

X8005

Figure 2-6 Parallel Download Cable Connection to JTAG Boundary-scan TAP

Appendix B contains schematic diagrams of the Parallel Download Cable.

Configuring the Parallel Download Cable

On PCs you can connect the parallel cable to your system's parallel printer port. The JTAG Programmer software will automatically identify the cable when correctly connected to your PC. If you choose to, you may also select this connection manually. To set up a parallel port manually:

$\texttt{Output} \rightarrow \texttt{Cable Setup}$

Select the **Parallel** box and match to the port you are using, then click on **OK**.

Flying Lead Connectors

The flying lead connector has a 9-pin (6 signals, 3 keys) header connector that fits onto the cable's JTAG header. The pin order is listed in Table 2-3. These header connectors are keyed to assure proper orientation to the cable assembly.

The flying lead connector has six individual female connectors on one end that fit onto standard 0.025" square male pins. Each lead is labeled to identify the proper pin connection.

When you layout the printed circuit board for use with JTAG insystem programming and testing, a few adjustments will make the process of connecting and downloading easier.

- Provide pins on your printed circuit board for VCC, GND, TCK, TDO, TDI and TMS.
- These pins must be standard 0.025" square male pins that have dedicated traces to the target system control pins. You connect to these pins with the flying lead connector.
- Place pins on board so that flying leads can reach them. The length of our flying leads is six inches. While pins may be a couple inches apart, do not have any two JTAG pins more than six inches apart.
- Keep header pins on your board a minimum of 0.10" apart.

Name	Function	Connections
VCC	Power – Supplies V _{CC} (5 V, 10 mA, typically) to the cable.	To target system V _{CC}
GND	Ground – Supplies ground reference to the cable.	To target system ground
TCK	Test Clock – this clock drives the test logic for all devices on boundary-scan chain.	Connect to system TCK pin.
TDO	Read Data – Read back data from the target system is read at this pin.	Connect to system TDO pin.
TDI	Test Data In – this signal is used to transmit serial test instructions and data.	Connect to system TDI pin.

 Table 2-3
 Parallel Cable Connections and Definitions

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Name	Function	Connections
TMS	Test Mode Select – this signal is decoded by the TAP controller to control test operations.	Connect to system TMS pin.



Figure 2-7 JTAG Cable and Leads (parallel cable shown)

Power Up Sequencing

- 1. Connect your cable to your host computer.
- 2. Turn the power to your target system off, if possible.
- 3. The power for the drivers is derived from the target system. Connect the cable's GND wire to the corresponding signal on the target board. Next, connect VCC to the corresponding signal on the target board.

Note: Download cables will not operate if the target system's power is turned off before or during JTAG Programmer operations. Make