



4

AI & Advanced Computer Vision

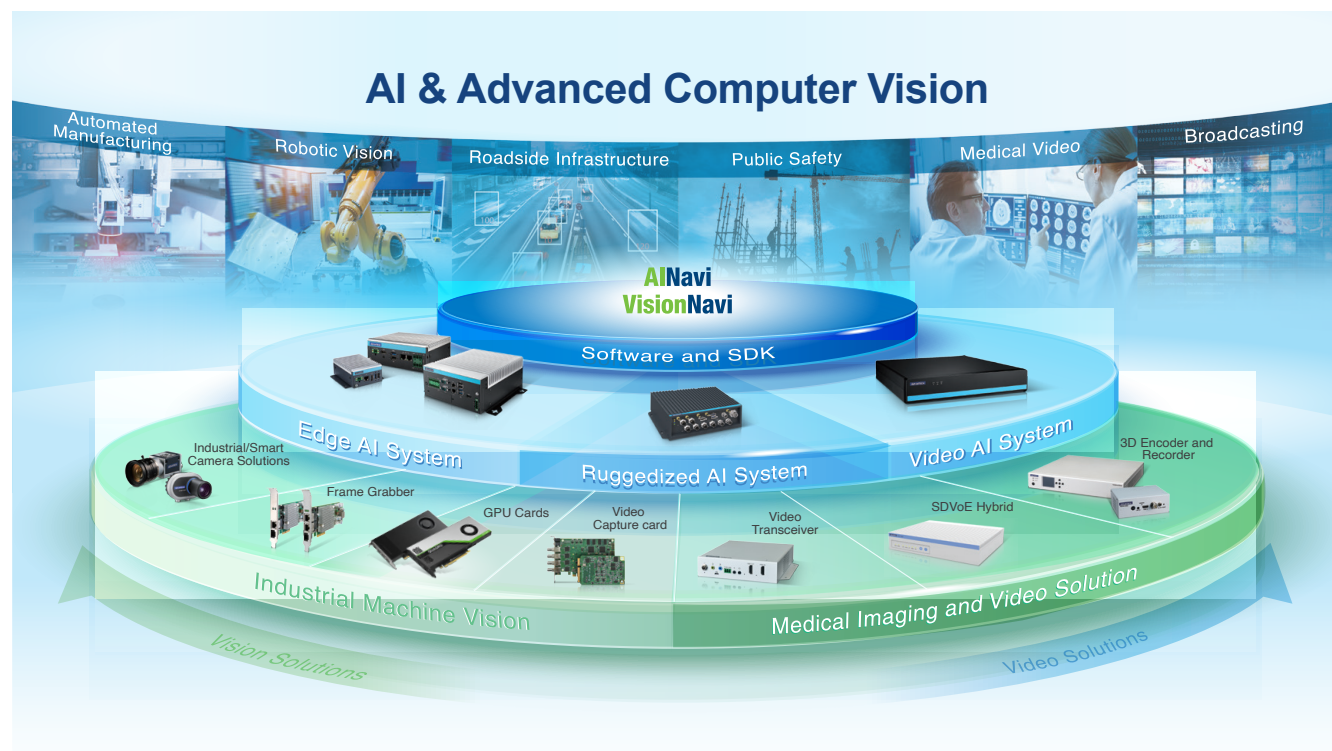
- ☞ 4-4 Edge AI Platforms
- ☞ 4-6 GPU Cards
- ☞ 4-9 Machine Vision Camera & Frame Grabbers
- ☞ 4-11 Video Capture Cards
- ☞ 4-12 AV over IP Solutions



AI & Advanced Computer Vision

Accelerate video analytics and video transmission at the edge

AI and computer vision are powering a new wave of interactivity in the IoT world. Cameras combined with powerful software that process and interpret images and video captured from production lines enable new automated processes and greatly improve efficiency. Computer vision when coupled with AI machine learning algorithms provide powerful solutions for manufacturing.



AINavi

AINavi is a deep-learning image analysis software for applications in automated optical inspection (AOI), video content management in security and transportation, more. The trained software development kit allows fast deployed of AI models with a user-friendly interface.



VisionNavi

VisionNavi is a programmable machine vision software that facilitates development of a menu-driven user interface and helps deploy multiple tasks. It supports a wide range of Advantech industrial PCs and cameras and provides easy system installation while reducing maintenance costs. It is suitable for automated applications aimed at defect inspection, quality assurance, and more.



Edge AI Platforms

Advantech MIC-Jetson series are highly integrated systems with NVIDIA Jetson platform. With strong computing power, small compact design, industrial I/O support and remote management, MIC-Jetson series allow AI application developers to rapidly create unique AI solutions in smart city, automation manufacturing, medical imaging applications.



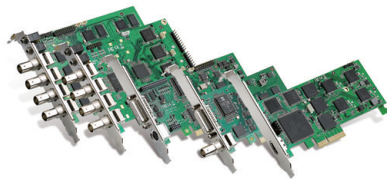
AI Industrial Cameras

Advantech AI Industrial Cameras are dedicated to machine vision applications. AI camera embedded NVIDIA Jetson SoM, lens, and LED illumination inside the camera enables OCR and AI-powered AOI applications at the network edge. AI Industrial cameras fully integrate a compact vision system for industrial automation.



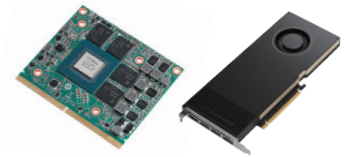
Video Capture Cards

Advantech offers an extensive range of video products, including video capture cards (PCIe, mini PCIe, and M.2) and industrial-grade video processing systems, to meet various market needs. From lecture recording to medical imaging, event broadcasting, live video streaming, and 24-hour surveillance, Advantech's intelligent video platforms are capable of supporting diverse video-related applications.



