Advantech Device Specific Help

Advantech PCL-720 I/O Cards, V 2.0

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	DIO	TEMP	COUNTER	ALARM
PCL-720	adPCL720.drv	NO	NO	YES	NO	YES	NO

A/D=ANALOG INPUT, D/A=ANALOG OUTPUT,   DIO=DIGITAL I/O,
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-774   Analog Expansion Board
* PCLD-786   AC/DC Power SSR and Relay Driver Board.
* PCLD-7216 SSR I/O Module Carrier Board
* PCLD-7224 SSR I/O Module Carrier Board
* PCLD-785   Relay Output Board.
* PCLD-885   Power Relay Output Board
* PCLD-782   Isolated D/I Board.
* PCLD-7115 Wiring Terminal Board
* PCLD-780   Wiring Terminal Board.
* PCLD-880   Industrial wiring Terminal Board.

I/O CARD FUNCTIONAL DESCRIPTION

3 Counter/Timer Channels
32 Channels (bits) of Digital Inputs
32 Channels (bits) of Digital Outputs

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-720
Configure the base address according to instructions in your PCL-720 user's manual.   The PCL-720 provides three timer/counter channels and 32 bits of digital I/O (four 8-bit channels).   The Counter/Timer section is supported in this version of the driver.

Event Counter/Square Wave Generator/Frequency Counter:
Counter channel 0, 1, or 2 functions as a rising edge event counter, square wave generator, or frequency counter. In reference to the Advantech API functions for event counter, pulse

output, or frequency counter/measurement operation (all supported), hardware "gating", in which the counter may be started by a seperate external hardware input, is not supported by the driver DLL. When using the API function to start the counter/timer, you may start the counter at any value between zero and 2^32. Since only one 8253/8254 counter channel is used for each counter device by the DLL, the pulse output may only be in the form of a square wave generator (50% duty cycle only). The frequency counter is not a highly accurate one, also because only one counter channel is used.

When using the PCL-720 as a square wave generator, you must solder a jumper between the desired on-board clock source and the clock input of the counter to be used. The square wave will then be generated on the output pin of the counter used. As an event counter, connect the external event generator to the clock input of the desired counter without wiring a jumper from the on-board clock source. As a frequency counter, wire the same as for event counter operation.