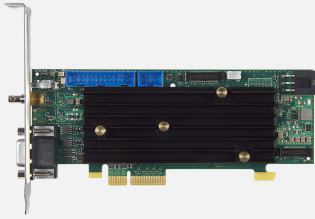


# Coaxlink Mono CXP-12 LH

1채널 CoaXPress CXP-12 프레임 그래버

## 둘러보기



- CoaXPress CXP-12 연결 1개: 카메라 대역폭 1,250 MB/s
- PCIe 3.0(Gen 3) x4 버스: 버스 대역폭 3,300 MB/s
- 로우 프로파일 카드. 표준형 및 로우 프로파일 브래킷과 함께 제공
- 패시브(무팬) 방열판
- 다기능 디지털 I/O 라인  
10개
- 폭넓은 카메라 제어 기능
- Memento 이벤트 로그 툴

## 장점

### 로우 프로파일 PCIe 카드

- 표준형 및 로우 프로파일 브래킷과 함께 제공

### PCIe 3.0(Gen 3) x4 버스

- 연속 버스 대역폭 3,300 MB/s

### 가장 빠르고 가장 높은 고해상도 카메라에서 이미지 캡처

- 업계 최고 수준의 데이터 캡처 속도
- 카메라 대 호스트 PC 메모리 대역폭 12.5 Gbit/s(1,250 MB/s)

### Coaxlink CXP-12를 위한 긴 케이블 지원

- CXP-12 속도(12.5 Gbps)에서 40m
- CXP-6 속도(6.25 Gbps)에서 72m
- CXP-3 속도(3 Gbps)에서 100m

### 표준 동축 케이블 사용

- 데이터 전송, 카메라 제어, 트리거, 전원 공급을 하나로 해결할 수 있는 저렴한 케이블
- 가장 혹독한 환경에서도 최고의 신뢰성, 유연성, 성능 제공

### 고강도 커넥터

- 안정적인 연결을 위한 Micro-BNC (HD-BNC™) 커넥터
- 신뢰성 높은 푸시 및 턴, 총검 방식 포지티브 락
- 빠르고 쉬운 연결 및 연결 해제 가능

## Memento 이벤트 로그 톨

- Memento는 Coaxlink 카드에서 이용할 수 있는 고급 개발 및 디버깅 톨입니다.
- Memento는 카메라, 프레임 그래버, 드라이버, 애플리케이션과 관련된 모든 이벤트 로그를 정확하게 기록합니다.
- 이 제품은 타임 스탬프 기록된 이벤트에 대한 정확한 시간 정보를 맥락 정보와 함께 개발자에게 제공합니다.
- 애플리케이션 개발, 디버깅뿐 아니라 기계 운용 중에도 유용한 장점을 제공합니다.

## GPU 직접 전송

- AMD DirectGMA 및 NVIDIA(CUDA) 샘플 프로그램 제공 가능
- 직접 GPU 전송은 불필요한 시스템 메모리 복사본을 줄이고, CPU 오버헤드를 낮추고, 지연을 감소시켜서 애플리케이션을 위한 데이터 전송 시간에 상당한 성능 향상을 제공합니다.
- AMD DirectGMA를 사용하여 이미지 데이터를 GPU 메모리로 직접 캡처. AMD FirePro W5x00 이상 제품 및 모든 AMD FirePro S 시리즈 제품과 호환

## 범용 IO 라인

- 광범위한 센서 및 모션 인코더와 호환:
- 고속 차동 입력: 최대 5 MHz까지 지원하는 쿼드러처 모션 인코더.
- 절연 전류 감지 입력: 5V, 12V, 24V 신호 전압 인가 가능, 최대 50 kHz, 최대 250VDC 및 170VAC RMS의 갈바닉 개별 절연.
- 절연 접점 출력.
- 고속 5V 규격 TTL 입력/LVTTL 출력.

