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ISO 9001:2000
CERT. N. 9105.CAEN

CAEN

Tools for Discovery

February 2011

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SiPM Kits

- CAEN today introduces 2 kits dedicated to the SiPM:

➢ The EVALUATION Kit

➢ The EDUCATIONAL Kit

The EVALUATION Kit

The EVALUATION kit is designed to test and characterize the sensors before starting to work on a specific application.

This Kit Includes:

- 2 Channels, 12 bit, 250 MS/s Digitizer (DT5720A) with DPP-CI (Charge Integration) firmware
- 2 Channels Power Supply and Amplication Unit with variable amplification gain up to 50 dB providing sensor bias with gain stabilization
- Ultra-fast LED Driver with Violet (405 nm) LED for SiPM Test
- 1 Mechanical adapter supporting a Hamamatsu MPPC 1x1 mm2 model S 10362-11-100C (100 pixel)
- 1 Mechanical adapter supporting a Hamamatsu MPPC 1x1 mm2 model S 10362-11-25C (1600 pixel)
- 1 Mechanical adapter without sensor for an easy SiPM mounting and test

The ITEMS-1

- 250MS/s sampling rate
- 12-bit resolution
- 2 channels
- DPP_CI Charge Integration firmware on board

- Max Voltage 120V
- Max Current 100 uA
- Temp. Feedback Res. 0.1 °C
- Sensor embedded/removable
- Gain: 1-50 dB
- Gain Setting Step: 1dB
- Bandwidth: 100 kHz - 500 MHz
- Output Dynamic Range: ± 2V
- Discriminator Threshold: ± 2V
- min step = 61 uV

The ITEMS-2

- Sensor Holder:
- MPPC 1x1 mm2 model S 10362-11-100C (100 pixels) with narrow dynamic range with great sensitivity suited for very low light applications
- MPPC 1x1 mm2 model S 10362-11-25C (1600 pixels) with wide dynamic range with less Photon Detection Efficiency suited for applications with a large number of photons
- Possibility to mount other sensors
- Temperature feedback sensor embedded

The ITEMS-3

- Wavelenght: 405 nm (Violet)
- Pulse Widht: 5 ns
- 50% Power Angle: 15 deg
- Luminosity (@ 20 mA): 1500 mcd adjustable by trimmer (under upgrade)
- Frequency: up to 500 kHz
- FC terminated optical fiber included

The EVALUATION Kit

The EVALUATION kit is designed to test and characterize the sensors before starting to work on a specific application.

This Kit Includes:

- 2 Channels, 12 bit, 250 MS/s Digitizer (DT5720A) with DPP-CI (Charge Integration) firmware
- 2 Channels Power Supply and Amplication Unit with variable amplification gain up to 50 dB providing sensor bias with gain stabilization
- Ultra-fast LED Driver with Violet (405 nm) LED for SiPM Test
- 1 Mechanical adapter supporting a Hamamatsu MPPC 1x1 mm2 model S 10362-11-100C (100 pixel)
- 1 Mechanical adapter supporting a Hamamatsu MPPC 1x1 mm2 model S 10362-11-25C (1600 pixel)
- 1 Mechanical adapter without sensor for an easy SiPM mounting and test

The EDUCATIONAL Kit

The EDUCATIONAL kit has been studied for educational purposes and it allows the students to perform several laboratory experiences .

This Kit Includes:

- 2 Channels, 12 bit, 250 MS/s Digitizer (DT5720A) with DPP-CI firmware
- 2 Channels Power Supply and Amplication Unit with variable amplification gain up to 50 dB providing sensor bias with gain stabilization
- 2 Mechanical adapter supporting a Hamamatsu MPPC 1x1 mm2 model S 10362-11-100C (100 pixel)
- Ultra-fast LED Driver with Violet (405 nm) LED for SiPM Test
- Mini Spectrometer with Hamamatsu MPPC 3x3 mm2 model S 10362-33-050C (3600 pixel) with 3 different scintillating crystals (LYSO, BGO, CsI)
- Scintillating Tile for beta spectroscopy and cosmic rays detection

The ITEMS-1

- 250MS/s sampling rate
- 12-bit resolution
- 2 channels
- DPP_CI Charge Integration firmware on board

