



- **ADPT-MX-X4G3-FF-X4G3-MTP**
Firefly to MTP backside adapter

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.

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1 General description



Figure 1: Isometric view of ADPT-MX-X4G3-FF-X4G3-MTP

This backside adapter is used to connect XIMEA X4G3 Firefly cameras to an MTP fiber optic cable. The adapter converts a single PCIe Gen3 x4 camera connection and turns the camera's copper Firefly connector into an MTP fiber optic interface.

ADPT-MX-X4G3-FF-X4G3-MTP provides power / I/O connector for synchronization and triggering.

Suitable for **xiX-XL** and **xiX-Xtreme** camera families.

Note: This backside adapter must be attached by XIMEA service.

2 Dimensional drawings

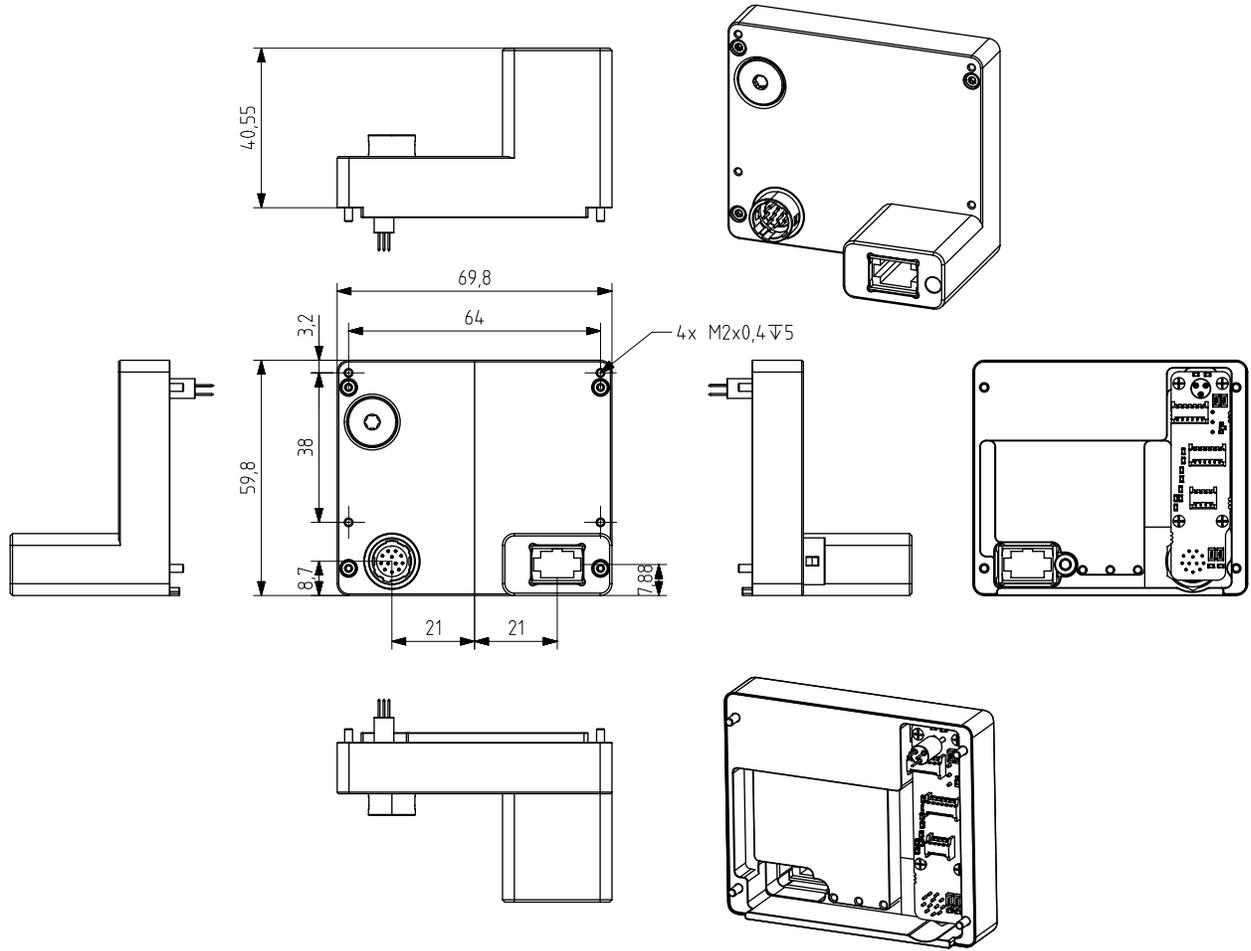


Figure 2: Dimensional drawing of ADPT-MX-X4G3-FF-X4G3-MTP

Width [W]	Height [H]	Depth [D]	Mass [M]	Material and technology	Cooling options
69.8 mm	59.8 mm	40.55 mm	154 g ¹	Machined Aluminum alloy	air / water cooled heatsink ²