## 고성능 DMA(Direct Memory Access)

- PCI 주소를 노출시키는 하드웨어 보드 및 사용자 할당 메모리로 직접 전송
- 하드웨어 분산-수집(scatter-gather) 지원
- 64비트 주소 지정 기능

## Area 스캔 트리거 기능

- 트리거는 일부분이 위치에 들어 왔을 때 캡처를 시작하는 데 사용됩니다. 하드웨어 트리거는 Coaxlink의 I/O 라인에서 제공됩니다. 소프트웨어 트리거는 애플리케이션에서 제공됩니다.
- 옵션 트리거 지연을 사용하여 프로그래밍 가능한 시간 동안 캡처를 연기할 수 있습니다.
- 트리거 제거 기능은 일부 트리거를 무시하는 기능입니다.
- 카메라 노출 제어 기능을 사용하면 애플리케이션에서 카메라의 노출 시간을 제어할 수 있습니다.
- 캡처가 시작되면 적절한 시점에 Coaxlink 보드가 출력 라인 중 하나에 연결된 조명 장치를 제어하기 위한 신호를 생성합니다.

## Coaxlink 드라이버에는 다음과 같은 도구가 포함되어 있습니다:

- Genicam</a></a> 브라우저: 시스템에서 GenTL Producer(s)에 의해 노출된 GenIcamfeatures 기능에 대한 액세스를 제공하는 애플리케이션.
- GenTL 콘솔: Euresys GenTL Producer에 의해 노출된 함수와 명령에 대한 액세스를 제공하는 커맨드 라인 톨.

## 다음의 지원을 포함하여 GenIcam과 호환

- GenApi
- 표준 기능 명명 규칙(SFNC)
- GenTL

## Windows, Linux 및 macOS 드라이버 이용 가능

- Intel 32비트 및 64비트 플랫폼뿐 아니라 ARM 64비트 플랫폼에 대한 지원 포함

## 애플리케이션

### 전자제품 제조산업용 머신 비전

- AOI, 3D SPI, 3D 리드/볼 검사 기계용 고속 이미지 캡처

- 플랫 패널 디스플레이 검사 및 태양 전지 검사용 초고해상도 라인 스캔 이미지 캡처
- 표식 검사

#### 일반 제조산업용 머신 비전

- 검사 기계용으로 높은 프레임 레이트의 이미지 캡처
- 표면 검사 기계용 라인 스캔 이미지 캡처
- 직물 검사용 라인 스캔 이미지 캡처
- 로봇용 이미지 캡처

