Quadra Product Specfications

Quadra Product Line

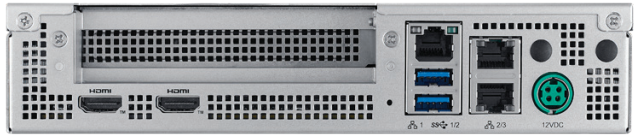
		Quadra Video Server	Quadra Mini Server	OEM VPU T1M	Quadra VPU T1U	Quadra VPU T1A	Quadra VPU T2A
Architecture		x86		OEM VPU module designed for embedded systems and limited space edge deployments.	Standard VPU for scalable data-center deployments and general-purpose video infrastructure.	Power-efficient VPU optimized for thermal limits and precision performance tuning	Dual-chip VPU delivering highest density and lowest cost-per-stream at hyperscale.
CPU		AMD® EPYC	Intel® 13th Gen i7				
Server Chassis		32 & 64 core models	Advantech® Vega 6321				
ASIC Hardware		10x T1Us	1x T1M	G5	G5	G5	2x G5
Size / Form Factor		1RU	1RU Half Rack	M.2	U.2	AIC	AIC
Power Consumption		~500W	~138W	8-10W	17W	20W	40W
Artificial Intelligence		150 TOPS	0	0	15 TOPS	15 TOPS	36 TOPS
Video Interface		0	SDI capture card Blackmagic® Decklink				
Software Integration		Preloaded with NETINT Bitstreams™ *Workflow management software, requires licence activation.*					
		FFmpeg SDKs, GStreamer, LibXcoder API integration					
Performance	**Encode**	**320x** 1080p30 80x 4Kp30 20x 8Kp30	20x 1080p30 5x 4Kp30		32x 1080p30 8x 4Kp30 2x 8Kp30		64x 1080p30 16x 4Kp30 4x 8Kp30
	Decode	**480x** 1080p30 120x 4Kp30 30x 8Kp30	25x 1080p30 6x 4Kp30		48x 1080p30 12x 4Kp30 4x 8Kp30		96x 1080p30 24x 4Kp30 8x 8Kp30
Codecs	**Encode**	H.264, HEVC, AV1, JPEG, HEIF, AVIF					
	Decode	H.264, HEVC, VP9, JPEG					

Quadra Video Server

Architecture		x86
CPU Options		AMD EPYC™ 7232P Server Processor (8-core)
		AMD EPYC 7543P Server Processor (32-core)
		AMD EPYC 7713P Server Processor (64-core)
Operating System		Ubuntu 20.04.05 LTS
Memory		16x 16GB DDR4-3200
Storage		400GB M.2 SSD
NVMe Support		10x
PCIe Expansion		Up to 3x PCIe slots
Network Options		Dual 10GBase-T LAN
Power Consumption		~500W
Power Supply		700W: 100 - 140Vac
		750W: 200 - 240Vac
		750W: 200 - 240Vdc (CCC only)
ASIC transcoder		10x Quadra T1U VPUs
Capacity	**Encoding**	Up to 320x 1080p30, 80 4Kp30, or 20x 8Kp30
	Decoding	Up to 480x 1080p30, 120 4Kp30 or 30x 8Kp30
Codec	**Encoding**	H.264, HEVC, AV1, JPEG, HEIF, AVIF
	Decoding	H.264, HEVC, JPG, VP9
Software Integration		FFmpeg, GStreamer and libxcoder.
		Preloaded with NETINT Bitstreams™ SDK, requires licence activation.
AI Engine		150 TOPS. On-chip DNN engine for ROI, content-adaptive encoding and inference in the same pipeline.
Physical Dimensions		W: 17.2” (437mm), H: 1.7” (44mm), D: 23.5” (597mm)
Rack Size		1RU
Weight		39 lbs (17.69 kg) fully loaded with 10x T1Us
Environmental		50 degrees F to 95 degrees F operating temp, 8% to 90% operating relative humidity
Power Inputs		100 - 140Vac / 8 - 6V / 50-60Hz
		200 - 240Vac / 4.5 - 3.8A / 50-60Hz
		200 - 240Vdc / 4.5 - 3.8A (CCC Only)
Certifications		RoHS Compliant, UL Approved

Quadra Mini Server

1RU Half Rack



Ideal for mobile broadcast for onsite event recording and distributon of single stream with edge processing.

