



Firefly X10 USB I/O Board

The combination of a suitable PC motherboard such as **Firefly 600/700** and the **Firefly X10** expansion board supplies all the control and I/O needed for a modern amusement or gaming machine.

For ultimate gaming interoperability, **the Firefly X10** mounts remotely via a USB cable. It adds an extensive set of features and interface capabilities including inputs for switches, open drain outputs for lamps and meters (including current sensing) and high current outputs for solenoids. Onboard DIL switches allow local configuration and additional serial I/O provides two additional ports that can be configured to operate at RS-232, TTL or ccTalk levels. A stereo audio amplifier is included.

Non volatile memory is provided in the form of battery backed static RAM and an EEPROM. An on-board security device provides software copy protection and also switch monitoring, even when mains power is removed from the machine. A comprehensive set of software drivers is available.

Rigorous attention to design criteria, and extensive experience in the supply of control systems to the gaming industry, allows Heber to offer the **Firefly** product range with comprehensive through-life support and long term availability to minimise issues with compatibility, obsolescence and regulatory approval.



Firefly X10

HEBER

Belvedere Mill, Chalford, Stroud, Gloucestershire, GL6 8NT, UK

Tel + 44 (0) 1453 886000 Fax + 44 (0) 1453 885013

www.heber.co.uk sales@heber.co.uk



OUTLINE SPECIFICATION

Host Interface	<ul style="list-style-type: none"> • Full speed USB V1.1
Power Supply	<ul style="list-style-type: none"> • Logic supply from USB • +12V Supply Input (For amplifier & distributed to I/O Connectors)
I/O Connectors	<ul style="list-style-type: none"> • USB Type B + 4 pin header • 50W, 34W and 16W headers, general I/O • 4W Hard Disk type Connector, +12V Power In • 20W Header, Dual HII / ccTalk Channels. • 3.5mm Jack Socket, Audio Line In
Audio	<ul style="list-style-type: none"> • 5W rms. per channel
Parallel I/O	<ul style="list-style-type: none"> • 16 Input Lines, 5V CMOS thresholds with +5V pull-ups • 20 off 250mA Open Drain Outputs (TPIC6259) • 4 off 3A Open Drain Outputs • 8 bi-directional pins, 250mA Open Drain OP / 5V CMOS IP. • 6 off 5V CMOS Outputs • Current sensed +12V output • 4 switch inputs with power-down monitoring • 8W DIL switch • Software controlled LED
Serial I/O	<ul style="list-style-type: none"> • 2 off Serial Channels, software switchable to be RS-232, TTL or HII / ccTalk.
Memory	<ul style="list-style-type: none"> • 128Kbyte battery backed SRAM, 64Kbyte Program + 64Kbyte Data • Socket for 8 pin I²C Serial EEPROM
Indicators	<ul style="list-style-type: none"> • Indicator LED's on +5V and +12V supplies
Supported Operating Systems	<ul style="list-style-type: none"> • Microsoft Windows 2000/XP/ XP Embedded
Security Microcontroller	<ul style="list-style-type: none"> • Battery backed Microcontroller • Monitoring of 4 external switches while powered down • Real time clock function • >30 days hold-up time • Provides Software Security via Customer Specific Drivers
Mechanical	<ul style="list-style-type: none"> • Single 4 Layer PCB Assembly • 2.95" x 8.3" (75mm x 211mm)

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