#### 인쇄 산업용 머신 비전

- 인쇄 검사 기계용 고속 라인 스캔 이미지 캡처

#### 비디오 캡처 및 기록

- 동작 분석 및 기록용 고 프레임 레이트 비디오 캡처

#### 비디오 모니터링, 감시, 보안

- 장거리 동축 케이블을 통해 교통 감시, 모니터링, 통제용 HD 비디오 전송 및 캡처

## 사양

### Mechanical

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Format         | Low profile, half length, 4-lane PCI Express card                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Cooling method | Air-cooling, fanless                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Mounting       | <ul style="list-style-type: none"> <li>• For insertion in a 4-lane or higher, PCI Express card slot.</li> <li>• Delivered with standard- and low-profile brackets for insertion in a standard- or a low-profile chassis.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Connectors     | <ul style="list-style-type: none"> <li>• 'A' on bracket: <ul style="list-style-type: none"> <li>– Micro-BNC female connector</li> <li>– CoaXPress host interface</li> </ul> </li> <li>• 'EXTERNAL I/O 1' on bracket: <ul style="list-style-type: none"> <li>– 15-pin 3-row high-density female sub-D connector</li> <li>– I/O lines and power output</li> </ul> </li> <li>• 'INTERNAL I/O 1' on PCB: <ul style="list-style-type: none"> <li>– 26-pin 2-row 0.1" pitch pin header with shrouding</li> <li>– I/O lines and power output</li> </ul> </li> <li>• 'I/O EXTENSION' on PCB: <ul style="list-style-type: none"> <li>– 26-pin 2-row 0.05" pitch pin header with shrouding</li> <li>– I/O extension lines and power output</li> </ul> </li> <li>• 'AUXILIARY POWER INPUT' on module: <ul style="list-style-type: none"> <li>– 6-pin PEG power socket</li> <li>– 12 VDC power input for PoCXP camera(s) and I/O power</li> </ul> </li> <li>• 'C2C-LINK' on module: <ul style="list-style-type: none"> <li>– 6-pin 2-row 0.1" header</li> <li>– Card to card link</li> </ul> </li> </ul> |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LED indicators | <ul style="list-style-type: none"> <li>• 'A' on bracket: <ul style="list-style-type: none"> <li>– Bi-color red/green LED</li> <li>– CoaXPress Host connector indicator</li> </ul> </li> <li>• 'FPGA STATUS LAMP' on PCB: <ul style="list-style-type: none"> <li>– Bi-color red/green LED</li> <li>– FPGA status indicator</li> </ul> </li> <li>• 'BOARD STATUS LAMP' on PCB: <ul style="list-style-type: none"> <li>– Bi-color red/green LED</li> <li>– Board status indicator</li> </ul> </li> </ul> |
| Switches       | 'RECOVERY' on card PCB: <ul style="list-style-type: none"> <li>• 3-pin 1-row 0.1" header</li> <li>• Firmware emergency recovery</li> </ul>                                                                                                                                                                                                                                                                                                                                                            |
| Dimensions     | L 167.65 mm x H 68,90 mm<br>L 6.6 in x H 2.71 in                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Weight         | 160 g, 5.64 oz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Host bus

|                                          |                                                                                                                                 |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Standard                                 | PCI Express 3.0                                                                                                                 |
| Link width                               | <ul style="list-style-type: none"> <li>• 4 lanes</li> <li>• 1 lane or 2 lanes with reduced performance</li> </ul>               |
| Link speed                               | <ul style="list-style-type: none"> <li>• 8.0 GT/s (PCIe 3.0)</li> <li>• 5.0 GT/s (PCIe 2.0) with reduced performance</li> </ul> |
| Maximum payload size                     | 512 bytes                                                                                                                       |
| DMA                                      | 32- and 64-bit                                                                                                                  |
| Peak delivery bandwidth                  | 3,900 MB/s                                                                                                                      |
| Effective (sustained) delivery bandwidth | 3,350 MB/s (Host PC motherboard dependent)                                                                                      |
| Power consumption                        | Typ. 11.5 W (3 W @ 3.3 V + 8.5 W @ 12 V), excluding camera and I/O power output                                                 |

## Camera / video inputs

|                                              |                                                                                                                                             |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Interface standard(s)                        | CoaXPress 1.0, 1.1, 1.1.1 and 2.0                                                                                                           |
| Connectors                                   | One micro-BNC 75 Ohms (also known as HD-BNC™) CXP-12                                                                                        |
| Status LEDs                                  | One CoaXPress Host connection status LED per connector                                                                                      |
| Number of cameras                            | One 1-connection area-scan camera                                                                                                           |
| Maximum aggregated camera data transfer rate | 12.5 Gbit/s (1,250 MB/s)                                                                                                                    |
| Supported CXP down-connection speeds         | 1.25 GT/s (CXP-1), 2.5 GT/s (CXP-2), 3.125 GT/s (CXP-3), 5 GT/s (CXP-5), 6.25 GT/s (CXP-6), 10.0 GT/s (CXP-10), and 12.5 GT/s (CXP-12)      |
| Supported CXP up-connection speeds           | <ul style="list-style-type: none"> <li>• Low-speed 20.83* Mbps (CXP-1 to CXP-6)</li> <li>• Low-speed 41.6* Mbps (CXP-10, CXP-12)</li> </ul> |
| Number of CXP data streams (per camera)      | 1 data stream per camera                                                                                                                    |
| Maximum CXP stream packet size               | 16,384 bytes                                                                                                                                |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PoCXP (Power over CoaXPress)   | <ul style="list-style-type: none"> <li>• PoCXP Safe Power: <ul style="list-style-type: none"> <li>– 25 W of 24V DC regulated power</li> <li>– PoCXP Device detection and automatic power-on</li> <li>– Overload and short-circuit protections</li> </ul> </li> <li>• On-board 12V to 24V DC/DC converter</li> <li>• A +12V power source must be connected to the AUXILIARY POWER INPUT connector using a 6-pin PEG cable</li> </ul>                                         |
| Camera types                   | <ul style="list-style-type: none"> <li>• Area-scan cameras: <ul style="list-style-type: none"> <li>– Grayscale and color (RGB and Bayer CFA)</li> <li>– Single-tap (1X-1Y) progressive-scan</li> </ul> </li> </ul>                                                                                                                                                                                                                                                          |
| Camera pixel formats supported | Raw, Monochrome, Bayer, RGB, and RGBA (PFNC names): <ul style="list-style-type: none"> <li>• Raw</li> <li>• Mono8, Mono10, Mono12, Mono14, Mono16</li> <li>• BayerXX8, BayerXX10, BayerXX12, BayerXX14, BayerXX16 where XX = GR, RG, GB, or BG</li> <li>• RGB8, RGB10, RGB12, RGB14, RGB16</li> <li>• RGBA8, RGBA10, RGBA12, RGBA14, RGBA16</li> <li>• YCbCr601_422_8, YCbCr601_422_10</li> <li>• YCbCr709_422_8, YCbCr709_422_10</li> <li>• YUV422_8, YUV422_10</li> </ul> |

