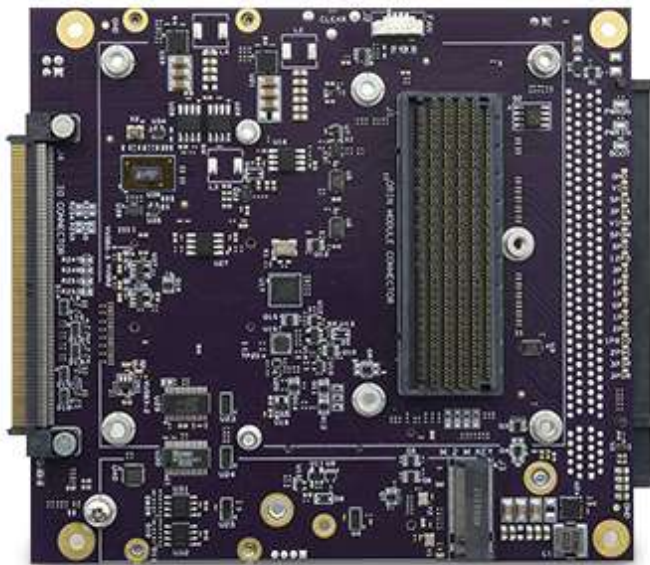


OSBOURNE Carrier and Development Kit for NVIDIA Jetson AGX Orin



Osbourne Orin module installation side



Osbourne I/O expansion socket side

FEATURES

- 3x USB 3.2 ports
- 4x USB 2.0 ports
- 1x 1G/2.5G/5G/10G Multi-Gigabit Ethernet port
- 1 10/100/1000Mbps Ethernet Port
- 4 x4 or 8 x2 lane CSI-2 camera Interface using industry-standard adapter socket
- 2x software configurable RS-232/422/485 ports with TTL option on one port
- 2x fixed RS-232 ports
- 1x HDMI 2.0a/b directly from Orin module
- Audio I/O via ALC5640 CODEC
- 8 Digital I/O via I2C I/O expander
- 2x CAN 2.0 ports with non-isolated transceivers
- 2x mPCIe full-size sockets with PCIe and USB support
- 1 M.2 M Key (2280 or 2242) NVMe expansion slots (4 lane PCIe Gen 3)
- 1 M.2 E key 2230 socket
- Dimensions 120 x 115mm / 4.7 x 4.5 (Carrier board only)
- Power input 7-20VDC
- Operating temperature -25 to +80C (same as Orin module)



Osbourne carrier board with panel I/O accessory board



Osbourne with AGX Orin module installed



Osbourne full kit with Orin module, fan sink, and commercial I/O adapter



Commercial I/O adapter

Osbourne is a versatile carrier board for the NVIDIA Jetson AGX Orin high-performance GPU module. It provides access to all I/O features of the Orin module and includes numerous sockets for I/O expansion. Osbourne has been designed to be used in almost any application ranging from commercial to industrial to airborne to rugged military use.

