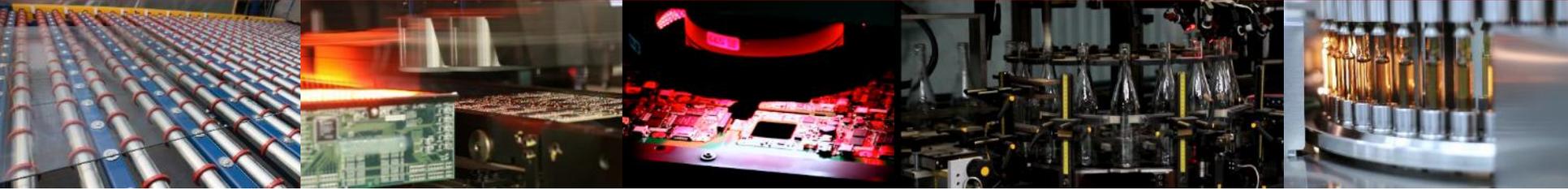


# Coaxlink series

Quad G3 - Quad - Duo - Mono

Ultimate in performance with superior value - CoaXPress Frame Grabbers



**CoaXPress**

 **EURESYS™**  
Excellence in vision

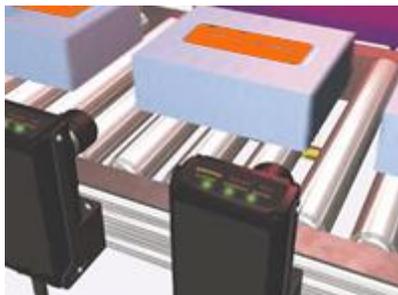
# CoaxPress

- **A New Standard for the Machine Vision Industry**
  - Camera / Frame Grabber Interface
- **High data rate**
  - Up to 6.25 Gbps over a single coaxial cable
    - **Up to 25 Gbps per camera, with four cables!**
- **Acquire images from the fastest and highest-resolution cameras**



## Benefits

- **Long cable lengths in excess of 100m**
  - Eliminate the need for a repeater
    - ✓ up to 40-meter cables at full speed,
    - ✓ up to 100-meter cables at half-speed
- **Real-time Triggering**
  - Low latency deterministic triggering capability



## Benefits

- **Flexible and reliable cable**

Use standard coaxial cables

- **Ease of integration**

Simplify cabling and reduce costs with a single coaxial cable for

- ✓ Data transfer
- ✓ Camera control
- ✓ Power



- **Take advantage of robust connectors**

with a push/pull latching system for reliability in industrial applications



## Benefits

- **Comparison with other interfaces**

Interface	Bandwidth	Cable length
GigE Vision	1.0 Gbps	100 m
USB3	5.0 Gbps	3 m
Camera Link	Base: 2.0 Gbps 80-bit: 6.8 Gbps	6 ~ 10 m
 CoaxPress	1x: 6.2 Gbps 2x: 12.5 Gbps 4x: 25.0 Gbps	40 m



## Benefits

- Adopted by Major Camera Manufacturers



# Euresys Coaxlink Series

Coaxlink  
Quad G3



Coaxlink  
Quad



Coaxlink  
Duo



Coaxlink  
Mono



## Camera inputs

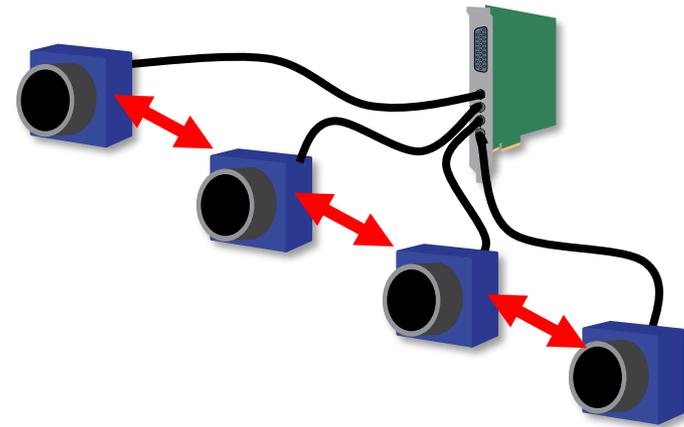
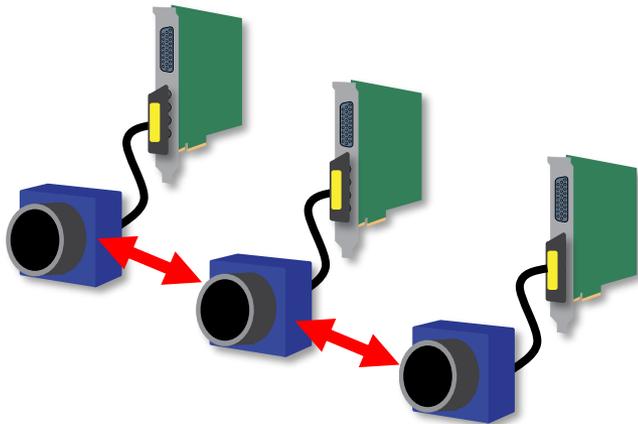
- **CXP-6 CoaXPress connections**
- **Up to 4 x 6.25 Gbps transfer rate**
  - Per card, a total of: 25 Gbps → Coaxlink Quad  
Coaxlink Quad G3
  - 12.5 Gbps → Coaxlink Duo
  - 6.25 Gbps → Coaxlink Mono
- Use of up to **four cameras** per Coaxlink card
- Simultaneous use of **multiple cards** in a single PC



