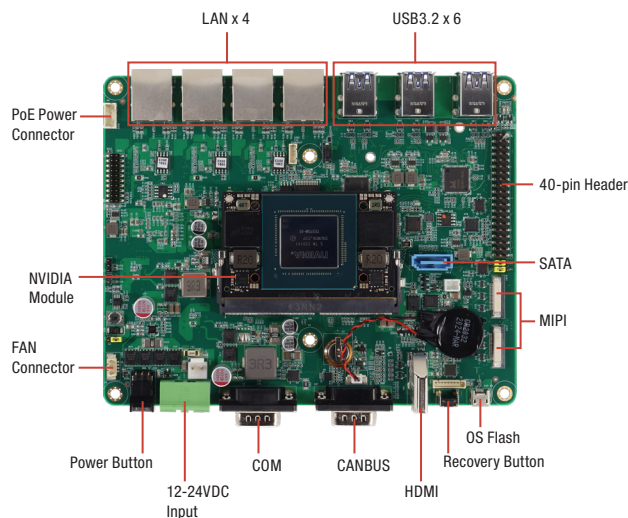


# BOXER-8654AI-KIT

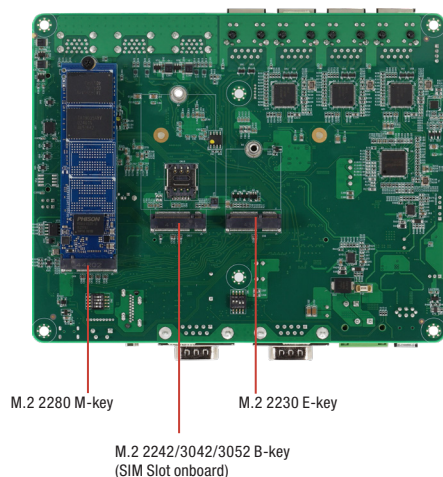
AI@Edge Embedded board with NVIDIA® Jetson Orin™ NX



Front View



Rear View



## Features

- NVIDIA® Jetson Orin™ NX
- MIPI connector x 2
- M.2 2230 E-Key x 1, M.2 2280 M-Key x 1, M.2 3052 B-Key x 1
- 40-pin Header compliant with NVIDIA Jetson Orin Nano Developer Kit
- PoE Connector, FAN connector
- 12V ~ 24V Wide Power DC Input
- TPM 2.0 Support (by Jumper select)



## Specifications

| System                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AI Accelerator         | NVIDIA® Jetson Orin™ NX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| CPU                    | Orin NX 16GB: 8-core Arm® Cortex®-A78AE ARMv8.2 64-bit CPU<br>Orin NX 8GB: 6-core Arm® Cortex®-A78AE ARMv8.2 64-bit CPU                                                                                                                                                                                                                                                                                                                                                                                                                 |
| System Memory          | 16GB LPDDR5<br>8GB LPDDR5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Storage Device         | M.2 M-Key 2280 x 1 (NVMe)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Display Interface      | HDMI Type A for HDMI 1.4 x 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ethernet               | RJ-45 x 4 for GbE LAN<br>(optional: power module for PoE (25.6W each port))                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| I/O                    | MIPI Connector x 2 (4 lanes for each MIPI connector, Default IMX219)<br>DB-9 x 1 for RS-232(RX/TX/GND)/422/485<br>DB-9 x 1 for CANBus<br>USB Type A x 6 for USB 3.2 Gen 2<br>Micro USB for image flash x 1<br>Power Button with LED Indicator x 1<br>2-pin Phoenix Type x 1 for Power Input<br>Recovery Button x 1<br>40-pin Header compliant with NVIDIA Jetson Orin Nano Developer Kit<br>Pin Header x 1 for RS/232/422/485 by jump select UART to 40-pin<br>Box Header x 1 for OOB<br>SATA Connector x 1<br>SATA power Connector x 1 |
| Expansion              | M.2 2230 E-Key x 1<br>M.2 2242/3042/3052 B-Key x 1 (SIM onboard)<br>M.2 2280 M-Key x 1                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Indicator              | Power LED x 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| OS Support             | Linux (NVIDIA Jetpack™ 6.0 and above)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Power Supply           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Power Requirement      | 12V ~ 24V DC in with 2-pin Terminal Block x 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Mechanical             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Mounting               | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Dimensions (W x D x H) | 6.53" x 5.24" (166mm x 133mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Gross Weight           | 0.79 lbs (0.36 Kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Net Weight             | 0.42 lbs (0.19 Kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Environmental          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Operating Temperature  | -13°F ~ 158°F (-25°C ~ 70°C) w/ Fan Kit, according to IEC60068-2 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         | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Anti-Shock             | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Certification          | CE / FCC class A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



