

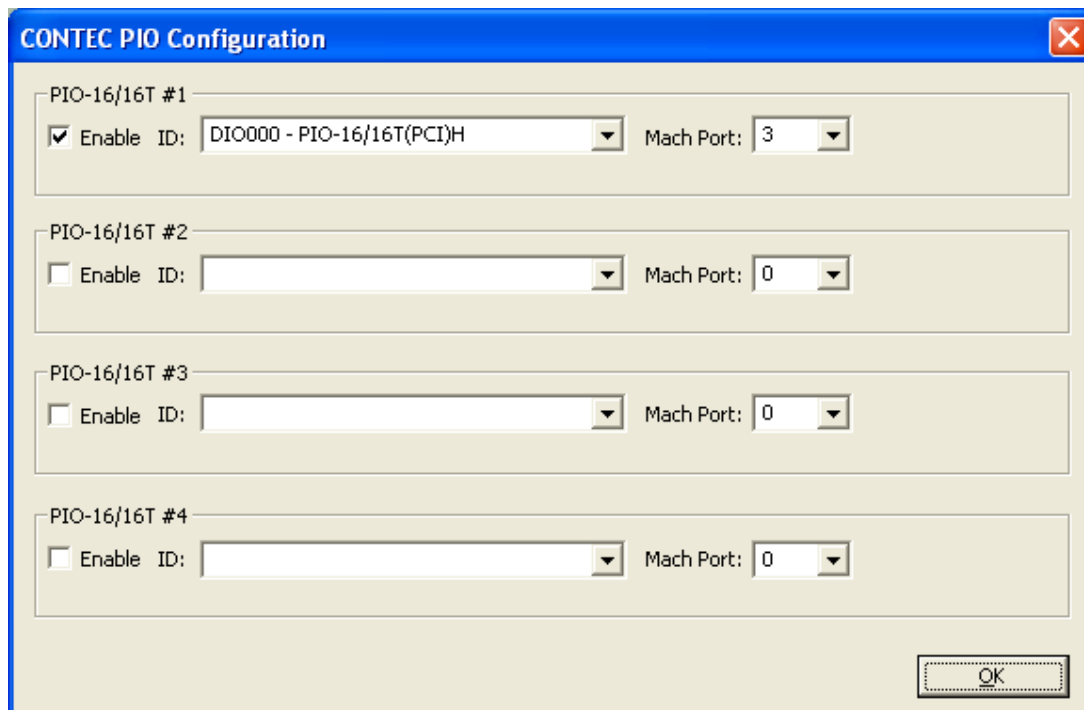
CONTEC PIO PlugIn

By Steve Murphree, Jr.

The CONTEC PIO PlugIn is an I/O PlugIn that controls the CONTEC PIO Digital IO PCI cards from CONTEC. <http://www.contec.com>. The I/O cards can be ordered with TTL or high voltage I/O.

The CONTEC PIO PlugIn will support 4 PIO cards, either dedicated input, dedicated output, or combination I/O cards, in any combination. This plugin only supports the PIO, PI, and PO series cards. The GPIO series cards are not supported.

Below is a sample of the CONTEC PIO PlugIn configuration dialog.



In the above dialog, a PIO-16/16T(PCI)H (16 inputs and 16 outputs with TTL signals).

Setting up a PIO card

Installing the CONTEC drivers

The CONTEC PIO PlugIn requires the **Windows high-performance Digital I/O driver API-DIO(WDM)** drivers to function. They can be obtained from the CONTEC website. Each card has a rotating device ID selector on its PCB. **IMPORTANT!** No two cards can share the same ID.

Setting up the Elexol PlugIn

Once the driver is installed, the CONTEC PIO PlugIn configuration can be used to configure the PlugIn. For each of the 4 supported card entries, do the following:

1. In the "ID" dropdown, choose the desired card.
2. Then click the Enable check box if you wish to use the card.
3. Set the Mach port. This is the port that you use to setup "ports and pins" in Mach. Normally, Mach uses port 1 and/or port 2 (parallel ports). So if you wish to retain parallel I/O, choose a different port, like port 3. (Make sure that each configured card has its own Mach port!!!)

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Setting Mach

Ports and Pins

Mach sees the I/O card as belonging to a port with sequential pins. Each PIO card has a pin layout that is specific to its model. For instance, the PIO-16/16T(PCI)H card has 16 inputs and 16 outputs. The inputs pins are always placed first in the pin sequence. So pins 1 to 16 would be inputs and pins 17 to 32 would be outputs.

It is important to know the pin layout of your particular card. It is identified in the card's instruction manual. Do not set an input up in Mach as an output and vice versa. The results are undefined!

In the card manuals, the inputs and outputs are zero based. IN0 refers to the first input and OUT0 refers to the first output, etc... However, we need to arrange them in sequential order for Mach's purposes. So OUT0 would be the first pin after the last input pin.

Determining the input pin number:

Pin = $INx + 1$ (where x is the input number as referenced by the manual).

Determining the output pin number:

Pin = $n_inputs + OUTx + 1$ (where n_inputs is the total number of inputs on the card and x is the output number as referenced by the manual).

Below is a pin map of a couple of cards:

PIO-16/16 (all versions): Port: defined in the plugin config. Pins: Input 1-16, Output 17-32

PIO-32/32 (all versions): Port: defined in the plugin config. Pins: Input 1-32, Output 33-64

The end... Have fun!!