

CoaXPress over Fiber Range Extender Datasheet



CoaXPress v2.1 over Fiber (SFP+) Range Extender

KAYA Instruments is a global leader in commercial, industrial and rugged cameras and imaging system solutions, providing high-performance products for over 15 years. Founded in 2010 by industry experts, KAYA designs, manufactures and supports both COTS and custom products for high-performance imaging needs.

KAYA Instruments' **CoaXPress Range Extender over Fiber** is the industry's first CoaXPress v2.1 extender, delivering high-resolution video transmission over distances up to 80 km in single-mode) or 300 m in multi-mode. The optical fiber ensures EMI immunity, secure communication, and eliminates grounding issues.

The system consists of two compact converters – camera-side and host-side – featuring Micro-BNC connectors for CoaXPress and SFP+ modules for optical connections. The device side can provide power to the camera over CoaXPress link, while the converter on the host side can sink power from the Frame Grabber. It supports uplinks up to 12.5 Gbps, downlinks up to 41.6 Mbps. Fully compatible with standard CoaXPress over Fiber frame grabbers.

Key Features

- CoaXPress v2.1 support
- CoaXPress over fiber (CXPoF) support
- Support up to 12 G of operation
- Power over CoaXPress with 13 W per link
- Fanless design, Heatsink available on request.
- Solves distance limitation of CoaXPress
- Downlink/Uplink of 12.5 Gbps and 41.6 Mbps respectively
- Data rates up to 12.5 Gbps per link
- Extension using Multi-Mode fiber up to 300 m
- Extension using Single-Mode fiber up to 80 km
- CWDM support
- Small mechanical footprint
- Improved power connector
- Rugged design
- Bidirectional CoaXPress communication
- Flexible SFP+ module for optic fiber connection
- Micro-BNC connector for CoaXPress links
- Plug and Play, no configuration required
- Industrial -40 °C to +70 °C operation temperature

Applications

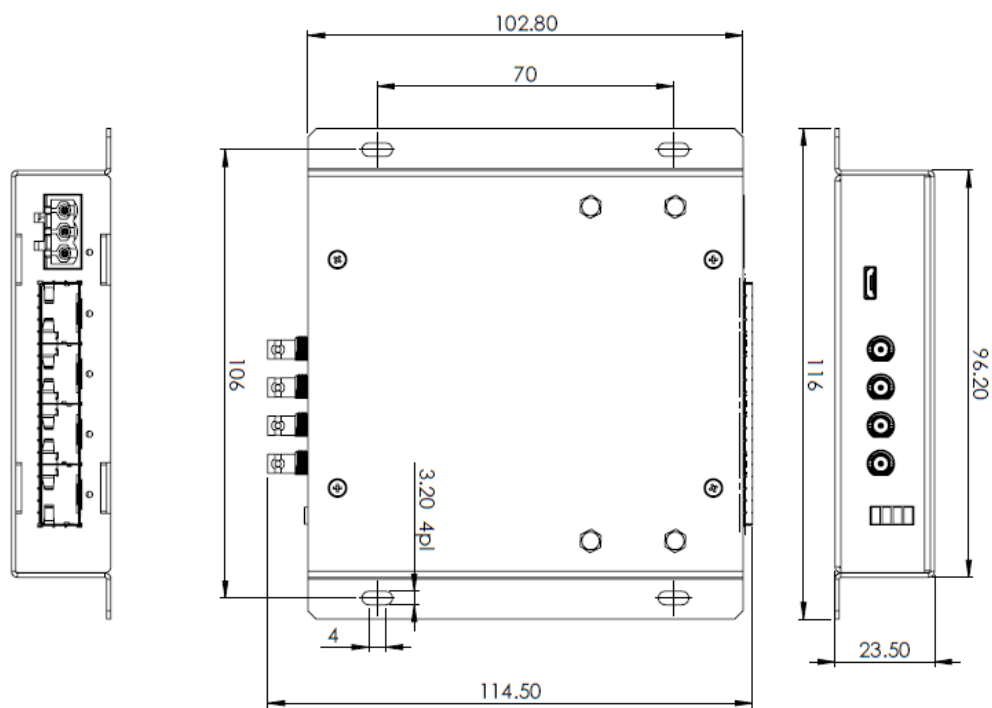
- High speed cameras
- High definition cameras
- Panoramic cameras
- Defense remote systems
- Surveillance
- Sports judgement and analytics