NVIDIA GPU Cards

Advantech offers various NVIDIA-Certified GPU cards, including the NVIDIA MXM, Quadro, and Tesla series GPU cards. GPU-accelerated computing is the use of a graphics processing unit (GPU) together with a CPU to accelerate deep learning, analytics and AI. It delivers the best possible experience with solutions and can be applied in the fields of industrial, manufacturing, medical, scientific imaging, transportation, surveillance, telecommunications, gaming, and robotics.



Frame Grabbers

Advantech frame grabbers are designed for connecting industrial cameras in machine vision, factory automation, and medical applications. It is a high-bandwidth industrial-grade expansion card designed for connecting industrial cameras in machine vision.



AV over IP Solution

Advantech's VEGA video platforms are designed to optimize infrastructure performance from acquisition to distribution to maximize resolution. The VEGA 1000 family of AV over IP transceivers support lossless UHD video with almost zero latency transmission.



1

IoT Software Solutions

2

Intelligent Systems

3

SKY Servers

4

AI & Advanced Computer Vision

5

Intelligent HMI and Monitors

6

Automation Computers

7

Intelligent Transportation Platforms

8

Mission Critical CompactPCI Platforms

9

Utility and Energy Solutions

10

EtherCAT Solutions and Automation Controllers

11

Intelligent Motion Control Solutions

12

High Speed DAQ Solutions

13

Industrial Communication

14

Intelligent Edge DAQ Devices

15

Remote I/O, Wireless I/O & Sensors

16

Serial Communication

Edge AI Platforms

Edge AI Computing



Model		MIC-710AIL MIC-710AILT MIC-710AILX	MIC-710AI MIC-710AIT MIC-710AIX	MIC-730AI
NVIDIA® Platform		NVIDIA Jetson Nano/ Jetson TX2 NX/ Jetson Xavier NX	NVIDIA Jetson Nano/ Jetson TX2 NX/ Jetson Xavier NX	NVIDIA Jetson AGX Xavier
Processor System	CPU	Nano: Quad Core ARM Cortex A57 (Max.Operating Frequency 1.43GHz) TX2 NX: Dual-Core Denver2.0 + Quad Core ARM Cortex A57 NX: Carmel Dual-Core Processor (Max. Operating Frequency 1.9GHz)		8-Core ARM v8.2 64 bit CPU, 8MB L2 + 4MB L3
	CUDA Cores	Nano: 128 Maxwell CUDA Cores TX2 NX: 256 Pascal CUDA Cores NX: 384 Volta CUDA Cores 48 Tensor Cores		512 Volta CUDA Cores and 64 Tensor Cores
	Memory	Nano: 4GB 64-bit LPDDR4/ TX2 NX: 8GB 128-bit LPDDR4/ NX: 8GB 128 bit LPDDR4 1600Hz		32GB 256-bit LPDDR4
	Flash	16GB eMMC	16GB eMMC	32GB eMMC
I/O / Expansion	LAN	1 x RJ-45	2 x RJ-45	2 x RJ-45
	PoE	–	–	–
	HDMI	1 x HDMI	1 x HDMI	1 x HDMI
	USB	External: 1 x USB2.0, 1 x USB3.0 Internal: 1 x USB2.0, 1 x MicroUSB	External: 1 x USB2.0, 1 x USB3.0 Internal: 1 x USB2.0, 1 x MicroUSB	External: 2 x USB 2.0, 2 x USB 3.0 Internal: 1 x USB 2.0
	DI/DO	–	8-bit (4In/4Out)	16-bit (8 In/8 Out)
	Button	Recovery, reset (internal)	Recovery, reset (internal)	Power buttons, recovery, reset (external)
	COM	–	1 x RS232/422/485	2 x RS-232/422/485
	SD Card	1 x Micro SD	1 x Micro SD	–
	SIM Card	–	–	–
	MiniPCle	1 x MiniPCle (PClex1)	1 x MiniPCle (PClex1)	1 x MiniPCle (PClex1)
	iDoor	✓ (by project)	✓	✓
	PCle iModule	–	–	MIC-75M10-00A1 MIC-75M20-00C1 *(x16 slot, x8 lanes)
Storage	Storage	1x M.2 2280 (M-key, PCIe)	1 x M.2 (SATA)	1 x 2.5 HDD/SSD 1 x M.2 (NVME PClex2)
Power	Power Supply	12-24V DC In	19-24V DC In	9-36V DC In
Dimension	H x W x D (mm)	85 x 118 x 45 (mm)	147 x 118 x 52 (mm)	192 x 230 x 87 (mm)

