

APPLICATION NOTE

MEASURE ENERGY AND PULSE WIDTH OF A LONG PULSE LASER RUNNING IN THE BURST MODE WITH OUR PYROELECTRIC JOULEMETER



MEASURE LONG PULSES

- Tuned Pyroelectric measures pulses up to 300 ms

MEASURE A SINGLE PULSE OR BURST OF PULSES

- From 1 to 16 sub-pulses

LABVIEW SOFTWARE PROVIDES EVERYTHING YOU NEED:

- Total Pulse Energy
- Sub-pulse Energy and Pulse Width

ORIGINAL APPLICATION

This one of a kind Pyroelectric Radiometer/Joulemeter was developed for a multi wavelength Medical Laser System. The requirement was to capture multiple pulses and to measure pulse width, individual and total pulse energy. It had to measure up to 16 sub-pulses in the 100 mJ to 50 J range, and from 0.2 to 300 msec. The wavelength range was Visible to Far IR.

GENERAL FEATURES

- 9 mm Ø Pyroelectric detector with BL coating
- Fast current mode preamp
- USB powered digital electronics module
- 5 decades of range 100 mJ to 100 J
- Zero baseline to offset thermal drift
- Attenuator Cal factor for use with external attenuators
- Analog output to monitor pulse shape

SOFTWARE FEATURES

- Trigger Set: 2 - 20%
- Set number of sub-pulses and pulse width
- Display pulse energy and width for each sub-pulse
- Graphic display of up to 16 pulses
- Large digital display of total pulse energy
- Log data to file

APPLICATION NOTE

LASER PULSE CAPTURE AND PROCESSING

Though the incoming laser pulse may exhibit high frequency oscillations (Fig. 1), the unique combination of our tuned Pyroelectric detector and electronics take the average, which results in a clean pulse (Fig. 2) whose peak amplitude and width can be measured accurately.

Fig 1: LASER SIGNAL

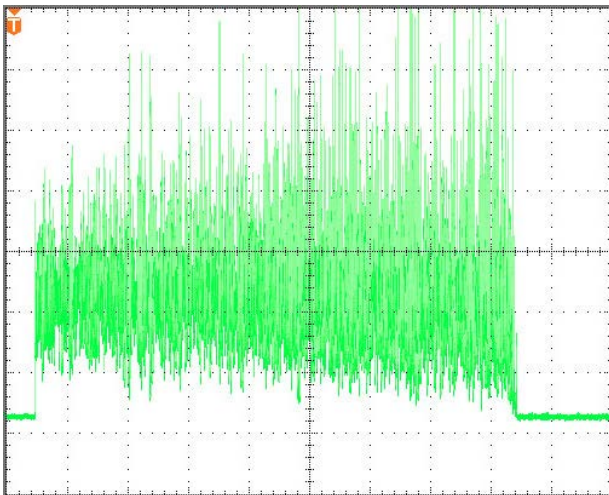
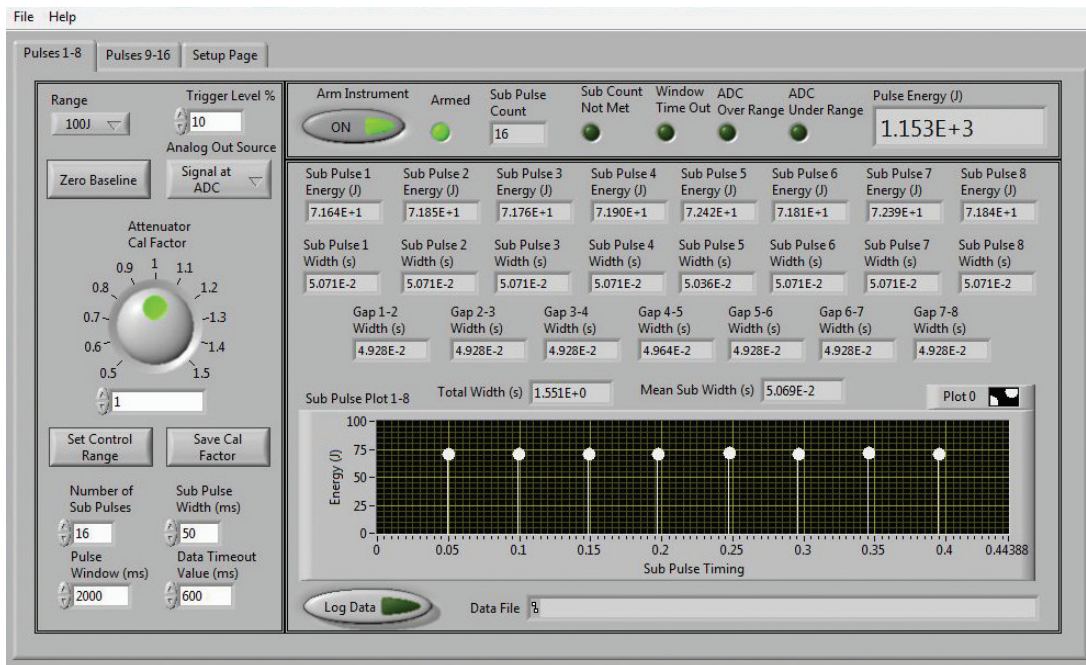
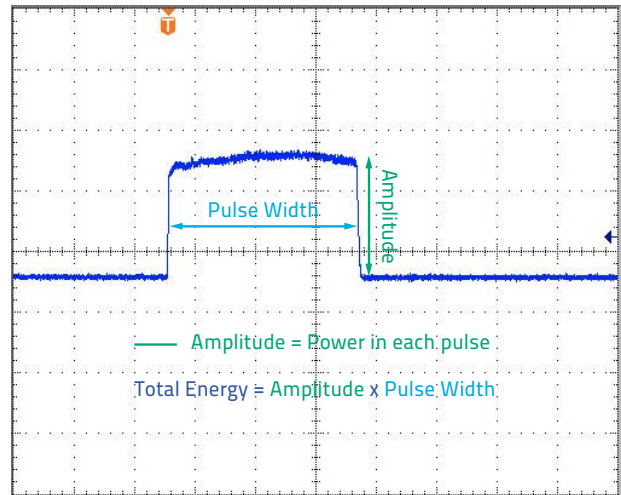


Fig 2: ANALOG SIGNAL



SOFTWARE INTERFACE

Our stand alone LabView Applications Software includes many control features and powerful data windows and graphics that make capturing and measuring your long pulse, burst mode laser easy!

ORDERING INFORMATION

If you are interested in our unique Long Pulse Pyroelectric Radiometer/Joulemeter or a similar capability for the measurement of your multi-pulse laser, please contact your local distributor or representative. It will be our pleasure to assist you in defining your exact needs. You will find our full contact listing on our website at gentec-eo.com/contact-us.