ispDOWNLOAD™ Cable

Download Cable for In-System Programming of the ispLSI®, ispGAL® and ispGDS™ Families of Devices

Features

- **CABLE AND PARALLEL PORT ADAPTER FACILITATE IN-SYSTEM PROGRAMMING OF ISP FAMILY OF DEVICES**
  - **— Simplifies In-System Programming**
  - **— Ideal for Design Prototyping and Debugging**
- **SUPPORTS ALL ISP® FAMILIES**
  - **— ispLSI™ Families (1000/E, 2000, 3000 and 6000)**
  - **— ispGAL® Family**
  - **— ispGDS™ Family**
- **EASY-TO-USE CONNECTORS**
  - **— 25-Pin Adapter Connects to PC Parallel Printer Port**
  - **— Two 6' Cables Offer PC Board Interface Options:**
    - **RJ-45 Connector**
    - **AMP Connector (8 Position, .100 Inch Center Spacing)**

Introduction

The ispDOWNLOAD Cable is designed to facilitate in-system programming of all Lattice Semiconductor Corporation (LSC) ISP devices on a printed circuit board directly from the parallel port of a PC. With In-System Programmiability™, hardware functions can be programmed and modified in real-time on the system board to give additional product features, shorten system design and debug cycle time, enhance product manufacturability and simplify field upgrades. After completion of the logic design and creation of a JEDEC file by a logic compiler such as the pDS®, pDS+™ Fitter or ispGDS Compiler software, Lattice Semiconductor's ISP Daisy Chain Download software programs devices on the end-product PC board by generating programming signals directly from the parallel port of a PC which then pass through the ispDOWNLOAD Cable to the device. With this cable and a connector on the PC board, no additional components are required to program a device. The ISP Daisy Chain Download software automatically generates the appropriate ISP command, programming address and data from the JEDEC fuse map information. ISP Daisy Chain Download software is included with all LSC pDS and pDS+ Fitter products.

