CROSSWARE®
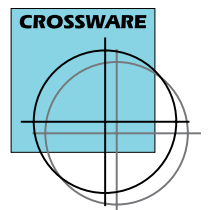# FireFly™

FireFly is a BDM Interface for Motorola ColdFire microprocessors and microcontrollers. It operates with Crossware debugging software running on a Windows platform and allows fast download and source level debugging of ColdFire programs via a USB port.

HIGHLIGHTS

❑ Fast downloads via USB Interface

❑ Smart synchronisation to maximise data transfer rate across BDM interface.

❑ Electronically compatible with Version 2, 3 and 4 ColdFire chips running at up to 200MHz and Version 4e ColdFire chips (MCF547X and MCF548X) running at up to 400MHz.

❑ Automatically updatable firmware allows for rolling enhancements.

❑ Includes Windows flash programming software that can program multiple FireFly interfaces.

❑ Plug and play compatible.

❑ Integrates for full source level debugging with Crossware's ColdFire Development Suite.

USB BDM Interface for ColdFire®

REF: FIREFLY/0413

Target System Requirements

- Minimum ColdFire clock frequency (CLKOUT): 4MHz

- Maximum ColdFire clock frequency (CLKOUT): 200MHz (note that CLKOUT for the MCF547X and MCF548X is half of the core frequency and so the maximum core frequency for these chips is 400MHz)

- Works with 3.3V ColdFire variants. Should not be used with older 5V parts such as the MCF5206.

- Standard Motorola recommended BDM connector layout:

```
NC              1       2       /BKPT
GND             3       4       DSCLK
GND             5       6       NC
RESET           7       8       DSI
NC              9       10      DSO
GND             11      12      PST3
PST2            13      14      PST1
PST0            15      16      NC
NC              17      18      NC
NC              19      20      GND
NC              21      22      NC
GND             23      24      CLKOUT
Core            25      26      /TA
Voltage
(3.3V)
```

Note that the 3.3V core voltage connection is optional. It can be 3.3V, 1.8V or not connected.

Download Speed

Tests on an M5282EVB (MCF5282 running at 64MHz) gave the following results:

	FireFly	parallel port interface
1MByte download into DRAM	10 seconds	43 seconds
1MByte download into external flash memory	60 seconds	8.5 minutes

Plug and Play

- Plug in FireFly and the Crossware source level debugging software will automatically use it.
- Unplug it and the Crossware source level debugging software will revert to the use of a parallel port interface.

Power Supply

- Powered by the USB interface. Requires no power from the target board or external power supply.

Smart Synchronisation

- Synchronises to the ColdFire clock to optimise timing and data transfer between FireFly and the ColdFire background debug module.

USB Interface

- Full speed operation compatible with both USB 1.1 and USB 2.0 interfaces.
- A USB cable to connect the PC to FireFly is supplied.

Connections

- Plugs directly into the BDM connector on the target board to minimise signal delays.
- Bump polarised socket to ensure correct orientation.

Updatable Firmware

- The FireFly firmware can be updated in seconds. If the Crossware debugging software detects that the firmware needs updating it will automatically download a new version.

Flash Programming Software
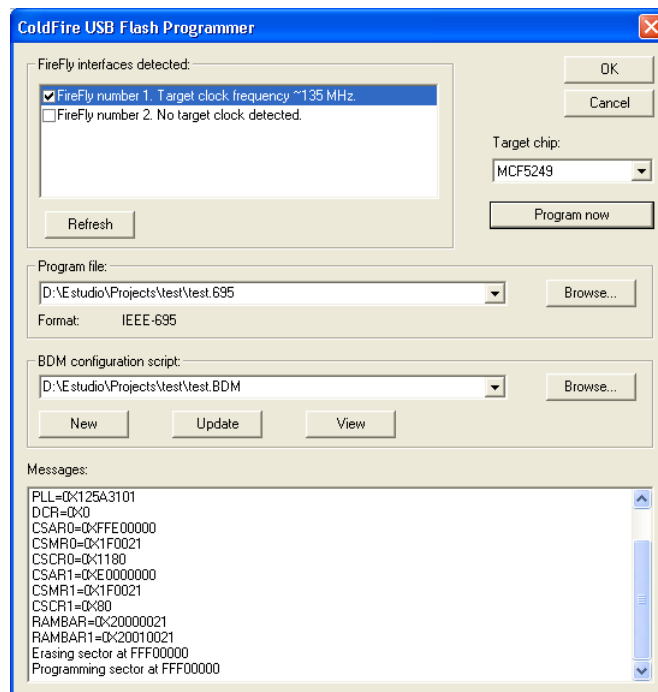
Windows flash programming software is included. This can simultaneously control up to 127 FireFly devices, programming any or all of the target boards connected to them.

The software is capable of automatically generating the BDM configuration script by examining the program that is to be downloaded.

Program file formats supported include Motorola 'S' records, HP/Microtek IEEE-695 and ELF.

Host System Requirements

Intel Pentium or above running Windows 2000, Windows XP, Windows Vista, Windows 7 or Windows 8 together with the included flash programming software or Crossware ColdFire Development Suite (not included).