

IEEE 488

APPLICATION BULLETIN

TIPS ON INSTALLING THE 4803 AND 4823B GPIB-<->PARALLEL INTERFACE BOARDS IN OTHER EQUIPMENT

INTRODUCTION

This application note provides additional information and suggestions for installing a 4803 or 4823B GPIB-<->Parallel Interface Board in a host chassis.

CONNECTION METHODS

Figure 1 shows some of the ways that the 4803 can be connected to the GPIB Bus and to the host equipment. There are a number of cable assemblies and connectors to help in adapting the 4803 to almost any application.

The 4803 Card has two headers with GPIB bus signals and one connector for the parallel signals and DC power. The GPIB header closest to the board's edge is J2 and it contains both GPIB bus signals and input signals for a GPIB address switch. The inside GPIB header is J1 and it has only GPIB bus signals. The GPIB bus signals are the same on both headers.

GPIB ADDRESS AND SIGNAL CONNECTIONS

The first choice to make is how to set the 4803's GPIB address. The choices are to use a physical switch to set the GPIB address or to save the address in the 4803's internal memory and change it with a SCPI command from the GPIB bus. The 4803 factory default setting is to use an internally saved address. A SCPI command from the GPIB bus can be used to enable the use of an external address switch.

ICS provides two styles of GPIB Connector/Address Switch Assemblies that can be used to mount a GPIB connector and an address rocker switch on the rear panel of the host chassis. Both assemblies need only two cutouts and two holes on the rear panel. Both GPIB Connector/Address Switch Assemblies have a flat ribbon cable that plugs into header J2. An alternative connection method for the address switch is to mount the address switch somewhere else and wire it back to

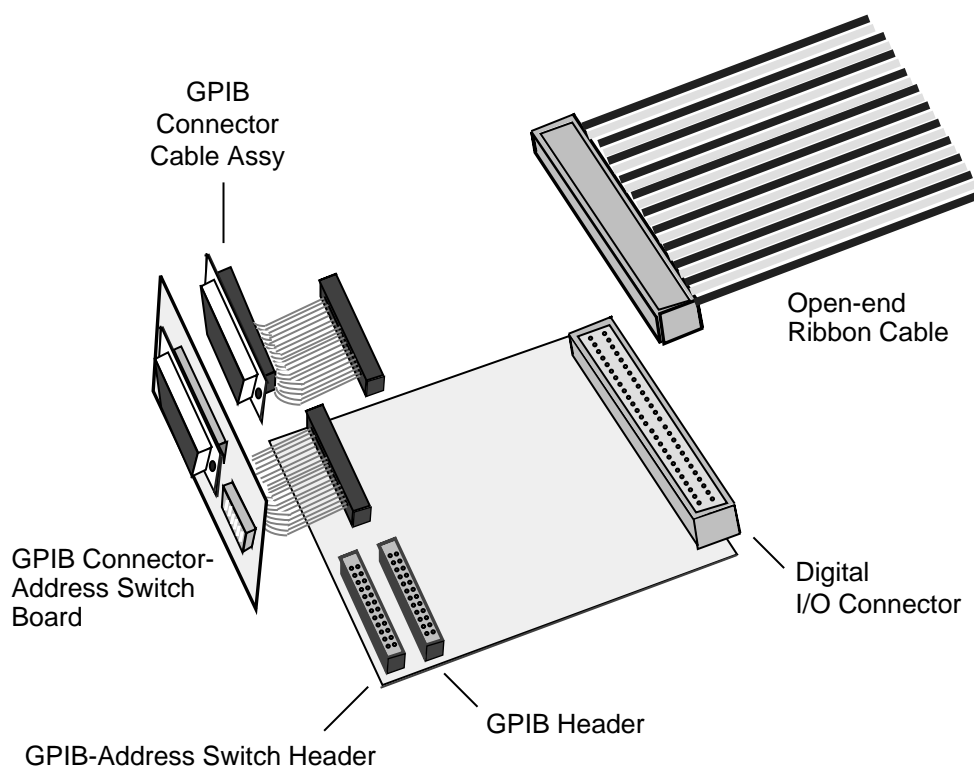


Figure 1 4803 Connection Methods

header J2. J1 can then be used to input the GPIB bus signals.

The external address switch can be a rocker switch or a rotary switch that will provide five contacts. The contacts should be binary coded with a contact closure to ground for a true condition.

GPIB bus signals on header J1 are arranged so that they match the layout of a standard IEEE-488 Bus Connector. A 24 conductor flat-ribbon cable with a GPIB connector at one end and a flat-ribbon female connector at the other end can be plugged directly into J1. The GPIB connector can be mounted to the rear panel with a pair of metric lock studs. A complete GPIB flat-ribbon cable assembly or metric lock studs can be ordered from ICS Electronics.

