

C-FIRE-TB

COLDFIRE TARGET BOARD

ColdFire® V2 embedded controllers are a range of high performance low power and low cost 32 bit micro-controllers. Abitec's COLDFIRE Target Board C-FIRE-TB is based on the Freescale® MCF52221 64 pin LQFP package.

Typical applications for the MCF5222x family are:

- Security and Access control
- Point of Sale
- Light weight Health Care product
- Industrial Automation
- ZigBee™ control

The C-FIRE-TB can also be supplied as the comprehensive development package C-FIRE-DATS

C-FIRE-DATS consists of the C-FIRE-TB target board fitted with the powerful Freescale MCF52221 ColdFire® V2

embedded device, together with the Crossware™ ColdFire® Software Development Suite complete with Fire Fly™ BDM interface. The MCF52221 is a high performance micro-controller with 128K bytes of downloadable non-volatile FLASH EEPROM and 16K bytes of SRAM.



Picture to follow

Designed for **EDUCATIONAL** and **TRAINING** purposes but also ideal for **INDUSTRIAL DEVELOPMENT** applications, the C-FIRE-TB target board is directly link-able to **Abitec's APPS-BD Applications board** with its wide range of features for student learning.

The ColdFire® Software 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 "FireFly" BDM to USB debugger interface. Software downloading to the target is achieved by plugging the FireFly pod into the BDM connector on the C-FIRE-TB and into a suitable USB port on the host PC. Programs are developed in 'C' or 'C++', debugged and then compiled before downloading. Program download can also be achieved via the, 9 way D type, serial port connection or the on board USB port.

A standard 40 way IDC connector on the C-FIRE-TB give full access to the controller ports and can be used for direct connection of additional teaching applications. Access to the ports is also duplicated via optional screw terminal blocks allowing easy connection for demonstration or development purposes.

C-FIRE-TB target board is manufactured as a 180 mm x 120 mm printed circuit board with through plated holes, solder mask and screen printed component identification.

The C-FIRE-TB target board is supplied mounted on an acrylic base with rubber feet for stability whilst in use on the bench.

C-FIRE-TB HARDWARE

COLDFIRE Target Board Specification

- MCF52221 Freescale micro-controller.
- 128K Bytes of In-System Re-programmable downloadable FLASH memory.
- 16K Bytes SRAM
- 8 channels of 12-bit ADC
- USB2.0 Full Speed Device Port
- 3 UARTs with DMA compatibility
- PLL, SW watchdog
- Queued serial peripheral interface (QSPI) with 4 peripheral chip selection
- I2C bus controller
- 4-channel, 16 bit or 8-bit PWM generator
- 4-channel DMA controller
- Up to 56 I/O channels
- USART/DBGU interface
- SD Memory Card interface
- In System Programmable downloaded via RS232, USB or BDM connections.
- All controller connections accessed via an IDC connector for external processor bus examination.

- Dimensions: 180 x 120 mm PCB
- Programmable UART serial port (via external 9 way D type connector) buffered by line receiver/driver
- On-board low-dropout voltage and reset generation. Generates +3.3V from a +5V supply.
- Powered from a simple unregulated 8 to 13V dc applied to 2.1mm connector (centre positive).
- Power On LED
- Can be powered via the USB connector.
- Up to 32 Programmable Input/Output lines accessible via IDC headers (3 lines allocated for in service programming).
- Screw terminal block option* to access the 32 I/O lines.
- Input/Output connections compatible with a range of Applications products (via 40 way header).
- 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
- Hardware reset signal push button.
- Power supply, cables, communication software and technical manual (on CD-ROM) included

C-FIRE-TB Connectors:

Standard fit

- RS232, female DSUB-9
- USB, type B connector
- MMC/SD memory card connector
- BDM interface socket
- 2.1 mm power supply connector

- 40 pin IDC expansion connector (APPS-BD compatible)

Optional fit

- Screw Terminal Blocks (4x12 way) access to signal lines
- Screw Terminal Block (2 way) access to on board 3.3V power
- Screw Terminal Block (2 way) access to USB 5V

COLDFIRE SOFTWARE DEVELOPMENT SUITE

Features:

- Advanced optimizing ANSI C compiler and libraries
- Code Creation Wizards for on-chip peripherals
- Source level simulation of instructions and on-chip peripherals
- Simulation of complete target system using Crossware *Virtual Workshop Interface*
- Source level BDM (Background Debug Mode) debugging via USB
- Multiple application debugging
- Multi-threaded, multi-target environment

Includes:

- ColdFire tool chain and libraries
- Code creation wizards
- Instruction set and peripheral simulator
- Source level debugger
- FireFly™ USB BDM debugger interface
- Embedded Development Studio
- Printed and electronic manuals
- Technical support and updates for 12 months

The Crossware FireFly USB BDM interface is designed to facilitate on-chip COLDFIRE debugging. It connects to the standard 26-pin ColdFire BDM connector, allowing the source-level debugger to drive the on-chip ColdFire embedded in-circuit emulator (EmbeddedICE) logic.

C-FIRE-DATS standard package consists of the C-FIRE-TB target board supplied in a rugged moulded storage case, the Technical/User Manual on CD-ROM, Crossware ColdFire " Software development suite with FireFly hardware, Serial cable, USB cable, Power supply and student tutorial/experiments book on CD-ROM.

Operating system requirements are Windows 2000, XP or above

Ordering Information

COLDFIRE training systemC-FIRE-DATS (specify UK, US or EU PSU)
 Screw terminal option fitted to C-FIRE-TB.....ST-OPT-CFIRE
 Experiments Manual (paper copy)..... EM-CFIRE
 COLDFIRE Development Suite with CD-ROM user manual.....CFIRE-CDS
 COLDFIRE Development Suite Paper manual only.....CFIRE-CDSPM



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