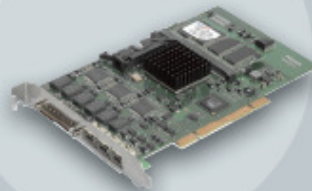dap TECHNOLOGY

FireSpy
# Overview

Basic

Advanced

Triple

FireSpy Family Overview:

DapTechnology offers a series on IEEE1394 data analyzers which have proven their capabilities in several areas of 1394 testing. Focusing primarily on Link, Transaction and Protocol layer analysis all FireSpys feature a suite of analysis and testing functions unmatched in the industry!

With enormous amounts of data transferred on a FireWire bus, engineers need powerful tools to understand and analyze transactions between nodes. The FireSpy family of analyzers encompasses a small, powerful device with an easy to use graphical user interface that runs on a PC.

Basic Series

With their initial releases in 2000 and 2003 the **FireSpy400** and **FireSpy800** have defined new standards for 1394 data analysis. Their unmatched feature set and the outstanding price/performance ratio of the FireSpys have made them the most commonly used 1394 data analyzers in the marketplace.
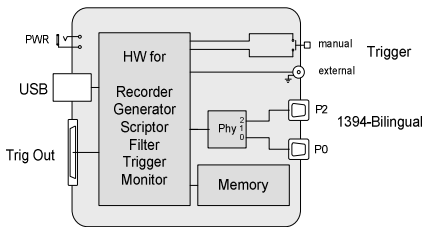

Advanced Series

The "Advanced Series" of FireSpys redefines 1394 data analysis! Built on top of the proven "Basic Series" this brand-new line features better performance due to a more powerful on-board processor, bus power provider capability, new connectivity interfaces (USB 2.0 and Ethernet, PCI), enhanced Scriptor capabilities and more data capture memory.
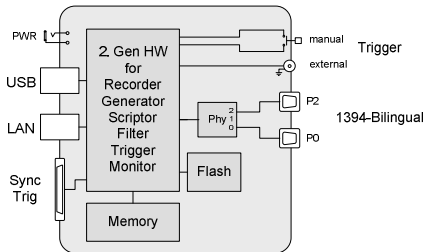
Triple Series

Utilizing the restructured hardware architecture of the FS810, the **FS3810**, **FS385X** and **FS3470bT** offer the industry's first 3 channel data analysis capability. And multiple units can be chained together (and synchronized) to build 3, 6 and 9 channel systems.
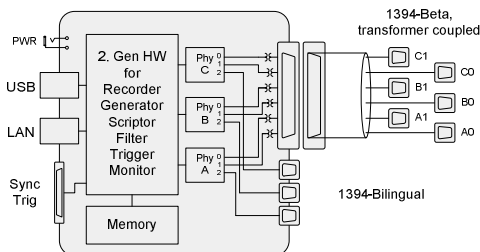

The **FireDiagnostics Suite** is the most comprehensive collection of 1394 analysis, simulation and interface tools for a wide range of applications. Apart from well established and hardware assisted analyzer tools like Monitor, Recorder, Generator, Commander and Scriptor, the suite also offers a set of software tools designed to allow the integration of 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++, LabView™ and LabWindows™ and support for both Windows and Linux operating systems, 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 Mil1394 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.
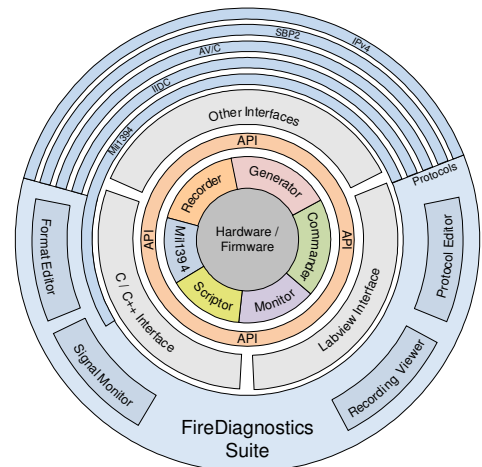
DapTechnology also offers certain analyzer models with support for AS5643. This solution which is part of DapTechnology's more generic and much wider **Mil1394** package offers transformer coupled ports and decoding/verification/generation features for the higher level ASM protocol including transmission and timing. Check the following table for analyzer models which are specifically supporting Mil1394!

