
Contents

Atmel FPGA Integrated Development System (IDS) contains the following items:

- IDS Installation Guide
- CD-ROM containing all necessary software and online documents

Features

- Support for Industry-standard PC and Workstation Tools
- Schematic, PLD, Verilog® and VHDL Design Entry Supported
- Macro Libraries for AT40K/AT40KAL and AT6000 FPGA Families
- Automatic Macro Generators for AT40K and AT6000
- HDL Planner for VHDL and Verilog Entry
- Hierarchy Browser
- User Library Management
- Technology Mapping
- Multi-chip Partitioning
- Floor Planning Capability
- Graphical Constraint Entry
- Incremental Design Change
- Timing Driven Design with Advanced Static Timing Analysis
- Automatic Place and Route
- Interactive Layout Editing
- Power Calculation
- Full Back-annotation for Functional and Post-layout Simulation
- Online Tutorials for New and Advanced Users
- Applications Support
- FPGA Applications Hotline - (408) 436-4119 or fpga@atmel.com
- FAQ and Application Notes at <http://www.atmel.com/atmel/products/prod3.htm>
- Maintenance
- Software Support for One Month is Included

Description

Atmel's Integrated Development System (IDS) lets designers create fast, predictable designs with AT40K/AT40KAL and AT6000 Series FPGAs.

Available for use with Windows® 98/2000, Windows NT® and Sun Solaris™/SunOS UNIX Workstation-based computers, IDS combines industry-standard software for design entry, synthesis and simulation with Atmel's proprietary software for component generation, automatic and interactive placement and routing, timing analysis and bitstream generation.

The IDS Desktop is shown in Figure 1. The Design Flow Bar provides push-button access to all the steps in the design flow. This includes opening schematic entry and synthesis tools and generating files for simulations automatically.

Figure 2 shows the HDL Planner tool which is used for VHDL and Verilog Design Entry. Figure 3 shows the Macro Generator used to generate standard components with optimal layout and performance.



Atmel FPGA Integrated Development System (IDS)



