



SDI Converter

User Manual

Model: SDI02E-12G

4K60Hz HDMI® to 12G-SDI Compact Converter with Dual Outputs



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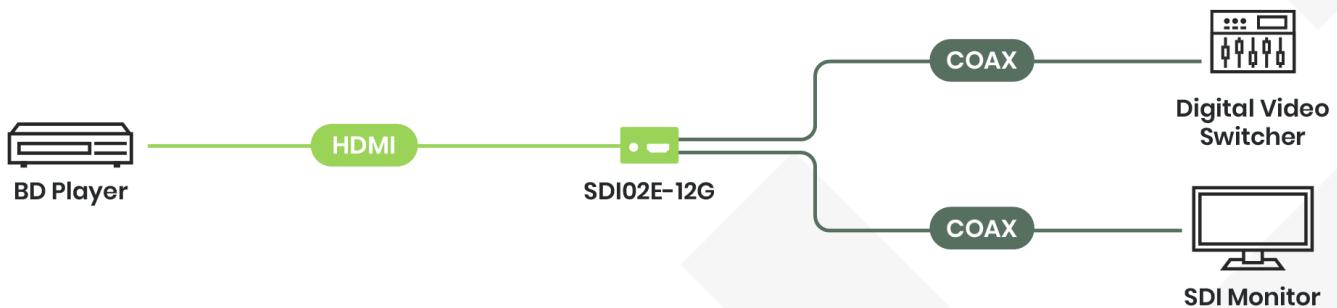
Introduction

SDI02E-12G is an HDMI® 2.0 to 12G-SDI converter that turns consumer HDMI® into SDI signals for broadcast applications. This small and compact converter has two SDI output ports, which can operate at the same time.

Features

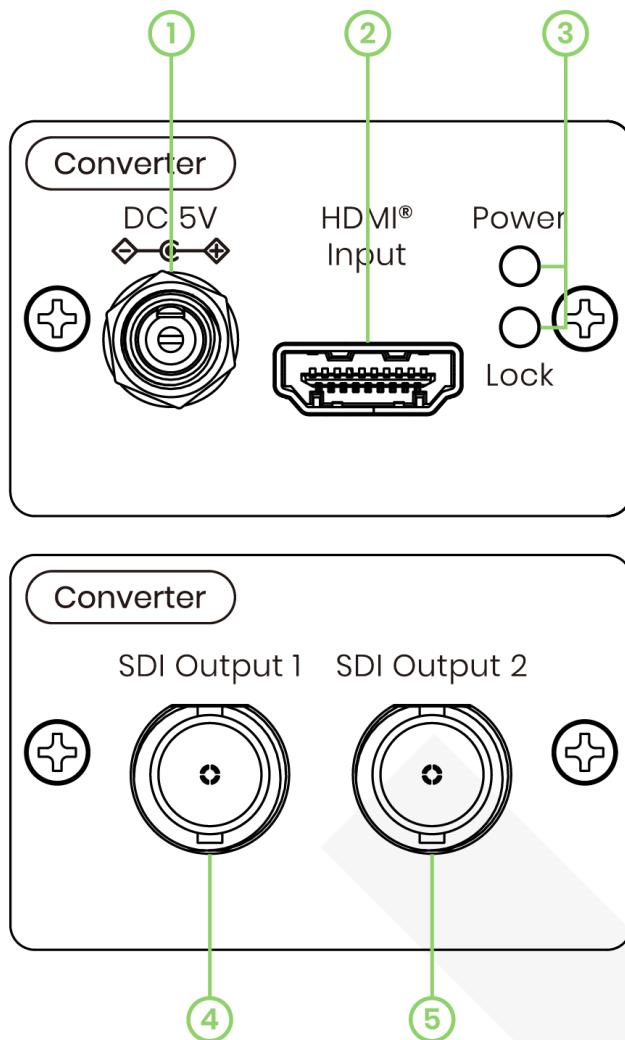
- HDMI® input resolution up to 4K60Hz
- 12G-SDI output compatible with 6G/3G/HD
- The power input is designed with a locking mechanism to prevent pulling or detachment
- Small, compact, easy to install
- Multiple mounting options: Walls, racks, or DIN rails

