

OSBOURNE-ER Osbourne-ER Rugged Nvidia
Jetson AGX Orin Carrier and Solution



I/O adapter uses latching connectors for increased ruggedness

FEATURES

Optimized AGX Orin solution for rugged embedded applications

Latching I/O connectors provide a reliable solution for rugged environments

Heat spreader mounting plate provides slimmer design and more efficient cooling

1x 1G/2.5G/5G/10G Multi-Gigabit Ethernet port

1 10/100/1000Mbps Ethernet Port

3x USB 3.2 ports with USB 2.0 fallback

1 fixed USB 2.0 port

1x HDMI 2.0a/b directly from Orin module

2x software configurable RS-232/422/485 ports with TTL option on one port

2x fixed RS-232 ports

Audio I/O via ALC5640 CODEC

8 Digital I/O with 3.3/5V selection

Data acquisition subsystem with 6 12-bit A/D, 2 12-bit D/A, 12 GPIO 3.3V

2x CAN 2.0 ports with non-isolated transceivers

Utility connector with I2C, SPI, Reset, and Power button

1 mPCIe full-size socket with PCIe and USB support

1 M.2 M Key (2280 / 2242) NVMe expansion slot (4 lane PCIe Gen 3)

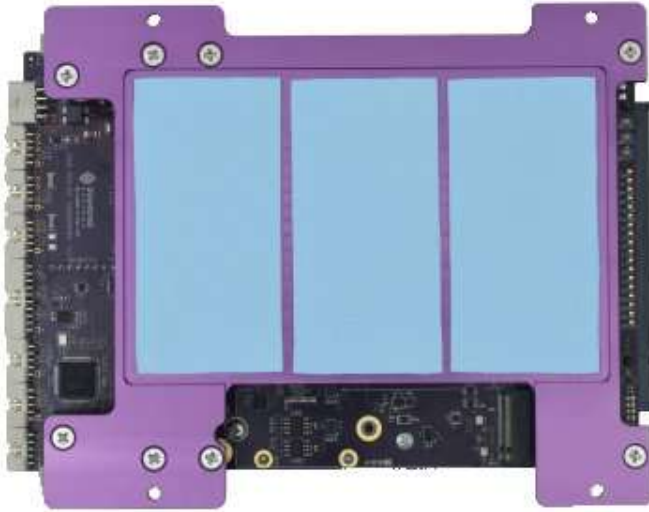
1 M.2 E key 2230 socket

4 x4 or 8 x2 lane CSI-2 camera interface using industry-standard camera adapter socket

Dimensions 165 L x 137 W x 36mm H / 6.5 x 5.4 x 1.4" (heat spreader footprint, fully assembled unit)

Power input 7-20VDC

Operating temperature -25 to +78C (AGX Orin 32GB/64GB),



-40 to +83C (AGX Orin Industrial)
 Weight: 425g / 15.0 oz (Kit without Orin module), 704g / 24.9oz (Full assembly with Orin module)

Bottom-mounted heat spreader / mounting plate with embedded thermal pads improves heat dissipation and simplifies installation



OSB-ER-KIT: Buy the Orin module separately and assemble on your own

Osbourne-ER is a rugged, versatile solution for the NVIDIA Jetson AGX Orin family of high-performance GPU modules. It provides access to all I/O features of the Orin module and includes numerous sockets for I/O expansion. Osbourne-ER is specifically designed for use in rugged applications requiring any combination of high performance, wide temperature,

or shock and vibration. Osbourne-ER is the ideal choice for any Jetson AI application where ruggedness and reliability are preferred over a low-cost commercial-grade solution.

