

Advantech Device Specific Help

Advantech PCL-721/723 I/O Cards

The Advantech DLL driver supports the operation of ADVANTECH data acquisition cards and signal conditioning boards. The following table lists the cards and functions supported:

TABLE 1: Advantech DLL Driver Software Support

| Hardware Type | DLL Driver | A/D | D/A | DI | DO | TEMP |
|---------------|--------------|-----|-----|-----|----|------|
| PCL-721 | adPCL721.drv | NO | NO | YES | NO | NO |
| PCL-723 | adPCL721.drv | NO | NO | YES | NO | NO |

A/D=ANALOG INPUT, D/A=ANALOG OUTPUT, DI=DIGITAL INPUT, DO=DIGITAL OUTPUT, TEMP=TEMPERATURE MEASUREMENT

All cards listed can be used in an IBM PC or compatible. A series of wiring terminal boards and signal conditioning boards, listed below, are also available for making your applications easier to implement:

- * PCLD-7216 SSR I/O Module Carrier Board
- * PCLD-7224 SSR I/O Module Carrier Board
- * PCLD-885 Power Relay Output Board
- * Any Opto-22 compatible expansion board

I/O CARD FUNCTIONAL DESCRIPTION

PCL-721

The 32 TTL digital input channels (channels 0 - 31) are divided into 4 groups. Each group handles 8 digital input channels.

PCL-723

The 24 TTL digital input channels (channel 0-23) are divided into 3 groups. Each group handles 8 digital input channels. An OPTO-22 compatible connector provides a direct interface to industrial standard I/O module carrier board (19 rack mountable), which can accept up to 24 channels of SSR input modules.

Both PCL-721 and PCL-723 have two operation modes: NORMAL and INTERRUPT. All channels in a board have to be in the same mode. In NORMAL mode, the PCL-721/723 serves as a general purpose multi-channel digital input card. To operate in NORMAL mode, select the interrupt channel to be NONE. This is the only mode currently supported in Genie application software.

In INTERRUPT mode, each channel can generate an interrupt request to the PC, once the channel input has changed. This interrupt capabilities allows the PCL-721/723 to work in the background while the processor perform other jobs in the foreground. With this feature, your system can do real-time process monitoring without polling its inputs, channel by channel.

HARDWARE CONFIGURATION

Before an acquisition board can work properly with the DLL driver software, it must be configured correctly. You must determine the hardware options (input range(s), I/O address, etc.) which suit your particular requirements. On all ADVANTECH boards, configuration is a matter of setting jumpers and switches. Read the manual that comes with your ADVANTECH

board in conjunction with this help to determine how to configure the hardware. All ADVANTECH boards are shipped with factory default settings. If the default configuration is appropriate for your system, no additional set-up is required.

Configuring the PCL-721 or PCL-723

The PCL-721 and PCL-723 are easy to configure. No switch or jumper settings are needed except the I/O base address. The IRQ level, individual channels trigger mode (rising or falling edge), and interrupt mask (enable or disable) are all software programmable. See Base Address Switch section for selecting I/O port address.

Base Address Switch

The PCL-721 and PCL-723 require 8 consecutive I/O space. The I/O port base address for these two boards is selectable by setting the SW1 DIP switch. Valid address is from 200 to 3F8 hex. The address selected should not conflict with addresses used by other peripheral cards. This switch should match the BASE ADDRESS parameter in the PCL-721/723 Device Configuration dialog box Menu. The switch setting for various base addresses are illustrated as follows:

| I/O port address (HEX) | switch position | | | | | | | |
|------------------------------|-----------------|-----|-----|----|-----|----|----|---------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | A9 | A8 | A7 | A6 | A5 | A4 | A3 | X |
| 200-207 | OFF | ON | ON | ON | ON | ON | ON | ON |
| 208-20F | OFF | ON | ON | ON | ON | ON | ON | OFF |
| : | | | | | | | | |
| 2A0-2A7 | OFF | ON | OFF | ON | OFF | ON | ON | ON |
| 2A8-2AF | OFF | ON | OFF | ON | OFF | ON | ON | OFF |
| : | | | | | | | | |
| 300-307 | OFF | OFF | ON | ON | ON | ON | ON | <== factory setting |

