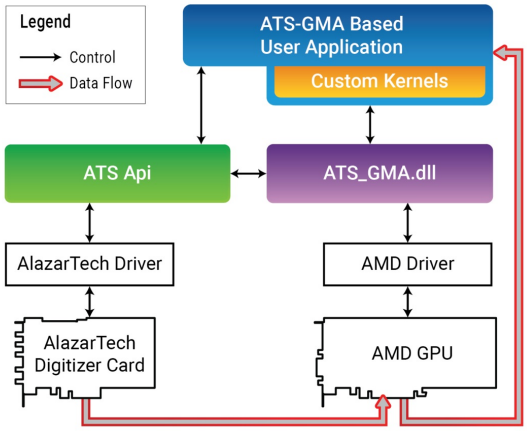
Press Release

For Immediate Release

New software allows DMA of data from AlazarTech waveform digitizers to GPU at up to 6.9 GB/s with very low latency



Click here for ATS-GMA datasheet

Click here for high resolution image

Montreal, Canada (March 23, 2018)

AlazarTech, a manufacturer of high-performance, low-cost PC-Based Instruments, today announced the release of **ATS-GMA™**, a software library that allows users to DMA data from its PCI Express waveform digitizers to AMD Radeon™ Pro Graphical Processing Units (GPUs) at rates up to 6.9 GB/s with latency as low as 100 µs.

Though the powerful processing capabilities and high-speed graphical memory bus make GPUs perfectly suited for signal processing applications, direct DMA from hardware devices to the GPU's on-board memory can be problematic. In the case of a waveform digitizer, users must manually copy data returned from the waveform digitizer buffer to the GPU, which causes a drastic reduction in overall data throughput. A commonly used alternate approach with NVIDIA® GPUs is to use CUDA® streams to overlap multiple buffer transfers. This method increases the transfer speed to approximately 5 GB/s, but suffers from large data latency.

ATS-GMA solves both these issues by enabling the DMA of data from AlazarTech PCI Express digitizers to compatible AMD GPUs without any CPU involvement. An added benefit of this approach is that data becomes available in GPU memory with very low latency.

Method	Transfer Speed	Latency
Manual memcpy	~900 MB/s	~3.5 ms
CUDA streams	~5 GB/s	~3.5 ms
ATS-GMA	Up to 6.9 GB/s	~100 µs

The initial release will be **ATS-GMA-BASE™**, which includes a sample program that demonstrates how to use the **ATS-GMA-BASE** library to do simple data processing and DMA data from AlazarTech PCI Express digitizers to compatible AMD GPUs.

In the coming weeks, AlazarTech will also release add-on libraries that allow users to perform additional signal processing on data captured into GPU memory by **ATS-GMA-BASE**.

ATS-GMA is compatible with Windows® 10. **ATS-GMA-BASE** includes a sample program written in C/C++ source code, which implements very simple GPU kernels that invert data and write it back to a buffer in computer memory.

ATS-GMA Features:

- Designed to work with AlazarTech PCI Express waveform digitizers
- DMA A/D data to GPU at high speed -- Up to 6.9 GB/s transfer rate for PCIe Gen 3 digitizer boards
- Data transfer to GPU with latency as low as 100 µs
- Supports AMD Radeon Pro GPUs and AMD SDK version 2.9 and higher, which support OpenCL™
- Write your own OpenCL kernels
- Compatible with Windows 10

"We heard from many customers that they would like to see the waveform digitizer as the analog front-end to a GPU, so researchers can quickly and easily develop and enhance real-time signal processing algorithms to innovate", stated Muneeb Khalid, President of AlazarTech. "We developed a true digitizer-to-GPU DMA hardware and software solution that does exactly that and also offers the lowest latency of any product on the market".

Applications for **ATS-GMA**:

- OCT and other biomedical imaging applications that require real-time signal processing such as FFT
- Radar and lidar applications that require real-time signal processing

Availability and Pricing

U.S. prices are listed below. International prices may be higher. Volume discounts are available.

Product	**Availability**	**U. S. Price**
ATS-GMA-BASE: License and 1 Year support and maintenance	Immediate	US$ 995
ATS-GMA-BASE-1YR: 1 Year extended support & maintenance for ATS-GMA-BASE	Immediate	US$ 200

For Further Technical or Editorial Information

For further technical or editorial information, contact **Muneeb Khalid** at 1-877-7-ALAZAR or +1-514-426-4899 or via e-mail at muneeb@alazartech.com. Mailing address is **AlazarTech**, 6600 Trans-Canada Highway, Suite 310, Pointe-Claire, QC, Canada H9R 4S2. Company web site is **www.alazartech.com**.

About AlazarTech

AlazarTech, headquartered in a suburb of Montreal, Quebec, Canada, provides high performance, low cost PC Based Instruments and software for customers involved in building OEM products, manufacturing test systems and research and development.

AlazarTech was founded in 2003 by Muneeb Khalid, who was the original founder of Gage Applied Sciences Inc., a pioneer in PC Based Instrumentation. That company was sold to Tektronix Inc. in 2000.

While AlazarTech manufactures some of the fastest PCI and PCI Express digitizers on the market, speed alone is not the differentiating factor. AlazarTech concentrates on providing usability features for its PCI and PCI Express digitizers that make them very easy to integrate into real-world OEM applications such as ultrasonic testing, medical imaging and radar signal analysis.

The key differentiation between AlazarTech products and the rest of the industry is AlazarTech's *Dual-Port Memory* technology, which enables OEMs to create systems that can capture, analyze and store data in real time.

Customers can use AlazarTech products not only for R&D, but also deploy them in the field. Competitive products use single-port memory, forcing customers to stop acquisition in order to read data, thereby limiting their usefulness to R&D and algorithm development.

AlazarTech also works with selected OEMs to customize its products based on customer requirements.

The company's line of ATS PCI and PCI Express digitizers have been recognized by leading European, Asian and North American OEMs as being superior in quality to other devices on the market.

The company's products have found applications in industries such as medical imaging, metal inspection, defense, automotive and semiconductor test.

AlazarTech sells its products directly in North America, and internationally through a distribution network.

For more information on AlazarTech, visit www.alazartech.com.