

XC-X4G3-SFF-X4G3-IPASS

SFF converter adapter

XIMEA Accessories

Technical Manual

Version v260831

Introductions

About this manual

Dear customer,

Thank you for purchasing a product from XIMEA.

We hope that this manual can answer your questions, but should you have any further queries or if you wish to claim a service or warranty case, please contact your local dealer or refer to XIMEA Support on our website: www.ximea.com/support

The purpose of this document is to provide a description of XIMEA Accessories and to describe the correct way to install related software, drivers and run it successfully. Please read this manual thoroughly before operating your new XIMEA Accessories for the first time. Please follow all instructions and observe the warnings.

This document is subject to change without notice.

About XIMEA

XIMEA is one of the worldwide leaders for innovative camera solutions with a 30-year history of research, development and production of digital image acquisition systems. Based in Slovakia, Germany and the US, with a global distributor network, XIMEA offers their cameras worldwide. In close collaboration with customers XIMEA has developed a broad spectrum of technologies and cutting-edge, highly competitive products.

XIMEA's camera centric technology portfolio comprises a broad spectrum of digital technologies, from data interfaces such as USB 2.0, USB 3.1 and PCIe to cooled digital cameras with CCD, CMOS and sCMOS sensors, as well as X-ray cameras.

XIMEA has three divisions – generic machine vision and integrated vision systems, scientific imaging and OEM/custom.

Our broad portfolio of cameras includes thermally stabilized astronomy and x-ray cameras, as well as specialty cameras for medical applications, research, surveillance and defense.

Contact XIMEA

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1 General description

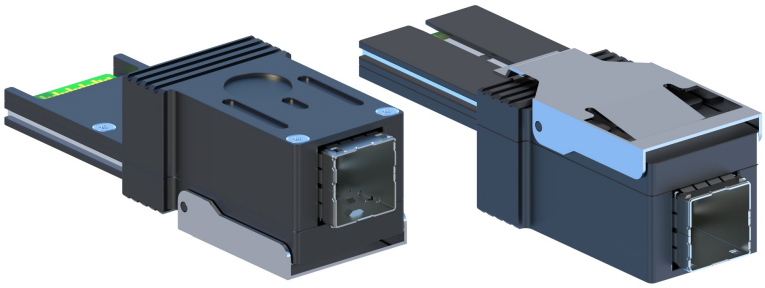


Figure 1: Isometric view of XC-X4G3-SFF-X4G3-IPASS

- Adapter connecting target iPass X4 interface to SFF-8644 host
- PCIe Gen3 x4 bandwidth with a link speed of 32 Gb/s
- For use with xiB camera series or xSWITCH devices (equipped with iPass X4 connector)

Adapter converter for connection of iPass X4G2 camera to SFF fiber optics cable. The cage (XCable housing) has been designed with standard SFF cable.

Can be used with High speed and high resolution xiB camera series. and xSWITCH.

