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QUALITY& STANDARDS

- ► ISO 9001:2015 CERTIFIED
- ► CANADIAN CONTROLLED GOODS
- ► ITAR CERTIFIED, US JOINT CERTIFICATION
- ► MIL-STD-810H, DO-160G FOR SHOCK & VIBRATION
- **► INGRESS PROTECTION**





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intel partner alliance



NVIDIA's Largest Global Jetson Hardware Partner

NOTE: Specifications found in this guide are subject to change without notice.



EMBEDDED SYSTEMS



Anvil

Ready to withstand the most compute intensive AI applications with its power-efficient and feature rich design. Seamlessly deploy your next generation autonomous vehicle, smart city application, or vision solution.

- 2x 10G Ethernet
- 8x GMSL2 or FPD-Link III camera inputs (optional)
- M.2, 2x M-Key, 1x B-Key, and 1x E-Key
- USB 3.2. External PCIe
- Wide Input Power Range
- +10 to +36V







Polaris

Harnessing the Jetson Orin NX and built for robotics, smart city and autonomous machines, the rugged Polaris system provides a wide range of IO in an IP67 rated rugged package.

- IP67 Rated, Actively Cooled
- Rugged M12: 2x GbE, 2x CAN, GPIO, Wide range isolated power input (+18V - +48V)
- 2x USB3.1. 4x GMSL2 via sealed FAKRA, 4G/5G/LTE, WiFi/BT, GNSS, M.2 2280 NVME M-Key

ESG604



CARRIER BOARDS



Forge

Full-featured Carrier Board for the NVIDIA® Jetson AGX Orin™. This carrier board is specifically designed for commercially deployable platforms.

- 2x 10G Ethernet
- M.2, 2x M-Key, 1x B-Key, and 1x E-Key
- USB 3.2. PCIe x4 Oculink connector
- Wide Input Power Range up to +36V

AGX201





Rogue for AGX Orin™

Small Form Factor Carrier Board for the NVIDIA® Jetson AGX Orin™. Roque for Orin is specifically designed for commercially deployable platforms, and has an extremely small footprint of 92 x 107mm.

- 2x 10G Ethernet
- Extremely small form-factor (Same size as AGX Orin module)
- 2x NVMe M.2 Key Slots, 3x USB 3.2

AGX202





JETSON ORIN COMPARISON CHART

	Orin Nano 4GB	Orin Nano 8GB	Orin NX 8GB	Orin NX 16GB	AGX Orin 32GB	AGX Orin 64GB	
Al Performance	20 TOPs	40 TOPs	70 TOPS	100 TOPS	200 TOPS	275 TOPS	
GPU	512-core NVIDIA Ampere w/ 16 Tensor Cores		1024-core NVIDIA Ampere w/ 32 Tensor Cores		1792-core NVIDIA Ampere w/ 56 Tensor Cores	2048-core NVIDIA Ampere w/ 64 Tensor Cores	
CPU	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU		6-core Arm® Cortex®-A78AE v8.2 64-bit CPU		8-core Arm® Cortex®-A78AE v8.2 64-bit CPU	12-core Arm® Cortex® A78AE v8.2 64-bit CPU	
Memory	4GB 64-bit LPDDR5 34 GB/s	8GB 128-bit LPDDR5 68 GB/s	8GB 128-bit LPDDR5 102.4GB/s	16GB 128-bit LPDDR5 102.4GB/s	32GB 256-bit LPDDR5 204.8 GB/s	64GB 256-bit LPDDR5 204.8 GB/s	
Storage	SUPPORTS EXTERNAL NVMe	SUPPORTS EXTERNAL NVMe	Supports E	xternal NVMe	64GB el	MMC 5.1	
Power	5W - 10W	7W - 15W	10W / 15W / 20W	10W / 15W / 25W	15W - 40W	15W - 60W	
PCIE	1 x4 + 3 x1	1 x4 + 3 x1	3 x1 + 1 x4 PCle Gen 4		Up to 2 x8, 1 x4, 2 x1 (PCle Gen4, Root Port & Endpoint)		
CSI Camera		Up to 4 ca (8 via virtual ch				cameras l channels***)	
DL Accelerator			1x NVDLA v2.0		2x NVDLA v2.0		
Vision Accelerator			PVA v:		VA v2.0		
Networking	1x GbE	1x GbE	1x	GbE	1x GbE 2x 10GbE		
Mechanical		69.6mm x 45mm 260-pin S0-DIMM connector			100 mm x 87 mm, 699-pin M	lolex Mirror Mezz Connector	





