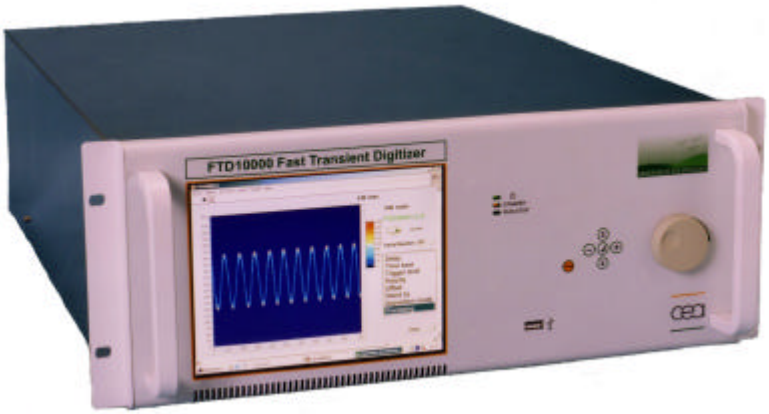
GREENFIELD TECHNOLOGY

FTD10000

7 GHz TRANSIENT DIGITIZER



- **50 ps rise time**
- **1 ps time resolution**
- **13 bits vertical resolution**
- **Controlled via Ethernet**
- **Optional front panel display**

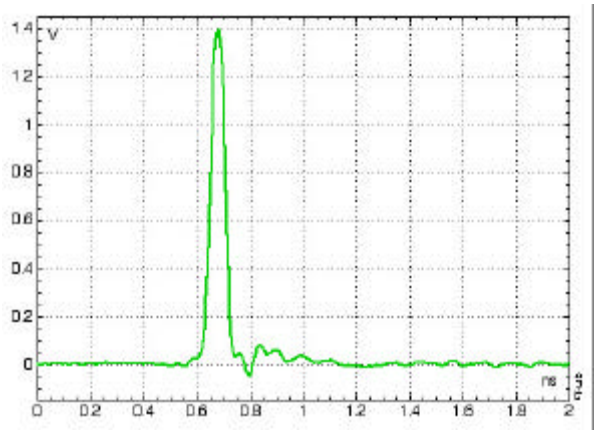
The FTD10000 is the world fastest digitizer specifically designed to record very fast single shot pulses down to 50 ps.

The FTD10000 is the ideal instrument for recording impulse phenomena in *Laser research*, *High-Energy physics*, *EMC/EMP simulators*, *High-Voltage breakdowns* and for testing *high-speed circuits*.

It features unique performances :

- 7 GHz bandwidth with slow roll off giving a very good 50 ps impulse response,
- maximum input voltage of 2000 Volts without overload,
- ultra-stable trigger plus optional fiducial input for picosecond timing accuracy,
- it is portable and rack mountable for use in laboratory or automated test benches.

The FTD10000 is a licensed product developed under CEA (Commissariat à l'Energie Atomique) contract.



50 PS IMPULSE RESPONSE
(with a 20 ps Armexel 4015B PPL pulser)

Typical performances of a FTD10000 compared to performances of other available digitizers :

	FTD10000	Other digitizers
Rise time	50 ps	~ 100 ps
Real time sampling res.	1 ps	50 ps
S/N ratio	> 3000	~ 300
Maximum input voltage	2000 V	~ 5 V
ESD protection	Yes	No
Time uncertainty (RMS)	< 5 ps	~ 10 ps

(Observed, 05/2003)

FTD10000 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
- Acquisition modes:
  - single shot
  - repetitive
  - electrical zero

SYSTEM

- Commands and settings : via Ethernet
- Data transfer : via Ethernet 10/100 Base-T
- Leds : for viewing instrument status

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

FRONT PANNEL DISPLAY: The optional front panel uses a 8”2 LCD display, a keyboard and a parameter entry knob for local waveform viewing and instrument control.

FIDUCIAL INPUT : This option provides a marker synchronous of recorded signal (SMA connector).

EQUALIZER : Extends bandwidth up to 11GHz (*available 07/2005*)

PRINCIPLE

The FTD10000 uses a scan conversion principle. The digitizer records the signal in a fast analog memory (screen of a CRT). Then it reads it more slowly (CCD) in order to digitize it and 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 read via the LAN interface and exported to standard signal analysis tools.

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