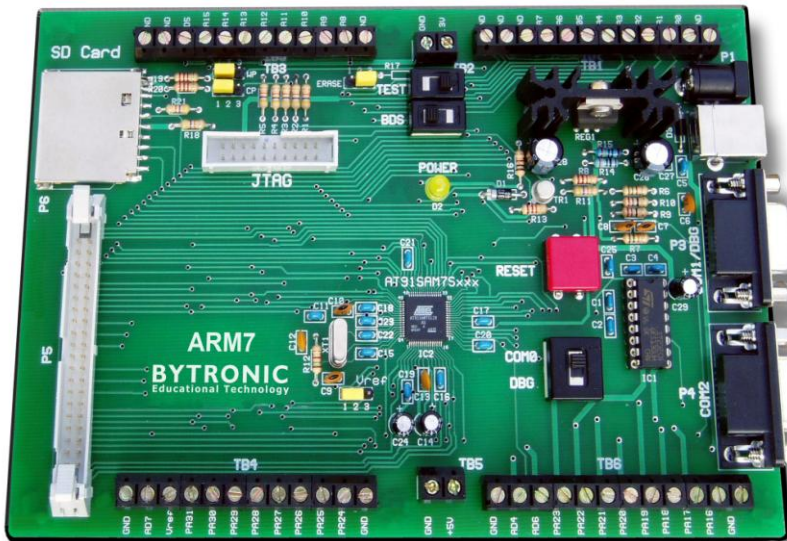


ARM7 Training System ARM7TS



Key Features:

- ARM7 16/32 bit microcontroller
- USB and RS232 connections
- 8 channels of 10-bit ADC
- 32 K Bytes SRAM
- ARM7 "C" software development suite
- In System Programmable (ISP) downloaded through RS232, USB or JTAG connections
- Training manual with student exercises

The ARM7TS microcontrollers training system is based around the Atmel® AT91SAM7S range of microcontrollers; a high performance micro-controller with 128K bytes of downloadable non-volatile FLASH EEPROM and 32K bytes of SRAM with high performance 32-bit RISC architecture and a high density 16-bit instruction set with real-time emulation and embedded trace support, which combine micro-controller with embedded high-speed flash memory. The ARM7 family is a range of low-power 32-bit RISC microprocessor cores optimized for cost and power-sensitive consumer applications. The ARM7TS is designed for the introduction of ARM technology in to students

The ARM7TS consists of the ARM7 Microcontroller board fitted with the Atmel AT91SAM7S128, Crossware™ ARM7 "C" Software Development Suite, Jaguar™ JTAG, interface cables, power supply and training manual.

The ARM7 Development Suite includes an advanced optimizing C compiler, Code Creation Wizards, source level instruction and peripheral simulator extendable to simulate complete target systems, source level debugger and the Crossware "Jaguar" JTAG to USB debugger interface. Software downloading to the target is possible by plugging the Jaguar into the JTAG connector on the ARM7 board and into a USB port on a PC. Programs are developed in 'C' or 'C++', debugged and then compiled before downloading them. Program download can also be achieved through either the 9 way D type, serial port connection or the USB port.

A 40way IDC is fitted to the board and provides access to the controller ports and can be used for direct connection of additional application equipment. Access to the ports is also available through a screw terminal blocks allowing connection for demonstration or development purposes.

Curriculum coverage using application board

- Outputting data
- Inputting data
- Subroutines and delays
- Digital to analogue
- Analogue to digital conversion
- Successive approximation ADC
- Seven segment display
- Multiplexing seven segment display
- Scanning the keypad
- Controlling the DC motor
- DC motor control using IR sensor
- Temperature control

Specification

- | | |
|---|--|
| Board consists | <ul style="list-style-type: none">• AT91SAM7S128 Atmel micro-controller.• 128K Bytes of In-System Re-programmable downloadable FLASH memory.• 32 K Bytes SRAM• 8 channels of 10-bit ADC• 2 Enhanced USARTs• SPI, SSC and TWI• USART/DBGU interface• In System Programmable (ISP) downloaded through RS232, USB or JTAG connections.• Programmable UART serial port, buffered by line receiver/driver• Advanced Interrupt Controller (8 level priority)• 20- bit Programmable Counter + 12-bit interval counter (PIT)• 12-bit Programmable Windowed Watchdog Timer (WDT) providing reset and interrupt signals.• 3 programmable external clock signals• Can be powered via the USB connector.• On-board low-dropout voltage and reset generation.<ul style="list-style-type: none">• Generates +3.3V from a +5V supply.• Up to 32 Programmable Input/output lines accessible through IDC headers |
| Connections | <ul style="list-style-type: none">• USB2.0 Full Speed Device Port• SD Memory Card interface• Controller connections through an IDC for external processor bus examination.• Screw terminal block to access the 32 I/O lines.• RS232, female DSUB-9• J-TAG socket• 40 pin IDC expansion connector• Screw Terminal Block (2 way) access to on board 3.3V power |
| ARM7 "C"
Software Development
Suite | <ul style="list-style-type: none">• An advanced optimizing Embedded C++ and ANSI C compiler and libraries• Code Creation Wizards to create configuration code and outline interrupt handlers for on-chip peripherals• A source level simulator to simulate the ARM core and the on-chip peripherals allowing debugging without hardware• An interface that allows the simulator to be extended, facilitating complete target system simulation• A source level debugger to allow debugging on the target hardware• A USB JTAG interface to communicate between the debugger and the target hardware• A multi-threaded, multi-target integrated development environment to write, edit and debug code, browse the high level source code,• Electronic copies of the manuals |

Weights and Dimensions

Un-Packed		Packed	
Approximate Dimensions (mm)	180L x 120W	Approximate Dimensions (mm)	350L x 300W x 100H
Approximate Weights	1Kg	Approximate Weights	3Kg

Required:

A PC with minimum; Pentium processor, 1GB RAM, 20GB HDD, CDROM Drive, and Windows XP or above.

Ordering Information

Model Number:	ARM7TS
<i>Consists of:</i>	1 x ARM7 microprocessor board 1 x Serial and USB cable 1 x Power supply 1 x Courseware user and technical manual with student tutorial/experiments 1 x Crossware ARM7 "C" Software development suite 1 x Crossware Jaguar USB JTAG debugger interface

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