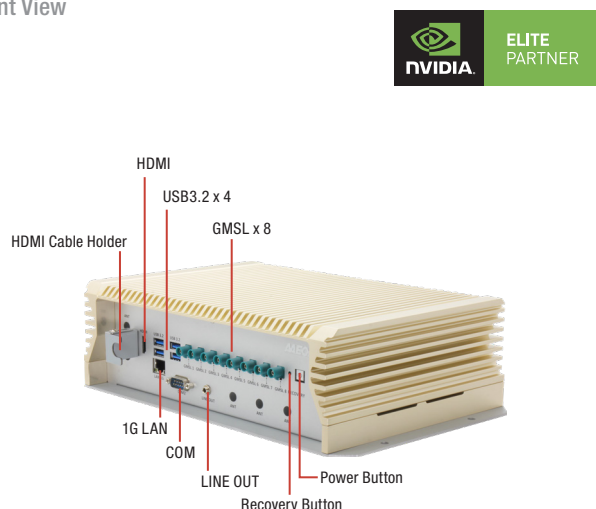


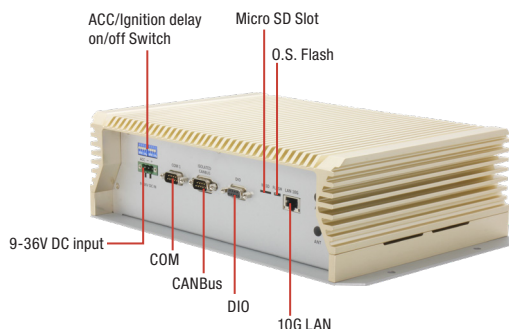
# BOXER-8645AI

AI@Edge Fanless Embedded AI System with NVIDIA® Jetson AGX Orin™

Front View

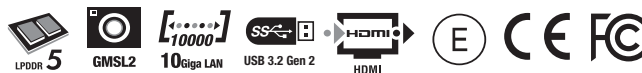


Rear View



## Features

- NVIDIA® Jetson AGX Orin™
- GMSL2 with FAKRA Connectors x 8
- 10G LAN x 1, Giga LAN x 1
- ACC Ignition Delay On/Off
- Military Standard Vibration and Shock
- E-Mark Certified
- Additional LAN x 8 (By request)



