Advantech Device Specific Help

Advantech DACpad-71A/B 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	DIO	TEMP	COUNTER	ALARM
DACpad-71A	adPAD71.drv	YES	NO	YES	YES*	NO	NO
DACpad-71B	adPAD71.drv	YES	NO	YES	YES*	NO	NO

A/D=ANALOG INPUT, D/A=ANALOG OUTPUT, DIO=DIGITAL I/O,
TEMP=TEMPERATURE MEASUREMENT

* Temperature measurement should set the CJC channel.
All cards listed can be used in an IBM PC or compatible.

I/O CARD FUNCTIONAL DESCRIPTION

DACpad-71A/B
8 differential analog inputs
4 digital inputs
4 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 DACpad-71A/B

The following options must be configured before the cards can be used with the Advantech DLL driver:

* Base Address
* IRQ channel
* CJC input channel

Software Gain Setting

For the DACpad-71A/B, the A/D gain is set directly through the application.

Starting PCMCIA device driver from DOS prompt

Before entering windows, you should have installed the PCMCIA device driver to operate DACpad-71A/B. Please refer the DACpad-71 users Manual for detailing.

Using the DACPAD for Thermocouple Measurement

Thermocouple linearization is provided by the ADVANTECH DLL driver automatically if a temperature measurement operation is chosen in the application program. The linearization is performed, and the temperature acquired by the thermocouple/mux card is available for control strategy use or display in DEGREES CENTIGRADE. The conversion to units other than degrees C (Fahrenheight, Kelvin, etc.) can be accomplished by use of a calculation scaling factor. To perform thermocouple measurement:

- Properly configure the DAS card to be used
- Connect the thermocouple(s) to the terminals
- Select the desired input channel on the card to connect to the CJC (cold junction compensation) circuit and connect a jumper from the CJC output to the input channel. Select the same CJC channel during software configuration of the driver. Of course, the CJC channel selected cannot be set at any analog channel used for another purpose.
- Select the appropriate configuration in the DLL driver dialog box -- base address, etc..
- Select a proper input range or gain in the application software for the type of thermocouple used:

  -- K type = +/- 0.05 volt range
  -- J type = +/- 0.05 volt range
  -- T type = +/- 0.05 volt range
  -- E type = +/- 0.05 volt range
  -- R type = +/- 0.05 volt range
  -- S type = +/- 0.05 volt range
  -- B type = +/- 0.05 volt range

- When the THERMOCOUPLE TYPE in the application software is selected, the driver will perform the appropriate linearization for the selected thermocouple type with respect to *any* selected A/D range. However, the *optimum* range, that is the A/D range that can handle the entire temperature range for each supported thermocouple type, is listed above.