

* ZED Box Mini

Orin™ Nano 4GB

Orin™ Nano 8GB

Orin™ NX 8GB

Orin™ NX 16GB

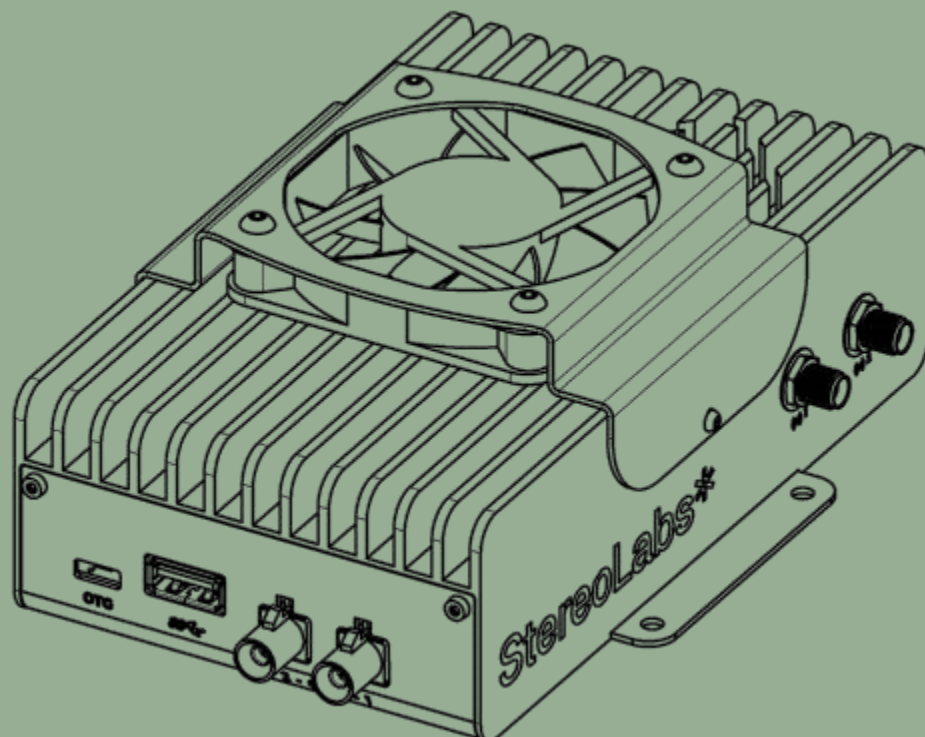
Embedded Computer Overview

The ZED Box Mini is a compact, high-performance embedded computing system built on NVIDIA Jetson Orin™ modules.

Engineered specifically for AI-driven vision-based applications, the ZED Box Mini provides essential I/O interfaces, including support for GMSL2 connectivity.

Its design prioritizes scalability and affordability, making it the ideal solution for large-scale deployments of AI-powered robotics and vision-based systems.

Whether you're developing autonomous robots, smart cameras, or edge AI systems, the ZED Box Mini offers the performance and flexibility needed to bring your projects to life.



*ZED Box Mini Overview



optimized for GM SL2camera-based applications
The ZED Box Mini supports seamless connectivity for up to two ZED X cameras via GMSL2, monocular and stereo cameras. Designed to maximize the potential of the ZED camera series, the ZED Box Mini is compatible with all current Stereolabs camera models with drivers available for various configurations, delivering unmatched integration.

compact and cost-effective
The ZED Box Mini combines a compact design with cost-effectiveness, making it ideal for deploying AI-powered systems at scale. Its small form factor ensures easy integration into space-constrained environments, while its affordability enables large deployments without compromising performance.

Designed for Advanced AI computing
Whether you're developing autonomous robots, smart cameras, or edge AI systems, the ZED Box Mini offers the performance and flexibility needed to bring your AI applications to life.
The ZED Box Mini natively supports the ZED SDK, delivering unmatched performance for vision-based AI applications.

Ready-to-use out of the box
The ZED Box Mini comes set up with all the necessary components for development, such as the latest NVIDIA JetPack, and features an integrated mounting plate, making it very easy to attach to any support.
Options include Wifi and various NVIDIA Jetson Orin™ modules.