TECHNICAL DATA

General	
Interface standard(s)	CoaXPress v2.1 (CoaXPress 1.1 backward compatible) CoaXPress over Fiber 1.0
Connectors	4x Micro-BNC CoaXPress v2.1 connector 4x SFP+ for CoaXPress over Fiber 1x Micro USB system status port 1x Power 24 V DC input connector
Status LEDs	4x CoaXPress connection status per connector 4x Fiber connection status per connector 1 System status LED
Number of links	4
Line-scan cameras supported	Yes
Supported CXP down-connection speeds	• 1.25 Gbit/s (CXP-1) • 2.5 Gbit/s (CXP-2) • 3.125 Gbit/s (CXP-3) • 5 Gbit/s (CXP-5) • 6.25 Gbit/s (CXP-6) • 10 Gbit/s (CXP-10) • 12.5 Gbit/s (CXP-12)
Cooling method	Air cooling, Passive or active heatsink available on request
Dimensions	117 mm x 114.5 mm x 23.5 mm (4.6" x 4.5" x 0.92")
Weight	300 g (10.58 oz)
Power Input	24 V DC
Power Consumption	< 11 W (Self consumption not including cameras)
Environmental conditions	
Operating ambient air temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Operating ambient air humidity	10% to 90% RH non-condensing
Storage ambient air temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Storage ambient air humidity	10% to 90% RH non-condensing
Certifications	
Electromagnetic - EMC standards	• The European EMC Directive 2014/30/EU • The United States FCC rule 47 CFR 15
EMC - emission	• EN 55032:2015 Class B • FCC 47 Part 15 Class B
EMC - immunity	• EN 55035:2017 Class B • EN 61000-4-3 • EN 61000-4-4 • EN 61000-4-6
Flammability	PCB compliant with UL 94 V-0
RoHS	Compliant with the European Union Directive 2011/65/EU (ROHS2)
REACH	Compliant with the European Union Regulation No 1907/2006
WEEE	Must be disposed of separately from normal household waste and must be recycled according to local regulations
Ordering Information	
CoaXPress v2.1 over Fiber (SFP+) Range Extender	KY-FEXT-II

CoaXPress v2.1 over Fiber (SFP+) Range Extender – Host unit	KY-FEXT-II-H
CoaXPress v2.1 over Fiber (SFP+) Range Extender – Device unit	KY-FEXT-II-D
SFP+ single-mode module, 10 km	KY-SFP-10GLR-31
SFP+ multi-mode module, 300 m	KY-SFP-10GSR-85
CWDM SFP+ module	KY-CWDM-10G-xSP
Fiber cable	KY-FCA-X-XX
CoaXPress Cable	KY-CCA-X-XX
Power supply 24V, 90W	KY_PWR24_90

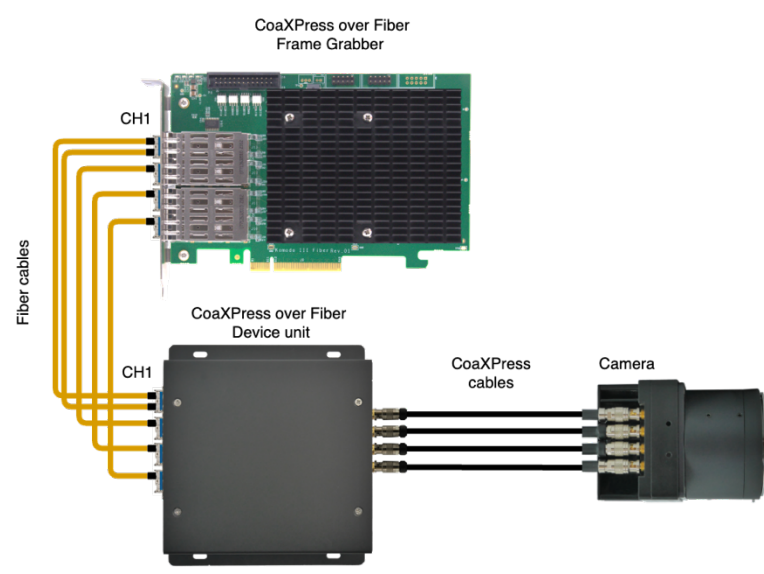
MECHANICAL DRAWINGS



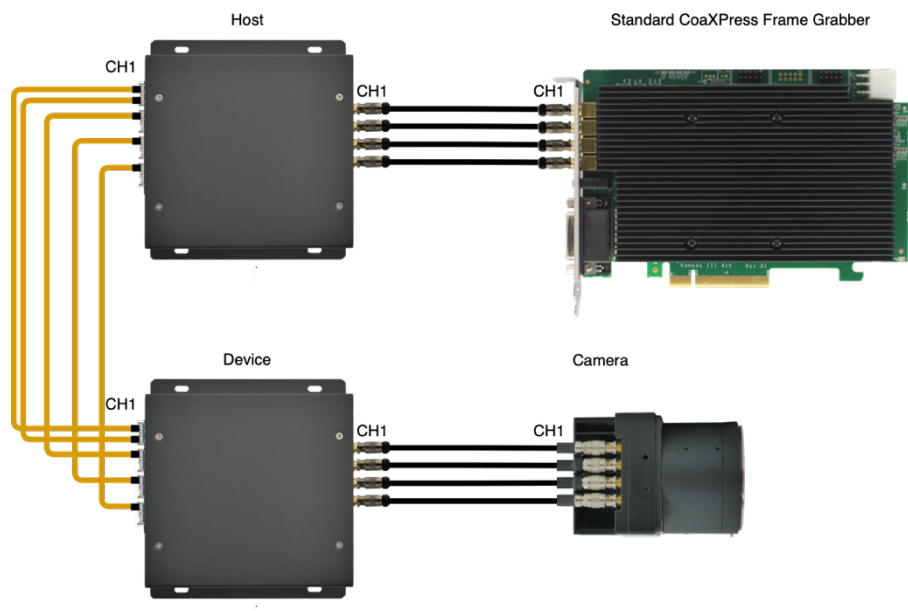
Dimensions are in millimeters.