Application Diagram



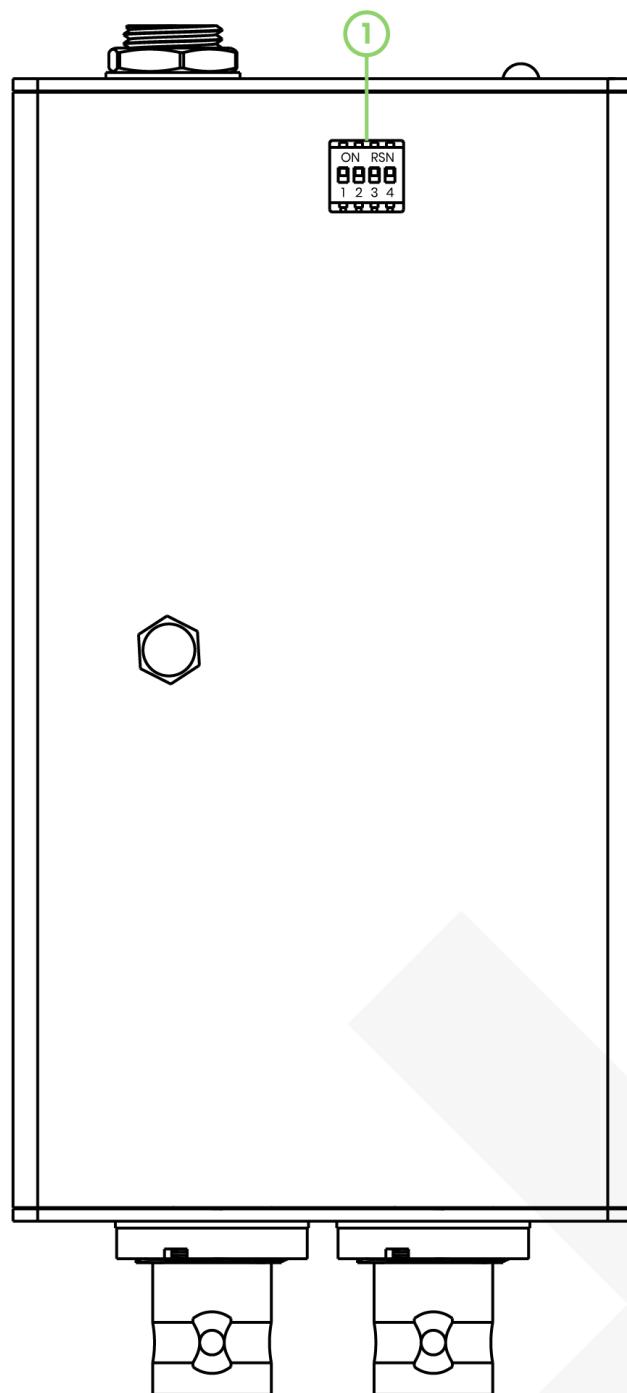
Panel View

Front/Back Panel View



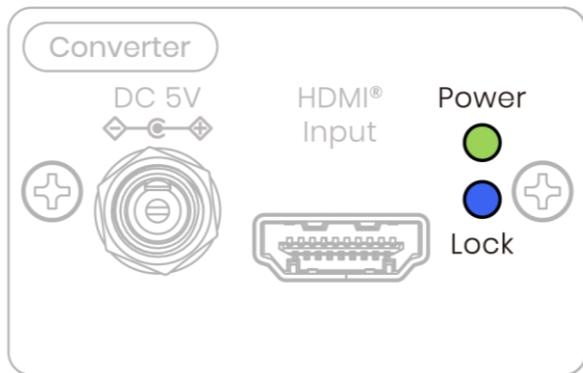
No	Interface	Description
1	DC Jack (with lock)	To plug in a DC 5V power adapter
2	HDMI® Input	To connect to an HDMI® source
3	Power/Lock LED	Refer to <i>LED Indication</i>
4	SDI Output 1	
5	SDI Output 2	To connect an SDI display or digital video switcher

