AT6000 FPGA Integrated Development System Overview

Features

- **Support for Industry Standard PC and Workstation CAE tools**
- **Combination Schematic, VHLD, 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.

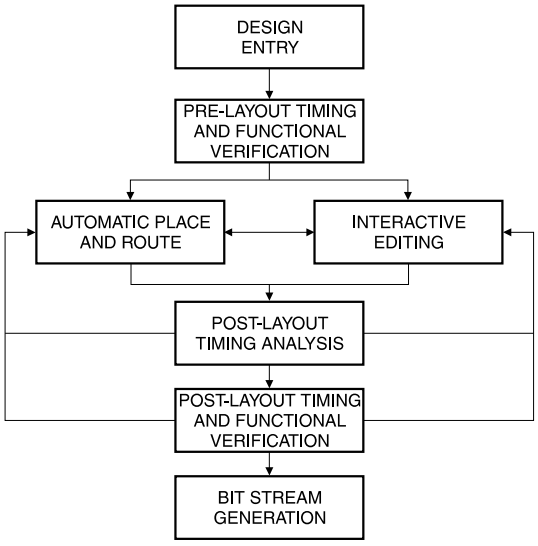
Available for use on 486/Pentium, Sun Sparc, or HP workstation-based computers, the Integrated Development System combines industry-standard software for design entry and simulation with Atmel's proprietary software for component generation, automatic and interactive placement and routing, timing analysis,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



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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.

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 resusable.

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 runnung SUN OS 4.1.2 or greater
- 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
ATDS2100PC	AT6000 Series Physical Design System
ATDS2101PC	AT6000 Series Physical Design System with PROcapture Schematic Entry
ATDS2110PC	AT6000 Series Physical Design System with PROcapture and PROSim Gate Simulation (10K)
ATDS2110PCI	AT6000 Series Design System & Viewlogic restricted license 10K upgrade
ATDS2120PC	AT6000 Physical Design System with PROcapture and ProSim (20K)
ATDS2120PCI	AT6000 Series Design System & Viewlogic restricted license 20K upgrade
ATDS2130PC	Viewlogic PROsynthesis, PROsim-VDHL Libraries & Interface for AT6000 Series Design System
ATDS2140PC	Exemplar Libraries & Interface for AT6000 Series Design System
ATDS2180PC	Integraph Libraries & Interface for AT6000 Series Design System
Maintenance Agreements	
ATDM2100PC	Maintenance for AT6000 Series Physical Design System
ATDM2101PC	Maintenance for AT6000 Series Physical Design System with PROcapture
ATDM2110PC	Maintenance for AT6000 Series Physical Design System with PROcapture and PROSim (10K)

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

Sun-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 Libraries & Interface for AT6000 Series Design System
Maintenance Agreements	
ATDM2100SN	Maintenance for AT6000 Series Physical Design System
ATDM2120SN	AT6000 Physical Design System with Powerview Schematic Entry and Viewlogic Simulator Maintenance for (20K)
ATDM2130SN	Maintenance for Viewlogic Viewsynthesis, ViewSim-VDHL Libraries & Interface for AT6000 Series Design System
ATDM2140SN	Maintenance for Exemplar Libraries & Interface for AT6000 Series Design System
ATDM2150SN	Maintenance for Mentor Libraries & Interface for AT6000 Series Design System
ATDM2160SN	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
University Sun-based Tools	
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
Maintenance Agreements	
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
University HP-based Tools	
ATDS2100HPU	University AT6000 Series Physical Design System
ATDS2120HPU	University AT6000 Series Physical Design System with Powerview Schematic Entry and Viewlogic Simulator (20K)