

**JACKSON-ER** Rugged carrier board for Jetson  
Orin NX / Orin Nano



**Heat spreader mounting plate provides improved  
heat dissipation**

## FEATURES

### Core System Features

Carrier board and integrated assembly for NVIDIA Jetson Orin Nano / Orin NX GPU modules

Rugged embedded design with latching I/O connectors and heat spreader

Camera adapter module connector supports a variety of cameras with 8 CSI lanes available

2x Gb Ethernet ports

3x USB 3.2 ports with USB 2.0 fallback

1x fixed USB 2.0 port

1x RS-232/422/485 serial port, jumper configurable

1x RS-232/logic level (UART) serial port, jumper configurable

1x HDMI 2.0a/b with audio support

1x CAN 2.0 port

16x GPIO, configurable

3.3V/5V and pull-up/pull-down

### Expansion Features

Minicard socket with PCIe, USB, and SIM socket

M.2 E-key 2230 socket

M.2 M-Key 2280/2242 socket

Daughterboard expansion connector with PCIe and USB3 links

### Mechanical / Environmental

Heat spreader option provides improved heat dissipation and convenient mounting method for deeply embedded applications

Latching right-angle I/O connectors provide reliable cable connections and support



all thermal solutions and mounting orientations  
 Compact size 4.33 x 3.15" / 110 x 80mm  
 5V / 7-20V input voltage  
 Autoswitching circuit guarantees 5V to Jetson Nano regardless of input voltage to avoid accidental module damage  
 -25 to +80 deg. C operation (matching Jetson modules)

### **Jackson-ER assembly with Orin NX and fansink option**



### **Side view showing heat spreader mounting plate, Jetson module, and Jackson-ER carrier board**

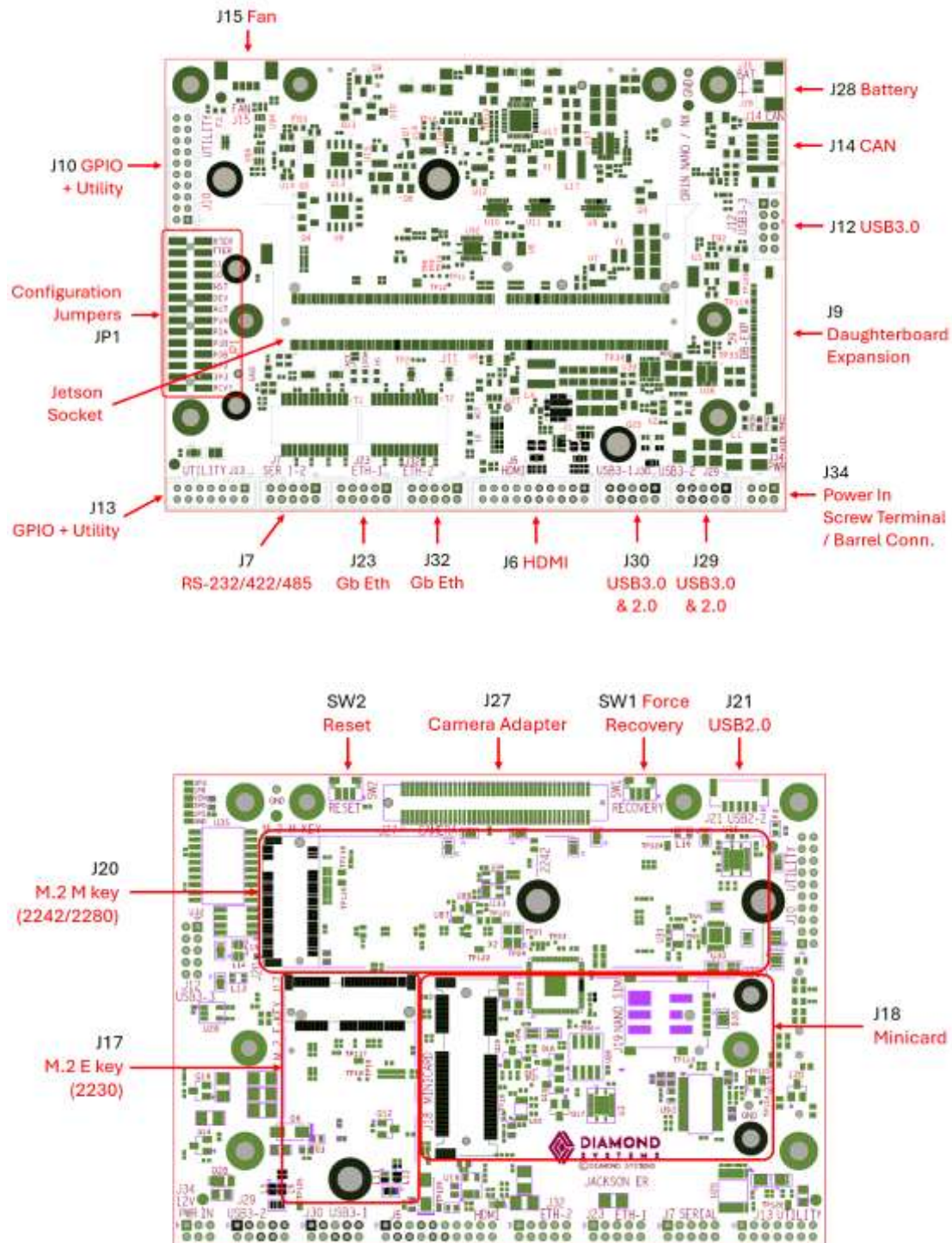
Jackson-ER provides a rugged, compact, economical, and I/O-rich solution for NVIDIA Jetson Orin Nano / Orin NX GPU modules. The deeply embedded design with latching I/O connectors fits applications such as robotics or vehicles where shock and vibration pose risks to long term product reliability, as well as box-level solutions where freedom to select different I/O connectors is needed. The available heat spreader mounting plate provides a secure mounting platform and improves heat dissipation, a critical consideration for high performance applications that utilize the Orin modules to their full capacity.