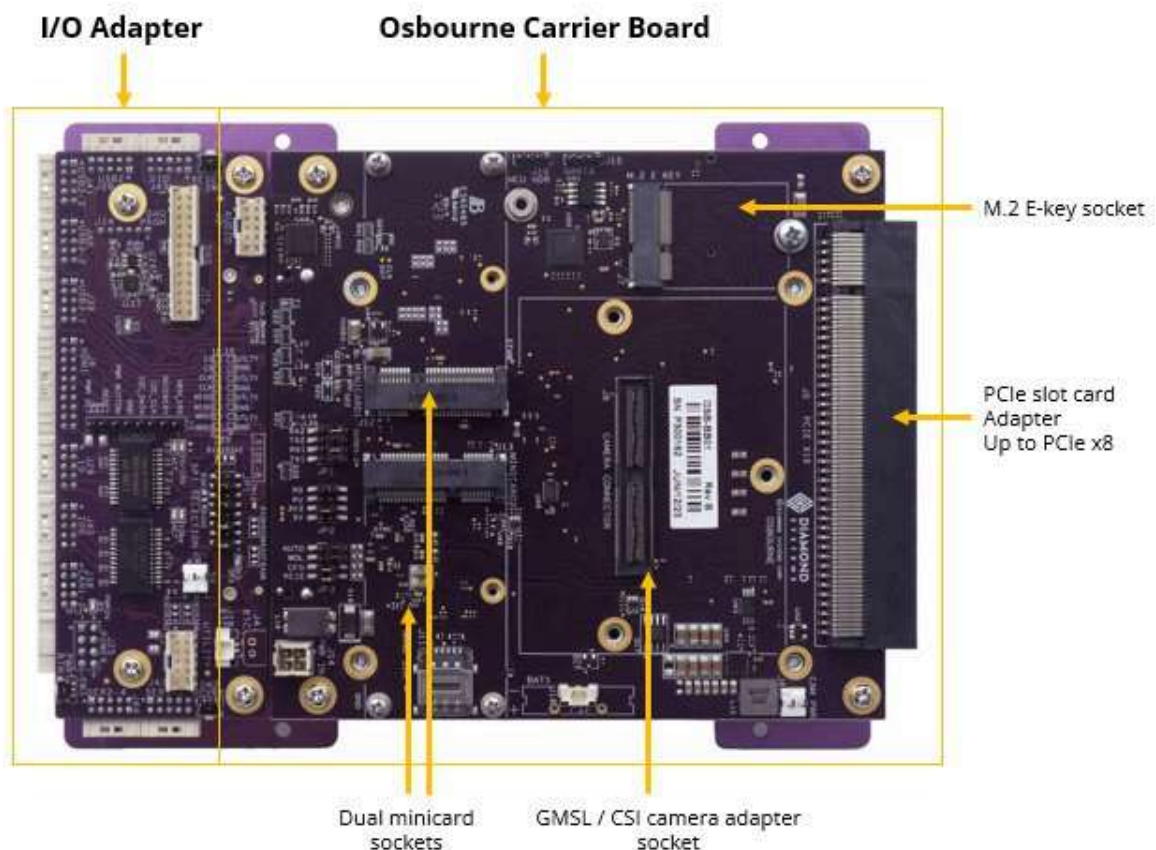
Key highlights of Osbourne-ER include:

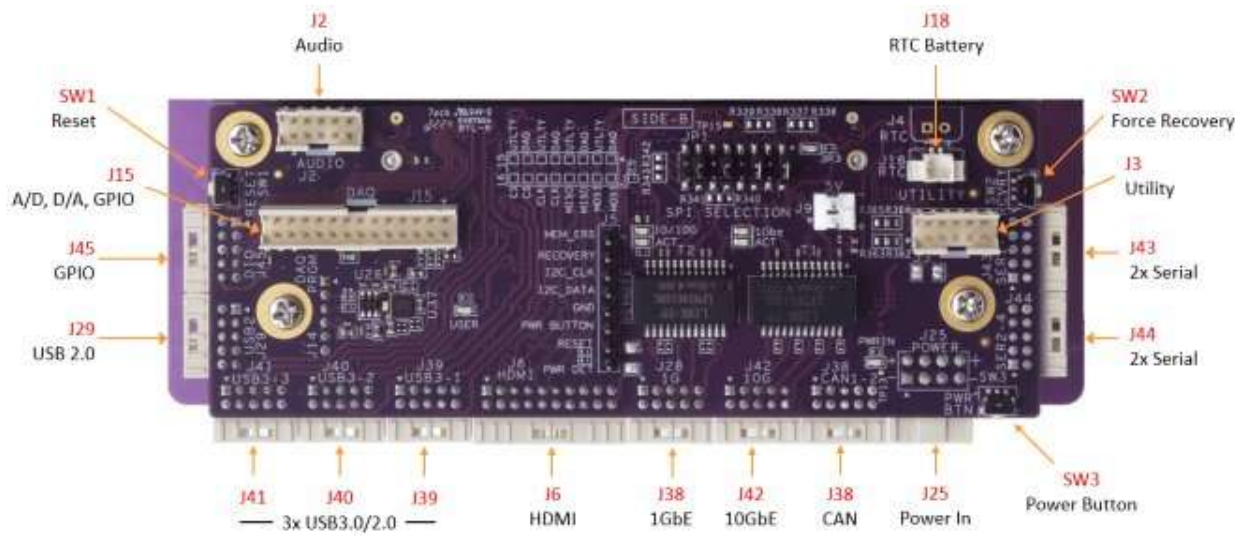
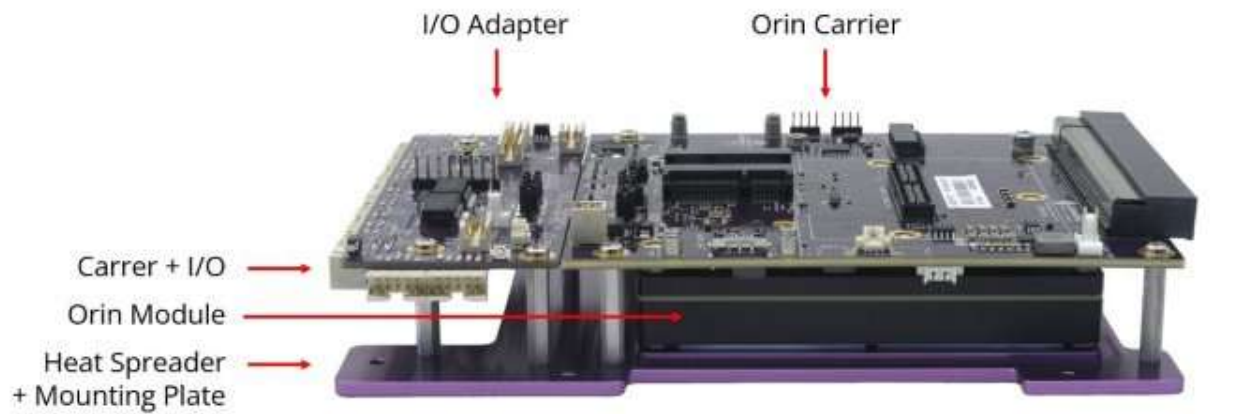
- Latching connectors for all I/O improve reliability
- Bottom mounted heat spreader/mounting plate provides improved heat dissipation and easier installation
- Industry-standard camera adapter socket for use with a wide range of CSI, GMSL, and other cameras
- 10Gb Ethernet + 1GB Ethernet ports
- Wide 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)

Osbourne-ER is available as a complete integrated solution with an AGX Orin module and fan sink installed and Linux OS based on Nvidia L4T preloaded. You can also order it in kit form, which includes everything except the Orin module and flashdisk, so you can obtain the Orin modules through your preferred channel and program them yourself. The kit requires assembly and programming.

◆ 2-Board Architecture

Osbourne-ER is a 2-board solution consisting of the main carrier board connected to an I/O breakout board or adapter. A single high-speed connector carries all the power and I/O between the two boards. This design allows Osbourne to be used with a variety of I/O adapters. For a solution using commercial connectors (RJ-45, USB type A, etc.) please see [Osbourne](#).



