# SC&T

## USB/Keyboard Mouse Extender Series

# User Manual

.

### Model : UE03H

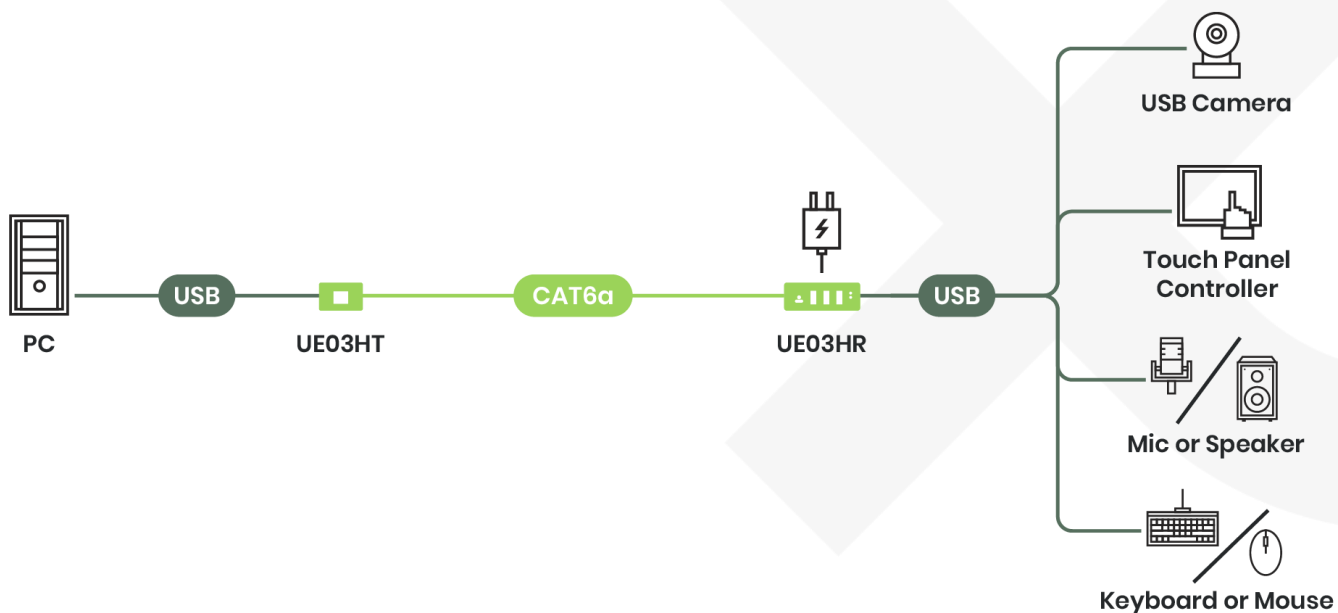### USB 3.2 Gen1 CAT6a Extender 100m

## Introduction

UE03H is a USB 3.2 Gen1 extender designed to carry USB signals using CAT6a/7 Ethernet cable. It is totally backward compatible with USB 2.0 & USB 1.x devices. It is perfect for multiple applications including devices such as USB cameras, touch panels, and any other USB devices.
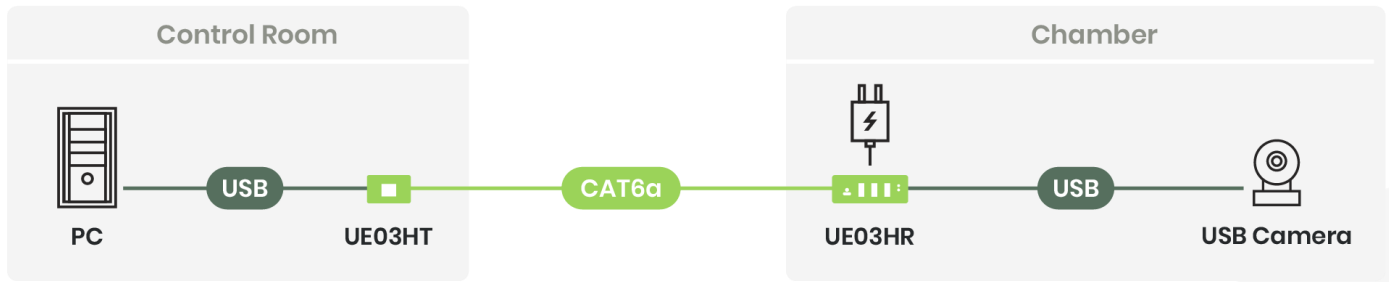
## Features