Figure 1. Integrated Development System

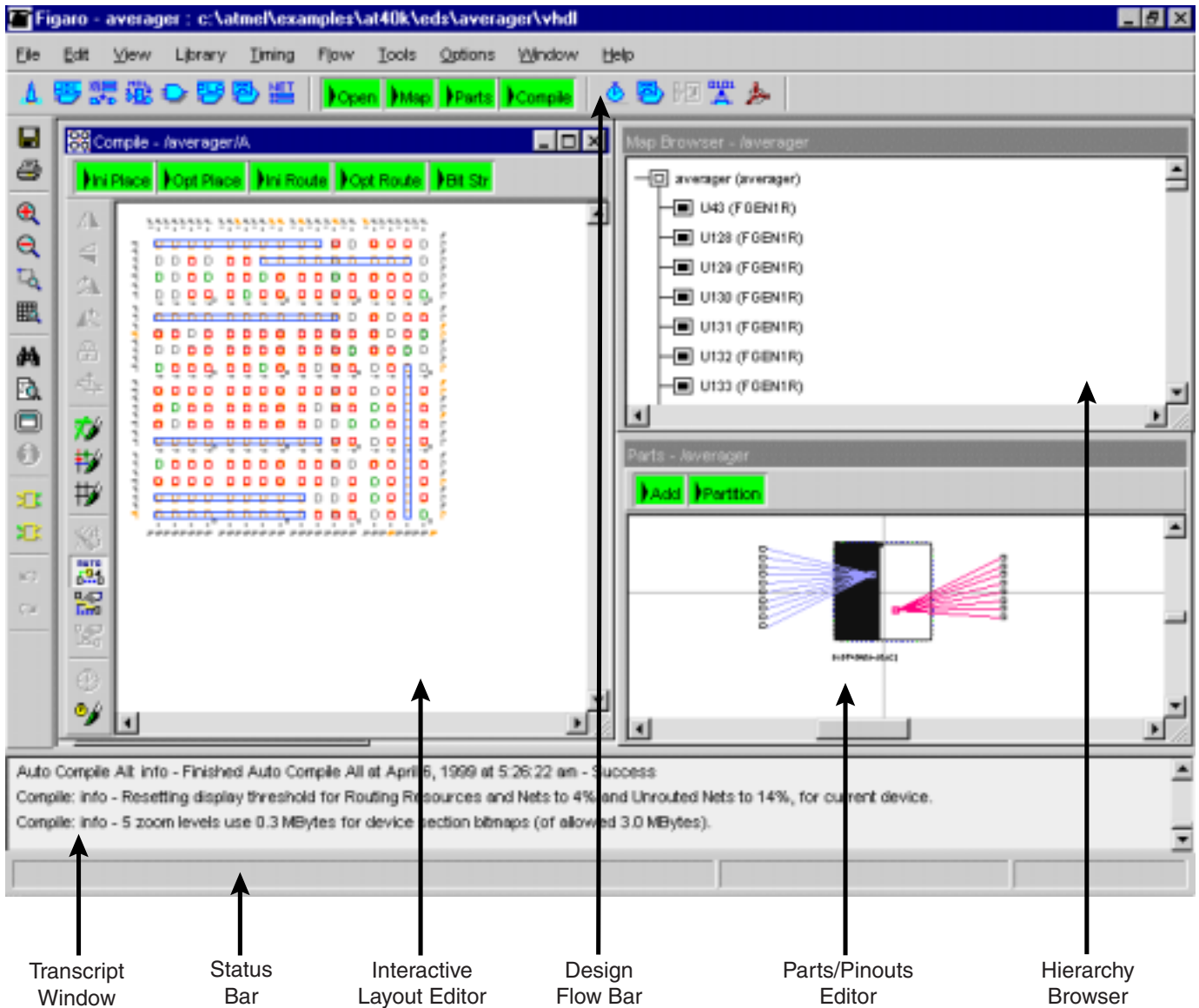
