CY3900i

Delta39K™/Ultra37000™ ISR™ Programming Kit

Features

- **Supports Cypress's Ultra37000™, Ultra37000V™, Quantum38K, Delta39K™, and PSI™ families of products**
- **STAPL programming language support**
- **Standard JTAG programming interface**
- **Multi-device programming**
- **Easy to use Windows 98™, Windows 2000™, Windows ME™, and Windows NT™ compatible interface**
- **Eliminates programming insertion to improve manufacturing efficiency**
- **For programming in the lab, on manufacturing floor, or at remote sites**
- **ATE support via STAPL on industry leading ATE platforms**

Kit Contents

- **UltraISR™ Programming Cable for use with Ultra37000, Delta39K, and PSI CPLD families**
- **ISR Programming Software Release 3.0**
- **ISR Application Notes**
- **Delta39K™/Ultra37000™ Prototype Board**[1]

Functional Description

The Delta39K/Ultra37000 ISR Programming Kit enables users to program Ultra37000, Ultra37000V, Quantum38K, Delta39K, and PSI CPLDs on board with our ISR Programming Software, the UltraISR Programming Cable, and a personal computer. The UltraISR Programming Cable connects to the parallel port of a PC into a standard 10-pin male connector mounted on the user's board. The ISR software provides an easy-to-use Graphical User Interface that accepts JEDEC or.hex files as input. The JEDEC/.hex files are used to compose platform independent STAPL files. STAPL files contain all the information needed to program the device. The ISR software is used to define how many devices are in the daisy chain and what operation is to be done on each Cypress device. The same chain can be used with other JTAG compliant devices.

The ISR User's Guide describes the operation of the ISR software. The application notes included with the kit describe all system design considerations for programming with this Programming Kit.

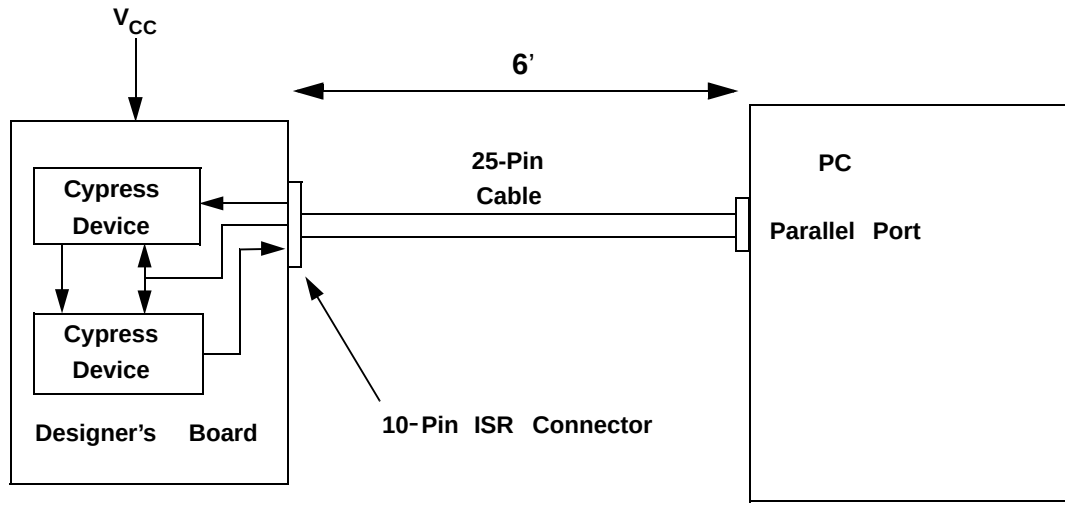
10-Pin Programming Connector

The diagram below shows the pinout of the 10-pin male connector to be mounted onto the board.

The view looking down onto the board connector pins is shown below:

TDO	VCC	ISR[2]	JTAGen	GND[2]
GND	NC	TDI	TCK	TMS

In-System Reprogrammable™ (ISR™) Programming



Notes:
1. Cypress reserves the right to substitute prototype boards based on product availability.
2. Refer to the CD-ROM ISR User's Guide documentation for detailed information on ISR programming and electrical specification requirements.