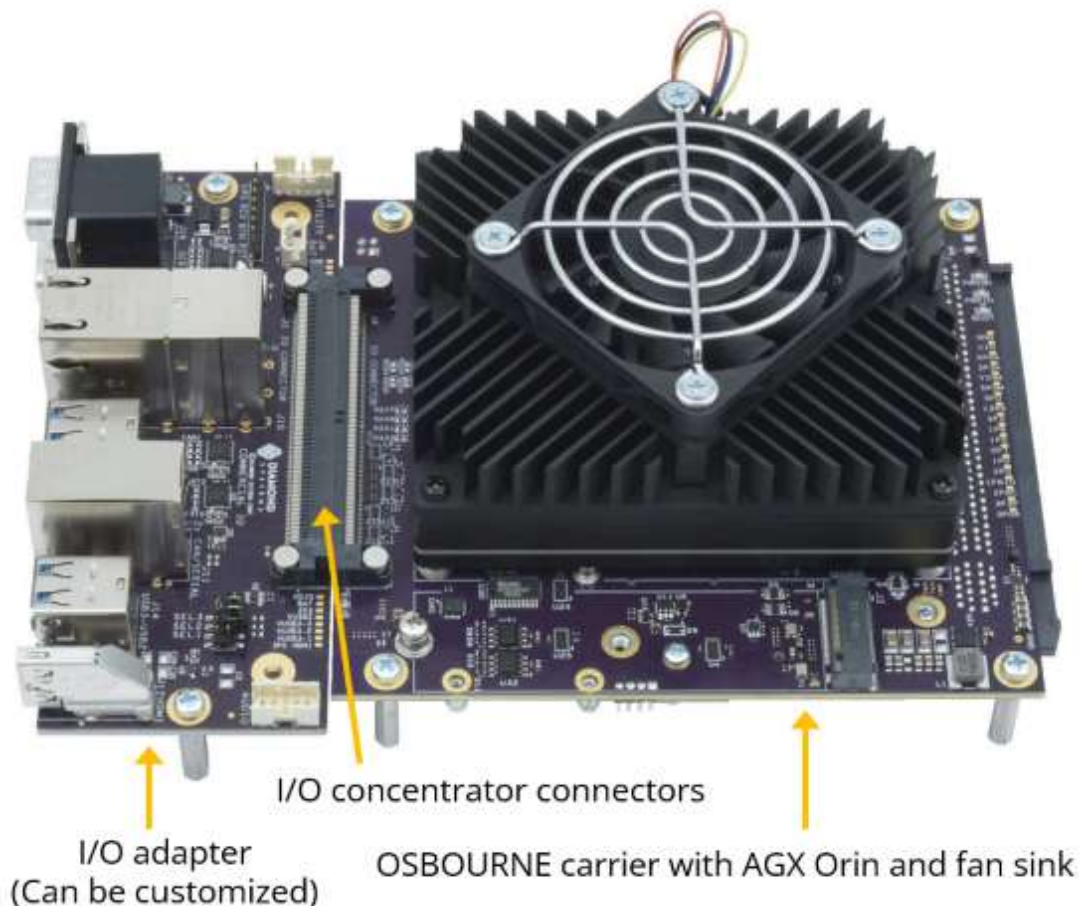
Key highlights of Osbourne include:

- Industry-standard camera adapter socket for use with a wide range of CSI, GMSL, and other cameras
- 10Gb Ethernet + 1GB Ethernet ports
- Wide temperature operation matching the range of the Orin module
- Dual minicard sockets with PCIe and USB interfaces
- Dual M.2 sockets for flash memory (M key 2242/2280) and network connectivity (E key 2230)
- I/O concentrator connector enables use with standard and custom I/O breakout boards

Osbourne is available as a carrier board alone or with an Orin module and fan sink installed and ready for use. A Linux OS based on Nvidia L4T and customized to support all I/O on Osbourne is available for free download.

◆ Flexible I/O Connector Design

All I/O on Osbourne is accessed through a single high-speed, high-density connector along the board edge. This decouples the board design from any specific I/O connector arrangement and frees you to select whatever I/O connector scheme you want. Standard connector boards are available for typical use cases, including a panel-mount connector board for installation in an enclosure and a breakout board for use with cables.



◆ Panel I/O Board

The Panel I/O board provides the ability to install Osbourne directly into an enclosure without the use of cables. All I/O is provided on a series of commercial-style connectors designed to be mounted in an enclosure front panel.



Panel I/O boards can also be designed with right-angle orientation. Below is an example of a connector board with MIL-DTL-38999 connectors for a rugged system using Orin.