✓: supported, –: not supported, △: optional

Ruggedized AI System and AI Video Systems



Model		MIC-715	MIC-710IVA MIC-710IVX	MIC-730IVA
NVIDIA® Platform		NVIDIA Jetson Xavier NX	NVIDIA Jetson Nano/ NVIDIA Jetson Xavier NX	NVIDIA Jetson AGX Xavier
Processor System	CPU	Carmel Dual-Core Processor (Max. Operating Frequency 1.9GHz)	Nano: Quad Core ARM Cortex A57 (Max. Operating Frequency 1.43GHz) NX: Carmel Dual-Core Processor (Max. Operating Frequency 1.9GHz)	8-Core ARM v8.2 64 bit CPU, 8MB L2 + 4MB L3
	CUDA Cores	384 Volta CUDA Cores 48 Tensor Cores	Nano: 128 Maxwell CUDA Cores NX: 384 Volta CUDA Cores 48 Tensor Cores	512 Volta CUDA Cores and 64 Tensor Cores
	Memory	8GB 128-bit LPDDR4 1600Hz	Nano: 4GB 64-bit LPDDR4/ NX: 8GB 128-bit LPDDR4 1600Hz	32GB 256-bit LPDDR4
	Flash	16GB eMMC	16GB eMMC	32GB eMMC
I/O Expansion	LAN	2 x M12 X-coded, 8-pin female	1 x RJ-45	2 x RJ-45
	PoE	4 x M12 X-coded, 8-pin female	8 x PoE	8 x PoE (15.4w/ch)
	HDMI	1 x HDMI	1 x HDMI	1 x HDMI
	USB	External: 2 x USB 3.0 Internal: 1 x MicroUSB	External: 1 x USB 2.0, 1 x USB 3.0 Internal: 1 x USB 2.0	External: 2 x USB 3.0 Internal: 1 x USB 3.0
	DI/DO	–	8 bit (4In/4Out)	8 bit (4In/4Out)
	Button	Recovery, reset (Internal)	Power switch (External) recovery, reset (Internal)	Power switch (External) recovery, reset (Internal)
	COM	2 x CAN (Interface: M12 A-coded, 5-pin male)	1 x RS-485	2 x RS-232/422/485
	SD Card	1 x Micro SD	–	–
	SIM Card	1 x SIM slot	–	1 x SIM slot
	MiniPCle	2 x MiniPCle (PCIex1)	–	1 x MiniPCle (PCIex1)
	M.2	1 x M.2 3052, 1 x M.2 2280	–	–
	iDoor	✓ (by project)	–	–
	PCIe iModule	–	–	–
Storage	Storage	1x M.2 2280 (M-key, PCIe)	2 x 3.5 HDD (internal)	2 x 3.5 HDD (internal)
Power	Power Supply	12-24V DC In	AC100-240V 250W ATX	AC100-240V 250W ATX
Dimension	H x W x D (mm)	275 x 220 x 80 (mm)	57 x 300 x 330 (mm)	57 x 300 x 330 (mm)

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1

IoT Software Solutions

2

Intelligent Systems

3

SKY Servers

4

AI & Advanced Computer Vision

5

Intelligent HMI and Monitors

6

Automation Computers

7

Intelligent Transportation Platforms

8

Mission Critical CompactPCI Platforms

9

Utility and Energy Solutions

10

EtherCAT Solutions and Automation Controllers

11

Intelligent Motion Control Solutions

12

High Speed DAQ Solutions

13

Industrial Communication

14

Intelligent Edge DAQ Devices

15

Remote I/O, Wireless I/O & Sensors

16

Serial Communication

NVIDIA GPU Cards

NVIDIA MXM GPU cards



Model	SKY-MXM-A2000	SKY-MXM-A1000	SKY-MXM-RTX3000	SKY-MXM-T1000
Part Number	SKY-MXM-A2000-4SDA	—	SKY-MXM-R3000-6SDA	SKY-MXM-T1000-4SDB
GPU Architecture	Ampere	Ampere	Turing	Turing
GPU Memory	4GB GDDR6 with ECC	4GB GDDR6	6GB GDDR6	4GB GDDR6
Memory Interface	128 bit	128 bit	192 bit	128 bit
Max Clock	7000 MHz	7000 MHz	7000 MHz	6000 MHz
Memory BW	224 GB/s	192 GB/s	336 GB/s	192 GB/s
CUDA Cores	2560	2048	1920	896
RT Cores	20	16	30	—
Tensor Cores	80	64	240	—
Tensor Tflops (Dense/Sparse)	34/66	26/52	44/NA	N / A
Max FP 32 Perf.	8.25 TF	6.66 TF	5.3 TF	2.7 TF
GPU Clock	1117 MHz	1192 MHz	945 MHz	1395 MHz
Boost Clock	1612 MHz	1624 MHz	1380 MHz	1455 MHz
Form Factor	MXM Type A	MXM Type A	MXM Type B	MXM Type A
Dimensions	82 (W) x 70 (D) mm	82 (W) x 70 (D) mm	82 (W) x 105 (D) mm	82 (W) x 70 (D) mm
Interface	MXM 3.1, PCIe 3.0 x8	MXM 3.1, PCIe 3.0 x8	MXM 3.1, PCI Express 3.0 x 16	MXM 3.1, PCI Express 3.0 x 16
TGP Power	60W	60W	80W	50W
Display Outputs	4 x DP 1.4a, HDMI 2.1 4K at 120Hz or 8K at 60Hz	4 x DP 1.4a, HDMI 2.1 4K at 120Hz or 8K at 60Hz	4 x DP 1.4a, HDMI 2.1 4K at 120Hz or 8K at 60Hz	4 x DP 1.4a, HDMI 2.1 4K at 120Hz or 8K at 60Hz
NVENC NVDEC	1(7th Gen) 2(5th Gen)	1(7th Gen) 2(5th Gen)	1(7th Gen) 3(4th Gen)	1(6th Gen) 3(4th Gen)
Operating Temperature	0°C to 55°C (dependent on CPU and cooler solution)			
Storage Temperature	-40°C to 85°C			
Vibration (Non-operating)	2G			
OS Support	Windows 10, Linux (64 bit)			