## Area-scan camera control

|         |                                                                                                                                                                                                                                                                               |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Trigger | <ul style="list-style-type: none"> <li>• Precise control of asynchronous reset cameras, with exposure control.</li> <li>• Support of camera exposure/readout overlap.</li> <li>• Support of external hardware trigger, with optional delay and trigger decimation.</li> </ul> |
| Strobe  | <ul style="list-style-type: none"> <li>• Accurate control of the strobe position for strobed light sources.</li> <li>• Support of early and late strobe pulses.</li> </ul>                                                                                                    |

## On-board processing

|                              |                                                                                                                                                                                                                                           |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| On-board memory              | 512 MB                                                                                                                                                                                                                                    |
| Image data stream processing | <ul style="list-style-type: none"> <li>• Unpacking of 10-/12-/14-bit to 16-bit with selectable justification to LSb or MSb</li> <li>• Optional swap of R and B components</li> <li>• Little endian conversion</li> </ul>                  |
| Input LUT (Lookup Table)     | Only available for monochrome cameras: <ul style="list-style-type: none"> <li>• 8 to 8 bits</li> <li>• 10 to 8, 10 or 16 bits</li> <li>• 12 to 8, 12 or 16 bits</li> </ul>                                                                |
| Data stream statistics       | <ul style="list-style-type: none"> <li>• Measurement of: <ul style="list-style-type: none"> <li>– Frame rate (Area-scan only)</li> <li>– Line rate</li> <li>– Data rate</li> </ul> </li> <li>• Configurable averaging interval</li> </ul> |

## Event signaling and counting

- The application software can be notified of the occurrence of various events:
  - Standard event: the EVENT\_NEW\_BUFFER event notifies the application of newly filled buffers
  - A large set of custom events
- Custom events sources:
  - I/O Toolbox events
  - Camera and Illumination control events
  - CoaXPress data stream events
  - CoaXPress host interface events
- Each custom event is associated with a 32-bit counter that counts the number of occurrences
- The last three 32-bit context data words of the event context data can be configured with event-specific context data:
  - Event-specific data
  - State of all System I/O lines sampled at the event occurrence time
  - Value of any event counter

