

# The Embedded Newsletter

No: 14

## Abatron Supports Cortex Devices

Development support for microprocessor devices based on the ARM Cortex architecture is now available on the Abatron BDI3000 high-speed debugger.

The new cores supported are the ARM Cortex-A8, such as the TI OMAP3430 family, and the ARM Cortex-M3, which includes the STM32 family, the LPC1700 and the whole of the Luminary Micro LM3S range. Both device families are supported by the JTAG interface on the BDI3000, and there is additional support for the single-wire debug port (SW-DP). The BDI3000 then acts as an external server connecting to the popular GDB debugging package via Ethernet.



With JTAG or SW-DP debug ports, the user can control and monitor the microprocessor through their on-chip debugging features, providing a significant amount of in-circuit emulation functionality. The cabling problems, as well as high cost, of In-Circuit Emulators are also eliminated.

The BDI3000 provides high-speed links to the target CPU (up to 32 MHz) and to the controlling PC (via 10/100 Ethernet), making it possible to load code for debugging at up to 1.5 MByte/s. Target voltages of between 1.2 V and 5 V are supported, as are variable clock speeds.

The unit can be used for debugging a wide range of other processors including ColdFire, PowerPC, XScale and MIPS processors. The same hardware is used for all supported targets, allowing re-use of the development tool on subsequent projects.

## Freescale Chip Programmers Enhanced

Both Cyclones - the PRO (for use programming the HC08, S08, HC12 and S12) and the Max (for use programming the ColdFire, PPC & ARM) can be upgraded with the following options.....

### Additional Flash Memory

This option provides 128MBytes of additional memory images implemented using a compact Flash card. This feature allows for faster, easier, and more flexible programming of data whether it is during field updates or on production runs.

### Automated Control Package

These Windows packages include a command line driven application "Cyclone Launch" and a set of DLLs providing a range of features of value when using the Cyclone in production situations:-

**Basic Edition** ----- Free Download ----- Controls a single Cyclone from a PC via USB or Ethernet allowing one Programming Image to be held on the Cyclone which does not have to be downloaded every time so increasing performance.

**Professional Edition** ----- Controls up to 3 Cyclones from a PC via USB or Ethernet, allowing up to 8 Programming Images, which do not have to be downloaded every time, to be changed on the fly and dynamic data such as serial numbers to be manipulated from the PC. Supported devices can be programmed in parallel, even if they are different devices with different data.

**Enterprise Edition** ----- As for the Pro version but unlimited numbers of Cyclones may be controlled from a single PC, More than 8 images can exist on the Cyclones and Licences for 5 end user PCs are included. Also provided is a full description of the RS232 and Ethernet command Protocols so that non Windows users can implement similar functionality.



# PROMJet Rom Emulators

PROMJet is an advanced tool for embedded system development. It replaces the EPROM or FLASH of the system under development allowing the user to load, examine, modify and view code or data directly in its emulation memory. PROMJet connects to a host computer via a standard USB or Ethernet connection. A write input signal allows the target processor to write to the emulation memory if required.



Adding the In-Circuit-Emulation (ICE) option to PROMJet allows the host computer to access PROMJet's emulation memory while the target processor is running without arbitration or wait-state signals. This permits the user to dynamically modify memory without stopping the target system.

It can also be used to establish a debugging communication channel between the host computer and the target system.

Memory capacity is from 4Mbit (512KByte) to 256Mbit (32MByte) with access speed 85 to 25ns. Low voltages down to 1.5v can be supported.

Support is available for 8bit and 16bit memory busses as well as LPC (4bit) and SPI (1bit) Data and all popular chips footprints. One PC can run up to 16 PROMJets under Windows XP/Vista or Linux.

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## Ellisys USB 3 Analysers and USB 2 Compliance Test

The latest Ellisys USB Explorer 280 is a sophisticated USB protocol test system. It is suitable for USB traffic monitoring, software stack and driver debugging, protocol compliance verification and performance analysis. The USB Explorer 280 Analyser will display the USB traffic on any USB 1.1, 2 or 3.0 links at any speed up to the new 5Gbps Super-Speed of USB3. It will also support OTG and the new InterChip-USB.

The 280 USB 3 family is based on a new hardware platform with 4 GB of memory and a high-performance custom processor having the power required to test the USB 3.0's 5 Gbps Super-Speed mode.

The Explorer 280 Message Generator will emulate USB Hosts and Devices as well as injecting pre-defined error patterns onto the bus for stress and error recovery testing.

**The Ellisys USB Device Examiner (DEX)** is a stand-alone USB device compliance test application that runs on the USB Explorer hardware. DEX provides a comprehensive set of robust compliance tests covering Chapter 9 of the USB Specification (Device Framework). Test results show pass/fail, are annotated with descriptive detail, and are summarised in a convenient summary report upon completion of testing.

Each test can optionally be captured with an Analyser, providing quick and in-depth analysis of test results. The summary report includes links to Analyser data captures for each test. In addition to the Chapter 9 coverage for any USB device, DEX also provides class-specific testing of several device classes, including mass storage devices, HID devices, and hub class (Chapter 11). The mass storage device class test suite includes read and write bandwidth stress tests.

