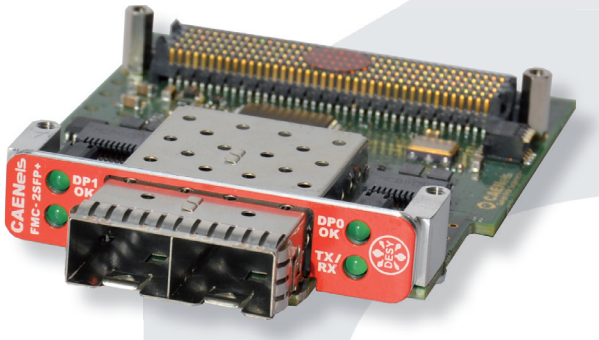

Dual- and Quad-Channel
FMC High-Speed
SFP/SFP+ Adapter

FMC-SFP+

- **These FMC cards are compatible with standard VITA 57.1 and can be mounted on carrier boards – DAMC-FMC2ZUP or DAMC-FMC25 – for high speed communication**
- **The FMC-2SFP+ and FMC-4SFP+ boards have a configurable oscillator and a wide I/O operating range (1.5 V to 3.3 V on V_{ADJ})**
- **Available in 2-channel or 4-channel SFP/SFP+ versions**

FEATURES

- **FPGA Mezzanine Card**
- **HPC FMC Module (Vita 57.1 compliant) with LPC compatibility**
- **Wide I/O operating voltage range: V_{ADJ} can vary from 1.5 V to 3.3 V**
- **True level conversion of all SFP+ module pins including I2C bus lines**
- **I2C-Controlled oscillator (10-280 MHz)**
- **Available as 2-channel or 4-channel version**
- **Fits on any FMC carrier without front-panel modification**
- **Individual module status via LEDs**
- **Autonomous Mode: Clock speed setting and transmitter activation via DIP switches**

APPLICATIONS

- **Fast Communication Interface**
- **Accelerator Diagnostics and Control**

FMC-SFP+. The FMC-SFP4 is a cost-efficient FPGA Mezzanine Card (FMC) designed according to ANSI/VITA 57.1 standard.

It offers two or four SFP/SFP+ module slots. All module pins are translated to the FMC Carrier Voltage (V_{ADJ}) that can be in the range of 1.5 V to 3.3 V.

With this low operating voltage it can be used on almost all carriers. The module is designed as an HPC module but can also be operated on an LPC carrier (one channel + clock).

The components are placed to be compatible with carriers that have components under the FMC module. The SFP+ cage is placed to fit to all carriers without front panel modification (card is only 16 mm longer than described by FMC standard).

The module features an I2C-controlled LVDS (Low-Voltage Differential Signaling) oscillator chip that operates in the range from 10 to 280 MHz.

Automatic configuration of clock oscillator and module pins for standalone operation is selectable via on-board jumpers.

Commercially available versions are the dual-channel FMC-2SFP+ with standard VITA 57.1 bezel and the quad-channel FMC-4SFP+.

Please check the FMC and MTCA.4 sections on our website www.caenels.com to check for news, updates and additional information on this specific cards and other FMC-based solutions.

CAENels
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About Us

CAEN ELS is a leading company in the design of power supplies and state-of-the-art complete electronic systems for the Physics research world, having its main focus on dedicated solutions for the particle accelerator community and high-end industrial applications.

- Power Supply Systems
- Precision Current Measurements
- Beamline Electronics Instrumentation
- FMC and MicroTCA

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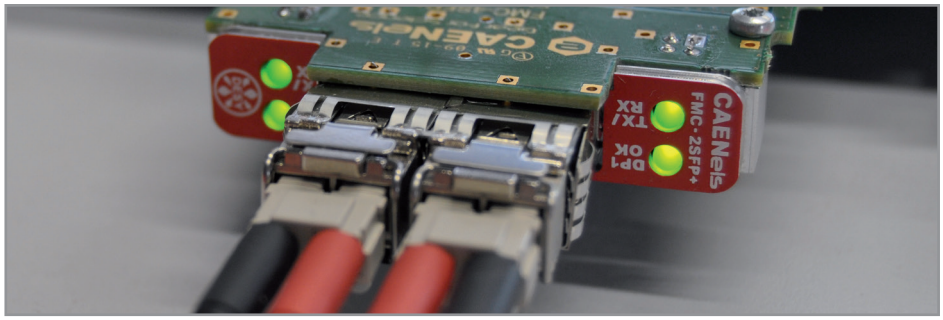
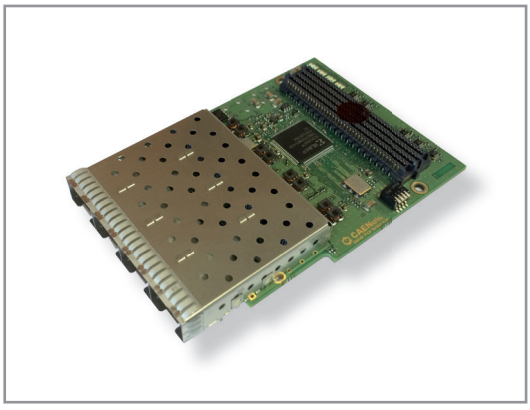
Technical Specifications	**FMC-SFP+**	
	Dual-channel	**Quad-channel**
Board Type	FPGA Mezzanine Card – VITA 57.1	
FMC Connector Type	HPC - High Pin Count	
Number of SFP/SFP+ channels	2	4
V_{ADJ} Range	1.5 V ... 3.3 V	
On-board Oscillator Frequency Range	10 MHz ... 280 MHz	
On-board Oscillator Configuration	I2C protocol	
Additional Features	- Link Status indication via front panel or bottom-emitting LEDs - Autonomous Mode: clock speed setting and transmitter activation via DIP switches	
Mechanical Dimensions	FMC - VITA 57.1	



Dual-channel FMC-SFP+ version during operation



Quad-channel FMC-SFP+ version

Designed and Licensed by **DESY**

Deutsches Elektronen-SYnchrotron
Ein Forschungszentrum der Helmholtz-Gemeinschaft

Ordering Codes

Ordering Code	Acronym	Description
FMC4SFP2XAAA	**FMC-2SFP+**	**Dual-channel SFP/SFP+ Adapter FMC**
FMC4SFP4XAAA	**FMC-4SFP+**	**Quad-channel SFP/SFP+ Adapter FMC**

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