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Installation Guide

SH6850 Shielded Cable

This guide describes how to use the SH6850 shielded cable to connect either a 68-pin MIO Series board to a 50-pin MIO accessory or a 50-pin MIO Series board to a 68-pin MIO accessory. In this guide, the AT-MIO-16, AT-MIO-16F-5, AT-MIO-16X, NB-MIO-16, and NB-MIO-16X are referred to collectively as the MIO-16 Series boards. The newer MIO-16E Series boards include the AT-MIO-16E-2 and the AT-MIO-16XE-50.

Introduction

The SH6850 shielded cable is a 1, 2, 5, or 10 m round cable, which has a 68-pin female connector at one end and a 50-pin female connector at the other end. The SH6850 shielded cable kit also includes a 3 in. ribbon cable and replacement brackets for the 50-pin AT-MIO Series (AT-MIO-16, AT-MIO-16F-5, and AT-MIO-16X) and NB-MIO Series (NB-MIO-16 and NB-MIO-16X) boards. The SH6850 shielded cable brings the pinout of your MIO Series board I/O connector, which has either 68 or 50 pins, to the MIO accessory I/O connector, which has either 50 or 68 pins.

What You Need to Get Started

- ❑ SH6850 shielded cable in one of four cable lengths: 1, 2, 5, or 10 m
- ❑ *SH6850 Shielded Cable Installation Guide*
- ❑ Either a 68-pin MIO board and a 50-pin MIO accessory
  or
  A 50-pin MIO board and a 68-pin MIO accessory
- ❑ Small Phillips-head screwdriver

In addition, you need the following components to connect a 68-pin MIO board to a 50-pin accessory:

- ❑ 3 in. 50-to-50-pin ribbon cable

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In addition, you need the following components to connect a 50-pin MIO board to a 68-pin accessory:

- ❑ Either a replacement bracket for 50-pin AT-MIO Series boards
  or
  A replacement bracket for 50-pin NB-MIO Series boards

You can use the brackets to modify your 50-pin MIO board so that you can connect it to a 68-pin MIO accessory via the SH6850 cable.

Installation

Connecting a 68-Pin Board to a 50-Pin Accessory

Figure 1 illustrates how to connect the SH6850 shielded cable and the 3 in. ribbon cable to a 68-pin MIO board and a 50-pin MIO accessory.

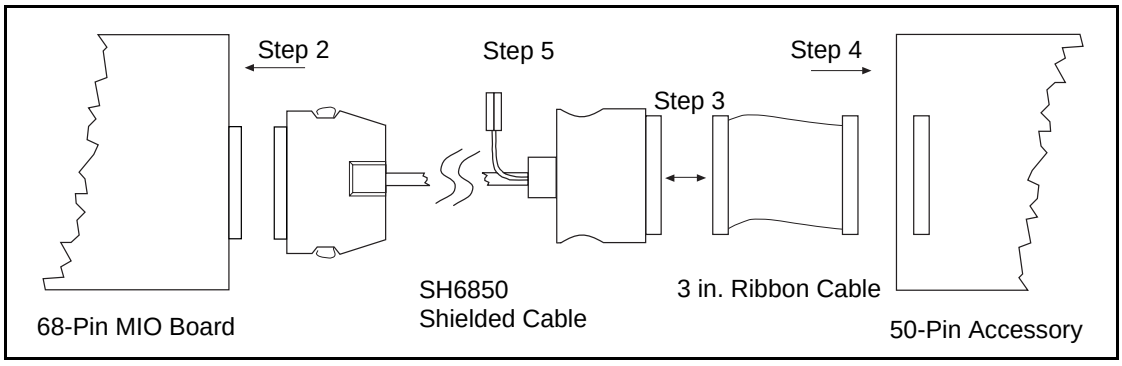


Figure 1. 68-Pin MIO Board Connection

To install the SH6850 cable to a 68-pin MIO board and a 50-pin MIO accessory:

1. Install your MIO board in a slot in your computer, following the instructions in your MIO board user manual.

2. Connect the 68-pin connector of the SH6850 shielded cable to the 68-pin I/O connector of your MIO board.

3. Connect the 50-pin female connector (the end with the grounding strap) of the SH6850 shielded cable to the 50-pin male connector of the 3 in. ribbon cable.

4. Connect the female connector of the 3 in. ribbon cable to your accessory.

5. Fasten the shield ground strap to the SH6850 shielded cable so that the strap is not dangling.

Connecting a 50-Pin Board to a 68-Pin Accessory

Bracket Replacement

Before you install the SH6850 to a 50-pin MIO board and a 68-pin MIO accessory, you must replace the bracket of your MIO board with the appropriate bracket from the SH6850 kit, unless your MIO board already has a bracket with a grounding strap tab. If your MIO board has a bracket with a grounding strap tab, skip the next page and go to the *SH6850 Connection* section.