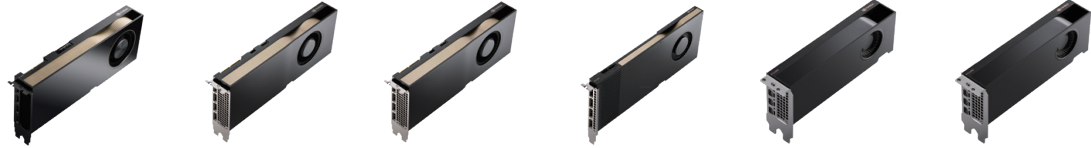
NVIDIA Tesla GPU cards



Model	NVIDIA A100 80GB	NVIDIA A30	NVIDIA A40	NVIDIA A16	NVIDIA A2
Part Number	SKY-TESL-A100-80P	SKY-TESL-A30-24P	SKY-TESL-A40-48P	SKY-TESL-A16-64P	SKY-TESL-A2-16P
Form Factor	DS FH 3 NVLINK bridges	DS FH 1 NVLINK bridges	DS FH 1 NVLINK bridges	DS FH	SS LP
GPU Memory	80GB HBM2e	24GB HBM2	48 GDDR6	4 x 16GB GDDR6	16GB GDDR6
Memory Bandwidth	1935GB/s	933GB/s	700GB/s	—	200GB/s
Multi-Instance GPU	Up to 7	Up to 4	N / A	N / A	N / A
Media Acceleration	1 JPEG Decoder, 5 Video Decoder	1 JPEG Decoder, 4 Video Decoder	1 Video Encoder, 2 Video Decoder (+AV1 decode)	4 Video Encoder, 8 Video Decoder (+AV1 decode)	1 Video Encoder, 2 Video Decoder
Ray Tracing	No	No	Yes	Yes	Yes
Fast FP64	Yes	Yes	No	No	No
DL & Compute	Ultimate	Fastest	Fastest	Fast	Fast
Graphics	For in-situ visualization (no vPC/vQuadro)	For in-situ visualization (no vPC/vQuadro)	Best	Good	Good
Max Power	300W	165W	300W	250W	40-60W

✓ : supported, — : not supported, △ : optional

NVIDIA Quadro GPU cards



Model	 NVIDIA RTX A6000	 NVIDIA RTX A5000	 NVIDIA RTX A4500	 NVIDIA RTX A4000	 NVIDIA RTX A2000 12GB	 NVIDIA RTX A2000
Part Number	SKY-QUAD-RTXA6000B	SKY-QUAD-RTXA5000B	SKY-QUAD-RTXA4500B	SKY-QUAD-RTXA4000B	SKY-QUAD-A2000-12B	SKY-QUAD-RTXA2000B
GPU Architecture	Ampere					
Memory Size	48 GB GDDR6 w/ ECC	24 GB GDDR6 w/ ECC	20 GB GDDR6 w/ ECC	16 GB GDDR6 w/ ECC	12 GB GDDR6 w/ ECC	6 GB GDDR6 w/ECC
Memory Interface	384-bit	384-bit	320-bit	256-bit	192-bit	
Memory Bandwidth	768 GB / s	768 GB / s	640 GB / s	512 GB / s	288 GB / s	
CUDA Cores	10,752	8,192	7,168	6,144	3,328	
Tensor Cores	336	256	224	192	104	
RT Cores	84	64	56	48	26	
Single-Precision Performance	38.7 TFLOPS	27.8 TFLOPS	23.7 TFLOPS	19.2 TFLOPS	8.0 TFLOPS	
RT Cores Performance	75.6TFLOPS	54.2 TFLOPS	46.2 TFLOPS	37.4 TFLOPS	15.6 TFLOPS	
Tensor Performance	309.7 TFLOPS	222.2 TFLOPS	189.2 TFLOPS	153.4 TFLOPS	63.9 TFLOPS	
Graphics Bus	PCI Express 4.0 x 16	PCI Express 4.0 x 16	PCI Express 4.0 x 16	PCI Express 4.0 x 16	PCI Express 4.0 x 16	
Max Power	300W	230W	200W	140W	70W	
Form Factor	4.4 inches H 10.5 inches L Dual slot, full height	4.4 inches H 10.5 inches L Dual slot, full height	4.4 inches H 10.5 inches L Dual slot, full height	4.4 inches H 9.5 inches L Single slot, full height	2.7 inches H 6.6 inches L Dual slot, low profile	
Display Connectors	4 x DP 1.4	4 x DP 1.4	4 x DP 1.4	4 x DP 1.4	4 x mDP 1.4 with latching mechanism	
Thermal Solution	Active					
Ambient Operating Temperature	0°C to 45°C	0°C to 45°C	0°C to 45°C	0°C to 50°C	0°C to 50°C	
Storage Temperature	-45°C to 75°C					
Max Simultaneous Displays	4x 4096 x 2160 @ 120 Hz 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz	4x 4096 x 2160 @ 120 Hz 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz	4x 4096 x 2160 @ 120 Hz 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz	4x 4096 x 2160 @ 120 Hz 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz	4x 4096 x 2160 @ 120 Hz 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz	
Graphics APIs	DirectX 12.07 Shader Model 5.17 OpenGL 4.68 Vulkan 1.18	DirectX 12.07 Shader Model 5.17 OpenGL 4.68 Vulkan 1.2	DirectX 12.07 Shader Model 5.17 OpenGL 4.68 Vulkan 1.2	DirectX 12.07 Shader Model 5.17 OpenGL 4.68 Vulkan 1.2	DirectX 12.07 Shader Model 5.17 OpenGL 4.68 Vulkan 1.2	
Compute APIs	CUDA, DirectCompute, OpenCL™					
Media Acceleration	1 NVENC, 2 NVDEC, (+AV1 dec)	1 NVENC, 2 NVDEC, (+AV1 dec)	1 NVENC, 2 NVDEC, (+AV1 dec)	1 NVENC, 2 NVDEC, (+AV1 dec)	1 NVENC, 2 NVDEC, (+AV1 dec)	
NVLink	Yes	Yes	Yes	No	No	
Virtualization Ready	Yes	Yes	No	No	No	
Power Connector	8-Pin CPU	8-Pin PCIe	8-Pin PCIe	6-Pin PCIe	–	