Push **multiple simultaneous streams** live to social sites.

Architecture	x86
CPU	Intel x86 20-Core CPU
Server Chassis	Advantech Vega 6321H
Memory	16G Dual DDR5 SODIMM
Storage	2x M.2 Type E (PCIe Gen 3x1)
NVMe Support	M.2 256GB NVMe
Video Interface	2 options of SDI capture card: Blackmagic® Decklink Duo 2 or Blackmagic® DeckLink 8K Pro G2
Display	2x HDMI 2.0
USB	2x USB 3.2 Gen 2
Ethernet Network	3x 2.5G RJ45
Power Consumption	138W
Power Supply	AC/DC 138W power adapter
ASIC transcoder	1x Quadra T1M VPU
Encoding capacity	Up to 20x 1080p30 or 5x 4Kp30
Decoding capacity	Up to 25x 1080p30 or 6x 4Kp30
Codec Support	Encode: H.264, HEVC, AV1, JPEG, HEIF, AVIF
	Decode: H.264, HEVC, JPG, VP9
Software Integration	FFmpeg, GStreamer and libxcoder.
	Preloaded with NETINT Bitstreams™ SDK, requires licence activation.
Physical Dimensions	330 x 160 x 44 mm
Rack Size	1RU & Half Rack
Weight	~4.4lbs (2 kg) without VPU
Environmental	50 degrees F to 95 degrees F operating temp, 8% to 90% operating relative humidity
Power Inputs	100 - 240Vac / 50-60Hz
Certifications	RoHS Compliant, UL Approved

SDI capture card options:

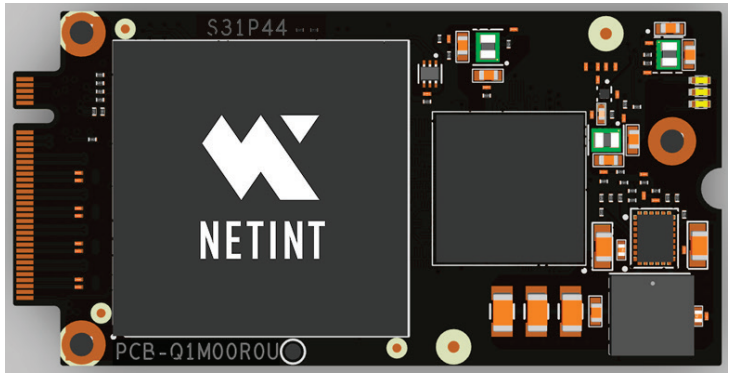
Blackmagicdesign

Blackmagic® Decklink Duo 2
- Supports up to 4x 1080p60 or 1080i60
- Supports multiple outputs resolutions (1080p30, 720p30, 540p30, 360p)

Blackmagic® DeckLink 4K Extreme 12G
- Supports up to 2x 4Kp60
- Supports multiple output resolutions (1080p30, 720p30, 540p30, 360p)

T1M

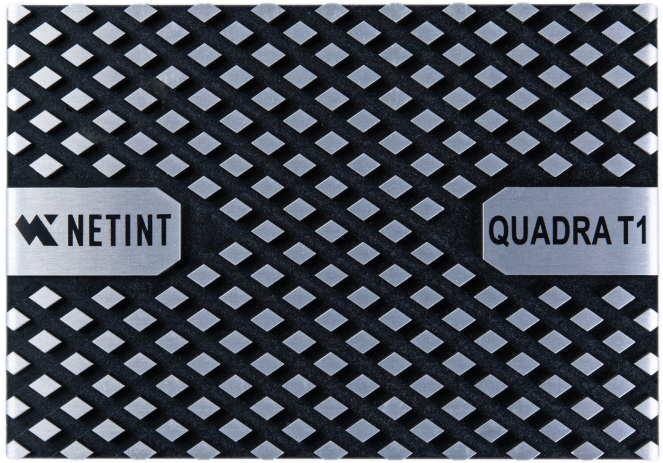
Quadra VPU (OEM)