- USB 3.2 Gen1 up to 5Gbps
- Transmission distance up to 100m with CAT6a cable
- No power needed at device side (UE03HR)
- Max power supply 5V/1.5A at Device side (UE03HR), does not support QC(Quick Charge), PD(Power Delivery)
- RS232 optional extension
- Compatible with USB 2.0 and USB 1.x devices
- USB Type-C port on both sides
- Plug & Play
- Small & compact, easy to install
- Low power consumption
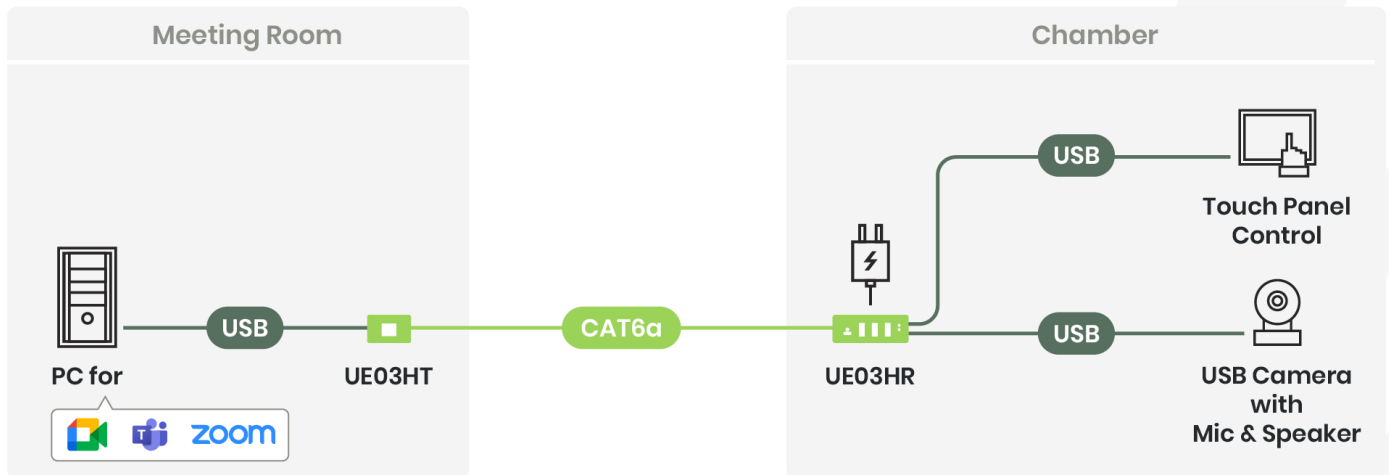- Multiple mounting options (Wall/Rack & Din Rail)

## Application Diagram
### USB Extension for General Purposes
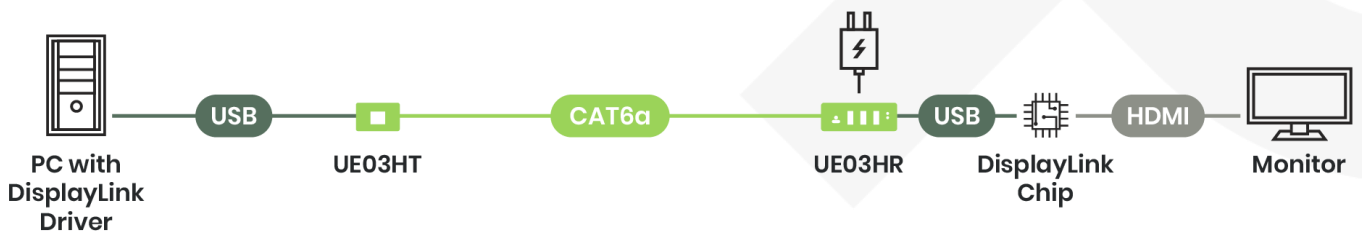
## USB Extension for Security/Monitoring

| Control Room | | Chamber |

PC — USB — UE03HT — CAT6a — UE03HR — USB — USB Camera

## USB Extension for Video Conferencing

| Meeting Room | | Chamber |

PC for — USB — UE03HT — CAT6a — UE03HR — USB — Touch Panel Control

UE03HR — USB — USB Camera with Mic & Speaker

## USB Extension for Video Capture

PC for Video Capture (UVC) — USB — UE03HT — CAT6a — UE03HR — USB to HDMI Converter — HDMI — BD Player or Game Console

