RADX® Orca-C2X™ COTS PXIe eGPUs & PCIe-to-PXIe Subsystem Kits

Enables Extreme Performance NVIDIA GPUs and FHFL, 1- or 2-Slot, PCIe Add-In-Cards (AICs) to Operate Seamlessly & Transparently in PXIe Systems with Full (Unshared) PXIe BW (up to 16 GB/Sec)

- **Full (Unshared) PXIe Bandwidth to PCIe Devices** – Unlike Remote Control (MXIe) Systems, where PXIe Devices Share 4, 8 or 16 Lanes to the External Host PC, Orca-C2x provides up to 8 Dedicated PCIe G3/G4 Lanes between the PCIe AIC and the PXIe Backplane / Embedded Controller. **In G3 x8 PXIe Systems (e.g., NI PXIe-1092 & PXIe-8881), Orca-C2X supports > 7.5 GB/Sec, Full Duplex**.
- **Thunderbolt Not Required** – **With Orca-C2X, add ANY PCIe device to virtually ANY PXIe System**, eliminating the need for Embedded Controllers with Thunderbolt. Plus, with its PCIe G3/G4 x8 I/F and up to 8/16 GB/Sec, Orca-C2X delivers 3x to 6x the Thunderbolt 3 Bandwidth (~2.5 GB/Sec).
- **Low-Latency** – With its Re-Driver technology, Orca-C2X latency is typically less than 200 picoseconds for Host and Target Adapters (combined) and ~5 ns for a 1m cable (one-way).
- **Seamless and Transparent Operation** – With Orca-C2X, PCIe Add-In-Cards operate as if they are directly on the Host PXIe System Backplane in the, so operation is transparent and seamless under Windows or Linux Operating Systems - without Impact to Device Drivers or Application Software.
- **Engineered for PCIe, OS & App Compatibility** – Orca-C2X features Advanced PCIe Re-drivers with Linear Equalization for optimal PCIe compatibility with a wide range of PCIe devices.
- **Futureproof** – Orca-C2X supports PCIe G4 x8 to for upgrades to 16 GB/Sec Full Duplex when deployed in PXIe Systems with PCIe G4/G5 Backplanes and Embedded Controllers.
- **Flexible –** Orca-C2X supports **Unmodified** Customer Provided and Integrated (or Consigned and RADX Integrated) PCIe Add-In-Cards:
  - *Full Height, Full Length (FHFL) and Single-Slot or Dual-Slot PCIe G3/G4 x1, x2, x4, x8 or x16*
  - *Up to ~500W via PCIe Bus Power and DC Connectors*
- **PXIe-C2X-G3/G4x8-500W-eGPU-AdaRTX6000** with Integrated NVIDIA Ada RTX 6000 (48 GB GDDR6, 91.1 FP32 TFLOPS, 300W) - see https://tinyurl.com/y3npf4fw ***(Blackwell Pro coming soon!)***
- **PXIe-C2X-G3/G4x8-500W-ePCIe-SK PXIe-to-PCIe Subsystem Kit for 3rd Party Integration**
  - ***1 x PCIe-C2X-G3/G4x16-E1-500W Enclosure*** *with PCIe G3/G4 x16 Backplane for Target Adapter and 2-Slot, FHFL, ≤ 500W PCIe Add-In-Card, 600W PSU & Cooling, and Power Cable*
  - ***1 x PCIe-C2X-G4x8-TA Target Adapter –*** *Integrated in C2X E1-500W Enclosure.*
  - ***1 x PXIe-C2X-G4x8-HA Host Adapter –*** *for Integration in Customer's PXIe System.*
  - ***1 x PXIe-C2X-G4x8-CK-X PCIe G4 x8 Cable Kit*** *with 2 x SFF-8674 2x1 Cables (1m Std).*
  - ***Optional First Article & Recurring RADX Integration*** *of Customer Consigned PCIe AICs*

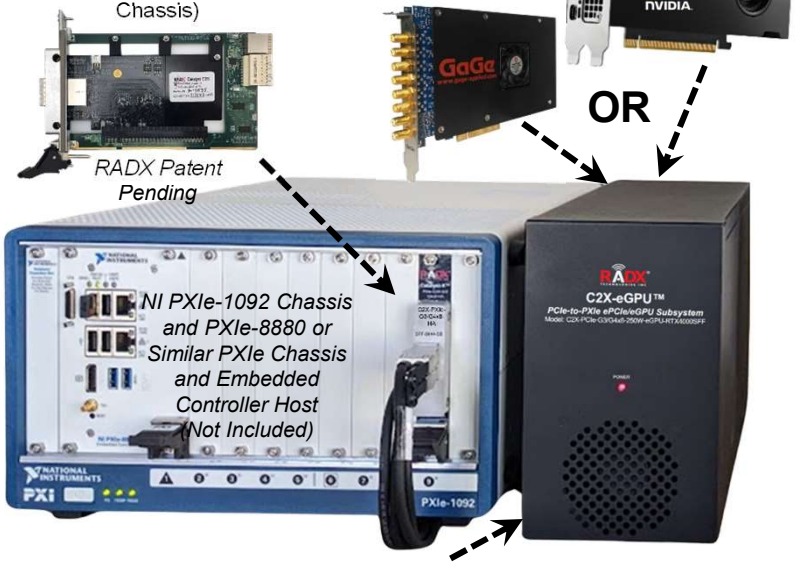
Blackwell Pro GPUs Coming Soon!

