The ElectronFlux™ USB module has been designed to provide hardware I/Os for a multitude of functions and configuration ease and flexibility through a straightforward user-friendly Windows visual tool.

Advanced configuration features allow each port to be individually controlled as needed, providing maximum flexibility without resorting to costly single function add-on cards. Each port can be set to drive LED's or 7-Segment displays without the use of resistors in Multiplexed mode or drive relays, power transistors, DAC's, LCD's, etc. in Direct mode. Minimal support circuitry may be required in certain instances.

ElectronFlux™ devices use only high quality components and PCB resulting in increased device longevity and stability. Advanced design protects against short circuits and over current.
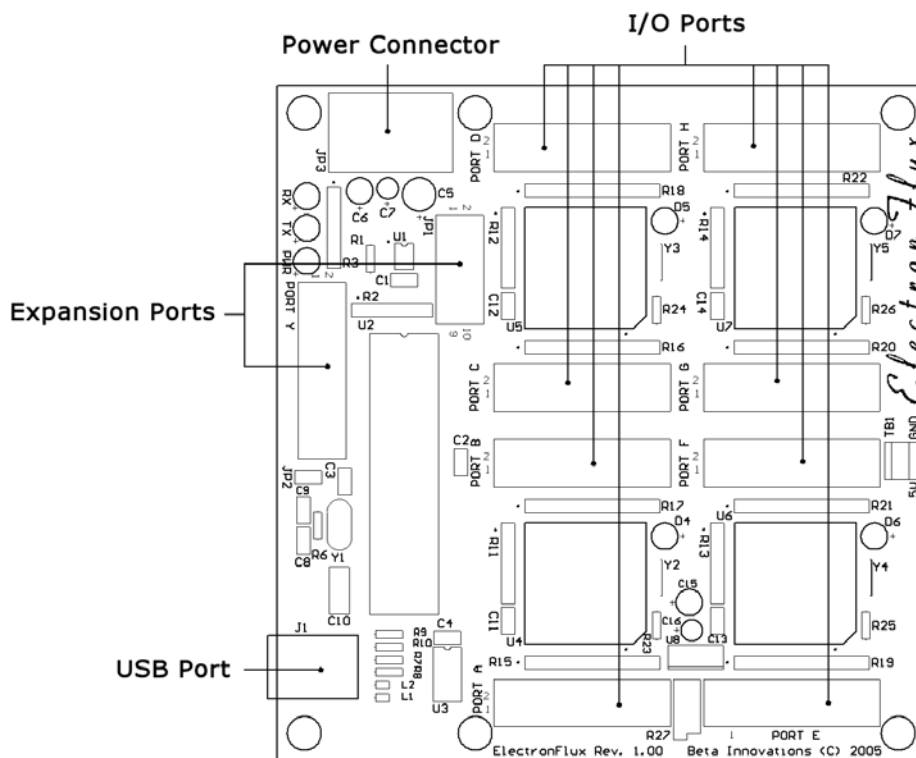

Features:

- Easy installation - The ElectronFlux™ device is a Full Speed USB HID compliant device which employs default drivers supplied by most OS.
  - Benefit: *fully Plug & Play easy installation with no performance impact on the OS. Requires a standard PC power supply.*

- 8 I/O Ports - Supports a variety of modes including Direct and Multiplexed outputs.
  - Benefit: *flexible I/O ports easily add functionality without the need for multiple function specific add-on cards, reducing over all system costs while adding reliability and simplicity.*

- Up to 15 Direct Outputs per Port – Provides output functionality for: Relays, Power Transistors for Lamps, Magnetic Switches, etc.
  - Benefit: *added flexibility in direct drive output definition. No need for additional circuits. Just define the digital outputs as needed and you have TTL ready port for communicating with external circuitry.*

- Up to 56 Multiplexed Outputs per Port – Provides outputs functionality capable of driving individual LED's or up to 7, 7-Segment display characters with brightness control for each individual LED. By employing the dual voltage capability of the card, no resistors are required.
  - Benefit: *added flexibility in multiplexed output definition. Eliminates need for additional components and increases ease of wiring.*
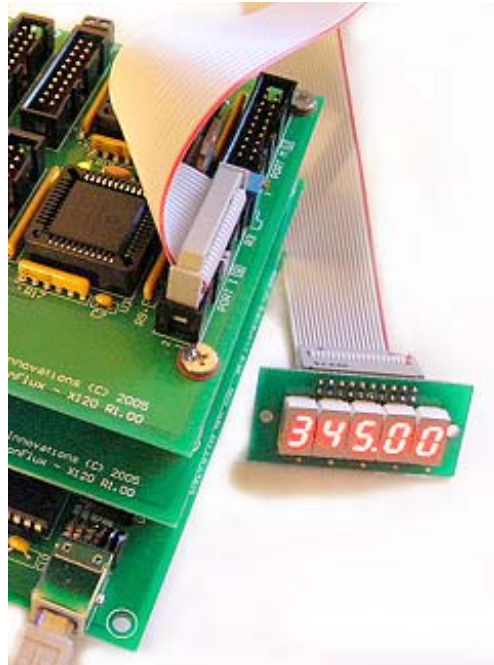
- CRT based vector engine – Provides display capability on suitable CRTs for Falcon 4 RWR simulation.
  - Benefit: *use any suitable low cost CRT with x & y inputs as an IP-1310/ALR azimuth indicator for use in Falcon 4.*
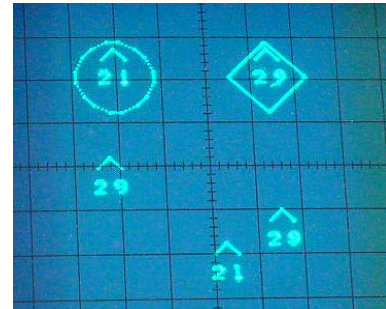
- Up to 10 8-Bit DACs per Port – Provides analog output capability for controlling Air-Core meters and Servos.
  - Benefit: *control instruments and gauges with just a few simple low cost components.*