## Specifications

| System                 |                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AI Accelerator         | NVIDIA® Jetson AGX Orin™                                                                                                                                                                                                                                                                                                                                                                                                  |
| CPU                    | AGX Orin 32GB: 8-core Arm® Cortex®-A78AE CPU<br>AGX Orin 64GB: 12-core Arm® Cortex®-A78AE CPU                                                                                                                                                                                                                                                                                                                             |
| System Memory          | 32GB LPDDR5<br>64GB LPDDR5                                                                                                                                                                                                                                                                                                                                                                                                |
| Storage Device         | 64GB eMMC 5.1 x 1<br>M.2 2280 M-Key x 1 (NVMe)<br>2.5" SATA x 2                                                                                                                                                                                                                                                                                                                                                           |
| Display Interface      | HDMI 2.0 x 1 (Type-A)                                                                                                                                                                                                                                                                                                                                                                                                     |
| Ethernet               | RJ-45 for 10G LAN x 1<br>RJ-45 for Giga LAN x 1<br>Additional LAN x 8 (By request)                                                                                                                                                                                                                                                                                                                                        |
| I/O                    | GMSL2 with FAKRA x 8<br>USB 3.2 Gen 2 x 4 (Type-A)<br>Micro USB x 1 for OS Flash<br>Line-Out x 1<br>DB-9 x 1 for Isolated CANBus x 2<br>DB-9 x 2 for RS-232 (Rx/Tx/CTS/RTS)/RS-485 x 2<br>DB-9 x 1 for DIO x 8<br>Switch x 1 for Ignition Delay On/Off<br>3-pin Terminal Block x 1 for Power Input<br>Power Button x 1<br>Recovery Button x 1<br>Antenna Hole x 7<br>TPM Support<br>GNSS Support<br>9-Axis Sensor Support |
| Expansion              | M.2 2230 E-Key x 1 (Wifi/BT)<br>M.2 3052 B-Key x 1 (LTE)<br>M.2 2280 M-Key x 1 (NVMe)<br>2.5" SATA x 2<br>SIM Slot x 2<br>MicroSD Slot x 1                                                                                                                                                                                                                                                                                |
| Indicator              | Power LED x 1                                                                                                                                                                                                                                                                                                                                                                                                             |
| OS Support             | Linux (NVIDIA JetPack™ 5.0 and above)                                                                                                                                                                                                                                                                                                                                                                                     |
| Power Supply           |                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Power Requirement      | 3-pin Terminal Block x 1 for 9V ~ 36V<br>ACC Ignition Delay On/Off                                                                                                                                                                                                                                                                                                                                                        |
| Mechanical             |                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Mounting               | Wall mount (default)                                                                                                                                                                                                                                                                                                                                                                                                      |
| Dimensions (W x D x H) | 11.26" x 7.95" x 3.54" (286mm x 202mm x 90mm)                                                                                                                                                                                                                                                                                                                                                                             |
| Gross Weight           | 11 lb. (5Kg)                                                                                                                                                                                                                                                                                                                                                                                                              |
| Net Weight             | 13 lb. (5.9Kg)                                                                                                                                                                                                                                                                                                                                                                                                            |
| Environmental          |                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Operating Temperature  | -13°F ~ 149°F (-25°C ~ 65°C with 0.5 m/s airflow)                                                                                                                                                                                                                                                                                                                                                                         |
| Storage Temperature    | -40°F ~ 185°F (-40°C ~ 85°C)                                                                                                                                                                                                                                                                                                                                                                                              |
| Storage Humidity       | 5 ~ 95% @ 40°C, non-condensing                                                                                                                                                                                                                                                                                                                                                                                            |
| Anti-Vibration         | MIL-STD-810G, 514.6C Procedure 1, Category 4 Trucker/Semitrailer on US highway (Figure 514.6C-1-Category 4-Common carrier)                                                                                                                                                                                                                                                                                                |
| Anti-Shock             | MIL-STD-810G, Method 516.6, Procedure I, flight vehicle equipment                                                                                                                                                                                                                                                                                                                                                         |
| Certification          | E-Mark, CE/FCC Class A                                                                                                                                                                                                                                                                                                                                                                                                    |



ES France - Mobilité & Systèmes Embarqués  
127 rue de Buzenval BP 26 - 92380 Garches