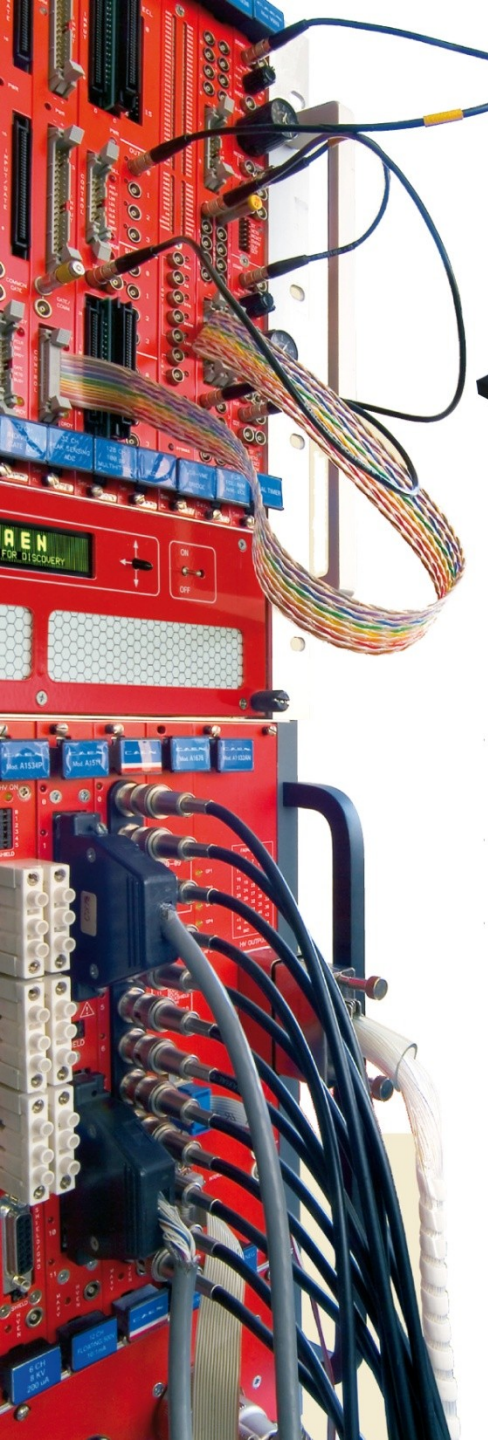
- Max Voltage 120V
- Max Current 100 uA
- Temp. Feedback Res. 0.1 °C
- Sensor embedded/removable
- Gain: 1-50 dB
- Gain Setting Step: 1dB
- Bandwidth: 100 kHz - 500 MHz
- Output Dynamic Range: ± 2V
- Discriminator Threshold: ± 2V
- min step = 61 uV

The ITEMS-2

- Wavelenght: 405 nm (Violet)
- Pulse Widht: 5 ns
- 50% Power Angle: 15 deg
- Luminosity (@ 20 mA): 1500 mcd adjustable by trimmer
- Frequency: up to 500 kHz
- FC terminated optical fiber included

- Sensor Holder:
- Currently Embedded SiPM: n.2 Hamamatsu MPPC model
  S 10362-11-100C (100 pixel)
- Possibility to mount other sensors
- Temperature feedback sensor embedded

The ITEMS-2



- Scintillating Material: Polystyrene with WLS Fiber embedded
- Dimensions: 100x100x10 mm^3
- Fiber Termination: FC

- Embedded SiPM: Hamamatsu MPPC S10362 -33-100C 100C 3x3 mm^2 Active Area
- Crystals (3x3x15 mm^3): LYSO, BGO, CsI
- Temperature feedback sensor embedded
- Possibility to install other sensors from other manufacturers (i.e. SensL…)

