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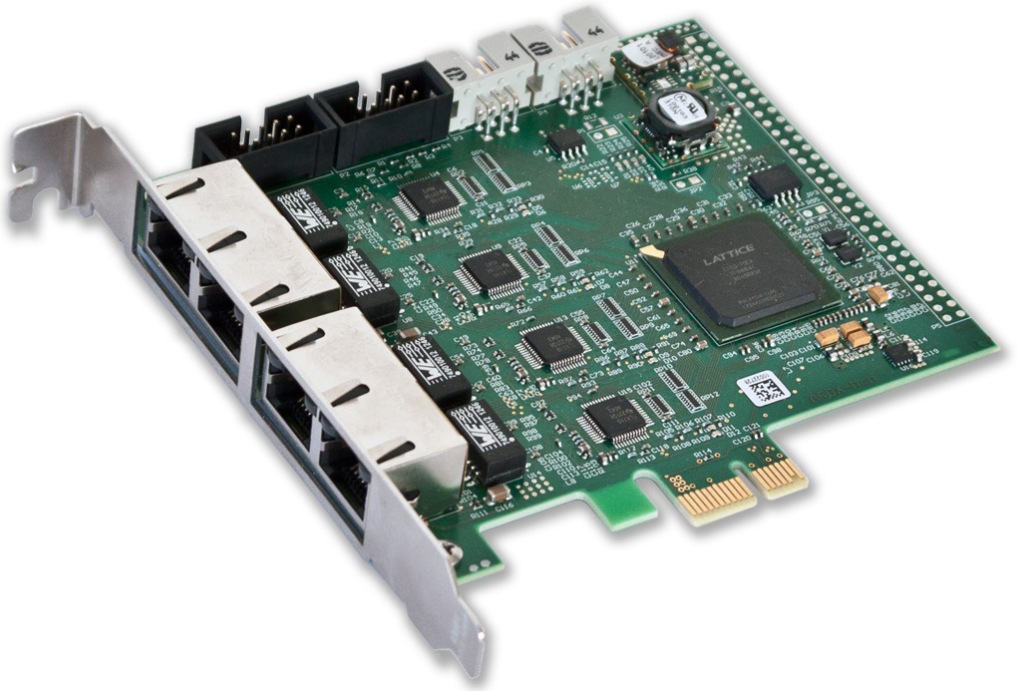
AFDX-Mon

Dual Channel PCI Express AFDX Test Access Port



- Two feed-through Ethernet interfaces with twisted pair transceivers
- Constant transmission delay of 24 bit times in tapping mode (100 Mbit)
- Time-stamping of all monitored packets with 1 µs absolute accuracy
- Basic error detection on monitored Ethernet frames
- Link interruption both on physical layer and data link layer
- Replay of recorded or generated frames
- Replay transmission time with 1 µs absolute accuracy
- Monitoring of replayed data
- Error injection on tapped data
- Automatically configured latency in error injection mode

Data Sheet

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AFDX-Mon

Dual Channel PCI Express AFDX Test Access Port

Application Scope

TechSAT's **AFDX-Mon** is a powerful monitoring, recording, replay, and error injection solution for all Ethernet based protocols, such as AFDX, implemented on a PCI Express x1 card.
AFDX-Mon supports simultaneous monitoring of up to 4 data streams on two physical Ethernet connections including time-stamping of all monitored packets with 1 µs absolute accuracy.

Apart from basic error detection on monitored Ethernet frames, AFDX-Mon also supports comprehensive error injection on tapped data including the following error injection operations among others:

> Dropping of frame
> Invalidate FCS
> Invalidate EDE checksum or ALIC certificate
> ADD, SUB, INV, XOR, OR, and SET values

The Replay function allows synchronous replay of recorded or generated frames on both channels (each with one port) at exact transmission times of 1 µs resolution with any type of error injection.

AFDX-Mon supports bit rates of both 10 Mbit and 100 Mbit with a constant transmission delay of 20 bit times and 24 bit times, respectively. It also supports software controlled link interruption on both the physical layer and the data link layer.

A multi-channel DMA controller provides a high performance data path for transferring the monitored data to the host memory without any software intervention.

Using the **TechSAT Timemaster** system, a virtually unlimited number of cards can be synchronized to form a large tapping system with 1 µs timestamp accuracy over the whole system.

Technical Data

General

- PCI Express 2.0 x1 interface with 2.5 Gbit transfer rate
- Two feed-through Ethernet interfaces with twisted pair transceivers
- Support of both 10 Mbit and 100 Mbit bit rates
- TechSAT Timemaster interface
- Multi-channel DMA controller for offloading data transfers
- Link interruption on physical layer and data link layer

Features

- Monitoring
  - Simultaneous monitoring of 4 ports with full bandwidth
  - Constant transmission delay of 20 bit times (10 Mbit) and 24 bit times (100 Mbit)
  - Time-stamping of all monitored packets with 1 µs absolute accuracy
  - Basic error detection on monitored Ethernet frames
- Recording
- Replay
  - Replay of recorded or generated frames on both channels (ea. with 1 port)
  - Any type of error injection supported
  - Transmission times of 1 µs resolution
  - Synchronous replay in complete system
- Monitoring of replayed data
- Error injection on tapped data
  - EI options: drop frame; invalidate FCS, invalidate ALIC or EDE CRC; ADD, SUB, INV, XOR, OR, and SET values; recalculate and fix checksums on data change; cut frame at given position
  - 128 byte mask/match frame filtering
  - 16 filter slots per port
  - Automatically configured latency in EI mode

Software

- C API
- C++ / Python API
- Drivers for Windows® or Linux
- Drivers for other platforms on request

Physical Dimensions

- Length: 109 mm
- Height: 100 mm
- Width: single slot

Power Consumption

- < 3 W

Part Number

- 702314-01

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