# NES-FMC-MIPI

## 4 CHANNELS DSI/CSI MIPI SOLUTION IN FMC FORMAT

### ▶ HIGHLIGHTS

2 onboard MachXO3™ LCMXO3L-4300C-6BG256C FPGA from Lattice

Comes with IP cores developed by Lattice and ported and tested by NOLAM EMBEDDED SYSTEMS

Two MIPI CSI-2 input interfaces with 4 lanes, up to 0.9Gb/s per Lane converted to two 14 bit parallel interfaces;

Each MIPI DSI-2 provides independent I2C interfaces to FMC HPC;

Two 18-bit parallel input interface converted to two MIPI DSI output interfaces with 4 lanes;

Onboard reference clock generator;

Supported video data formats for input(camera connection): RAW8/10/12/14, YUV422(8/10-bit), RGB565, user-defined 8 bit, interface is 14 bit;

Supported video data formats for output(monitor connection): RAW8/10/12/14, YUV422(8/10-bit), YUV444, 666/565, user-defined 8 bit, interface is 18 bits;

I2C interface level is VADJ.

Small footprint, HPC FMC module

### RELATED PRODUCTS

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### ▸ DESCRIPTION

NES-FMC-MIPI is particularly suitable for applications and R&D in Augmented Reality / Virtual Reality (AR/VR ). When combined with our NES-PCIe-Z+, Zynq based board, and its hardcore Video Codec H.265/H.264, it offers a powerful COTS platform for most image/video processing requirements.

NES-FMC-MIPI is an HPC FMC designed to provide connectivity between FPGA on a carrier and 2x MIPI CSI-2 4 lanes input and 2x MIPI DSI2 4 lanes output interfaces. The module offers conversion from MIPI CSI-2 to parallel interface or vice versa to 2x MIPI CSI2 4 lanes output. This feature means that 2 MIPI-based sensors/cameras and 2 MIPI-based displays could be supported, concurrently. An adapter card is also provided that can house two sensors/cameras. Adapter cards for several MIPI-based cameras from Sony and Onsemi are available for fast project development.

The default adapter supplied with NES-FMC-MIPI is MIPI-IMX378 supporting the IMX378 camera which, can take two camera modules based on the Sony IMX378 cameras. Please contact our support team to learn more about the adaptor for other cameras. COTS cable for connecting FMC to adapter card is available; Samtec part number HLCD‐30‐03.00‐BH‐TH‐2.

NES-FMC-MIPI can also be attached to our adapter cards to create an embedded solution. This module will be a self-contained hardware platform with power, FPGA resource, FLASH, two cameras, and an interface to x2 MIPI-based displays

**Order Part Number:**

- NES-FMC-MIPI  FMC MIPI hardware module ,and MIPI –IMX169-C and IP CORE for Lattice on the NES-FMC-MIPI
- S-IMX378 Camera  Sony Camera IMX378 (Framos part number CA378 –AIOS)
- HLCD-30-03.00-BH-TH-2  Samtec cable assembly  for connecting NES-FMC-MIPI to adapter