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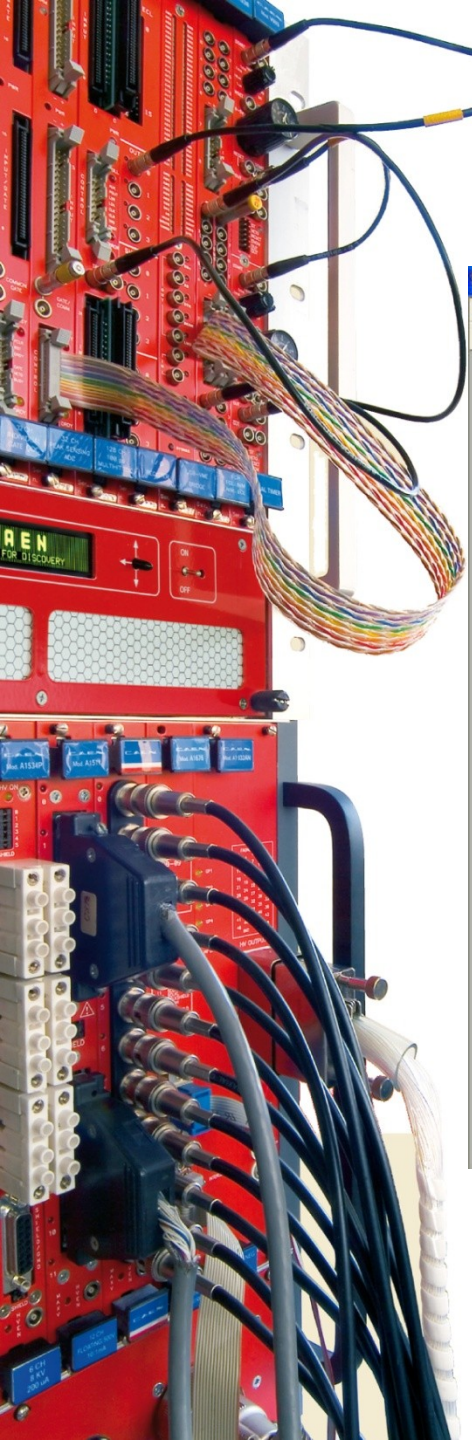
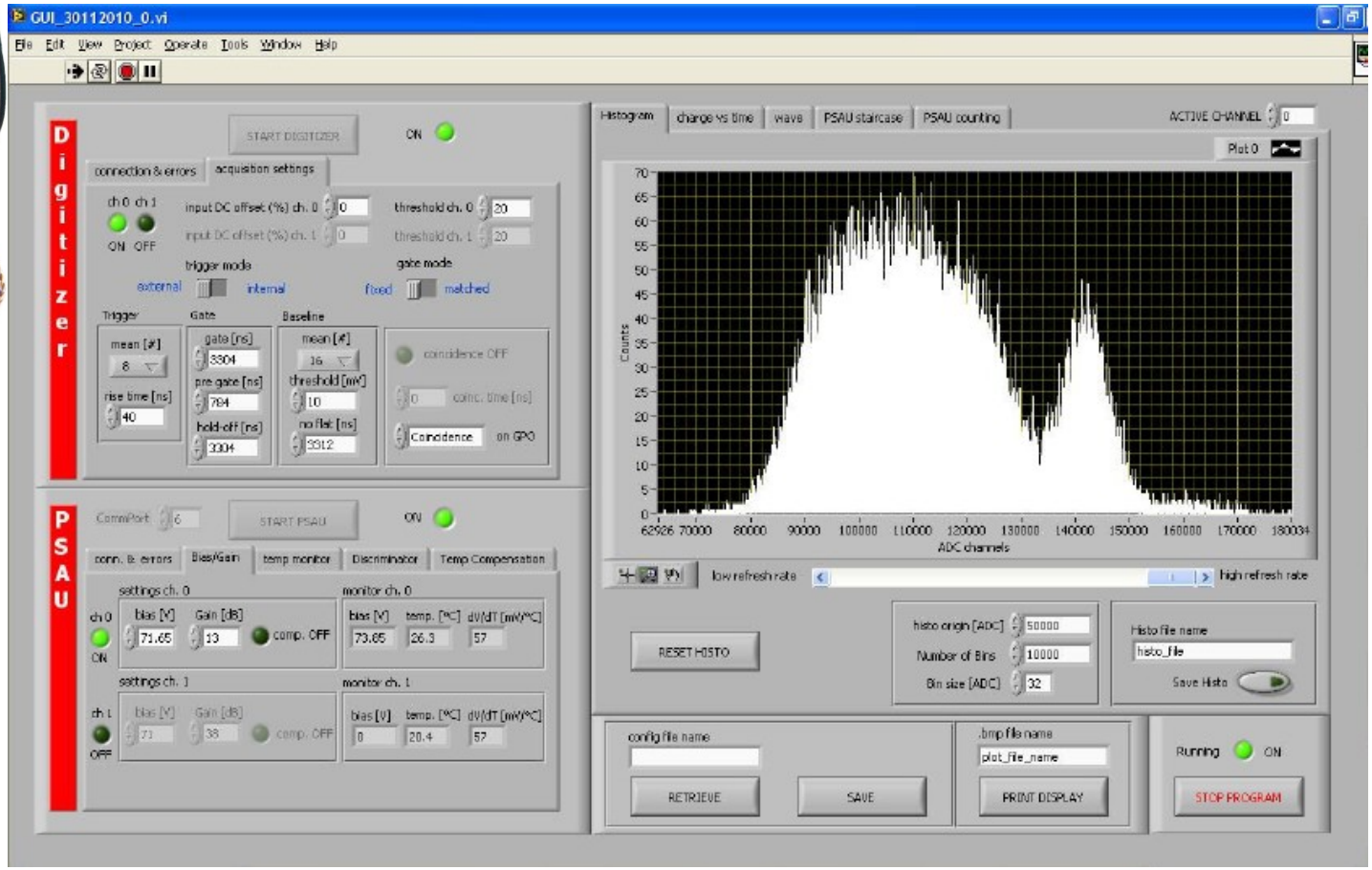
Software





Compatible with Windows XP/Vista/7

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