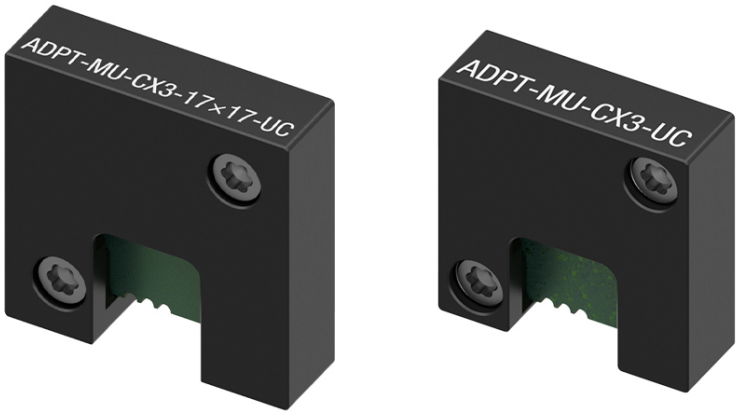


• ADPT-MU-CX3-UC
MicroCoaxial adapter for MU

XIMEA Accessories •
Technical Manual •
Version v260901 •

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

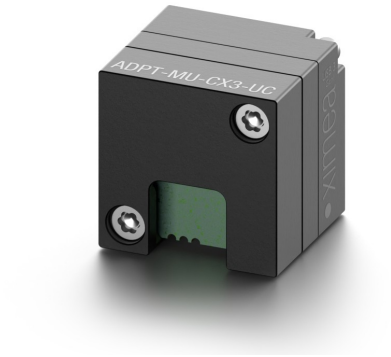


Figure 1: Camera with adapter

The mini backside adapter extension provides a compact USB3 I-PEX Cabline SS Micro Coax interface for camera triggering and output signaling. Adapter is designed for integration with small-format MU cameras with a 15 x 15 mm form factor.

The adapter is mounted on the camera rear using 2x M1.6x5 countersunk TRX screws.

- Camera compatibility: MU 15 x 15 mm cameras
- Interface: USB3 I-PEX Cabline SS Micro Coax
- Functionality: Camera triggering and output signaling
- Accessory compatibility: -UC accessories
- Mounting: 2x M1.6x5 countersunk TRX screws
- Alternative version: 17 x 17 mm variant available for the MU051 camera model

