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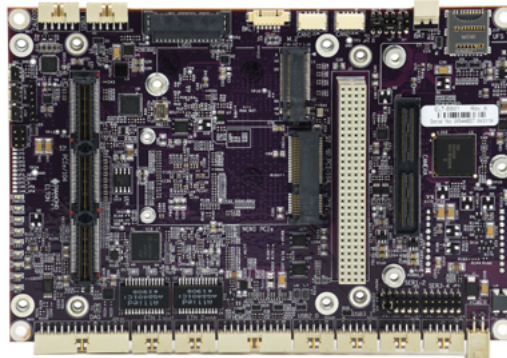Sign Up for our eNewsletter Today!

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ELTON™ Carrier for Nvidia Jetson Xavier

High-Performance Carrier System for NVIDIA® Jetson™ AGX Xavier™ Module

◆ NVIDIA

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◆ **Ideal Platform for compute-intensive rugged embedded applications**

With its NVIDIA Xavier computing power, rugged design, and PCIe/104 expansion capability, Elton offers the ideal platform for implementing high performance computing and AI applications in mobile and harsh environments.
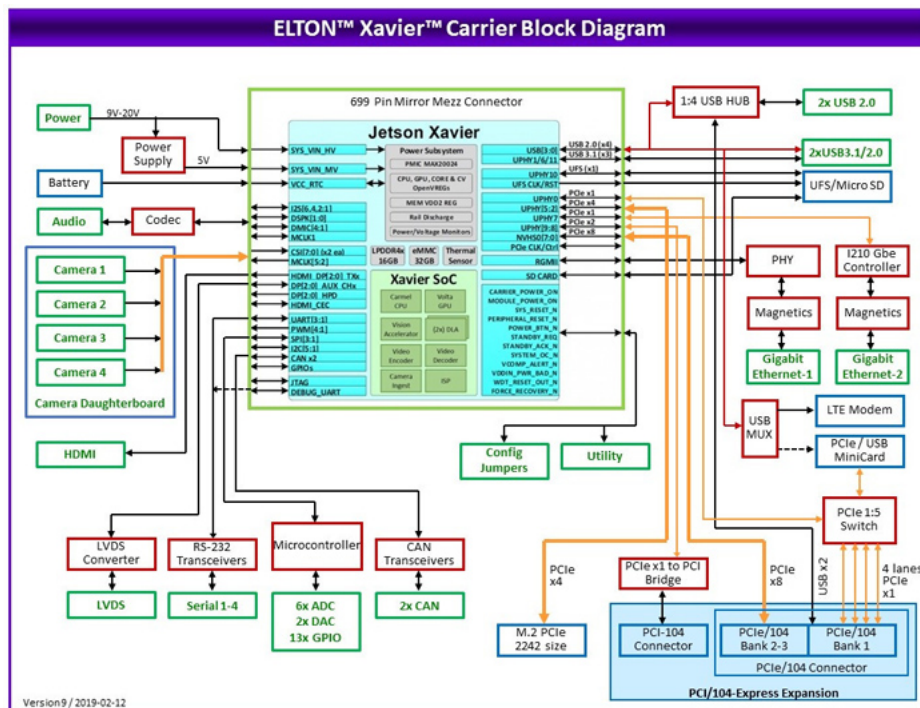
Elton utilizes the NVIDIA Jetson AGX Xavier embedded computer module to deliver unmatched performance for AI, machine learning, image processing, and other compute-intensive tasks. The Xavier module delivers up to 30 TeraOps in performance (3×10^{13} operations per second) at a maximum power dissipation of 30 watts. Xavier also offers scalable performance for applications requiring lower overall power consumption of 10 or 15 watts. The module runs at 32 TOPs on a 512-core Volta GPU with Tensor Cores and accelerators, enabling high-performance AI-powered autonomous machines like never before. At 87 x 100mm (3.4 x 3.9") it is slightly bigger than the other Jetson modules.