Form Factor	Custom PCI Express M.2 (M key)
ASIC transcoder	1x Codensity G5
Dimensions	30 mm x 60 mm x 4.3mm (over PCB 2.1mm) With heatsink = 30mm X 60mm X 17.2mm
Weight	Without heatsink = 24g
Power	Standard M.2 Adapter Spec: < 10W Max Under Full Load Power supply input +3.3V with ±5% variation
Usage	24/7 Operation
Compliance	NVM Express 1.4 and PCI Express 3.0
PCIe Endpoint	4x Lanes, PCI Express Gen 3.0
Memory Configuration	64bit Single Channel, LPDDR4-3200, 4GB Memory
Operating Temperature	+0 to +35° C (300LFM active airflow with heatsink)
Absolute Max Ratings	+3.3V min = -0.5V, +3.3V max= 3.6V Non-Operation Storage (Ambient) Temperature: -55 to 95° C
Storage	Transportation temperature (ambient) -40° C to +85° C Storage humidity 30% to 70% RH
Video Encoding Standards/Formats	AVC/H.264 Baseline, Main, High, High 10 HEVC/H.265 Main, Main 10 AV1 Main JPEG, YUV 420 8 bit/10 bit encoding HDR10/10+, HLG, HRD, VBR, FIXP, CBR, CRF, ROI SEI/Meta data insertion, closed captions & look ahead
Video Decoding Standards/Formats	AVC/H.264 Baseline, Main, High, High 10 HEVC/H.265 Main, Main 10 VP9 Profile 0, Profile 2, JPEG, YUV 420 8 bit/10 bit Decoding HDR10/10+, HLG SEI/Meta data extraction closed captions & error conceal
2D Processing Engines	Cropping, padding, scaling, overlay, YUV & RGB conversion
Software Integration	Windows, MacOS, Linux and Android OS Support libxcoder API for encoding, decoding, and 2D support Libavcodec, a library of codecs FFmpeg / GStreamer integration
Performance / Throughput *(Restricted to M.2 power Limit)*	**Encode**: 20x 1080p30, 5x 4Kp30 **Decode:** 25x 1080p30, 6x 4Kp30 **Transcode:** 20x 1080p30, 4K-4K: 2x 30 FPS **ABR Ladder:** 10 Ladders @ 30 FPS, Input: 1080p, Outputs: 1080p, 720p, 352p (cif30), 352p (cif15)
Certifications	FCC, CE, EU, RoHS, REACH, HF, WEEE and UL

T1U

Quadra VPU



Form Factor	U.2
ASIC transcoder	1x Codensity G5
Interface	PCIe 4.0 x4
Power Consumption (Typ)	17W
Usage	24/7 Operation
Operation Temperature	0 - 50°C
Product Health Monitoring	Self-Monitoring, Analysis, and Reporting Technology (SMART) commands Temperature Monitoring and Logging
Video Encoding Standards/Formats	AVC/H.264 Baseline, Main, High, High 10 HEVC/H.264 Main, Main 10 JPG YUV 420 8 bit/10 bit encoding AV1 Main
Video Decoding Standards/Formats	AVC/H.264 Baseline, Main, High, High 10 HEVC/H.265 Main, Main 10 VP9 Profile 0, 2 JPEG YUV 420 8 bit/10 bit decoding
Throughput Capacity	Up to 32x 1080p30, 8x 4Kp30, 2x 8Kp30
Level	1 to 6.2 Main Tier
Resolution	48 x 48 to 8192 x 8192
Scan Type	Progressive
Bitrate	64kbit/s to 700Mbit/s
Software Integration	FFmpeg SDKs, GStreamer, LibXcoder API integration
AI Assisted Encoding	15 TOPS. On-chip DNN engine for ROI, content-adaptive encoding and inference in the same pipeline.
Region of Interest (ROI)	ROI enables the quality of some regions to be improved at the expense of other regions
Closed Captioning	EIA CEA-708 for H.264 and HEVC encode/decode
High Dynamic Range (HDR)	HDR10, HDR10+, HLG for H.264 & HEVC encode/decode
Low Latency	Sub-frame latency
IDR Insert	Forced IDR frame inserts at any location
Flexible GOP Structure	8 presets plus customizable GOP structure
2D Processing Engine	Crop & Padding/Scaling/Overlay/YUV & RGB Conversion
RoHS Compliance	European Union (EU) ROHS Compliance Directives

