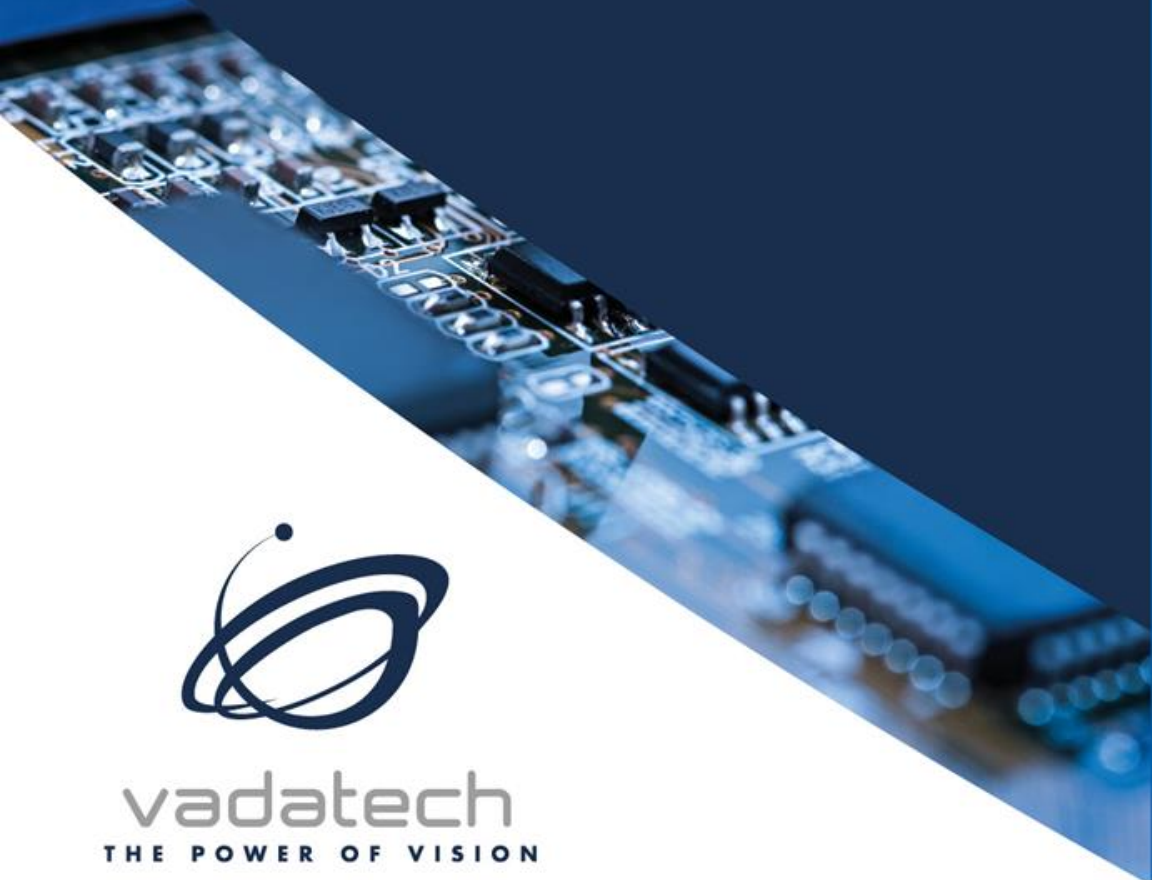


VadaTech HEP-DAQ Solution May 2016



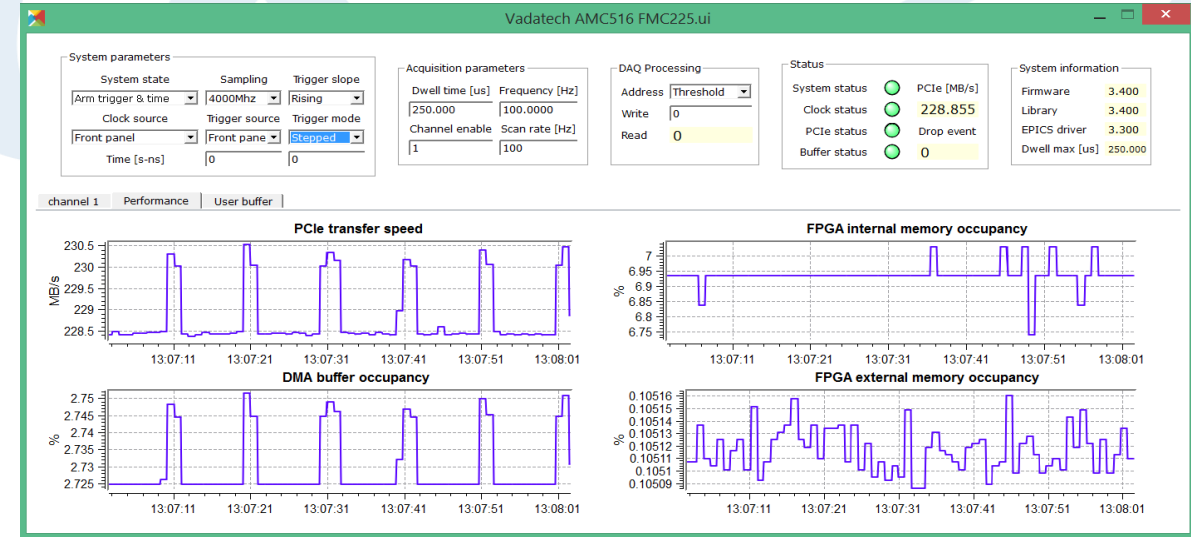
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VadaTech Leader in Open System