Elton provides numerous sockets for I/O expansion. An industry-standard camera module socket supports the attachment of up to 8 CSI cameras (up to 4 cameras with 4K resolution). An M.2 socket supports the use of PCIe x4 NVMe flash storage up to 256GB. An LTE module socket supports the use of NimbeLink SkyWire cellular modems, featuring a broad range of solutions with worldwide compatibility.

Standard PC-style I/O on Elton includes 2 USB 3.0 ports, 2 USB 3.1 ports, HD audio, HDMI and LVDS display, and 4 RS-232/422/485 ports with software configurability. All I/O is provided on pin headers that are compatible with both common non-latching and rugged latching mating cables, making Elton ideal for applications in environments subject to high shock and vibration.
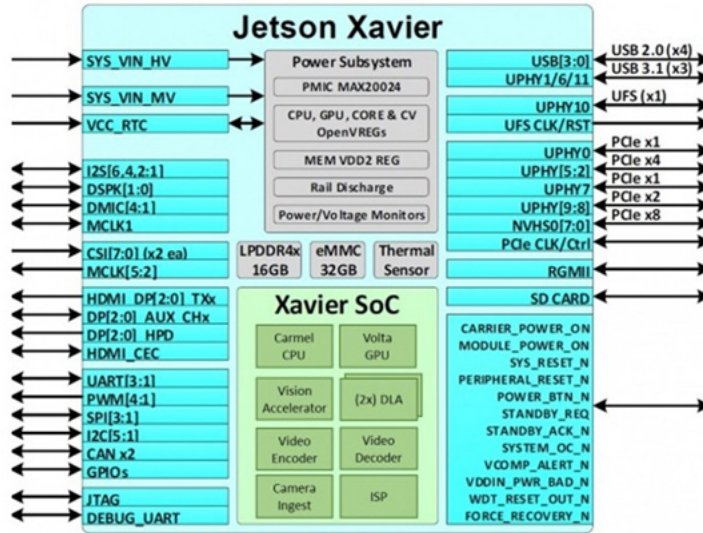
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◆ **Elton Block Diagram**

ELTON™ Xavier™ Carrier Block Diagram

FEATURES

◆ Size: 4" x 6.00" / 101.6 x 1
◆ Input voltage 9-20VDC

On-board features:

◆ I/O breakout from Xavier bo
◆ 2x USB 3.1
◆ 2x USB 2.0
◆ 2x Gigabit Ethernet
◆ 1x HDMI
◆ 1x LVDS LCD
◆ 4x RS-232/RS485/RS422
◆ 2x CAN 1Mbps
◆ Audio
◆ SAM DAQ circuit:
◆ 6 12-bit A/D, 0-3.3V inpu 1MSPS sampling rate
◆ 2 12-bit D/A, 0-3.3V outp
◆ 13 GPIO, 3.3V logic levels

Socketed features:

◆ Camera module connector s 6x 2-lane CSI cameras
◆ UFS flash socket
◆ M.2 PCIe x4 socket (2242 s
◆ 1x Nimbelink™ Skywire® m
◆ PCI-104 Express expansion
◆ PCI-104 connector for PCI
◆ 3-bank PCIe/104 Type 1 c 1x PCIe x8 and 4x PCIe x1
◆ The PCIe/104 specifica available here