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1
IoT Software Solutions2
Intelligent Systems3
SKY Servers4
AI & Advanced Computer Vision5
Intelligent HMI and Monitors6
Automation Computers7
Intelligent Transportation Platforms8
Mission Critical CompactPCI Platforms9
Utility and Energy Solutions10
EtherCAT Solutions and Automation Controllers11
Intelligent Motion Control Solutions12
High Speed DAQ Solutions13
Industrial Communication14
Intelligent Edge DAQ Devices15
Remote I/O, Wireless I/O & Sensors16
Serial Communication

NVIDIA GPU Cards

NVIDIA Quadro GPU cards



Model	NVIDIA T1000 8GB	NVIDIA T1000	NVIDIA T400 4GB
Part Number	SKY-QUAD-T1000-8-B	SKY-QUAD-T1000-AB	SKY-QUAD-T400-4-B
GPU Architecture	Turing		
Memory Size	8 GB GDDR6	4 GB GDDR6	4 GB GDDR 6
Memory Interface	128-bit		64-bit
Memory Bandwidth	160 GB / s		80 GB / s
CUDA Cores	896		384
Tensor Cores	–		
RT Cores	–		
Single-Precision Performance	2.5 TFLOPS		1.09 TFLOPS
RT Cores Performance	–		
Tensor Performance	–		
Graphics Bus	PCI Express 3.0 x 16		
Max Power	50W	50W	30W
Form Factor	2.713 inches H 6.137 inches L single slot, Low profile		
Display Connectors	4 x mDP 1.4 with latching mechanism		3 x mDP 1.4 with latching mechanism
Thermal Solution	Active		
Ambient Operating Temperature	0°C to 55°C		
Storage Temperature	-40°C to 75°C		
Max. simultaneous Displays	4x 3840 x 2160 @ 120 Hz 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz		3x 3840 x 2160 @ 120 Hz 3x 5120 x 2880 @ 60 Hz
Graphics APIs	DirectX 12.07 Shader Model 5.17 OpenGL 4.68 Vulkan 1.2		
Compute APIs	CUDA, DirectCompute, OpenGL™		
Media Acceleration	1 NVENC, 2 NVDEC,		
NVLink	No		
Virtualization Ready	No		
Power Connector	–		

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Machine Vision Camera & Frame Grabbers

Frame Grabber Cards



Model		 PCIE-1158	 PCIE-1672E	 PCIE-1674E	 PCIE-1182
Power Requirements	Input Voltage	12 V _{DC} direct from PCIe slot (limited to PCIe design) or AT/ATX system power input	12 V _{DC} direct from PCIe slot, total Max. 18W or AT/ATX system power input		12 V _{DC} direct from PCIe slot, with optional 12 V _{DC} AT/ATX
	Overload Current Protection	Device auto recover after eFuse tripped when rated currents > 2A Present			
	Connection	AT/ATX Power Jack			
	Power Output	5 V _{DC} power output, max. 4.5W per port	48 V _{DC} PoE Power output, total Max. 18W (total Max. 60W with AT/ATX system power input)		Up to 24 watts for each of 2 12V _{DC} output port
Environment	Operating Temperature	0 ~ 60°C (32 ~ 140°F)	0 ~ 50°C (32 ~ 122°F)		0 ~ 60°C (32 ~ 140°F)
	Storage Temperature	-20 ~ 80°C (-4 ~ 176°F)			
	Operating Humidity	5 ~ 95% RH			
Mechanics	Dimensions (W x D)	153 x 106 mm (6.02" x 4.17")	185 x 110 mm (7.3" x 3.9")		167 x 68.9 mm, PCIe low profile
Communication	Communication	USB	GigE		GigE
	Interface/Compatibility	USB vision	IEEE802.3af		IEEE 802.3, IEEE 802.3u, IEEE802.3ab, IEEE802.3x, IEEE802.3af, IEEE802.3at
	Speed	–	10/100/1000 Mbps		10,000/5,000/1,000 Mbps
	No. of Ports	4	2	4	2, 10GBASE-T MAC and PHY
	Port Connector	8 x USB 3.0 Type A	8-pin RJ45		8-pin RJ45 copper
	Bus Interface	PCI Express Gen2 x4 interface, up to 2.0 GB/s	PCI Express® x 4		PCI Express x4 compliant
	Jumbo Frame	–	9KB		
	Controller	Renesas μPD720202, Compliant with USB 3.0 Specification and Intel® xHCI Specification, Revision 1.0	–	–	–
Safety	ESD	8KV (air), 4KV (contact)			8KV (air), 4KV(contact)
	EFT	2 KV			
	Surge Protection	1 KV			
	Isolation Protection	2.5 KV			
Digital Input/Output	No. of Channels	4 input and output	–	–	–
	Input/Output range	0-30V opto-isolated	–	–	–
	Max. Frequency	1KHz	–	–	–
	Digital Input Interrupt	Falling and rising edge, normal and invert	–	–	–