2 Dimensional drawings

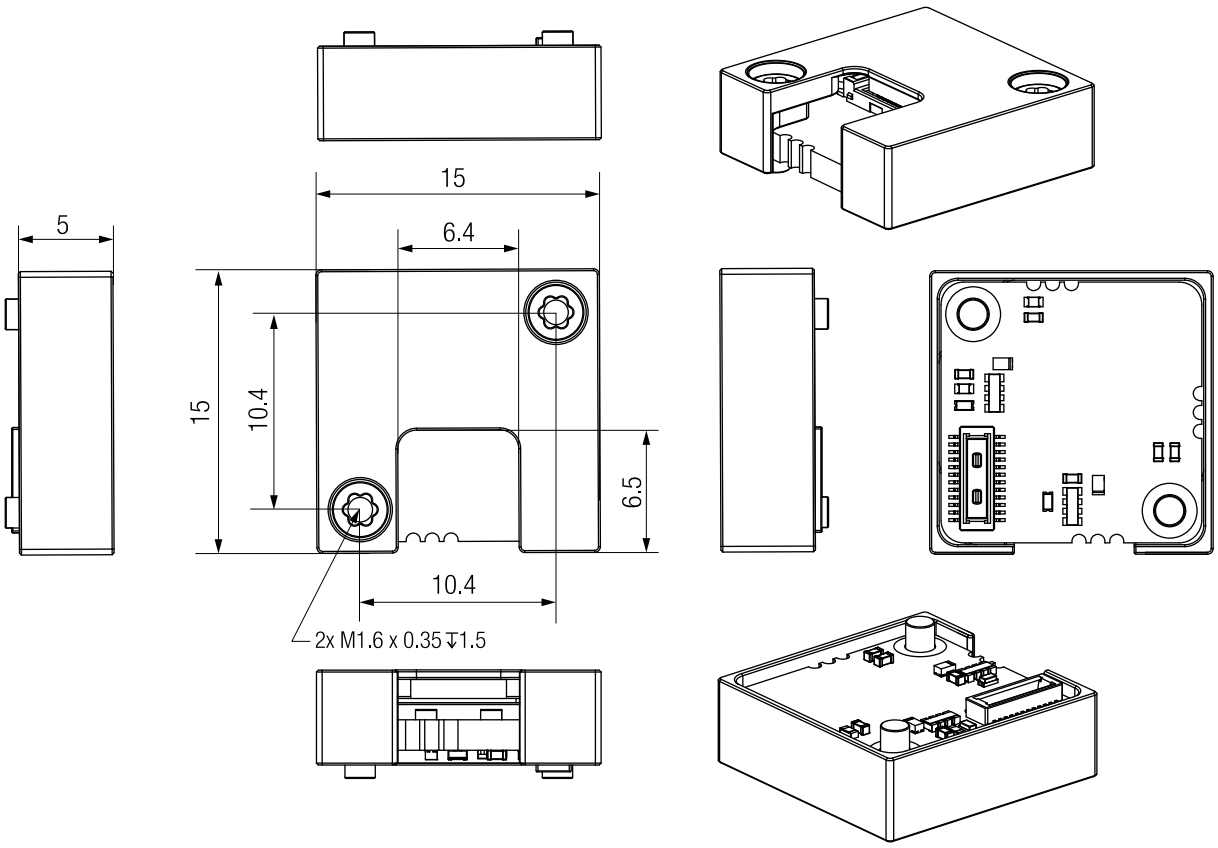


Figure 2: Dimensional drawing of ADPT-MU-CX3-UC

Width [W]	Height [H]	Depth [D]	Mass [M]	Material
15 mm	15 mm	5.0 mm	1.8 g	Machined Aluminum alloy[1]