## General Purpose Inputs and Outputs

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of lines           | <p>10 I/O lines:</p> <ul style="list-style-type: none"><li>• 2 differential inputs (DIN)</li><li>• 2 singled-ended TTL inputs/outputs (TTLIO)</li><li>• 4 isolated inputs (IIN)*</li><li>• 2 isolated outputs (IOUT)*</li></ul> <p>NOTE: Only 2 IIN and 1 IOUT lines are available on the EXTERNAL I/O connector.</p> <p>NOTE: The number of I/O lines can be extended using I/O modules attached to the I/O EXTENSION connector.</p>                                                                                                                                                                                                                                     |
| Usage                     | <ul style="list-style-type: none"><li>• Any I/O input lines can be used by any LIN tool of the I/O Toolbox</li><li>• Selected pairs of I/O input lines can be used by any QDC tool of the I/O toolbox to decode A/B signals of a motion encoder</li><li>• The LIN and QDC tools outputs can be further processed by the other tools (DIV, MDV, DEL) of the I/O toolbox to generate any of the following "trigger" events:<ul style="list-style-type: none"><li>– The "cycle trigger" of the Camera and Illumination controller</li><li>– The "cycle sequence trigger" of the Camera and Illumination controller</li></ul></li></ul>                                       |
| Electrical specifications | <ul style="list-style-type: none"><li>• DIN: High-speed differential inputs compatible with ANSI/EIA/TIA-422/485 differential line drivers and complementary TTL drivers</li><li>• TTLIO: High-speed 5V-compliant TTL inputs or LVTTL outputs, compatible with totem-pole LVTTL, TTL, 5V CMOS drivers or LVTTL, TTL, 3V CMOS receivers</li><li>• IIN: Isolated current-sense inputs with wide voltage input range up to 30V, compatible with totem-pole LVTTL, TTL, 5V CMOS drivers, RS-422 differential line drivers, potential free contacts, solid-state relays and opto-couplers</li><li>• IOUT: Isolated contact outputs compatible with 30V / 100mA loads</li></ul> |
| Filter control            | <ul style="list-style-type: none"><li>• Glitch removal filter available on all System I/O input lines</li><li>• Configurable filter time constants:<ul style="list-style-type: none"><li>– for DIN and TTLIO lines: 50 ns, 100 ns, 200 ns, 500 ns, 1 µs</li><li>– for IIN lines: 500 ns, 1 µs, 2 µs, 5 µs, 10 µs</li></ul></li></ul>                                                                                                                                                                                                                                                                                                                                      |
| Polarity control          | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Power output              | Non-isolated, +12V, 1A, with electronic fuse protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

The I/O Toolbox is a configurable interconnection of tools that generates events (usually triggers) from input lines. The composition of the toolset is product- and firmware-dependent.

- Line Input tool (LIN): Edge detector delivering events on rising or falling edges of any selected input line.
- Quadrature Decoder tool (QDC): A composite tool including:
  - A quadrature edge detector delivering events on selected transitions of selected pairs of input lines.
  - An optional backward motion compensator for clean line-scan image acquisition when the motion is unstable.
  - A 32-bit up/down counter for delivering a position value.
- Divider tool (DIV): to generate an event every nth input events from any I/O toolbox event source.
- Multiplier/divider tool (MDV): to generate m events every d input events from any I/O toolbox event source.
- Delay tool (DEL): to delay up to 16 events from one or two I/O toolbox event sources, by a programmable time or number of motion encoder ticks (any QDC events).
- User Actions Scheduler tool (UAS): to delegate the execution of User Actions at a scheduled time or encoder position. Possible user actions include setting low/high/toggle any bit of the User Output Register or generation of any User Events.

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#### I/O Toolbox composition

8 LIN, 1 QDC, 1 DIV, 1 MDV, 2 DEL, 1 UAS

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### C2C-Link

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#### Description

- Accurate synchronization of the trigger and the start-of-exposure of multiple grabber-controlled area-scan cameras.
  - Accurate synchronization of the start-of-cycle, start-of-scan and end-of-scan of multiple grabber-controlled line-scan cameras.
- 