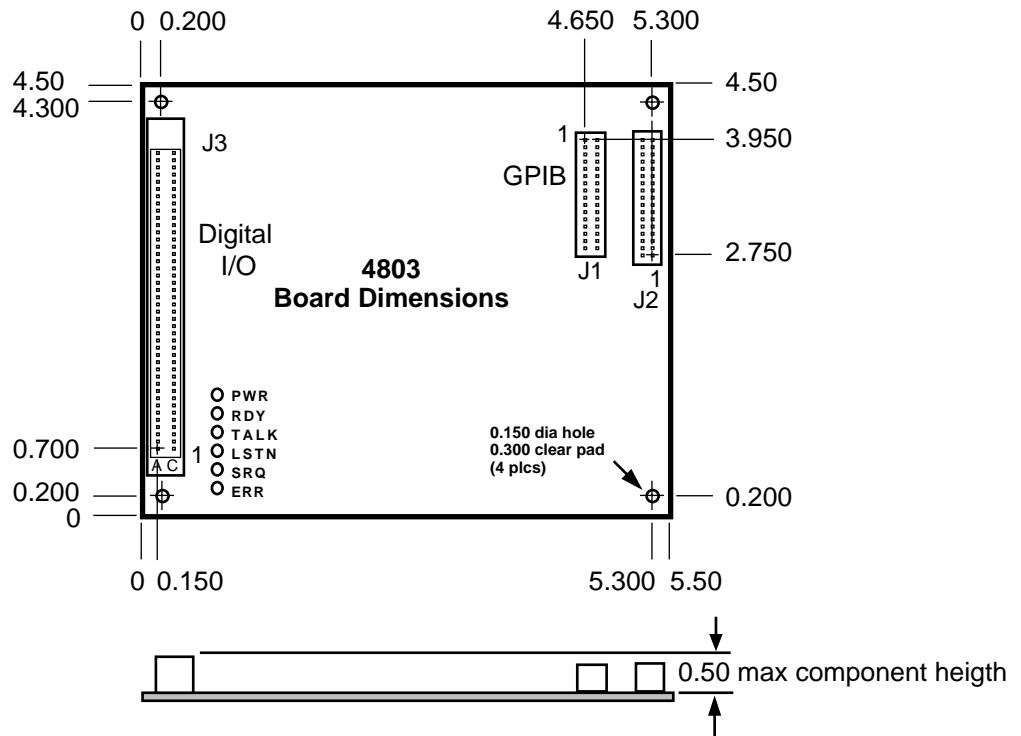


Figure 2 4803 Mounting Dimensions

DIGITAL AND POWER CONNECTIONS

The 4803's digital and power connections are on connector J3. J3 also contains the LED drive signals for operating a remote set of LEDs. J3 is a three row, 96-pin male DIN connector. It mates with any 96-pin DIN connector. The 4803 uses only rows A and C on the connector. This makes it possible to use a flat-ribbon cable to interface the 4803 to the host electronics. DIN connectors are also available with solder eyelets, wirewrap posts and dip-solder pins. When using a flat-ribbon cable, use all four of the 4803's ground and power connections to minimize voltage loss and noise. Mating DIN connectors are available from several electronic parts distributors or they and the flat-ribbon cable assembly can be ordered from ICS.

MOUNTING AGAINST A METAL PLATE

The 4803 can be bolted against a metal plate or any other flat surface. Use the four mounting holes on the 4803 to fasten the 4803 to the plate. Figure 2 shows the 4803 mounting hole dimensions. Use short standoffs to isolate the bottom of the 4803 from any metal surface.

MOUNTING ON A PCB

There are two options for mounting the 4803 on a larger PC board. The first choice is to mount the 4803 component side down. This is the most compact mounting position as shown in Figure 3. The second choice is to order the 4803 with its DIN I/O connector mounted on the circuit side and mount the 4803 with its components and LEDs facing straight up as shown in Figure 4. This approach is easier but requires more space.

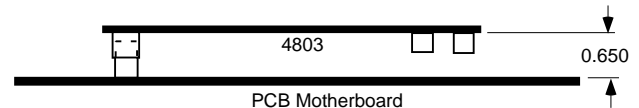


Figure 3 4803 Mounted Component Side Down

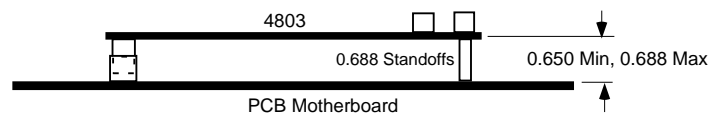


Figure 4 4803 Mounted Component Side Up

Headers J1 and J2 are used to bring the GPIB bus and optional address switch signals onto the 4803. Only one mating header is required to connect the GPIB signals to the 4803. Both headers are two row headers with pin spacing on 0.1 inch centers. The location of pin 1 is identified in Figure 2. CAUTION - Carefully check the header in layout in the 4803 manual before laying out the PCB as each header has a different pin arrangement. Select the mating header so the mating height is approximately 0.650.

On a standard 4803, connector J3 is a three row, 96-pin female body DIN connector with male pins in rows A and C. When the 4803 is placed component side down, connector J3 mates with a female 96-pin DIN connector mounted on the larger PCB board. Figure 2 also shows the location of pin 1 of the DIN connector.