¹This weight is for mainbody

²See Section [Cooling possibilities](#)

Table 1: Parameters and mass of ADPT-MX-X4G3-FF-X4G3-MTP

3 Connectors

3.1 Location of connectors

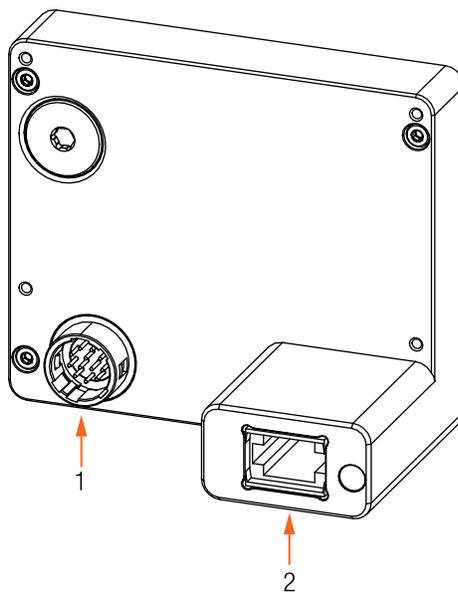


Figure 3: Location of connectors

num.	connector
1	IO connector, I/O and Power 12-pin Alysium 60-30-1112
2	Multifiber Termination Push-on (MTP) optical fiber connector

Table 2: Description of connectors

3.2 Data interfaces

3.2.1 MTP

The MTP connector on the backside adapter is a 12-fiber male MTP connector. For proper operation, use MTP cables with a 12-fiber female connector, such as CBL-MTP-X4G3-FF-xxxM0, see Section [CBL-MTP-X4G3-FF-10M0](#).

3.2.2 GPIO

Item	Value
Connector	I/O and Power 12-pin Alysium 60-30-1112
Signals	Opto-isolated trigger input and non-isolated I/O plus camera power
Mating Connectors	Alysium 60-41-1012, 60-41-1112, 60-01-1012, 60-01-1112, 60-03-1012, 60-03-1112
Mating Cable	Ximea PN: CBL-MT-PWR-SYNC-3M0 for 3 m cable