Jackson-ER brings out all I/O from the modules to I/O connectors or expansion sockets. A novel camera adapter connector provides compatibility with any CSI / GMSL camera by means of a simple low-cost adapter board that mounts directly on the bottom of Jackson ER.

For I/O beyond the given baseboard features, an expansion connector provides a convenient way to connect standard or custom I/O daughterboards that mount directly underneath the Jackson carrier board. The connector provides PCIe, USB3, I2C, and power via a flex circuit cable. Daughterboards can be designed to provide extra Ethernet and USB ports, extra M.2 and minicard sockets, and other I/O.

Jackson-ER is available both as a carrier board and as a complete integrated solution with Jetson module and heat spreader installed and Linux OS loaded. See the ordering information tab for part numbers and configurations.

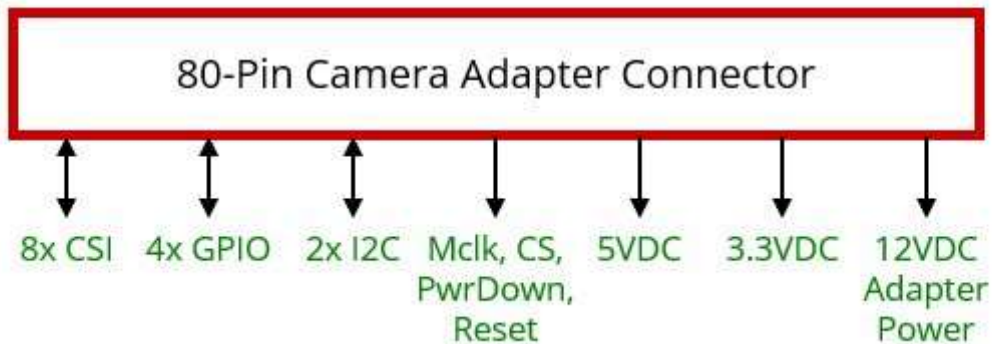
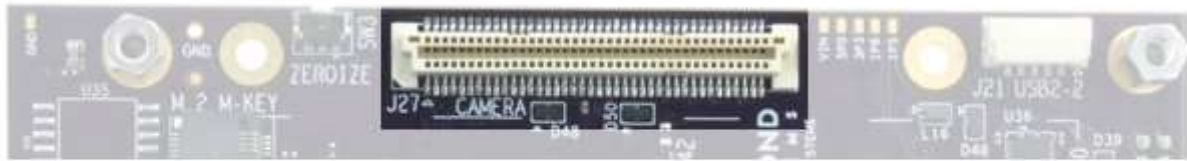
The illustrations below show the wealth of I/O and expansion sockets available on Jackson-ER.



