BOLIN

EDGE Series
Dante AV-H Decoder

Dante AV-H™

EDGE Series Dante AV-H™ Network Video Decoder

"*Dante AV-H is a software solution for SoC-based video products that brings the power and interoperability of Dante to H.26x video endpoints. Dante AV-H is less complicated and more flexible to install than point-to-point solutions and with low bandwidth it's the ideal AV solution for today's networks.*" (Audinate.com)
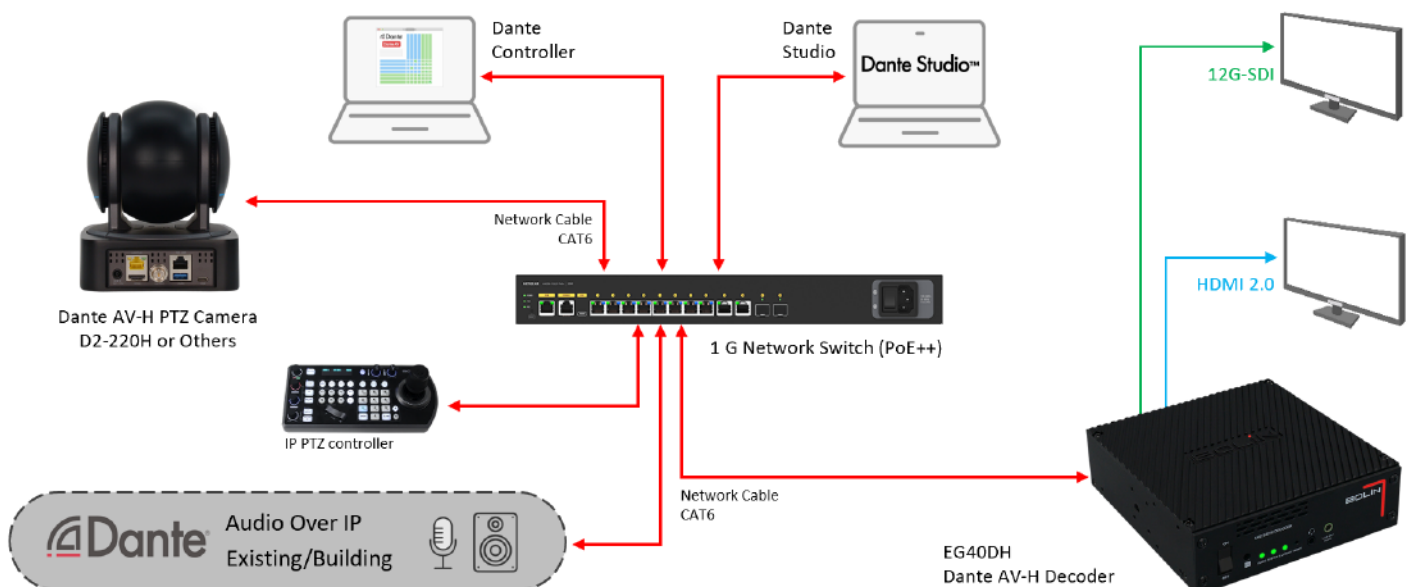
Bolin **EG40DH** is a powerful FPGA engineered IP decoder capable of receiving a single Dante AV-H video flow over a standard 1GB network and outputting up to 4K60 with embedded Dante audio through HDMI 2.0 and 12G-SDI. It is compatible with all Dante AV-H cameras and Dante audio devices. In addition, the EG40DH can decode RTSP IP streams via HEVC, and FAST HEVC, making it compatible with Bolin's FAST HEVC cameras and decoders.

Dante AV-H uses the industry standard H.264/H.265 codecs, offering excellent image quality and low bandwidth across the network. Dante AV-H video and audio routing and configuration are managed with the familiar, reliable, easy-to-use Dante Controller software. The EG40DH can also take advantage of Dante Domain Manager's robust management and user access control. Dante AV-H flows can co-exist with Dante AV Ultra flows on the same network, providing excellent video quality with lower bandwidth.

