



GEN2 TRIPLE SERIES
FIRESPY
3811



PRODUCT OVERVIEW:

The Triple Series USB/Ethernet hosted **FireSpy3811** provides three FireSpy bus analyzer engines in one compact package. Designed to meet the requirements of AS5643 based triple-redundant bus architectures, the **FireSpy3811** allows to be connected to three separate IEEE-1394 buses while connecting to three synchronized analysis engines. Based on our 2nd generation hardware platform, the **FireSpy3811** contains 1GB internal memory and a powerful processor to provide the resources needed to service all three buses. The USB2.0 and Ethernet host interfaces allow capture data and all other communication with the FireSpy to be 10 to 40 times faster than our Basic Series products.

The **FireSpy3811** brings out six ports, two from each analyzer engine, to IEEE-1394 Bilingual 9-pin connectors. The AS5643/1 active transformer coupled ports can only operate at S400 and S800 Beta data rates, while the bilingual ports support S100, S200 and S400 legacy connections and S400 and S800 Beta connections.

The **FireSpy3811** utilizes the same FireDiagnostics Suite™ software as all other FireSpy bus analyzers however, all bus analyzers are presented in a single GUI. FireDiagnostics Suite™ supports Windows™ Operating Systems. Additionally, the FireDiagnostics Suite API allows you to build your own control software using C/C++ or LabVIEW™.

The seamless integration of the AS5643 protocol makes the **FireSpy3811** the preferred tool for many Aerospace & Defense development tasks. DapTechnology has made considerable efforts to fully support the SAE AS5643 protocol in all major functional areas of the **FireSpy3811** and continuously updates the analyzers' functionality according to implementation requirements and ongoing standardization efforts

Key Features

- IEEE 1394-1995, 1394a-2000 and 1394b-2002
- 100, 200, 400, 400b and 800b transfer rates
- Host connection via USB 2.0 or 10/100 LAN
- 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 six 1394 ports.
 - No transformer coupling
- Optional Bus Power
- Powerful software provides:
 - Monitor
 - Recorder
 - Commander
 - Scriptor
 - Generator
 - Filter and Trigger
 - Support for AS5643, IEC61883, AV/C, SBP2, IP1394, AMI-C 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.

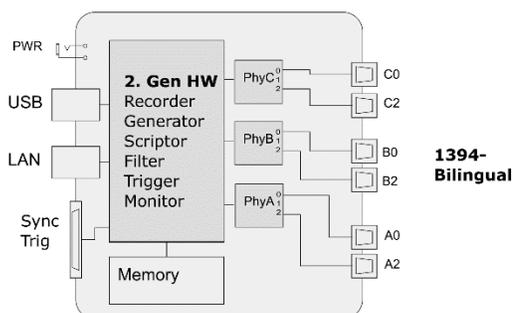
The **Signal Monitor** is an easy-to-use Mil1394 sub-system monitor and analysis tool that benefits from the hardware-implemented Mil1394 protocol. A customizable set of status signals can be pulled from the bus and displayed in near real-time on a customizable graphical Control Panel. Alarms can be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

FS3811



MAIN FEATURE SUMMARY:

GENERAL

- IEEE 1394-1995, 1394a-2000 and 1394b-2002 compliant
- Supported transfer rates
 - FS3811: 100(L), 200(L), 400(L&B) and 800(B) Mbps
- Connects to host using USB2.0 interface or to LAN via 10/100 Base-T
- Electrical isolation between IEEE 1394 and host (USB)
- Optional Bus Power: 2.8 Watts at 12 Volt (for each bilingual port)
- 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:

| | |
|----------------------------|---|
| Dimensions: | 125 mm x 48 mm x 209 mm |
| Weight: | 800 g |
| Operating Range: | 0 – 45 C |
| Power Requirements: | 12V, 10 Watt maximum (without providing 1394 bus power) |
| Compliance: | FCC Class A |
| Connections: | USB 2.0 connector for host-computer RJ45 Ethernet connector 3 IEEE 1394 connectors (bilingual) high-density connector (VHDCI) for 6 transformer-coupled 1394Beta connections |
| Indicators: | Green LEDs for: USB, Power, Ethernet, Trigger Red LEDs for: Record, Scriptor Active, Generate Buzzer |
| Switches: | Toggle switch for Power On/Off Push button for manual triggering |
| Package Content: | FireSpy3811 Power Adapter (12V, 2500mA) USB Cable 2.0 3x 1394b Cable (Beta9 – Beta9) |
| Product warranty: | 36 months limited warranty |
| Part Number: | FS3811 or FS3811AS5643 w. AS5643SW protocol package |
| SW Add-on modules: | AS5643 protocol software package SBP2 protocol software package IIDC protocol software package AV/C protocol software package IP1394 protocol software package AMI-C protocol software package |



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