E2075 GPIO Interface Configuration Help

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Configuring the E2075 Interface

To configure the E2075 GPIO interface for the I/O Libraries, you need to provide the following information.

NOTE
The **Base Address** configuration value is read-only.   It indicates the base I/O port address selected for the interface by its DIP switch settings. To change the Base Address, you must power down your computer, remove the GPIO interface card, re-set the DIP switches, re-install the card, and power up your computer.   You can then run I/O Config again to configure the GPIO interface.   For information on setting the DIP switches, see the *I/O Installation Guide*.

□   **Interface Name** is a symbolic name that SICL uses to uniquely identify this GPIO interface.   The default Interface Name is **gpio12**.   The Interface Name must be a unique string of alphanumeric characters, starting with a letter. Remember this value and the Logical Unit number in order to address the GPIO interface properly in your SICL applications.

□   **Electrical to Logical Polarity** lists the E2075 lines that you can change polarity from low-true to high-true.   The default polarity of all lines is low-true.   Checking the box next to the line name changes the polarity to high-true.   The lines with reversible polarities include: Data-out (DOUT), Data-in (DIN), Peripheral Status (PSTS), Peripheral Flag handshake (PFLG), and Peripheral Control handshake (PCTL).   See the *I/O Installation Guide* for more information about these lines.

□   **Logical Unit** is a number that SICL uses to uniquely identify this GPIO interface.   The Logical Unit number is an integer in the range of 0-10000. Remember this value and the Interface Name in order to address the GPIO interface properly in your SICL applications.

□   **Interrupt Line** is a hardware line over which I/O devices can send interrupts to the CPU.   The Interrupt Line must be reserved for exclusive use by this GPIO interface.   For more information, see Choosing an Interrupt Line.

□   **Data Port** can either be 98622 Compatible mode or Enhanced mode.   To avoid hardware damage, do not connect any cables to your GPIO interface until this mode has been set correctly to match your peripheral device.   For more information on these modes, see the *I/O Installation Guide*.

□   **Handshake** modes supported on the E2075 GPIO are Full-Mode handshakes, Pulse-Mode handshakes, and an Async Output mode. For more information on these handshake modes, see the *I/O Installation Guide*.

□   **PCTL Delay** sets the delay (settling time) from a data write to PCTL set in Auto-Handshake mode. See the *I/O Installation Guide* for more information.

□   **Read Clock** determines when the data input lines are latched. The three available clocks are: Read Clock, when a register is read and the Read Strobe is pulsed.   Busy PFLG, the ready-to-busy edge of the PFLG line.   Ready PFLG, the busy-to-ready edge of the PFLG line.   This configuration setting assumes that the most significant byte (MSB) and the least significant byte (LSB) are latched at the same time.   If you need to latch the MSB and LSB at different times, use the I_GPIO_READ_CLK request with the **igpioctrl** function. See the *I/O Installation Guide* for more information.

□   **Clear DOUT at Reset** determines if the data-out lines are cleared when the card is reset (that is, when the P_RESET line is pulsed and the card's state machine is reset).

If the configuration values that are displayed for the Interface Name, Electrical to Logical Polarity, Logical Unit number, Interrupt Line, Data Port, Handshake, PCTL Delay, Read Clock, and Clear DOUT at Reset are acceptable to you, click on the **OK** button.

Otherwise, you can change the configuration values either by clicking on the arrows next to the values, or, if there are no arrows, by typing in the values you want. At any time, you can press the **Defaults** button to return the configuration dialog box to its default configuration values for the GPIO interface.

When you are done changing the values, either press the **OK** button if you want I/O Config to accept the changes, or press the **Cancel** button to cancel the changes and return to the previous configuration values for the GPIO interface.

Choosing an Interrupt Line

The Interrupt Line assigned for an E2075 GPIO interface must be reserved for exclusive use by the interface.   If this Interrupt Line is already being used by another interface, this will cause unpredictable behavior (such as system crashes, LAN problems, mouse tracking problems, etc.).