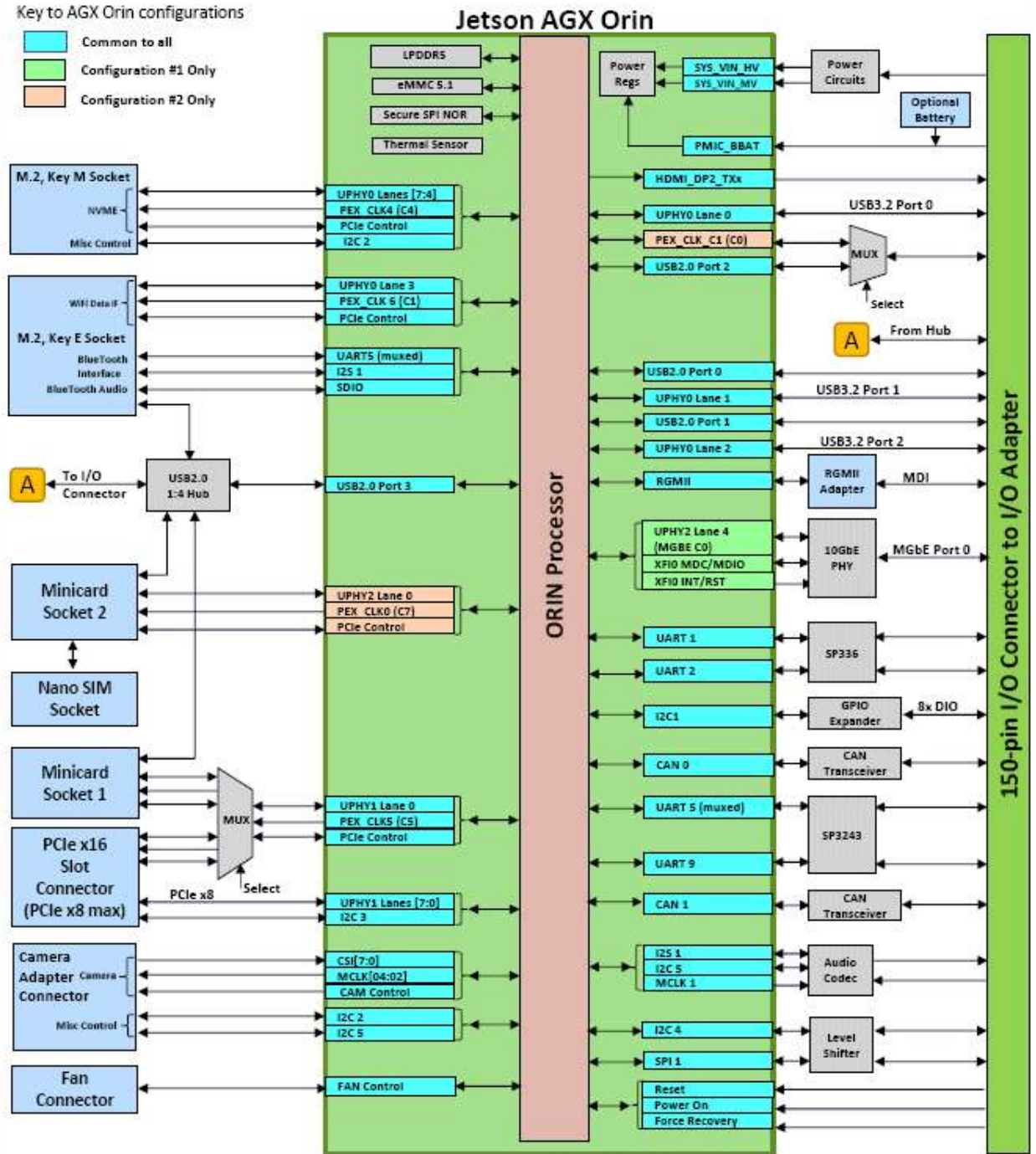


Osbourne-ER consists of two boards mated together: the main carrier board and the I/O adapter. The first diagram below shows the main carrier board, while the second diagram shows the I/O adapter. The two are joined via the block labeled "150-pin connector" to define the complete product architecture.