- Up to 2 Graphical LCDs per Node – Supports any Samsung KS0107 & KS0108 interface compatible 192x64 pixel graphical LCD. Provides custom fonts and glyphs based on the F-16 DED and PFD.
 - Benefit: *Plug-n-Play DED & PFD LCDs for use with Falcon 4.*
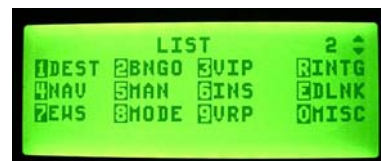
- Short Circuit Protection - Up to 3 Amps available per card for external circuitry eliminating the need for additional external power supplies and support circuitry. Monitoring circuitry prevents component damage.
    - Benefit: *eliminates the risk of system damage caused by overloads and short circuits. Wire your circuit with the confidence that potential mistakes will not result in costly damages.*
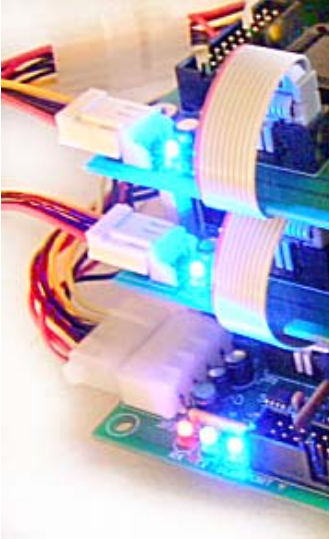
- PnP Expansion Port - Provides expandable functionality. Up to 2 additional expansion cards can be connected for up to 360 Direct Drive outputs or 1344 Multiplexed outputs. Additional cards are auto detected and enumerated without any user intervention.
    - Benefit: *eliminates obsolescence and increases usability. Allows a gradual and cost-effective expansion of the system.*

- Flash Loader Mode - Incorporates a Flash Loader for easy firmware updates via USB.
    - Benefit: *online firmware version checking provides easy, fast and painless updates, keeping the firmware up-to-date and down-time to minimum.*

- Windows configuration tool – All ElectronFlux™ functions are easily configurable through a fully visual interface.
    - Benefit: *eliminates input "programming" errors and facilitates maintenance and fast customization. No need to learn new "programming languages" and maintain cryptic configuration files.*

Device Manager Configuration Tool specifications:

The Windows Device Manager configuration tool uses a fully point-and-click, GUI environment that enable the configuration and control of all ElectronFlux™ functions:
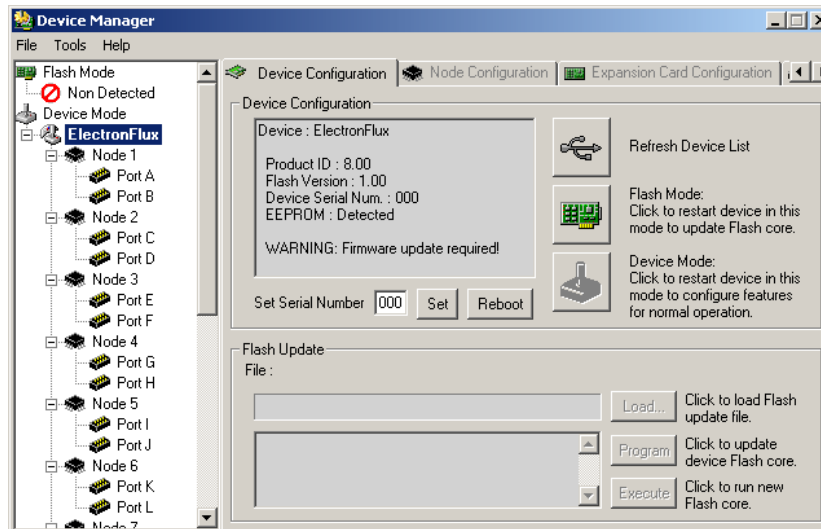
- I/O Ports:
    - Port activation / deactivation
    - IO Mode (Currently only supports Output mode)
    - Output modes:
        - Direct Drive: Relays, Lamps, LEDs, etc.
        - Multiplexed: 7-Segment Displays, LEDs
        - CRT RWR: Oscilloscope or CRT Tubes
        - 8-Bit DACs: Air-Core Meters, Servos, etc.
        - GLCD: 192x64 LCDs

Additional modes currently under development include but not limited to:
    - Inputs: Switches and Rotary Encoders.
    - Outputs: PWM Servos, Stepper Motors and Alphanumeric Displays

All expansion cards are auto detected and enumerated in PnP fashion. These additional ports will be visible and configurable in the Device Manager.

Visit us at www.betainnovations.com and discover our new expansion modules and accessories.