Figure 1. ispDOWNLOAD Cable Offers Two Types of In-System Programming Interfaces

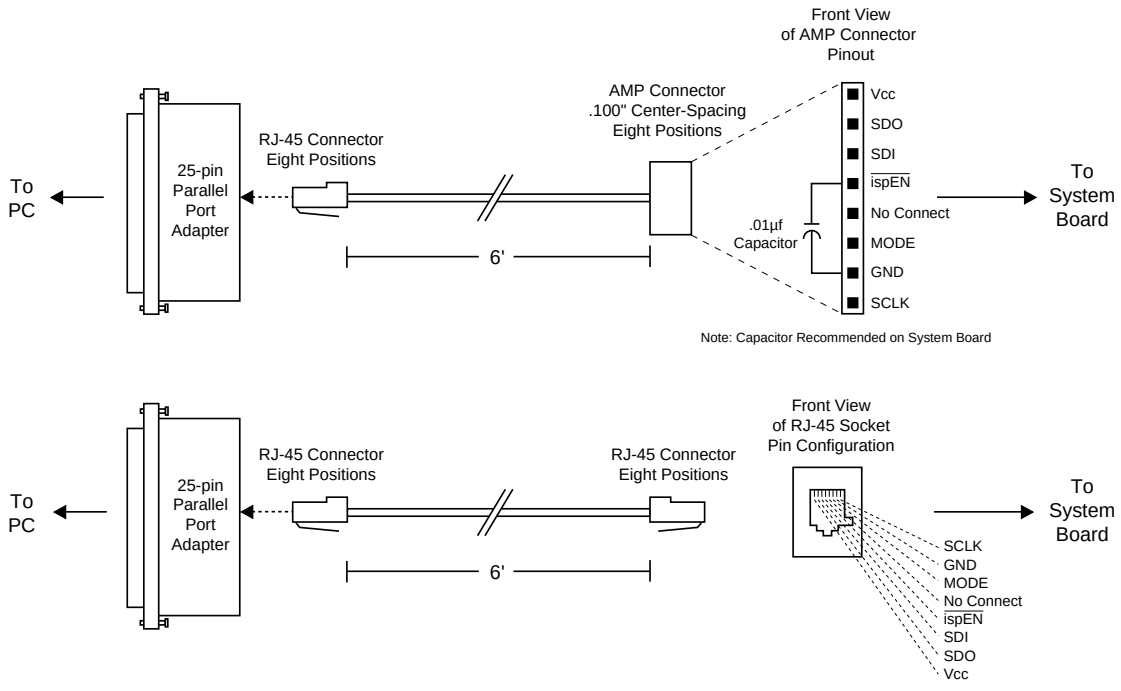

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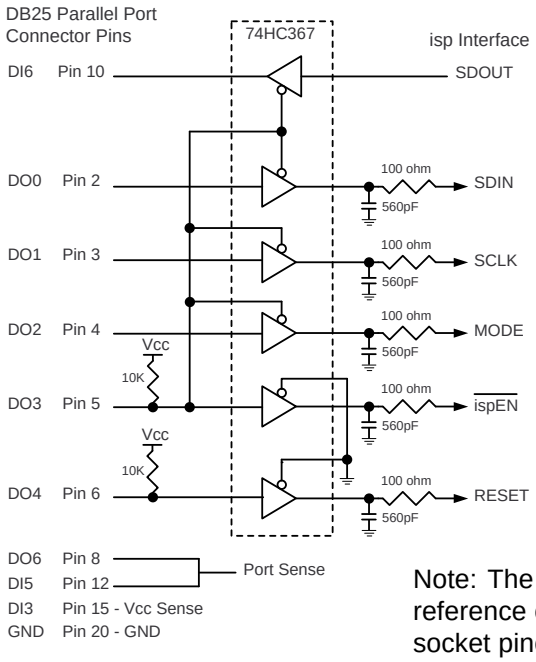
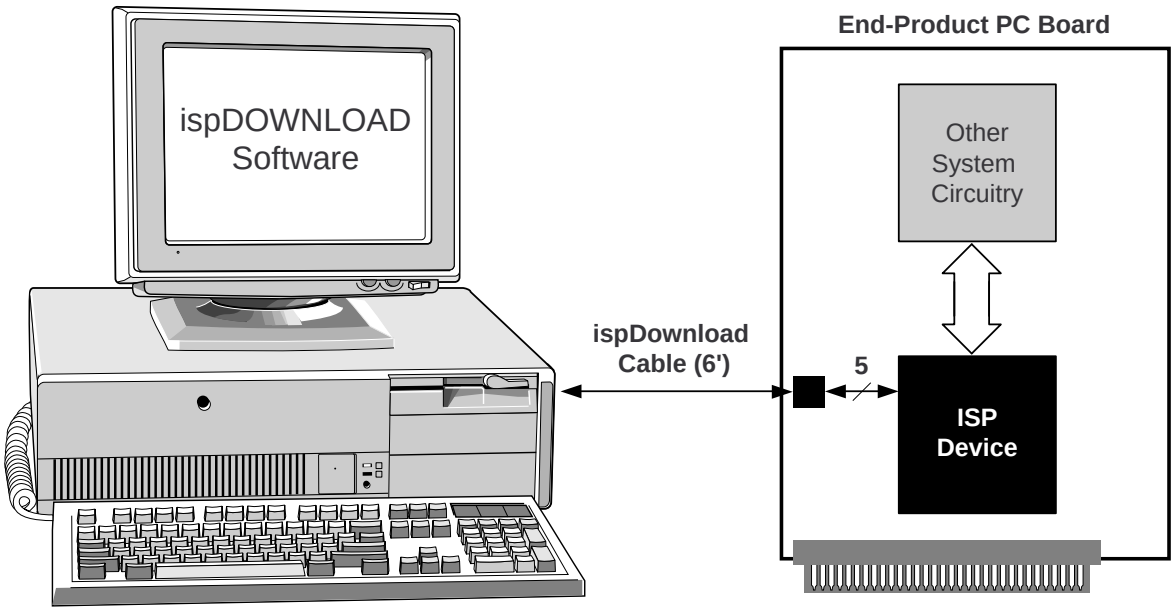
Figure 2. PC Parallel Port Connector



Note: The pin numbers in this diagram are for reference only. Do not use pin numbers as the socket pinout for board layout.

Figure 3. Configuring In-System Programming from a Remote System



Product Ordering Information

Product Code	Description
pDS4102-DL	ispDOWNLOAD Cable (For PC Only) Contains: Two 6' Cables with RJ45 and AMP Connectors, Parallel Port Adapter, Documentation

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