3A International, Inc.

Products

FireWorks 1394 Cable Booster

1394CB-400

IEEE1394 compatible cable coupling

The 1394CB-400 is the first IEEE1394 compatible coupling which can connect two copper based 1394 cables. It basically works as a signal repeater and cable extender, and allows branching.

Currently, the 1394 specification restricts the copper based cable length to 4.5 m (14.8'). 3A's 1394 Cable Booster is the first product to overcome this limitation and to allow inexpensive cable extensions.

The 1394CB-400 provides the full capabilty of the IEEE1394 PHY layer with hot cable plugging, etc. The cable booster is cable powered and will be identified as an inactive node on the 1394 topology map.

The 1394CB-400 is now available with data transfer rates up to 400 Mbps. According to the 1394 specification it supports all lower speeds of 100 and 200 Mbps.

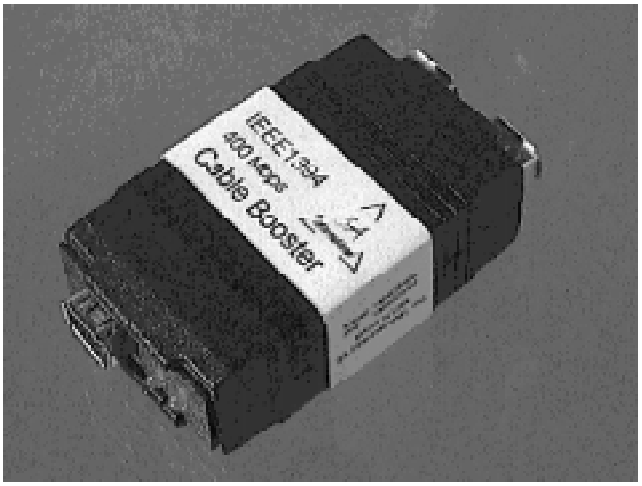
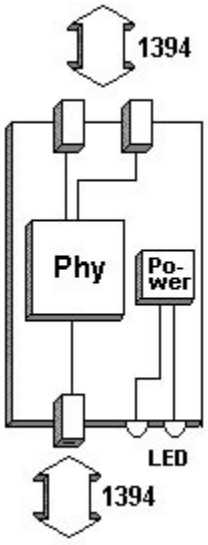


Image captured with 1394 digital camera



- signal repeater functionality
- electrically isolated signals and ground
- data transfer rates: 100, 200, 400 Mbps
- maximum of 15 repeaters allowed between two power providers
- fully asynchronous and isochronous capable
- hot 1394 cable insertion capable
- LED power status indication

1394 TRADE ASSOCIATION
THE MULTIMEDIA CONNECTION

The IEEE1394 serial bus provides an inexpensive, non-proprietary, high-speed method of interconnecting both professional industrial and consumer electronic products. The scalable architecture, the flexible topology and the video and audio capability make IEEE1394 ideal for a new generation of embedded systems. 3A's Fireworks product line offers intelligent connectivity components and development tools for various industries.

FireWorks
The ultimate serial data technology!

3A International, Inc.

FireWorks

1394 Cable Booster

Functional Considerations

Physical Layer

The PHY chip, basically a cable transceiver/arbiter operating at 400 Mbps, provides the analog transceiver functions needed to implement a 3-port node in a cable-based IEEE1394 network. Each cable port incorporates two differential line transceivers. The transceivers all include circuitry to monitor the line conditions needed for determining connection status, for initialization and arbitration, and for packet reception and transmission.

Power Regulation

The Cable Booster is directly powered off the 1394 cable. The total power consumption is less than 1 W. In order to provide the PHY with its supply voltage the cable voltage of 8-40 V (as specified for IEEE1394) has to be reduced by an internal power regulation circuit.

Two LED are used to indicate the power status:

LED	description
none	no or unsufficient power on cable
red	problem in power circuit, Phy not powered correctly
green	device powered correctly

Specifications

Electrical

- Electrically compatible with IEEE1394-1995 specification
- 1394 cable powered
- internal power regulation circuitry
- power consumption off the bus < 1 W

Mechanical

- Dimensions: 76x44x21 mm (3x1.62x0.81inches)
- Weight: 46.6 grams (1.65 ocs)
- Connectors: 3 x 6-pin, IEEE1394 connector

Reliability

- MTBF: TBD
- MTTR: 30 seconds (based on replacement)

Environmental	
Operating Temperature	0° to 70° Celsius
Storage Temperature	-65° to + 150° Celsius
Relative Humidity	< 95% at 40° Celsius

Ordering Information

1394CB-400	1394 Cable Booster 400Mbps

All products are shipped F.O.B. Tempe, AZ, USA.
Contact 3A International for additional information.

Note: Due to technical progress, all designs, specifications and components are subject to change without notice.

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