



MVA for Industrial Vision Applications

Ethernet adapters with GigE™ Vision hardware acceleration

Machine Vision Acceleration (MVA)™ software, running on ARIA Cybersecurity Solutions Ethernet adapters, provides a high-performance platform for GigE-Vision-enabled devices. The MVA-enabled Myricom adapter is uniquely able to provide a virtual frame capture capability for high speed Ethernet cameras.

Key Features

- Each adapter supports aggregating up to sixty-four 1 Gbit cameras into eight 10GbE streams
- MVA-enabled adapters offload GigE Vision Stream Protocol and send images directly to an application for image processing
- Intelligent interrupt generation reduces latency and jitter
- Load balancing between CPU cores
- MVA software distributions are available for Linux and Windows

The MVA adapter processes the Ethernet packets composing camera frames and performs a direct memory access (DMA) of the incoming data contiguously and directly into the application buffers without host interrupt for each packet of the frame. Doing this significantly reduces the overhead cost of frame capture, thereby making more host computer cycles available for image processing. It also reduces latency, reduces jitter, and load balances between host CPU cores. The custom LANai programmable Ethernet controller on the Myricom 10GbE adapters makes this possible.

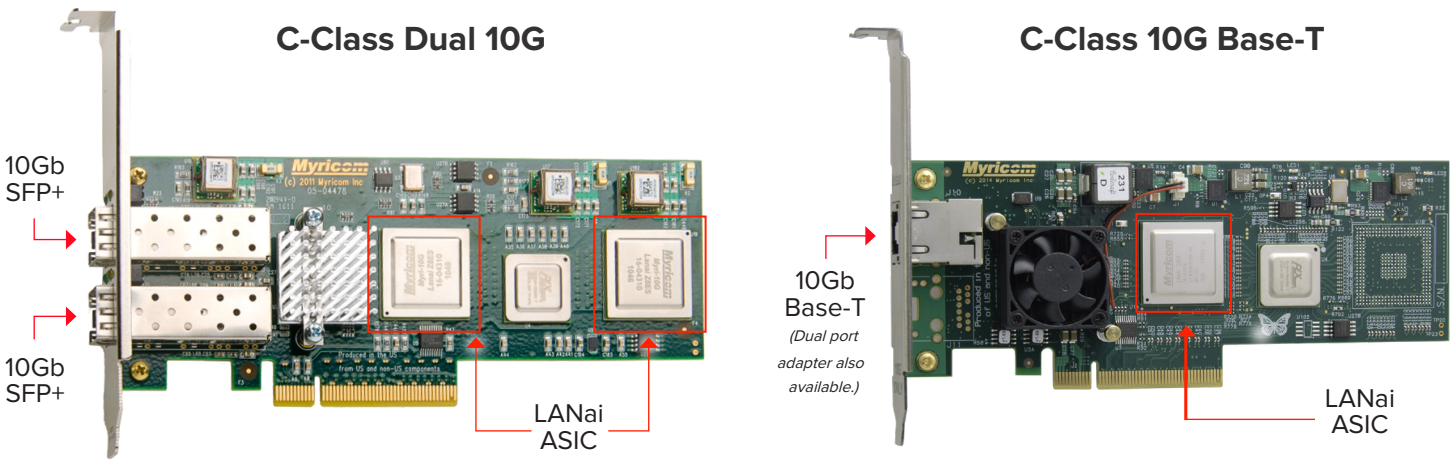
With the Myricom API, all of the LANai ASIC chip's GigE Vision features are available in the application using GigE Vision Streaming Protocol (GVSP) version 2.1. Because the MVA enabled adapter understands the GVSP protocol, it is able to generate interrupts to wake up the receiving application at exactly the right time – when the frame is available in the user buffer. Generic adapters must either generate interrupts for each packet composing the frame or use general interrupt moderation which introduces jitter and latency.

When processed by a Myricom adapter, MVA consumes only 5% of a single host CPU core when receiving 2 MB frames at the full 10GbE line rate. A single MVA-equipped server can support up to eight 10GigE Vision cameras or up to sixty-four 1GigE Vision cameras.

ARIA Cybersecurity offers MVA Ethernet adapters for commodity servers (low-profile PCIe cards) and support both Linux and Windows.

The GigE Vision protocol is an AIA standard used by cameras that attach directly to Ethernet. Such cameras are used by vendors of industrial imaging equipment, military prime contractors, within medical imaging equipment, for traffic monitoring, and in other industries.