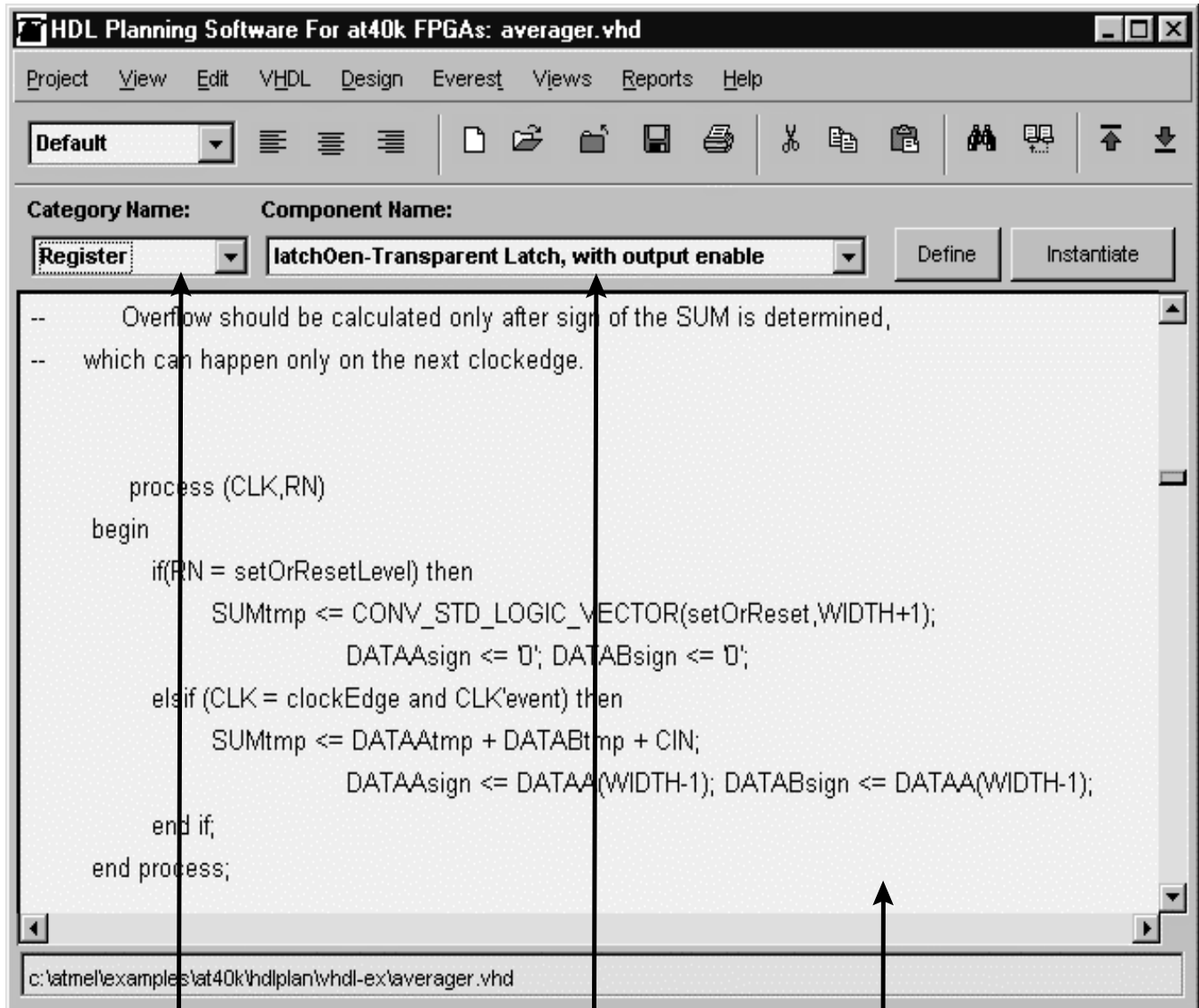