VadaTech is a world leader in high performance embedded computing platforms and leverages its large portfolio of innovative solutions to offer a large choice of platforms and Data Acquisition modules ideal for a range of applications:

- High Energy Physics
- Nuclear Physics
- Astrophysics
- Material Science
- Network/Storage



Our flexibility, technical strength, and ability to quickly engage both engineering and commercial functions, all help our customers to generate and seize new opportunities.

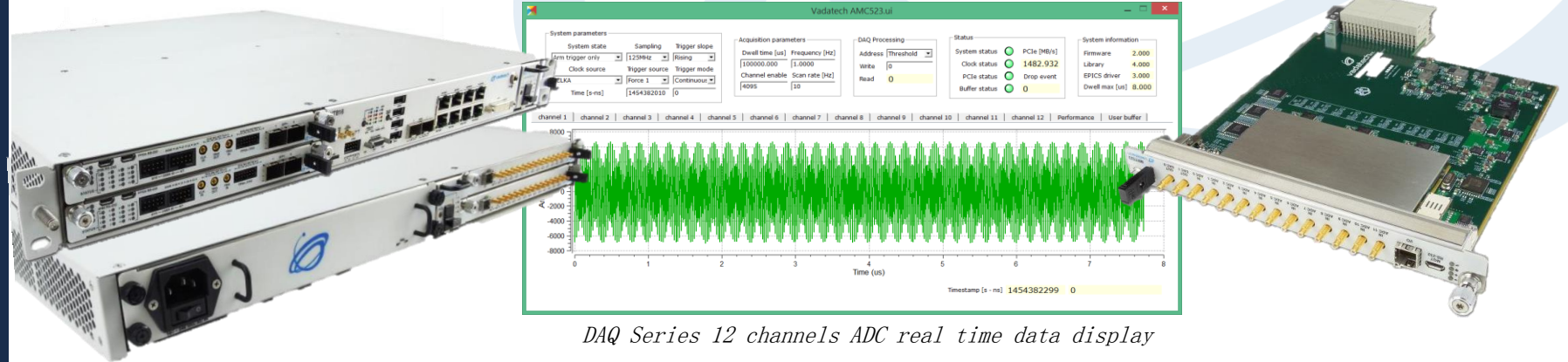


Plasma Control system

High density Data Acquisition system

VT816: 1U μ TCA.4 Chassis, 2 AMC Slots, PCIe 8x Gen 3, integrated Intel Xeon E3.

AMC/MRT523: 12 ADC 16-bit @ 125 MSPS and Dual DAC 16-Bit @ 250 MSPS



- ✓ High density acquisition platform: 24 ADC (125MSPS, 16bit), 4 DAC in 1U chassis
- ✓ Large Signal Processing capabilities: 2 Kintex 7 FPGA with 4GB of DDR3
- ✓ High performance computing: Intel Xeon E3, 16GB DDR3, Scientific Linux, RedHat, Fedora
- ✓ High speed interconnect: 3.2GB/s DMA engine from FPGA to CPU
- ✓ Flexible networking capabilities: 2x10GbE, 2GbE ports
- ✓ Flexible reference clock/trigger/timestamp capabilities
 - ✓ Front panel clock/trigger
 - ✓ Clock/trigger distribution to all AMC thru backplane
 - ✓ PTP compatible
- ✓ Complete software solution
 - ✓ DAQ Series
 - ✓ EPICS
 - ✓ Matlab/Simulink

For more information: [A scalable Solution for High Energy Physics](#)