Table 3: GPIO connector general description

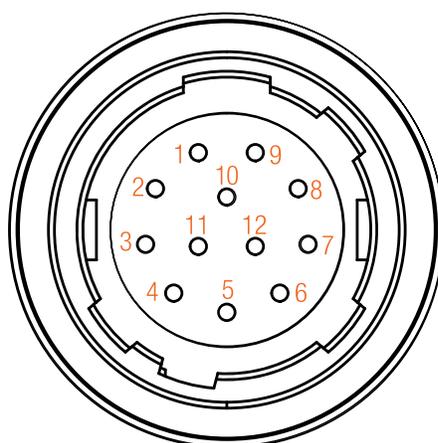


Figure 4: GPIO connector pinout

Pin	Name	Signal	Technical description
1	IN2	Opto-isolated Input 2	(<0.8 Low; 4-24 High)
2	IN1	Opto-isolated Input 1	(<0.8 Low; 4-24 High)
3	OUT2	Opto-isolated Output 2	Open collector
4	OUT1	Opto-isolated Output 1	Open collector
5	AUX PWR	Power supply input	12-24 V
6	GND	External grounds for power and non-isolated I/O	-
7	INOUT1	Non-isolated I/O	LVTTL(3.3, 50 μ A)
8	INOUT3	Non-isolated I/O	LVTTL(3.3, 50 μ A)
9	INOUT2	Non-isolated I/O	LVTTL(3.3, 50 μ A)
10	IN GND	Ground for Opto-Isolated Inputs (IN1, IN2)	-
11	OUT GND	Ground for Opto-Isolated Out (OUT1, OUT2)	-
12	INOUT4	Non-isolated I/O	LVTTL(3.3, 50 μ A)

Table 4: GPIO connectr pin assigment

4 Usages

4.1 Mounting points

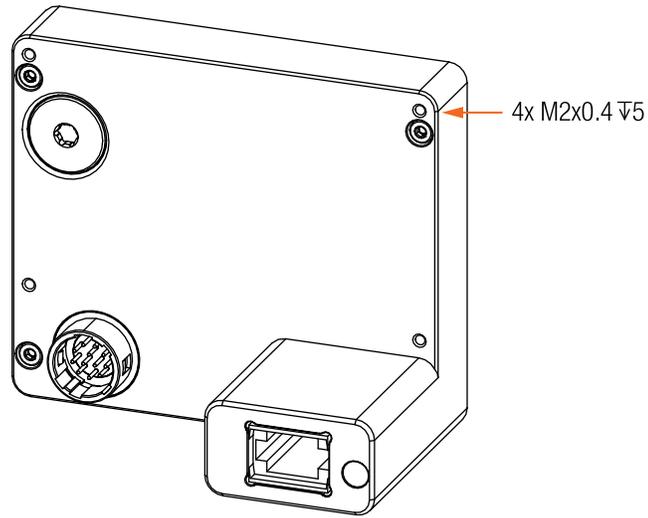


Figure 5: Mounting points for cooling options

5 Additional information

5.1 Cables

5.1.1 CBL-MTP-X4G3-FF-10M0

To connect camera with ADPT-MX-X4G3-FF-X4G3-MTP adapter to MTP host connector you can use a 10-meter MTP fiber-optic trunk cable supporting PCIe Gen3 x4 with a data rate of 20 Gbit/s. It uses US Conec MTP® (pinless) female-to-female connectors and contains 12 Corning ClearCurve glass fibers. The cable features a minimum bend radius of 7.5 mm and a plenum (OFNP)-rated outer jacket.

It is also available in 5 m, 20 m, 30 m, and 53 m lengths.

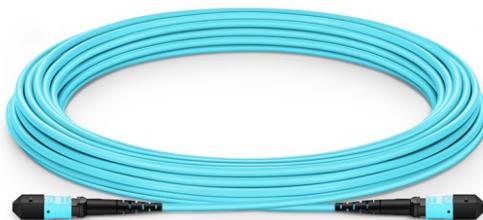


Figure 6: CBL-MTP-X4G3-FF-10M0 cable

5.1.2 CBL-PCU0-X4G3-0M15

The backside adapter includes the CBL-PCU0-X4G3-0M15, a 15 cm MTP (female) to Firefly 12-fiber cable supporting PCIe Gen3 x4.

5.2 Cooling possibilities

Back part attachment is compatible with ADPT-MX-MTP-FAN-COOLER or ADPT-MX-MTP-WAT-COOLER.



Figure 7: Backside adapter cooling options

To attach or detach the fan module, you will need four M2x0.4 screws.

5.2.1 ADPT-MX-MTP-WAT-COOLER connection

Please refer to the pictures and steps below for the correct connection of the water cooler.

