout

**Power**

Basic 48 bit unit: +5VDC from external regulated power supply, &lt;300mA typical (no load), 2.0A max (full load)

Auxiliary Outputs: +5VDC via one 0.5A resettable fuse for both connectors

**ORDERING GUIDE**

ETH-DIO-48 48 digital input/outputs in rugged enclosure w/DC jack &amp; external power adaptor

ETH-DIO-24 24 digital input/outputs in rugged enclosure w/DC jack &amp; external power adaptor

**Model Options**

-LV LVTTTL I/O for 3.3V systems

-OEM Board only version with no enclosure or ext. power supply

-T Extended operating temperature -40°C to +80°C

-RoHS Available in a RoHS compliant version

**Optional Accessories**

STB-DIO-48-ETH Plug-in spring-cage terminal board for 48 Digital I/O lines (used inside enclosure for ETH-DIO-48)

STB-50 Screw terminal board\*

STB-48CH 50-pin multi-header universal screw terminal board with steel powder coated enclosure for up to 48 digital I/O channels\*

IIB-24 24-channel optical isolator board\*

ROB-24 24-channel electromechanical relay board\*

CAB50F-6 6' flat ribbon cable with female 50-pin connectors

1781-A24A Solid state module mounting rack

CAB50-6 6' flat ribbon cable female to edge connector

MP104-DIN DIN rail mounting provision

\*requires one or more ribbon cables