FTD 10000
7 GHz Transient Digitizer

Features

- 7 GHz bandwidth with slow roll off
- 50 ps rise time
- Up to 1 ps time resolution
- 13-bit vertical resolution
- 2000 V maximum input voltage without overload
- Controlled via front panel and Ethernet
- 19" Rack, 4U, 560 mm
- Fiducial input for time stamping

Applications

- Diagnostics for Laser research and High-Energy physics
- Recording of fast single shot pulses
- EMC/EMP simulators
- High-voltage breakdowns
- Test of high speed circuits
- Automatic Test Equipment (ATE)

Description

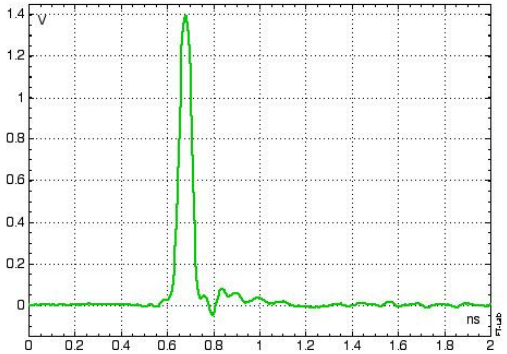
Greenfield Technology's FTD10000 Fast Transient Digitizer is the industry fastest digitizer specifically designed to record very fast single short pulses down to 50 ps with 13-bit amplitude resolution.
It features unique performances such as a 7 GHz bandwidth with slow roll off giving a very good impulse response, maximum input voltage of 2000 Volts without overload and low noise giving a S/N ratio > 3000 (> 70 dBFS).
Additional features include an input for timing fiducials and a large front panel display for easy and precise viewing.
A GUI allows local and remote control of all setup and digitizing features and viewing of results. As such the FTD10000 is an excellent solution for laboratory and automatic test application.
The FTD10000 is a licensed product developed under CEA (Commissariat à l'Energie Atomique) contract.

Principle: The heart of the digitizer is a very large bandwidth Cathode Ray Tube (CRT) directly coupled to a CCD camera through two fibers windows. The FTD10000 uses a scan conversion principle (fast in, slow out).

Phase 1: The digitizer records the signal in a fast analog memory (screen of the CRT).

Phase 2: The digitizer captures the fast memory slowly and digitizes it (CCD camera) in order to store it in a video memory.

The signal is extracted from the video memory through image processing and defect correction. The acquired waveform can be viewed on local display and read via the LAN interface and exported to standard signal analysis tools.



50 ps impulse response (0.2ns/div)
Generator is PSPL 4015B pulser

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Main Characteristics

SIGNAL INPUT
- Sensitivity: 5 V
- Bandwidth: DC to 7 GHz (4 dB)
- Rise Time: 50 ps
- Input impedance: 50 Ω
- Vertical position: +50 % to –50 %
- Maximum input: 2000 V (1 µs)

TRIGGER
- Source: external
- Input impedance: 50 Ω
- Signal polarity: positive or negative
- Signal duration: > 0.5 ns
- Level: 0.5 to 5 V
- Maximum input: 500 V (1 µs)
- Jitter: 5 ps rms
- Internal delay: 40 to 540 ns

DIGITIZING
- Analysis duration: 1 to 2000 ns
- Horizontal resolution: 10 bits
- Vertical resolution: 13 bits
- Non volatile memory: 1 record & settings
- SNR: 3000 (70 dBF)
- Acquisition modes:
  - single shot
  - repetitive
  - electrical zero
- Waveform processing
  - Raw data (image)
  - Fast (waveform)
  - High (corrected waveform)

SYSTEM
- Commands and settings: via Ethernet
- Data transfer: via Ethernet 10/100 Base-T
- Leds: for viewing instrument status
- 8"2 LCD display, keyboard and a parameter entry knob for local waveform viewing and instrument control

FIDUCIAL INPUT:
This input (SMA connector) provides a marker synchronous of recorded signal. The fiducial input signal is added to the signal input.

INPUTS/OUTPUTS
All connectors are located at the rear of the equipment
- Signal input and output: N connectors
- Trigger input: BNC connector
- Timing output: BNC connector
- Ethernet port: RJ-45

ENVIRONMENT
- Temperature: 0 to 40°C
- Humidity: 85% non-condensed at 40°C
- EMC: EN 55022/B

POWER SUPPLY
- Voltage: 115 to 220 V
- Power: 120 W

PHYSICAL DIMENSIONS
- Width: 19 inch
- Height: 173 mm (4 U)
- Depth: 560 mm / 670 mm with handle
- Weight: 20 kg

OPTIONS

EQUALIZER: This module extends bandwidth up to 11 GHz

SOFTWARE
- Labview driver for Windows XP / Seven