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	Basic					Advanced						Triple			
	FS400b	FS800	FS410	FS410b	FS410bT	FS450b	FS450bT	FS810	FS810bN	FS850	FS3810	FS3811	FS3850(1)(2)	FS3470bT
specifically suited for	IEEE1394	IEEE1394 Mil1394	IEEE1394	IEEE1394	Mil1394	Mil1394	Mil1394	IEEE1394 Mil1394	IEEE1394 Mil1394	IEEE1394	IEEE1394 Mil1394	IEEE1394	IEEE1394 Mil1394	IEEE1394 Mil1394
Standard Compliance	1394b-2002 1394a-2000 1394-1995	1394b-2002 1394a-2000 1394-1995	1394a-2000 1394-1995	1394b-2002 1394a-2000 1394-1995	1394b-2002 1394a-2000 1394-1995	1394b-2002 1394a-2000 1394-1995	1394b-2002 1394a-2000 1394-1995	1394b-2002 1394a-2000 1394-1995	1394b-2002 (Beta only)	1394b-2002 1394a-2000 1394-1995	1394b-2002 1394a-2000 1394-1995	1394b-2002 1394a-2000 1394-1995	1394b-2002 1394a-2000 1394-1995	1394b-2002 1394a-2000 1394-1995
Physical Layer	TSB41BA3A	TSB81BA3	TSB41AB2	TSB41BA3A	TSB41BA3A	TSB41BA3A	TSB41BA3A	TSB81BA3	-	TSB81BA3	3 x TSB81BA3	3 x TSB81BA3	3 x TSB81BA3	3 x TSB41BA3
Supported 1394 Speeds	S100 B S200 B S400 B	S100 L S200 L S400 L&B S800 (B)	S100 L S200 L S400 L	S100 B S200 B S400 B	S100 B S200 B S400 B	S100 B S200 B S400 B	S100 B S200 B S400 B	S100 L S200 L S400 L&B S800 B	S100 B S200 B S400 B S800 B	S100 L S200 L S400 L&B S800 B	S100 L S200 L S400 L&B S800 B	S100 L S200 L S400 L&B S800 B	S100 L S200 L S400 L&B S800 B	S100 L S200 L S400 B
Dimensions	W: 125 mm H: 48 mm L: 224 mm	W: 125 mm H: 48 mm L: 224 mm	W: 125 mm H: 48 mm L: 224 mm	W: 125 mm H: 48 mm L: 224 mm	W: 125 mm H: 48 mm L: 224 mm	W: 15 mm H: 106 mm L: 174 mm	W: 15 mm H: 106 mm L: 174 mm	W: 125 mm H: 48 mm L: 224 mm	W: 125 mm H: 48 mm L: 224 mm	W: 15 mm H: 106 mm L: 174 mm	W: 125 mm H: 48 mm L: 224 mm	W: 125 mm H: 48 mm L: 224 mm	W: 15 mm H: 106 mm L: 174 mm	CPCI 3U
Weight	670 g	670 g	760 g	760 g	760 g	150 g	150 g	760 g	770 g	150 g	800 g	800 g	150 g	150 g
Temp. Range						0 - 70 °C	0 - 70 °C			0 - 70 °C			0 - 70 °C	0 - 70 °C
Host Interface	USB 1.1	USB 1.1	USB 2.0 Ethernet	USB 2.0 Ethernet	USB 2.0 Ethernet	PCI 2.1	PCI 2.1	USB 2.0 Ethernet	USB 2.0 Ethernet	PCI 2.1	USB 2.0 Ethernet	USB 2.0 Ethernet	PCI 2.1	CPCI
Internal Processor	50 MHz MicroBlaze	50 MHz MicroBlaze	200 MHz RISC	400 MHz RISC	400 MHz RISC	400 MHz RISC	400 MHz RISC	400 MHz RISC	400 MHz RISC	400 MHz RISC	400 MHz RISC	400 MHz RISC	400 MHz RISC	400 MHz RISC
Timestamp Res.	10 ns	10 ns	20 ns	10 ns	10 ns	10 ns	10 ns	10 ns	10 ns	10 ns	10 ns	10 ns	10 ns	10 ns
Internal Memory	256 MB	256 MB	512 MB	512 MB	512 MB	1 GB	1 GB	512 MB	1 GB	1 GB	1 GB	1 GB	1 GB	1 GB
1394 Ports	B (x2)	BL (x2)	L (x2)	B (x2)	B (x2)	BL (x3), programmable port modes	B (x3)	BL (x2)	B (x2)	BL (x3)	BL (x3), VHDCI (x1)	BL (x6)	FS3850: VHDCI (x1), BL (x3) FS3851: BL (x3), LEMO (x3) FS3852: LEMO (x6)	SCSI (x1)
1394 Bus Power	Self powered	Self powered	Self powered or 2.8 W power	Self powered or 2.8 W power	Self powered or 2.8 W power	Self powered or 10 W power	Self powered or 10 W power	Self powered or 2.8 W power	Self powered	Self powered or 10 W power provider	Self powered or 2.8 W power (for each bus)	Self powered or 2.8 W power (for each bus)	Self powered or 2.8 W power provider (for each bus)	Self powered or 2.8 W power (for each bus)
Upgradeable FW	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Analysis Channels	1	1	1	1	1	1	1	1	1	1	3	3	3	3
Chainable / Sync	-	-	Y / Y	Y / Y	Y / Y	Y / Y	Y / Y	Y / Y	-	Y / Y	Y / Y	Y / Y	Y / Y	Y / Y
Monitor	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Recorder	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Generator	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Commander	Y	Y	Y	Y	Y	Y	Y	Y	Topology	Y	Y	Y	Y	Y
Scriptor	Basic	Basic	Enhanced	Enhanced	Enhanced	Enhanced	Enhanced	Enhanced	Enhanced	Enhanced	Enhanced	Enhanced	Enhanced	Enhanced
Internal Self Test	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
LabView Interface	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Protocol Options	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC AS5643	AVIC SBP2 IP1394 IIDC AS5643