## USB Extension using DisplayLink

PC with DisplayLink Driver — USB — UE03HT — CAT6a — UE03HR — USB — DisplayLink Chip — HDMI — Monitor

**Panel View**
**UE03HT**
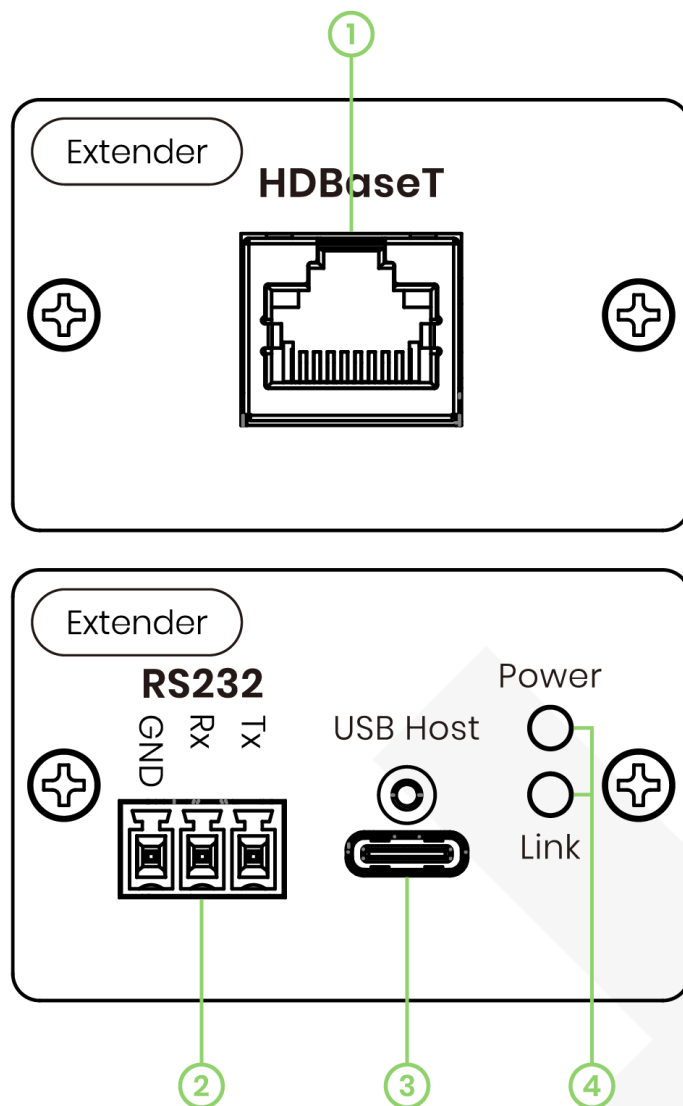


| | Interface | Description |
|---|---|---|
| 1 | HDBaseT | To connect to UE03HR |
| 2 | RS232 | To connect to RS232-command-controllable device (needs Terminal Block to RS232) |
| 3 | USB Type-C | To connect to USB 3.2 Gen1 source |
| 4 | Power/Link LED | Refer to LED Indicator |