Jetson Xavier™ NX 16GB



Jetson Xavier™ NX



Jetson™ TX2 NX



Jetson Nano



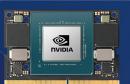
Jetson AGX Xavier Industrial



Jetson AGX Xavier™



Jetson Orin™ NX 16GB



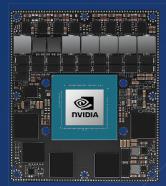
Jetson Orin™ NX 8GB



Jetson Orin™ Nano 4GB



Jetson Orin™ Nano 8GB



Jetson AGX Orin™ 64GB



Jetson AGX Orin™ 32GB



JETSON COMPARISON CHART

	Nano	TX2 NX	Xavier NX	TX2i	AGX XAVIER	AGX XAVIER INDUSTRIAL	
AI Performance	0.5 TFLOPS	1.33 TFLOPs	6 TFLOPS	1.26 TFLOPs	11 TFLOPS	10 TFLOPS	
GPU	128-core NVIDIA Maxwell™ GPU	256-core NVIDIA Pascal™ GPU	384-core NVIDIA Volta™ GPU with 48 Tensor Cores	256-core NVIDIA Pascal™ GPU	512-core NVIDIA Volta™ G	core NVIDIA Volta™ GPU with 64 Tensor Cores	
СРИ	Quad-Core ARM® Cortex®-A57 MPCore	Dual-Core NVIDIA Denver 2 64-Bit CPU and Quad- Core ARM® Cortex®-A57 MPCore	6-core NVIDIA Carmel ARM®v8.2 64-bit CPU 6MB L2 + 4MB L3	t CPU 1.5 64-Bit CPU and 8-core NVIDIA Carme		el Arm®v8.2 64-bit CPU + 4MB L3	
Memory	4 GB 64-bit LPDDR4 25.6GB/s	4 GB 128-bit LPDDR4 51.2GB/s	8 GB or 16GB 128-bit LPDDR4x 59.7GB/s	8 GB 128-bit LPDDR4 (ECC Support) 51.2GB/s	64GB or 32 GB 256-bit LPDDR4x 136.5GB/s	32GB 256-bit LPDDR4x 136.5GB/s	
Storage	16 GB eMMC 5.1			32 GB eMMC 5.1	32 GB eMMC 5.1	64GB eMMC 5.1	
Power	5W / 10W	7.5W / 15W	10W / 15W / 20W	10W / 20W	10W / 15W / 30W	20W / 40W	
PCIE	1 x4 1 x1 + 1 x2, total 30GT/s (PCIe Gen2) (PCIe Gen2)		1 x1 + 1 x4 (PCle Gen3, Root Port & Endpoint)	1 x1 + 1 x4 0R 1 x1 + 1 x1 + 1 x2 (PCle Gen2)	1 x8 + 1 x4 + (PCle Gen4, Root F		
CSI Camera	Up to 4 cameras	Up to 5 cameras (12 via virtual channels)	Up to 6 cameras (24 via virtual channels)	Up to 6 cameras (12 via virtual channels)	Up to 6 cameras (24 via virtual channels)	Up to 6 cameras (36 via virtual channels)	
DL Accelerator			2x NVDLA Engines		2x NVDLA	Engines	
Vision Accelerator					7-Way VLIW Vision Processor	2x 7-Way VLIW Vision Processor	
Networking			10/100/1000 BA	SE-T Ethernet			
Mechanical	69.6 mm x 45 mm, 260-pin SO-DIMM connector			87 mm x 50 mm, 400-pin connector	100mm x 87mm, 699-pin connector		



EMBEDDED SYSTEMS



AGX Orin™ Inference Server

The AGX Inference Server is a high performance AI workstation powered by 12X NIVIDIA Jetson AGX Orin Modules. Running NVIDIA'S most powerful deep-learning software.

- 12x 200 TOPs, 1792-Core Ampere GPU and 56 Tensor Cores
- 2x 10G SFP+ 2x 1GSFP uplink capability
- Up to 2TB of NVMe Storage per module
- 2U ATX style redundant PSU

UAGXAS





Sentry-X

Sentry-X is ideal for Aerospace, Defense and Heavy Machinery or for any market that can benefit from the Jetson AGX Xavier's incredible performance in a rugged enclosure.

- 2x GbE, 3x USB 3.1, 2x HDMI, 2x CAN 2.0b, 4x GPI, 4x GPO, 2x RS-232/422/485
- Unique Docking Stations
- Tested to MIL-STD-810G, D0-160G for shock & vibration, ingress protection of IP67

SGX001





Sentry-X 38999

Sentry-X now offers a fully sealed, 38999 docking sled option using Meritec Hercules rugged, circular MIL-DTL-38999L Series III shell connectors.

- 2x GbE, 3x USB 3.1, 2x HDMI, 2x CAN 2.0b, 4x GPI, 4x GPO, 2x RS-232/422/485
- Tested to MIL-STD-810G, D0-160G for shock & vibration, ingress protection of IP67
- ATX style redundant PSU

SGX001-05, -06





Anvil for AGX Orin™

Ready to withstand the most compute intensive AI applications with its power-efficient and feature rich design. Seamlessly deploy your next generation autonomous vehicle, smart city application, or vision solution.

- 2x 10G Ethernet
- 8x GMSL2 or FPD-Link III camera inputs (optional)
- M.2, 2x M-Key, 1x B-Key,and 1x E-Key
- USB 3.2, External PCIe
- Wide Input Power Range
- +10 to +36V







EMBEDDED SYSTEMS



Rudi-AGX

Rudi-AGX unleashes the full potential of the NVIDIA® Jetson AGX Xavier™ module, capable of running AI programs at Maximum Performance (Max-N).

- Expandable storage via NVMe and/or SD card.
- Connect up to 8x GMSL cameras
- Quickly Integrate WiFi, Bluetooth, LTE, and a video capture card
- 2x HDMI outputs and 4x USB for robust and flexible deployment

ESG610





Rudi-NX

Rudi-NX is the ultimate Edge Al computing device for state-of-the-art, compute-intensive applications. Rudi-NX is powered by NVIDIA® Jetson Xavier™ NX or Orin™ NX.

- Extremely small footprint: 135mm x 50mm x 109mm
- 1/0: 4x GMSL, USB 3.0, USB 2.0, CAN 2.0b, USB OTG, RS-485, I2C, GPIO, SPI. PWM
- •1x NVMe (PCIe x4, 2280), 1x SD Card
- -20°C to +80°C Operating Temperature Range

ESG602





Rudi-NX FPD-Link III

Rudi-NX FPD-Link III is the ultimate Edge AI computing device for state-of-the-art, compute-intensive applications. Rudi-NX is powered by NVIDIA® Jetson Orin NX™.

- Extremely small footprint: 135mm x 50mm x 109mm
- I/O: 4x FPD-Link III, USB3.0, USB 2.0, CAN 2.0b, USB 0TG, RS-485, I2C, GPIO. SPI. PWM
- 1x NVMe (PCle x4, 2280),

ESG603





Orin™ NX Inference Server

The Jetson Orin™ NX Inference Server is a low wattage, high-performance deep learning inference server powered by the NVIDIA® Jetson Orin™ NX 16GB module.

- 24x 100 TOPS, 1024 GPU CUDA cores with NVIDIA® Ampere™ architecture
- 2x 10G SFP+, 2x 1G SFP uplink capability
- 0°C to +60°C Operating Temperature Range

UTX2AS



CARRIER BOARDS



Rogue

Rogue is a full featured Carrier Board for the NVIDIA® Jetson AGX Xavier™ module. Camera Board platforms are available for the Rogue Carrier.

- 6x 2-lane or 4x 4-lane MIPI CSI Camera Inputs
- 2x NVMe M.2 Key M Slots, 3x USB 3.1 2x GbE
- Wide input power range 9-19V DC
- Dimensions: 92mm x 105mm







Rogue-X

The Rogue-X allows for the Jetson AGX Xavier to interface up to two XIMEA xiX embedded vision cameras, each camera utilizing a PCIe Gen2 x4 connection.