AI Camera



Model	ICAM-500			
Image Sensor	1.6MP@60fps, Global Shutter, Monochrome/Color	Sensor Size	SONY IMX296 1/2.9"	
Processor	NVIDIA Jetson Nano	RAM/Storage	4GB LPDDR4 / 16G eMMC/64G SD card	
Lens	12/16 mm programmable focus lens	LED Lighting	8 Pcs (Red and white LED lighting)	
Working Distance	100 mm~ 900 mm	Synchronization	Hardware Trigger / Software Trigger / Free-run	
USB	USB 3.0 (USB Type C Connector)	Display	HDMI	
Digital I/O	2 x Isolated Inputs, 2 x Outputs	LAN	1 x 1000BASE-	
Power Input	19-24V _{DC}	Dimensions	78mm (W) x 121mm (H) x 53mm (D)	
Environment / Certification	0-45° C, 5Grms, CE/FCC Class B /KCC, IP54	Software / SDK	OS: Ubuntu 18.04 Support Jetpack 4.5.1 Azure Cloud Connecting SW package CAMNavi SDK	

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1
IoT Software Solutions

2
Intelligent Systems

3
SKV Servers

4
AI & Advanced Computer Vision

5
Intelligent HMI and Monitors

6
Automation Computers

7
Intelligent Transportation Platforms

8
Mission Critical CompactPCI Platforms

9
Utility and Energy Solutions

10
EtherCAT Solutions and Automation Controllers

11
Intelligent Motion Control Solutions

12
High Speed DAQ Solutions

13
Industrial Communication

14
Intelligent Edge DAQ Devices

15
Remote I/O, Wireless I/O & Sensors

16
Serial Communication

Machine Vision Camera & Frame Grabbers

Industrial Cameras (GigE)



Model		QCAM- GM0640-121CE	QCAM- GM0720-290CE	QCAM- GM1300-060DE	QCAM- GM1440-073CE	QCAM- GM2500-014DE	QCAM- GM2440-020CE	QCAM- GM5400-005CE
Resolution		659 x 494	720 x 540	1280 x 1024	1440 x 1080	2590 x 1942	2448 x 2048	5472 x 3648
Frame Rate		134	291	60	73	14	23	5
Pixel Size (μm)		5.6 x 5.6	6.9 x 6.9	5.3 x 5.3	3.45 x 3.45	2.2 x 2.2	3.45 x 3.45	2.4 x 2.4
Mono/ Color		Mono	Mono	Mono	Mono	Mono	Mono	Mono
Sensor	Company	SONY	SONY	e2v	e2v	Onsemi	Onsemi	SONY
	Model	ICX618 replacement	IMX287	EV76C560	EV76C570	MT9P031	MT9J003	IMX183
	Shutter	Global	Global	Global	Global	rolling	rolling	rolling
	Size	1/4"	1/2.9"	1/1.8"	1/2.9"	1/2.5"	2/3"	1"
	Type	CMOS						
Input		1						
Output		1						
Power Requirements		PoE or 12 V _{DC}						
Power Consumption		2.7 W	2.9 W	2 W	2.1 W	2.2 W	3.3 W	2.6 W
Lens Mount		C						
Size(L x W x H)		42.0 x 29.0 x 29.0 mm						
Weight		90 g						
Operating Temp.		0°~50°C						

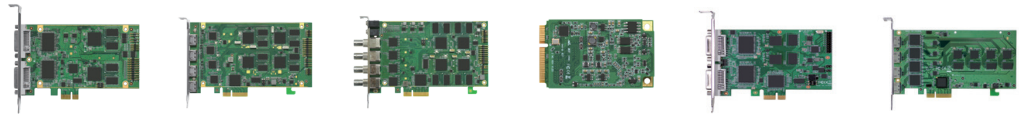
Industrial Cameras (USB)



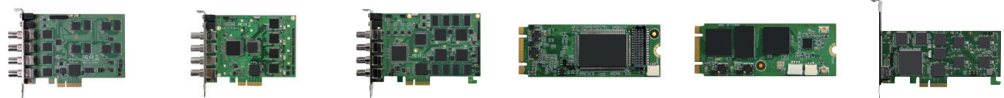
Model		🔧 QCAM-UC0640-750CE/QCAM-UM0640-750CE	🔧 QCAM-UC0720-520CE/QCAM-UM0720-520CE	🔧 QCAM-UC1300-200CE/QCAM-UM1300-200CE	🔧 QCAM-UC1440-220CE/QCAM-UM1440-220CE	🔧 QCAM-UC2440-035CE/QCAM-UM2440-035CE
Resolution		640 x 480	720 x 540	1280 x 1024	1440 x 1080	2488 x 2048
Frame Rate		751	525	203	227	35
Pixel Size (μm)		4.8 x 4.8	6.9 x 6.9	4.8 x 4.8	3.45 x 3.45	3.45 x 3.45
Mono/ Color		Color/Mono	Color/Mono	Color/Mono	Color/Mono	Color/Mono
Sensor	Company	Onsemi	SONY	Onsemi	SONY	SONY
	Model	PYTHON 300	IMX287	PYTHON 1300	IMX273	IMX 264
	Shutter	Global	Global	Global	Global	Global
	Size	1/4"	1/2.9"	1/2"	1/2.9"	2/3"
	Type	CMOS				
Input		1				
Output		1				
Power Requirements		Via USB3.0 interface				
Power Consumption		2.8 W	3 W	3 W	3.3 W	2.7W
Lens Mount		C				
Size(L x W x H)		29.3 x 29.0 x 29.0 mm				
Weight		80 g				
Operating Temp.		0°~50°C				