1. Turn off the power to your computer.
2. Remove your MIO board from your computer.
3. Unscrew and remove the two screws that attach the bracket to the MIO board.
4. Remove the bracket from the board. See Figure 2 for NB-MIO board bracket removal or Figure 3 for AT-MIO board bracket removal.

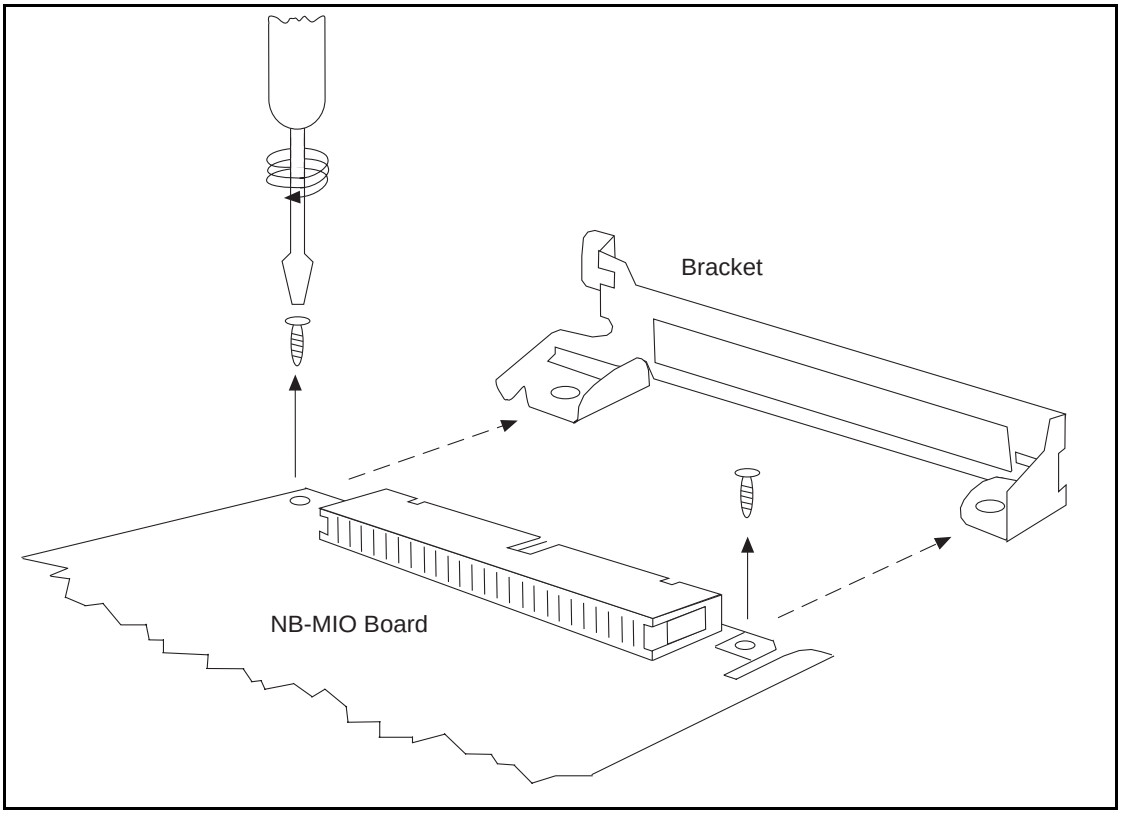


Figure 2. Removing the Bracket from an NB-MIO Board

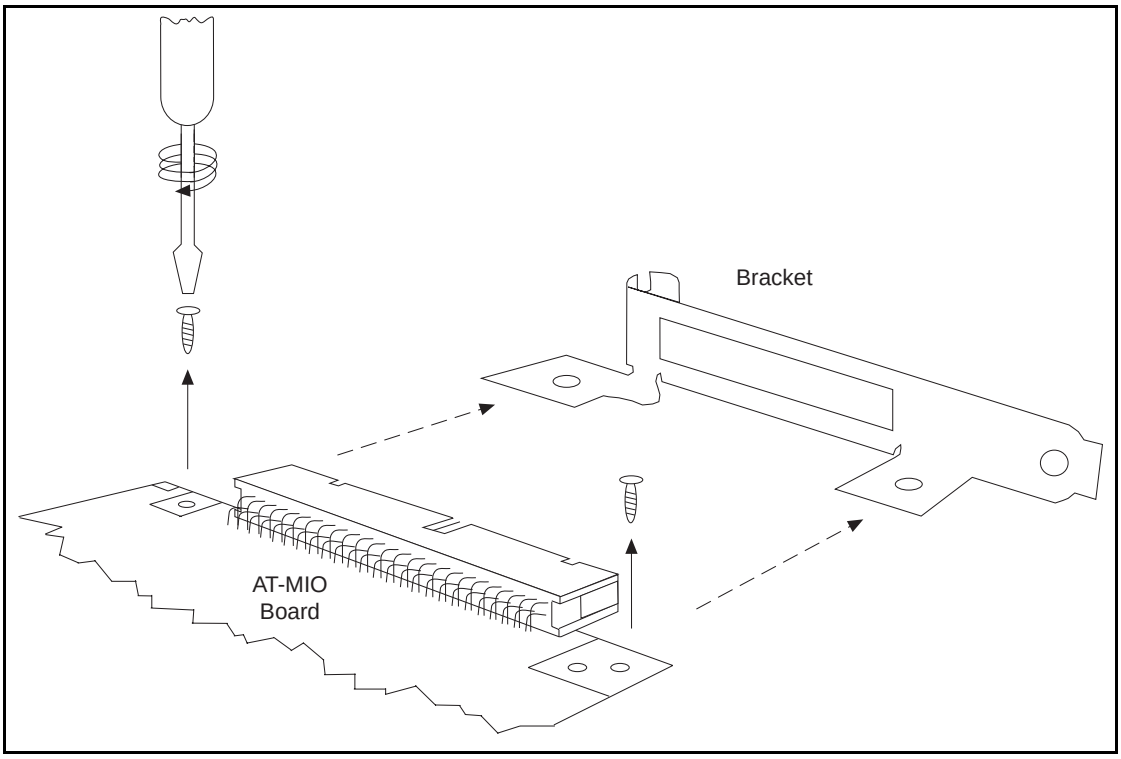


Figure 3. Removing the Bracket from an AT-MIO Board

5. The 50-pin I/O connector on your MIO board may have small plastic key inserts installed for mating with military polarized connectors. Because these keys are incompatible with the 50-pin connector on the SH6850 shielded cable, you must remove them. The 50-pin SH6850 connector has a center polarization bump that prevents you from inserting the connector upside down.