I/O Config will limit your choices so that you do not pick an Interrupt Line that conflicts with another configured E2075 interface, a GPIB interface, or an RS-232 port.   However, I/O Config will not know about any other interfaces in your system.   If you have another interface in your system that uses an Interrupt Line, you will need to avoid assigning this Interrupt Line to your   E2075 interface.

If you suspect an Interrupt Line conflict exists between an E2075 interface and another interface on your system, edit the configuration entry for the E2075 interface and assign another Interrupt Line for the interface.

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Troubleshooting for the E2075 Configuration

Please select one of the following:

[I/O Config Cannot Find the E2075 GPIO Interface](#)

[Resolving E2075 I/O Port Conflict](#)

[Resolving E2075 GPIO Interrupt Line Conflict](#)

I/O Config Cannot Find the E2075 GPIO Interface

The most common problem encountered when using I/O Config is that an interface is not found.   For an E2075 GPIO interface, this is due to one of the following reasons:

1. The interface was not installed in your system before running I/O Config.

To solve this problem, you need to install the interface card in your system and then run I/O Config again.

2. The interface is set up to use an I/O port address (Base Address) that is already being used.

To solve this problem, you need to resolve the I/O port address conflict. See Resolving E2075 I/O Port Conflict.

3. The interface has already been configured by I/O Config.

To solve this problem, you need to *edit* the existing configuration entry for the interface, instead of trying to add a new interface.   In the main I/O Config window, click on the name of the interface configuration entry for the E2075 GPIO in the **Configured Interfaces** list box. Then, click the **Edit** button directly beneath the **Configured Interfaces** list box to edit the configuration entry for the   E2075 GPIO.

Resolving E2075 I/O Port Conflict

If I/O Config does not find an E2075 GPIO interface when you try to add a configuration entry for it, you may have an I/O port (Base Address) conflict with that interface.   Neither I/O Config nor the I/O Libraries will recognize the E2075 GPIO interface if a conflict exists with the I/O port Base Address used by the interface. To resolve this problem, select another I/O port address for the interface by changing its DIP switch settings.

Note that the selected I/O port address ranges must not conflict with other I/O interfaces installed in your computer, including other manufacturer's products (such as LAN interfaces, etc.).   Refer to the documentation for the other interfaces and the following section to select unique Base Addresses for all the interfaces in your computer.

Setting the E2075 I/O Port Address

The DIP switches on the E2075 interface card set the I/O port Base Address that will be used by the interface.   The following table lists the I/O port Base Address ranges specified by the different DIP switch settings:

```
Switches   I/O Base Address   I/O Address Range Used
1 2 3 4       (Hexadecimal)         (Hexadecimal)
--------   ----------------   ----------------------
0 0 0 0           228             228-22F, 628-62F
1 0 0 0           238             238-23F, 638-63F
0 1 0 0           258             258-25F, 658-65F
1 1 0 0           288             288-28F, 688-68F
0 0 1 0           328             328-32F, 728-72F
1 0 1 0           348             348-34F, 748-74F
0 1 1 0           388             388-38F, 788-78F
1 1 1 0           398             398-39F, 798-79F
```

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Resolving E2075 GPIO Interrupt Line Conflict

The Interrupt Line assigned for an E2075 GPIO interface by I/O Config must be reserved for exclusive use by the interface.   If this Interrupt Line is already being used by another interface, this will cause unpredictable behavior (such as system crashes, LAN problems, mouse tracking problems, etc.).

If you suspect an Interrupt Line conflict exists between an E2075 GPIO interface and another interface on your system, edit the configuration entry for the E2075 GPIO interface and assign another Interrupt Line for the interface.

Note that I/O Config will not let you choose an Interrupt Line that is already being used by another interface.   However, if the same Interrupt Line is assigned to another interface (for example, via the Device Manager in the Control Panel) *after* I/O Config is run, a conflict may occur.

In such a case, you can check the Interrupt Lines assigned for the various interfaces in your system via the Device Manager in the Control Panel.   To do this, click on the **System** icon in the **Control Panel**. Then click on **Device Manager**, which will display information about the interfaces on your system. Select the E2075 GPIO interface listed in the dialog box, and then click on **Properties**.   This will show what interfaces, if any, are in conflict with the E2075 GPIO.

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