

## Adtron 2.5" Flashpak IDE Cable Technical Bulletin

### Introduction

This document describes the various options for connecting the 2.5" form factor Flashpak® solid state disks (SSDs) to the host controller. It also addresses the addition of two jumper pins, which are reserved for the EraSure feature (see Figure 7 on page 3 for jumper settings). Because these pins are contiguous with the other jumper and cable pins, standard 44-pin IDE cables do not fit properly.



### ESD Caution

Before handling the SSD or any media associated with the SSD, make sure you are working in an ESD-safe environment.

### Pin Layout

Figure 1 illustrates the pin layout on the 2.5" form factor SSD. As shown, the addition of the new jumper pins (E and F) essentially creates a 50-pin configuration. Options for installing the SSD include using any of the following (see Table 2 on page 3 for purchasing information):

- 44-Pin Cable with 2mm Square Tail Socket (part no. SQT-122-01-F-D-20 or SQT-122-01-L-D-20)
- 50-Pin IDE Cable
- 44-to-50-Pin IDE Cable (part no. ASP-133875-01)
- 50-Pin Backplane Connector (part no. 150250-5222-RB)
- 3.5" IDE Cable with 2.5" Drive to 3.5" Drive Cable Adapter Converter (part no. ADP-IDE23)

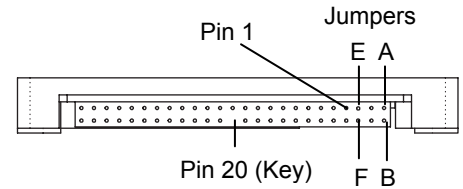


Figure 1 Pin Layout

Each of these options is described in the following sections.

### Using a 2mm Square Tail Socket

The 2mm square tail socket is a straight, pin-to-pin connector that reduces the overall connector width (see Figure 2). This adapter supports the use of jumper straps on pins A-F (see Figure 7 on page 3). Because the 44-pin adapter is keyless, it is important to note the location of pin 1. Ribbon cable pin 1 (typically red striped) must connect to pin 1 on the SSD. See Table 1 on page 3 for the SSD pinout.

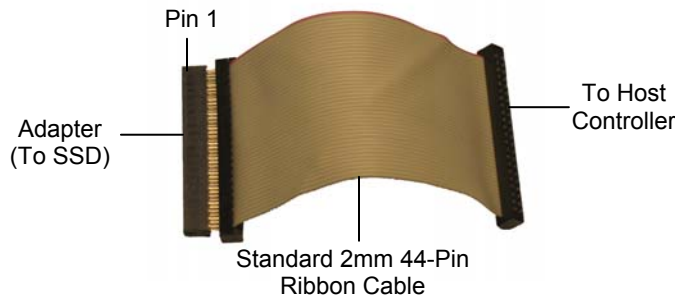


Figure 2 Connecting a 2mm Square Tail Socket (Adapter)

### Using a 50-Pin Cable

The SSD also supports a standard 50-pin cable. When using the 50-pin cable, pin 1 on the cable connects to pin A on the SSD, and pin 50 connects to pin 44 (see Figure 3 below). The SSD boots as a master drive whenever a 50-pin cable is used.

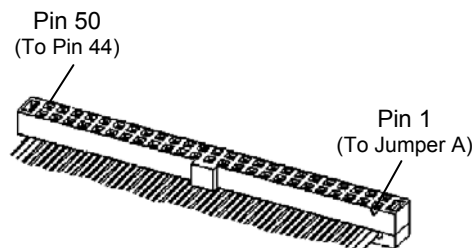


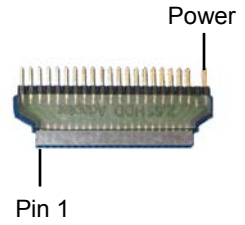
Figure 3 50-Pin Cable Layout

**Using a 2.5" to 3.5" Cable Adapter**

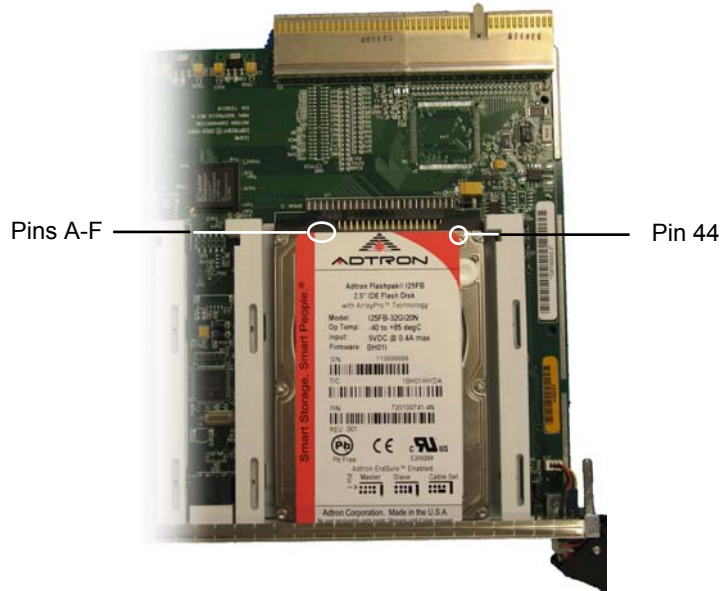
If the computer uses a 3.5" IDE cable, you must use an adapter to connect the SSD. This adapter converts the 44-pin configuration of the 2.5" form factor to a 40-pin configuration (see Figure 4). This configuration supports the use of jumper straps on pins A-F (see Figure 7 on page 3).