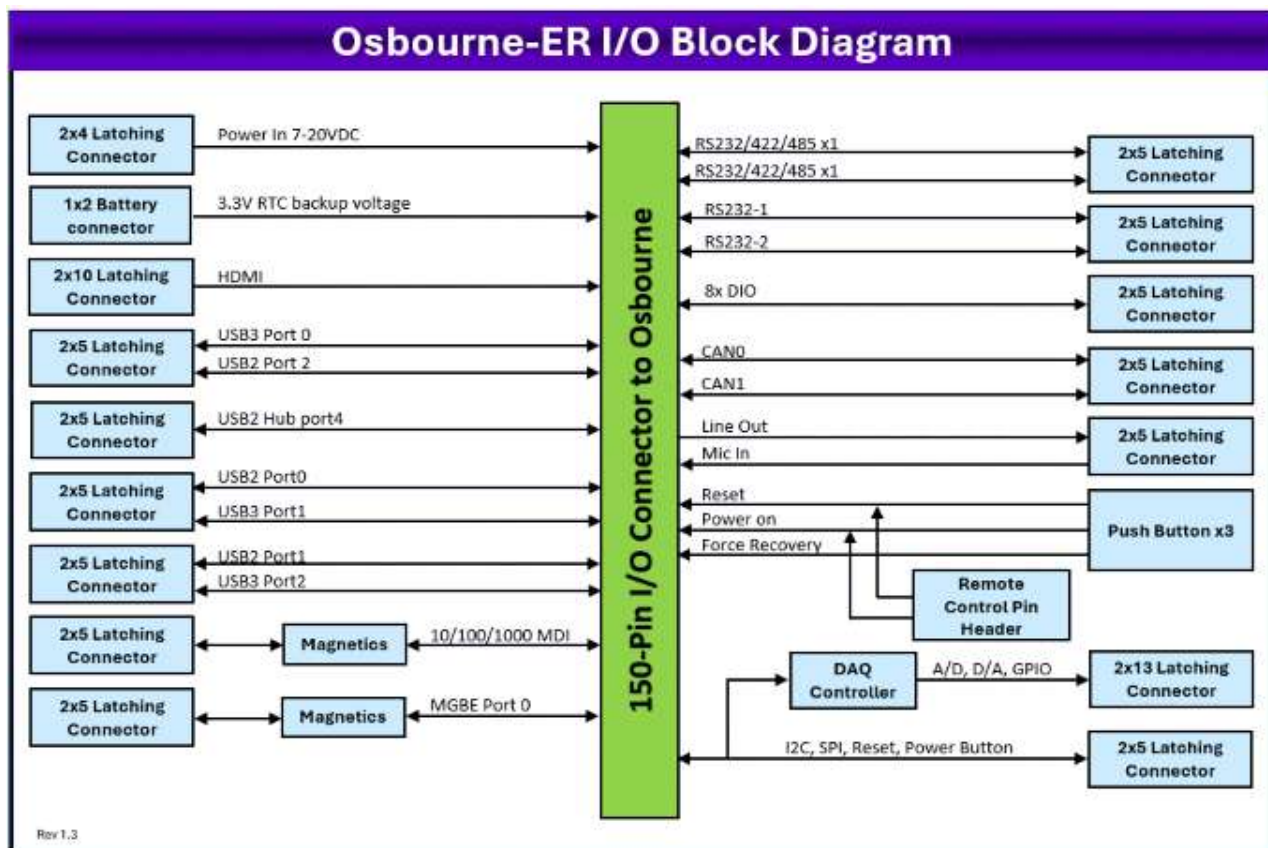
Osbourne Carrier Board Block Diagram

Key to AGX Orin configurations

- Common to all
- Configuration #1 Only
- Configuration #2 Only



Rev 1.1



Models and Accessories

Osbourne-ER

Available Models:

OSB-ER-32G-1T	Osbourne-ER with AGX Orin 32GB module, 1TB external flash, Linux OS	Available
OSB-ER-32G-2T	Osbourne-ER with AGX Orin 32GB module, 2TB external flash, Linux OS	Available
OSB-ER-64G-1T	Osbourne-ER with AGX Orin 64GB module, 1TB external flash, Linux OS	Available
OSB-ER-64G-2T	Osbourne-ER with AGX Orin 64GB module, 2TB external flash, Linux OS	Available
OSB-ER-64GXT-1T	Osbourne-ER with AGX Orin 64GB industrial module, 1TB external flash, Linux OS	Available
OSB-ER-64GXT-2T	Osbourne-ER with AGX Orin 64GB Industrial module, 2TB external flash, Linux OS	Available
OSB-ER-KIT	Osbourne-ER kit for self-assembly; includes carrier, I/O adapter, and heat spreader mounting plate	Available

Please [login](#) or [signup](#) for an online quote request.

The Osbourne-ER cable kit contains cables for all the I/O on the I/O adapter.



CK-OSBER-01 includes the following cables:

No.	Qty	Cable	Description	Drawing
1	1	6980512	Power input cable, discrete wires	Show
2	3	6980603	Cable, FCI 2x5 2mm latching to USB 3.0 type A panel mount	Show
3	1	6980604	Ethernet cable, FCI 2mm 2x6 latching to RJ-45 socket	Show
4	1	6980615	10Gb Ethernet Cable, FCI 2x5 2mm to RJ-45 Jack	Show
5	1	6980608	Audio cable, 3x 3.5mm jacks	Show
6	1	6980605	HDMI Cable	Show
7	1	6980602	Dual USB 2.0 cable, 2x USB 2.0 type A	Show
8	3	6980601	Dual serial port cable, 2x DB9 male	Show
9	1	6980606	Cable, FCI Latching 2mm to DB25F, 12", Ribbon	Show
10	2	6980609	FCI latching 2x5 2mm to IC 2x5 2mm, 12"	Show
11	1	4713001	3.3V RTC backup battery cable, Molex 2-pin connector	-

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