Figure 2. HDL Planner Tool

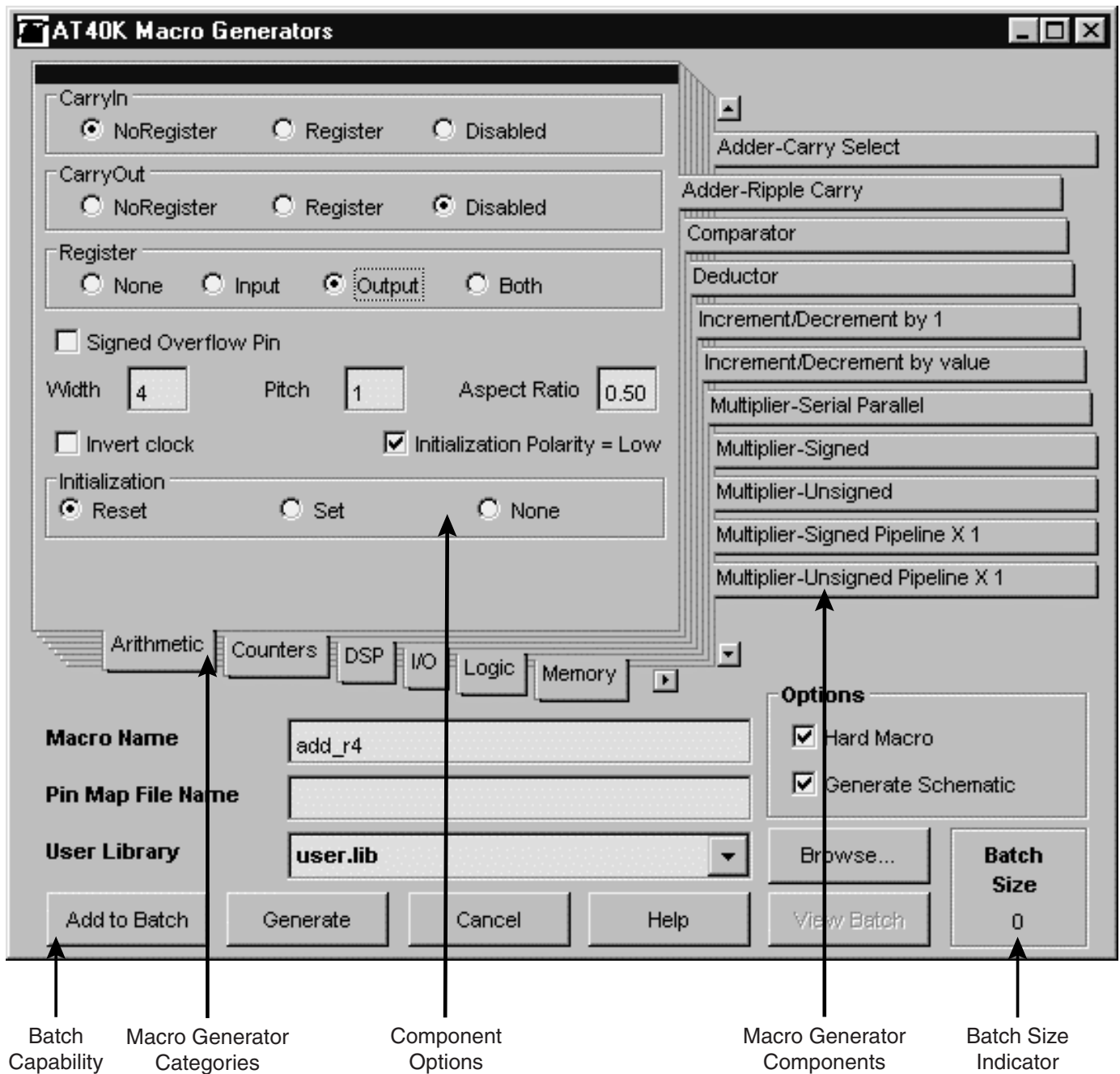


Macro Generator
Categories

Macro
Components

VHDL/Verilog
Editor

Figure 3. Macro Generator



Ordering IDS and CAE Tools

When IDS is shipped, the CD contains library support and interfaces to all the listed CAE tools, see on page 6.

A month evaluation copy of Exemplar LeonardoSpectrum® Synthesis tool is shipped on the CD.

For other CAE tools listed, the libraries and interface are supplied on the IDS CD. For the vendor software and licensing you should go directly to the third-party vendor. Atmel does not supply these systems. Many of the listed tools have evaluation copies available on their web sites.

Simulation Libraries

A month evaluation copy of ModelSim® Simulator is shipped on the CD.

There are many other simulators available on the worldwide web. The IDS CD does include fully verified Verilog and VHDL VITAL® libraries. These can be compiled and used with any other simulation tool that is Verilog or VHDL compliant. IDS will export a Functional Netlist for pre-layout simulation and a Post-layout Netlist and SDF files for Post-layout Simulation.

The only difference with “Unsupported” tools is that there are not tutorials for these tools, and they are not fully integrated to IDS.

Annual Maintenance Agreements

Annual maintenance agreements are available for each Package Option in the Integrated Development System (IDS). The first year of maintenance is included in the purchase price – renewal is optional. Maintenance agreements give the users direct access to Atmel’s experienced technical support staff and cover software upgrades that keep engineers on the leading edge of Atmel’s design tools.

System Requirements

PC-based Systems

For a single-user system, IDS requires a personal computer with a 80486 or greater micro-processor equipped as follows; or better.

- 3.5-inch 1.44 MB capacity high-density disk drive (recommended)
- CD-ROM drive
- 200 MB minimum hard drive (both IDS and Viewlogic)
- 48 MB extended memory minimum (64 MB recommended for larger designs using Timing and Mapping)
- Serial interface port
- Parallel interface port
- MS-DOS, release 5.0
- Microsoft Windows 95/98/2000, NT 3.51, or NT 4.0 or higher
- VGA graphics card and display monitor
- Windows compatible mouse
- A permanent swap space of 64 MB: refer to the Windows documentation for details on its setup
- Sufficient disk space for file archival and management

Sun-based Systems

For a single-user system, IDS requires a Sun Sparcstation® workstation equipped as follows:

- CD-ROM drive (local or network)
- 200 MB (minimum) hard drive 50 MB hard disk space allocated as swap space
- 64 MB RAM
- SUNOS 4.1.2/Solaris 2.4 or higher
- X11R4/Motif 1.1.4, X11R5/Motif 1.2, or OpenWindows 3.x