### Camera Adapter Socket

Jackson contains a unique camera adapter connector that makes it possible to interface any camera, including standard, custom, CSI, and GMSL cameras, to the board by using a simple, low-cost adapter board. Custom cameras can easily be connected to Jackson in this way without the expense of a custom carrier board or the inconvenience and fragility of free-hanging adapter boards.





**Jackson carrier shown. Jackson-ER board similar.**

### ◆ Expansion Capabilities

Jackson-ER contains multiple sockets for I/O and mass storage:

- The M.2 M-key socket with NVMe PCIe x4 connectivity is generally used for mass storage, since the Orin Nano and Orin NX modules lack integrated eMMC mass storage. The socket supports both 2242 and 2280 size modules, and all mounting hardware is included.
- A full-size minicard socket provides both PCIe and USB interfaces to support a wide range of I/O modules including analog, digital, serial, Ethernet, WiFi, and Bluetooth.

- An M.2 E-key 2230 socket supports the installation of modem, WiFi, and Bluetooth modules for mobile applications.

### Cable Kit

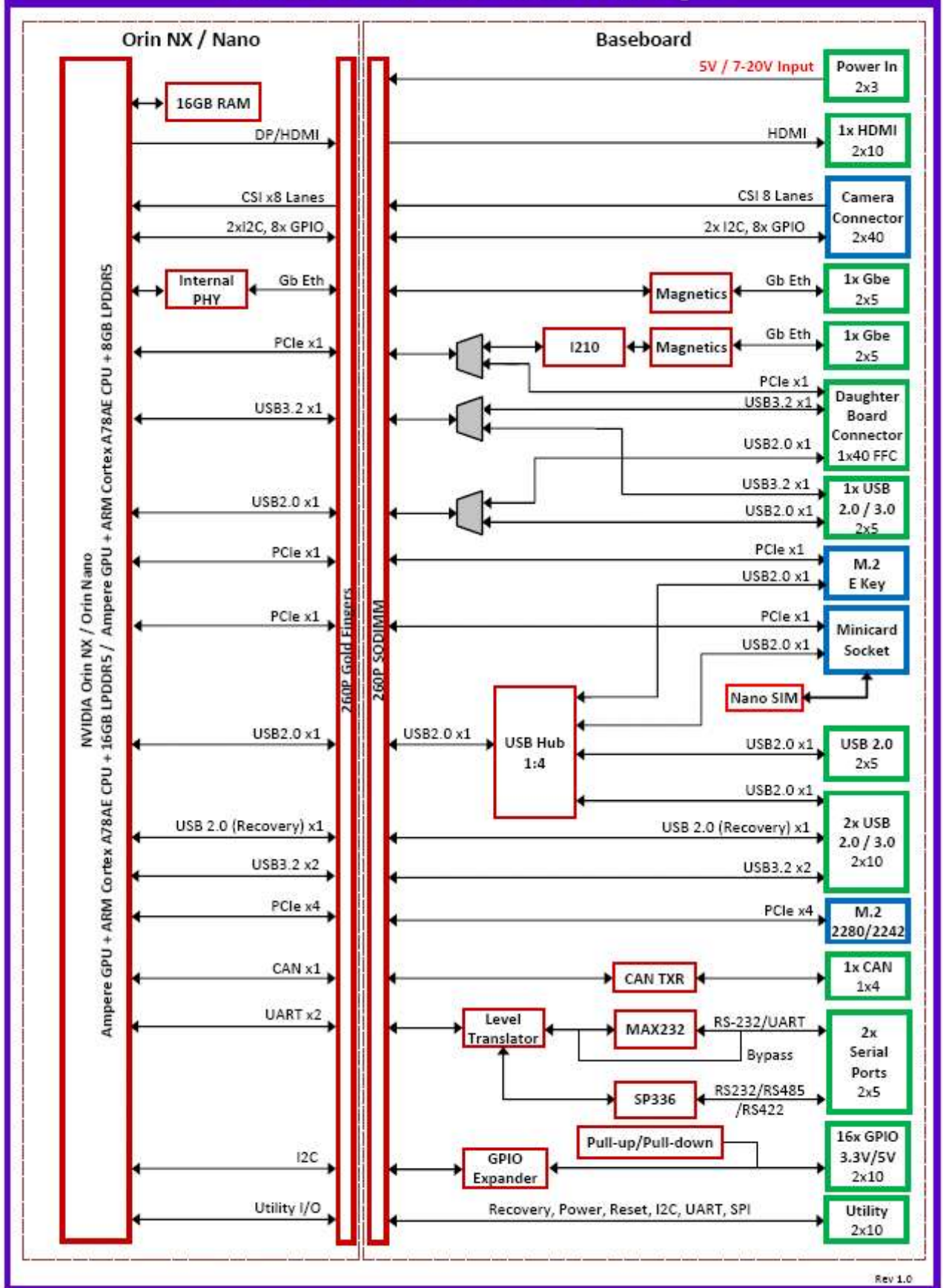
The Jackson-ER cable kit (part number CK-JAXER-01) includes all cables needed for I/O on Jackson-ER. All cables have positive latching connection to the board for improved ruggedness and reliability.



