

# BOXER-8521AI

Compact fanless AI@Edge embedded box PC with Google Edge TPU ML accelerator

## Features

- Google Edge TPU ML accelerator
- NXP i.MX 8M SoC (Quad-Core)
- 1 GB LPDDR4x
- 1x GbE PoE/PD LAN port
- Operating temp.: -5 °C ~ 50 °C



## BOXER-8521AI – AI@Edge Embedded Platform

Winner of the 2021 Taiwan Excellence Award, the BOXER-8521AI combines installation flexibility with advanced connectivity features. It includes a PoE-PD port, allowing the system to be placed far from the power source while maintaining internet connectivity and remote monitoring through a single cable. Additionally, the system can operate with both the PoE-PD port and DC input, ensuring uninterrupted functionality even if one power source fails.

### AI Edge Computing with Google Edge TPU

The BOXER-8521AI is designed for AI edge computing, powered by the Google Edge TPU system-on-module (SoM). This module integrates the NXP i.MX 8M SoC (Quad Cortex-A53, Cortex-M4F) with the Google Edge TPU coprocessor, delivering up to 4 TOPS at a highly efficient 2 TOPS per watt. The system's robust chassis and versatile I/O workload make it ideal for demanding edge computing tasks.

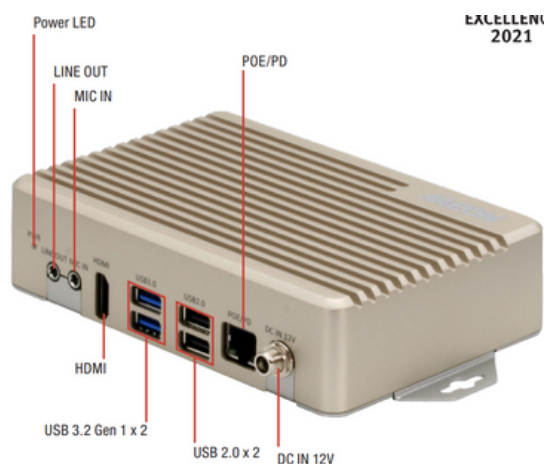
### Rapid Development of AI Models

With the Google Edge TPU, developers can utilize Google's AutoML Vision Edge software suite to quickly create and train AI models. This innovative tool leverages Google's cloud services for training, then exports the trained model to the BOXER-8521AI for on-device processing. TensorFlow Lite support ensures efficient AI model execution, improving system performance and processing speeds.

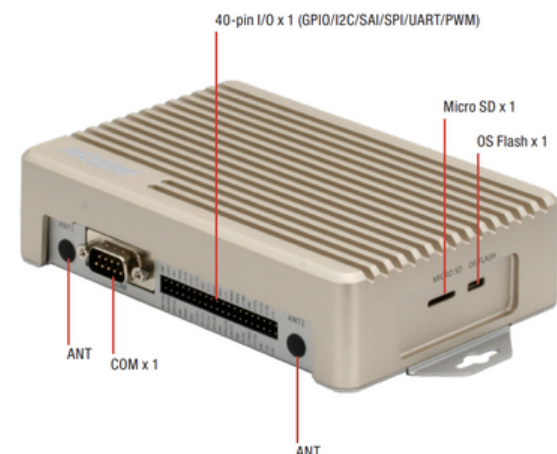
### Rugged and Reliable Design

Built with a durable, fanless design, the BOXER-8521AI protects against dust and contaminants, ensuring long-term reliability. It operates within a temperature range of -5°C to 50°C without performance loss. The system includes flexible I/O options such as COM, HDMI, two USB3.2 Gen 1, and two USB2.0 ports. Additionally, a 40-pin multi-I/O port allows integration with sensors and controllers, including cameras, temperature sensors, and other devices.

## Front View



## Rear View



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## Specifications

	BOXER-8521AI
<b>SYSTEM</b>	
CPU	NXP i.MX 8M SoC (Quad-Core Cortex-A53, plus Cortex-M4F)AI Accelerator: Google Edge TPU ML Accelerator Coprocessor
RAM	1 GB LPDDR4x
Storage	8GB eMMC
Operating System	OS Support: ACLinux 4.0 (compatible with Debian 10)
<b>INTERFACE</b>	
Ethernet	2x RJ-45 for PoE/PD (802.3at)
USB	2x USB Type A for 3.2 Gen 1 2x USB Type A for 2.0 1x OS Flash Port (Micro-USB)
COM	1x DB-9 for RS-232/485
Digital I/O	1x 40-Pin I/O (GPIO/I2C/SPI/SPI/UART/PWM)
Video	1x HDMI 2.0a
Audio	1x Mic-In 1x Line-Out
Power	1x 12V DC (lockable DC connector)
Other	1x MicroSD Slot
<b>ENVIRONMENTAL</b>	
Power Supply	PoE/PD (802.3at) 1x 12V DC (lockable DC connector)
Remote Control & LED	1x Power LED
Operating Temperature	-5°C ~ 50°C
Storage Temperature	-40°C ~ 85°C
Vibration/Shock Resistance	Vibration: Random, 3.5Grms / 5 ~ 500Hz Shock: 50G peak acceleration (11 msec duration, eMMC, microSD)
Humidity	5 ~ 95% @ 40°C, non-condensing
Dimensions	175.8 x 100 x 39 mm
Weight	1.05 kg (gross) 0.58 kg (net)
Mounting	Wall-Mount Kit
Certifications	CE/FCC Class A

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## Ordering Information

Part Number	AI Accelerator	PDE/PD	USB 3.2 Gen 1	RS-232/485	Storage	Display	Mounting	Power	Operation temp.
BOXER-8521AI-A1-1010	Google Edge TPU	1	2	1	8GB eMMC	HDMI x 1	Wallmount	DC 12V	-5°C ~ 50°C with 0.5m/s airflow

## Packing List

1x BOXER-8521AI
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## Optional Accessories

Power Cord (US)
Power Cord (Europe)
Power Cord (Japan)
60W Power Adapter

## Dimensions (mm)

