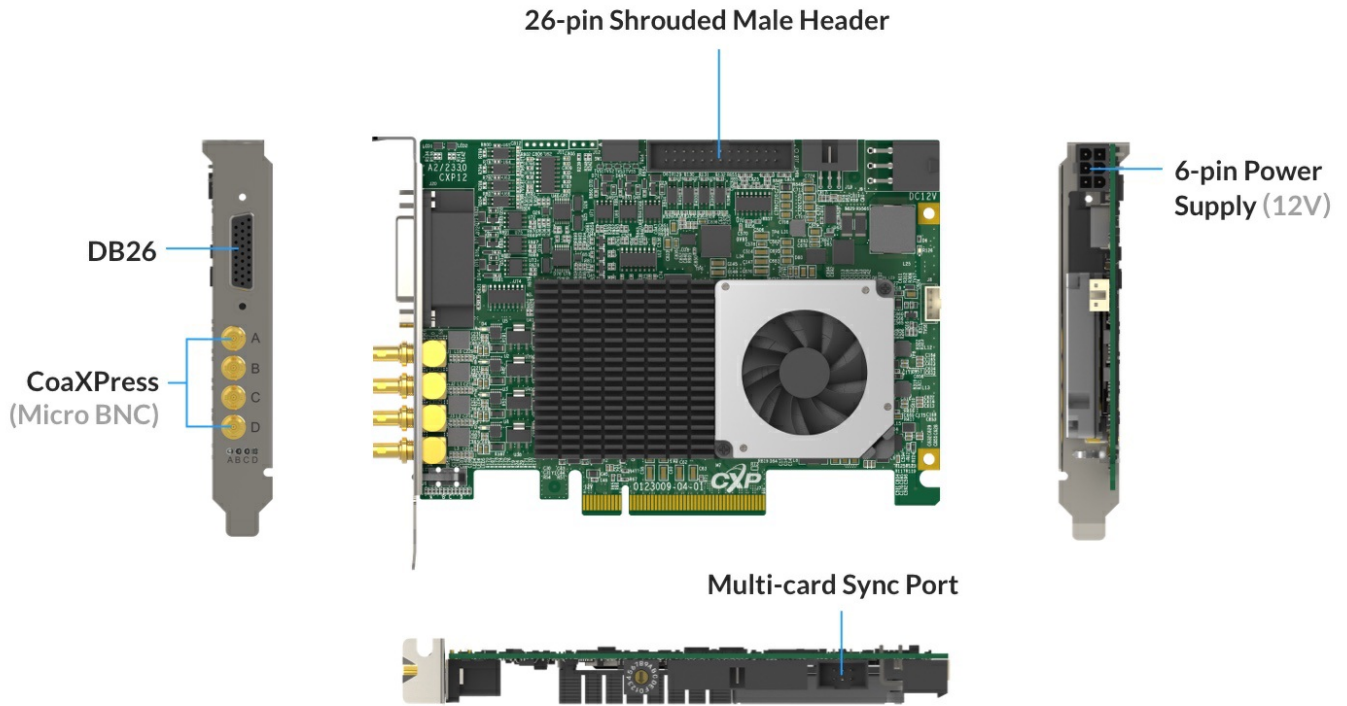


# Flex I/O Quad CXP-12 Enhanced

4-channel CXP-12 frame grabber

SKU: 118300000



## Product Overview

Flex I/O Quad CXP-12 Enhanced is a high-performance image acquisition device designed for the industrial machine vision field. Equipped with four-channel CXP-12 interfaces, it supports a maximum transmission rate of 50Gbps and enables multi-camera synchronous acquisition and collaborative control. It is suitable for high-precision industrial inspection scenarios such as 3C consumer electronics, lithium batteries, FPD display screens, and semiconductors.

## Key Features

- Supports a maximum connection of 4 cameras to a single grabber
- Supports the CoaXPress 1.1/2.0 protocol standard
- Supports up to 5000MB/s camera transfer bandwidth with four CoaXPress CXP-12 (up to 12.5 Gbps) camera connections
- Supports up to 6700MB/s bus bandwidth with the full-height PCIe card and PCIe Gen 3 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 capture and transmission by hardware, no CPU usage.
- Supports disordered industrial camera cable connections
- Supports GenTL Producer and GenICam programming interfaces

## Packing List

- 1\* Flex I/O Quad CXP-12 Enhanced device

## Technical Specifications

Revised on 06/18/2025

## CoaXPress Connectors

- 4\* 75Ω Micro-BNC connectors
- Power over CoaXPress: Feed the camera up to 16W per channel, and the total power is up to 64W
- Supported rate: 1.25 Gbps, 2.5 Gbps, 3.125 Gbps, 5 Gbps, 6.25 Gbps, 10 Gbps, 12.5 Gbps

## 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

- 4d4s:
  - AAAA mode: one 1- or 2- or 4-connection camera
  - AABB mode: two 1- and 2-connection cameras
  - AABC mode: one 1- or 2-connection camera for Channel A, two 1-connection cameras for Channel B and Channel C
  - ABCD: four 1-connection cameras
  - Supports disordered cable connections
  - Supports Bayer2RGB
  - Low power consumption

## 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 32768 Bytes in a row.

## LED Indicators

- 4 full-color LED indicators, indicating the status of the corresponding Micro-BNC connectors according to CXP specifications

## Frame Buffers

- 4 x 4Gb DDR4–2400 frame buffers (2 GB)

## PCIe Interface

- PCIe Gen 3 x8 interface, compatible with PCIe Gen 2/1 and x4, x2, x1

## I/O on PCI Bracket

- 4\* 75Ω Micro-BNC connectors
- 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 4 multi-card synchronization interfaces, with the max. frequency of 1MHz

## PoCXP Power Input

- A +12V power source must be connected to the AUXILIARY POWER INPUT connector using a 6-pin PEG cable

## 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

## Other Functions

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

## Dimensions

- 144.8mm x 104.9mm

## Fan

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

## Power Consumption

- The capture card uses PCIe + 12V power supply. The power consumption of the whole card depends on the firmware, with the typical power consumption  $\leq 20W$ .

## Working Environment

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

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