



CYCLONE UNIVERSAL FX

In-Circuit Production Programming, Debug & Test

Overview

The **Cyclone Universal FX** is P&E's versatile **stand-alone** in-circuit programmer for NXP® 8-/16-/32-bit devices as well as ARM® Cortex®-based devices. Communication with the PC occurs via Ethernet, USB, or Serial Port. Once the Cyclone is configured, programming operations may be completed in **one touch** without a PC, or **automated** in conjunction with a PC. The Cyclone may also be used as a **debug probe** via USB, Ethernet, or Serial communications, and is supported in NXP's CodeWarrior and Kinetis Design Studio, P&E's GDB Server, and many commercial development tools.

The Cyclone has an extensive **library of programming algorithms** for both **internal** and **external** flash. P&E continually adds to this library and welcomes requests for devices that are not currently supported.

Supports NXP & ARM Cortex devices

NXP 8-/16-/32-bit devices:

- Kinetis®
- LPC
- S32
- MPC5xxx
- ColdFire® +/V1
- ColdFire V2/3/4
- DSC
- Many other ARM Cortex devices
- HC(S)12(X)
- S12Z
- HCS08
- RS08
- HC08 (MON08)
- MAC7xxx
- Power MPC5xx/8xx

Production Power & Flexibility

The Cyclone's **flexible** set-up and **intuitive** software allow for a smooth transition to an easily scalable production programming environment. The Cyclone has over **1GB** of non-volatile memory, which allows for the onboard storage of a practically unlimited # of programming images. Communications speed is **extremely fast**, up to 25Mb/s. **Enhanced security features** include the ability to restrict access to individual programming images based on programming count, date range, etc.

In **Stand-Alone Mode**, the Cyclone Universal is configured and loaded with one or more programming images. The Cyclone features a **million-press** Start button and **4.3" touchscreen** LCD for manual control and configuration which allow it to operate **independently of the PC**. Cyclone operations may also be **automated** from a PC via the Automated Control Package SDK. The Cyclone and the target being programmed may be local to the PC or connected remotely via Ethernet. **Multiple Cyclones** on your network can easily be detected and controlled from the same PC.

The Cyclone Universal **FX** can provide 1.6V-5.2V power to the target and also has the ability to switch a target's power supply via internal relays. It has been specifically designed with features like **voltage protection technology** in order to withstand the rigors of a production environment.

More information on the Cyclone Universal **FX** is available at: pemicro.com/cyclone.

Applications

- In-Circuit Programming
- In-Circuit Debug
- Production Programming
- Field Updating
- Product Testing

Hardware Features

- Ethernet, USB, and Serial communications interfaces
- Supports extremely fast communications speed (up to 25Mb/s)
- 4.3" Touchscreen LCD
- 1GB encrypted internal storage
- Expandable memory via SD port
- No practical limit to number of images
- Multi-voltage support for targets ranging from 1.6 to 5.2 Volts
- Production environment ready with voltage protection technology
- Allows switching of the target's power supply

Flash Programming Highlights

- Highly intuitive, fast in-circuit flash programming
- Capable of programming internal and external flash
- Anti-tamper technology
- Internal memory protection & encryption
- Restrict usage of individual programming images
- Multiple image support for programming of different images during production runs
- Trimming capabilities
- PC-controlled and stand-alone functions for programming and testing of units on production lines
- Can program dynamic data, such as serial numbers