NFRI
National Fusion Research Institute

두루트론릭스
durutronics

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Pulse Detector

Very High Speed Data Acquisition system

**VT843: 1U μ TCA Chassis,
12 AMC slots, PCIe 8x Gen 3**

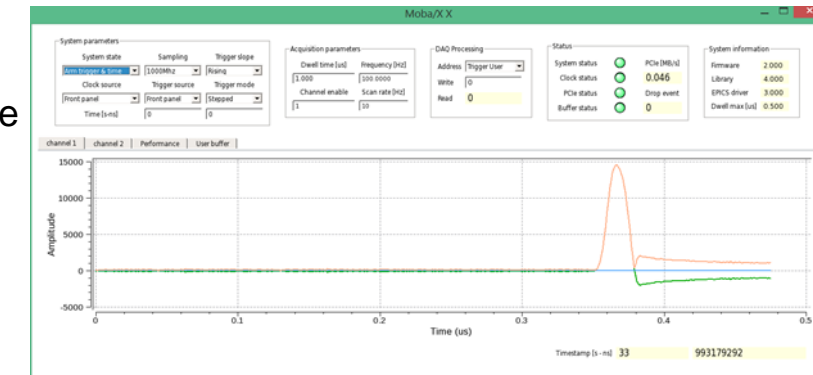


**AMC754: Intel Broadwell-DE
CPU, 16GB DDR4**

**AMC516 FMC226
2x ADC 4GSPS, 12bit,
Virtex 7 FPGA, 2GB DDR3**



- ✓ High density acquisition platform: 20x ADC (4GSPS, 12bit) in 1U chassis
- ✓ Large Signal Processing capabilities: 10x Virtex 7 FPGA, 20GB of DDR3
- ✓ High performance computing: 2x Intel Broadwell DE, 32GB DDR4, Scientific Linux, RedHat, Fedora
- ✓ High speed interconnect: 12GB/s DMA engine from FPGA to CPU
- ✓ Flexible networking capabilities: 2x10GbE, 2GbE ports
- ✓ Flexible reference clock/trigger/timestamp capabilities
 - ✓ Front panel clock/trigger
 - ✓ Clock/trigger distribution to all AMC thru backplane
 - ✓ PTP compatible
- ✓ Complete software solution
 - ✓ DAQ Series
 - ✓ EPICS
 - ✓ Matlab/Simulink



Acquisition and timestamping data display of 16ns pulse digitized with VadaTech FMC226

Storage Networking IO Carrier for: PCIe/XMC/PMC

- ✓ Storage SATA & SSD in Raid 0,1,10
- ✓ Optical Fiber FMCs for custom protocol network applications
- ✓ Digital and Serial IO for full control of your system
- ✓ XMC/PMC and PCIe carrier for *non-uTCA* form factor compatibility



Storage [AMC624](#): 2.5" Dual/Single SATA III Drive 4TB



[FMC108](#) Dual QSFP+



[FMC109](#) Quad SFP+



16-channel Digital IO [AMC095](#)



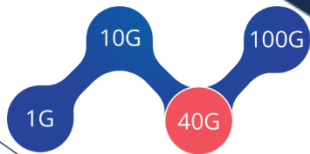
Eight Port RS-422 Serial Adapter [AMC323](#)



XMC/PMC Carrier [AMC105](#)

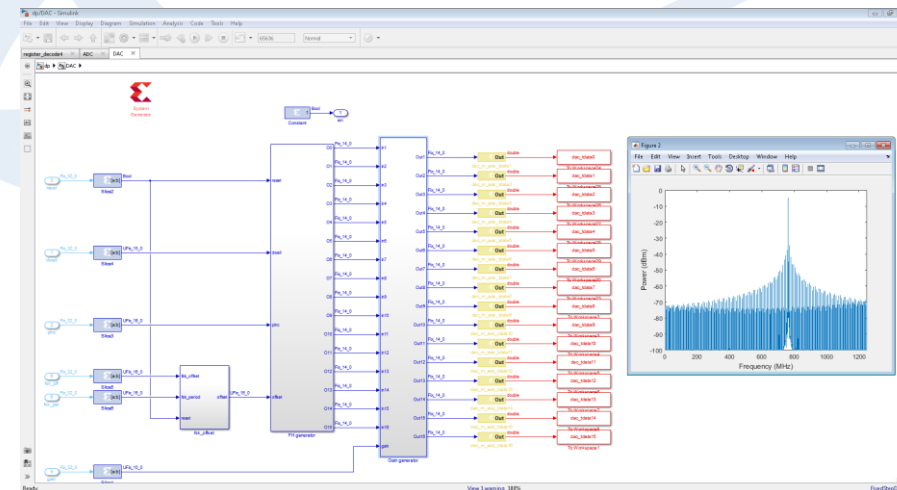


PCIe Extension card [PCI113](#)



High performance FPGA carrier

- Latest generation FPGA
- Designed for High Performance Signal processing
 - Compatible with DAQ Series' Signal Processing Development Kit
 - From 2GB to 20GB external memory
 - High speed PCIe Gen3 DMA engine
- Flexible clock/trigger routing



Save resources by coding FPGA with System Generator for DSP™ and Matlab Simulink™.