[1] Anodized to black color

Table 1: Parameters of ADPT-MU-CX3-UC

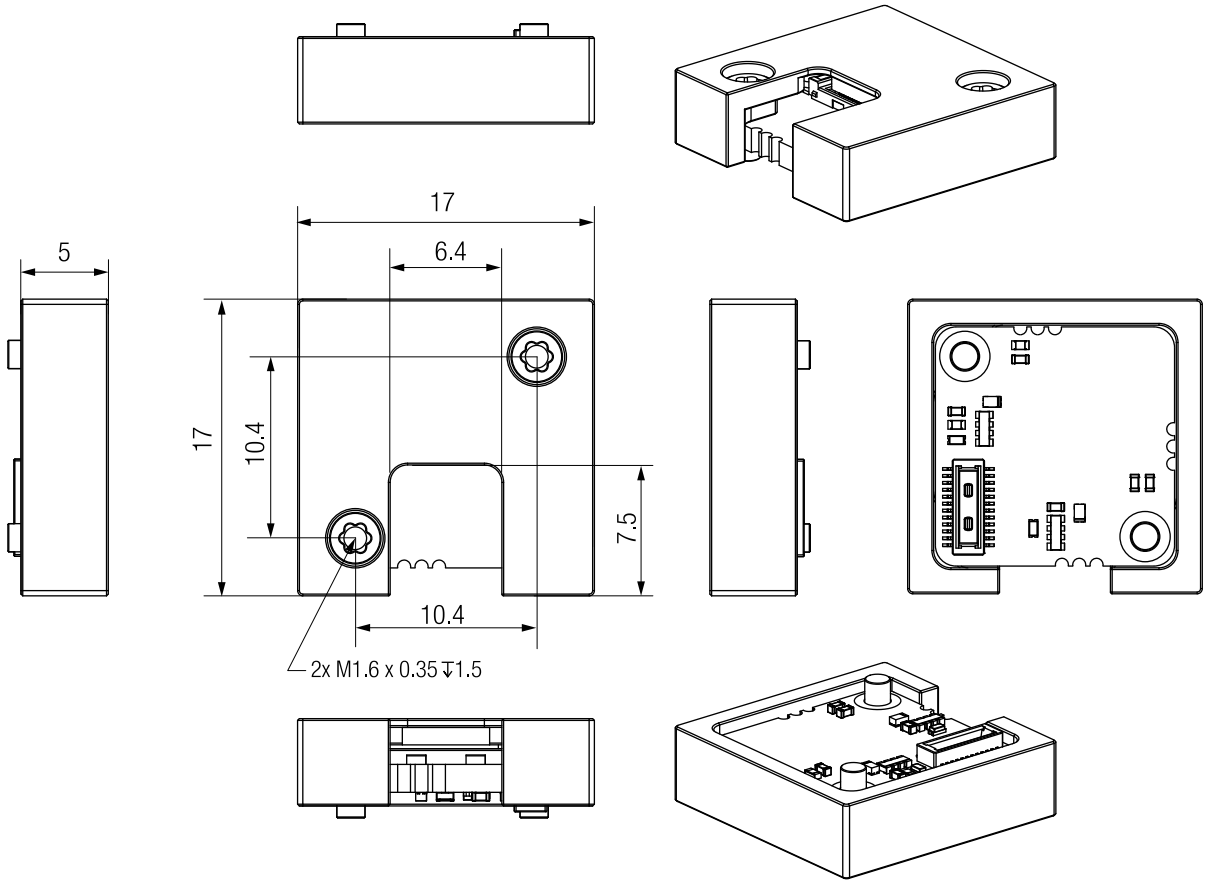


Figure 3: Dimensional drawing of ADPT-MU-17X17-CX3-UC

Width [W]	Height [H]	Depth [D]	Mass [M]	Material
17 mm	17 mm	5.0 mm	2.6 g	Machined Aluminum alloy[1]

[1] Anodized to black color

Table 2: Parameters of ADPT-MU-17X17-CX3-UC

3 Connectors

3.1 Location of connectors

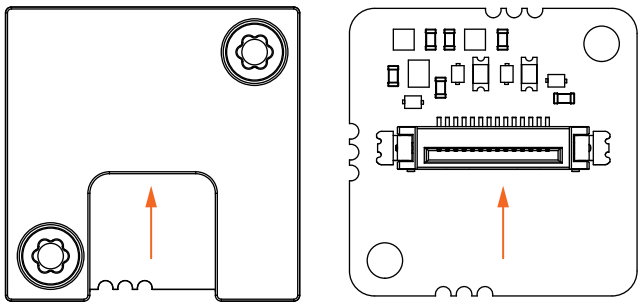


Figure 4: Location of connector

3.2 Data interfaces

3.2.1 Micro-Coaxial Cabline SS

Item	Value
Connector	CONN I-PEX Cabline SS Micro Coax Cable Receptacle, 14-position (CONN-20374-R14E-31)
Signals	USB 3.1 Gen1 (SuperSpeed), USB 2.0, Power, I/O
Mating Connector	Cable-side I-PEX Cabline SS 14-position plug
Mating Cable	XIMEA PN: CBL-U3-PSD-UC-0M10, CBL-U3-PSD-UC-0M25, CBL-U3-PSD-UC-0M50, CBL-U3-PSD-UC-1M0[1]

[1]Cables up to 1 m in length are supported when cameras are directly connected to the xSwitch (e.g., XS-5P-U3-UC-TC). However, when cameras are connected via the ADPT-U3-UC-U3-UB, the maximum supported length of the micro coaxial cable depends on the VBUS voltage provided by the USB 3.0 controller and the length of the USB 3.0 cable used between the ADPT-U3-UC-U3-UB and the USB 3.0 controller.

Table 3: Micro-Coaxial Cabline SS connector general description

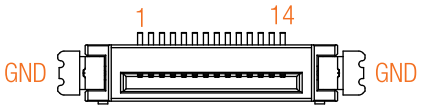


Figure 5: Micro-coax connector pinout

Pin	Signal	GPI/GPO index API	Description
1	VBUS	None	+5 V Power input
2	VBUS	None	+5 V Power input
3	INOUT2	4/4	Non-isolated Input/Output 2 (<0.3 Low; > 1.3 High)
4	OUT2	-/3	Non-isoalted Output 2
5	SSRX+	None	SuperSpeed receiver differential pair
6	SSRX-	None	SuperSpeed receiver differential pair
7	D+	None	2.0 differential pair
8	D-	None	2.0 differential pair
9	SStX+	None	SuperSpeed transmitter differential pair
10	SStX-	None	SuperSpeed transmitter differential pair (<0.3 Low; > 1.3 High)
11	INOUT1	2/2	Non-isolated Input/Output 1
12	OUT1	-/1	Non-isoalted Output 1
13	VBUS	None	+5 V Power input
14	VBUS	None	+5 V Power input