Ring inserting

The insert ring is designed to prevent deformation of the tube. A soft tube can be connected to the Fitting.

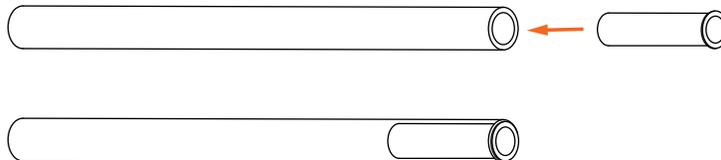


Figure 8: Inserting the ring into the tube

Tube insertion

Insert the tube into the Push-In Fitting until it reaches the end. The collet will secure the tube automatically, while the elastic sleeve creates a seal around it.

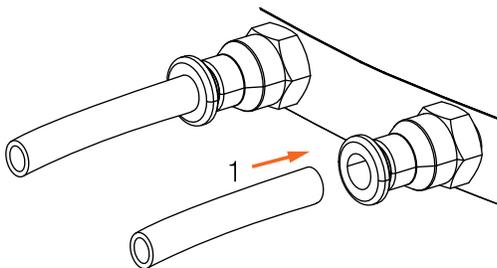


Figure 9: Tube insertion

Tube disconnection

To disconnect the tube, simply push the collet. Ensure that the water supply is halted before disconnecting the tube.

- Step 1.** Push the collet.
- Step 2.** Pull the tube out.

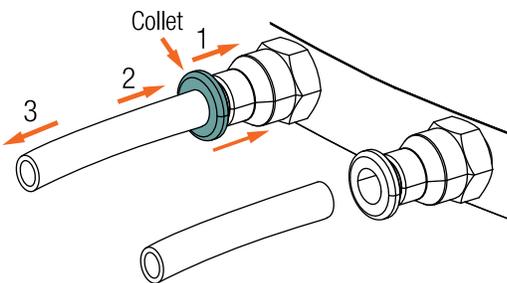


Figure 10: Tube disconnection

6 Quickstart guide

6.1 Hardware setup

6.1.1 Essential components

- XIMEA camera with ADPT-MX-X4G3-FF-X4G3-MTP backside adapter
- host PC supporting MTP connection
- optical MTP cable (e.g. CBL-MTP-X4G3-FF-10M0)
- power/sync cable CBL-MT-PWR-SYNC-3M0

6.1.2 Connecting the components

Ensure the power supply and the computer are turned off before connecting any cables. The order of cable connections is not strictly specified, but you can follow the steps 1 to 4 in this order:

- Step 1.** Connect optical MTP cable (CBL-MTP-X4G3-FF-10M0) to backside adapter (ADPT-MX-X4G3-FF-X4G3-MTP)
- Step 2.** Connect optical MTP cable (CBL-MTP-X4G3-FF-10M0) to PC
- Step 3.** Connect power/sync cable (CBL-MT-PWR-SYNC-3M0) to adapter, then to power source
- Step 4.** Power up computer.

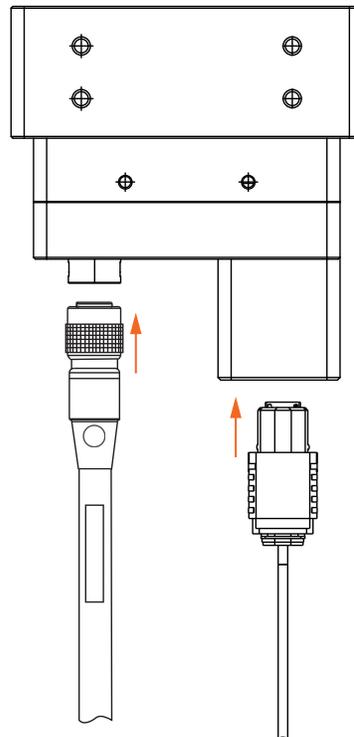


Figure 11: Connection steps

For more information about ADPT-MX-X4G3-FF-X4G3-MTP please contact: sales@ximea.com.

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