Table 1. UltraISR Cable Pin Description

Pin	Type	Description
JTAGen	OUTPUT	In System Reprogramming JTAG enable (active HIGH).
ISR*	OUTPUT	In System Reprogramming enable indicator (active LOW).
VCC	INPUT	+5V and +3.3V supply voltage provided from the target system to the cable.
TDO	INPUT	Test Data Output Receiver. The TDO output pin of the last device in the ISR chain of the system is connected to this input pin.
TMS	OUTPUT	Test Mode Control. This is the mode select control input for the TAP controller state machine contained in the ISR interface.
TCK	OUTPUT	Test Clock. ISR interface clock.
TDI	OUTPUT	Test Data Input Driver. This output pin is connected to the TDI input of the first device in the ISR chain.
NC	NC	No Connect.
GND	—	Zero volt common ground for PC and target system.

Table 1 describes the function of each of these pins on the UltraISR Programming Cable. An OUTPUT is provided by the PC and an INPUT is provided by the target system.

The dimensions of the male connector required for the UltraISR Programming Cable are given below:

Male Connector:

- 2 x 5 = 2 rows, 5 pins per row
- Measuring from center of the pins, each pin is 0.1” from the others.
- Pin Length is 0.23”
- Pin cross-section is 0.025” x 0.025”

Part Number:

- DIGI-KEY® S2012-05-ND (straight-pin connector)
- DIGI-KEY S2112-05-ND (right-angle connector).

To facilitate easy and quick prototyping of designs, a Delta39K/Ultra37000 Prototype Board* has been included in the CY3900i Delta39/Ultra37000 ISR Programming Kit (see Figure 1 for the basic layout). The prototype board comes with a CY37256VP160 device and a CY39100V208 device already premounted and header strips that facilitate signal testing. Detailed information on the board layout and proper usage may be found in the Cypress application note, “Using the Delta39K ISR Prototype Board.”

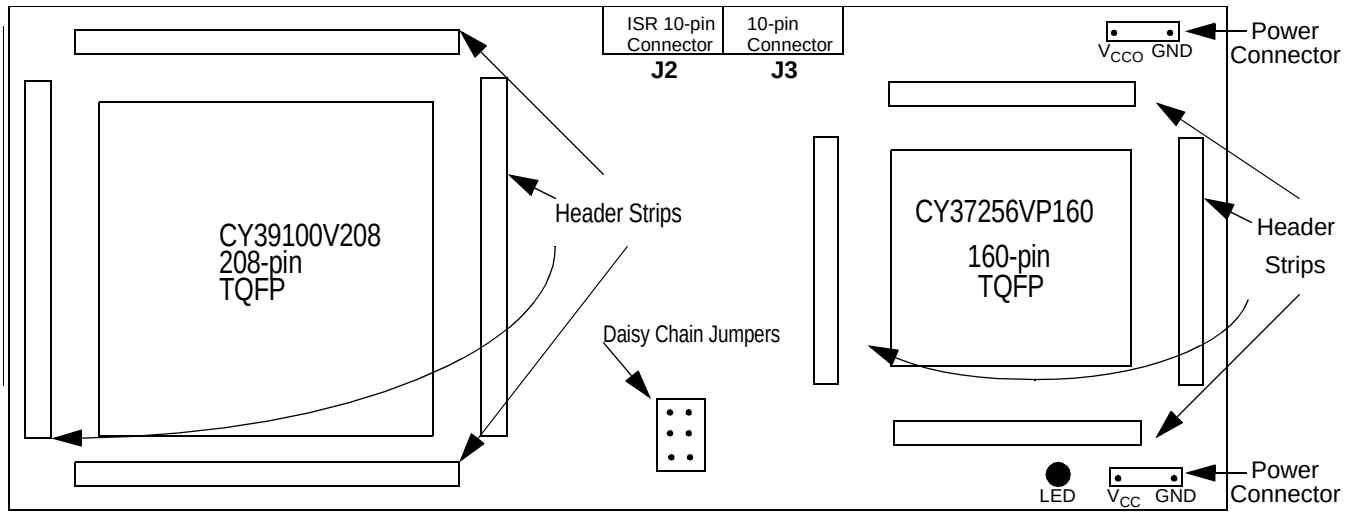


Figure 1. Delta39K™/Ultra37000™ Prototype Board

PC System Requirements

- IBM PC or compatible running Windows 98, Windows 98 Second Edition, Windows ME, Windows NT 4.0 Service Pack 5 or later or Windows 2000 Service Pack 1 or later
- One free parallel port
- Minimum of 32MB of RAM
- Approximately 30MB free hard disk space

Ordering Information

Product Code	Description
CY3900i	Delta39K/Ultra37000 ISR Programming Kit

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