## Camera inputs

- **Camera and Coaxlink card synchronization available**

- within one Coaxlink card
- or between multiple cards

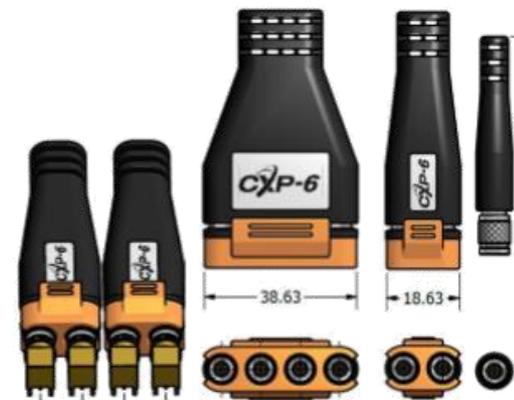


It allows the precise synchronization of the acquisition from multiple cameras.



## Camera cables and connectors

- **Robust push/pull latching connection system for reliable industrial applications**
  - DIN 1.0/2.3 connectors
- **Cable length**
  - Up to 40 meters (CXP-6)
  - Up to 100 meters (CXP-3)
- **Power over CoaXPress**
  - Up to 13W per connection



# PCI Express

- **Coaxlink PCIe x4**
  - Half-size PCI Express x4 card
  - Coaxlink Quad, Duo and Mono: PCIe 2.0 (Gen 2) x4
  - Coaxlink Quad G3: PCIe 3.0 (Gen 3) x4
- **High-performance DMA transfer into user-allocated memory**
  - With 64-bit addressing capability



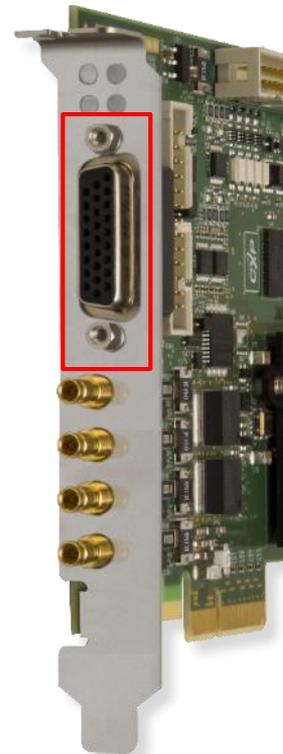
# Bandwidth matrix

		CoaXPress Configuration		
		CXP-6 DIN-1 1 x 6.25 Gb/s = 625 MB/s	CXP-6 DIN-2 2 x 6.25 Gb/s = 1,250 MB/s	CXP-6 DIN-4 4 x 6.25 Gb/s = 2,500 MB/s
PCIe Bus	PCIe 2.0 (Gen 2) x4 1,700 MB/s (sustained bandwidth)	<b>Coaxlink Mono</b>	<b>Coaxlink Duo</b>	<b>Coaxlink Quad</b>
	PCIe 3.0 (Gen 3) x4 3,350 MB/s (sustained bandwidth)	-	-	<b>Coaxlink Quad G3</b>



## Digital Input / Output lines

- **A feature-rich set of 20 digital input / output lines**
  - Compatible with a wide range of sensors and motion encoders
  - Freely allocated to any of the cameras
- **Internal I/O connectors**
  - On the PCB
  - 26-pin straight shrouded 0.1" pitch flat cable header connectors
    - ✓ Coaxlink Mono: 1x internal connector
    - ✓ Coaxlink Quad 3G, Quad and Duo: 2x internal connectors
- **One external I/O connector**
  - Easily accessible on the card's bracket
  - High-density 26-pin female Sub-D connector
  - With 10 of the digital input / output lines



## Digital Input / Output lines

- **Four types of I/O lines**
  - Four **high-speed** differential inputs
    - ✓ Quadrature motion encoder support up to 5 MHz
  - Eight **robust, isolated** current-sense inputs
    - ✓ 5V, 12V, 24V signaling voltages accepted, up to 50 kHz
    - ✓ Individual galvanic isolation up to **500VAC RMS**
  - Four **robust, isolated** contact outputs
  - Four **high-speed** 5V-compliant TTL inputs/ LVTTL outputs
- **Non-isolated +12V power output**





# Application Programming Interface

- **Genicam support for camera control and image acquisition**
  - **GenAPI**: camera and frame grabber control API
  - **GenTL**: image delivery API, camera communication API

