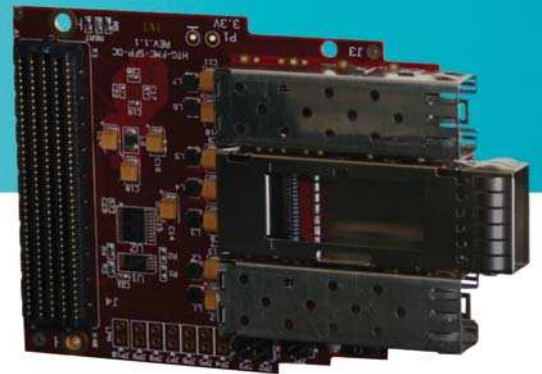


Nutaq QSFP/SFP+ FMC

One straight QSFP(+) port,
two straight SFP(+) port FMC module
PRODUCT SHEET



Nutaq QSFP/SFP+ FMC

- Versatile and industry-standard VITA 57.1 FMC module
- Straight, front-panel QSFP(+) port
- Two, straight, front-panel SFP(+) ports

- Default clock configuration supports OBSAI/CPRI interfaces
- Perfect for Nutaq's μ TCA Perseus AMCs

The QSFP/SFP+ FPGA mezzanine card (FMC) directly interfaces six multigigabit transceivers of the FPGA to QSFP(+)/SFP(+) transceiver modules. Each QSFP(+)/SFP(+) transceiver supports fiber optic or copper interfaces for high-speed protocols such as OBSAI/CPRI and others.

The QSFP/SFP+ FMC is also compatible with the Virtex-6's signaling scheme through its use of voltage translators on the control signals.

The QSFP/SFP+ FMC complies to the VITA 57.1 standard, widely used by the digital signal processing industry, making it easier for developers to integrate FPGAs to their embedded system designs. The QSFP/SFP+ FMC is ready for use with Nutaq's μ TCA Perseus AMCs, but it can as easily be used on other AMCs.

The front-panel QSFP(+)/SFP(+) ports extend slightly outward from the front panel to comply with the mechanical specifications for FMCs.

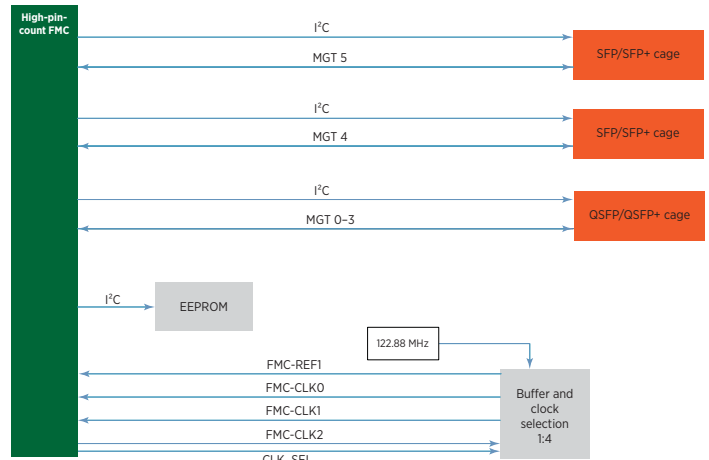
HARDWARE ARCHITECTURE

The VITA 57.1 (FMC) standard comes to the rescue of complex designs with its unprecedented mechanical and electrical flexibility — VITA 57.1 provides a standard specification for small mezzanine modules designed to adapt an FPGA-based carrier card to different I/O requirements.

FEATURES

- One QSFP(+) front-panel cage
- Two SFP(+) front-panel cages
- Direct interface to the FPGA's high-speed transceivers for maximum bandwidth and minimum latency
- Default OBSAI/CPRI clock configuration and software selection
- Other standard protocols can be configured upon request (contact Nutaq for details).

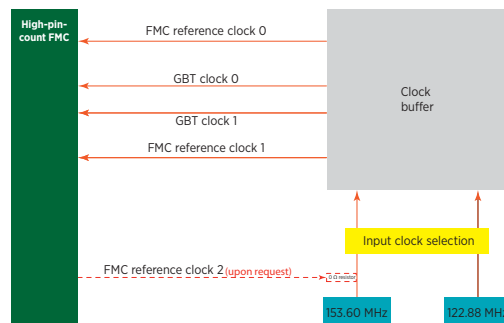
Functional block diagram



CLOCK MANAGEMENT

The module is equipped with two onboard, low-jitter, fixed, 122.88 MHz or 153.60 MHz reference clocks. When it is not installed, 153.60 MHz clock source, can be selected from the FMC. The clock is buffered and distributed to both M2C clock outputs and to GBTCLK0 and GBTCLK1. To synchronize several modules, select a user clock with the clock buffer originating from the FMC's CLK2 (requires a special configuration where the 153.60 MHz oscillator must be removed. Discuss it with us).

Clock modes block diagram



SPECIFICATIONS

FMC connectivity

- High-pin-count connector
 - LA (00–03)
 - HA(03) (optional)
- CLK0 and CLK1 (M2C: selected reference clock)
- CLK2 (C2M: connected to user clock)

Front panel

- 1× QSFP port
- 2× SFP ports
- 2× LEDs per transceiver cage
 - Plugged, RX LOS

Mechanical

Dimensions: 69 mm × 10 mm × 104 mm (W×H×D)

Standards compliance

- FMC
 - VITA 57.1

Electrical

- 12 V (unused)
- 3.3 V
- V_{adj} (unused)

Power consumption

- 200 mW (maximum)

Note: Specifications for the FMC only. They do not account for the power consumption of the QSFP/SFP(+) transceiver module.



INNOVATION TODAY
FOR TOMORROW®

2150 Cyrille-Duquet, Quebec City (Quebec) G1N 2G3 CANADA
T. 418-914-7484 | 1-855-914-7484 | F. 418-914-9477
info@nutaq.com

Nutaq products are constantly being improved; therefore, Nutaq reserves itself the right to modify the information herein at any time and without notice. The FMC logo is a trademark of VITA.