✓: supported, -: not supported, △: optional

Video Capture Cards



Model		DVP-7621HE	DVP-7637HE	DVP-7636HE	DVP-7612HE	DVP-7021HE	DVP-7031HE
Video	Compression	H/W H.264 / MPEG4	H/W H.264	H/W H.264	H/W H.264	S/W H.264	SW H.264
	Channels	2	4	4	1	2	4
	Host Interface	PCIe x1	PCIe x4	PCIe x4	Mini PCIe x1 (Gen 2)	PCIe x1 (Gen2)	PCIe x4 (Gen2)
	Input Interface	2 x HDMI/DVI/VGA/ S-Video/YPbPr	–	–	HDMI/DVI/VGA	SDI/DVI/VGA/ HDMI/Composite/ YPbPr/S-video/VGA	HDMI
	Max. Resolution	1920 x 1080p @60/50	1920 x 1080p @60/50	1920 x 1080p @60/50	1920 x 1080p @60/50	1920 x 1080p @ 60/50	1920 x 1080 @ 60/50
Watchdog		Yes	No	No	No	-	Yes
Physical Characteristic	Operating Temperature	-20 ~ 70°C (-4 ~ 158°F)	-40 ~ 85°C (-40 ~ 185°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)
	Dimensions (W x H x D)	132.22 x 84.5 mm	167.65 x 101.03 mm	157 x 101.01 mm	30 x 51 mm	108 x 85 mm (4.25" x 3.34") PCIe Full Height	168 x 93 mm (6.64" x 3.66")
	Safety	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Operating System	Operating System	Windows XP/XPe/ Vista/7/8/8.1/10; Linux 2.6.14 or higher; 32/64 bits	Windows XP/XPe/ Vista/7/8/8.1; Linux 2.6.14 or higher; 32/64 bits	Windows XP/XPe/ Vista/7/8/8.1; Linux 2.6.14 or higher; 32/64 bits	Windows XP/XPe/ Vista/7/8/8.1/10; Linux 2.6.14 or higher; 32/64 bits	Windows XP/XPe/ Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/XPe/ Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit



Model		DVP-7033HE	DVP-7035HE	DVP-7635HE	DVP-7011MHE	DVP-7012MHE	DVP-7011UHE
Video	Compression	SW H.264	S/W H.264	H/W H.264	S/W H.264	S/W H.264	S/W H.264
	Channels	4	4	4	1	1	1
	Host Interface	PCIe x4 (Gen2)	PCIe x4 (Gen2)	PCIe x 4	PCIeM.2	PCIeM.2	PCIe x 4
	Input Interface	3G-SDI/HD-SDI/SDI	TVI/CVI/AHD/ Composite (CVBS)	TVI/CVI/AHD/ Composite (CVBS)	HDMI/DVI/VGA/ YPbPr	SDI	HDMI 2.0
	Max. Resolution	1920 x 1080 @ 60/50	1920 x 1080p @ 30/25	1920 x 1080p @ 30/25	1920 x 1080p @ 30/25	1920 x 1080p @ 30/25	4096 x 2160p @ 60/50
Watchdog		Yes	–	Yes	–	–	Yes
Physical Characteristic	Operating Temperature	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)	-20 ~ 70°C (-4 ~ 158°F)
	Dimensions (W x H x D)	140 x 101 mm (5.51" x 3.97")	128 x 101mm (5.03" x 3.97") PCIe Full Height	150 x 101 mm (5.9" x 3.97")	22 x 60 mm (0.86" x 2.36") M.2 Type B/M	22 x 60 mm (0.86" x 2.36") M.2 Type B/M	145 x 69 mm (5.7" x 2.71") PCIe Low profile
	Safety	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC	CE/FCC
Operating System	Operating System	Windows XP/XPe/ Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/XPe/ Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/XPe/ Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/XPe/ Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/XPe/ Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit	Windows XP/XPe/ Vista/7/Win8/ Win8.1/Win10; Linux 2.6.14 or higher; 32/64-bit