T1A

Quadra VPU

Form Factor	AIC (HH HL)
ASIC transcoder	1x Codensity G5
Interface	PCIe 4.0 x4
Power Consumption (Typ)	20W
Usage	24/7 Operation
Operation Temperature	0 - 50°C
Product Health Monitoring	Self-Monitoring, Analysis, and Reporting Technology (SMART) commands Temperature Monitoring and Logging
Video Encoding Standards/Formats	AVC/H.264 Baseline, Main, High, High 10 HEVC/H.264 Main, Main 10 JPG YUV 420 8 bit/10 bit encoding AV1 Main
Video Decoding Standards/Formats	AVC/H.264 Baseline, Main, High, High 10 HEVC/H.265 Main, Main 10 VP9 Profile 0, 2 JPEG YUV 420 8 bit/10 bit decoding
Throughput Capacity	Up to 32x 1080p30, 8x 4Kp30, 2x 8Kp30
Level	1 to 6.2 Main Tier
Resolution	48 x 48 to 8192 x 8192
Scan Type	Progressive
Bitrate	64kbit/s to 700Mbit/s
Software Integration	FFmpeg SDKs, GStreamer, LibXcoder API integration
AI Assisted Encoding	18 TOPS. On-chip DNN engine for ROI, content-adaptive encoding and inference in the same pipeline.
Region of Interest (ROI)	ROI enables the quality of some regions to be improved at the expense of other regions
Closed Captioning	EIA CEA-708 for H.264 and HEVC encode/decode
High Dynamic Range (HDR)	HDR10, HDR10+, HLG for H.264 & HEVC encode/decode
Low Latency	Sub-frame latency
IDR Insert	Forced IDR frame inserts at any location
Flexible GOP Structure	8 presets plus customizable GOP structure
2D Processing Engine	Crop & Padding/Scaling/Overlay/YUV & RGB Conversion
RoHS Compliance	European Union (EU) ROHS Compliance Directives

T2A

Quadra VPU

Form Factor	AIC (HH HL)
ASIC transcoder	2x Codensity G5
Interface	PCIe 4.0 x4x4
Power Consumption (Typ)	40W
Usage	24/7 Operation
Operation Temperature	0 - 50°C
Product Health Monitoring	Self-Monitoring, Analysis, and Reporting Technology (SMART) commands Temperature Monitoring and Logging
Video Encoding Standards/Formats	AVC/H.264 Baseline, Main, High, High 10 HEVC/H.264 Main, Main 10 JPG YUV 420 8 bit/10 bit encoding AV1 Main
Video Decoding Standards/Formats	AVC/H.264 Baseline, Main, High, High 10 HEVC/H.265 Main, Main 10 VP9 Profile 0, 2 JPEG YUV 420 8 bit/10 bit decoding
Throughput Capacity	Up to 64x 1080p30, 16x 4Kp30, 4x 8Kp30
Level	1 to 6.2 Main Tier
Resolution	48 x 48 to 8192 x 8192
Scan Type	Progressive
Bitrate	64kbit/s to 700Mbit/s
Software Integration	FFmpeg SDKs, GStreamer, LibXcoder API integration
AI Assisted Encoding	36 TOPS. On-chip DNN engine for ROI, content-adaptive encoding and inference in the same pipeline.
Region of Interest (ROI)	ROI enables the quality of some regions to be improved at the expense of other regions
Closed Captioning	EIA CEA-708 for H.264 and HEVC encode/decode
High Dynamic Range (HDR)	HDR10, HDR10+, HLG for H.264 & HEVC encode/decode
Low Latency	Sub-frame latency
IDR Insert	Forced IDR frame inserts at any location
Flexible GOP Structure	8 presets plus customizable GOP structure
Video 2D Processing Engine	Crop & Padding/Scaling/Overlay/YUV & RGB Conversion
RoHS Compliance	European Union (EU) ROHS Compliance Directives

VPU Category Leader

VPUs: The only silicon purpose-built to scale 4K video to billions.

200,000	+ ONE TRILLION
VPUs sold	minutes streamed

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