**Connecting to the Backplane**

You can install the SSD on any computer that uses a 50-pin backplane connector. As with connecting to a standard 50-pin cable, pin A connects to pin 1 on the backplane, and pin 44 connects to pin 50. When inserting the drive, face the label up so that pins A-F on the SSD line up with pins 1-6 on the backplane connector, as show in the Figure 5. When using this configuration, you can set jumpers A-F on the printed circuit board (PCB). Otherwise, the SSD boots as the master drive.



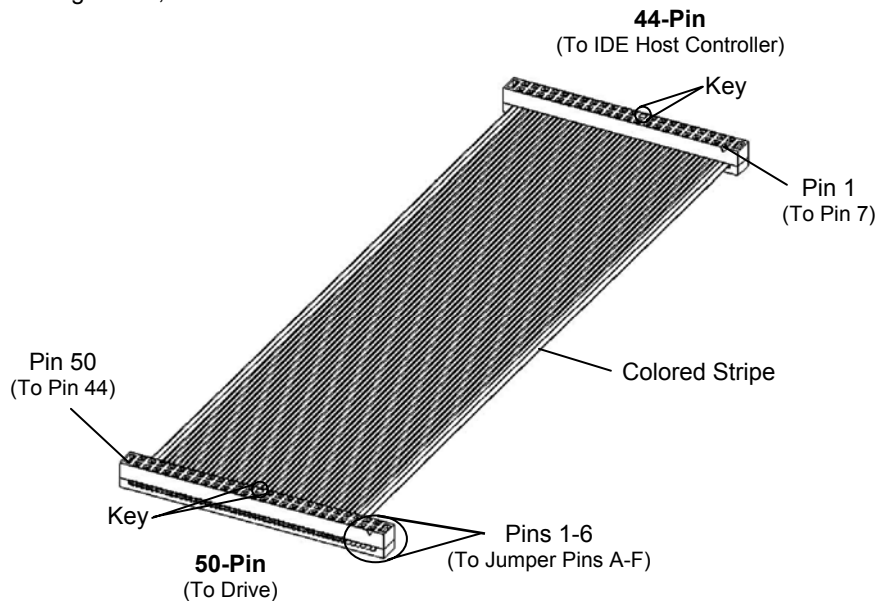
**Figure 4 3.5" Cable Adapter**



**Figure 5 Connecting to a 50-Pin Backplane**

**Using a 44-to-50-Pin Cable**

The 44-to-50-pin cable is a specialized cable that has a 50-pin connector at one end and a 44-pin connector at the other end. As shown in Figure 6, the first six pins of the 50-pin connector are not physically connected to the cable. These pins connect to the jumper pins (A-F) on the SSD. With this configuration, the SSD boots as the master drive.



**Figure 6 44-to-50-Pin Cable**

**Signal Connector Pinout**

Table 1 shows the pinout for the SDD. Pins 1-6 on a standard 50-pin cable correspond to pins A-F on the SDD. These pins are not used on a 44-pin cable.

**Jumper Settings**

Figure 7 shows the jumper settings for pins A-F. Use pins A-D for master, slave, and cable select settings. Pins E-F are reserved for secure erase functions. To place jumpers on these pins, you must use the square socket tail adapter (see page 1) or the 2.5" to 3.5" cable adapter (see page 2).

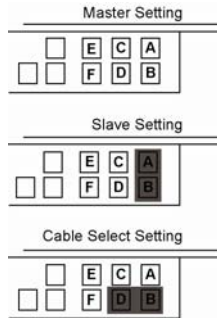


Figure 7 Jumper Settings Pins A-F

Pin	Signal	Pin	Signal
A	J_-Slave	B	JP_B
C	JP_C	D	J_CSEL_-EN
E	JP_E	F	JP_F
1	-RESET	2	GND
3	DB7	4	DB8
5	DB6	6	DB9
4	DB5	8	DB10
9	DB4	10	DB11
11	DB3	12	DB12
13	DB2	14	DB13
15	DB1	16	DB14
17	DB0	18	DB15
19	GND	20	[KEY]
21	DMARQ	22	GND
23	-DIOW	24	GND
25	-DIOR	26	GND
27	IORDY	28	CSEL
29	-DMACK	30	GND
31	INTRQ	32	-IOCS16
33	DA1	34	-PDIAG
35	DA0	36	DA2
37	-CS0	38	-CS1
39	-DASP	40	GND
41	+5V	42	+5v
43	GND	44	N/C

Table 1 Signal Connector Pinout

Signals prefixed with a dash (-) are active low as the asserted state. Signals without a dash are asserted high.

**Product Distributors**

Table 2 lists the companies that distribute the products identified in this notice.

Part No.	Description	Manufacturer	Web Site(s)
ASP-133875-01	44-to-50-Pin Cable	Samtec	<a href="http://www.samtec.com">www.samtec.com</a>
SQT-122-01-F-D-20	2mm Square Tail Socket w/Gold Flash on Contact		
SQT-122-01-L-D-20	2mm Square Tail Socket w/Gold on Contact		
ADP-IDE23	2.5" Drive to 3.5" Drive Cable Adapter Converter	Kinamax	<a href="http://www.BuyExtra.com">www.BuyExtra.com</a> <a href="http://www.Directron.com">www.Directron.com</a>
150250-5222-RB	50-Pin Boardplane Connector	3M	<a href="http://www.3m.com">www.3m.com</a>

Table 2 Product Distributors

Flashpak® is a registered trademark of Adtron Corporation.



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