ZED BOX Mini | Available Models

Model	ZED BOX Mini Nano 4GB	ZED BOX Mini Nano 8GB	ZED BOX Mini NX8GB	ZED BOX Mini NX 16GB
AI Module	Jet son ori nM Nano 4GB	Jet son ori nM Nano 8GB	Jets on orinM NX 8GB	Jets on orinM NX16GB
AI performance	20TOPS	40TOPS	70TOPS	100 TOPS
Ideal camera configurations	1x ZED X GS or 2x ZED X One GS	2x ZED X GS / ZED X One GS	2x ZED X GS / ZED X One GS	2x ZED X GS / ZED X One GS
Compute capabilities	Medium computer vision applications for single stereo camera setups	Medium computer vision applications for dual stereo camera setups	Advanced computer vision applications for dual stereo camera setups	Cutting-Edge computer vision applications for dual stereo camera setups
performance *	Single Stereo Camera Depth @30fps with 80% GPU load	Single Stereo Camera Depth @30fps with 36% GPU load	Single Stereo Camera Depth @30fps with 28% GPU load	Single Stereo Camera Depth @30fps with 23% GPU load
		Dual Stereo Camera Depth @30fps with 64% GPU load	Dual Stereo Camera Depth @30fps with 55% GPU load	Dual Stereo Camera Depth @30fps with 47% GPU load

* ZED X GS cameras with ZED SDK5.0 NEURAL LIGHT Model with Jetson™ in a non-MAXN SUPER mode with 1920x1200 image resolution

*ZED Box Mini

Technical Specifications

Model	ZED Box Mini Nano 4GB	ZED Box Mini Nano 8GB	ZED Box Mini NX 8GB	ZED Box Mini NX 16GB
Reference	ZBX-420010 (No WiFi) ZBX-420110 (With WiFi)	ZBX-430010 (No WiFi) ZBX-430110 (With WiFi)	ZBX-440010 (No WiFi) ZBX-440110 (With WiFi)	ZBX-450010 (No WiFi) ZBX-450110 (With WiFi)
AI Module	Jet son ori nM Nano 4GB	Jet son ori nw Nano 8GB	Jets on orinM NX 8GB	Jets on orinM NX16GB
AI performance	20TOPS	40TOPS	70TOPS	100 TOPS
Power	10W 1 25W	15W 1 25W	10WW 115W 120W 140W	10W 115W 125W 140W
video Encode	Not yet supported	Not yet supported.	1x 4K @ 60 (H.265) 3x 4K @ 30 (H.265) 6x 1080p @ 60 (H.265) 12x 1080p @ 30 (H.265)	1x 4K @ 60 (H.265) 3x 4K @ 30 (H.265) 6x 1080p @ 60 (H.265) 12x 1080p @ 30 (H.265)
video Decode	1x 4K @ 60 (H.265) 2x 4K @ 30 (H.265) 5x 1080p @ 60 (H.265) 11x 1080p @ 30 (H.265)	1x 4K @ 60 (H.265) 2x 4K @ 30 (H.265) 5x 1080p @ 60 (H.265) 11x 1080p @ 30 (H.265)	1x 8K @ 30 (H.265) 2x 4K @ 60 (H.265) 4x 4K @ 30 (H.265) 9x 1080p @ 60 (H.265) 18x 1080p @ 30 (H.265)	1x 8K @ 30 (H.265) 2x 4K @ 60 (H.265) 4x 4K @ 30 (H.265) 9x 1080p @ 60 (H.265) 18x 1080p @ 30 (H.265)
Display	1X HDMI 1.4	1X HDMI 1.4	1X HDMI2.1	1X HDMI2.1

Interface s and storage

cameras Inputs	2x GMSL2 FAKRA-Z 1x USB3.0 Type-A
Ethernet	1x10/100/1000 Base-T Ethernet RJ45
Debug	1X Micro usb2.0Type-B for system fa shing &OTG
camera sync.	1x GMSL2 Camera Sync. Trigger Input 1x GMSL2 Camera Sync. Trigger Output
Fan	1x12V Fan Entry
Misc. connector	1x10 pins Header connector including : 1X CAN PHY, 1X U ART,2X GPI OS,1x5v, 1x3.3v,2XG ND
storage	NV Mess D256GB mounted on M.2 key-M2242 socket
wifi (optional)	wi Fi6 with1X Intel AX210Module mounted on M.2key-E2230socket and 2x 2.4/5GHz wiFi antennas

power

power Input	DC 10.5v to 13.5V- 60W max
power Interface	screw able Terminal block connector TB PO1p1w-508-02GR