AMC517: Kintex-7 410T, 2GB DDR3, Freescale PPC2040

AMC516: Virtex-7 690T, 2GB DDR3, Freescale PPC2040

AMC592: Kintex UltraScale XCKU115, 20GB DDR4



For more information: http://www.vadatech.com/category.php?catid_2=38&catid_1=0

Versatile Data Acquisition solutions

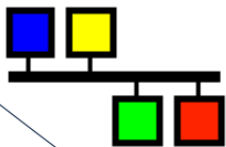


xTCA Models	Type	Speed	Resolution	FPGA	Memory
AMC/MRT522	8x ADC 2x DAC	250 MSPS 250MSPS	16bit	Kintex7	2GB DDR3
AMC/MRT523	12x ADC 2x DAC	125 MSPS 250MSPS	16bit	Kintex7	2GB DDR3

FMC Models	Type	Speed	Resolution
FMC228	4x ADC	1 GSPS	12bit
FMC227	2x ADC 1x DAC	2.6 GSPS 5.7 GSPS	12bit 14bit
FMC226	2x ADC	4 GSPS	12bit
FMC225	1x ADC 1x DAC	4 GSPS 2.8 GSPS	12bit 14bit

DAQ Series software package

EPICS

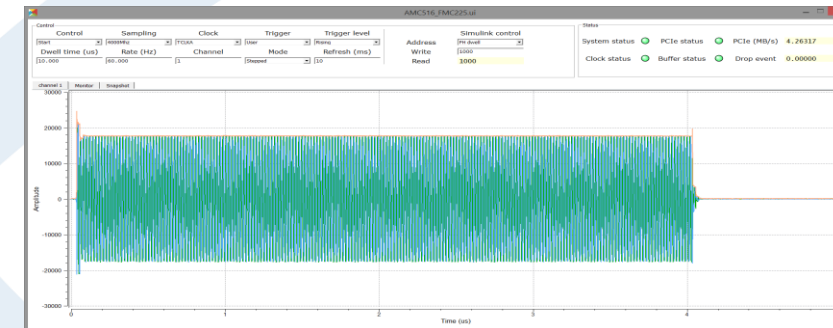


**MATLAB
SIMULINK**

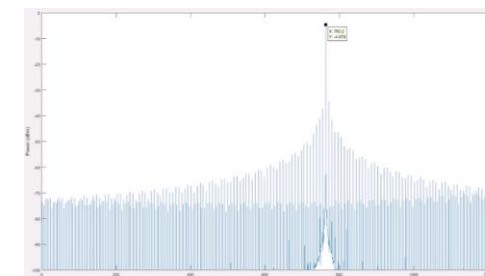


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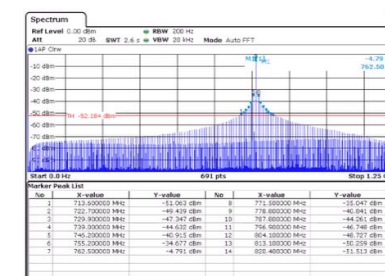
- ✓ Complete solution
 - ✓ Real time snapshot acquisition, recording, display
 - ✓ System control
 - ✓ System status
- ✓ Fast development/verification of custom Signal Processing Algorithms
 - ✓ Create your algorithms in MATLAB/Simulink
 - ✓ Integrate your algorithms on FPGA with Xilinx System Generator
- ✓ Highly customizable
 - ✓ Open source
 - ✓ Optional EPICS driver
 - ✓ Common API for all VadaTech DAQ products
- ✓ High performances
 - ✓ Simultaneous acquisition / data transfer to Linux server
 - ✓ From 2GB to 20GB on-board snapshots buffer
 - ✓ High speed DMA transfer to Linux server



Setup your clock and trigger source, set your sequence and visualize the digitized data.



