

January 2003

Features

■ Support for All Lattice ISP Product Families (Including ispPAC® and ORCA® Families)

- 1.8V to 5V programming
- Ideal for design prototyping and debugging

■ Connect to Multiple PC Interfaces

- USB (v1.0, 2.0 ready)
- PC Parallel Port

■ Easy-to-Use Programming Connectors

- Versatile flywire, 2 x 5 (.100") or 1 x 8 (.100") connectors

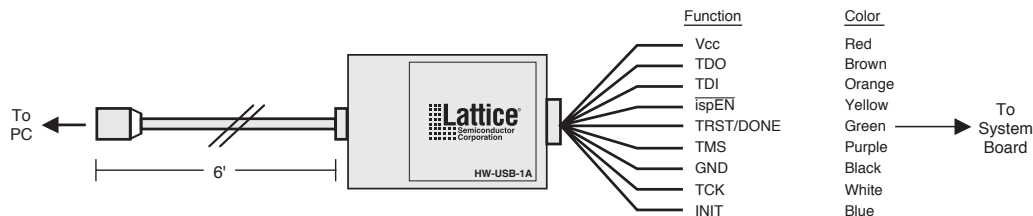
■ 6 Feet (2 Meters) or More of Programming Cable Length (PC to DUT)

ispDOWNLOAD Cable for the PC

The ispDOWNLOAD Cables for the PC are designed to facilitate in-system programming of all Lattice Semiconductor ISP devices on a printed circuit board directly

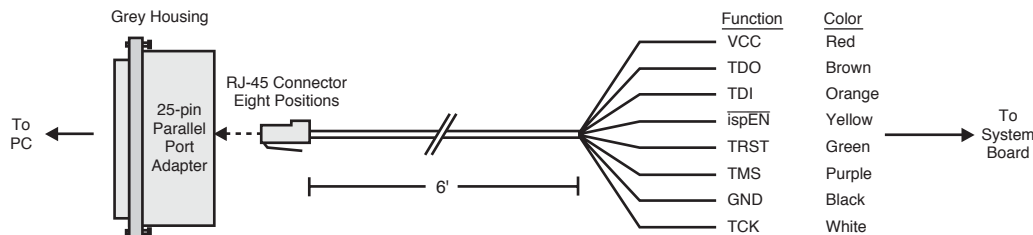
from the parallel port of a PC. With in-system programmability, hardware functions can be programmed and modified in real-time on the system board to give additional product features, shorten system design and debug cycle time, enhance product manufacturability and simplify field upgrades. After completion of the logic design and creation of a programming file in the Lattice development system, ispVM™ System software programs devices on the end-product board. Programming signals are generated from the USB or parallel port of a PC and directed through the ispDOWNLOAD Cable to the device. With one of these cables and a connector on a board, no additional components are required for programming. The ispVM System software automatically generates the appropriate ISP command, programming address and data from the programming file information. ispVM System software is included with all Lattice Semiconductor design tool products and from the Lattice web site at www.latticesemi.com.

Figure 1. ispDOWNLOAD Cable In-System Programming Interface for the PC (HW-USB-1A)



Supports 1.8V, 2.5V, 3.3V and 5V Programming

Figure 2. ispDOWNLOAD Cable In-System Programming Interface for the PC (HW7265-DL3)

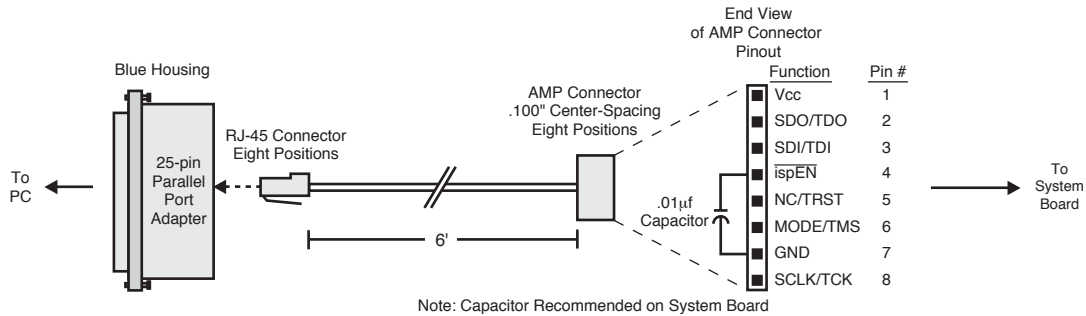


Supports 1.8V, 2.5V, 3.3V and 5V Programming

When connecting this cable to existing target system boards that have used the 1 x 8-position AMP connector or the 2 x 5-position (10-pin) connector, use the following table to make connections:

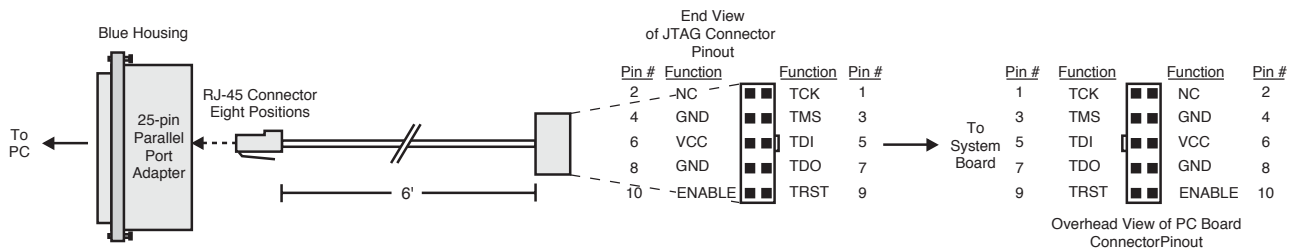
Parallel Port Connector		Flywire Cable		Your Board			
DB 25 Pin	Function	Function	Color	Pin #	8-Position Connector	Pin #	10-Position Connector
—	—	V _{CC}	Red	1	V _{CC}	6	V _{CC}
10	TDO	TDO	Brown	2	SDO/TDO	7	TDO
2	TDI	TDI	Orange	3	SDI/TDI	5	TDI
5	ispEN	ispEN	Yellow	4	ispEN	10	Enable
6	TRST	TRST	Green	5	Do Not Connect (TRST)	9	TRST
4	TMS	TMS	Purple	6	MODE/TMS	3	TMS
—	—	GND	Black	7	GND	4	GND
3	TCK	TCK	White	8	SCLK/TCK	1	TCK
7	JTAG	—	—	—	—	2	No Connect
12	DL1-ID	—	—	—	—	8	GND (Do Not Connect)
8	OUT						
13	DL2-ID						
15	VCC						
20	GND						

Figure 3. ispDOWNLOAD Cable In-System Programming Interface for the PC (pDS4102-DL2)



Supports 2.5V, 3.3V and 5V Programming

Figure 4. ispDOWNLOAD Cable In-System Programming Interface for the PC (HW7265-DL2)



Supports 2.5V, 3.3V and 5V Programming

Product Ordering Information

Product Description	Part Number
ispDOWNLOAD cable (USB). Contains 6' USB cable, flywire connectors, 8-position (1x8) AMP connection adapter and 10-position (2x5) JTAG connection adapter.	HW-USB-1A
ispDOWNLOAD cable (PC only). Contains parallel port adapter, 6' cable with RJ45, flywire connectors, 8-position (1x8) AMP connection adapter and 10-position (2x5) JTAG connection adapter.	HW7265-DL3
ispDOWNLOAD cable (PC only). Contains 6' cable with RJ45 and 8-position AMP connector and parallel port adapter.	pDS4102-DL2
ispDOWNLOAD cable (PC only). Contains 6' cable with RJ45 and 10-position JTAG connector and parallel port adapter.	HW7265-DL2

Feature	Ordering Part Number			
	HW-USB-1A	HW7265-DL3	HW7265-DL2	PDS4102-DL2
USB	X			
PC-Parallel		X	X	X
1.8V Support	X	X		
2.5-5.0V Support	X	X	X	X
2x5 Connector	X	X	X	
1x8 Connector	X	X		X
Flywire	X	X		

Technical Support Assistance

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 1-408-826-6002 (International)
 e-mail: techsupport@latticesemi.com