✓ : supported, – : not supported, △ : optional

1

IoT Software Solutions

2

Intelligent Systems

3

SKY Servers

4

AI & Advanced Computer Vision

5

Intelligent HMI and Monitors

6

Automation Computers

7

Intelligent Transportation Platforms

8

Mission Critical CompactPCI Platforms

9

Utility and Energy Solutions

10

EtherCAT Solutions and Automation Controllers

11

Intelligent Motion Control Solutions

12

High Speed DAQ Solutions

13

Industrial Communication

14

Intelligent Edge DAQ Devices

15

Remote I/O, Wireless I/O & Sensors

16

Serial Communication

AV over IP Solutions

UHD Video Convertor



Model			VEGA-1000	VEGA-1100	VEGA-1200
Life Cycle			5 Years	5 Years	5 Years
Platform			AVX200T	AVP2000T	AVP2000T + Ambarella H2
Video Inputs and Outputs	Channels (Max.)		1	1	1
	Video formats	Resolution	480i/480p/720p/1080i/1080p/4K2K	480i/480p/720p/1080i/1080p/4K2K	480i/480p/720p/1080i/1080p/4K2K
		Frame rate	up to 4K60	up to 4K60	up to 4K60
	Chroma Sampling Format		4:4:4	4:4:4	4:4:4
	Bit Depth		8-bit/10-bit/12-bit	8-bit/10-bit/12-bit	8-bit/10-bit/12-bit
	Input Interface		HDMI 2.0	HDMI 2.0	HDMI 2.0 / DP/ 12G-SDI/S-Video/VGA
Video Coding	Output Interface		HDMI 2.0	HDMI 2.0	HDMI 2.0
	Video Encoding	Standard	AVX	SDVoE	SDVoE/HEVC/AVC
		Bit Depth	8-bit/10-bit/12-bit	8-bit/10-bit/12-bit	8-bit/10-bit/12-bit
		Chroma Subsampling	4:4:4/4:2:2/4:2:0	4:4:4/4:2:2/4:2:0	4:4:4/4:2:2/4:2:0
	Video Decoding	Standard	AVX	SDVoE	SDVoE
		Bit Depth	8-bit/10-bit/12-bit	8-bit/10-bit/12-bit	8-bit/10-bit/12-bit
VoIP	Connectivity		1 x 10Gb (SFP+ cages)/ 1x10Gb Copper/1Gb Copper	1 x 10Gb (SFP+ cages)/ 1x10Gb Copper/1Gb Copper	1 x 10Gb (SFP+ cages)/ 1 x 1Gb Copper
	Standard Supported		AVX	SDVoE	SDVoE/NDI/SRT
Audio	Channels (Max.)		8	8	8
	Formats		Stereo Multi-channel linear PCM up to 8 channels (7:1)	Stereo Multi-channel linear PCM up to 8 channels (7:1)	Stereo Multi-channel linear PCM up to 8 channels (7:1)
	Audio Connectors		1 x In / 1 x Out	1 x In / 1 x Out	1 x In / 1 x Out
Feature	Operating System		Linux	Linux	Linux
	Streaming Protocol		AVX	SDVoE	SDVoE/NDI/SRT
	Management & Control Interface		Local or remote Control GUI interface Semtech AVX	Local or remote Control GUI interface Semtech BlueRiver	Local or remote Control GUI interface Semtech BlueRiver
	Development Kits		HDMI 2.0	HDMI 2.0	HDMI 2.0
	Local Video Output		10Gb SFP+ Fiber/ 10Gb Copper/ 1Gb Copper	10Gb SFP+ Fiber/ 10Gb Copper/ 1Gb Copper	10Gb SFP+ Fiber/ 1Gb Copper
	Network Interface		3 x USB 1.0 typeA HID	3 x USB 1.0 typeA HID	1 x USB 2.0 TypeA 1 x USB 1.0 TypeA HID
Power	Power Input		12V DC	12V DC	12V DC
	Power Consumption		12.5 Watt [max]	12.5 Watt [max]	20 Watt [max]
Mechanical	Dimensions		172 x 162 x 30mm	172 x 162 x 30mm	266 x 210 x 47.5mm

4K Portable Video Streamer



Model			VEGA-2002-12GS	VEGA-2002-3GS	VEGA-2002R-4X3GS
Life Cycle			5 Years	5 Years	5 Years
Platform			Ambarella H2+ Xilinx Kintex-7 FPGA	Ambarella H2+ Xilinx Kintex-7 FPGA	Ambarella H2+ Xilinx Kintex-7 FPGA
Video Inputs and Outputs	Channels (Max.)		2	2	4
	Video formats	Resolution	HDMI Interface 4K p 60/ 59.94/.../ 25	HDMI Interface 4K p 60/ 59.94/.../25	BNC (3GS-SDI) Interface 4K p 60/ 59.94/.../29.97 (Note: 3840x2160 support by 4 x 3GSDI Quad Link)
		Frame rate	up to 4K60	up to 4Kp60	up to 4Kp60
	Chroma Sampling Format		4:2:2	4:2:2	4:2:2
	Bit Depth		8bit/10bit	8bit/10bit	8bit/10bit
	Input Interface		1 x 12G-SDI 1 x HDMI 2.0	1 x 3G-SDI 1 x HDMI 2.0	4 x 3G-SDI
Video Coding	Output Interface		HDMI 2.0	HDMI 2.0	HDMI 2.0
	Video Encoding	Standard	H.265(HEVC)/H.264 (AVC)	H.265(HEVC)/H.264 (AVC)	H.265(HEVC)/H.264 (AVC)
		Bit Depth	8, 10 bit(only HEVC)	8, 10 bit(only HEVC)	8, 10 bit(only HEVC)
		Chroma Subsampling	4:2:0	4:2:0	4:2:0
	Formats		Line-In: stereo 12G(3G)-SDI: 2 stereo HDMI: 2 stereo	Line-In: stereo 3G-SDI: 4 stereo HDMI: 4 stereo	Line-In: stereo 3G-SDI: 2 stereo (Only supports the SDI port next to the line in)
	Sampling Frequencies		HDMI/SDI: 44.1/48KHz Line in: 32/44.1/48KHz	HDMI/SDI: 44.1/48KHz Line in: 32/44.1/48KHz	HDMI/SDI: 44.1/48KHz Line in: 32/44.1/48KHz
Feature	Sampling Bit Depth		16bit	16bit	16bit
	Audio Connectors		1 x In	1 x In	1 x In
	Operation System		Linux	Linux	Linux
	Streaming Protocol		RTSP/RTP/RTMP/HLS/TS over IP/SRT/ NDI HX2 (option)	RTSP/RTP/RTMP/HLS/TS over IP/SRT/ NDI HX2 (option)	RTSP/RTP/RTMP/HLS/TS over IP/SRT/ NDI HX2 (option)
	Management & Control Interface		Remote from Web GUI interface	Remote from Web GUI interface	Remote from Web GUI interface
	Local Video Output		HDMI 2.0	HDMI 2.0	HDMI 2.0
Power	Network Interface		RJ45	RJ45	RJ45
	USB Port		2 x USB 1.0 typeA	2 x USB 1.0 typeA	2 x USB 1.0 typeA
Mechanical	Power Input		12V DC	12V DC	12V DC
	Power Consumption		17.8 Watt [max]	17.8 Watt [max]	17.8 Watt [max]
Mechanical	Dimensions		130 x 48x 93(mm)	130 x 48x 93(mm)	122 x 43 x 92(mm)

✓: supported, -: not supported, △: optional