The **EG40DH** is a powerful, reliable option for decoding video flows from Dante AV-H PTZ cameras or PCs running Dante Studio software for output to monitors or Vision Mixers to swap between multiple sources.
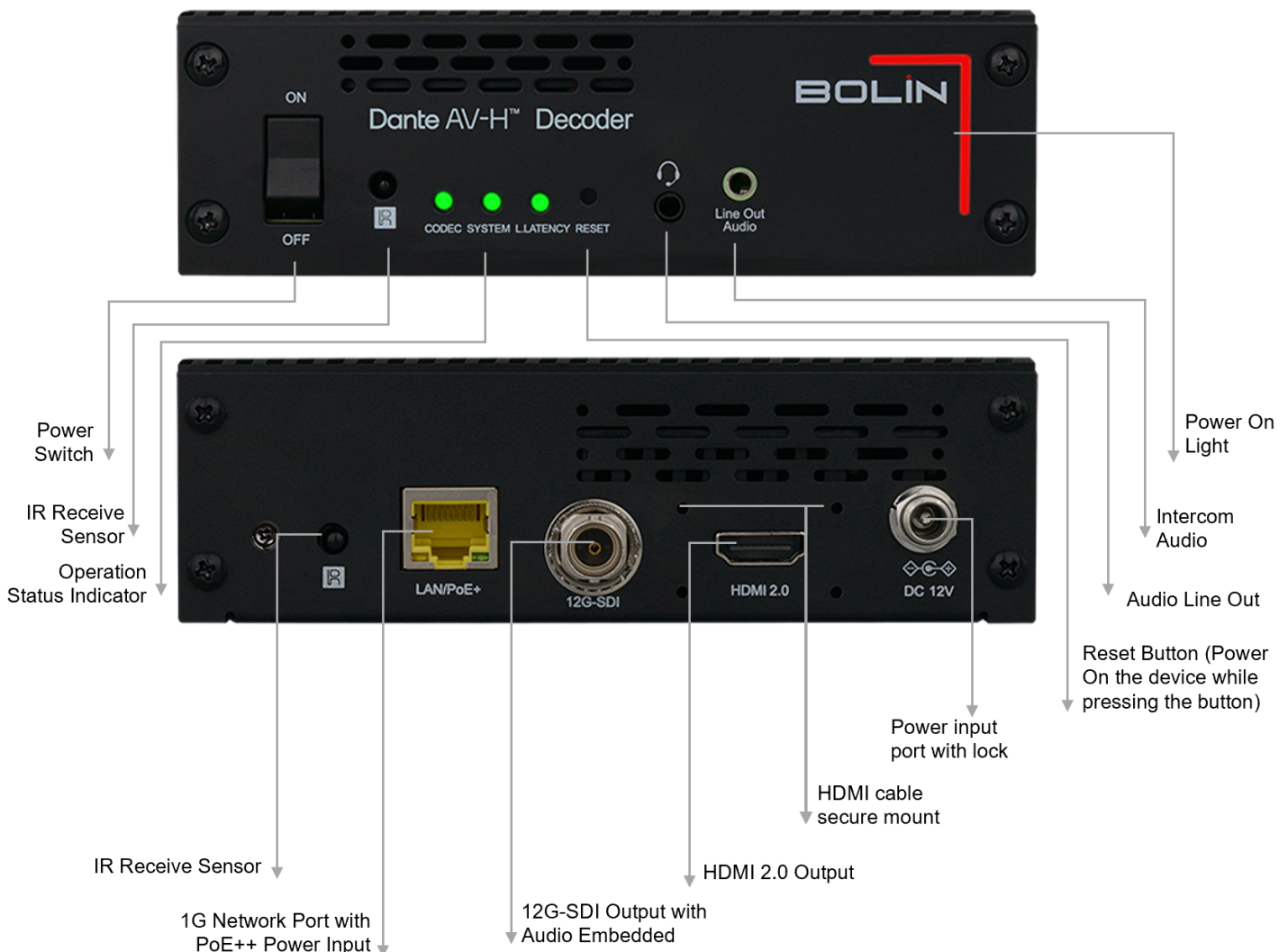
Bolin Dante AV-H Decoder Workflow

Dante Ecosystem Friendly

• Full compatibility with all existing and future Dante-enabled products.

• Discovery, routing, and management with the familiar and reliable Dante Controller software and Dante Studio and Dante Viewer.