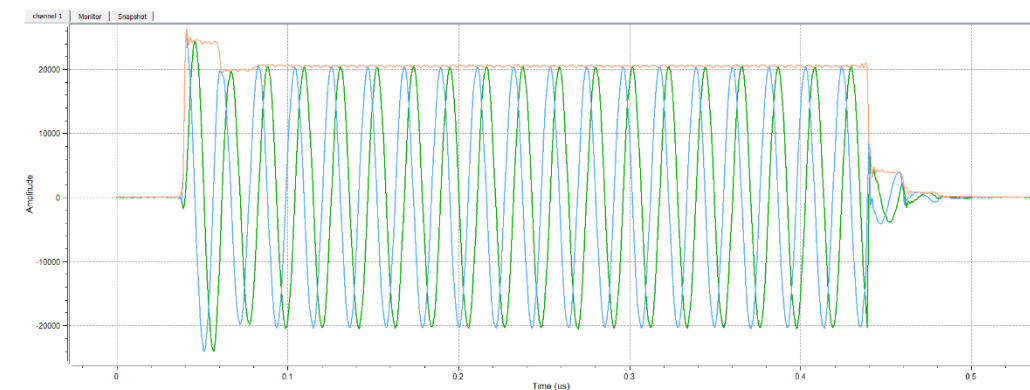
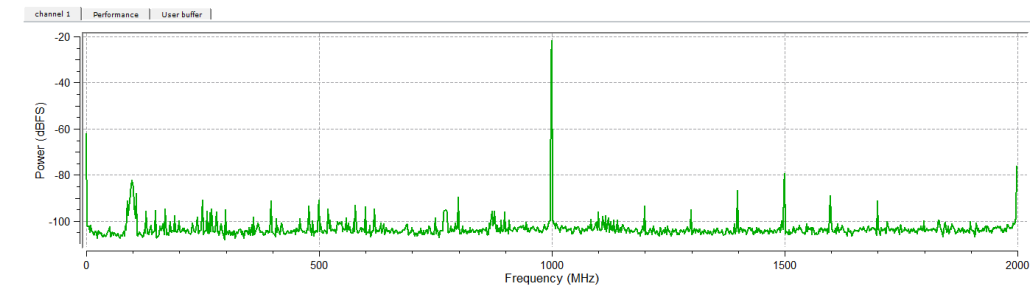
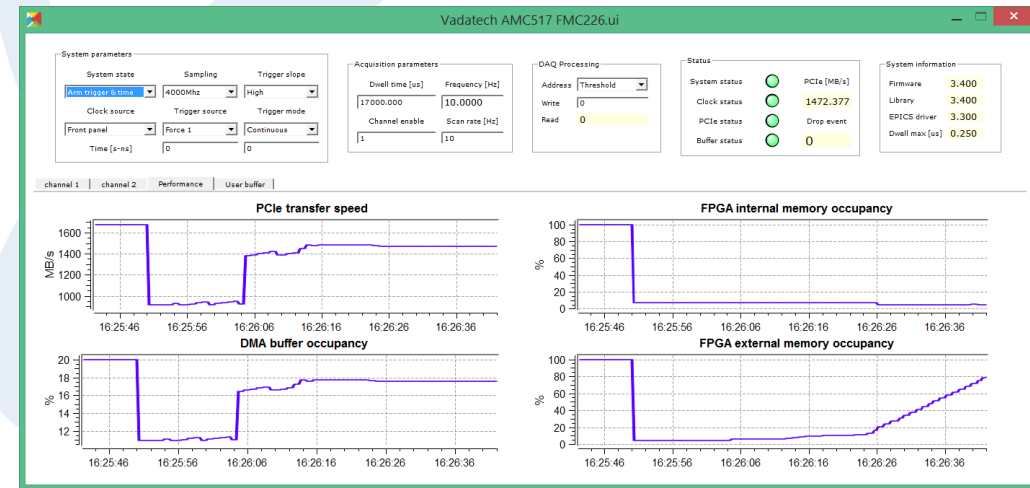
Simulated signal



Real signal

DAQ Series advanced features

- Real time system monitoring
 - Buffer level
 - PCIe speed
 - Hardware status
- High accuracy timestamping
 - Slot to slot timestamp synchronization
 - Nanosecond timestamp accuracy
- Flexible acquisition sequencing
 - Rising/falling trigger detection
 - User defined trigger function
 - Continuous/Stepped triggering mode
- Real time display
 - Spectrum Analyzer
 - Oscilloscope



VadaTech Quality and service

Our products are all assembled and tested in our USA headquarter to guaranty the best quality and reliability:



Our Engineering team is dedicated to collaborate and guide you from the choice of the most suitable platform to acceptance and validation of your system:



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