- 6x 2-lane or 4x 4-lane MIPI CSI Camera Inputs
- 1x NVMe M.2 Key M Slot, 3x USB 3.1 2x GbE
- Wide input power range 9-19V DC
- Dimensions: 105mm x 105mm

AGX103/AGX113





Rogue-X2

The Roque-X2 is a full featured Carrier Baord for the NVIDIA Jetson AGX Xavier mdoule, allowing for a PCIe x4 peripheral card to be used for IO expansion.

- PCIe x4 Card Slot
- 6x 2-lane or 4x 4-lane MIPI CSI-2 Camera Inputs
- 1x NVMe M.2 Key M Slot, 2x USB 3.1, 1x GbE
- Wide input power range 9-19V DC
- Dimensions: 125mm x 100mm

AGX108



Rogue-X NVMe Adapter **XBG018**



Expand your Roque-X with 2 -2230, 2242, 2260 or 2280 NVMe PCI x4 modules.

Features:

- PCle Gen3 x4 interface
- 1x NVMe M.2 Key M Slot
- Direct 12V power from an AGX103 or 2.1 external positive barrel jack
- 107.95 x 63.5 mm



CARRIER BOARD COMPARISON CHART

	Rogue Carrier	Rogue-X Carrier	Rogue-X2 Carrier		
Part Number	AGX101	AGX103	AGX108		
Dimensions	92mm x 105mm (3.62" x 4.13")	105mm x 105mm (4.13" x 4.13")	119.5mm x 105mm (4.70" x 4.13")		
Weight	103g (3	.63oz)			
Camera Inputs	6 x2 Lane MIPI CSI-2 OR 4 x4 Lane MIPI CSI-2	2x PCle Gen2 x4 Connections (for ximea xiX cameras) 6x 2 Lane MIPI CSI-2 or 4x 4 Lane MIPI CSI-2	6x two lane MIPI CSI-2 OR 4x four lane MIPI CSI-2		
User Expansion	1x M.2 Key-E Slot with PCIe & USB (WiFi + BT modules)	2x PCIe Gen2 x4 1x M.2 Key-E Slot with PCIe & USB (WiFi + BT modules)	1x M.2 Key-E expansion slot (WiFi + BT modules) 1x PCIe x8 Edge Card Connector		
USB		3x USB 3.1, 1x USB 0TG			
Networking					
Display Output		2x HDMI 2.0			
Storage	1x Micro SD/UFS Card Slot 2x NVMe M.2 Key M Slots	1x Micro SD/UFS Card	d Slot 1x NVMe M.2 Key M Slots		
UART	2x @ 3.3V levels U	ARTO and UART1	2x 3.3V Logic Level UARTs 1x USB based Debug UART3		
I2C/SPI		1x I2C Channel @ 3.3V IO 1x SPI Channel @ 3.3V IC			
CAN		2x CAN 2.0b Port			
GPI0					
Input Power		or) r load			
Operating Temperature					



CAMERA BOARDS



Basler MIPI Camera Board

This expansion board allows up to 4 Basler Dart cameras to be connected to all AGX Xavier ™ and AGX Orin ™ Carrier Boards.

- 4x 28 pin Hirose FH41 series FFC connectors to interface with **Basler Dart MIPI cameras**
- · Onboard power regulation
- Compact Size
- 2x GPI and 2x GPO Per Camera
- GPIO on board to support camera synchronization

JCB001





GMSL Camera Platform

This expansion board supports up to 8x GMSL1 or GMSL2 cameras to be connected to all AGX Xavier ™ and AGX Orin ™ Carrier Boards.

- GMSL1 or GMSL2 protocols
- Internal or External Camera power
- Allows longer length cabling as well as a direct path to the Jetson AGX Xavier ISPs
- Power over Coax; 4x mini coax connector
- Input voltage protection and Software power cycle

JCB002





Allied Vision MIPI Camera Board

This Camera Board allows for direct connectivity for to up to six MIPI sensors without the need of additional hardware components.

- Simple integration of Allied Vision MIPI CSI-2 sensors to the Jetson AGX Xavier™ and AGX Orin™ platforms.
- Connect up to 6x 2-lane or 4x 4-lane MIPI Cameras
- Seamless integration to Jetson AGX Xavier and AGX Orin Carrier Boards





FPD-Link III Camera Platform

This expansion board allows for the connection of FPD-Link III Deserializers to be connected to Jetson AGX Xavier and AGX Orin Carrier Boards

- 8x FPD-Link III camera inputs, 2x per deserializer
- 16-lane MIPI output; single 4-lane MIPI CSI-2 per deserializer
- Power over Coax
- Internal or External Camera power

JCB006





CAMERA BOARD COMPARISON CHART

\	Basler MIPI Camera Board	Allied Vision MIPI Board	GMSL Camera Platform	FPD-Link III Camera Board	
Part Number	JCB001	JCB005	JCB002	JCB006	
Size	75mm x 40.2mm (2.95" x 1.58")	75mm x 40.2mm 75mm x 57mm (2.95" x 1.58") (2.95" x 2.24")		75mm x 57mm (2.95" x 2.24")	
Weight	25g	25g 19g		37g	
Connector	1x High Density Connector	Camera Board will mate to the Forge and Rogue for (r on the Rogue, Rogue-X,	
Camera Inputs	Up to 4 MIPI CSI-2 [4x 4-lane] N/A N/A		8x Total (GMSL2/GMSL1)	8x Total	
Deserializer			Maxim MAX9296A	Texas Instruments DS90UB954	
MIPI Output			A single 4-lane MIPI CSI- 2 v1.3 output from each Deserializer (16-lanes total)	A single 4-lane MIPI CSI-2 v1.3 output from each Deserializer (16-lanes total)	
Camera Input Connectors	4x 4-lane MIPI CSI-2 Connections to interface to Basler MIPI Cameras	6x MIPI CSI-2 connectors to interface to Allied Vision Alvium cameras	2x MATE-AX Quad Coax Connectors Breakout cables to FAKRA available	2x MATE-AX Quad Coax Connectors Breakout cables to FAKRA available	
PoC (Power-over-Coax)	N	/A	All 8 cameras will be sourced Power-Over- COAX from JCB002	All 8 cameras will be sourced Power-Over- COAX from JCB006	
Operating Temperature					

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Visit our website at www.connecttech.com to find out where you can see us next!