If the 4803 is ordered with the J3 connector on the circuit side, J3 becomes a 96-pin male body with female sockets. When mounted component side up, connector J3 mates to a 96-pin female body DIN connector with male pins. The female connector on the PC board only needs pins in rows A and C. Row B may be stuffed but it is not used by the 4803. Suggested connectors are: ICS P/N 902257 or Panduit 100-964-153. Use the dimensions and connector orientation shown in Figure 2 when laying out the motherboard.

The 4803 may be held in place by standoffs located to match the mounting holes on the 4803. For most applications, only two standoffs are required at the end of the 4803 away from the DIN connector. Mated DIN connectors result in a 0.650 board-to-board spacing. The closes standard standoff length is 0.688 which works out fine in most applications.

4823B Considerations

The installation of the 4823B Board in the host chassis is very similar to that described for the 4803. The 4823B is simpler in that it does not have the second GPIB only header. Figure 5 shows the 4823B's Board layout. J1 has the digital signals and is a right angle, 96-pin DIN connector with male pins. J1 mates with any 96-pin DIN connector with female sockets. J2 contains both GPIB and Address signals and mates with either GPIB Connector/Address Switch Assembly. The 4823B is a small VME 3U (VXI A-size) board and can be mounted on standoffs or in a 3U high set of card guides. It has only two mounting holes at the GPIB end of the board.

Figure 6 shows how the 4823B appears with the connector mounted on the circuit side. The circuit-side connector is a 96-pin DIN connector with a male body and female pins. The notch is on row C. The connector mounted to the user's PC

board should be a 96-pin DIN connector with a female body and male pins. Suggested connectors are: ICS P/N 902058 or Winchester 96P-6033-0723-3. The board to board spacing is the same as shown in Figure 4. Use the dimensions and connector orientation shown in Figure 6 when laying out the motherboard.

SUMMARY

This application note has provide additional information to make it easier to install a 4803 OR 4823B GPIB<->Parallel Interface in a host system. Please contact ICS Electronics if you need additional information.

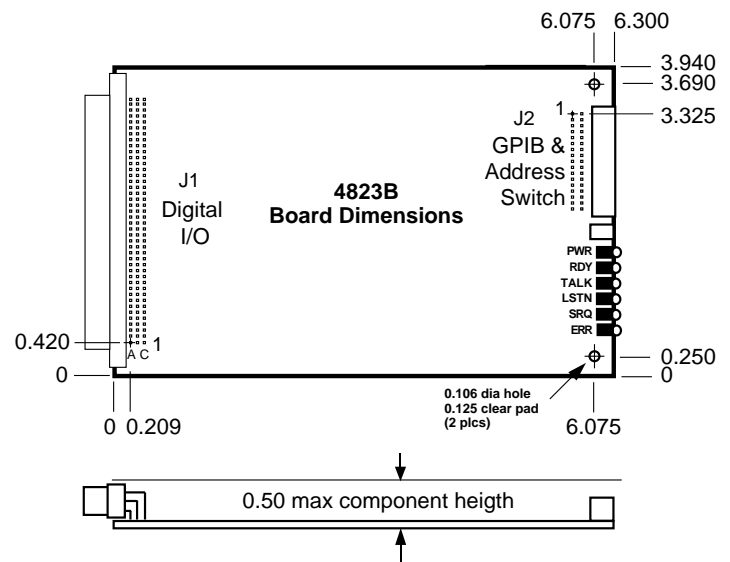


Figure 5 4823B Board Layout

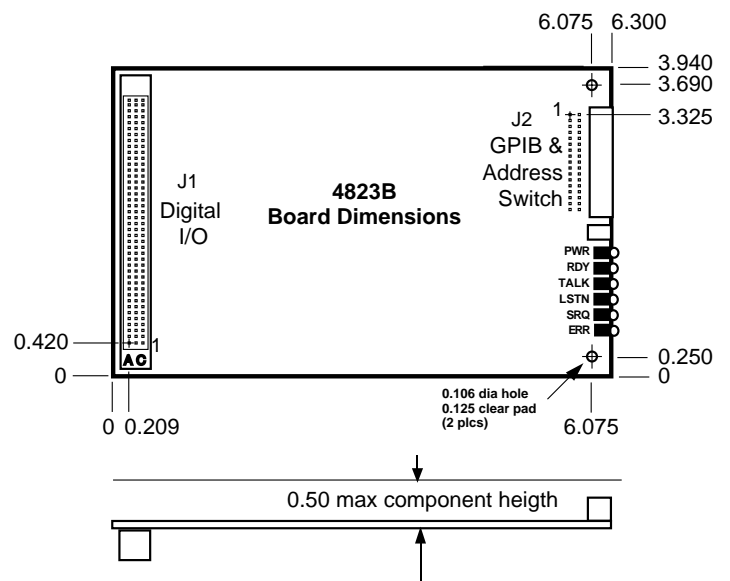


Figure 6 4823B with Connector on Circuit Side