IEEE1394 ..... commercial applications for IEEE1394
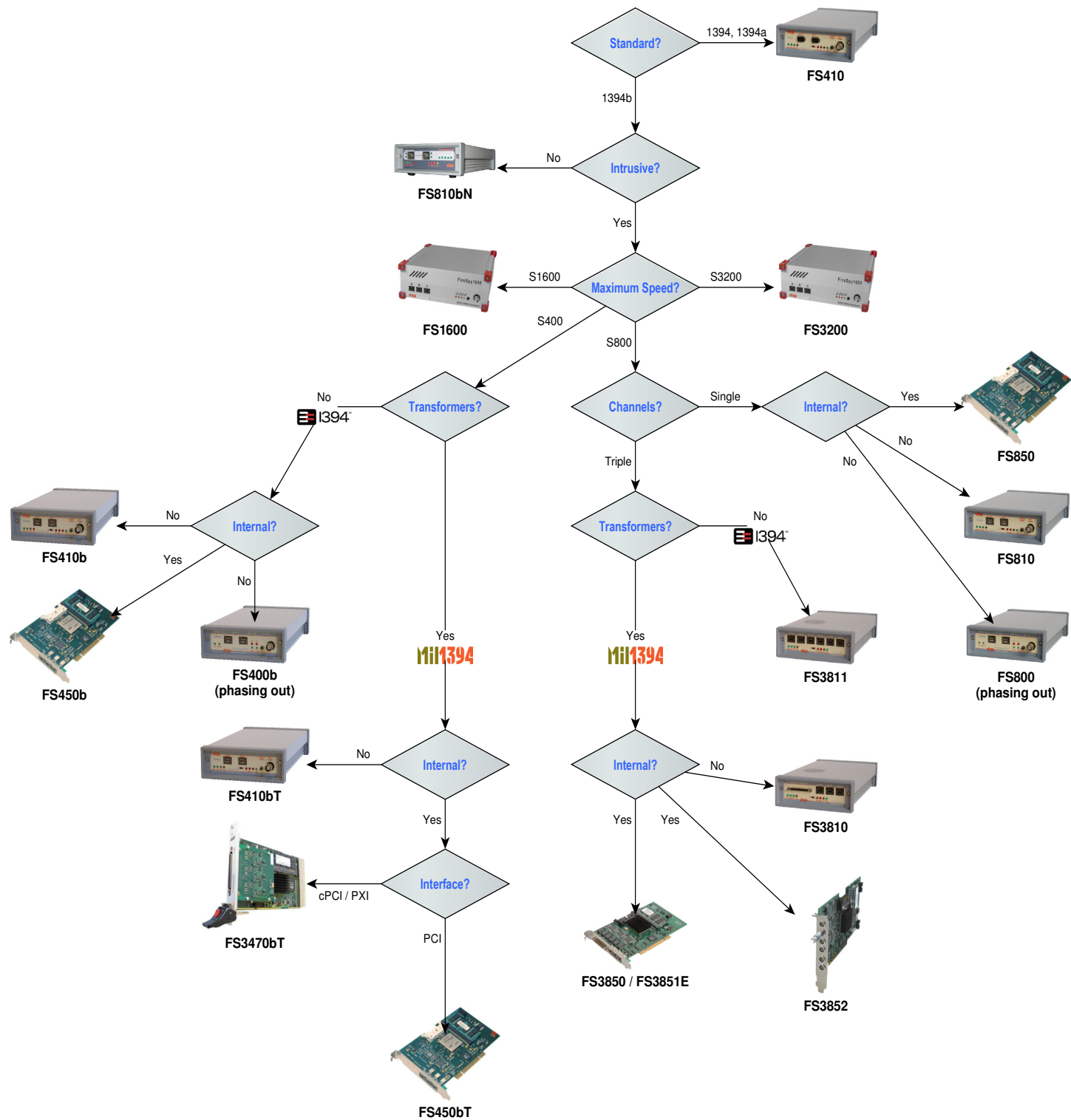Mil1394 ..... A&D applications based on AS5643

B .... Beta
L .... Legacy

BL .... Bilingual (B+L)
BTC .... Beta with transformer coupling
LEMO .... Lemo with transformer coupling

SCSI... SCSI with 6 transformer coupled ports
VHDCI .... VHDCI with 6 transformer coupled ports

FireSpy Decision-Making Flowchart

The attached flowchart shall help you to decide which FireSpy is right for your testing requirement. Please contact DapTechnology directly if our offering does not meet your needs.