Mechanical

weight	600g (1.32lbs)
Dimensions	152.8x103.8x41.5 mm (6.02x4.09x1.63") LXW XH
case	Black Ano diz ed Aluminum Heat sink. white powder-coated Bent steel for the lower part of the product.
operating Temp.	-20°C to+50°C(-42F to 1222F). storage from -40°C to +85c(-40F to185F).
Humidity	10% to90% (Non-condensing)
certifications	CE & FCC

*ZED Box Mini I/O Interfaces



Micro USB2.0
Type-B USB3.0
Type-A GMSL2 FAKRA-Z
Connectors



GPIO
Connector 12V Fan
Connector HDMI
Type-A GMSL2
SYNC-IN GMSL2
SYNC-OUT



Gigabit
Ethernet Port Reset
Button Power
LED Recovery
Mode Button power Input



WiFi Female SMA
Connectors *

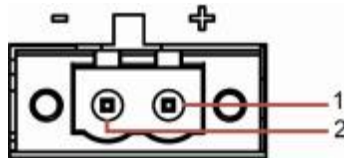
*wi Fi Module is included with compatible versions

*ZED Box Mini Pinout Table

power Input connector

The ZED Box Mini series supports a nominal voltage of 12V (+/- 1.5V) via its dedicated Terminal Block connector.

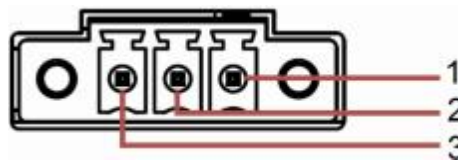
pin out	
pin Number	Description
1	DC IN 12V
2	GND



SYNC - IN connector

The synchronization-input connector is used as a frame-sync trigger input in order to synchronize image acquisition on multiple GMSL2 cameras connected to different ZED Box Mini. The connector is a Same Sky 3-pin Terminal Block, that mates with TBP02P1W-381-03BE.

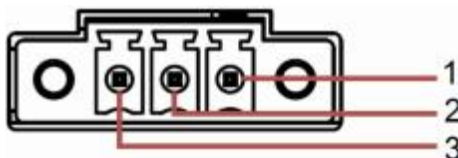
pin out	
pin Number	Description
1	TRIG_INFO
2	GND
3	TRIG_IN



SYNC - OUT connector

The synchronization-output connector is used as a frame-sync trigger input in order to synchronize image acquisition on multiple GMSL2 cameras connected to different ZED Box Mini. The connector is a Same Sky 3-pin Terminal Block, that mates with TBP02P1W-381-03BE.

pin out	
pin Number	Description
1	GND
2	GND
3	TRIG_OUT



FAN connector

The ZED Box Mini includes a dedicated 12V-compatible fan connector to support active cooling solutions.

pin out	
pin Number	Description
1	FAN_12V
2	GND

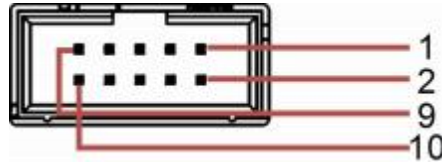


*ZED Box Mini Pinout Table

MISCELLANEOUS (GP IO)connector

The Miscellaneous connector, labeled GPIO on the ZED Box Mini, is mainly used for debug and testing purposes.