CK-JAXER-01 includes the following cables:

No.	Qty	Cable	Description	Drawing
1	1	6980504	USB cable, JST GHV-05V-S latching to USB type A panel mount, 12"	<a href="#">Show</a>
2	1	6980529	Cable, Molex 51021-0200 1.25mm Pitch, 150mm L, External Battery	-
3	1	6980601	Dual serial port cable, 2x DB9 male	<a href="#">Show</a>
4	3	6980603	Cable, FCI 2x5 2mm latching to USB 3.0 type A panel mount	<a href="#">Show</a>
5	1	6980604	Ethernet cable, FCI 2mm 2x6 latching to RJ-45 socket	<a href="#">Show</a>
6	1	6980605	HDMI Cable	<a href="#">Show</a>
7	1	6980607	Utility I/O cable, 2x10 latching to 2x10 2mm IDC ribbon	<a href="#">Show</a>
8	1	6980613	Power input cable, FCI 2x3 2mm latching to tinned leads	<a href="#">Show</a>
9	1	6980614	Utility cable, FCI latching 2x7 2mm to IDC 2mm 2x7 socket header	<a href="#">Show</a>
10	1	6981182	CANbus 2.0 cable, JST 1x4 to DB9M	<a href="#">Show</a>

## JACKSON-ER Orin NX / Nano Carrier Board Block Diagram



Ordering Information

Models and Accessories

Jackson-ER

Available Models:		
<b>JAXER-BB01</b>	Jackson-ER Baseboard (no Jetson module or heat spreader)	Jun-24
<b>JAXER-ASY-ONX16-HSP</b>	Jackson-ER assembly with Orin NX 16GB module and heat spreader; Linux OS installed	Jun-24
<b>JAXER-ASY-ONA8-HSP</b>	Jackson-ER assembly with Orin Nano 8GB module and heat spreader; Linux OS installed	Jun-24
<b>JAXER-ASY-ONX16-HSK</b>	Jackson-ER assembly with Orin NX 16GB module and fan sink; Linux OS installed	Jun-24
<b>JAXER-ASY-ONA8-HSK</b>	Jackson-ER assembly with Orin Nano 8GB module and fan sink; Linux OS installed	Jun-24
<b>6882660</b>	Heat spreader for Jackson-ER, with thermal pads and installation hardware	Jun-24

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

## Cables and accessories

Available Models:	
<a href="#">6882650</a>	Heat sink for Jackson / Jackson-ER, 90 x 50.3 x 21.5mm
<a href="#">6882651</a>	Heat sink with fan for Jackson / Jackson-ER, 90 x 50.3 x 25.6mm, 5V
<a href="#">CK-JAXER-01</a>	CK-JAXER-01 cable kit
<a href="#">6980504</a>	USB cable, JST GHV-05V-S latching to USB type A panel mount, 12"
<a href="#">6980529</a>	Cable, Molex 51021-0200 1.25mm Pitch, 150mm L, External Battery
<a href="#">6980601</a>	Dual serial port cable, 2x DB9 male
<a href="#">6980603</a>	Cable, FCI 2x5 2mm latching to USB 3.0 type A panel mount
<a href="#">6980604</a>	Ethernet cable, FCI 2mm 2x6 latching to RJ-45 socket
<a href="#">6980605</a>	HDMI Cable
<a href="#">6980607</a>	Utility I/O cable, 2x10 latching to 2x10 2mm IDC ribbon
<a href="#">6980613</a>	Power input cable, FCI 2x3 2mm latching to tinned leads
<a href="#">6980614</a>	Utility cable, FCI latching 2x7 2mm to IDC 2mm 2x7 socket header
<a href="#">6981182</a>	CANbus 2.0 cable, JST 1x4 to DB9M

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

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