**UE03HR**
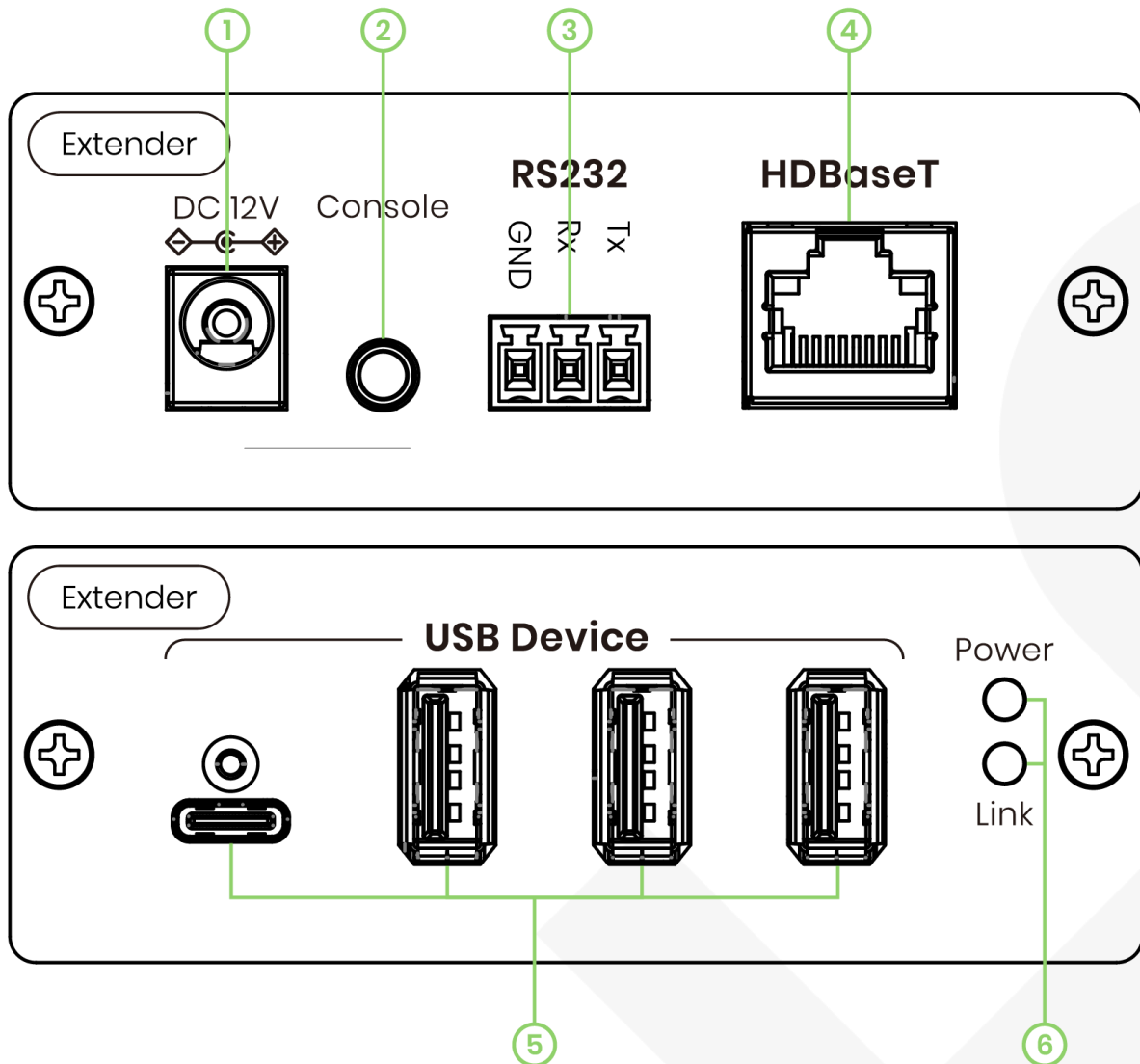


| | Interface | Description |
|---|---|---|
| 1 | DC Jack | To plug in DC 12V power adapter |
| 2 | Console | To update FW (needs 3.5mm jack cable to UART) |
| 3 | RS232 | To connect to RS232-command-controllable device (needs Terminal Block to RS232) |
| 4 | HDBaseT | To connect to UE03HT |
| 5 | USB Type-C/Type-A | To connect to USB device, **compatible with** USB 3.2 Gen1 / 2.0 / 1.1 / 1.0 |
| 6 | Power/Link LED | Refer to LED Indicator |

## LED Indication

| Interface | LED Color | Status |
|---|---|---|
| Power (Green) | On | Power On |
| | Off | Power Off |
| Link (Blue) | On | RJ45 Linked |
| | Off | RJ45 Unlinked |