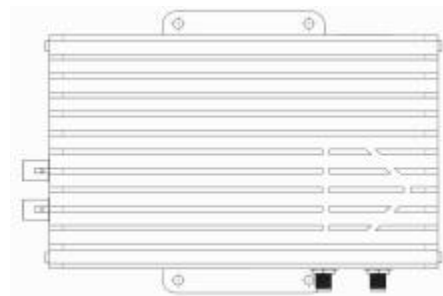
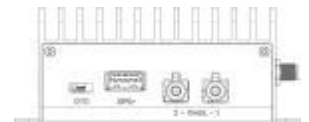
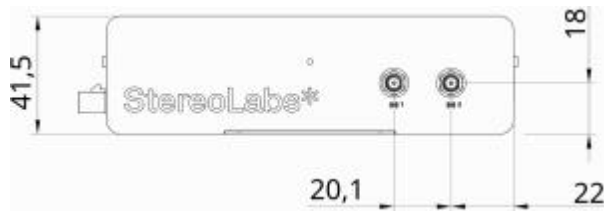
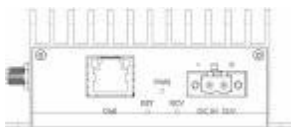
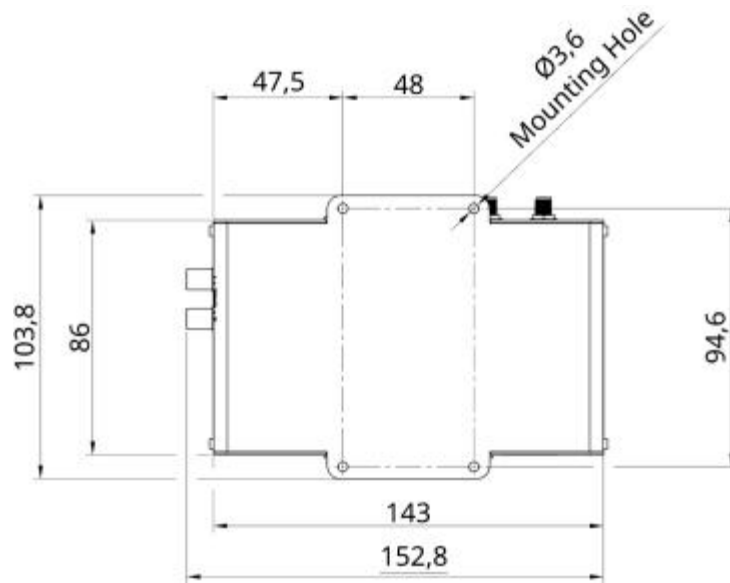
pin out	
pin Number	Description
1	VCC_5V
2	GND
3	GP IO_11
4	GP IO_12
5	CAN_R X
6	CAN_TX
7	VCC_3V3
8	GND
9	UART_R XD
10	UART_TX D



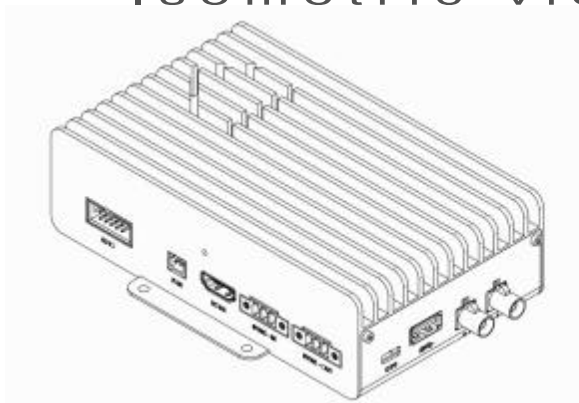
standard connectors

connector	Description	pin out
FAKRA-Z GM SL2	The two separated FAKRA-Z connectors each one for connected a GMSL2 camera through a single coaxial cable.	Please refer to the FAKRA-Z standards.
USB3.0Type-A	The USB3.0 Type-A connector supports up to 5Gbps data rate. It is compliant with the requirements of Super Speed (SS), High Speed (HS), Full Speed (FS) and Low Speed (LS).	Please refer to the USB3.0 Type-A standards.
Micro-USB2.0 Type-B (OTG)	The Micro USB2.0 Type-B connector can be used for OTG functions, or paired with the use of the Recovery button to flash a new Image on the device. In non-recovery mode, this connector provides a serial output that can be used to access the device through a serial console.	Please refer to the USB3.0 Type-A standards.
Ethernet(LAN)	The ZED Box Mini series comes with one Gigabit Ethernet LAN port supporting 10/100/1000 BASE-T with a RJ45 connector.	Please refer to RJ45 Ethernet standards for 10/100/1000 BASE-T.
HDM	The ZED Box Mini features an HDMI connector to display video with a maximum resolution of 3840x2160 @60Hz.	Please refer to the HDMI standards.