CARRIER BOARDS



Hadron

The Hadron Carrier Board for Orin™ NX is an ultra small, rugged and feature-rich carrier for AI Computing at the Edge. Just slightly larger than the Jetson™ SODIMM module.

- Tiny footprint: 82.6mm x 58.8mm (3.25" x 2.31")
- 2x USB 3.1, 1x GbE, 1x 4-lane MIPI CSI-2, 1x USB OTG
- 1x 2242/2230 NVMe (M-Key), 2x RS-232 Serial Ports 4x PWM capable GPI0
- Wide power input +9V to +60V DC

NGX012





Boson for FRAMOS

Boson for FRAMOS is an Al vision powerhouse, integrating up to four MIPI cameras within an extremely small footprint.

- Compatible with Orin NX, Xavier NX/TX2 NX & Nano
- Integrate up to 4x 2-lane or 3x 4-lane MIPI FRAMOS Sensor Modules
- Dual GbE and Dual USB
- NVMe and microSD card for additional storage
- WiFi and Bluetooth expansion options
- +9V to +36V wide input voltage range

NGX007





Photon Al Camera Platform

The Photon carrier board is a Jetson Al Camera Platform specifically designed to support smart camera applications.

- Compatible with Orin NX, Xavier NX/TX2 NX & Nano
- PoE PD (NGX002) capable, power via separate input or over Ethernet
- 1 x GbE, 1x NVMe (M.2 M-Key), 1 microSD, 4x GPIO, I2C, USB Console UART, USB OTG for programming
- DC barrel power input also available
 Internal or External Camera power







Quark

Quark Carrier is an affordable, ultra small feature rich carrier. Just slightly larger than the Jetson™ module, it's ideal for vision applications, inference, and unmanned payloads.

- Tiny footprint: 82.6mm x 58.8mm (3.25" x 2.31")
- 1x USB 3.1, 2x GbE, 2x 2-lane MIPI CSI-2, 1x USB OTG
- 1x SD card slot, 3x 3.3V UART, 2 x I2C, 1x CAN 2.0b, and 1x SPI
- For Jetson Xavier NX, TX2 NX & Nano only.

NGX004



Jetson Orin™ NX, Xavier™ NX, TX2™ NX, Orin™ Nano and Nano™ **© IVIDIA**.



Name Hadron Carrier		Quark Carrier	Photon Carrier	Boson Carrier for FRAMOS	
Part Number NGX012		NGX004	NGX002	NGX007	
Dimensions	82.6mm x 58.8mm (3.25" x 2.31")	82.6mm x 58.8mm (3.25" x 2.31")	145mm x 64.5mm (5.7" x 2.53")	90mm x 75mm (3.54" x 2.95")	
Ethernet	1x 1000BASE-T Ports • 1x GBE from Jetson GBE Port	2x 1000BASE-T Ports • 1x GBE from Jetson GBE Port • 1x GBE from PCIe x1 i210 PHY	1x 1000BASE-T Uplink • PoE IEEE 802.3af-2003 (15.4W) PD • PoE+ IEEE 802.3at- 2009 (25.5W) PD	2x 1000BASE-T Ethernet Ports • 1 Port sourced directly from NX • 1 Port sourced from i210	
USB + OTG	2x USB 3.1 1x USB 2.0 (OTG)	1x USB 3.1	1x USB 3.1, 1x USB 2.0 OTG 1x USB FTDI UART	1x USB 3.0 Gen 2 w/ OTG capability (Type C) 1x USB 2.0 (Type A)	
MIPI Cameras	1x 4-Lane MIPI CSI-2 22-pin FPC Connector	2x 2-lane MIPI CSI-2	2x 2-lane MIPI CSI-2	Up to: • 4x 2-lane MIPI FRAMOS Sensor Modules, or • 3x 4-lane FRAMOS Sensor Modules	
Misc Interfaces	1x 3.3VTTL UART, 2x RS-232 Serial Ports, 4x PWM capable GPI0 1x 3.3V I2C, 1x 3.3V SPI	3x UARTs, 8x GPIO, 2x I2C 3.3V, 1x CAN 2.0b, 1x SPI	1x I2C, 4x GPIO, 1x Power Output	3x 3.3V TTL UARTs (1x CONSOLE), 8 GPIOs 3.3V TTL (2x PWM Capable), 2x I2C 3.3V, 1x CAN 2.0b, 2x SPI, 2x 3.3V, 2x 5V, 8x GND	
Storage	1x 2242/2230 NVMe (M-Key)	1x Micro SD Card Slot	1x SD Card Slot 1x NVMe 2280 (M.2 M-KEY)	1x M.2 M-Key (2280) NVMe PCIe x4 1x Micro SD Card	
Display Output	None (Headless Operation only)	None (Headless Operation only)	1x	HDMI 2.0	
Wireless Expansion	1x 2230 E-Key Expansion for WiFi/Bluetooth	N/A	1x 2230 E-Key Expansion for WiFi/Bluetooth 1x 2230 B-Key Expansion for LTE/GNSS	1x 2230 E-Key Expansion for WiFi/Bluetootl 1x PCle x1 + USB 2.0	
Power Input	+9V to +60V DC	+5V DC Input (Positive Locking MiniTek Connector)	1x 2mm DC Barrel Jack +12V DC +/- 5%	+9V to +36V Input Voltage Range Auto-ON operation by default	
Operating Temperature	-25°C to +85°C (-13°F to +185°F)	-25°C to +85°C (-13°F to +185°F)	-25°C to +85°C (-13°F to +185°F)	-40°C to +85°C (-40°F to +185°F)	
Weight 33g (1.16oz)		33g (1.16oz)	76g (2.68oz)	80g (2.82oz)	



THERMAL SOLUTIONS

ACTIVE HEAT SINKS

Jetson Orin NX/Nano **XHG325**



Jetson Xavier NX & Nano XHG312, XHG314, XHG309





Jetson TX2-NX **XHG318**



PASSIVE HEAT SINKS Jetson Orin NX/Nano **XHG324** Jetson Xavier NX & Nano XHG311, XHG308 Jetson TX2 NX - XHG317



Jetson Orin NX/Nano **XHG323**



Jetson Xavier NX & Nano XHG313, XHG310



Jetson TX2 NX - XHG316



Jetson Accessories:

Connect Tech carrier boards and system level solutions offer a wide variety of expansion options and accessories.

