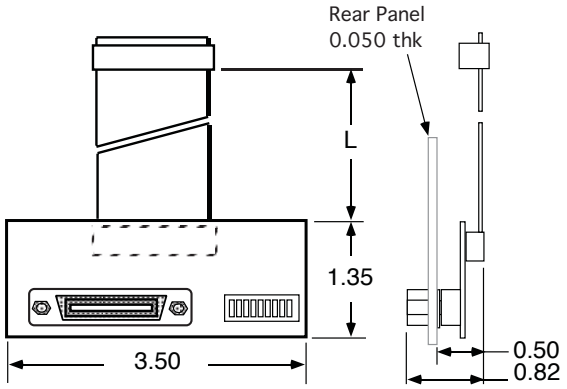
ICS ELECTRONICS
division of Systems West Inc.

IEEE 488 APPLICATION BULLETIN

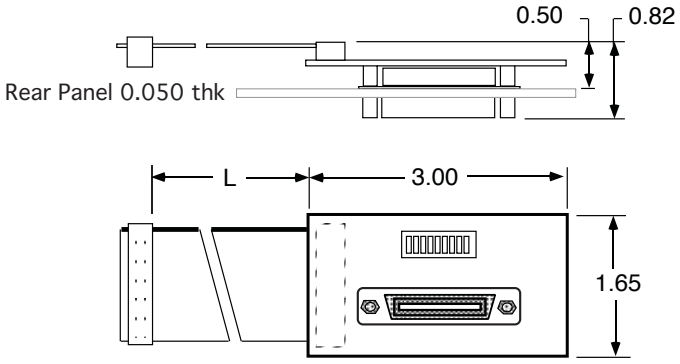
Using ICS's GPIB Connector/Address Switch Cable Assemblies

INTRODUCTION

ICS designed the GPIB Connector/Address Switch Cable Assemblies to solve the problem of how to mount a GPIB Connector and an address switch on a rear panel of an instrument or chassis. Originally designed to be used with ICS's GPIB Interface Cards, the GPIB Connector/Address Switch Cable Assemblies are being used by engineers as a convenient solution to mounting GPIB connectors and GPIB Address Switches on the rear panel of their chassis. This application note provides directions and guidelines for designing the GPIB Connector/Address Switch Cable Assemblies into a chassis.



(a) Horizontal GPIB Connector/Switch Assembly



(b) Vertical GPIB Connector/Switch Assembly

Figure 1 GPIB Connector/Address Switch Assembly Styles

GPIB CONNECTOR/ADDRESS SWITCH ASSEMBLIES

The GPIB Connector/Address Switch Cable Assemblies are small, business card size, printed circuit boards that provide a convenient way to mount an IEEE-488 Connector and an Address Switch on the rear of the host unit. They have a flat ribbon cable that plugs into a header on the user's interface or logic board.

The GPIB Connector/Address Switch Cable Assemblies are available in two layout styles. The Horizontal Connector/Address Switch Assembly has the Address Switch in line with the IEEE-488 connector as shown in Figure 1(a). The Vertical Connector/Address Switch Assembly has the Address Switch located on top of the IEEE 488 connector as shown in Figure 1(b).

The Address Switch is an eight position rocker switch. For ICS board products, the five left most switches set the GPIB address. The bit weights are shown in Figure 4. Up is a logical 1, down is a logical 0. Rocker 6 sets address 0. Rockers 7 and 8 are normally not used and are free for other functions.

The assemblies may be ordered with any length flat ribbon cable, from 10 to 90 cm long. The dash number specifies the cable length in cm. Order as:

Type	Part Number
Horizontal Conn./Sw Assy with 90 cm long cable	113640-90
Vertical Conn/Sw Assy with 90 cm long cable	113642-90

INSTALLATION

Both the Horizontal and the Vertical Connector/Switch Assemblies are designed to be mounted to the rear panel of the host equipment's rear panel by the included metric studs. The following are the recommended installation steps:

1. Select the appropriate cutout from Figure 2

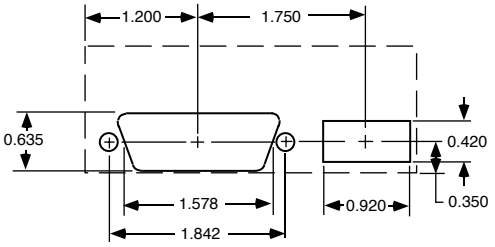
2. Locate a suitable blank area on the host chassis rear panel. Leave room on the outside for the GPIB Cable as shown in Figure 3. Leave room inside for the flat ribbon cable bend radius.

   Route the flat ribbon cable away from AC power and other high current or high RFI radiating devices or cables.

3. Machine the cutouts shown in Figure 2. If the rear panel is thicker than 0.050 inches, mill a 2.3 in x 0.8 in relief on the inside of the panel for the Amphenol 57-20240 connector.

