CATC FireInspector

T*he CATC FireInspector™ IEEE 1394 Bus & Protocol Analyzer are based on CATC's exclusive BusEngine™ technology. This serial bus analyzer technology gives the FireInspector analyzer unprecedented functionality, unparalleled flexibility and uncompromising user-friendliness for the IEEE 1394-based (FireWire™ and I.Link™) product development and test communities. The FireInspector is available as a standalone protocol analyzer, or the FireInspector Plus which includes traffic generation capabilities.*

The FireInspector IEEE 1394 Bus & Protocol analyzer is a stand-alone unit that is easily configured and controlled by a portable or desktop PC connected via its USB port. FireInspector uses hardware triggering to capture real-time events and hardware filtering to preserve memory and assist in pinpointing the data of interest. Recorded data can be viewed with the highly intuitive CATC Trace™ expert analysis software that dramatically simplifies the presentation and understanding of IEEE 1394 protocol traffic.

The IEEE 1394 protocol features a tree structured topology view that is crucial to understanding system performance. The FireInspector analyzer presents topological information that updates dynamically as devices are connected to and removed from the network. The FireInspector software provides a dual-pane display; one to graph the topology itself and the second to list comprehensive details about the currently selected node.

Included in the FireInspector analyzer is the ability to manage encapsulated command sets such as AV/C, DCP, IPv4, HAVi and SBP-2. The analyzer decodes and displays the associated request/response operations, as well as encapsulated fields; such as CIP headers from ISO 61883, "Reconnect" from SBP-2 and "Fast_Start" from SBP-3. FireInspector will also export data fields (e.g. DV video frames, SBP mass storage data blocks). FireInspector provides an open API that allows users to debug proprietary or "vendor unique" 1394 protocols. This documented framework supports user modification of existing decodes or creation of custom decodes from "scratch". These decoded protocol elements are subject to the analyzer's complete search capabilities.

The FireInspector Plus model offers, in addition to the protocol analyzer functionality, the ability to test functionality, compatibility and error recovery through a sophisticated traffic generation module. This traffic can be easily created using the GUI interface or edited from an existing data file using a text-based interface. Traffic can contain both legal (per the 1394 standard) and illegal packets to enable stress/limit testing of 1394-based designs and to observe design behavior under faulty bus conditions. Packets can be deleted, added, copied/pasted and/or modified bit by bit.

For complete product information, please visit www.catc.com.

FEATURES

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• Fully IEEE Std 1394–1995 and P1394a compliant	• Timing measurement & analysis functions
• Supports 100/200/400 Mbits/s transfer rates	• Decoding of encapsulated protocols (FCP, AV/C, SBP-2, SBP-3, 61883 ISO CIP header, Digital Camera Specification 1.30 and HAVi)
• 128 MB data recording memory	• Search at the packet or transaction level
• Programmable, real-time event triggering	• Field upgradeable firmware and recording engine
• Real–time traffic capture filtering	• Full–speed USB host connection
• Graphical display of bus transactions, usage and topology	• Software operates as stand–alone "trace viewer"
• Accurate time stamping of bus packets	• File–based Decoding
• 1394 bus traffic generation ("Plus" model only)	• Automation (OLE scripting)
• Generate and send Asynchronous, Isochronous and PHY packets	• Adjustable buffer size
• 3 Year Hardware Warranty	• Bus and timing utilization calculator
• Extensive search capabilities	

THE CATC TRACE

FireInspector utilizes the CATC Trace™ to present the captured data in an immediate, understandable and useful format.

The CATC Trace is a powerful and intuitive expert software system embedding detailed knowledge of the protocol hierarchy and intricacies, as defined in the protocol specification. The software allows the user to control the analyzer and set specific real-time triggering and filtering conditions. The CATC Trace utilizes a graphical display that has been optimized for fast and easy navigation through a captured traffic session. Users are alerted as violations are detected at all levels of the protocol layering and can easily drill down on areas of interest or collapse and hide fields that are not relevant.

Packets (subactions) are shown on separate rows, with their individual fields both labeled and color-coded. Packets are also numbered (sequentially, as recorded), timestamped (to an accuracy of 20ns), and highlighted to show data rates (100/S200/S400) and the presence of subaction and arbitration reset gaps. In addition to the graphical format, individual packets can also be viewed as a "quadlet list"; the style of presentation used in the IEEE Std 1394-1995 document.

For additional information on the CATC Trace, please download the White Paper from the CATC website: http://www.catc.com/support/whitepapers/index.html.
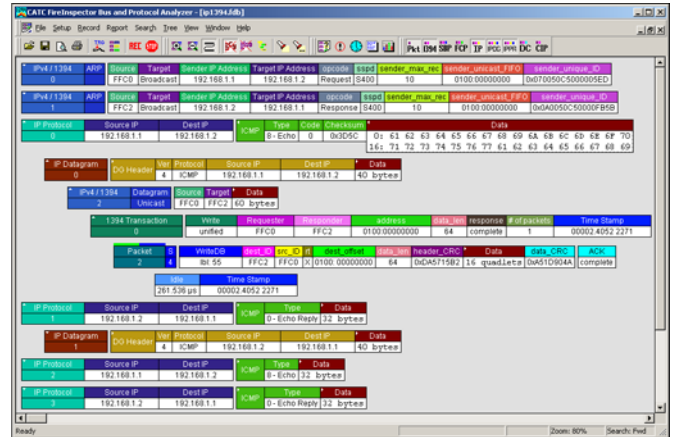
SPECIFICATIONS

Package

Dimensions:	10.5 x 10.4 x 2.4 inches (26.7 x 26.5 x 6 cm)
Connectors:	one USB (type "B"), three 1394 (6-pin)
Weight:	3.5 lbs (1.6 kg)

Power Requirements
90-264 VAC, 47-63 Hz (universal input), 100W maximum

Environmental Conditions

Operating Range:	0 to 55º C (32 to 131º F)
Storage Range:	-20 to 80º C (-4 to 176º F)
Humidity:	10 to 90%, non-condensing

LEDs

Power (PWR):	illuminated when the analyzer is powered on
Triggered (TRG):	illuminated when the analyzer has detected a valid trigger condition
Recording (REC):	illuminated when the analyzer is actively recording traffic data

Recording Memory Size
64M x 8-bit DRAM for traffic data capture
64M x 8-bit DRAM for timing, state & other data

Certification
FCC (Class A), CE Mark, UL, CSA

Basic Events Detected
bus conditions (bus reset, arbitration reset gap, subaction gap, speed signaling); **PHY packets** (self ID); **acknowledge packets**; **transaction codes** (cycle start, data quadlet read request, data block read request, data quadlet read response, data block read response, data quadlet write request, data block write request, write response, lock request, lock response, stream, isochronous data packet) and any other **packet header** contents; **data patterns** (aligned quadlets in any data block); **hardware-detected errors** (bad PHY packet complement, bad header CRC, bad data CRC, bad acknowledge parity); and **external (user-supplied) signals**.

Host Compatibility
Works with any PC equipped with a functioning USB port, and running Microsoft Windows 98®, Windows 2000®, Windows ME®, Windows XP® or Windows NT®.

LeCroy is a global leader in developing, manufacturing, and marketing electronic signal acquisition and analysis products and services.

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