*ZED Box Mini Technical Drawings



Isometric view

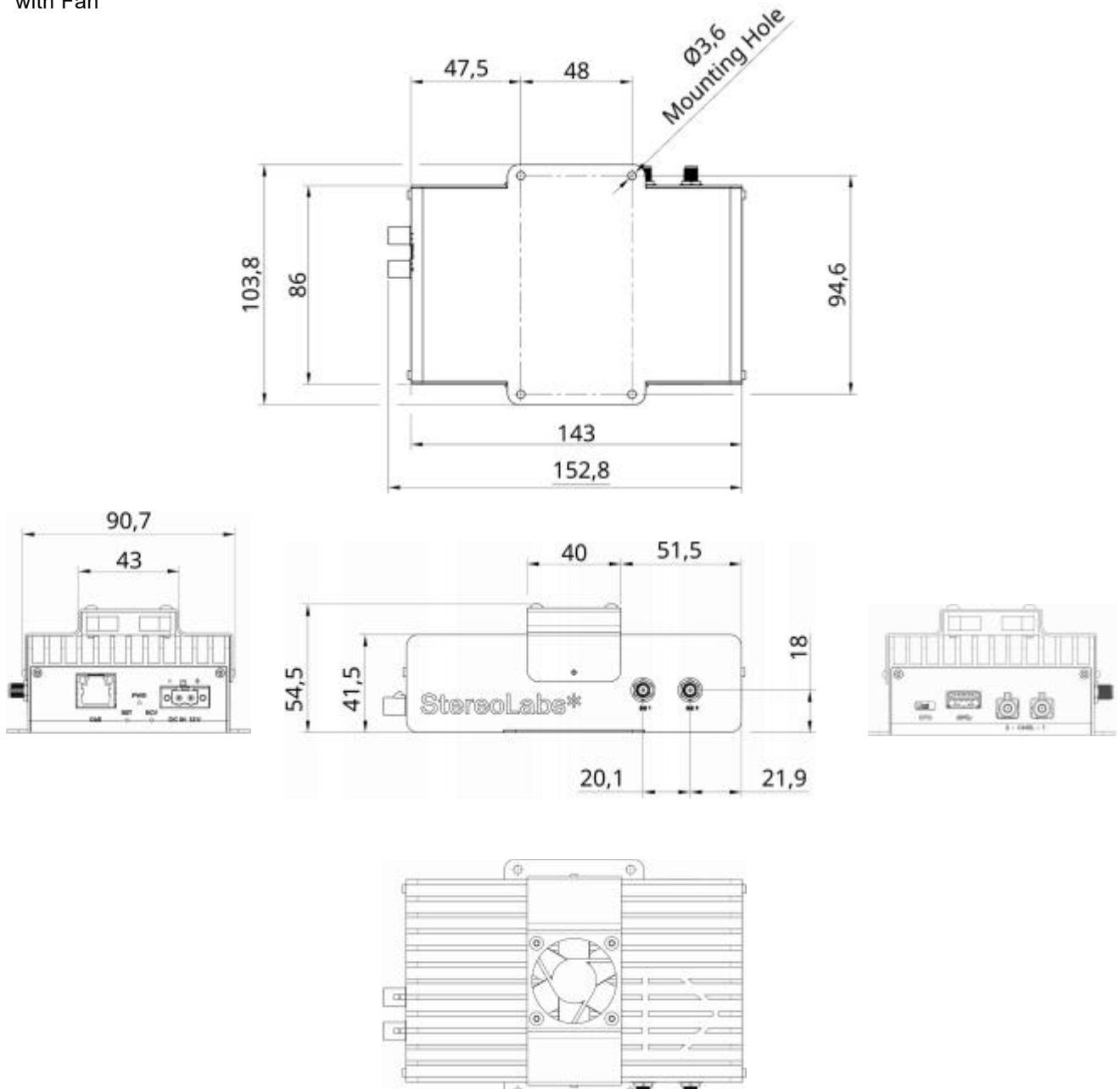


Rear view



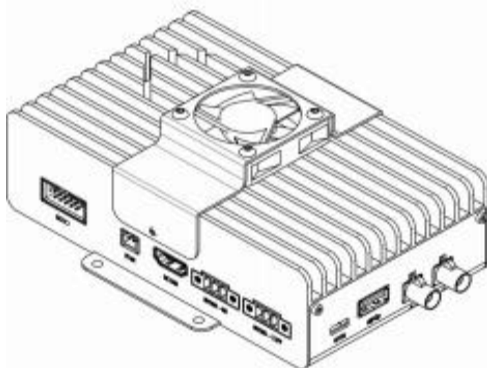
*ZED Box Mini Technical Drawings

with Fan



Isometric view

Rearview



*ZED Box Mini Technical Drawings

Fan Installation