## RS232 Pin Define



## Transmission Distance

See Caution, point 6

| Cable Type | Transmission Distance |
|---|---|
| CAT6a 83G02HD105 | 100m |

## USB Read & Write Speed

| Testing Condition | Using CAT6a cables and CrystalDiskMark software, testing the read and write speed of USB flash drives. PC：i5-12400 RTX3060Ti | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | ESD310C USB 3.2/Type C 256GB | | SanDisk SDDDC3 (Type A) (USB 3.0) | | SanDisk SDDDC3 (Type C) (USB 3.0) | | SanDisk Ultra Flair USB 3.0 64GB (Type A) (USB 3.0) | | KINGSTON (Type A) (USB 3.0) | |
| | Read | Write | Read | Write | Read | Write | Read | Write | Read | Write |
| 100m 83G02HD105 | 439.58 MB/s | 437.74 MB/s | 152.18 MB/s | 65.84 MB/s | 155.16 MB/s | 65.49 MB/s | 162.16 MB/s | 52.43 MB/s | 136.56 MB/s | 11.31 MB/s |

**Caution**

1. This product is designed for indoor applications. If it is desired for outdoor use, please install additional equipment for waterproof protection and surge protectors to prevent damages caused by lighting.

2. Do not put anything on the power and system cables, place them where they cannot be stepped on. Please be sure there is nothing resting on any cables.

3. Avoid using this product close to water places, or near high temperature devices such as radiators, stoves, etc.

4. Shut down the power supply and unplugged all equipment immediately if:

    A. water or any kind of liquid has been spilled into the product;

    B. the product has been damaged by external force;

    C. the product does not operate normally as this manual indicates;

    D. Please contact us for further repair if above conditions happen.

5. We strongly recommend using high quality CAT6a, CAT7 UTP/STP/FTP cable. Improper installation may cause unstable connection.

6. The transmission distance may differ by cable or construction quality. Using CAT6a, CAT7 cable between transmitter and receiver, the transmission distance can reach up to 100 meters.

7. This extender does not support video & audio transmission (DP alternate mode).

8. RS232 does not support hardware handshake.

9. The USB-Type C port on the device side does not support power delivery mode.

**Technical Specification**

| UE03H | UE03HT | UE03HR |
|---|---|---|
| Compliance | | |
| Standard | USB 3.2 Gen1<br>USB 2.0<br>USB 1.1<br>USB 1.0 | |
| Max. Transmission Distance | 100m over CAT6a/7 | |
| Data Rate | USB 3.2 Gen1 up to 5Gbps bidirectional | |
| Ports & Interfaces | | |
| USB Data | 1 x USB Type-C | 3 x USB Type-A<br>1 x USB Type-C |
| Transmission Medium | 1 x RJ45 | 1 x RJ45 |
| RS232 | 1 x 3-Pin Terminal Block | 1 x 3-Pin Terminal Block |
| Console | | 1 x 3.5mm Phone Jack |
| Power | | |
| Power Supply | USB 5V | 12V 1.5A |
| Power Consumption | 2W | 2.76W (No include USB device) |
| Power Saving | 1.6W | 1.8W |
| Ambient Temperature | | |
| Operation | 0 to 55ºC | |
| Storage | -40 to 80ºC | |
| Operating Altitude | 2000m | |
| Humidity | Up to 95% | |
| Physical Characteristics | | |
| Dimension | 50 x 93 x 32mm | 87 x 123 x 32mm |
| Weight | 128g | 259g |