• Compatible with Dante Domain Manager

• Operates on a standard 1GB network infrastructure.

• Can Co-exist with Dante AV Ultra flows on the same network (Dante AV-H devices can only be subscribed to other Dante AV-H devices.)

• Perfect for Houses of Worship, Video Conferencing, Education, Live Performance, Hospitality, Green Rooms, and any situation where excellent quality, low bandwidth, and Dante compatibility are required.

OUTPUT

Power Switch

IR Receive Sensor

Operation Status Indicator

IR Receive Sensor

1G Network Port with PoE++ Power Input

12G-SDI Output with Audio Embedded

HDMI 2.0 Output

HDMI cable secure mount

Power input port with lock

Power On Light

Intercom Audio

Audio Line Out

Reset Button (Power On the device while pressing the button)

OVERVIEW

- ▪ Up to 4K60 video over standard Gigabit Ethernet
- • 2 channels of Dante audio embedded with video
- • Low latency, low bandwidth video performance
- • HDMI 2.0 and 12G-SDI output
- • Video upscalable max from 720P up to 4K60 (UHD)
- • Discoverability, routing, and management with Dante Controller software
- • Supports unicast and multicast for video and audio flows with separately routable audio and video streams.
- • Seamless integration with existing Dante audio or Dante AV networks

KEY FEATURES

High Quality, Low Bandwidth Video Output
The EG40DH outputs up to 4K60 video with low latency and very low bandwidth (±50 Mb) across the Dante AV network, giving customers additional flexibility and network management options.

Dante AV-H™ and Dante Audio Compatible
Full compatibility with all Dante AV-H cameras and encoders and all Dante-enabled Mixers, audio devices, and encoders, with support for up to eight channels of audio essences embedded in the video output.

HDMI and SDI Output
Support for simultaneous HDMI 2.0 and 12G-SDI outputs to monitors or Vision Mixers.

IP Decode Support
FPGA decoding support for RTSP, SRT, MPEGTS IP streams, HEVC, and FAST HEVC, making it compatible with Boliln's FAST HEVC cameras, decoders, and all standard HEVC streams.

Production Audio Support
TRRS Audio intercom on the front provides support for live production intercom.

Full Dante Controller Support
Device discovery, management, routing, monitoring, and firmware upgrades are enabled through the familiar and reliable Dante Controller software, providing a simple, plug-and-play experience.

Video Upscalable
Upscales lower resolution HDMI and SDI video to maximum from 720P up to 4K60 (UHD) output. Downscaling is available.

Flexible Power Options
Support for POE+ power over the network and 12VDC power input (supplied).

Convenient Mounting Options
The small, 1/3RU form factor offers a variety of horizontal and vertical mounting options, including rack mount, DIN rail, panel and wall mounts, VESA mounts, and tripod support.

Video Format and Standard

Full Format
3840 x 2160P 60/59.94/50/30/29.97/25/24/23.98
1920 x 1080P 60/59.94/50/30/29.97/25/24/23.98
1920 x 1080i 60/59.94/50
1280 x 720P 60/59.94/50

Upscalable
Max From 720P Up to 4KP60

SDI Standard
SMPTE 292(1.5Gb/s)
SMPTE 424
SMPTE 425-A(3Gb/s)
SMPTE 2081(6Gb/s)
SMPTE 2082-0/1(12Gb/s) with SMPTE 352 SDI Metadata
.

Dante AV-H™ / FAST HEVC / HEVC

EG40DH Dante AV-H decoder Decodes

- **Dante AV-H** - when used within Dante AV-H environment
- **HEVC** - when used with any SoC HEVC IP cameras
- **FAST HEVC** - when used with Bolin's FAST HEVC cameras to gain ultra low latency

FPGA Based FAST HEVC Platform

Instead of an SoC, the EG40DH utilizes Bolin's FPGA-based FAST HEVC platform to provide a higher level of performance:

- **Dual output** 12G-SDI and HDMI 2.0 video with independent resolution setup

- **Upscaling** from low resolution up to UHD (4K60) video output, in addition to decoding 4K60 IP streaming