Bottom Panel View



No	Interface	Description
1	DIP Switch	See additional settings

LED Indication



LED Color	LED Status	Description
Power (Green)	On	Power On
	Off	Power Off
Lock (Blue)	On	HDMI® signal locked and SDI signal ready to transmit
	Off	No HDMI® signal

Functional Description

SDI Interface



SDI02E-12G is equipped with two 12G-SDI output ports, allowing for simultaneous transmission of converted video signals to multiple SDI-compatible devices. These SDI output ports provide flexibility in signal routing and distribution, catering to various production and broadcasting setups.

It is compliant with SMPTE ST2081 and ST2082 standards, and each output port supports data rates up to 12Gbps.

SDI02E-12G carries ancillary data such as embedded audio, timecode, and other metadata, ensuring synchronized audio-video playback.

Support Resolution

SDI02E-12G supports various resolutions, indicated by the below table:

Resolution		
12G SMPTE ST 2082	4096x2160p	23.98/24/25/29.97/30/50/59.94/60Hz
	3840x2160p	23.98/24/25/29.97/30/50/59.94/60Hz
6G SMPTE ST 2081	4096x2160p	23.98/24/25/29.97/30Hz
	3840x2160p	23.98/24/25/29.97/30Hz
3G-A ¹ SMPTE ST 424	2048x1080p	23.98/24/25/29.97/30/50/59.94/60Hz
	1920x1080p	23.98/24/25/29.97/30/50/59.94/60Hz
	1280x720p	50/59.94/60Hz
HD ² SMPTE ST 292	2048x1080p	23.98/24/25/29.97/30Hz
	1920x1080p	23.98/24/25/29.97/30Hz
	1280x720p	50/59.94/60Hz

¹ 3G Level B format is not supported

² SD format is not supported

HDMI® Interface



SDI02E-12G features a single HDMI® input port, designed to accept HDMI® signals from compatible sources such as cameras, media players, or computers.

As SDI signals are not encrypted, there will be no HDCP encryption on the HDMI® input port.

The HDMI® input conforms to HDMI® 2.0 specifications, supporting all the input resolutions provided in the SDI Interface Section.

As 12G-SDI's maximum resolution is 4096x2160p at 60Hz with 4:2:2 10-bit color depth, the maximum HDMI® output resolution will be the same.

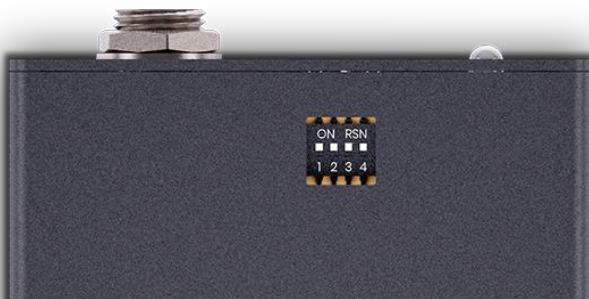
Audio Channel Conversion

The audio conversion from HDMI to SDI interface is determined by the AVI Infoframe as specified under HDMI standard. The relevant AVI Infoframe table is shown below:

