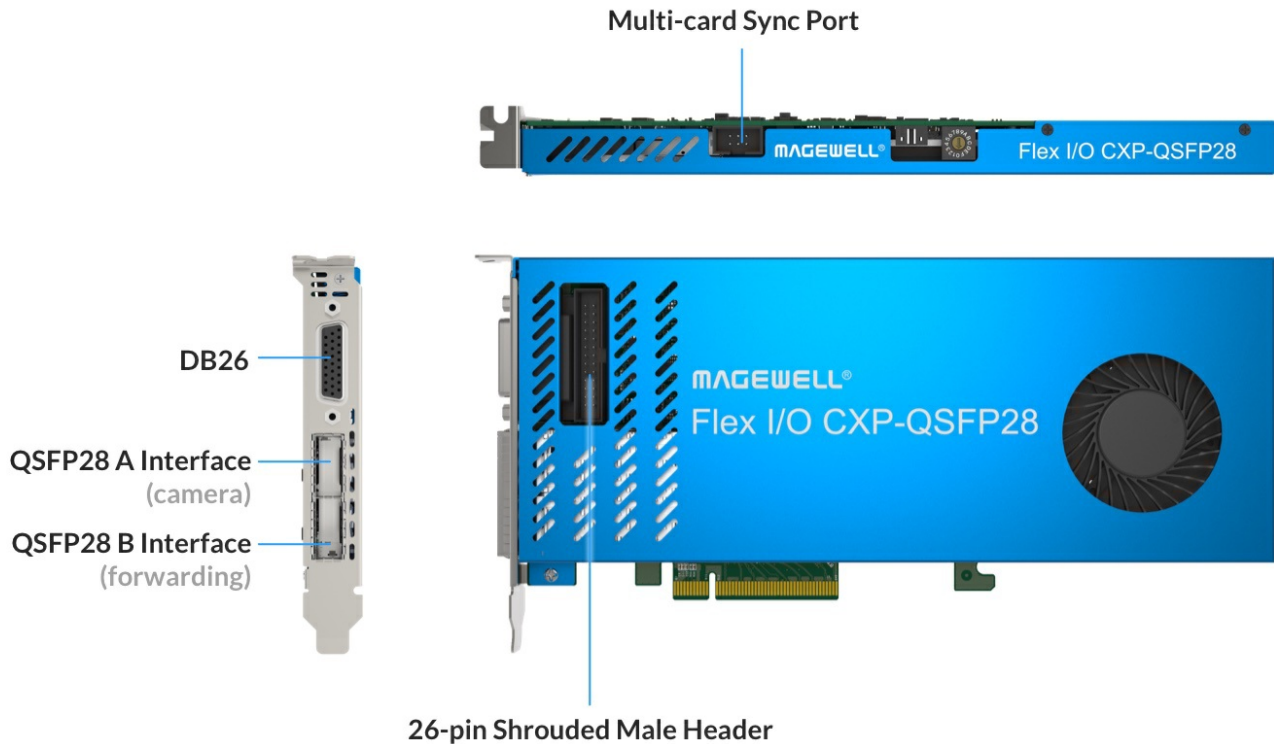


Flex I/O CXP-QSFP28

4-channel CoaXPress-over-Fiber 100G frame grabber

SKU: 118500000



Product Overview

Flex I/O CXP-QSFP28 is a high-performance image acquisition device designed for the industrial machine vision field. It achieves a transmission bandwidth of 100Gbps through a single QSFP28 (Quad Small Form-factor Pluggable) optical transceiver module and a single optical cable, enabling easy long-distance transmission of large-capacity data. Meanwhile, it supports camera image data forwarding, allowing multiple grabbers to be cascaded for shared image data, making it suitable for high-demand semiconductor visual inspection scenarios.