2 Dimensional drawings

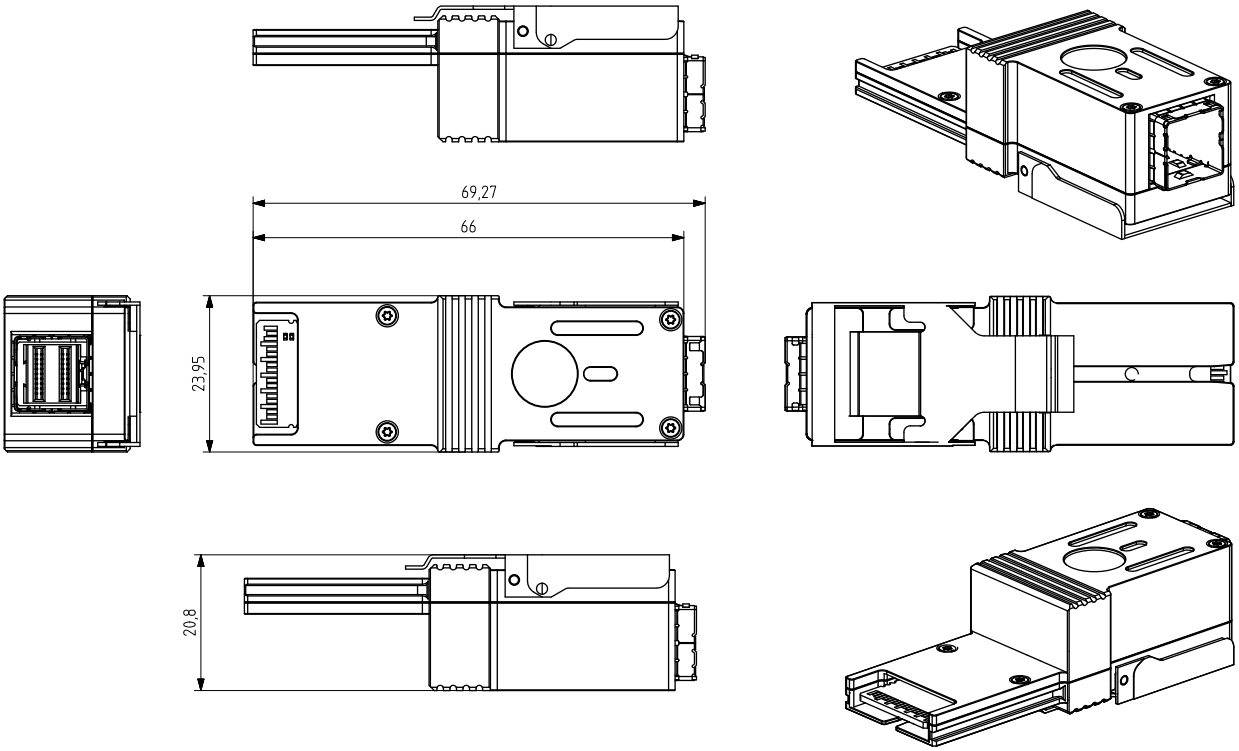


Figure 2: Dimensional drawing of XC-X4G3-SFF-X4G3-IPASS

Width [W]	Height [H]	Depth [D]	Mass [M]	Material
24 mm	20.8 mm	69.3 mm	38 g	Machined Aluminum alloy

Table 1: Mechanical parameters

3 Connectors

3.1 Location of connectors

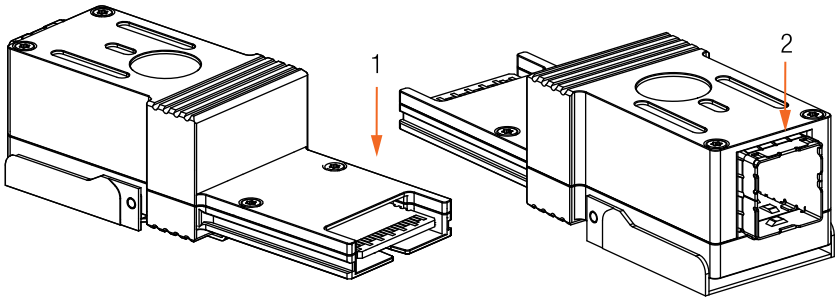


Figure 3: XC-X4G3-SFF-X4G3-IPASS connectors location

num.	connector
1	1x iPass X4 PCIe
2	1x SFF port for SFF-8644

Table 2: Connectors description

3.2 Data interfaces

3.2.1 PCIe iPass+ HD connector

Item	Value
Connector	Conn Receptacle MINI-SAS HD RIGHT ANGLE PUSH-IN, 2149966-1, 2x36pos
Signals	Data delivery
Mating cables	Ximea PN: CBL-SFF-X4G3-10M0, CBL-SFF-X4G3-30M0, CBL-SFF-X4G3-50M0

Table 3: PCIe iPass+ HD connector description

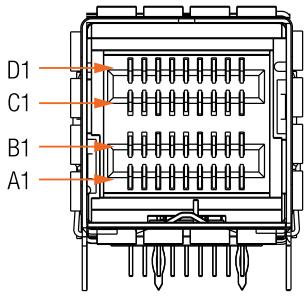


Figure 4: PCIe iPass+ HD SFF connector pinout

Pin	Name	Description	Pin	Name	Description
A1	CADDR	Control Address	C1	CMISCL	Clock line for Control Management Interface
A2	CINT	Control Interrupt	C2	CMISDA	Data line for Control Management Interface
A3	GND	Ground	C3	GND	Ground
A4	PCIe_PERP_0	PCIe RX differential signal (Lane 0)	C4	PCIe_PETP_0	PCIe TX differential signal (Lane 0)
A5	PCIe_PERN_0	PCIe RX differential signal (Lane 0)	C5	PCIe_PETN_0	PCIe TX differential signal (Lane 0)
A6	GND	Ground	C6	GND	Ground
A7	PCIe_PERP_3	PCIe RX differential signal (Lane 3)	C7	PCIe_PETP_3	PCIe TX differential signal (Lane 3)
A8	PCIe_PERN_3	PCIe RX differential signal (Lane 3)	C8	PCIe_PETN_3	PCIe TX differential signal (Lane 3)
A9	GND	Ground	C9	GND	Ground
B1	PWR	Power supply	D1	PWR	Power supply
B2	CBLPRSNT	Cable Present signal	D2	MGTPWR	Multi-Gigabit Transceiver Power
B3	GND	Ground	D3	GND	Ground
B4	PCIe_PERP_1	PCIe RX differential signal (Lane 1)	D4	PCIe_PETP_1	PCIe TX differential signal (Lane 1)
B5	PCIe_PERN_1	PCIe RX differential signal (Lane 1)	D5	PCIe_PETN_1	PCIe TX differential signal (Lane 1)
B6	GND	Ground	D6	GND	Ground
B7	PCIe_PERP_2	PCIe RX differential signal (Lane 2)	D7	PCIe_PETP_2	PCIe TX differential signal (Lane 2)
B8	PCIe_PERN_2	PCIe RX differential signal (Lane 2)	D8	PCIe_PETN_2	PCIe TX differential signal (Lane 2)
B9	GND	Ground	D9	GND	Ground