CA (binary)									CA (hex)		Channel Number									
7	6	5	4	3	2	1	0		8	7	6	5	4	3	2	1				
0	0	0	0	0	0	0	0	00	-	-	-	-	-	-	FR	FL				
0	0	0	0	0	0	0	1	01	-	-	-	-	-	LFE	FR	FL				
0	0	0	0	0	0	1	0	02	-	-	-	-	FC	-	FR	FL				
0	0	0	0	0	0	1	1	03	-	-	-	-	FC	LFE	FR	FL				
0	0	0	0	0	1	0	0	04	-	-	-	RC	-	-	FR	FL				
0	0	0	0	0	1	0	1	05	-	-	-	RC	-	LFE	FR	FL				
0	0	0	0	0	1	1	0	06	-	-	-	RC	FC	-	FR	FL				
0	0	0	0	0	1	1	1	07	-	-	-	RC	FC	LFE	FR	FL				
0	0	0	0	1	0	0	0	08	-	-	RR	RL	-	-	FR	FL				
0	0	0	0	1	0	0	1	09	-	-	RR	RL	-	LFE	FR	FL				
0	0	0	0	1	0	1	0	0A	-	-	RR	RL	FC	-	FR	FL				
0	0	0	0	1	0	1	1	0B	-	-	RR	RL	FC	LFE	FR	FL				
0	0	0	0	1	1	0	0	0C	-	RC	RR	RL	-	-	FR	FL				
0	0	0	0	1	1	0	1	0D	-	RC	RR	RL	-	LFE	FR	FL				
0	0	0	0	1	1	1	0	0E	-	RC	RR	RL	FC	-	FR	FL				
0	0	0	0	1	1	1	1	0F	-	RC	RR	RL	FC	LFE	FR	FL				
0	0	0	1	0	0	0	0	10	RRC	RLC	RR	RL	-	-	FR	FL				
0	0	0	1	0	0	0	1	11	RRC	RLC	RR	RL	-	LFE	FR	FL				
0	0	0	1	0	0	1	0	12	RRC	RLC	RR	RL	FC	-	FR	FL				
0	0	0	1	0	0	1	1	13	RRC	RLC	RR	RL	FC	LFE	FR	FL				
0	0	0	1	0	1	0	0	14	FRC	FLC	-	-	-	-	FR	FL				
0	0	0	1	0	1	0	1	15	FRC	FLC	-	-	-	LFE	FR	FL				
0	0	0	1	0	1	1	0	16	FRC	FLC	-	-	FC	-	FR	FL				
0	0	0	1	0	1	1	1	17	FRC	FLC	-	-	FC	LFE	FR	FL				
0	0	0	1	1	0	0	0	18	FRC	FLC	-	RC	-	-	FR	FL				
0	0	0	1	1	0	0	1	19	FRC	FLC	-	RC	-	LFE	FR	FL				
0	0	0	1	1	0	1	0	1A	FRC	FLC	-	RC	FC	-	FR	FL				
0	0	0	1	1	0	1	1	1B	FRC	FLC	-	RC	FC	LFE	FR	FL				
0	0	0	1	1	1	0	0	1C	FRC	FLC	RR	RL	-	-	FR	FL				
0	0	0	1	1	1	0	1	1D	FRC	FLC	RR	RL	-	LFE	FR	FL				
0	0	0	1	1	1	1	0	1E	FRC	FLC	RR	RL	FC	-	FR	FL				
0	0	0	1	1	1	1	1	1F	FRC	FLC	RR	RL	FC	LFE	FR	FL				
0	0	1	0	0	0	0	0	20	Reserved											
1	1	1	1	1	1	1	1	FF												

Table 20 Audio InfoFrame Data Byte 4

Additional Settings



SDI02E-12G provides a DIP switch on the bottom, allowing users to switch between 4K/1080p output resolutions, RGB/YUV 4:4:4 color spaces and audio channels.

SW1 - Output Resolution			SW2 - Color Space	
SWITCH	Function/Settings		SWITCH	Function/Settings
Diagram			Diagram	
Function	4K (Default)	1080p	Function	Force YUV 4:2:2 (Default)
SW3 - Audio Channel			SW4 - Reserved	
SWITCH	Function/Settings		SWITCH	Function/Settings
Diagram			Diagram	

Function	8-channel (Default)	2-channel	Function	Reserved
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Technical Specification

Model	SDI02E-12G
Compliance	
Standard ³	SMPTE ST 2082/2081/424/292 HDMI® 2.0
Max. Video Resolution	4096 x 2160p 60Hz
Dynamic Range Standard ⁴	SDR, HDR
Audio Format ⁵	PCM 2CH、5.1CH、7.1CH Dolby Digital (AC-3)
Ports & Interfaces	
Input	1 x HDMI® Type A
Output	2 x (12G/6G/3G/HD)-SDI
Power	
Power Supply	DC 5V 2A
Power Consumption	5W
Power Saving	2W
Ambient Temperature	
Operation	0 to 55°C
Storage	-40 to 85°C
Operating Altitude (Max.)	2000m
Humidity	Up to 95%
Physical Characteristics	
Dimension	93 x 51 x 32mm

³ 3G Level B and SD formats are not supported.

