



GEN2 TRIPLE SERIES  
FIRESPIY  
3470bT



## PRODUCT OVERVIEW:

The **FireSpy3470bT** bus analyzer is an interesting addition to the Triple analyzer series from DapTechnology. Based on the proven architecture of the **FireSpy3850** this new product meets many customer requests for this 3U CPCI/PXI form factor! Just like the **FireSpy3850** it combines three FireSpy analyzers in one single instrument. It comprises a significantly more powerful on-board processor and improved connectivity to the host.

The Compact PCI form factor makes this product very appealing as the solution enables users to install the FireSpy hardware in any 3U CPCI or PXI card slot.

The **FireSpy3470bT** has three 1394 nodes connected to three synchronized analyzer engines. They are controlled by an on-board RISC processor running at 400 MHz. Each node is connected to three active transformer coupled ports. All nine ports are connected via a high-speed high density connector on the front bezel and are made accessible via a special adapter cable (with 1394b Beta connectors).

The **FireSpy3470bT** is equipped with 1 GByte memory and extensive hardware filtering and trigger capabilities. On the host you can control the FireSpy using a graphical user interface to analyze and display the bus traffic in a user-friendly way, or you can use the API and program your own controlling software.

**Key Features** include:

- IEEE 1394-1995, 1394a-2000 and 1394b-2008
- 200b, 400b transfer rates
- PICMG 2.0 R3.0 and PXI 2.2 compliant
- On-board 400 MHz RISC processor and programmable logic
- 1024 MByte internal memory
- GUI and API for Windows™ Operating Systems
- 3 analyzing nodes with a total of 9 1394 ports
  - All ports are active transformer coupled
- Powerful software provides:
  - Monitor
  - Recorder
  - Commander
  - Scriptor
  - Generator
  - Filter and Trigger
  - Support for AS5643, IEC61883, AV/C, SBP2, IP1394 and IIDC protocols
- Internal SelfTest
- C/C++ API with wrappers for LabVIEW™

## A COMPLETE SOLUTION:

The **FireDiagnostics Suite** is the most comprehensive collection of 1394 analysis, simulation and interface tools for a wide range of applications. Apart from well established and hardware assisted analyzer tools like Monitor, Recorder, Generator, Commander and Scriptor, the suite also offers a set of software tools designed to integrate the FireSpy products in a wide variety of testing applications, as well as extend customization of its functionality beyond the baseline feature set provided by DapTechnology.

The foundation for all software tools included in the FireDiagnostics Suite is formed by the **Application Programming Interface (API)**. With its interfaces for a wide range of development environments like C/C++ and support for the Windows operating system, the application of FireSpy analyzers is extremely flexible. With its feature-rich function library, all hardware assisted analyzer tools like the Recorder and Generator can be controlled as well as more low-level 1394 bus functions.

The **Recording Viewer** is a standalone application designed to permit trace (recorded data) analysis offline, i.e. without a connected FireSpy. The same comprehensive set of analysis tasks is available but allows for a much smaller PC footprint than having the entire FireSpy application installed.

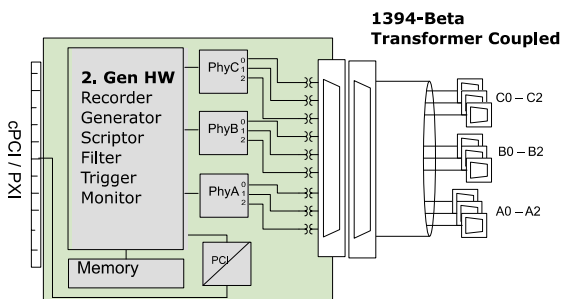
The **Signal Monitor** is an easy-to-use Mil1394 sub-system monitor and analysis tool that benefits from the hardware-implemented Mil1394 protocol. A customizable set of status signals can be pulled from the bus and displayed in near real-time on a customizable graphical Control Panel. Alarms can be setup to alert the operator of out-of-range values.