Table 4: PCIe iPass+ HD connector pin assignment

4 Additional information

4.1 Cables

Optical SFF cables are compatible with all CB500 cameras and CB120/CB200 cameras starting from hardware revision 6.

4.1.1 CBL-SFF-X4G3-10M0

The cable is available in 30 m, and 50 m lengths. PCIe Gen3 x4 fiber SFF cable (SFF-8644) is a high-speed optical connection used to link PCIe devices over longer distances. It uses Corning ClearCurve glass fiber (OM3, 850 nm) and provides four bi-directional data lanes, reaching up to 12 Gbps per lane (48 Gbps in total).



Figure 5: CBL-SFF-X4G3-10M0

4.1.2 CBL-SFF-X4G3-COP-5M0

The CBL-SFF-X4G3-30M0 is a PCIe Gen3 x4 copper cable (SFF-8644) designed to connect compatible XIMEA products. Cable provides four data lanes with speeds of up to 12 Gbps per lane (48 Gbps total). The cable length is 5 m, making it suitable for short-distance, high-bandwidth camera connections.



Figure 6: CBL-SFF-X4G3-COP-5M0

5 Quickstart guide

5.1 Hardware setup

5.1.1 Essential components

It is important that the power is turned off when inserting/detaching the cables. General ESD precautions need to be applied. Failing this requirement may lead to product damage.

- Host PC with supported SFF host adapter card (e.g. Ximea HA-2P-X4G3-SFF-X4G3) inside
- SFF-8644 fiber optic cable (e.g. Ximea CBL-SFF-X4G3-10M0)
- any xiB camera

5.1.2 Connecting the components

Make sure the DIP switches on the host adapter card are in position for x4 ports.

Step 1. Connect SFF-8644 fiber optic cable to the XC-X4G3-SFF-X4G3-IPASS

Step 2. Connect XC-X4G3-SFF-X4G3-IPASS to PC

Step 3. Connect XC-X8G3-SFF-X8G3-IPASS to the the xiB camera

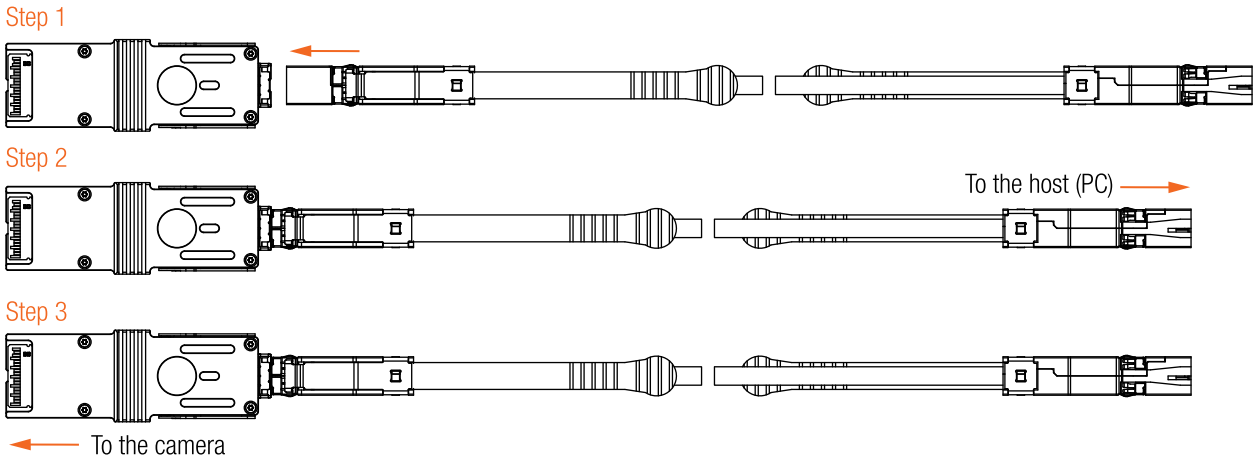


Figure 7: Connecting steps

For more information about XC-X4G3-SFF-X4G3-IPASS please contact: sales@ximea.com.

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