Accessories include:

Cables, antennas, power supplies, camera adapters, camera expansions. enclosures, thermals, WiFi modules, 5G & LTE Modules, frame grabbers, storage, bluetooth modules. and more.

Jetson™ Thermal Solutions & Accessories



ACCESSORIES



Active Heat Sink

This active heat sink features a built-in fan for enhanced cooling, ensuring optimal performance and longevity of your NVIDIA® Jetson AGX™ module.

- Specifically designed to fit the NVIDIA® AGX Orin. Also compatible with Jetson AGX Xavier™ modules
- Dissipates the heat produced by the module through a fan
- Dimensions: 100mm x 87mm x 36.7mm

XHG319





Passive Heat Sink

Efficiently dissipates heat from your NVIDIA® Jetson AGX Orin™ and AGX Xavier™ modules, ensuring optimal performance and longevity.

- Specifically designed to fit the NVIDIA® AGX Orin. Also compatible with Jetson AGX Xavier™ modules
- Dissapates the heat produced by the module through convection
- Dimensions: 100x87x26.7

XHG320





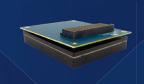
Liquid Cooling Block

Superior thermal management, keeping your NVIDIA® Jetson AGX™ module cool under heavy loads for maximum performance.

- Industrial grade Liquid Cooling solution
- Ideal for space constrained or limited airflow applications
- 8 customizable side ports where inlet/outlet flow can be directed
- Incredibly quiet, high-performance heat dissipation solution

XHG307





Connector Saver

The NVIDIA® Jetson AGX Xavier™
Connector Saver attaches directly to
the AGX Xavier production module to
save your connector from wear.

- Minimizes contact damage
- Protects connectors from mating and unmating wear
- Dimensions: 92mm x 105mm (3.62" x 4.13")
- Compatibility: NVIDIA Jetson AGX Xavier, Connect Tech Rogue Carrier

ADG110





EMBEDDED SYSTEMS



Cogswell Vision System

Cogswell Vision System is integrated with the NVIDIA® Jetson™ TX2. It comes in an anodized metal enclosure and is both fanless and cable free.

- . Specifically designed for use with **GigE Vision Cameras**
- 5 x Gigabit Ethernet Channels -4 x PoE. 2 x PoE+ PSE Gigabit Ports
- . Only a single +12V input required; No external 48V PoE power required
- 1 x USB 3.0, 1x USB 2.0, 1x USB OTG, 2x RS-232, 1x miniPCle, 1x mSATA







Rosie Embedded System

Rosie is a small form factor, rugged embedded system pre-integrated with the NVIDIA Jetson TX2 or TX2i. It is housed in a rugged compact enclosure.

- 163.6mm x 108.0mm x 96.3mm [6.438" x 4.250" x 3.790"]
- 1x HDMI, 2x GbE, 2x USB 2.0, IEEE 802.11 ac. 1x RS-232
- +9V to +36V Power Input
- Designed to MIL-STD 810g and DO 160G for shock and vibration Designed to IP68 ingress protection

ESG501





Rudi Embedded System

Rudi holds a lot of power in a small package and is pre-integrated with NVIDIA Jetson TX2, providing 256 CUDA® Cores.

- 1 TFLOP/s, 256 CUDA cores with **NVIDIA Pascal GPU Architecture**
- · Extremely small footprint 135mm x 50mm x 105mm
- USB 3.0. USB 2.0. CAN 2.0b. USB OTG. RS-232, I2C, GPIO, WiFi, Bluetooth
- 1 x miniPCle Slot with PCle & **USB Connectivity**







TX2 Inference Server

The TX2 Inference Server is a low wattage, high performance deep learning inference server powered by the NVIDIA Jetson.

- 24x 1 TFLOP/s, 6,144 GPU CUDA cores with NVIDIA Pascal architecture
- 2x 10G SFP+, 2x 1G SFP Uplink Capability
- 3x 2.5" SATA drives
- 1U ATX style redundant power supply







CARRIER BOARDS



Orbitty Carrier

Orbitty Carrier is designed to match the NVIDIA® Jetson™ TX2/TX2i module form factor. Orbitty is our best selling solution due to its combination of features, price point, and size.

- Ideal for robotics and unmanned applications or any small form factor rugged environment
- Extremely Small Size: 87mm x 50mm (3.42" x 1.96")
- 1x GbE, USB 3.0, USB 2.0, 1x HDMI, 1x MicroSD, 2x 3.3V UART, 12C, 4x GPIO
- +9V to +14V DC Nominal (+19V Peak)







Elroy Carrier

Designed to match the NVIDIA Jetson TX2 or TX2i form factor. With locking pin-header connectors and industrial temperature range components, the Elroy is ideal for use in drones.

- Extremely Small Size: 87mm x 50mm (3.425" x 1.968")
- Head-to-head dual Mini-PCle
- Dual x2 MIPI CSI-2 Video Inputs
- · Locking pin-connectors
- Operating Temperature -40°C to +85°C (-40°F to +185°F)

ASG002





Astro Carrier

Astro is specifically designed to work with the NVIDIA Jetson TX2 or TX2i. The Astro Carrier provides access to features found on the Jetson TX2/TX2i

- 2x 1GbE (10/100/1000) Ports
- USB & HDMI Ports
- Use with COTS or custom breakout boards
- Extended Temperature Range -40°C to +85°C (Astro Carrier)
- Video Inputs: MIPI, GMSL (ASG012)

ASG001/ASG012





Sprocket Carrier

Sprocket Carrier is designed to match the NVIDIA Jetson TX2/TX2i module form factor. The Sprocket is our lowest price entry level product.

- Slimmest design possible in Z-axis All components fit "under" TX2/TX2i
- Extremely Small Size: 87mm x 50mm [3.42" x 1.96"]
- •1x USB OTG, 1 x4 lane MIPI CSI-2, 2x 3.3V UART, I2C, 4x GPIO
- +12V to +16V DC Input Range

ASG008



CARRIER BOARDS



Cogswell Carrier

Cogswell Carrier for NVIDIA® Jetson™ TX2 and TX2i is ideal for use in Gigabit Ethernet Vision applications, Provides Gigabit Ethernet channels with built-in Power over Ethernet (PoE).