## Installation

### Installed on Wall

**Step 1** Same way as "Installed on a Platform", but need to put screw plugs into the pilot hole before inserting the screws (leave 2mm space from the platform)
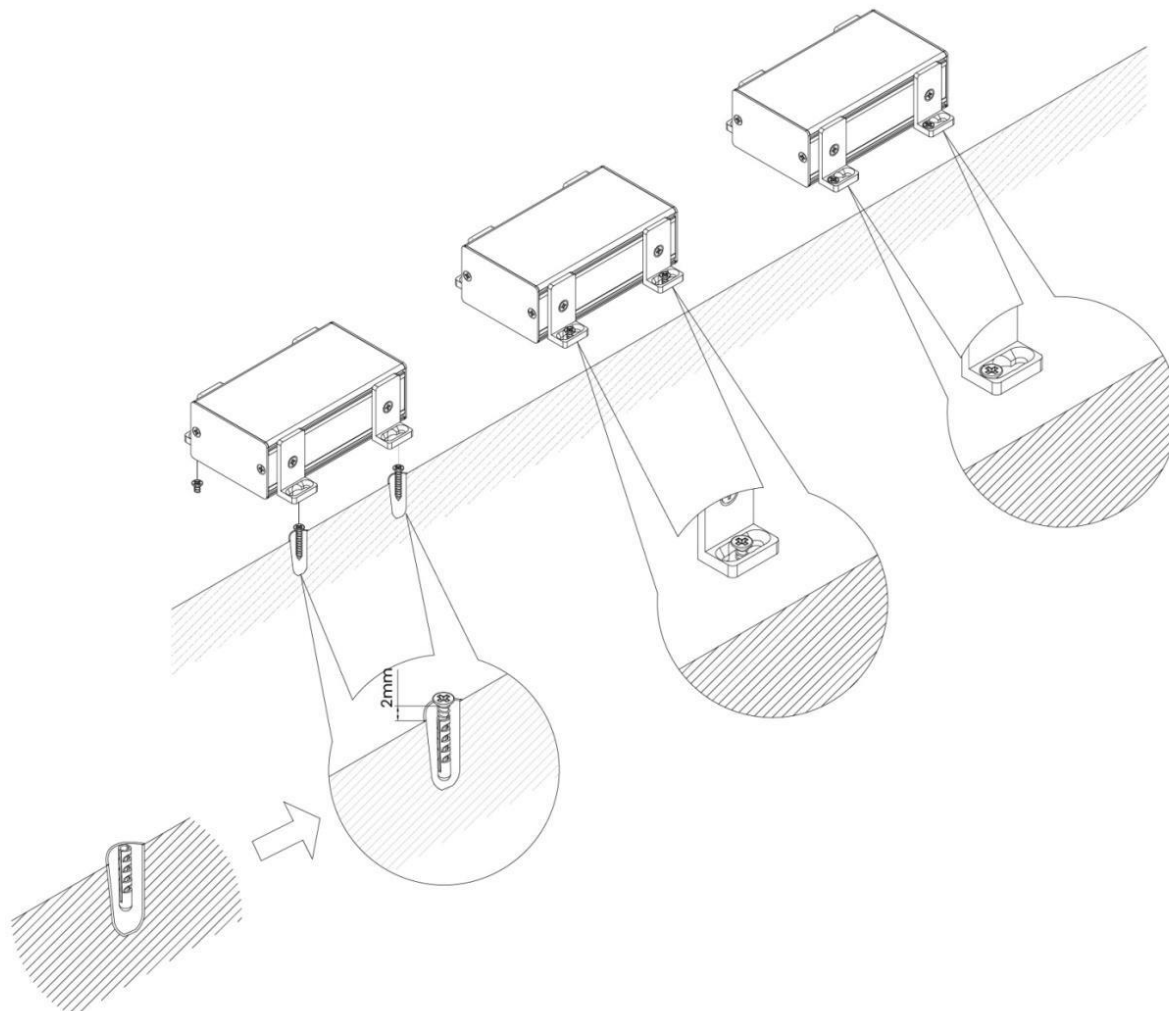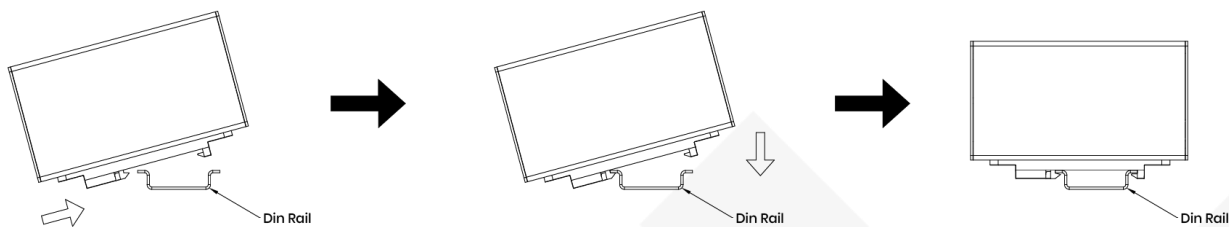
## Installed on a DIN-rail

