

DIG_Prt_Config

status = DIG_Prt_Config (deviceNumber, port, mode, dir)

Purpose

Configures the specified port for direction (input or output). `DIG_Prt_Config` also sets the handshake mode for the DIO-24, 6025E devices, AT-MIO-16DE-10, DIO-96, and Lab and 1200 Series devices.

Parameters

Direction	Name	Type	Description
Input	deviceNumber	i16	assigned by Measurement & Automation Explorer
	port	i16	digital I/O port number of the port to write to
	mode	i16	handshake mode the port uses
	dir	i16	direction, input, or output

Parameter Discussion

port is the digital I/O port number.

Range: 0 or 1 for the AT-AO-6/10, PC-LPM-16, PC-TIO-10, DAQCard-500, DAQCard-700, PC-OPDIO-16, and AO-2DC devices.
0 for the E Series devices, except the AT-MIO-16DE-10 and 6025E devices.
0 through 2 for the DIO-24 and Lab and 1200 Series devices.
0 through 3 for the DIO-32F and 653X devices.
0 and 2 through 4 for the AT-MIO-16DE-10 and 6025E devices.
0 through 3 for the VXI-AO-48XDC.
0 through 11 for the DIO-96.
0 through 15 for the VXI-DIO-128.
0 for the PCI-4451 and the PCI-4452.
0 through 3 for the NI 4551 and NI 4552.
0 for the 671X devices.
0 through 5 for the 652X

mode indicates the handshake mode the port uses.

- 0: Port is configured for no-handshaking (nonlatched) mode. You must use **mode** = 0 for all other ports and devices. You can use the DIO-32F and 653X devices for handshaking, but only through the group calls (see [DIG_Grp_Config](#)).
- 1: Port is configured for handshaking (latched) mode. **mode** = 1 is valid only for ports 0 and 1 of the DIO-24, and Lab and 1200 Series devices; for ports 2 and 3 of the 6025E devices and AT-MIO-16DE-10; and for ports 0, 1, 3, 4, 6, 7, 9, and 10 of the DIO-96.



Note: *mode must be set to handshaking in order to be bidirectional.*

dir indicates the direction, input or output, to which the port is to be configured.

Range: 0 through 3.

- 0: Port is configured as an input port (default).
- 1: Port is configured as a standard output port.
- 2: Port is configured as a bidirectional port.

- 3: Port is configured as an output port, with wired-OR (open collector) output drivers.

The following ports can be configured as bidirectional:

Device	Ports
AT-MIO-16DE-10 and 6025E devices	2
Lab and 1200 Series devices	0
DIO-24	0
DIO-96	0, 3, 6, and 9



Note: *The only ports that can be configured as wired-OR output ports are 653X device ports 0 through 3.*

For the VXI-DIO-128, PC-OPDIO-16, and 652X devices, the port direction is as follows.

Device	Input Ports	Output Ports
6527	0-2	3-5
VXI-DIO-128	0-7	8-15
PC-OPDIO-16	1	0

Using This Function

`DIG_Prt_Config` configures the specified port according to the specified direction and handshake mode. Any configurations not supported by or invalid for the specified port return an error, and NI-DAQ does not change the port configuration. Information about the valid configuration of any digital I/O port is in the *DAQ Hardware Overview Guide*, and Chapter 3, *Software Overview*, of the *NI-DAQ User Manual for PC Compatibles*.

For the DIO-24, DIO-32F, 653X, DIO-96 and Lab and 1200 Series devices, `DIG_Prt_Config` returns an error if the specified port has been assigned to a group by a previous call to [DIG_Grp_Config](#) or [DIG_SCAN_Setup](#). `DIG_Prt_Config` also returns an error for the DIO-32F and 653X devices if the specified port is port 4.

After system startup, the digital I/O ports on all the devices supported by this function are configured as follows:

dir = 0: Input port.
mode = 0: No-handshaking mode.

Also, ports on the DIO-24, DIO-32F, 653X, DIO-96, and Lab and 1200 Series devices are not assigned to any group. If this is not the digital I/O configuration you want, you must call `DIG_Prt_Config` to change the port configuration. You must call [DIG_Grp_Config](#) instead to use handshaking modes on the DIO-32F and 653X devices.

This function is optional for the 652X devices, because the ports are pre-configured to be either input or output.



Note: *6025E devices, AT-MIO-16DE-10, Lab and 1200 Series, PC-AO-2DC, PC-DIO-24/PnP*

and DIO-96 users—Because of the design of the Intel 8255 chip, calling `DIG_Prt_Config` on one port resets the output states of lines on other ports on the same 8255 chip. The other ports remain in the same configuration; input ports are not affected. Therefore, configure all ports before outputting data.



Note: *If you have connected one or more AMUX-64T devices or an SCXI chassis to your MIO or AI device, `DIG_Prt_Config` returns a `badPortError` if called with port equal to 0.*

DIG_Out_Prt

status = DIG_Out_Prt (deviceNumber, port, pattern)

Purpose

Writes digital output data to the specified digital port.

Parameters

Direction	Name	Type	Description
Input	deviceNumber	i16	assigned by Measurement & Automation Explorer
	port	i16	digital I/O port number of the port to write to
	pattern	i32	8-bit digital pattern for the data written

Parameter Discussion

port is the digital I/O port number to write to.

Range: 0 or 1 for the LPM devices, AT-AO-6/10, DAQCard-500/700, PC-TIO-10, PC-OPDIO-16, and AO-2DC devices.

0 for the E Series devices, except the AT-MIO-16DE-10 and 6025E devices.

0 through 2 for the DIO-24 and Lab and 1200 Series devices.

0 and 2 through 4 for the AT-MIO-16DE-10 and 6025E devices.

0 through 3 for the VXI-AO-48XDC.

0 through 4 for the DIO-32F and 653X devices.

0 through 11 for the DIO-96.

8 through 15 for the VXI-DIO-128.

0 for the PCI-4451 and the PCI-4452.

0 through 3 for the NI 4551 and NI 4552.

0 for the 671X devices.

0 through 5 for the 652X.

Note: *Refer to the DAQ Hardware Overview Guide for a bit map of port 4.*

pattern is the digital pattern for the data written to the specified port. NI-DAQ ignores the high 32 bits of **pattern**. NI-DAQ maps the low 32 bits of **pattern** to the digital output lines making up the port so bit 0, the least significant bit, corresponds to digital output line 0. If the port is less than eight bits wide, only the low-order bits in **pattern** affect the port. For example, because port 0 and 1 on the E Series device is 8 bits wide, only bits 0 through 7 of **pattern** affect the digital output state of these ports.

Using This Function

DIG_Out_Prt writes the specified digital data to the port on the specified device. If you have not configured the specified port as an output port, NI-DAQ does not perform the operation and returns an error. You must call [DIG_Prt_Config](#) to configure a digital I/O port as an output port. Using DIG_Out_Prt on a port with a combination of input and output lines returns a warning that some lines are configured for input.

Port 4 of the DIO-32F or 653X devices is not a configurable port and does not require a

DIG_Port_Config call. On a 653X device, however, bits 0 and 2 of port 4 are unavailable when group 1 is configured for handshaking, and bits 1 and 3 are unavailable when group 2 is configured for handshaking.