ONLINE SUPPOR

◆ See ELTON™ Carrier for N Xavier Technical Resourc
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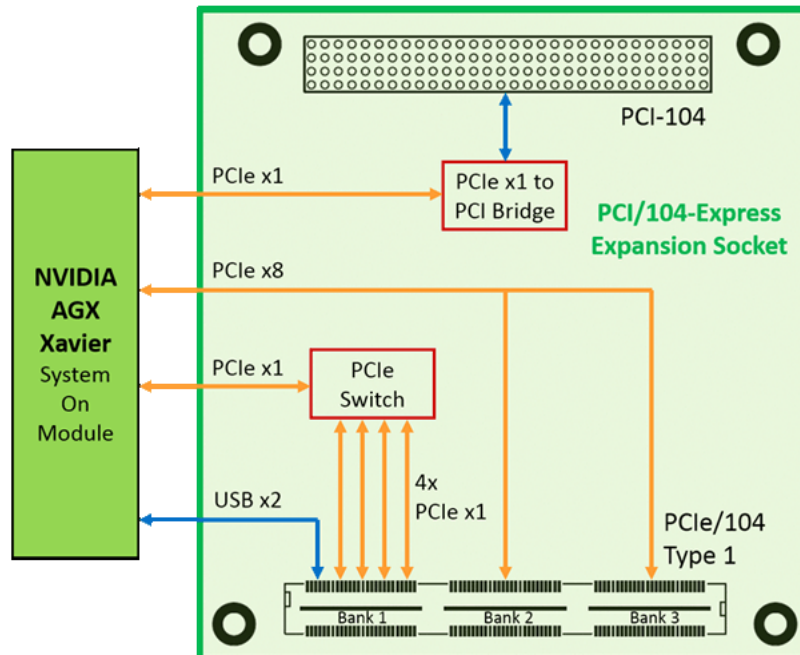**DOWNLOADS**

◆ Elton user manual (**.pdf**, 3.7 MB)
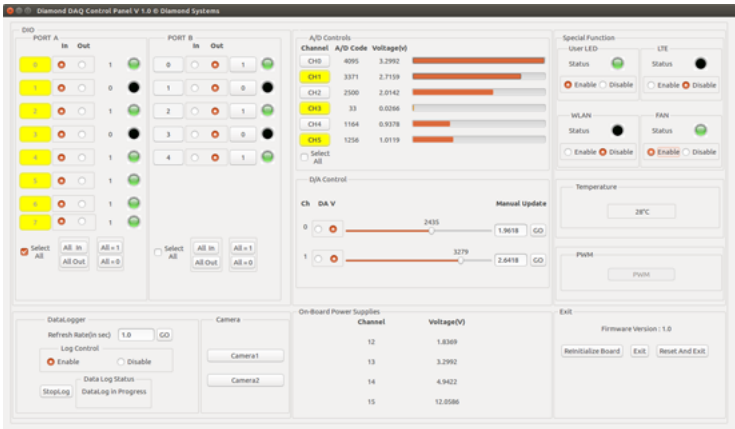
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◆ Jetson Xaviar Block Diagram

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◆ NVIDIA Meets PC/104

Unique among NVIDIA computing module carriers, Elton employs a PCI/104-Express expansion socket. The socket provides support for PCI-104, PCIe/104 type 2 (x8 lane), and PCIe/104 OneBank expansion modules (4 x1 lanes), enabling rapid creation of truly rugged, custom-configured, high performance, PCIe-based solutions using off-the-shelf I/O modules from a large number of manufacturers worldwide. Typical PCIe/104 I/O expansion includes 1G/10G Ethernet, video capture, and high resolution video display. A wide variety of industrial I/O modules, including analog, digital, serial, motion control, and other types is also available.
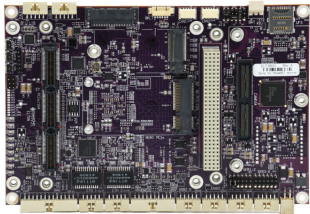

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◆ Data Acquisition

A built-in data acquisition circuit provides 12-bit A/D up to 1MSPS, 12-bit D/A, and 3.3V GPIO. Diamond's free C-language programming library simplifies application development, while a GUI control panel offers convenient control and monitoring of real-world processes as well as ready-to-run data logging capability.
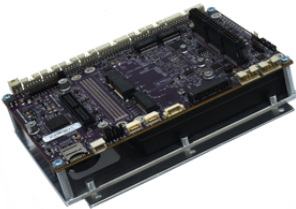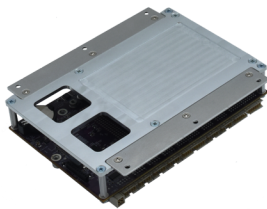
◆ Unique and Rugged

