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## Features

- Supports Atmel's AT6K/40K FPGA & AT94K FPSLIC™
- Simple Parallel Port Interface
- No External Configuration Memory Required
- Download Directly to the SRAM-based Device
- Fast Configuration

## Software Requirements

- IDS (Supports AT6K and AT40K)
- System Designer (Supports AT94K)
- Downld.exe (Included with IDS Software for AT6K – under <install dir>\bin)
- Downld40.exe (Included with IDS Software for AT40K – under <install dir>\bin)
- Downld40.exe (Included with System Designer™ Software for AT94K – under <install dir>\bin)
- Operating System – Windows® 95/98/2000/Me, Windows NT® and MS DOS

## Description

Atmel's ATDH2081 download cable allows designers to configure Atmel's family of AT6K/40K Field Programmable Gate Array (FPGA) and AT94K Field Programmable System Level Integrated Circuit (FPSLIC) devices. The ATDH2081 connects to any x86 PC via the parallel port through a 10-pin header cable to configure FPGA or FPSLIC devices. The bitstream is downloaded in milliseconds.

The ATDH2081 download cable is used in conjunction with the ATDH40M motherboard (AT40K FPGAs) as well as the downld40.exe program that is provided with the IDS tool set for FPGAs. The ATDH2081 download cable is used to download directly from the PC (Mode 7).

The ATDH2081 download cable can only be used for programming directly to the Atmel's SRAM devices listed above. It is not suitable for use with configuration memory devices and the Configuration Programming System (CPS) software.



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**Programmable  
SLI**

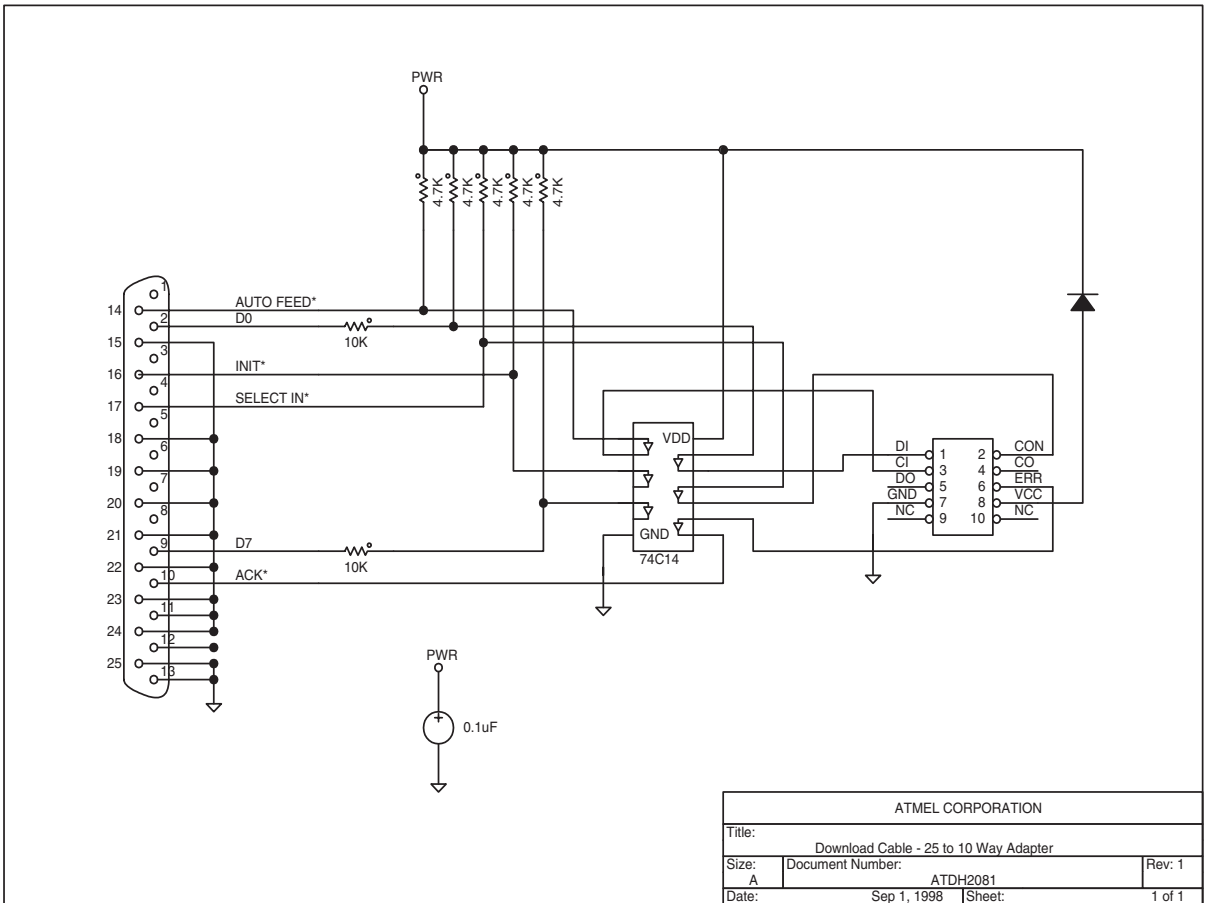
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**ATDH2081  
Download Cable**

Rev. 2315A-07/01



Figure 1. ATDH2081 Download Cable (25- to 10-Way Adapter)



## Example Hardware Connections for Use with ATDH40M

1. Connect the 25-pin parallel cable to the 25-pin male connector of the ATDH2081 download cable.
2. Connect the 10-pin female header into the 10-pin male header (H1) on the ATDH40M motherboard.
3. Connect the power supply from an AC outlet to the 9V DC connector (P1) on the ATDH40M motherboard.
4. Adjust SW3 to Internal PS and SW1 to the ON position. Check to see that LED(L1) is on and visibly bright.
5. Adjust SW2 to the 5V position for AT40KXX devices and 3V position for AT40KXXLV/AT40KALXX devices. Verify the voltage reading at VCC pads.
6. Ensure that the 4 MHz signal is switched on for all left side pins of H2 and that at least one jumper is provided for H2.
7. Set CS<sub>0</sub> to GND and M<sub>0</sub>, M<sub>1</sub> and M<sub>2</sub> to VCC.

## Download to FPGA Directly from PC (Mode 7)

1. Verify that a jumper is placed on H2 across GCK4.
2. Adjust SW4 and SW5 according to the silk-screened table for Mode 7 on the ATDH40M motherboard.
3. Adjust SW1 to the ON position.
4. Download bitstream from the PC using the following command:  
downld40 yourfile.bst.



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