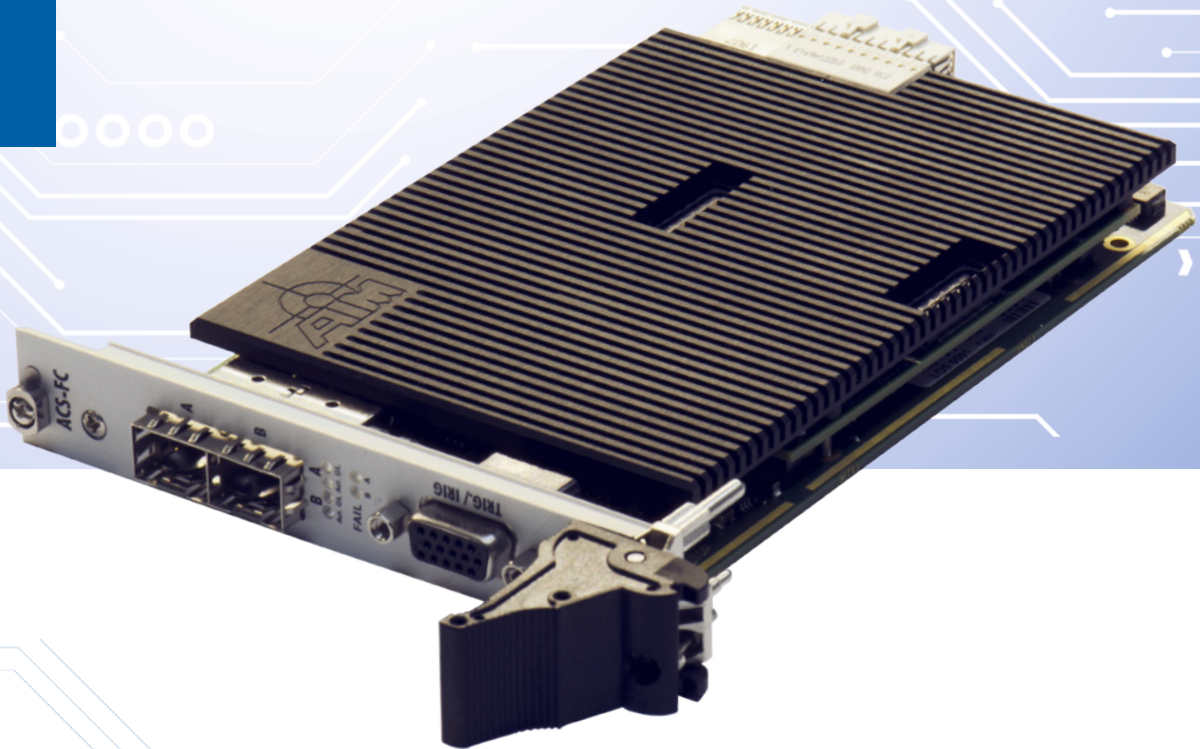


ACS-FC-3U-2

2 Port 4GFC Fibre Channel
Test, Simulator and Monitor Module
for 3U CPCle(PXle)

Data
Sheet



ACS-FC-3U-2

2 Port 4GFC Fibre Channel Test, Simulator and Monitor Module for 3U CPCle(PXle)

General Features

The ► **ACS-FC-3U-2** is AIM's high performance intelligent CPCle/PXle compatible module offering 2 ports with full function test, simulation, monitoring and analyzer functions for Fibre Channel networks. The ACS-FC-3U-2 is a powerful state-of-the-art 4-lane PCIe 2.0 compliant board. The architecture of the ACS-FC-3U-2 provides a dual core processor for each port and dedicated DDR3 RAM for handling receiver and transmitter tasks. Each port provides 4GB of low power DDR3 RAM, summarizing to 8GB for the complete module. This separation of the processing capabilities and onboard RAM per port makes each port operating independent from the other port. 2 high performance FPGAs implementing the customized ► **Fibre Channel** interfaces.

