Ultra37000™ ISR™ Programming Kit

Features

- **Supports Ultra37000™ and Ultra37000V™ CPLD device families**
- **Jam programming language support**
- **Standard JTAG programming interface**
- **Multi-device programming**
- **Easy to use Windows 95™, Windows 98™, 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 Jam on industry leading ATE platforms**

Kit Contents

- **37000 UltraISR™ Programming Cable for use with Ultra37000 CPLDs**
- **ISR Programming Software Release 2.2**
- **ISR Application Notes**
- **Ultra37000 Prototype Board with one CY37256 device**

Functional Description

The Ultra37000 ISR Programming Kit enables users to program Ultra37000 or Ultra37000V CPLDs on board with our ISR Programming Software, the 37000 UltraISR programming cable, and a personal computer. The 37000 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 files as input. The JEDEC files are used to compose platform independent Jam files. Jam files contain all the information needed to program the device. The ISR software is used to dictate 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 the Ultra37000 ISR Programming Kit.

10-Pin Ultra37000™ ISR 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[1]	JTAGen	GND[2]
GND	NC	TDI	TCK	TMS

Ultra37000 ISR Programming[3]
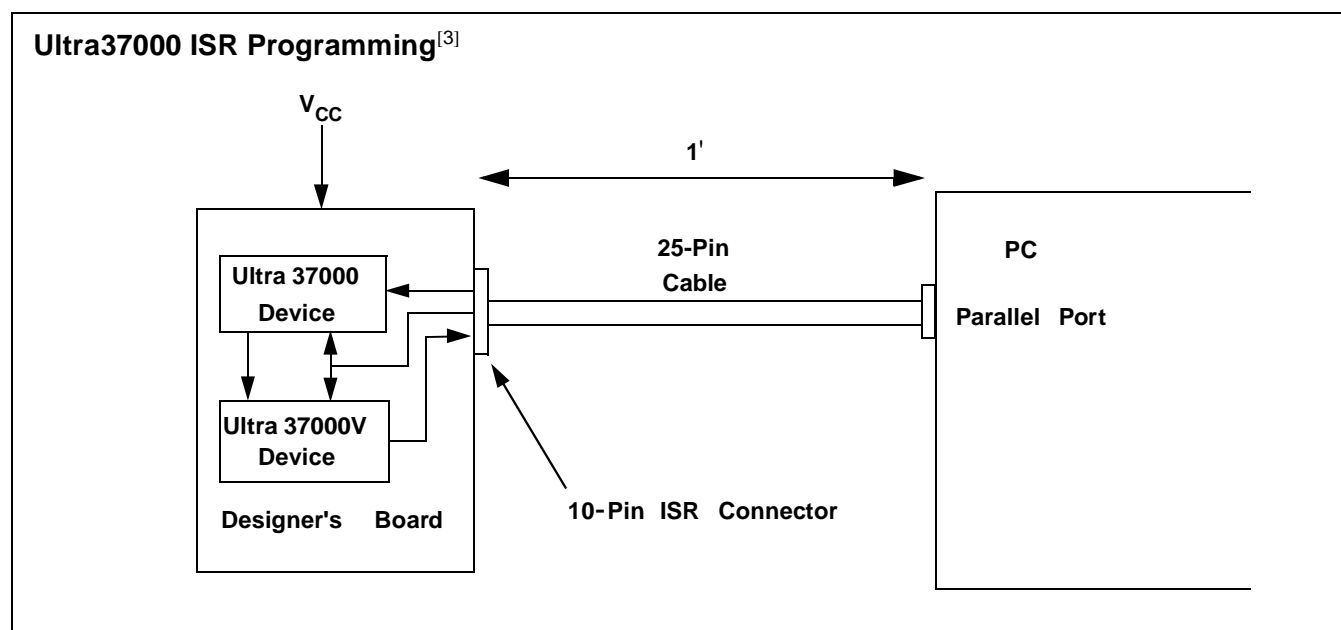
Notes:
1. Refer to the CD-ROM ISR User's Guide documentation for detailed information on ISR programming and electrical specification requirements.
2. Pin1 Connection.
3. A parallel port extension cable can be used to extend the 37000 UltraISR Cable to lengths over 1'.

Table 1. 37000 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 & +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 input.
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 37000 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 37000 UltraISR™ 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).

Ultra37000™ Prototype Board
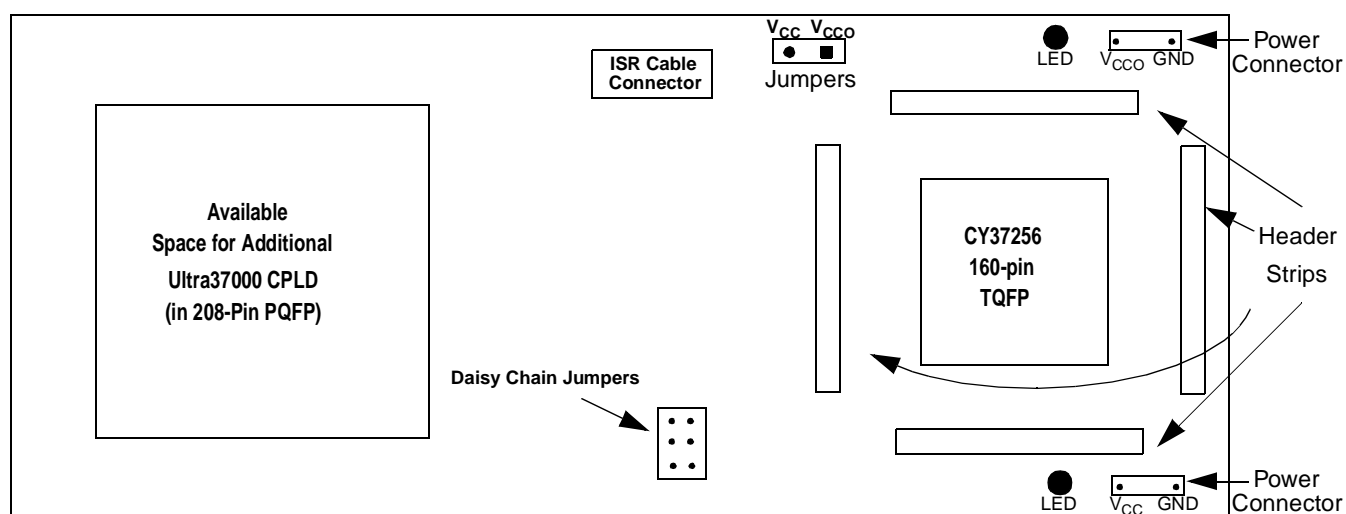
Figure 1. Ultra37000 Prototype Board

To facilitate easy and quick prototyping of designs, an Ultra37000 Prototype Board has been included in the Ultra37000 ISR Kit (see *Figure 1* for the basic layout). The prototype comes with a CY37256P160 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 Ultra37000 ISR Prototype Board."

PC System Requirements

- One free parallel port
- 486 / 66-MHz PC or better
- Windows 95/98/NT
- 16 MB of RAM
- 1 MB or more disk space

Ordering Information

Product Code	Description
CY3700i	Ultra37000 ISR Programming Kit

Document #: 38-00746-B

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