- **Ultra Low latency** when used with Bolin's FAST HEVC camera

SPECIFICATIONS

Model No.	EG40DH
Decoder (Video Output)	HDMI & SDI

Codec		
Encoder/Decoder		Decoder only
Video Codec		Dante AV-H, AVC-H.264 / HEVC-H.265
Codec Platform		Hardware FPGA-enhanced HEVC codec for FAST HEVC
Video Resolutions		3840 x 2160P @60/59.94/50/30/29.97/25/24/23.98 1920 x 1080P @60/59.94/50/30/29.97/25/24/23.98 1920 x 1080i @60/59.94/50 1280 x 720P @60/59.94/50
Color Space(HDMI)		4K60: RGB 8bit, YUV4:4:4 8bit, YUV4:2:2 12bit, 4K30 & below: RGB 8bit/10bit, YUV4:4:4 8bit/10bit, YUV4:2:2 12bit
Audio Formats		3.5mm Jack, analog audio, stereo (unbalanced); audio intercom, Line out - HDMI audio output
Video Streaming		1 stream
Latency (Results may vary depending on network configuration and management settings)		<4 frame (<70 ms between encoder and decoder)
Bandwidth (Results may vary depending on network configuration and management settings)		4K60 4:2:2/12bit; 20-60Mbps
		1080p60 4:2:2/12bit; 10-35Mbps
Ecosystem Friendly		Dante AV-H, Instant Dante Ecosystem compatibility with existing Dante AV-H enabled products; Unified control of audio and video using Dante tools - Dante Controller
		Video codec is compatible with standard AVC/HEVC, H.264/265 or Dante AV-H to output video without having ultra low latency; Pair with Bolin's Fast HEVC camera or encoder to decode output extremely low latency video.

Video		
Video	Highest Resolution	Up to 4K (3840x2160)
	Highest Frame Rate	Up to 60
IP IN	Video Codec	Dante AV-H,AVC-H.264 / HEVC-H.265
	Video Format	3840 x 2160P @60/59.94/50/30/29.97/25/24/23.98 1920 x 1080P @120/60/59.94/50/30/29.97/25/24/23.98 1280 x 720P @60/59.94/50
	Frame Rates (Hz)	23.98, 24, 25, 30, 29.97, 50, 59.94, 60
	Application Protocols	Dante AV-H,RTP, RTSP. MP2TS over UDP, TS over RTP, TS over SRT, HTTP, IGMP v1/v2, DHCP, SSH, 802.1X Authentication
	Multi-stream	1 stream
HDMI OUT	Format	HDMI 2.0
	Supported Resolutions	3840 x 2160P 60/59.94/50/30/29.97/25/24/23.98 1920 x 1080P 120/60/59.94/50/30/29.97/25/24/23.98 1920 x 1080i 60/59.94/50 1280 x 720P 60/59.94/50
	Upscalling	Yes, upscale from 720P up to FHD, and from FHD to 4K60 resolution
	Frame Rates (Hz)	23.98, 24, 25, 29.97, 30, 50, 59.94, 60
	Color Space	4K60: RGB 8bit, YUV444 8bit, YUV422 12bit, 4K30 & below: RGB 8bit/10bit, YUV444 8bit/10bit, YUV422 12bit
SDI OUT	Format	12G-SDI
	Supported Resolutions	3840 x 2160P @60/59.94/50/30/29.97/25/24/23.98 1920 x 1080P @60/59.94/50/30/29.97/25/24/23.98 1920 x 1080i @60/59.94/50 1280 x 720P @60/59.94/50
	Upscalling	Yes, upscale from 720P up to FHD, and from FHD to 4K60 resolution
	Frame Rates (Hz)	23.98, 24, 25, 29.97, 30, 50, 59.97, 60
	Color Space	YUV422 10bit
	Standard	SMPTE 292(1.5Gb/s), SMPTE 424, SMPTE 425-A(3Gb/s), SMPTE 2081, SMPTE 2082-0/1 With SMPTE352 SDI Metadata Supported