Standard?

1394, 1394a

FS410

1394b

Intrusive?

No

FS810bN

Yes

Maximum Speed?

S1600

FS1600

S3200

FS3200

S400

S800

Transformers?

No

1394

Channels?

Single

Internal?

Yes

FS850

No

No

FS810

Triple

Internal?

No

FS410b

Yes

No

FS450b

**FS400b
(phasing out)**

Transformers?

No

1394

FS3811

Yes

Mil1394

Yes

Mil1394

Internal?

No

FS410bT

Yes

Internal?

No

FS3810

Yes

Yes

**FS800
(phasing out)**

Interface?

cPCI / PXI

FS3470bT

PCI

FS3850 / FS3851E

FS3852

FS450bT

Other Products:

Besides the Analyzer products DapTechnology also offers a variety of specialty products for various applications in the aerospace as well as embedded market.

Mil1394 INTERFACE SOLUTIONS

DapTechnology offers a new line of flexible interface solutions. They include **media converter** / repeater as well as specialty multi-channel **host adapter cards** (PCI and PMC) with transformer coupling.

1394b LLC IP C

The 1394b FPGA Link Layer Controller IP Core provides a flexible IEEE 1394b Link Layer hardware design IP core. The IEEE 1394b VHDL core engine, which has been field proven on our IEEE 1394b FireSpy Analyzers for several years, is now packaged and productized as a reference design kit, with licensing for netlist, binary and source code for developers wishing to integrate IEEE 1394b embedded targets.

DapTechnology introduces two versions of the Link Layer Controller to the market, i.e. a *Basic* and an *Extended* version. The Basic version is optimized for small core sizes and the Extended version is optimized for high bandwidth throughput. Both versions have their respective feature sets and benefits. DapTechnology will gladly assist customers in selecting the appropriate version for their particular product.
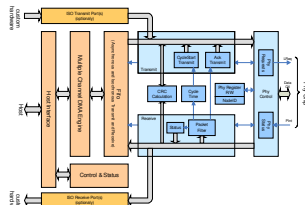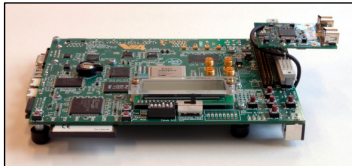
TRAINING

DapTechnology IEEE 1394/FireSpy Training Workshops provide a rich hands-on forum for existing FireSpy users, both novice and experienced, to learn new tricks, share ideas and stay tuned to current technology/feature updates to the products. The course Training offers a modular structure that can be adjusted according to the customer's educational requirements. Three major building blocks form the backbone structure of the 1394 Technology Training.

- IEEE1394 Technology Training (typically 1 day)
- FireSpy Analyzer Workshop (typically 0.5 days)
- FireSpy Scriptor Workshop (typically 0.5 days)

About DapTechnology:

Founded in 1998 in Nijmegen, Netherlands, DapTechnology B.V. is a company specializing in products, systems and solutions based on the IEEE 1394 Standard. Ever since, the company has been working closely with the IEEE 1394 standards development organizations, strategic industry partners and key customers to develop world-class products using IEEE 1394. The DapTechnology FireSpy IEEE 1394a and IEEE 1394b Protocol Analyzer products have gained worldwide acceptance and are currently being used in various aero-

space & defense, industrial, consumer electronics and automotive product development efforts. DapTechnology's business growth in recent years is a testament of the company's commitment to meticulous engineering disciplines, exceptional quality and customer satisfaction.

DapTechnology has been a long-time member company of the 1394Trade Association and is actively participating in standards organization like the Society of Automotive Engineers.

Customer Commitment:

In an ongoing effort to be a leading provider of leading edge 1394 Test and Simulation products, DapTechnology is committed to producing only the highest quality products focusing on high reliability, broad-based applications and spanning a wide range of product implementations.

Quality:

DapTechnology delivers high quality and highly reliable products. And as part of the Dap solution, excellent service and support is provided before and after any product delivery.

In 2005 DapTechnology has received ISO 9001:2000 certification for its Netherlands Offices. By receiving ISO 9001:2000 certification, DapTechnology meets the requirements of the International Standards Organization

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