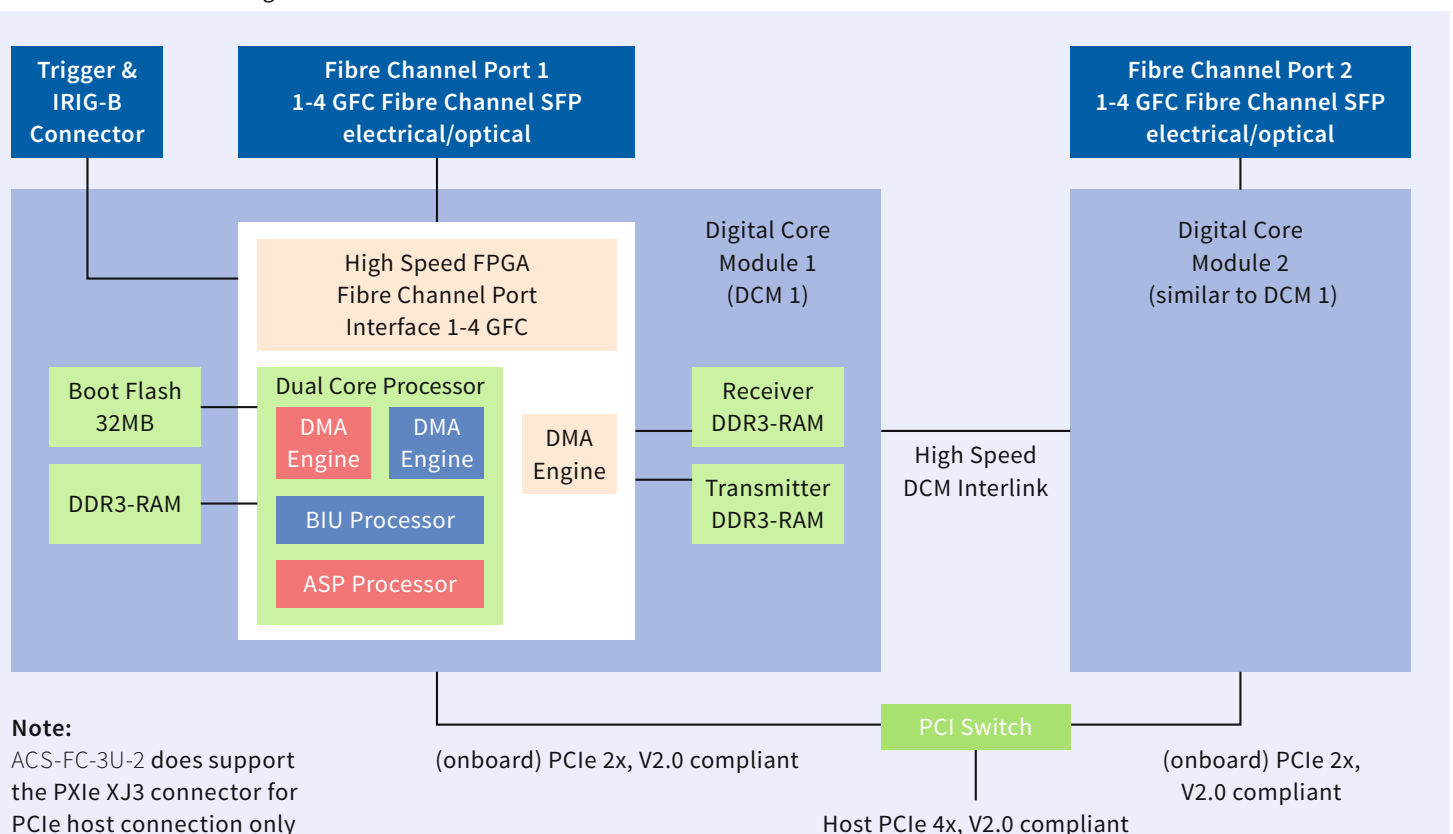
The ports can operate concurrently in traffic simulator or receiver/monitor modes with support for port related frame statistics. The TAP mode provides a possibility of monitoring traffic between 2 Fibre Channel ports without interacting to the attached ports with source or destination ID packet capturing and monitoring features. Service classes 1, 2 and 3 are fully supported, link level parameters are user definable. 4GB DDR3 RAM is provided for each port to implement receive buffers and transmit scenarios onboard.