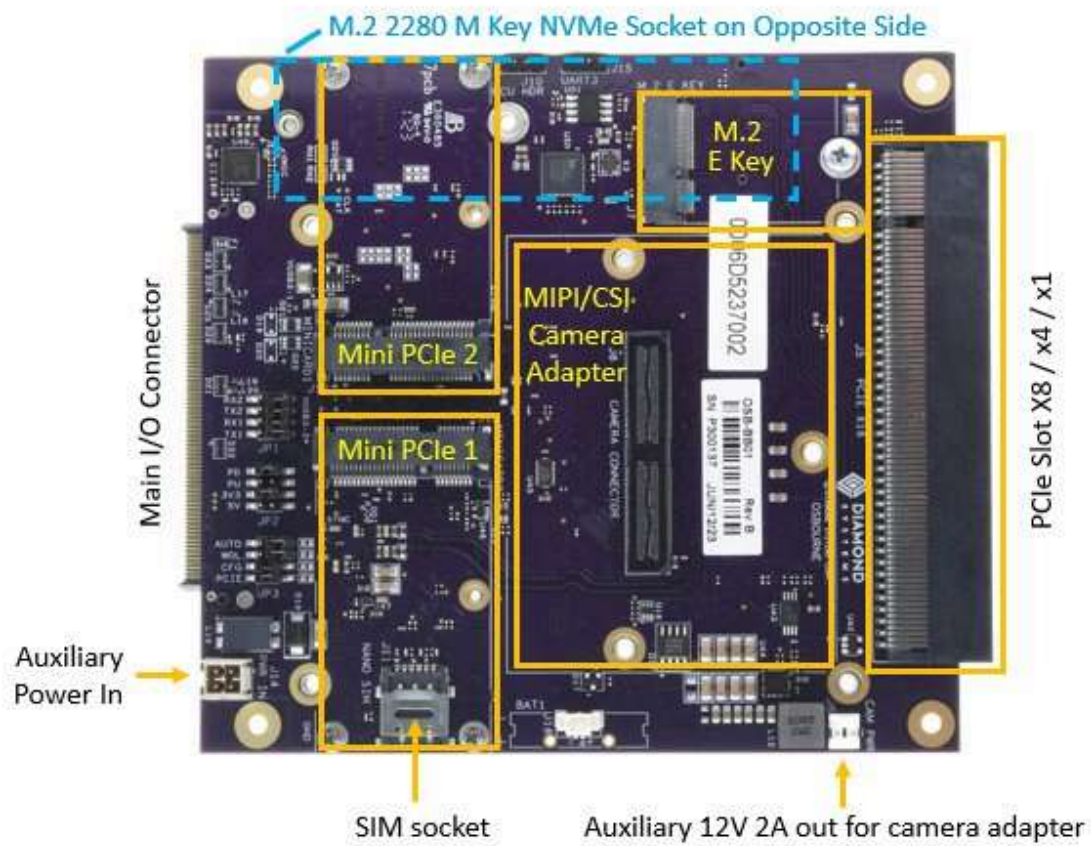


Front view, rugged panel I/O board with MIL-DTL-38999 and high-speed connectors

I/O Expansion

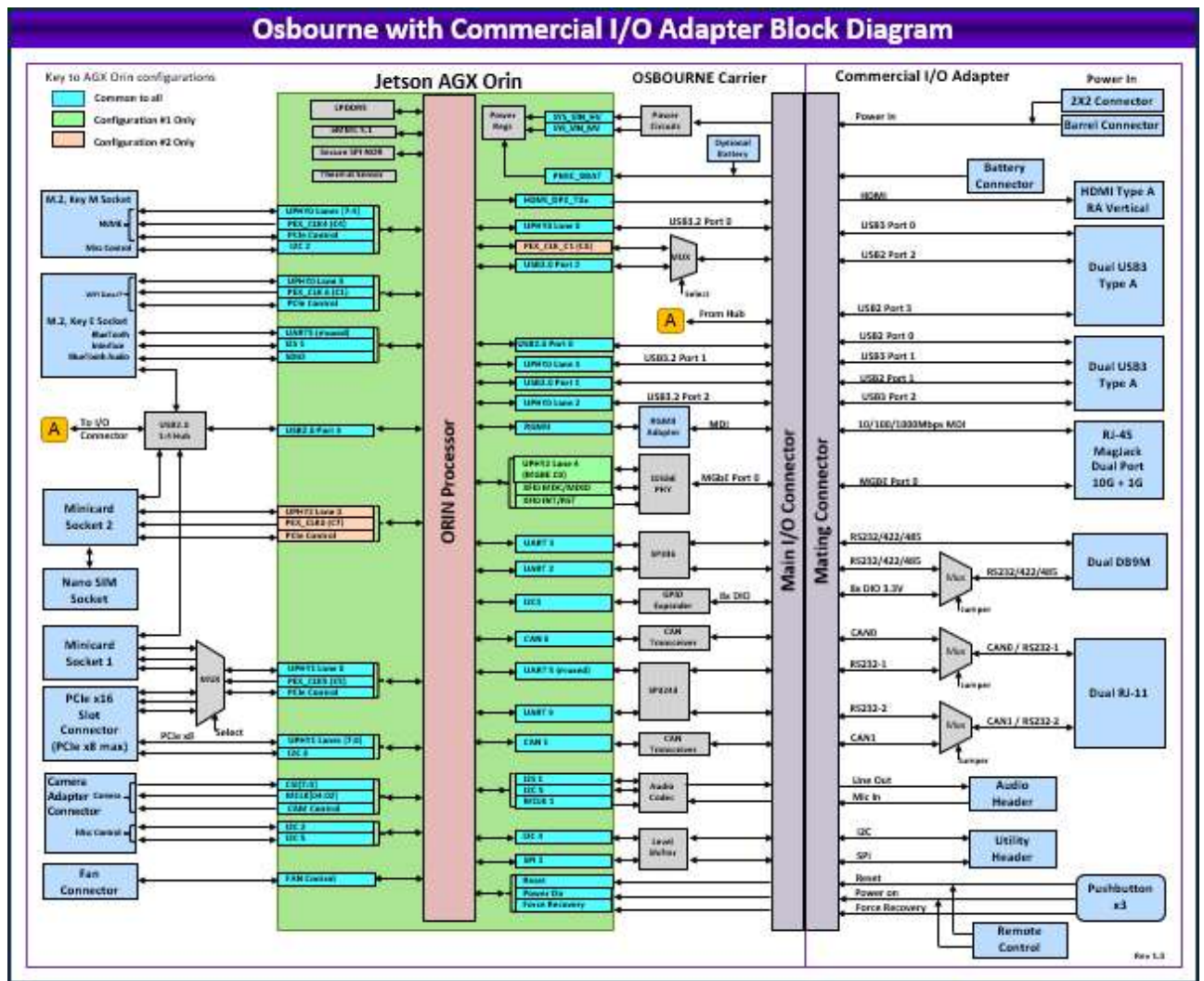
Osbourne includes dual PCIe minicard sockets with both PCIe and USB interfaces, supporting a wide range of I/O and communications/networking modules from Diamond as well as third party vendors. It includes an M.2 E key socket for installation of WiFi and other networking modules. Also a PCIe slot connector enables attachment of standard desktop-style PCIe slot I/O boards with PCIe x8 / x4 / x1 connection.

Mass storage is provided with an M.2 2242/2280 NVME socket and a Micro-SD card socket.



Block Diagram

Osbourne makes available all the I/O of the Orin module in UPHY configuration 1, so application developers have access to all features without limitation.



Ordering Information

Models and Accessories

OSBOURNE

Available Models:

OSB-BB01	Osbourne carrier board for NVIDIA Jetson AGX Orin	Available
OSB-ASY-01	Osbourne Carrier Board With OSB-PNL01 I/O Board Integrated Assembly	Available
OSB-ASY-0132-E1F0	Osbourne carrier board with Orin 32GB module installed, OS loaded, fan sink	Available
OSB-ASY-0132-E1F1	Osbourne carrier board with Orin 32GB module installed, OS loaded, fan sink, 1TB NVMe SSD	Available
OSB-ASY-0164-E1F1	Osbourne carrier board with Orin 64GB module installed, OS loaded, fan sink, 1TB NVMe SSD	Available
OSB-ASY-0164XT-E1F1	Osbourne carrier board with Orin 64GB Industrial module installed, OS loaded, fan sink, 1TB NVMe SSD	Available
OSB-PNL01	Osbourne commercial I/O adapter, jumper configured ports	Available
OSB-PNLR02	Osbourne Rugged Panel I/O Board with MIL-DTL-38999 and SJT Connectors; with I/O expansion support	Coming Soon
OSB-PNLR02A	Osbourne Rugged Panel I/O Board with MIL-DTL-38999 and SJT Connectors; no I/O expansion support	Coming Soon

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