   To remove the key inserts, use a thin probe such as a pencil or a pen tip to gently press down on the release tab in the center of the key insert (see Figure 4). Then use the probe to lift up the back end of the key insert and slide the insert off the connector.

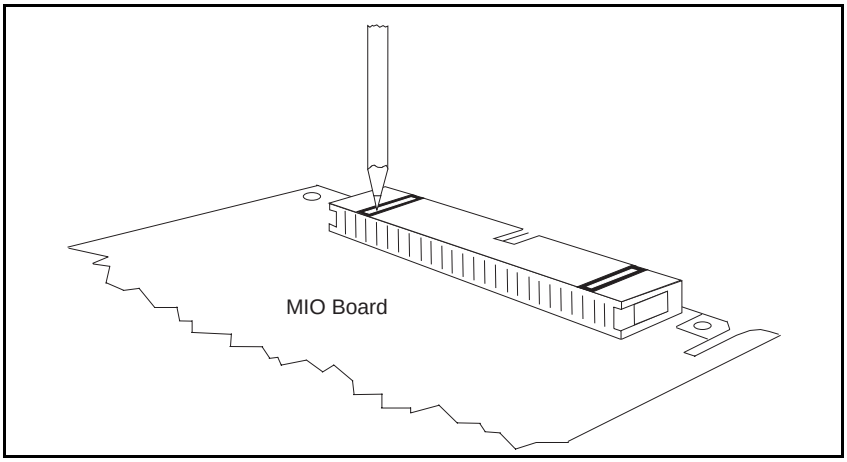


Figure 4. Removing the Key Inserts

6. Identify the appropriate replacement bracket for your MIO board from your SH6850 kit. The bracket that you use should look like the one you remove, except that the new one has an extra tab that mates with the grounding strap on the SH6850 cable assembly.
7. Install the new bracket by aligning the bracket with the holes in your MIO board and screw in the two mounting screws.

Now you are ready to connect the SH6850 shielded cable to a 50-pin MIO board and a 68-pin accessory.

SH6850 Connection

Figure 5 illustrates how to connect the SH6850 shielded cable to a 50-pin MIO board and a 68-pin MIO accessory.