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



Tél. 01 47 95 99 80  
Fax. 01 47 01 16 22

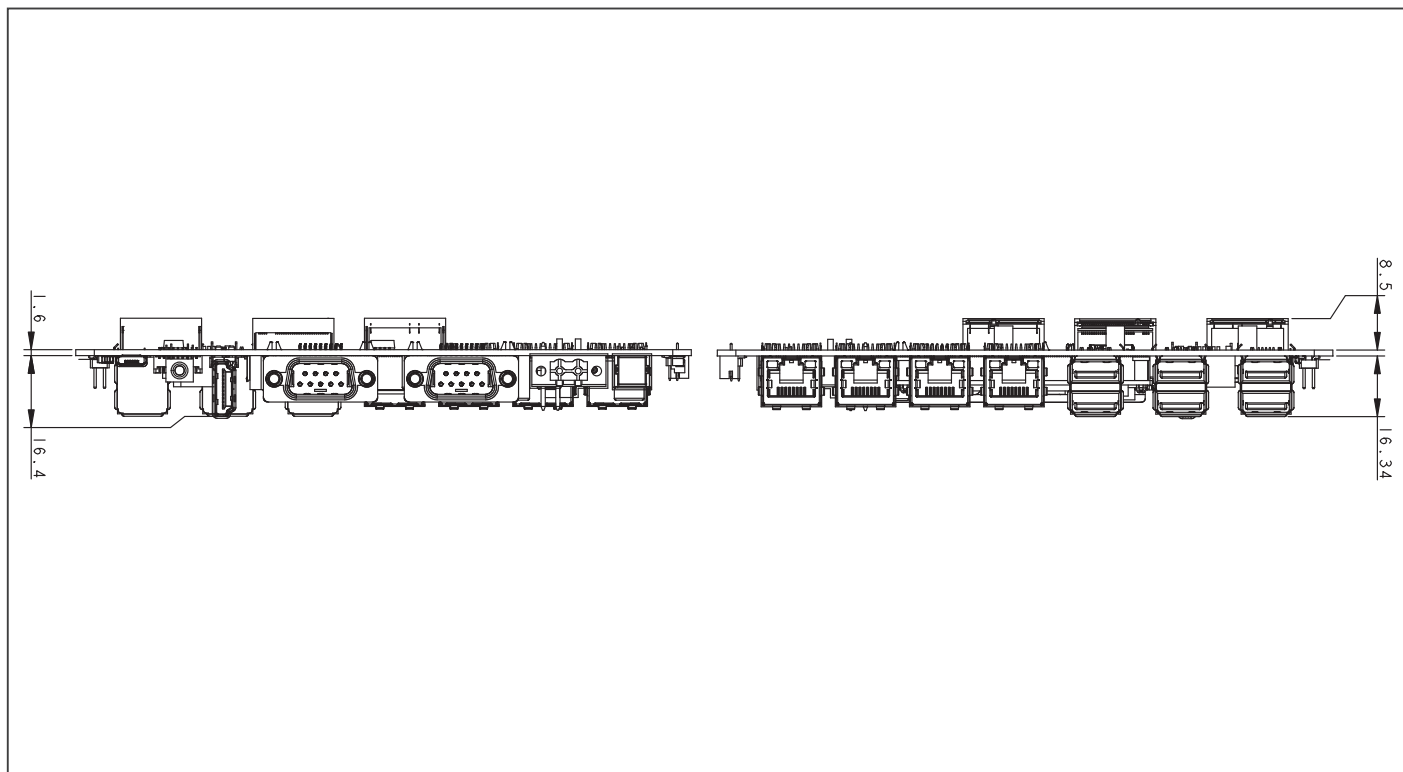


e-mail : mse@es-france.com  
Site Web : www.es-france.com



## Dimension

Unit: mm



## Ordering Information

| Part Number                     | AI Solution                  | LAN | USB 3.2 Gen 2 | COM | CANBus | Storage                                  | Display  | Expansion                                                                              | Power     |
|---------------------------------|------------------------------|-----|---------------|-----|--------|------------------------------------------|----------|----------------------------------------------------------------------------------------|-----------|
| BOXER-8654AI-KIT-JP600N-A1-1010 | NVIDIA® Jetson Orin™ NX 8GB  | 4   | 6             | 1   | 1      | M.2 M Key 2280 NVME x 1 (Default: 128GB) | HDMI x 1 | M.2 2230 E-Key x 1<br>M.2 2242/3042/3052 B-Key x 1 (SIM onboard)<br>M.2 2280 M-Key x 1 | DC 12~24V |
| BOXER-8654AI-KIT-JP600N-A2-1010 | NVIDIA® Jetson Orin™ NX 16GB | 4   | 6             | 1   | 1      | M.2 M Key 2280 NVME x 1 (Default: 128GB) | HDMI x 1 | M.2 2230 E-Key x 1<br>M.2 2242/3042/3052 B-Key x 1 (SIM onboard)<br>M.2 2280 M-Key x 1 | DC 12~24V |

## Packing List

- BOXER-8654AI-KIT x 1
- Power Connector x 1
- Screw Package x 1

## Optional Accessories

- 1255X00066  
120W Power Adapter
- 170X000799  
Power Cord (US type)
- 170X000800  
Power Cord (European Type)
- 170X000803  
Power Cord (Japanese Type)
- 9641865400  
Cooler Fan Kit
- 9641865401  
Heat Spreader Kit
- 9641865402  
Top Heat Sink with Heat Spreader Kit