⁴ Dynamic range metadata in the input stream is pass-through and fully maintained.

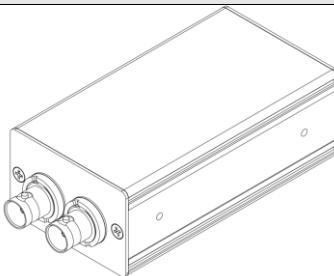
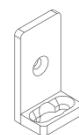
⁵ Audio data in the input stream is pass-through and fully maintained.

Weigh	158g
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Caution

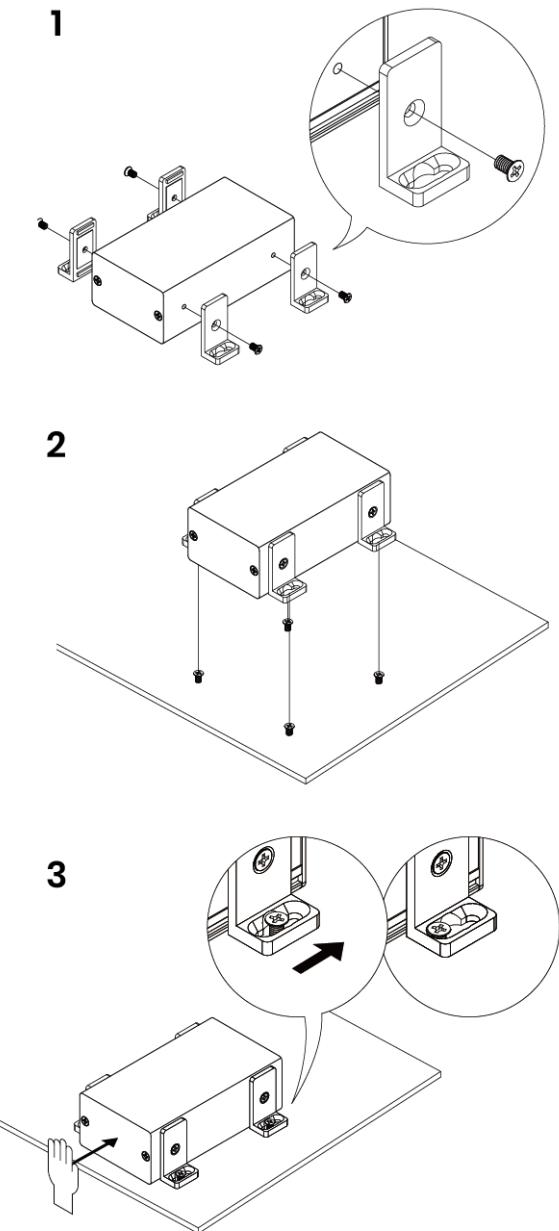
1. This product is designed for indoor applications. If outdoor use is necessary, please additionally install a waterproof protective case and surge protector to prevent damage caused by lightning.
2. Do not place any objects on the power or transmission cables, and avoid stepping on all connection cables.
3. Do not place this product in damp or high-temperature environments. Avoid nearing water or high-temperature devices such as radiators, stoves, etc.
4. Immediately turn off the power and disconnect all connected devices when the following events occur:
 - A. When water or other liquids penetrate the product.
 - B. When the product is damaged due to external force.
 - C. When the product cannot be used normally as described in the manual.
5. If any of the above events occur, please contact us for assistance.
6. It is recommended to use certified Premium HDMI® cables for high-resolution video transmission.
7. It is recommended to use certified coaxial cables for high-resolution video transmission.
8. This converter does not support SD-SDI and 3G-SDI level B.
9. Interlace timing is not supported.

