

# VME

## PORTABLE MULTI-CHANNEL SUPPLY AND DIGITAL DETECTOR READ-OUT SYSTEM

**WIENER, MESYTEC** and **ISEG** are presenting a new VME based, digital high-precision multi-channel read-out system for a variety of detector types as HPGe and Clover detectors, Si pixel / -strip detectors, NaI, CsI, and many others.

All needed hardware including ISEG BIAS/High Voltage supplies, MESYTEC Preamp-power supplies and Digitizers are fitting into the portable WIENER VME 554 chassis.

The new MESYTEC Digital Pulse Processors combine high precision energy and time measurement with ease of use.

All read-out is done via the WIENER VM-USB controller with list sequencer and high speed USB2 interface. The hardware package is completed by a ready-to-run multi-platform DAQ software with online monitoring capability.



### WIENER 554 VME/VME64x crate

- portable and light-weight
- 5 slots VME or VME64x
- 250W...500W power, hotswap, front-loaded,
- Display local and remote control

### WIENER VM-USB

VME-bus controller with high speed USB-2 interface and list sequencer



### MESYTEC MDPP-16 / 32

- Digital Pulse Processor for 16 or 32 channels
- Up to 15bit (32k) energy and 75ps time resolution Sophisticated trigger / timing (16us window)
- Simple set-up/programming Analog monitoring outputs of reconstructed digital signals for all channels

### MESYTEC MVNV4

preamp power supply with +/-6V and +/-12V, can power 4 pre-amps

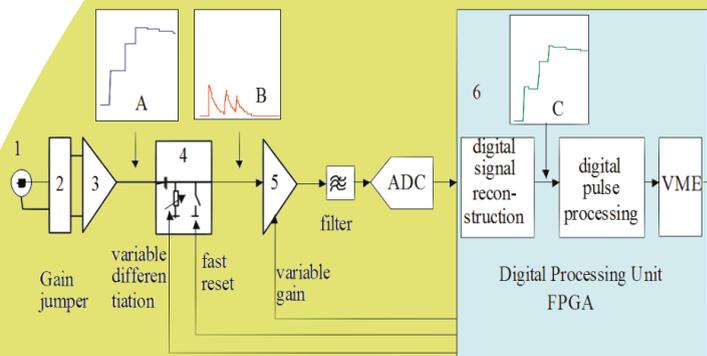


### ISEG VHS/VDS

- 100V ... 6kV BIAS/High Voltage modules
- with 4 or 8 channels in single wide / 12 or 24 channels in double wide 6U VME
- Each channel individually controlled and monitored
- Lowest noise and ripple
- SHV or REDEL multi-pin
- Perfect for SiPM's, APD's, HPGe detectors as well as PMT's and gaseous detectors

# VME portable

DIGITAL PULSE PROCESSING WITH ENERGY AND TIME OUTPUT



- ▶ input range 1.5mV to 20V
- ▶ noise 2 $\mu$ V @ 2 $\mu$ s shaping
- ▶ support of reset pre-amps
- ▶ 15 bit energy resolution
- ▶ 75 ps time resolution

- 1: **Input Stage:** Differential or unipolar
- 2: **Input / gain jumper:** Polarity and coarse gain
- 3: **Low Noise Amplifier:** High dynamic range
- 4: **Differentiation stage:** Variable with fast reset circuit
- 5: **Variable gain stage:** 1...24, total continuous gain 1 .. 200, Sampling ADC (80MHz)
- 6: **FPGA with Digital Pulse Processing:** Up to 4 different FW loadable

## SCP Firmware:

Processes signals from standard charge integrating preamps. (Shaper, ADC / CFD, TDC )

- ▶ 15 bit energy (32k) resolution, CFD-timing with 75 ps rms resolution
- ▶ Independent trapezoidal shaping from 50ns to 25 $\mu$ s, PZ adjustment from 800ns to infinity,
- ▶ High performance self adjusting Baseline restorer.

## RCP Firmware:

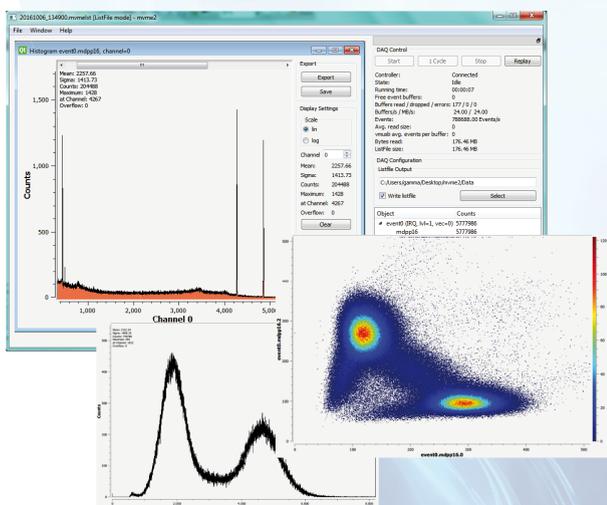
Processes signals from Reset-type charge integrating preamps (Shaper, ADC / CFD, TDC )

- ▶ SCP features with Fast Recovery from reset pulse (2 $\mu$ s + shaping time)
- ▶ Dynamic range of  $1.5 \cdot 10^6$  reset pulse/noise

## QDC Firmware:

Processes fast signals from PMTs, channel plate... (Pre-amplifier, CFD, 2 x QDC, TDC)

- ▶ Self-triggered QDC with 12bit resolution, and TDC with 75ps rms
- ▶ 2 Integrations: Main with 15ns to 1.6 $\mu$ s, Second integration, 50ns to 1.6 $\mu$ s
- ▶ n/gamma pulse shape discrimination for BC501, Stilbene, CLYC..



## MVME2 - DAQ software:

- ▶ Multi-platform DAQ software with hardware setup, data collection and online monitoring
- ▶ Up to 10MB/s data throughput with VM-USB in list sequencer mode
- ▶ Supports all MESYTEC VME modules, easy configuration with scripting files
- ▶ ISEG VHS/VDS High voltage control