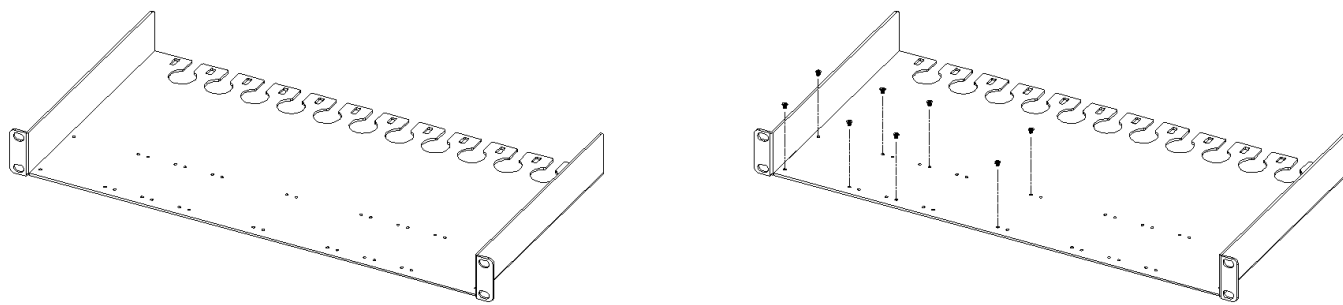**Step 1** Use machine screws to fix a DIN-rail mounting plat on the side of your product
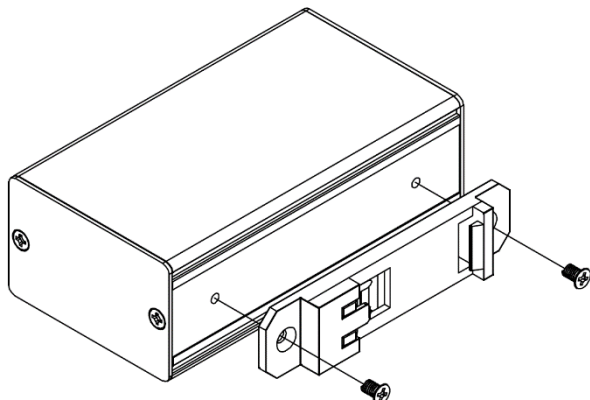
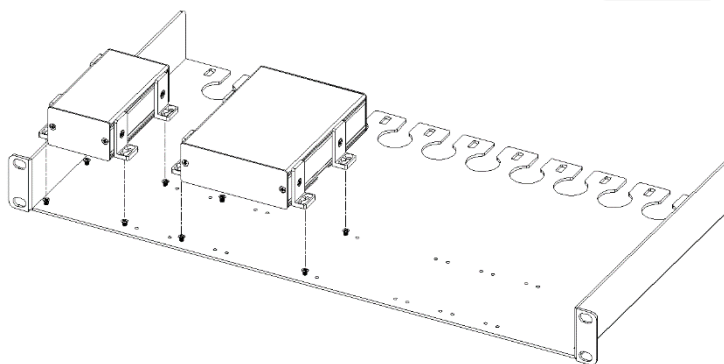**Step 2** Install your product on a DIN-rail as following instruction
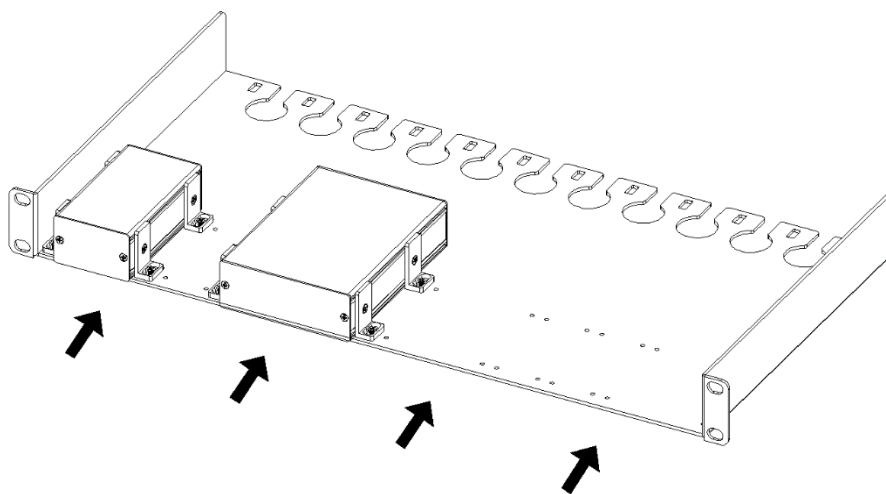
Din Rail

Din Rail

Din Rail

## Installed on a Rack

**Step 1** Lock machine screws in the rack

**Step 2** Put your products on the rack

**Step 3** Push the products to the other side of the rack

**Step 4** Install the rack in a cabinet