

## Features

- Support for Industry Standard PC and Workstation CAE tools
- Combination Schematic, VHDL, PLD design entry
- Macro Library of Over 200 Hard/Soft Functions
- Automatic Macro Generators Generate Physical Layout
- Floor Planning Capability
- Automatic Place and Route
- Interactive Layout Editing
- Advanced Timing Analysis
  - 100% logical path coverage
  - No user-vector generation
  - Displays set-up/hold violations & speed critical paths
- Full Back-Annotation for Functional & Timing Simulation
- Graphical User Interface
- Unified Design Database

## Description

Atmel's Integrated Development System lets designers create fast, predictable designs with AT6000 Series FPGAs.

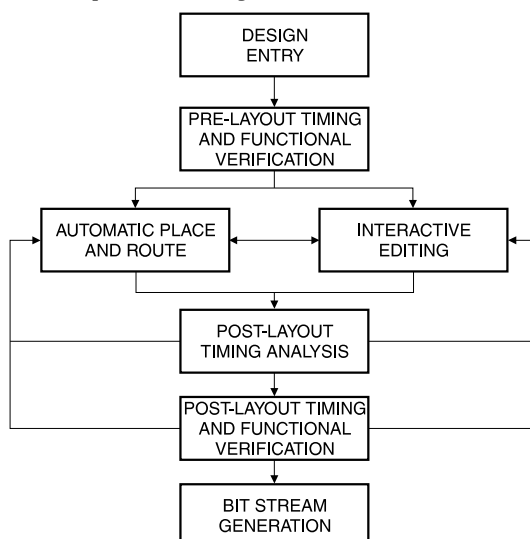
Available for use on 486/Pentium, Sun Sparc, or HP workstation-based computers, the Integrated Development System combines industry-standard software for design entry and simulation with Atmel's proprietary software for component generation, automatic and interactive placement and routing, timing analysis, and bit stream generation.

The Integrated Development System design flow is shown below. Pre-layout modules verify design logic, place and route modules implement the design, and post-layout modules reflect the design as it actually appears in silicon.

A Design Manager provides push-button access to each step in the flow. The Design Manager's simple user interface streamlines the design flow as it creates a seamless design environment. Design data is stored in a unified database that eliminates the need for data re-entry and translation.

The Integrated Development System Physical Design System includes a prototype kit and Viewlogic PRO Series (PC) or PowerView (Sun) macro libraries. Viewlogic timing and functional simulation is optional. Mentor, Verilog, Synopsys, Cadence, and Exemplar library/interface packages are also available.

## Integrated Development System



## AT6000 FPGA Integrated Development System Overview

0438B



## AT6000 FPGA System Summary

The following is a summary of Integrated Development System software, hardware, and annual maintenance agreements. Detailed technical information is contained in the individual product data sheets.

Atmel offers specially-priced University systems for selected PC and Sun packages.

### FPGA Physical Design System (ATDS2100PC/ATDS2100SN)

The AT6000 Physical Design System includes the Atmel Design Manager with PLD interface and macro libraries for Viewlogic schematic capture synthesis and functional simulation. Tools are included for macro generation, interactive editing, design rule checking, automatic placement and routing, timing analysis, bitstream generation, and PROM file generation.

Base PC and Sun system requirements for the Physical Design System are listed on the next page.

### Physical Design System/Viewlogic Standalone Packages.

Several AT6000 Series design tool packages combine the Physical Design System with Viewlogic schematic capture and functional simulation options.

#### PC-based packages

Viewlogic's PRO series for the PC includes PROcapture (schematic entry), PROsim (gate simulation), and PROsynthesis (text-based entry).

Atmel offers the following PRO series packages:

- **ATDS2101PC.** AT6000 Series Physical Design System with PROcapture Schematic Entry
- **ATDS2110PC.** AT6000 Series Physical Design System with PROcapture and PROsim Gate Simulation (10K gates)
- **ATDS2120PC.** AT6000 Series Physical Design System with PROcapture and PROsim Gate Simulation (20K gates)

Customers with Viewlogic restricted licenses may purchase an Atmel 10K or 20K AT6000 Series Design System & Viewlogic restricted license upgrade.