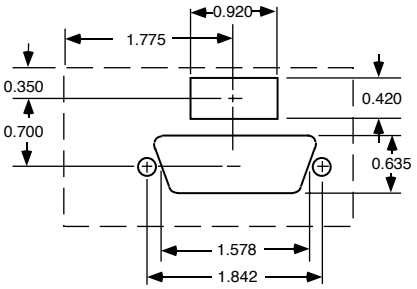
4. Install the Connector/Switch Assembly from the inside of the panel. Use the supplied metric studs and two thin lock washers to hold the assembly to the panel as shown in Figure 1.

5. Mark or silkscreen the switch functions onto the rear panel as shown in Figure 4. Identify the 5 address rockers as shown and switches 6-8 for your application.



Notes:
1. All dimensions are in inches
2. D cutout radius is 0.2 inches
3. Holes are 0.180 dia., 2 plcs
4. Allow 0.25 inches for cable bend

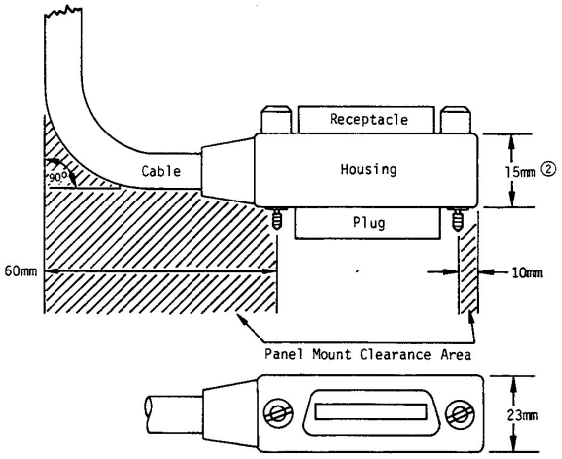
(a) Horizontal Cutout Dimensions



Notes:
1. All dimensions are in inches
2. D cutout radius is 0.2 inches
3. Holes are 0.180 dia., 2 plcs
4. Allow 0.25 inches for cable bend radius

(a) Vertical Cutout Dimensions

Figure 2 Cutout Dimensions



NOTES: (1) All measurements are typical.
(2) Length of lock screw is a function of this dimension.

Figure 3 IEEE-488.1 Recommended Cable Bend and Clearances

WIRING

Table 1 lists the signal wiring for the Connector/Address Switch Assemblies. The mating header is a 26 pin header with GPIB and Address switch signals. The header layout is shown in Figure 5. Use a 3M N2526-6002-RB or similar header with male pins on 0.1 inch centers.

The rocker switches are normally open and are closed to ground when in the 'ON' or up position.

SUMMARY

This application note has described ICS's GPIB Connector/Address Switch assemblies and how to mount them in your chassis.

If you do not need the address switch, ICS supplies a GPIB flat ribbon cable assembly that mounts just the GPIB Connector on the rear panel. Refer to ICS P/N 114439.

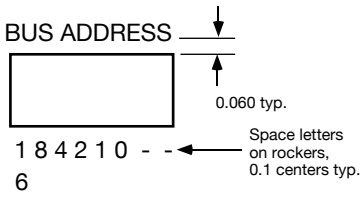


Figure 4 Switch Silkscreen Detail

TABLE 1 GPIB CONNECTOR/ADDRESS SWITCH SIGNALS

Signal	Pin Number	Wire Color	Bit Weights
GROUND	1	BRN 1	
ADSW5	2	RED 1	16 (MSB)
T SW	3	ORG 1	not used
L SW	4	YEL 1	not used
ADSW4	5	GRN 1	8
SI SW	6	BLU 1	
ADSW1	7	VIO 1	1
ADSW3	8	GRY 1	4
ADSW2	9	WHT 1	2
NRFD	10	BLK 1	
REN	11	BRN2	
DAV	12	RED 2	
IFC	13	ORG 2	
NDAC	14	YEL 2	
EOI	15	GRN 2	
ATN	16	BLU 2	
SRQ	17	VIO 2	
DIO1	18	GRY 2	
DIO2	19	WHT 2	
DIO3	20	BLK 2	
DIO4	21	BRN	
DIO5	22	RED 3	
DIO6	23	ORG 3	
DIO7	24	YEL 3	
DIO8	25	GRN 3	
GROUND	26	BLU 3	

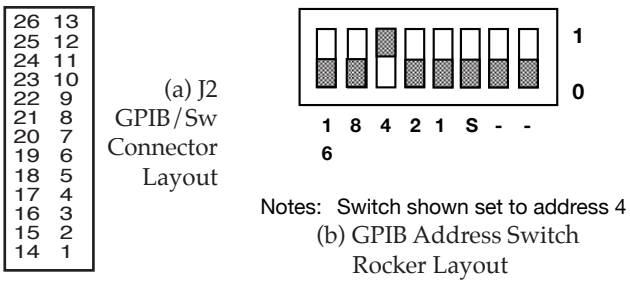


Figure 5 Connector and Address Switch Layouts