Package Includes

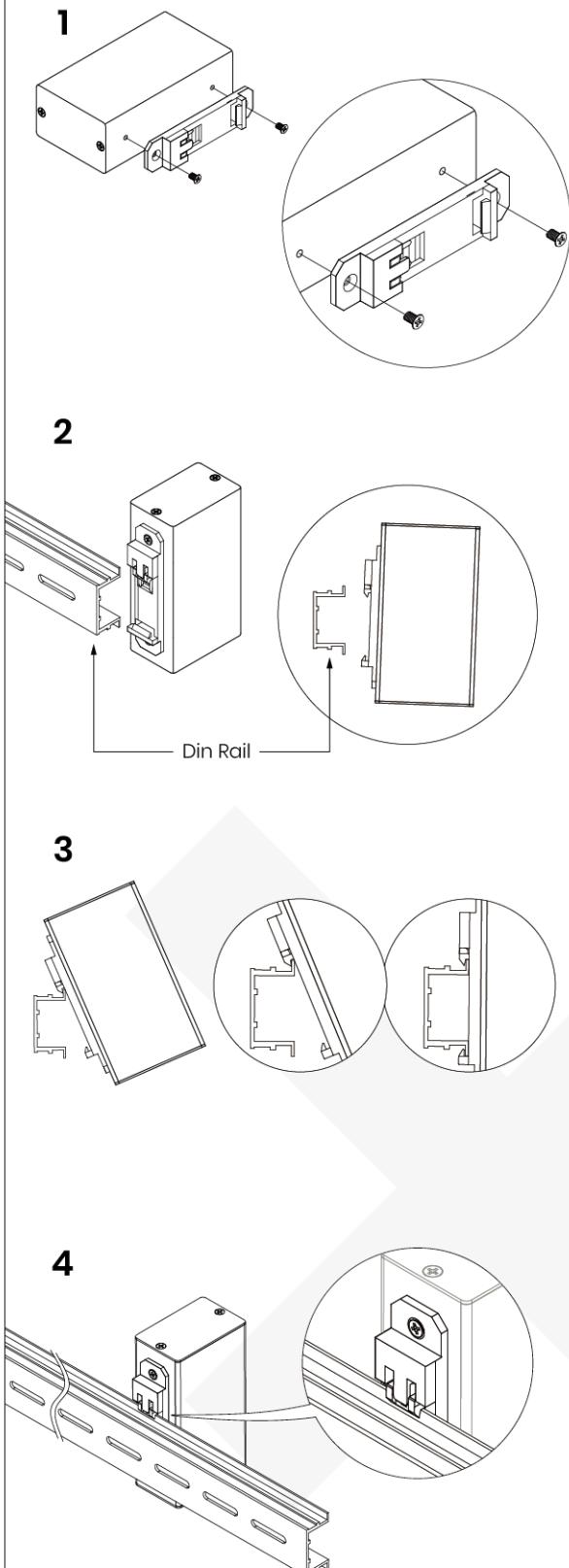
Item	Amount	Image
SDI02E-12G	1 pc	 The unit has a width of 51mm and accommodates six units within a standard 19-inch rack
DC 5V 2A Power Adapter	1 pcs	
Mounting Screw pack	1 bag	 4 pcs (bag)  4 pcs (bag)  4 pcs (bag)  4 pcs (bag)  1 pcs (bag)