RADX Orca-C2X PXIe-eGPUs Include Integrated NVIDIA RTX Pro GPUs (e.g., Ada RTX 6000, 300W, 48GB GDDR6, 91.1 FP32 TFLOPs) for ML/DL/LLM Training, Inference and Other Extremely Compute Intensive Applications:

RADX Catalyst PXIe-C2X-G3/G4x8-HA Host Adapter Included for Customer Integration into Customer's PXIe Chassis)

Customer Provided and Integrated (or RADX Integrated) FHFL PCIe G3/G4 x4/x8/x16, ≤ 500W, 1- or 2-Slot **Add-In-Card or GPU** (Not Included)

RADX Integrated NVIDIA Ada RTX 6000, or Other GPUs



RADX Orca-C2X PCIe-G3/G4x16-E1-500W Enclosure including PCIe-C2X-G3/G4x8-TA (Target Adapter), 2-Slot PCIe G3/G4 x16 Backplane, 600W Power Supply & Cooling and PXIe-C2X-G3/G4x8-CK-Xm PCIe G3/G4 x8 SFF-8674-SB Cable Kit

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Available Soon on GSA via: gsamart testmart https://tinyurl.com/muk72crx

RADX® Orca-C2X™ COTS eGPU & PCIe-to-PXIe Subsystem Kit Specifications

(Specifications Current as of 24APR2025 - Subject to Change Without Notice)

Orca-C2X ORDERING INFO	COO / ECCN	C2X-PCIe-G3/G4x16-E1-X	C2X-PXIe-G3/G4x8-HA	NVIDIA Ada RTX GPU	Opt'l Consigned PCIe AIC Integration Fee		Q225 FOB MSRP *Excluding US Import Tariffs*
					1st Article	Recur-ring	
PXIe-C2X-G3/G4x8-500W-ePCIe (For 3rd Party Integ)	US / EAR99	-500W	Incl.	N/A	RFQ	$1,250	$9,999
PXIe-C2X-G3/G4x8-500W-eGPU-RTX6000	US / 4A090.a	-500W	Incl.	Ada RTX 6000	N/A	N/A	$24,999

(Included in PXIe-C2X-G3/G4x8-ePCIe-500 and PXIe-C2X-G3/G4x8-eGPU-AdaRTX6000-48GB eGPUs)

NO.	PARAMETER	VALUE
1.	RADX P/N:	PCIe-C2X-G3/G4x8-TA – included in Subsystem & eGPU Kits
2.	PCIe Interface & Bandwidth	PCIe G3/G4 x8 Connector for Up to 8 GB/Sec (G3) or 16 GB/Sec (G4)
3.	Front Panel I/O:	2 x SFF-8644-SB 1x2 Connectors for PCIe G3/G4 x8
4.	Re-Driver Technology:	• 4 x 4-CH PCIe 4.0 Linear Re-Drivers Support PCIe Gen 1.0/2.0/3.0/4.0 at up to 16Gbps per Lane. • Continuous Time Linear Equalization (CTLE) Boosts up to 18 dB at 8 GHz to Extend Channel Reach • Automatic Receiver Detection for PCIe Compatibility • Protocol Agnostic Linear Re-Driver for Seamless PCIe Link Training • Ultra-low Latency of 70 Picoseconds (typical) • Low Additive Random Jitter of 60 fs (typical) with PRBS Data • Single 3.3V Supply - Low Active Power of 124 mW/CH (5W TDP) • Supports Pin-Strap or SMBus Programming
5.	Receiver Equalization (Typically Set by RADX for Most Applications):	• Default DC Gain Setting of 0 dB (sufficient for most PCIe systems) • Equalization SW1: PCIe Tx 0 to 7 Equalization Setting from PCIe Edge Connector (Side B) to Re-Drivers (U1 & U2) • Equalization SW2: PCIe Rx 0 to 7 Equalization Setting from SFF-8644 (CON1) to Re-Drivers (U3&U4)
6.	Host / Target Mode Selection (SW5-1 & SW5-2):	MODE: HOST, SW5-1: ON, SW5-2: OFF MODE: TARGET, SW5-1: OFF, SW5-2: ON
7.	Reference Clock & Re-Drivers Settings (Typically Set by RADX for Most Applications):	REFCLK&ReDrivers (Lane 0~3) / SW5-3: Auto – OFF*, Enable – ON. Auto:Lane 0~3 Enable by CON1A Pin B2 (CPRSNTA#) ReDrivers (Lane 4~7) / SW5-4: Auto – OFF*, Enable – ON. Auto: Lane 4~7 Enable by CON1B Pin B2 (CPRSNTB#) If PCIe Rx Detection State Machine is Enabled. Rx Detection is asserted after 1x valid detection. Pre-Detect: Hi-Z, Post Detect: 50Ω
8.	Operating Temp Range:	Op Temp: 0°C to 50°C, 90% RH Non-Condensing
9.	Software:	N/A – Transparent Operation, No Software Required
10.	Certifications & Export Comp.:	RoHS, CE. UKCA, FCC-A. VCCI, RCM; COO: TW, EAR99 NLR
11.	Dimensions:	H: 64.4 mm x D: 96.3 mm x W: 1-Slot; ~60g Net Weight; ~ 5 W TDP
12.	Warranty:	1 Year RTF