#### Specification

- C2C-Link synchronizes cameras connected to:
    - the same card
    - to different cards in the same PC (requires an accessory cable such as the "3303 C2C-Link Ribbon Cable" or a custom-made C2C-Link cable)
    - to different cards in different PCs (requires one "1636 InterPC C2C-Link Adapter" for each PC and one RJ 45 CAT 5 STP straight LAN cable for each adapter but the last one)
  - Maximum distance:
    - 60 cm inside a PC
    - 1200 m cumulated adapter to adapter cable length
  - Maximum trigger rate:
    - 2.5 MHz for configurations using a single PC, or up to 10 PCs and 100 m total C2C-Link cable length
    - 200 kHz for configurations up to 32 PCs and 1200m total C2C-Link cable length
  - Trigger propagation delay from master to slave devices:
    - Less than 10 ns for cameras on the same card or on different cards in the same PC
    - Less than 265 ns for cameras on different cards in different PCs (3 PCs and 40m total C2C-Link cable length)
- 

### Software

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#### Host PC Operating System

- Microsoft Windows 10, 8.1, 7 for x86 (32-bit) and x86-64 (64-bit) processor architectures
- Linux for x86 (32-bit), x86-64 (64-bit) and aarch64 (64-bit) processor architectures
- macOS for x86-64 (64-bit) processor architecture

Refer to release notes for details

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|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| APIs | EGrabber class, with C++ and .NET APIs: <ul style="list-style-type: none"> <li>• .NET assembly designed to be used with development environments compatible with .NET frameworks version 4.0 or higher</li> </ul> GenICam GenTL producer libraries compatible with C/C++ compilers: <ul style="list-style-type: none"> <li>• x86 dynamic library designed to be used with ISO-compliant C/C++ compilers for the development of x86 applications</li> <li>• x86_64 dynamic library designed to be used with ISO-compliant C/C++ compilers for the development of x86_64 applications</li> <li>• aarch64 dynamic library designed to be used with ISO-compliant C/C++ compilers for the development of aarch64 applications</li> </ul> |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Environmental conditions

|                                   |                                                                                              |
|-----------------------------------|----------------------------------------------------------------------------------------------|
| Operating ambient air temperature | 0 to +55 °C / +32 to +131 °F, with minimum 150 LFM (Linear Feet per Minute) required airflow |
| Operating ambient air humidity    | 10 to 90% RH non-condensing                                                                  |
| Storage ambient air temperature   | -20 to +70 °C/ -4 to +158 °F                                                                 |
| Storage ambient air humidity      | 10% to 90% RH non-condensing                                                                 |

Certifications

|                                 |                                                                                                                                                   |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Electromagnetic - EMC standards | <ul style="list-style-type: none"> <li>• European Council EMC Directive 2004/108/EC</li> <li>• United States FCC rule 47 CFR 15</li> </ul>        |
| EMC - Emission                  | <ul style="list-style-type: none"> <li>• EN 55022:2010 Class B</li> <li>• FCC 47 Part 15 Class B</li> </ul>                                       |
| EMC - Immunity                  | <ul style="list-style-type: none"> <li>• EN 55024:2010 Class B</li> <li>• EN 61000-4-3</li> <li>• EN 61000-4-4</li> <li>• EN 61000-4-6</li> </ul> |
| KC Certification                | Korean Radio Waves Act, Article 58-2, Clause 3                                                                                                    |
| Flammability                    | PCB compliant with UL 94 V-0                                                                                                                      |
| RoHS                            | European Union Directive 2015/863 (ROHS3)                                                                                                         |
| REACH                           | European Union Regulation 1907/2006                                                                                                               |
| WEEE                            | Must be disposed of separately from normal household waste and must be recycled according to local regulations                                    |

Ordering Information

|                            |                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product code - Description | <ul style="list-style-type: none"> <li>• 3621-LH - Coaxlink Mono CXP-12 LH</li> </ul>                                                                                                                                                                                                                                                                                                                |
| Optional accessories       | <ul style="list-style-type: none"> <li>• 1625 - DB25F I/O Adapter Cable</li> <li>• 1636 - InterPC C2C-Link Adapter</li> <li>• 3303 - C2C-Link Ribbon Cable</li> <li>• 3304 - HD26F I/O Adapter Cable</li> <li>• 3610 - HD26F I/O Extension Module TTL-RS422</li> <li>• 3612 - HD26F I/O Extension Module TTL-CMOS5V-RS422</li> <li>• 3614 - HD26F I/O Extension Module - Standard I/O Set</li> </ul> |

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