**GEN<i>CAM**

- **Euresys MultiCam driver proprietary API**
  - For easy transition from existing applications using Grablink cards

**MultiCam™**



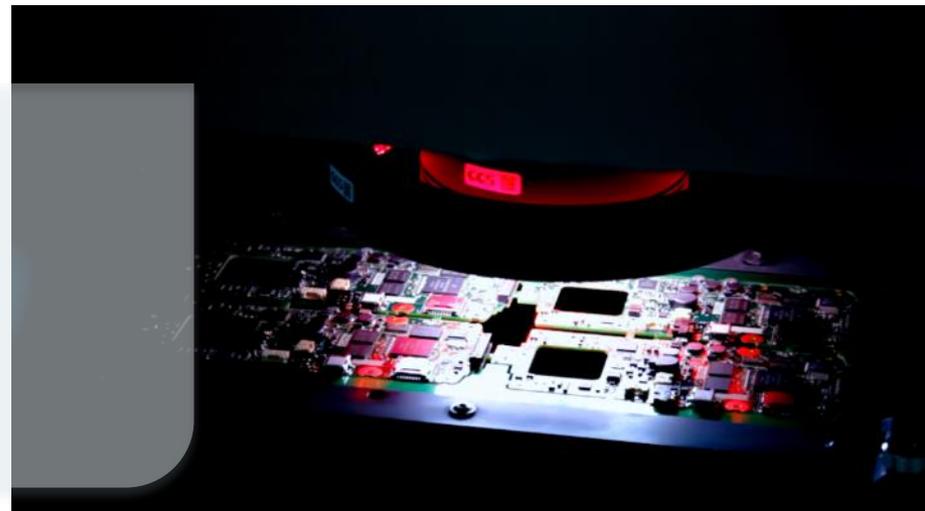
# Applications

## For applications requiring

- High resolution
- High frame rate
- Consistent real-time timing

Such as ...

- AOI
- 3D SPI
- 3D inspection
- Printing inspection



## For applications requiring

- High data rates
- High frame rates
- Long cable lengths, greater cable reliability and flexibility

Such as...

- Flat Panel Display
- Solar Glass inspection
- Glass inspection



## For applications where

- Use of coaxial cable is prevalent
- Longer cable length is required

Such as ...

- Defense applications
- Security applications
- Medical applications



## Why choose Euresys?

- **A complete range of Coaxpress cards starting at €899 for the Coaxlink Mono**
- **Take advantage of the latest in PC motherboard technology**
  - PCIe x4 Gen 2 and Gen 3
- **Benefit from Euresys' 25 year experience in developing high performance frame grabbers**



# Coaxlink Quad G3



**PCI EXPRESS** GEN 3

- **Simultaneous use of up to 4 CXP cameras**
  - 4 x CXP-6 CoaXPress connections
  - 4 x 6.25Gbps (CXP-6) down connection transfer rate for a total of **25 Gbps**
  - 4 x DIN 1.0/2.3 connectors: robust push/pull latching system for reliable industrial applications
- **Rich set of 20 digital input / output lines**
- **PCIe 3.0 (Gen 3) x4 bus** for a peak transfer rate of **3.9 GByte/s**
- **APIs:** Genicam and MultiCam drivers



# Coaxlink Quad



PCI EXPRESS GEN 2

- **Simultaneous use of up to 4 CXP cameras**
  - 4 x CXP-6 CoaXPress connections
  - 4 x 6.25Gbps (CXP-6) down connection transfer rate for a total of **25 Gbps**
  - 4 x DIN 1.0/2.3 connectors: robust push/pull latching system for reliable industrial applications
- **Rich set of 20 digital input / output lines**
- **PCIe 2.0 (Gen 2) x4 bus** for a peak transfer rate of 2 GByte/s
- **APIs:** Genicam and MultiCam drivers



# Coaxlink Duo



PCI EXPRESS GEN 2

- **Use of one or simultaneously 2 CXP cameras**
  - 2 x CXP-6 CoaXPress connections
  - 2 x 6.25 Gbps (CXP-6) down connection transfer rate, for a total of **12.5 Gbps**
  - 2 x DIN 1.0/2.3 connectors: robust push/pull latching system for reliable industrial applications
- **Rich set of 20 digital input / output lines**
- **PCIe 2.0 (Gen 2) x4 bus** for a peak transfer rate of 2 GByte/s
- **APIs:** Genicam and MultiCam drivers



# Coaxlink Mono



PCI EXPRESS GEN 2

- **Use of one CXP camera**
  - One CXP-6 CoaXPress connection
  - **6.25 Gbps** (CXP-6) down connection transfer rate 2 x
  - One DIN 1.0 / 2.3 connector: robust push/pull latching system for reliable industrial applications
- **Rich set of 20 digital input / output lines**
- **PCIe 2.0 (Gen 2) x4 bus** for a peak transfer rate of 2 GByte/s
- **APIs:** Genicam and MultiCam drivers



Thank you for your attention!