Key Features

- Supports the CoaXPress 1.1/2.0 protocol standard
- Supports CoaXPress over Fiber Bridge Protocol Version 1.0 standard
- Supports a maximum camera transmission bandwidth of 12.5GB/s
- Supports camera image data forwarding function, cascading multiple cards to share image data
- Abundant GPIO interface resources, providing two external interfaces: DB26 and 26-pin shrouded male header
- Supports up to 13GB/s bus bandwidth with the full-height PCIe card and PCIe Gen 4 x8 interface
- Magewell Flex I/O Viewer client, compatible with all types of CXP industrial cameras, supports parameter configuration and preview.
- Magewell Flex DMA PCIe transmission engine completes frame grabbing and transmission by hardware, no CPU usage.
- Supports GenTL Producer and GenICam programming interfaces

Technical Specifications

Revised on 06/18/2025

Camera Connector

- QSFP28 Connector A, compatible with the SFF-8636 protocol, supporting up to 100G bandwidth

- Supports CoaXPress over Fiber Bridge Protocol Version 1.0 standard
- Supports High Speed Upconnection interface

Forwarding Connector

- QSFP28 Connector B, compatible with the SFF-8636 protocol, supporting up to 100G bandwidth
- Use customized transport protocol to forward image data to other frame grabbers

Supported Camera

- Supports Aera-scan cameras and Line-scan cameras
- Supports Grayscale cameras and color cameras (YCbCr, YUV, RGB and Bayer CFA)
- Tap supports 1X-1Y, 1X-1Y2, 1X-2YE

Firmware Type

- Master grabber firmware:
 - Supports one 1- or 2- or 4-connection camera
 - Supports Bayer2RGB
 - Supports forwarding image data
- Slave grabber firmware:
 - Receive image data forwarded by Master/Slave frame grabber
 - Forward the received image data

Built-in Image Processing

- Little endian conversion
- Unpacking of 10-/12-/14-bit data to 16-bit with selectable justification to LSb or MSb
- Bayer CFA to RGB decoder: 3X3 linear interpolation method

*Note: Bayer CFA to RGB function supports up to 65536 Bytes in a row.

Frame Buffers

- 4 x 16Gb LPDDR4 frame buffers (8 GB)

PCIe Interface

- PCIe Gen 4 x8 interface, compatible with PCIe Gen 3/2/1 and x4, x2, x1
- Supports the maximum sustained write bandwidth of 13GB/s* (typical value, the actual value is platform-dependent)

*Note: In the test environment, MPS = 256 bytes, and for bandwidth calculation, 1KB = 1024B.

I/O on PCI Bracket

- 1* QSFP28 Connector A (camera connector)
- 1* QSFP28 Connector B (forwarding connector)
- 1* DB26 Female Connector (26-pin 3-row high-density female sub-D connector)
 - 4 differential opto-isolated inputs (IIN), with the max. frequency of 50kHz
 - 4 differential high-speed inputs (DIN), with the max. frequency of 5MHz
 - 3 differential opto-isolated outputs (IOUT), with the max. frequency of 100kHz
 - 2 single-ended TTL/LVTTL inputs/outputs, with the max. frequency of 5MHz
 - 12V and GND

I/O on PCB

- 1* 2x13 2.54mm pitch connector
 - 4 differential opto-isolated inputs (IIN), with the max. frequency of 50kHz
 - 4 differential high-speed inputs (DIN), with the max. frequency of 5MHz
 - 3 differential opto-isolated outputs (IOUT), with the max. frequency of 100kHz
 - 2 single-ended TTL/LVTTL inputs/outputs, with the max. frequency of 5MHz
 - 12V to GND
- 1* 2x3 2.54 pitch connector, containing 2 multi-card synchronization interfaces, with the max. frequency of 1MHz

Supporting Software

- Flex I/O Viewer: compatible with all types of CXP industrial cameras, supporting parameter configuration and preview

Development Interface

- GenTL Producer and GenICam: support for Halcon, MVS, and many others

Development Samples

- Provides C/C++ secondary development sample source program

Operating Systems

- Windows 10/11
- Linux (Please consult Magewell Sales Team for details)

Other Functions

- Supports cascading through IO interfaces and synchronized acquisition trigger for multiple cards

Dimensions

- 241.5mm x 104.85mm

Fan

- Reports FPGA temperature and fan speed information, with the ability to set fan speed manually

Power Consumption

- The frame grabber uses PCIe + 12V power supply. The power consumption of the whole grabber depends on the firmware, with the typical power consumption $\leq 35W$.

Working Environment

- Operating temperature: 0 to 50 deg C
- Storage temperature: -15 to 85 deg C
- Relative Humidity: 10% to 90% non-condensing

Notice

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