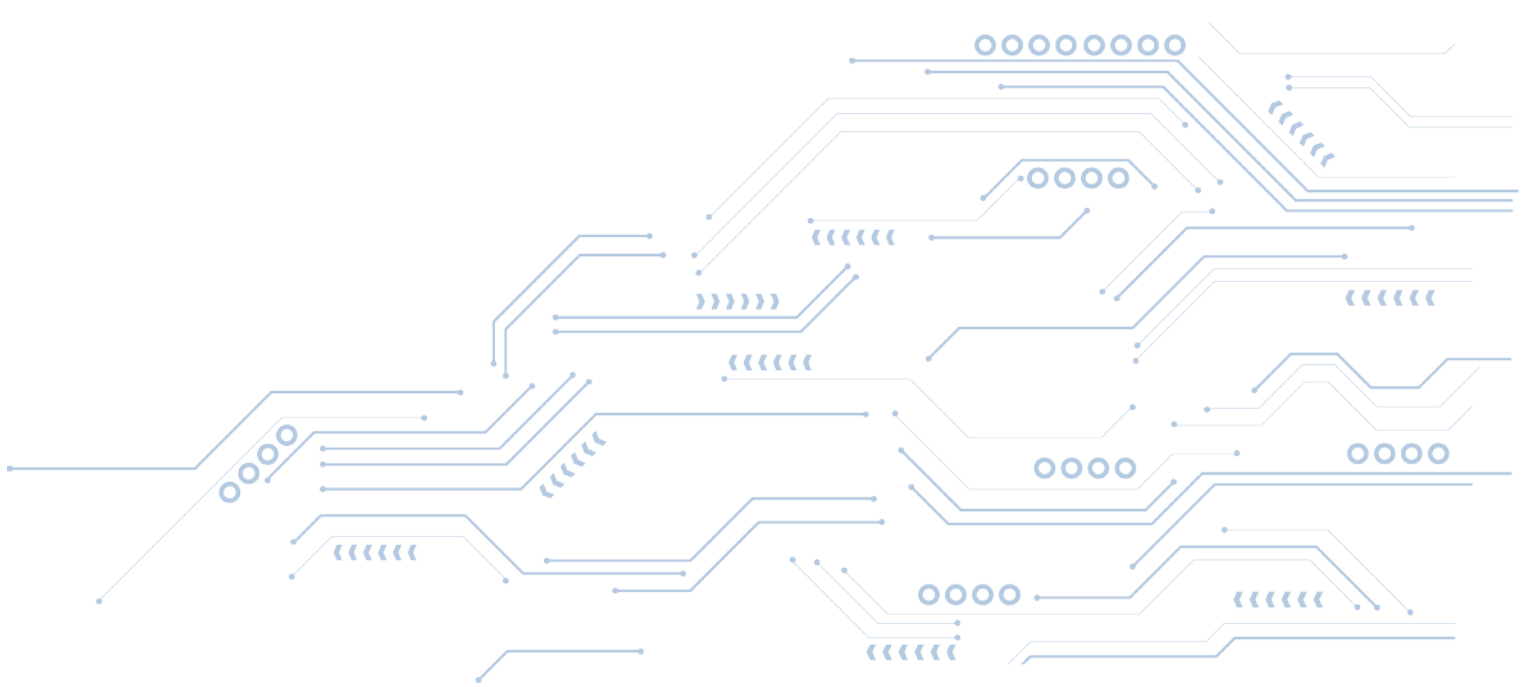
The flexible frontend implementation allows the user to select the Fibre Channel network speed of 1 to 4GFC by software command.

The ACS-FC-3U-2 module provides 2 Fibre Channel ports implementing either an optical or electrical full duplex interface. The SFP cage makes it suitable for different media types as optical or electrical network technologies.

The ACS-FC-3U-2 module is available with following optional software: ► **PBA.pro™** the most scalable and flexible application framework focusing on test, simulation and integration under Windows and Linux. PBA.pro database support offers great flexibility for analyzing and easily setup of user defined frame contents.

ACS-FC-3U-2 Block Diagram





Traffic Generation

The ► **ACS-FC-3U-2** provides real time Traffic Generation on all ports concurrently. Different Traffic Generation modes are available:

Generic Traffic Simulation

(based on the setup of FC-2 frame lists)

- Service Classes 1, 2 and 3 fully supported Data Flow Management
- Simulation of FC-2 Layer Fibre Channel Traffic with fully programmable Frame Attributes (Protocol Headers, Protocol Payload Data, Timing, Physical Error Injection, FC-0/1/2 Error Injection)
- Fully programmable Timing and Sequencing of Frames

Traffic Reception & Monitoring

The ACS-FC-3U-2 provides real time Traffic Reception on all ports concurrently. Messages can be analyzed in FC-2 and FC-4 mode. Different Traffic Receiver modes are available:

Chronological Receive Mode

(based on the reception of FC-2 frames)

- Sequential Storage of frames in a dynamically adapted onboard buffer
- Programmable Data Capture modes
- Time Stamping of captured frames with extended IRIG-B Time Code with 10ns resolution incl. Inter Frame Gap/Idle Measurement
- Error Detection for SOF/EOF Errors, Physical Coding Errors, CRC, Size and Alignment Errors
- FC-Protocol Error Detection and Management

TAP-Monitoring Mode

- Monitoring of bi-directional FC data without physically appearing to the network (TAP functionality)
- Low-Skew interface keeps the real time behavior of networks
- Global Statistic Information is available providing information about the received number of frames and sequences, the number/type of detected errors, the size distribution of received frames and sequences, etc.

IRIG-B Time Encoder/Decoder

An onboard IRIG-B time Encoder/Decoder allows synchronization of multiple FC ports by using multiple ACS-FC-3U-2 modules. The modules can be easily synchronized using an external IRIG-B time source or the onboard time decoder of 1 ACS-FC-3U-2 module as the reference for accurate correlation of data across multiple ports.

Physical Bus Interface

The ACS-FC-3U-2 provides 2 ports with either electrical or optical front end.

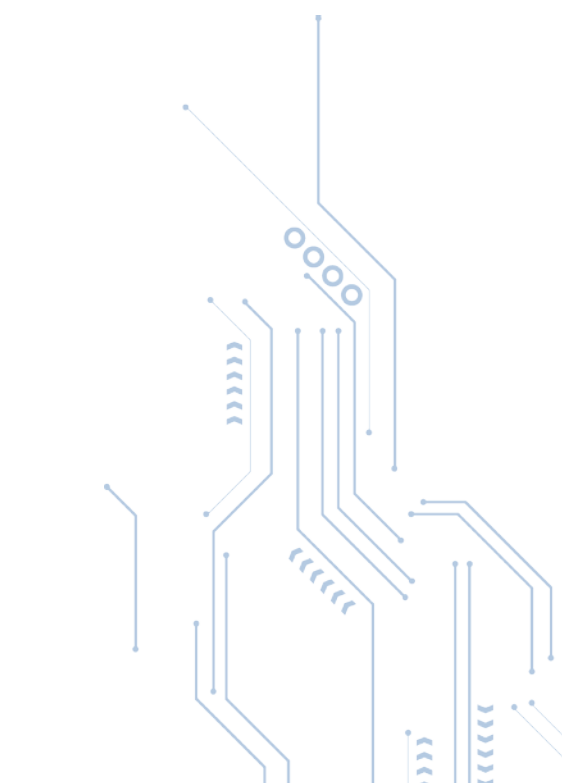
- Customized Fibre Channel interfaces implemented in FPGA for maximum flexibility
- Large internal FPGA Burst buffers running at full system speed
- Standard SFP (Small Form Pluggable) transceiver allowing the customer in a flexible way to adapt the required physical medium

Standard supplied optical SFP (others available on request):

- 850nm with Duplex LC connector

Driver Software Support

The ACS-FC-3U-2 module is supplied with a full function Application Programming Interface (API) which is compatible with Windows and Linux. Host applications can be written in C and C++.



Technical Data

Sub-System Interface

ACS-FC-3U-2: 4-lane PCIe 2.0 interface with up to 2000MB/s of bandwidth

Processors

1 Dual Core RISC Processor per port

Memory

8GB DDR3 RAM

Encoder/Decoder

2 Fibre Channel Encoder/Decoder with Link Control facilities

Time Tagging

IRIG-B time code with 10ns resolution
physical bus interface 2 full duplex Fibre Channel ports with up to 4GFC

Physical Bus Interface

2 full duplex Fibre Channel ports with up to 4GFC

Connectors

PXIe XJ3 backplane connector
2x SFP cages for electrical or optical SFPs compliant to the SFP-MSA,
1x 15-way D-Sub connector (female) for IRIG-B time code (front panel only, no PXI XJ4 support)

Dimensions

Standard 3U CPCI(e) PXI(e) format

Power Consumption

19W

Operating Temperature Range

Standard: 0°C to +55°C ambient

Storage Temperature Range

-40°C to +85°C

Humidity

0 to 95% non-condensing

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