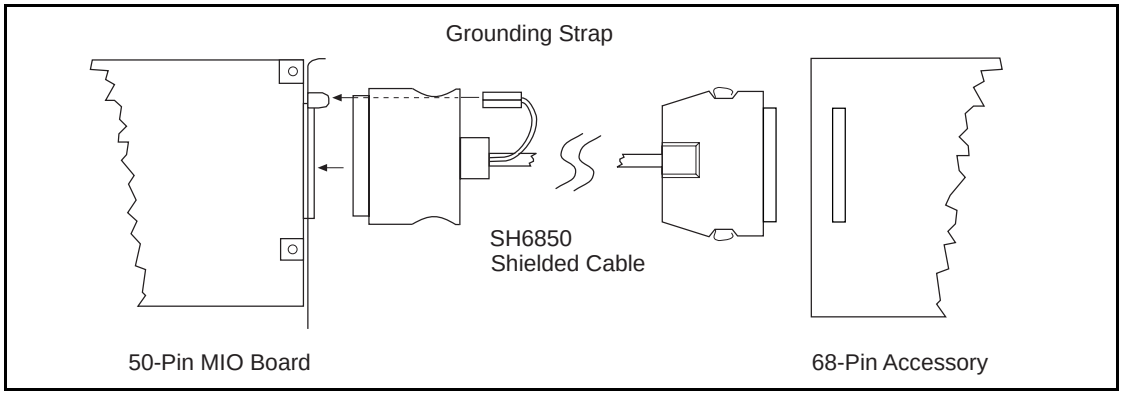


Figure 5. 50-Pin MIO Board Connection

1. Install your MIO board in a slot in your computer, following the instructions in your MIO board user manual.
2. Connect the 50-pin female connector (the end with the grounding strap) of the SH6850 shielded cable to the 50-pin male I/O connector of the MIO board, as shown in Figure 5.
3. Slide the end lug of the ground strap onto the tab of the MIO board bracket as shown in Figure 5.
4. Connect the 68-pin connector of the SH6850 shielded cable to your 68-pin MIO accessory.

The 3 in. 50-to-50-pin ribbon cable is not needed when connecting a 50-pin MIO board to a 68-pin MIO accessory.

SH6850 Pin Designations

The following table lists the pin designations for the 50-pin and the 68-pin I/O connectors on the SH6850 and the corresponding MIO-16 Series and MIO-16E Series signal names.

50-Pin Connector Pin Numbers	MIO-16 Series Signal Names	MIO-16E Series Signal Names	68-Pin Connector Pin Numbers
1, 2	AIGND	AIGND	24, 27, 29, 32, 56, 59, 64, 67
3	ACH0	ACH0	68
4	ACH8	ACH8	34
5	ACH1	ACH1	33
6	ACH9	ACH9	66
7	ACH2	ACH2	65
8	ACH10	ACH10	31
9	ACH3	ACH3	30
10	ACH11	ACH11	63
11	ACH4	ACH4	28
12	ACH12	ACH12	61
13	ACH5	ACH5	60
14	ACH13	ACH13	26
15	ACH6	ACH6	25
16	ACH14	ACH14	58
17	ACH7	ACH7	57
18	ACH15	ACH15	23
19	AISENSE	AISENSE	62
20	DAC0	DAC0OUT	22
21	DAC1	DAC1OUT	21
22	EXTREF	EXTREF	20
23	AOGND	AOGND	54, 55
24, 33	DGND	DGND	4, 7, 9, 12, 13, 15, 18, 35, 36, 39, 44, 50, 53
25	ADIO0	DIO0	52
26	BDIO0	DIO4	19
27	ADIO1	DIO1	17
28	BDIO1	DIO5	51
29	ADIO2	DIO2	49
30	BDIO2	DIO6	16
31	ADIO3	DIO3	47
32	BDIO3	DIO7	48
34, 35	+5V	+5V	8, 14
36	SCANCLK	SCANCLK	46
37	EXTSTROBE*	EXTSTROBE*	45
38	EXTTRIG*/STARTTRIG*	PFI0/TRIG1	11
39	EXTGATE*/ STOPTRIG	PFI1/TRIG2	10
40	EXTCONV*	PFI2/CONVERT*	43
41	SOURCE1	PFI3/GPCTR1_SOURCE	42
42	GATE1	PFI4/GPCTR1_GATE	41
43	OUT1	GPCTR1_OUT	40
44	EXTTMRTRIG*/ SOURCE2	PFI5/UPDATE*	6
45	GATE2	PFI6/WFTRIG	5
46	OUT2	PFI7/STARTSCAN	38
47	SOURCE5	PFI8/GPCTR0_SOURCE	37
48	GATE5	PFI9/GPCTR0_GATE	3
49	OUT5	GPCTR0_OUT	2
50	FOUT	FREQ_OUT	1

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