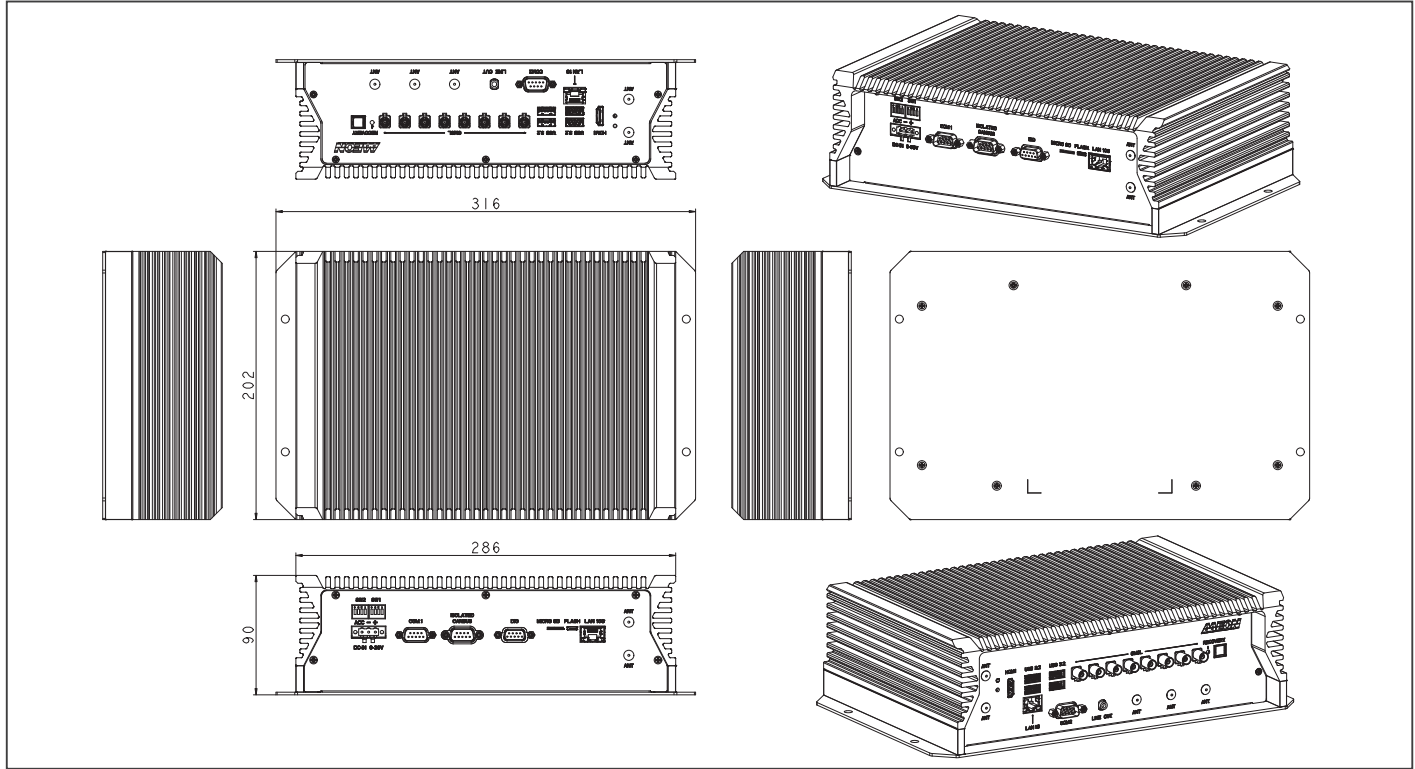
Tél. 01 47 95 99 80  
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Site Web : www.es-france.com

## Dimension

Unit: mm



## Optional Accessories

- **1255X00059**  
120W Power Adapter
- **1702031802**  
Power Cord (US Type)
- **1702031803**  
Power Cord (European Type)
- **170203180E**  
Power Cord (Japanese Type)
- **9641864500**  
M.2 2280 NVMe Gen 3 M key Thermal Kit. For the SSD support list, please check the user manual.
- **9641864510**  
M.2 2280 NVMe Gen 4 M key Thermal Kit. For the SSD support list, please check the user manual.

## Packing List

- **BOXER-8645AI**
- **Power Connector x 1**
- **Screw Package x 1**
- **HDMI Cable Holder x 1**

## Ordering Information

| PART NUMBER                 | AI SOLUTION                   | GMSL | LAN                | USB           | RS-232/422/485 | Isolated CANBUS | DIO | STORAGE                                           | GNSS & 9 axis sensors & TPM | DISPLAY  | MOUNTING   | POWER                                                       | OPERATION SYSTEM                     |
|-----------------------------|-------------------------------|------|--------------------|---------------|----------------|-----------------|-----|---------------------------------------------------|-----------------------------|----------|------------|-------------------------------------------------------------|--------------------------------------|
| BOXER-8645AI-JP511E-A1-1010 | NVIDIA® Jetson AGX Orin™ 32GB | 8    | 10G x 1 & Giga x 1 | 3.2 Gen 2 x 4 | 2              | 2               | 8   | 64GB eMMC, M.2 2280 NVMe M Key x 2, 2.5" SATA x 2 | Built in                    | HDMI x 1 | Wall mount | 9 ~ 36VDC w/ 3 pin terminal block and Ignition delay on/off | Linux (NVIDIA Jetpack™ 5.0 or above) |
| BOXER-8645AI-JP511E-A2-1010 | NVIDIA® Jetson AGX Orin™ 64GB | 8    | 10G x 1 & Giga x 1 | 3.2 Gen 2 x 4 | 2              | 2               | 8   | 64GB eMMC, M.2 2280 NVMe M Key x 2, 2.5" SATA x 2 | Built in                    | HDMI x 1 | Wall mount | 9 ~ 36VDC w/ 3 pin terminal block and Ignition delay on/off | Linux (NVIDIA Jetpack™ 5.0 or above) |