- · Specifically designed for use with **GigE Vision Cameras**
- 5 x Gigabit Ethernet Channels -4 x PoE, 2 x PoE+ PSE Gigabit Ports
- . Only a single +12V input required; No external 48V PoE power required
- 1 x USB 3.0, 1x USB 2.0, 1x USB OTG, 2x RS-232, 1x miniPCle, 1x mSATA







Spacely Carrier

Spacely Carrier for NVIDIA Jetson TX2/ TX2i is an ideal product for unmanned vehicle applications, or any application where situational awareness is critical.

- Built-in expansion for a GPS/GNSS module
- Connect up to 6 MIPI CSI-2 Camera Inputs
- Tailored I/O for easy connection to **Pixhawk Autopilot**
- 2x GbE, 1x uHDMI, 2x USB 3.0, 2x USB 2.0, 1x USB CLIENT, 1x miniPCle Slot,

ASG006/ASG009





Quasar Carrier

Very similar to the popular Orbitty Carrier, the Quasar brings in a few new features while maintaining the small 87mm x 50mm footprint.

- Additions*: 2x USB 3.0, 1x 4-lane MIPI (I-PEX), 1x CAN, SATA 7-pin connector for storage
- Updated 1x HDMI 2.0 connector
- +9V +14V DC Nominal (+19V Peak)







NVIDIA TX2 Dev Kit Carrier

The NVIDIA TX2 Dev. Kit Carrier features 12 lanes MIPI CSI-2. D-PHY 1.2. HDMI 2.0, GPIO, I2C, I2S, SPI, UART. This Carrier contains the same footprint and 10 placements as TX2 Dev Kit.

- NVIDIA TX2 Dev Kit Replacement (drop-in)
- Additional USB 3.0 Ports 15x Ports Total
- +9V +14V DC Nominal (+19V Peak)

ASG018

CARRIER BOARD COMPARISON CHART

	Orbitty	Quasar	Elroy	Astro	Sprocket	Cogswell	Spacely
Part Number	ASG003	ASG016	ASG002	ASG001 w/ XBG206	ASG008	ASG007	ASG006
Dimensions	87mm x 50mm (3.425" x 1.968")	87mm x 50mm (3.425 x 1.968)	87mm x 50mm (3.425" x 1.968")	87mm x 57mm (3.43" x 2.24")	87mm x 50mm (3.425" x 1.968")	178mm x 147.5mm (7.008" x 5.81")	125mm x 95mm (4.92" x 3.74")
Mini-PCle/ mSATA	N/A	N/A	1x Mini-PCle/mSATA half or full size (use of full size removes secondary Mini PCle slot)	1x half size card or 1x full size card PCle and USB signalling (Mini PCle)	N/A	1 x miniPCIe Slot with PCIe & USB, x mSATA Full Size Slot	1 x miniPCIe Slot with PCIe, USB + SIM; 1x mSATA Full Size Slot
SATA	N/A	1x SATA (7-pin Data Connector)	1x mSATA half or full size (use of full size removes secondary Mini PCIe slot)	1x SATA Link	N/A	N/A	N/A
Display	1x HDMI	1x HDMI	1x HDMI	1x HDMI	N/A	1x HDMI	1x HDMI
Serial	2x 3.3V UART through discreet connector	2x 3.3V UART through discreet connector	2x RS-232/RS-485	2x RS-232/RS-485	2 x 3.3V from TX2 UART0 + UART1	2x RS-232	2x 3.3V from TX2 UART0 and UART1
CAN	N/A	N/A	N/A	N/A	N/A	1x CAN 2.0b Port	1x CAD 2.0b Port
USB	1x USB 3.0, 1x USB 2.0 OTG	2x USB 3.0	1x USB 3.0 (Integrated USB 2.0), 1x USB 2.0	1x USB 3.0, 2x USB 2.0	1 x USB OTG	1 x USB 3.0, 1 x USB OTG (Micro- AB), 1 x USB 2.0, 1 x USB, 2.0 to miniPCle	2x USB 3.0, 1x USB 0TG, 2x USB 2.0, 1x USB 2.0 to miniPCle Slot
Ethernet	1x GbE	1x GbE	1x GbE	2x GbE	N/A	5 x GbE (4x PoE, 2x PoE+)	1x GbE
Audio	HDMI Integrated Audio	HDMI Integrated Audio	HDMI Integrated Audio	HDMI Integrated Audio	N/A	N/A	HDMI Integrated Audio
SD Card	1x microSD Card Slot	1x microSD Card Slot	1x microSD Card Slot	1x microSD Card Slot	N/A	1x microSD Card Slot	1x microSD Card Slot
Video Inputs	N/A	N/A	2x 2-Lane (2x) MIPI CSI 2.0	1 x2 Lane MIPI CSI-2 2 x4 Lane MIPI CSI-2	1 x4 lane MIPI CSI-2	5x capable GbE ports	6 x2 Lane MIPI CSI-2 OR 3 x4 Lane MIPI CSI-2
Misc	I2C, 4x GPI0	2x 3.3V UART, 12C, 4x GPIO, 1x CAN	1x I2C Link, 1x SPI Link, 1x System Control, 1x RTC Battery Input, 4x GPI0	1x I2C Link 1x System Control, 1x RTC Battery Input, 4x GPIO	1x USB OTG, I2C, 4x GPIO	1x USB OTG, I2C, CAN 2.0, GPIO	1x USB OTG, I2C, CAN, GPIO, 1x GPS/GNSS (optional), SPI Channel @ 3.3V IO
Power Requirements	+9V to +14V DC Nominal (+19V Peak)	+9V - +14V DC Nominal (+19V Peak)	DC Input Range +12V DC Nominal Input	+9V to +36V Input	+9V to +16V DC	+12 DC Only	+12V to +22V DC





COM Express Type 6 + **GPU Embedded System**

The COM Express® Type 6 + GPU **Embedded System combines High-End NVIDIA GPUs with latest generation** x86 processors into a ruggedized small form factor embedded system.