Table 4: ADPT-MU-CX3-UC connector pin assignment

3.2.2 GPIO

Digital Input/Output (INOUT)

Item	Parameter / Note
Maximal input voltage	24V DC
Common pole	YES
Effect of incorrect input terminal connection	Reverse voltage polarity protected
Effects when withdrawing/inserting input module under power	no damage, no lost data
Protection	Reverse voltage
Input Impedance- minimum	15 kΩ
Input Level for logical 0	< 0.3 V
Input Level for logical 1	> 1.3 V
Input debounce filter	NO
Input delay - rising edge	< 300 ns, VINPUT=2 V
Input delay - falling edge	< 450 ns, VINPUT=2 V

Table 5: General info for digital input / output, ADPT-MU-CX3 adapter

Digital Output (OUT)

Item	Parameter / Note[1]
Common pole	YES
Effects when withdrawing/inserting input module under power	May damage camera electronics
Protection	ESD and short circuit[2]
Maximal output sink current	20 m A
Inductive loads	NO
Output Level logical 0	< 0.8 V, Load 100 kΩ
Output Level logical 1	> 4.5 V, Load 100 kΩ
Output delay - rising edge	<20 ns, Load 100 kΩ threshold 1.5 V
Output delay - falling edge	<20 ns, Load 100 kΩ threshold 0.5 V

[1]Note that the GPO signals are routed through unidirectional level translators, therefore High Impedance GPO mode setting is not supported

[2]ESD HBM ANSI/ESDA/JEDEC JS-001 Class 2 exceeds 2 kV; CDM JESD22-C101E exceeds 1000 V

Table 6: General info for digital output, ADPT-MU-CX3 adapter

4 Quickstart guide

4.1 Hardware setup

4.1.1 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.

- small MU camera with adapter ADPT-MU-CX3-UC or ADPT-MU-17X17-CX3-UC
- Micro Coaxial cable (CBL-U3-PSD-UC-0M10)
- adapter board (e.g. ADPT-U3-UC-U3-UB) for connecting ADPT-MU-CX3-UC to PC
- host (PC)

4.1.2 Connecting the components

Step 1. Remove the 2x M1.6x5 screws from the rear of the ADPT-MU-CX3-UC backside adapter.

Step 2. Connect the CBL-U3-PSD-UC-0M10 Micro-Coax cable to the ADPT-MU-CX3-UC backside adapter.

Step 3. Reinstall and secure the rear section using the 2x M1.6x5 screws.

Step 4. Connect the opposite end of the Micro-Coax cable to the adapter (e.g., ADPT-U3-UC-U3-UB).

Step 5. Connect the ADPT-U3-UC-U3-UB to the host computer using a USB cable.

Step 6. Power on the host computer.

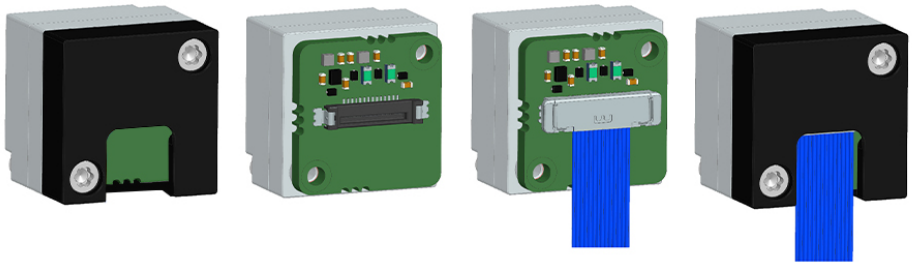


Figure 6: Connecting steps

For more information about ADPT-MU-CX3-UC please contact: sales@ximea.com.

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