Audio		
Audio Transport Formats	Audio Compression	AAC-LC,MPEG-2
	Audio S/N Ratio	≥85dB
	Audio THD+N	≤0.05%
	Audio Noise (RMS)	≤-90dB
	Bit Depths	AAC-LC, MPEG-2 (sampling rate: 48KHz/44.1KHz, 24bit, 64-256Kbps selectable)
Intercom	MIC / Headset	Reserved
Output Signal Types	Embedded Audio over HDMI	Stereo 2-channel, Dante AV-H (Audio Flow x 4 Flows / 2 Channels per Flow)
	Embedded Audio over SDI	Stereo 2-channel
	Format	PCM
	Line-out	3.5mm Jack, analog Line-out

SPECIFICATIONS

Communication/Connector		
Ethernet	Ethernet General	Standard 1Gbps Ethernet
		Auto-switching, auto-negotiating, auto discovery, full/half duplex
	Ethernet with PoE	IEEE 802.3at compliant 1000BASE-T Ethernet port
		IEEE 802.3at Type 3 compliant, PoE+ Class 4
HDMI OUTPUT (Decoder only)		HDMI 2.0 Type A connector, female; HDMI digital video/audio output
SDI OUTPUT	BNC	75Ω
PTZ Camera IR Receiver		Front and Back, bidirectional
LED Indicator	Power	Yes, board powered and active (Bolin Logo corner)
	Codec	Yes, video codec active
	Low latency	Yes, light up for low latency mode
	System	Yes, system status
Control	Interface	–
	Protocol	Bolin Restful API
System Firmware Upgrade		Upgrade via IP web interface or Dante Controller for Dante AV-H
Reset		Yes, long press for 5 seconds to reset
Power	Power Input	12V DC, 2A
	Power Button	Yes
	Connector Type	5.5mm×2.1mm Male DC Power Plug Connector & Screw Lock Female Panel Socket Mount Adapter
Interface		HDMIx1, SDIx1, 12V DC power portx1, Power switchx1, Reset buttonx1, RJ45x1 (LAN/PoE+), Infrared Receiverx2 (front & back), Line outx1, Intercom Mic inputx1, LED Indicatorx3
General		
Power	Power Consumption	18W
	PoE	PoE+, IEEE 802.3at Type 3 class 4 compliant
	Power Adaptor	12V DC, 2A
		12V DC IN has priority over Ethernet PoE. Ethernet PoE will become active a fraction of a second after 12V DC IN is disconnected.
Storage Temperature		-40° to 60° C (-40°F to 140°F)
Operating Temperature		0° to 50° C (32°F to 122°F)
Humidity		10% to 90% (non-condensing)
Heat Dissipation		Cooling fan, 3 Level - Automatically adjust the fan speed according to the temperature
Acoustic Noise		NC35 or less, variable with cooling fan speed adjustment
Dimension		142*150*44mm (LxDxH), 142*150*50.5mm(with feet mats)
Net Weight		1.05kg (2.31lb)
Enclosure		
Chassis		Metal, black finish, heat dissipation surface, fan cooled; vented front and rear
Mounting	Included	HDMI cable secure mount, Base mount
	Optional	19" Single-rack mount, 19" Tri-rack mount, Din rail mount, Surface mount
Size of Screw Hole for Tripod		1/4"
What's Included		Decoderx1, Power Adapter x1 & Power Cord x3 (US, EU, UK),Thank You Card x1

ODER INFORMATION

• EG40DH（HDMI 2.0+12G-SDI） Decoder

Included: • B-BM10 (Base Mount)
• B-SM10 (Surface Mount)

Optional

• B-RM20 (Single-Rack Mount)
• B-RM22 (Dual-Rack Mount)
• B-RM23 (Tri-Rack Mount)
• B-DR10 (Din Rail Mount)

INSTALLATION MOUNT

- Rack Mount
- Base Mount
- Surface Mount
- Pole Mount
- Din Rail Mount
- Tripod Mount