- GPUs can be targeted for independent display outputs OR for a headless GPU processing system utilizing CUDA® cores
- CPU: Intel Raptor Lake (13th Gen). Alder Lake (12th Gen) and Tiger Lake (11th Gen) options available
- GPU: NVIDIA RTX A4500. A2000, A1000 & A500 (Ampere) & RTX 5000, RTX 3000 and T1000 (Turing) Options Available







COM Express Type 7 + **GPU Embedded System**

The COM Express Type 7 + GPU Embedded System combines 2x 10 GbE with Intel Xeon® D (Server Class) processors with high-end NVIDIA GPUs all into a small form factor embedded system.

- GPUs can be targeted for independent display outputs OR for a headless GPGPU processing system using CUDA® cores
- CPU: Intel Ice Lake D, Broadwell D and Denverton Server Class Options **Available**
- GPU: NVIDIA RTX A4500, A2000. A1000 & A500 (Ampere) & RTX 5000, RTX 3000 and T1000 (Turing) Options **Available**

V7G SERIES





V7G GPU System

The V7G GPU System combines Intel Xeon D (Server Class) and Intel Atom C3000 x86 processors with high-end NVIDIA Quadro GPUs in a black aluminum enclosure. Half-rack rail mount or Standalone mounting brackets available.

- Ideal for highend encode/decode video applications or GPGPU CUDA processing, Deep Learning and Al applications.
- CPU: Intel Ice Lake D, Broadwell D and Denverton Server Class Options **Available**
- GPU: NVIDIA RTX A4500, A2000. A1000 & A500 (Ampere) & RTX 5000, RTX 3000 and T1000 (Turing) Options **Available**

ESG7 SERIES





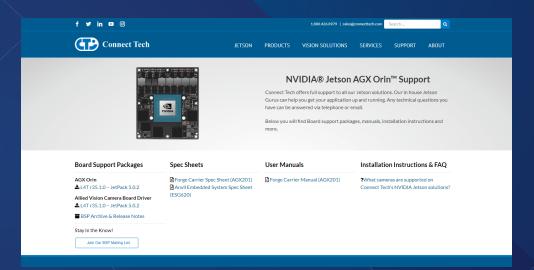
Connect Tech is a leader in highend compute platforms for the embedded market. Choose from the latest NVIDIA GPUs paired with Xeon D (Server Class) and Intel Atom C3000 x86 processors in a compact system designed to be highly portable. Available in a fully enclosed system as well as a non-enclosed version for customer designed thermal solutions.



ESG701-01 - 2U Half-rack enclosure system



CHAT WITH THE JETSON EXPERTS



Our technical support team is easily accessible and allows for direct Engineer to Engineer communication. Our NVIDIA Jetson Support page has Board Support Packages, User Manuals, Videos, and Articles on Flashing, Storage, and Integration.

Skilled & Expert Technical Staff Ready to Help Visit connecttech.com/support



COM-HPC



COM-HPC Carrier Board

Our first Carrier Board for the new COM-HPC platform. This carrier board features high-speed PC style connectors and locking pin header connectors.

- 2 x 2.5-Gigabit Ethernet
- 3 x USB4 via USB type C
- 1 x 3042 M.2 B-Key, 1 x 2230 M.2 E-Key, 1 x 16-Lane PCIe Expansion
- Dimensions: 160mm x 120mm
- Extended Temperature Range -40°C to +85°C

HPC001



TYPE 7



Type 7 Carrier Board

This Type 7 Carrier Board is ideal for high-compute, enterprise level applications needing access to highend Intel® Xeon® D class and Intel® Atom® C3000 processors.

- Dual 10-Gigabit Ethernet
- Ultra High Speed Storage with M.2 NVMe SSD support
- Extremely Small Form Factor: 125 x 95mm
- Extended Temperature Range -40°C to +85°C

CCG070



TYPE 10



Type 10 Stacking Carrier

CCG030 provides high density board to board connectors for use with either off-the-shelf or custom breakout boards, dramatically reducing the need for cabling.

- Extremely small size: 84mm x 55mm
- Support for the latest generation of low-powered CPUs
- 2x USB 2.0 (Mini-PCle), 2x USB 3.0,
 4x USB 2.0, 1x SATA 2.0 Port, 1x Mini
 PCle Half Size with SIM Card Slot, 1x
 Mini-PCle/mSATA

CCG030





Type 10 Mini Carrier Board

The Type 10 Mini Carrier Board is an extremely small carrier board featuring rugged, locking connectors and offers the ultimate in durability.

- Extremely small size: 84mm x 55mm
- Now supporting USB 3.0 on CCG020 model
- 2 x mini PCIe, mSATA, SATA, 2 x GBE, 6 x USB, LVDS, DisplayPort HDMI/DVI/VGA, HD Audio, 2x RS 232/422/485

CCG010/CCG020



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COM Express Carrier Boards



TYPE 6



Type 6 104e

This is a compact carrier board which matches the dimensions of a COM Express® Basic module and offers the ultimate durability with rugged, locking pin header connectors.

- 4x USB 3.0, 2x GbE, 2x RS-232/485, LVDS (2×24), VGA
- PCIe/104 Type 1 (CCG018) or PCIe/104 Type 2 (CCG017)
- On-Board DisplayPort/HDMI/DVI display switching
- Extended temperature range -40°C to +85°C

CCG017/CCG018





Type 6 Rugged Ultra Lite Carrier Board

The Type 6 Rugged Ultra Lite Carrier Board is compact. It offers the ultimate durability with locking, rugged pin headers. CCG011 supports only USB 2.0 and CCG012 supports USB 3.0.

- Mini-PCIe Expansion, USB 2.0, DisplayPort++
- Small size, 95mm x 125mm
- Supports latest Intel® processor sets
- Extended temperature range -40°C to +85°C

CCG011/CCG012





Type 6 Ultra Lite Carrier Board

The Type 6 Ultra Lite Carrier Board is a compact carrier board with standard PC connectors and is ideal for space constrained applications.

- COM Express® Type 6 Compatibility
- Mini-PCle Expansion
- Supports latest Intel® processor sets
- Extended temperature range -40°C to +85°C





SMARC



SMARC 2.0 Carrier

Connect Tech's SMARC 2.0 carrier is an extremely small SMARC carrier board ideal for low power IoT applications. Users can take advantage of the integrated on-board wireless capabilities.