SYSTEM STRUCTURE

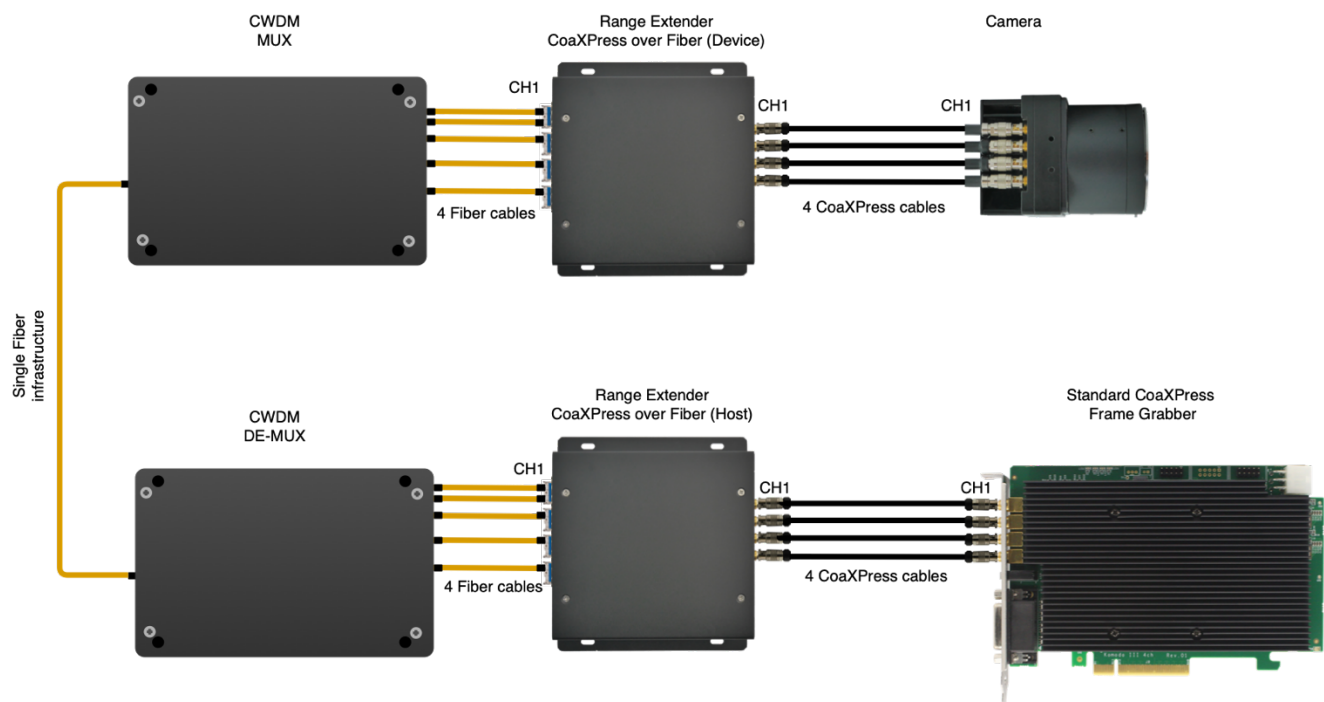
Range Extender directly to Frame Grabber:



Range Extender to Range Extender:



CWDM:



NOTE: Channel 1 (CH1) must have a duplex fiber connection (Or BIDI SFP with single fiber cable) while other channels can have a simplex fiber connection from device side to host.

COMPATIBILITY

KAYA Instruments creates and maintains compatibility and interfaces for the most common and advanced vision image processing libraries and applications. Major support is available for **MVTec Halcon**, **National Instruments' LabVIEW** and **MathWorks' MATLAB**.

Supported vision standards:



Supported vision libraries:



Supported operating systems:



Please check our website for an up-to-date list of other supported libraries and software package

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Please feel free to contact our sales team for pricing, availability, documentation or customization at our e-mails – we will be happy to provide assistance and consultation.

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