Another cornerstone of the FireSpy products is the unparalleled high-level **protocol support**. Besides the hardware-assisted integration of AS5643 the FireSpys also support software-based analysis capabilities for consumer and industrial control based applications. The different protocols require very different implementation details and are therefore very unique in their implementation. However, some key characteristics can be identified and are listed below:

- Nested protocol header decoding
- Protocol payload separation
- Handshake verification
- Logical grouping of related transactions
- Separate protocol view
- Protocol layer CRC and Parity Check
- Customization of display details

Additionally, separate applications (**Format Editor and Protocol Editor**) allow for the modification and extension of the factory default decoding and identification definitions. This extremely powerful and versatile tool enables experienced users to build on top of the standard definitions, engage in early prototyping and benchmarking of protocols still in the specification development process, as well as add proprietary extensions.

**FS3470bT**





## MAIN FEATURE SUMMARY:

### GENERAL

- IEEE 1394-1995, 1394a-2000 and 1394b-2002 compliant
- Supports 200(B) and 400(B) Mbps transfer rates
- CompactPCI compliant
- 992 MByte memory for packet and data storage
- Firmware field upgradeable to enable future expansions
- AUX connector for:
  - Trigger input and output functions
  - Recording external event
- GUI and API for Windows™ Operating Systems

### MONITOR

- Displays bus activity:
  - isochronous packets
  - all types of asynchronous packets
  - all types of PHY packets
  - all types of acknowledge packets
  - several types of Errors
- Counts packets according to type, speed, ack and error condition
- Counts number of bus resets
- Measurement of bus power voltages (bilingual ports)

### RECORDER

- Time stamping of all packets and status events with 10ns resolution
- Packets hidden by slower connections are visible as 'prefix only' packets
- Extensive packet/event filtering/trigger/search capabilities
  - Packet type
  - Transmission speed
  - Boolean combination of 4 programmable packet sets
  - Data payload patterns
  - Error conditions
  - Various status events
  - Graphical Trigger Sequencer
- Adjustable trigger position within programmable record buffer size
- Cyclic pre-trigger buffer management option
- Different kinds of packet display views, including:
  - Time View, displays all packets on a time line, including the prefix
  - Packet View, displays packets as list plus selected packet options
  - Transaction View, displays transactions as list or flow graph
  - Topology View, graphical topology displays as is during recording
  - Protocol View, displays packets decoded to selected protocol
- Precise time measurements
- Marking of individual packets or packet ranges
- Export format for re-generation of packets by Scriptor or API

### GENERATOR

- Simultaneous generation of up to 63 iso streams
  - Graphically programming of stream transmit block
  - Data payload import from file
- Generator and Scriptor run simultaneous for stream and asynchronous packet generation
- Special Mil1394 stream generator package (optional)

### SCRIPTOR

- Script Editor
  - C-like scripting language
  - Function Library
  - Macros to automatically generate blocks of code
  - Syntax coloring
  - Integrated Debugger
  - Floating point data types
- Data Editor
- Control Panel
  - Graphical display elements for data value representation
  - Ethernet-connected Client Panels for remote data monitoring
- Several Sample Scripts

### COMMANDER

- Reading and/or writing of local and reading of remote PHY registers
- Reading and/or writing of remote memory locations (incl. CSR register space)
- Possibility to graphically view the current Topologies
- Sending of user definable packets

## SPECIFICATION:

<b>Dimensions:</b>	3U CPCI card, 213x130x20 mm
<b>Weight:</b>	250 g
<b>Operating Range:</b>	0 – 70 C
<b>Power Requirements:</b>	10 Watt maximum
<b>Compliance:</b>	FCC Class A
<b>Connections:</b>	rear: PXI J1, J2 front: 68p SCSI II/III connector carrying 9 active transformer coupled IEEE1394 Beta
<b>Indicators:</b>	-
<b>Switches:</b>	-
<b>Package Content:</b>	FireSpy3470bT Adapter Cable (SCSI – 1394Beta (x9))
<b>Product warranty:</b>	36 months limited warranty
<b>Part Number:</b>	FS347bT or FS347bTAS5643 w. AS5643 SW protocol package
<b>Optional Configuration:</b>	-
<b>SW Add-on modules:</b>	SBP2 protocol software package IIDC protocol software package AV/C protocol software package IP1394 protocol software package AMI-C protocol software package AS5643 protocol software package



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