A University system without a prototype kit is available for the ATDS2100PC and ATDS2110PC.

- **ATDS2130PC.** Viewlogic PROsynthesis, PROsim-VDHL Libraries & Interface for AT6000 Series Design System

#### Sun-based packages

Viewlogic's design tool family for Sun workstations is called Powerview, and the schematic entry, gate simulation, and text-based entry options are called ViewDraw, ViewSim, and ViewSynthesis.

Atmel offers the following Powerview packages:

- **ATDS2120SN.** AT6000 Physical Design System with Powerview Schematic Entry and Viewlogic Simulator (20K gates)
- **ATDS2130SN.** Viewlogic Viewsynthesis, ViewSim-VDHL Libraries & Interface for AT6000 Series Design System

A University system is available for the ATDS2120SN.

### Library and Interface packages

Atmel offers several library and interface packages for customers who wish to use the AT6000 Series Physical Design System with third-party software from other companies:

#### PC-based library/interface package

**ATDS2140PC.** Exemplar Library & Interface for AT6000 Series Design System

#### Sun-based library/interface packages

**ATDS2140SN.** Exemplar Library & Interface for AT6000 Series Design System

**ATDS2150SN.** Mentor Library & Interface for AT6000 Series Design System

**ATDS2160SN.** Synopsys Library & Interface for AT6000 Series Design System

**ATDS2170SN.** Cadence Verilog/Concept Library & Interface for AT6000 Series Design System

### Annual Maintenance Agreements

Annual Maintenance Agreements are available for each package and option in the Integrated Development System. The first year of maintenance is included in the purchase price; renewal is optional. Maintenance Agreements give 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. See the individual product data sheets for ordering and pricing information.

Extended maintenance agreements are not available for University systems.

## Prototype Kit

A Prototyping Kit is included in all PC Physical Design System packages, except University systems. Additional Prototype Kits can be ordered separately. Each kit includes a cable for downloading configuration data to a device and an AT-style board for prototyping designs.

Atmel now offers both 84-pin and 132-pin download boards for use with the Prototype Kit or the designer's target system. The boards can be attached to a host PC running the AT6000 series software.

## System Requirements

### PC-based systems:

- Fully Compatible 486/Pentium-Based Computer
- MS-DOS version 5.0 or greater
- Windows version 3.1
- Minimum 30 MB fixed disk space (for base system)
- CD-ROM player
- VGA graphics board and monitor
- Windows-Compatible Mouse
- One parallel port
- 32 MB of RAM

### Sun-based systems:

- Sun Sparc workstation running SUN OS 4.1.2 or greater

## Automatic Macro Generators

The AT6000 Physical Design System includes an innovative tool that allows users to create from a large number of datapath functions (multipliers, adders, accumulators).

The user specifies the parameters and the software quickly generates a physical layout and schematic, and reports worst case speed, area, and power consumption. These functions are layout-independent and reusable.

- Graphical monitor (color recommended)
- Minimum 40 MB fixed disk space (for base system)
- CD-ROM player
- X-Windows or Open Windows support
- 32 MB of RAM

### HP-based Systems

For a single user system, the IDS requires an HP 9000 series 700 workstation equipped as follows:

- CD-ROM drive (local or network)
- 100M (minimum) hard drive 50M hard disk space allocated as swap space
- 32M RAM
- HP\_UX 9.0.1 or higher