MVA deployment options



SPECIFICATIONS	C-Class	C-Class Base-T
Dimensions	2.7" x 6.6	2.7" x 6.6"
Bus Interface	PCI Express. Gen 2, 8 lanes wide (dual port adapters) PCI Express. Gen 1, 8 lanes wide (single port adapters)	PCI Express. Gen 2, 8 lanes wide
Form Factor	Low-profile PCI Express x8 add-in cards that ship with a standard height faceplate installed; and a low profile faceplate in the box.	
Electrical power	14.5W - 17.7W, Dual Port Adapters	17.5W-20.7W (Single) 19.5W-22.7W (Dual)
Cooling Requirements	It is recommended that adapters be installed into servers that provide some air flow over the PCIe slots. Use in an office or computer room environment.	
Cooling Options	Passive cooling / Active cooling	Active cooling
Operating Temperature	0-55 deg C (100 LFM min)	0-55 deg C (100 LFM min)
Storage Temperature	-40 to 70 deg C	-40 to 70 deg C
Storage Humidity	5% to 90% non-condensing	5% to 90% non-condensing
Processor	LANai ASIC (dual)	1 LANai ASIC (Single) 2 LANai ASIC (Dual)

SPECIFICATIONS	C-Class	C-Class Base-T
Hardware Acceleration	LANai ASIC	LANai ASIC
Memory	2 MB Flash	2 MB Flash
Network Connectivity	2x10 Gb Ethernet, RJ45, SFP+; 10GBASE-T, XFP, CX4	1x10 Gb Ethernet 10GBASE-T (Single) 2x10 Gb Ethernet 10GBASE-T (Dual)
Software Support	Software available for Linux (CentOS, RHEL and Ubuntu) and Windows. Supports libpcap (Linux) and winpcap (Windows) libraries. Software provides support for RSS (receive side scaling), port merging of ethernet packets, pcap replay; GVSP up to version 2.1	Software available for Linux (CentOS, RHEL and Ubuntu) and Windows. Supports libpcap (Linux) and winpcap (Windows) libraries. Software provides support for RSS (receive side scaling), port merging of ethernet packets, pcap replay.; GVSP up to version 2.1
SW Version supported	V3 – SNF, DBL, MVA & ethernet driver	V3 – SNF, MVA & ethernet driver
Security	N/A	N/A
Throughput	2x10Gb/s	1x10Gb/s (Single) 2x10Gb/s (Dual)
Timestamp (if applicable)	+/- 5 us accuracy	N/A
Regulatory approvals, compliance	TAA, RoHS (Reduction of Hazardous Substances). EMI and EMC, Class A USA, Canada, and Europe.	
Country of Origin	USA	USA
Warranty	Three year for hardware defects and 90 days for software defects. 90 days of “getting started” telephone and email support, as well as any software upgrades shipped within that window. Refer to the support datasheet for options extending the 90-day window	
ORDER DETAILS		
Part Numbers	10G-PCIE2-8CS-2S-SYNC-MVA Dual Port, 10Gb/s Ethernet, PCI Express Gen2 x8 timecode-enabled adapter with SFP+ sockets for 10GBase-SR LR, and LRM modules with MVA software. 10G-PCIE-8C2-2S+MVA Dual Port, 10Gb/s Ethernet, PCI Express Gen2 x8 adapter with SFP+ sockets for 10GBase-SR LR, and LRM modules with MVA software. 10G-PCIE-8B-S+MVA	10G-PCIE2-8C-T-MVA (Single) 10G-PCIE2-8C2-2T+MVA (Dual)
<i>MVA licenses can be purchased separately on already sold adapters.</i>	10G-MVA-License MVA Software for C-Class adapters	
Cables and Transceivers	Refer to the Myricom Accessories datasheet for compatible cables and transceivers.	

Contact Us to Schedule a Technical Demonstration or Arrange an Evaluation ✉ ARIAsales@ariacybersecurity.com

ABOUT ARIA CYBERSECURITY SOLUTIONS

ARIA Cybersecurity Solutions recognizes that better, stronger, more effective cybersecurity starts with a smarter approach. Our solutions provide new ways to monitor all internal network traffic, while capturing and feeding the right data to existing security tools to improve threat detection and surgically disrupt intrusions. Customers in a range of industries rely on our solutions each and every day to accelerate incident response, automate breach detection, and protect their most critical assets and applications. With a proven track record supporting the Department of Defense and many intelligence agencies in their war on terror, and an award-winning portfolio of security solutions, ARIA Cybersecurity Solutions is committed to leading the way in cybersecurity success.

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