CAE Tools Supported by IDS

| Vendor | Tool | Version | Type | Platform | AT40K AT40KAL | AT6000 | Software Ordering Code | Maintenance Ordering Code |
|--------------------------|---------------------|--------------|------------|----------|------------------|--------|--|--|
| eProduct Designer® | ViewDraw™ | 1.1+ | Schematic | PC | x | x | See Viewlogic Table for Ordering | See Viewlogic Table for Ordering |
| | Digital Fusion™ | 1.1+ | Simulation | PC | x | x | | |
| Viewlogic® Powerview™ | ViewDraw™ | 5.3.1 - 6.0+ | Schematic | Sun | x | x | | |
| | ViewSim™ | 5.3.1 - 6.0+ | Simulation | Sun | x | x | | |
| | ViewSynthesis™ | 5.3.1 - 6.0+ | Synthesis | Sun | x | x | | |
| Orcad® | Express®/Capture® | 9.1+ | Schematic | PC | x | x | ATDS2100PC | ATDM2100PC |
| | Express®/Capture® | 9.1+ | Simulation | PC | x | x | | |
| | Express®/Capture® | 9.1+ | Synthesis | PC | x | x | | |
| Synplicity® | Synplify™ | 5.1.2+ | Synthesis | PC/Sun | x | | ATDS2100PC | ATDM2100PC |
| Model Technology™ | ModelSim™ | 4.7b+ | Simulation | PC | x | x | ATDS2100PC | ATDM2100PC |
| | ModelSim™ | 5.1+ | Simulation | Sun | x | x | ATDS2100SN | ATDM2100SN |
| Exemplar™ | LeonardoSpectrum™ | 3+ | Synthesis | PC | x | x | ATDS2100PC | ATDM2100PC |
| | Galileo Extreme™ | 4.1+ | Synthesis | PC/Sun | x | x | ATDS2100SN | ATDM2100SN |
| | Leonardo Extreme™ | 4.1+ | Synthesis | PC/Sun | x | x | | |
| Synopsys® | FPGA Express™ | 2.1+ | Synthesis | PC | x | x | ATDS2100PC | ATDM2100PC |
| | FPGA Compiler™ | 3.2+ | Synthesis | Sun | x | x | ATDS2100SN | ATDM2100SN |
| | Design Compiler™ | 3.2+ | Synthesis | Sun | x | x | | |
| | VSS VHDL Simulator™ | 3.2+ | Simulation | Sun | x | x | | |

AT6000 Only

| Vendor | Tool | Version | Type | Platform | AT6000 | Software Ordering Code | Maintenance Ordering Code |
|---------------------------|-------------------|-----------|---------------|----------|--------|---------------------------|------------------------------|
| Mentor Idea Station | Design Architect™ | 8.2 - 8.4 | Schematic | Sun | x | ATDS2100SN | ATDM2100SN |
| | Quicksim™ | 8.2 - 8.4 | Simulation | Sun | x | | |
| | ENWrite™ | 8.2 - 8.4 | | Sun | x | | |
| | ENRead™ | 8.2 - 8.4 | | Sun | x | | |
| | SG | 8.2 - 8.4 | Schematic Gen | Sun | x | | |
| Cadence 9504 or Higher | Concept™ | 1.6 - p4+ | Schematic | Sun | x | ATDS2100SN | ATDM2100SN |
| | Verilog-XL™ | 2.3.14+ | Simulation | Sun | x | | |
| | SDF Annotator | 2.0.5 | | Sun | x | | |
| | SDF Interface | 5.0.5 | | Sun | x | | |

Design Hardware

| | |
|----------------|---|
| ATDH40M | AT40K Series FPGA Prototyping Kit (One Daughterboard included - Specify) |
| ATDH40D84 | Daughter Board Attachment - 84PLCC |
| ATDH40D100R | Daughter Board Attachment - 100RQFP |
| ATDH40D100 | Daughter Board Attachment - 100VQFP |
| ATDH40D144 | Daughter Board Attachment - 144TQFP |
| ATDH40D160 | Daughter Board Attachment - 160PQFP |
| ATDH40D208 | Daughter Board Attachment - 208PQFP |
| ATDH40D240 | Daughter Board Attachment - 240PQFP |
| ATDH2000 | AT6000 Series FPGA Demonstration Board |
| ATDH2080 | AT6000 Series FPGA Prototyping Kit |
| ATDH2200E | AT17 Series Configurator Programming Kit (Enhanced) |
| ATDH2221 | 20-pin SOIC Adapter for ATDH2200 |
| ATDH2222 | 20-pin PLCC Adapter for ATDH2200 |
| ATDH2223 | 8-lead SOIC Adapter for ATDH2200 |
| ATDH2224 | 44-lead TQFP Adapter for ATDH2200 |
| ATDH2226 | 32-lead TQFP Adapter for ATDH2200 |
| ATDH2227 | 44-lead PLCC Adapter for ATDH2200 |
| ATDH2225 | Standalone In-System Programming Cable |



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