# FW Extender

## 2-port IEEE 1394 FireWire to one RJ45 port HUB (Repeater), IEEE Std 1394b-2002

### Introduction

FW Extender is two FireWire (1394a) to one RJ45 port S400 Repeater

FW Extender enables 1394 signals to be transmitted and received over Cat5 or Cat6 Unshielded Twisted- Pair (UTP) cable.
FW Extender is optimized to create long-haul IEEE 1394b-2002 connections over Cat5 or Cat6 at the S400 data rate, but it can also be used at S200 and S100.
FW Extender also works for Cat5-structured wiring cable that is typically installed in a home or office.

**Typical Equalization Performance**

| 1394 Rating | Range using | |
|---|---|---|
| | Cat5e | Cat6 |
| S100 | 55m | 55m |
| S200 | 55m | 55m |
| S400 | 55m | 55m |

* Measurements performed in lab conditions

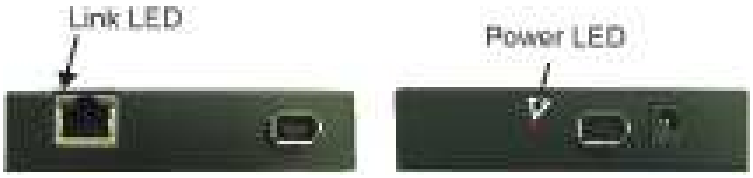
## Technical Specifications

- Fully Supports Provisions of IEEE 1394a.2000 and 1394.1995 Standard for High Performance Serial Bus
- Fully Interoperable With Firewire, SB1394, DishWire, and i.LINK Implementation of IEEE Std 1394
- Fully Supports Provisions of IEEE Std 1394b-2002 at S400B Signaling Rates

| Mode | Mode9 | | Mode10 | |
|---|---|---|---|---|
| JP1-2 | Open | | Short | |
| JP3-4 | Short | | Open | |
| Port 0 | B2 | S | B4 | S |
| Port 1 | DS | T | DS | T |
| Port 2 | DS | T | DS | T |

Default Mode: 10
LEGEND:
DS = 1394a-2000, data strobe-only, S400, S200, and S100 operating speeds
B2 = 1394b-2002 Beta-only, S200b and S100b operating speeds
B4 = 1394b-2002 Beta-only, S400b, S200b, and S100b operating speeds
S = TPBIAS#_SD# terminal is in signal detect input mode
T = TPBIAS#_SD# terminal is in TPBIAS output mode

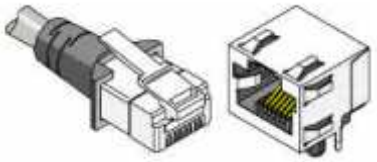

- Equipped with a multi-rate adaptive equalizer which restore IEEE Std 1394b signals received over Cat 5 or Cat6 Unshielded Twisted Pair (UTP) Cable at 400 Megabits per Second (Mbits/s)
- DC Power Connector: Walkman-type 2.0 mm DC Jack
- Power Input Range: DC 8V~30V, max. 1.35A
- Power & Link LEDs



## Pin Assignment of RJ45 Connector

### FW Extender

The wiring signal of the RJ45 connector is compatible with 100baseT Ethernet (pin1,2,3,6). Users can use the crossover type Cat5e or Cat6 cable.



**The two ends look like this:**

| Standard End | Crossover End |
|---|---|
| Pin 1 White/Orange | Pin 1 White/Green |
| Pin 2 Orange | Pin 2 Green |
| Pin 3 White/Green | Pin 3 White/Orange |
| Pin 4 Blue | Pin 4 Blue |
| Pin 5 White/Blue | Pin 5 White/Blue |
| Pin 6 Green | Pin 6 Orange |
| Pin 7 White/Brown | Pin 7 White/Brown |
| Pin 8 Brown | Pin 8 Brown |

| Pin | Signal |
|---|---|
| 1 | TPB |
| 2 | TPB* |
| 3 | TPA |
| 4 | +V(BusPower) |
| 5 | 0V(Ground) |
| 6 | TPA* |
| 7 | |
| 8 | |

## Hardware Requirements

- Desktop PC:
  With either a built-in FireWire (IEEE-1394) controller or a FireWire (IEEE-1394) to PCI Host Adapter equipped with an external FireWire (IEEE 1394) port.
- Laptop PC:
  With either a built-in FireWire (IEEE-1394) controller or a FireWire (IEEE-1394) to CardBus PC Card equipped with an external FireWire (IEEE 1394) port.

## Application


## Certifications

- CE Test: Pass
- FCC Test : Pass