Installation

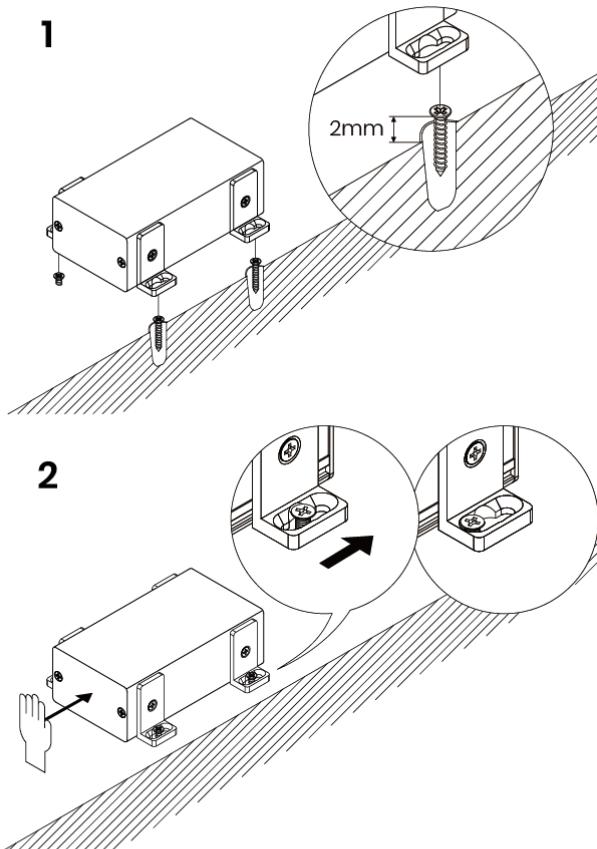
Installed on a Platform



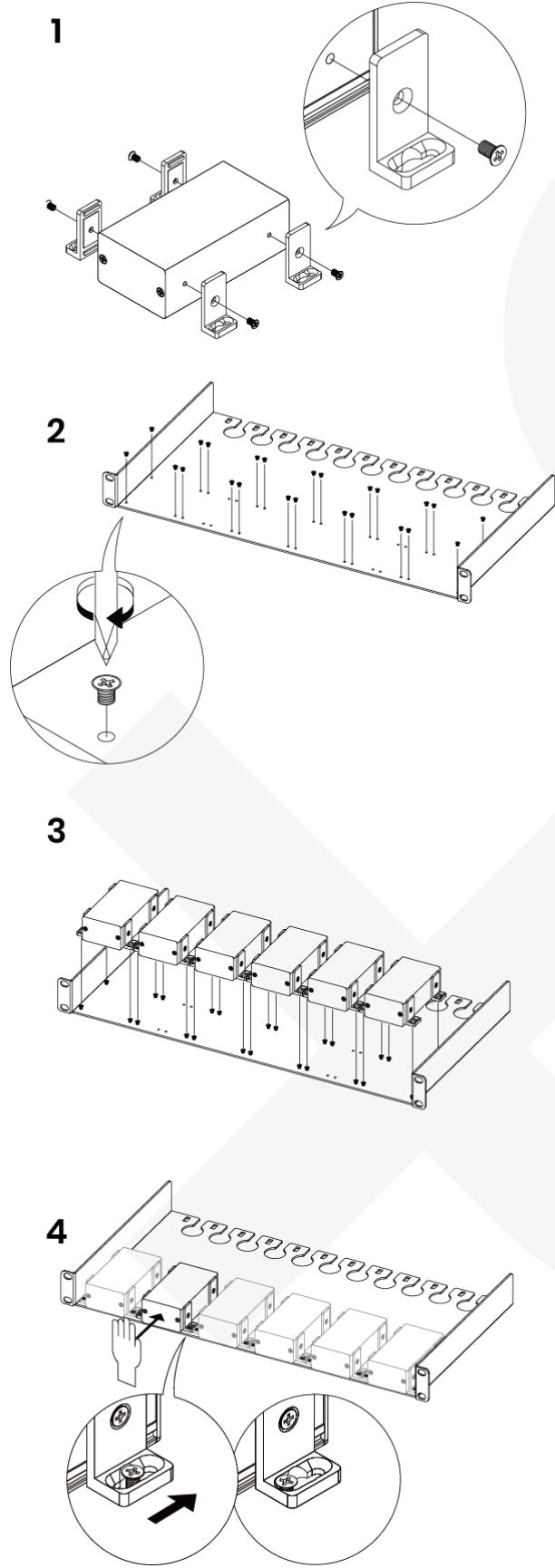
Installed on a DIN-rail



Installed on Wall



Installed on a Rack



RoHS CE