Transitioning from the Cyclone PRO & Cyclone MAX
to CYCLONE LC & CYCLONE FX Programmers

This document describes both the differences between the Cyclone PRO/MAX and the CYCLONE LC/CYCLONE FX, as well as considerations when transitioning to the newer hardware.

Differences between CYCLONE LC/CYCLONE FX and the Cyclone PRO/MAX

P&E's CYCLONE & CYCLONE FX are the newest generation of Cyclones and are replacing our Cyclone PRO and Cyclone MAX products. This new Cyclone platform features several improvements:

- The CYCLONE LC & CYCLONE FX platforms can each support programming all of the devices supported by Cyclone PRO, plus all of the devices supported by the Cyclone MAX.
- The CYCLONE LC & CYCLONE FX programmers feature a 4.3" touchscreen, which is a significant improvement over the Cyclone PRO/MAX 2.7" non-touch display and navigation buttons.
- The Start button on the CYCLONE LC & CYCLONE FX programmers is rated for 1,000,000 presses, which far exceeds the 100,000 press rating of the older Cyclone button.
- The CYCLONE FX programmers have many new software features, such as the ability to detect target power, the ability to delete individual images, a descriptive error message queue, dynamic IP acquisition (DHCP), etc.
- Headers for the CYCLONE LC & CYCLONE FX are keyed on the opposite side as the Cyclone PRO/MAX. The headers are also located within the body of the unit as opposed to around the sides. Users with keyed connectors should check any connections carefully to be sure they will not need to be re-oriented..

Note that the CompactFlash port on the Cyclone PRO/MAX does not exist on CYCLONE programmers and has been replaced by the SDHC port on CYCLONE FX programmers.

CYCLONE FX programmers are high-speed versions of the CYCLONE programmers which add higher performance, larger internal storage (allowing many more images), security, the ability to set programming limitations, power measurement, external SDHC memory expansion, and test capabilities.

A more comprehensive feature comparison is shown here:

http://www.pemicro.com/comparison/cyclone/

Migrating from the Cyclone PRO/MAX to CYCLONE LC & CYCLONE FX

Features & Device Support

The CYCLONE LC and CYCLONE FX platforms represent two different levels of features, pertaining to security , storage size, comminucations speed, peripherals, etc. One you have decided which set of features you need (CYCLONE or CYCLONE FX), choose the model within that platform which offers the device support that you require. One model will support ARM devices only, and one model will support ARM devices as well as a broad range of NXP devices. More information can be found here:

Programming Image Compatibility

Images generated with recent versions of the Cyclone PRO/MAX software will run without modification on the CYCLONE LC & CYCLONE FX programmers.

Programming images generated with older versions of the Cyclone PRO/MAX software may need to be converted to a new format version to work with the CYCLONE LC & CYCLONE FX programmers. The conversion is necessary to update the image to a more secure CRC version. Conversion does not require any of the original files/settings used to generate the image, just the image file itself, and the data in an image is not exposed during the conversion. There is a command-line utility in the CYCLONE LC & CYCLONE FX software called SAP_CONVERT_CONSOLE.EXE which completes this conversion. The converted image will run on the latest firmware versions for both the Cyclone PRO/MAX and CYCLONE LC & CYCLONE FX programmers.

One advantage of images created with recent versions of the image creation utilities is that settings and scripts used to generate a programming image are now stored in the image itself. While there is no ability to read out the data stored in a programming image, the settings used to generate it can be imported back into the image creation utility. This is convenient if, for instance, the user wants to see which power settings are used in the image. It also allows a programming image to be regenerated if the user has all of the data files needed.

Automated Control Software

Older versions of the Cyclone Automated Control Package, used to automate control of programming and modify the images stored on a Cyclone from the PC, may need to be updated to the latest version in order to work with the CYCLONE LC & CYCLONE FX programmers. The latest version of the Cyclone Automated Control Package supports both new and old Cyclones.

Development IDE Software

There are many software development IDEs on the market which support older Cyclones, such as the Cyclone PRO, for use in development. We have worked with many of these vendors to update their software to transparently support the CYCLONE LC & CYCLONE FX programmers. The latest versions of software such as NXP's Codewarrior, NXP's Kinetis & S32 Design Studios and MCUXpresso, IAR's Workbench, Keil's uVision, and Cosmic's Zap now support the CYCLONE & CYCLONE FX programmers just as they have supported the Cyclone PRO in the past.

For older tools which are no longer being actively supported, PEmicro provides many patches so that customers can upgrade their older software to work with the latest hardware, including the CYCLONE LC and CYCLONE FX programmers. PEmicro has a FAQ on the web describing this : http://www.pemicro.com/faqs/faq_view.cfm?id=211