- Feature Packed (HDMI, SATA, 2x MIPI CSI-2 Camera Interfaces)
- 2x USB 3.0, 2x USB 2.0, 2x USB 2.0 to miniPCle
- Input Voltage +5V DC only
- Extended temperature range -40°C to +85°C

SRG004





10GbE



Xtreme/10G Managed **Ethernet Switch /Router**

Xtreme/10G Managed Ethernet Switch/ Router provides high density, high port count Layer 2 switching and Layer 3 routing with 10G uplinks. A total of 36 switchable ports, with 12x 10G/5G/2.5G and 24x 2.5G/1GbE copper ports in an extremely small form factor 85mm x 85mm (3.35" x 3.35").

XDG205 features 1588 PTP support!



- Drop-in replacement to previous generation module (XDG201/XDG202)
- 36 switchable ports (12x10G/5G/2.5G; 24x 2.5G/1GbE)
- High-density board-to-board connector
- +4V to 14V input range
- Measurements: 85mm x 85mm (3.35" x 3.35")
- Extended Temperature Range -40°C to +85°C (-40°F to +185°F)

Software Packages for Managed Ethernet Switches

Connect Tech's software design team builds support for our line of managed ethernet switches using industryleading firmware.

IStaX



LINQ/GbE

LINQ/GbE is a Rugged Managed Ethernet Switch Box. LINQ/GbE series of products offers 12 or 24 Ethernet ports of 10/100/1000 Mbps.

- 12 and 24 Port 10/100/1000 Mbps Managed Switch Box
- Ruggedized Sealed RJ-45 Acclimate **Connector Series**
- IP68 Dust and Waterproof Solid Aluminum Enclosure
- Laver 2+ Carrier Ethernet Management
- Low Power Passively Cooled Construction

ESG301/ESG302





Xtreme/GbE Managed Carrier Ethernet Switch

This 8 or 12 port Ethernet Switch is available with either standard RJ45 or rugged latching connectors, conduction cooled heatplates, and PC/104, PCIe/104 or standalone options.

- Conduction cooled Heatplate or Air cooled
- 8 or 12 Port 10/100/1000 Mbps Switch
- Carrier Grade Ethernet Switching
- Available with RJ-45 or Rugged Locking connectors
- PC/104 Compliant: 4.550" x 4.393" (115.57mm x 111.58mm)
- Extended Temperature Range -40°C to +85°C (-40°F to +185°F)

XDG004-XDG010, XDG012 XDG013, XDG016-XDG023



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Embedded Ethernet Devices



1GbE



Xtreme/GbE 24-Port Managed Carrier Ethernet Switch

Xtreme/GbE 24-Port Managed Carrier Ethernet Switch provides high density, high port count, Carrier Grade Ethernet switching capabilities in an extremely small embedded form factor. Excellent for any space constrained, mission-critical application needing an embedded high-density/high-port count managed Ethernet Switch.

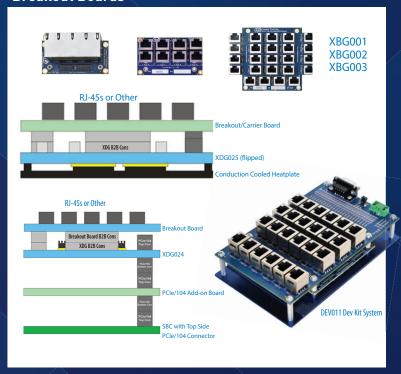
XDG024/XDG025



The XDG025 is designed for standalone applications, with all thermal extraction on one layer and connector/cabling on the opposite layer.
Where as the XDG024 is intended to stack directly into a PCIe/104 stack.

- 24 Port Gigabit Ethernet (10/100/1000 Mbps) Switch
- All 24 Port Magnetics Integrated on-board
- High-Density Ruggedized Boardto-Board/Board-to-Cable Port Breakout
- Extremely Small Footprint 90 × 96 mm (3.550 × 3.775 inches)
- Conduction cooled Heatplate or Air cooled Heatsink Options
- Extended Temperature Range -40°C to +85°C

Breakout Boards





NEVER MISS AN UPDATE



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We're proud to offer a convenient way for our customers to stay upto-date with the latest BSP software updates. Our web page allows users to subscribe to updates for their purchased hardware, ensuring that they have access to the latest features and improvements. We've made it easy for our customers to receive them directly through their inbox.

JETSON ORIN NX PERFORMANCE



Connect Tech compares NVIDIA Jetson Orin NX to Xavier NX. See performance gains over multiple models on various sensor and vision sources. Scan to watch the



ADDING MORE STORAGE TO JETSON PROJECTS

Consider the following when starting your Jetson project:

- Developer Kits vs. Production Modules Offer different storage capabilities
- On-board eMMC vs. External SD card vs. NVMe SSD
- Carrier Board or System Solutions Provide additional capabilities, including SD or NVMe storage. Review Connect Tech's lineup within this **Product Guide**



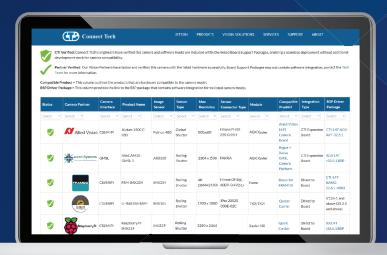
READ THE FULL ARTICLE AT CONNECTTECH.COM/NEWS

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Jetson Supported Camera Table

We have partnered with trusted Jetson Ecosystem Camera Partners to develop solutions that ensure our hardware and software are compatible with various camera models, allowing customers to minimize overall application development time.



View our full list of supported Cameras from our Vision Partners by visiting https://connecttech.com/vision-solutions

TRUSTED VISION SOLUTIONS

As the capabilities of Edge Al Vision grows, finding solutions to easily integrate sensors with embedded hardware empowers rapid product development and field deployment.

- Partnering with leading camera/sensor providers
- Trusted hardware with integrated sensor software
- Minimize overall application development time



























Velodyne LiDAR





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Connect Tech Inc. is NVIDIA's largest global embedded hardware partner offering a wide array of NVIDIA® Jetson™ solutions, as well as embedded products for a variety of industry standards including COM Express, SMARC, and more. With over 38 years of embedded computing experience, Connect Tech's range of proven technology includes complete embedded systems, carrier boards, and thermal solutions, just to name a few. With in-house design and manufacturing services, Connect Tech can provide fast turn-around of custom design services, taking you from development to deployment in record time.

Serving customers around the globe

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Connect Tech Inc. - ISO 9001:2015 Certified

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