## PC-based Tools

| Ordering Code                 | Description                                                                               |
|-------------------------------|-------------------------------------------------------------------------------------------|
| <b>ATDS2100PC</b>             | AT6000 Series Physical Design System                                                      |
| <b>ATDS2101PC</b>             | AT6000 Series Physical Design System with PROcapture Schematic Entry                      |
| <b>ATDS2110PC</b>             | AT6000 Series Physical Design System with PROcapture and PROSim Gate Simulation (10K)     |
| <b>ATDS2110PCI</b>            | AT6000 Series Design System & Viewlogic restricted license 10K upgrade                    |
| <b>ATDS2120PC</b>             | AT6000 Physical Design System with PROcapture and ProSim (20K)                            |
| <b>ATDS2120PCI</b>            | AT6000 Series Design System & Viewlogic restricted license 20K upgrade                    |
| <b>ATDS2130PC</b>             | Viewlogic PROsynthesis, PROsim-VDHL Libraries & Interface for AT6000 Series Design System |
| <b>ATDS2140PC</b>             | Exemplar Libraries & Interface for AT6000 Series Design System                            |
| <b>ATDS2180PC</b>             | Integraph Libraries & Interface for AT6000 Series Design System                           |
| <b>Maintenance Agreements</b> |                                                                                           |
| <b>ATDM2100PC</b>             | Maintenance for AT6000 Series Physical Design System                                      |
| <b>ATDM2101PC</b>             | Maintenance for AT6000 Series Physical Design System with PROcapture                      |
| <b>ATDM2110PC</b>             | Maintenance for AT6000 Series Physical Design System with PROcapture and PROSim (10K)     |

| Ordering Code                                                       | Description                                                                                               |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>ATDM2110PCI</b>                                                  | Maintenance for AT6000 Series Design System & Viewlogic restricted license 10K upgrade                    |
| <b>ATDM2120PC</b>                                                   | Maintenance for AT6000 Physical Design System with PROcapture and ProSim (20K)                            |
| <b>ATDM2120PCI</b>                                                  | Maintenance for AT6000 Series Design System & Viewlogic restricted license 20K upgrade                    |
| <b>ATDM2130PC</b>                                                   | Maintenance for Viewlogic PROsynthesis, PROsim-VDHL Libraries & Interface for AT6000 Series Design System |
| <b>ATDM2140PC</b>                                                   | Maintenance for Exemplar Library & Interface for AT6000 Series Design System                              |
| <b>ATDM2180PC</b>                                                   | Maintenance for Integrgraph Library & Interace for AT6000 Series Design System                            |
| <b>University PC-based Tools (does not include Prototyping Kit)</b> |                                                                                                           |
| <b>ATDS2100PCU</b>                                                  | University AT6000 Series Physical Design System                                                           |
| <b>ATDS2110PCU</b>                                                  | University AT6000 Series Physical Design System with PROcapture and ProSim (10K)                          |
| <b>PC Design Hardware</b>                                           |                                                                                                           |
| <b>ATDH2000</b>                                                     | AT6000 Series FPGAs Demonstration Board                                                                   |
| <b>ATDH2080</b>                                                     | AT6000 Series FPGAs Prototyping Kit                                                                       |
| <b>ATDH2200</b>                                                     | AT17CXX Series Configurator Programming Kit                                                               |

## Sun-based Tools

| Ordering Code                 | Description                                                                                                 |
|-------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>ATDS2100SN</b>             | AT6000 Series Physical Design System                                                                        |
| <b>ATDS2120SN</b>             | AT6000 Physical Design System with Powerview Schematic Entry and Viewlogic Simulator (20K)                  |
| <b>ATDS2130SN</b>             | Viewlogic Viewsynthesis, ViewSim-VDHL Libraries & Interface for AT6000 Series Design System                 |
| <b>ATDS2140SN</b>             | Exemplar Libraries & Interface for AT6000 Series Design System                                              |
| <b>ATDS2150SN</b>             | Mentor Libraries & Interface for AT6000 Series Design System                                                |
| <b>ATDS2160SN</b>             | Synopsys Libraries & Interface for AT6000 Series Design System                                              |
| <b>ATDS2170SN</b>             | Cadence Verilog/Concept Libraries & Interface for AT6000 Series Design System                               |
| <b>ATDS2180SN</b>             | Integrgraph Libraries & Interface for AT6000 Series Design System                                           |
| <b>Maintenance Agreements</b> |                                                                                                             |
| <b>ATDM2100SN</b>             | Maintenance for AT6000 Series Physical Design System                                                        |
| <b>ATDM2120SN</b>             | AT6000 Physical Design System with Powerview Schematic Entry and Viewlogic Simulator Maintenance for (20K)  |
| <b>ATDM2130SN</b>             | Maintenance for Viewlogic Viewsynthesis, ViewSim-VDHL Libraries & Interface for AT6000 Series Design System |
| <b>ATDM2140SN</b>             | Maintenance for Exemplar Libraries & Interface for AT6000 Series Design System                              |
| <b>ATDM2150SN</b>             | Maintenance for Mentor Libraries & Interface for AT6000 Series Design System                                |
| <b>ATDM2160SN</b>             | Maintenance for Synopsys Libraries & Interface for AT6000 Series Design System                              |