Unique among NVIDIA module carriers, Elton offers a full PCI/104-Express expansion socket with PCIe x8, PCIe x1, and PCI expansion capabilities in a solution designed for vehicle and harsh environment applications. Elton bridges the world of NVIDIA high performance computing and graphics capabilities and the world of PC/104 rugged systems. Elton is the first product to bring NVIDIA into the PC/104 ecosystem and helps to prove the enduring value of PC/104 as the PCIe expansion system of choice for small form factor, high performance, rugged embedded computer systems.
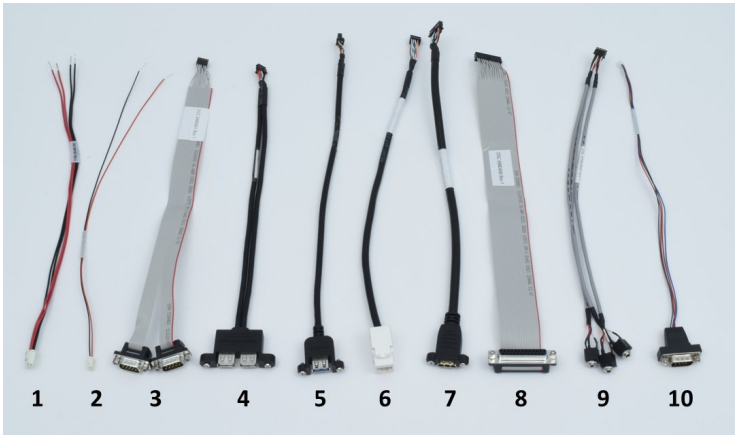

Elton carrier board

Elton carrier board with heat spreader,
and no PC-104 connector bank

Elton carrier board bottom with tabs
for securing to enclosure

Cable kit for Elton Jetson Xavier carrier board, Latching board connectors

CK-ELTON-01 includes the following cables:

No.	Qty	Cable	Description	Drawing
1	1	6981507	Power Cable, IPD 2x2 to Leads, 20AV	**Show**
2	1	6980524	Cable, External Battery, Molex Spox	**Show**
3	1	6980601	Dual serial, latching, 2x DB9M	**Show**
4	1	6980602	Cable, Dual USB 2.0, FCI 98414 to D	**Show**
5	1	6980603	Cable, USB 3.0, Latching, FCI 98414	**Show**
6	1	6980604	Cable, RJ-45 socket, panel mount	**Show**
7	1	6980605	HDMI Cable	**Show**
8	1	6980606	DAQ Cable	**Show**
9	1	6980608	Audio cable 2mm to 3x3.5mm	**Show**
10	1	6981182	CANbus 2.0 dual port cable	**Show**

Get an online quote

ELTON™ Carrier for Nvidia Jetson Xavier

	available models:	quantity:
ELT-BB01	Elton carrier board for Jetson AGX Xavier computer on module with PCIe/104 expansion	0
ELT-BB02	Elton carrier board for Jetson AGX Xavier computer on module with PCIe/104 + PCI-104 expansion	0
ELT-BB03	Elton carrier board for Jetson AGX Xavier computer on module, no PCIe/104 / PCI-104 expansion	0
ACC-HSELT-01	Heat spreader for Elton carrier board	0

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Cables and accessories

	available models:	quantity:
CK-ELTON-01	Cable kit, Elton Latching type	0
6981507	Power Cable, IPD 2x2 to Leads, 20AV	0
6980524	Cable, External Battery, Molex Spox	0
6980601	Dual serial, latching, 2x DB9M	0
6980602	Cable, Dual USB 2.0, FCI 98414 to D	0
6980603	Cable, USB 3.0, Latching, FCI 98414	0
6980604	Cable, RJ-45 socket, panel mount	0
6980605	HDMI Cable	0
6980606	DAQ Cable	0
6980608	Audio cable 2mm to 3x3.5mm	0
6981182	CANbus 2.0 dual port cable	0

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