Orca-C2X PXIe-C2X-G3/G4x8-HA PXIe Host Adapter Specs

IDENTICAL TO PCIe-C2X-G3/G4x8-TA EXCEPT AS INDICATED BELOW

(Included in PXIe-C2X-G3/G4x8-500W-ePCIe and PXIe-C2X-G3/G4x16-eGPU-AdaRTX6000-48GB Kits)

NO.	PARAMETER	VALUE
1.	RADX P/N:	PXIe-C2X-G3/G4x8-HA – included in Subsystem & eGPU Kits
2.	PXIe/PCIe I/F & BW:	PXIe XJ3 & XJ4 (PCIe G3 x8) Connectors for Up to 8GB/Sec
3 – 9 & 12.	Various:	Identical to C2X-PCIe-G3/G4x8-TA
10.	Certs & Export Comp.:	RoHS, CE. UKCA, FCC-A. VCCI, RCM; COO: US, EAR99 NLR
11.	Dimensions:	100 mm (H) x 160 mm (L) x 1-Slot; ~100g Net Weight; ~ 5 W TDP

Orca-C2X PCIe-G3/G4x16-E1-500 Enclosure Preliminary Specs

NO.	PARAMETER	VALUE
1.	RADX P/N:	C2X-PCIe-G3/G4x16-E1-500 – included in ePCIe & eGPU Kits
2.	Integrated Backplane:	2-Slot x PCIe G4 x16 Connectors and PCIe G4 x16 Support for 1 x PCIe G3/G4 x8/x16 Target Adapter and 1 x PCIe G3/G4 x8/x16 AIC
3.	PCIe Add-In-Card Support	1 x PCIe G2/G3/G4 x1 to x16, 1- or 2- Slot, up to 500W TDP
4.	Backplane PCIe Slot 1:	1 x PCIe G2/G3/G4 x1/x2/x4/x8/x16, FHFL, Single or Dual Slot, Up to 340 mm L x 135 mm H x 52 mm W and Up to 500W TDP
5.	Backplane PCIe Slot 2:	1 x PCIe G3/G4 x8/x16, FHFL, Single Slot for RADX Target Adapter
6.	Integrated 600W (-500) Power Supply:	600W: Silverstone FX600 Platinum (600W): +3.3V / 15A, +5V / 15A, +12V / 50A, +5VSB / 2.5A, -12V / 0.3A (https://tinyurl.com/yr6krv7c)
7.	Integrated Power Supply Input and AC Power Cords:	AC 115-230V, 50-60Hz, Up to 300W or 600W; NEMA 5-15 (NA Standard), 6 Ft. Other Int'l Power Cords Available by Request
8.	Power Switches and LEDs:	Power Switch (ON/OFF) and 1 x Power LED (Red)
9.	Integrated Cooling Fan:	8 cm x 8 cm, Front
10.	Operating Temp Range:	Op Temp: 0°C to 50°C, 90% RH Non-Condensing
11.	Software:	N/A – Transparent Operation, No Software Required
12.	Certifications & Exp Comp:	RoHS, CE; Designed to Meet FCC-A, UL ; COO: TW, EAR99
13.	Dimensions & Net Weight	4.84 in / 12.3 cm W x 14.3 in / 35.9 cm D x 7.95 in / 20.2 cm H; 7.92 lbs / 3.6 kg
15.	Warranty:	1 Year RTF

Orca-C2X PXIe-C2X-G3/G4x8-CK-X Cable Kits

(2 x SFF-8674-SB 1x2 Cables Included in PXIe-C2X-G3/G4x16-E1-500 and -eGPU-AdaRTX6000 Kits)

NO.	PARAMETER	VALUE
1.	RADX P/N:	PXIe-C2X-G3/G4x8-CK-Xm – included in ePCIe & eGPU Kits
2.	Physical I/F for Each Cable:	PCIe Gen 4 Ext'l Mini-SAS HD (SFF-8674-SB) 4i with Sideband
3.	Available Lengths :	0.5 m, 0.75 m, 1.0 m and 2 m (1 m Standard)
4.	Warranty:	1 Year RTF

RADX® TECHNOLOGIES, INC.

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