| Ordering Code                     | Description                                                                                                  |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------|
| ATDM2170SN                        | Maintenance for Cadence Verilog/Concept Libraries & Interface for AT6000 Series Design System                |
| ATDM2180SN                        | Maintenance for Integraph Libraries & Interface for AT6000 Series Design                                     |
| <b>University Sun-based Tools</b> |                                                                                                              |
| ATDS2100SNU                       | University AT6000 Series Physical Design System                                                              |
| ATDS2120SNU                       | University AT6000 Series Physical Design System with Powerview Schematic Entry and Viewlogic Simulator (20K) |

## HP-based Tools

| Ordering Code                    | Description                                                                                                  |
|----------------------------------|--------------------------------------------------------------------------------------------------------------|
| ATDS2100SN                       | AT6000 Series Physical Design System                                                                         |
| ATDS2120SN                       | AT6000 Physical Design System with Powerview Schematic Entry and Viewlogic Simulator (20K)                   |
| ATDS2130SN                       | Viewlogic Viewsynthesis, ViewSim-VDHL Libraries & Interface for AT6000 Series Design System                  |
| ATDS2140SN                       | Exemplar Libraries & Interface for AT6000 Series Design System                                               |
| ATDS2150SN                       | Mentor Libraries & Interface for AT6000 Series Design System                                                 |
| ATDS2160SN                       | Synopsys Libraries & Interface for AT6000 Series Design System                                               |
| ATDS2170SN                       | Cadence Verilog/Concept Libraries & Interface for AT6000 Series Design System                                |
| ATDS2180SN                       | Integraph/Veribest Libraries & Interface for AT6000 Series Design System                                     |
| <b>Maintenance Agreements</b>    |                                                                                                              |
| ATDM2100HP                       | Maintenance for AT6000 Series Physical Design System                                                         |
| ATDM2120HP                       | AT6000 Physical Design System with Powerview Schematic Entry and Viewlogic Simulator Maintenance for (20K)   |
| ATDM2130HP                       | Maintenance for Viewlogic Viewsynthesis, ViewSim-VDHL Libraries & Interface for AT6000 Series Design System  |
| ATDM2140HP                       | Maintenance for Exemplar Libraries & Interface for AT6000 Series Design System                               |
| ATDM2150HP                       | Maintenance for Mentor Libraries & Interface for AT6000 Series Design System                                 |
| ATDM2160HP                       | Maintenance for Synopsys Libraries & Interface for AT6000 Series Design System                               |
| ATDM2170HP                       | Maintenance for Cadence Verilog/Concept Libraries & Interface for AT6000 Series Design System                |
| ATDM2180HP                       | Maintenance for Integraph Libraries & Interface for AT6000 Series Design                                     |
| <b>University HP-based Tools</b> |                                                                                                              |
| ATDS2100HPU                      | University AT6000 Series Physical Design System                                                              |
| ATDS2120HPU                      | University AT6000 Series Physical Design System with Powerview Schematic Entry and Viewlogic Simulator (20K) |