ACCESSORY

Items marked * are optional to purchase

* VCC-RC-2
IR Remote Controller

VCC-P12-2
12VDC 2A Power Adapter

B-BM10
Base Mount Kit

* B-RM23
Tri Rack Mount Kit

* B-RM22
Dual Rack Mount Kit

* B-RM20
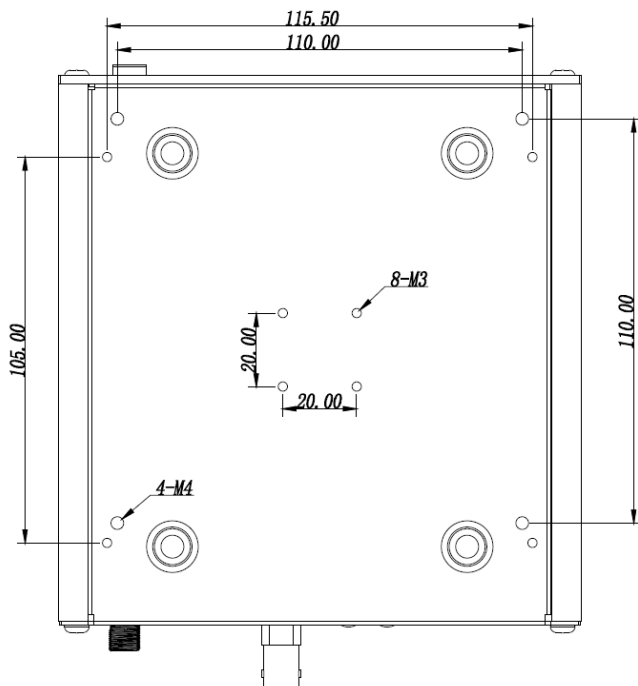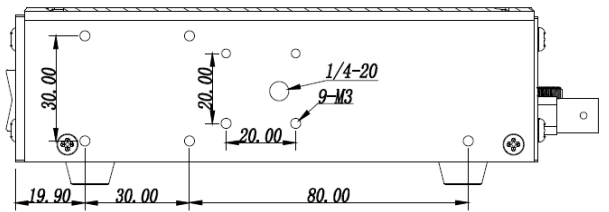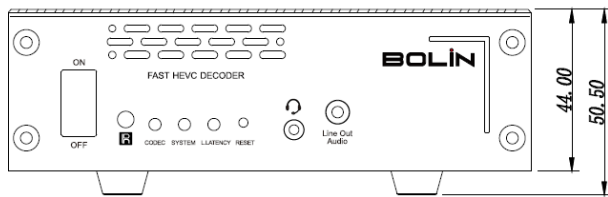Single Rack Mount Kit

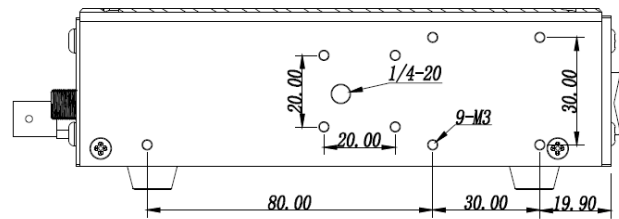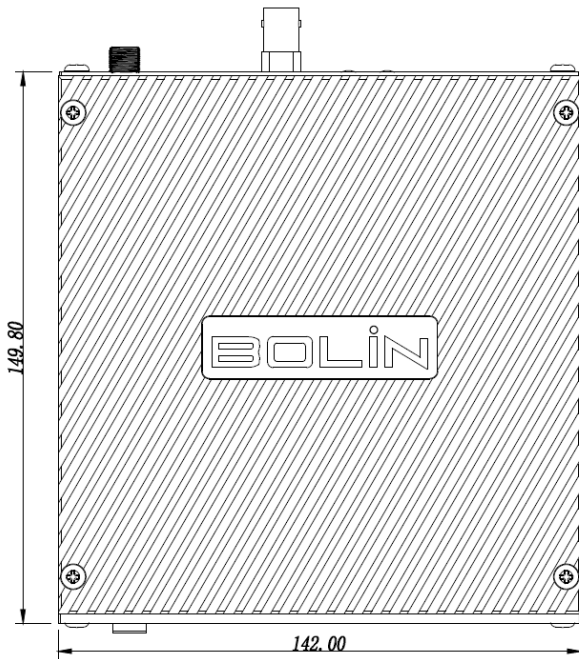* B-DR10
Din Rail Mount Kit

B-SM10
Surface Mount Kit

* BL-PP97
97W POE POWER INJECTOR

DIMENSIONS

Unit: mm

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