GFT1208
8 Channel Digital Delay Generator

Features
- Eight Independent Delay Channel
  - 1 ps resolution
  - 15 ps RMS Jitter (Channel to channel)
  - 1 second delay range
- Output pulse
  - 2.5V to 10V into 50 Ω
  - <2 ns rise time
  - Lemo connector
- Trigger source
  - Internal or External
- cPCI, 6U, 1 slot form factor
- Optical input (option) for timing system mode

Applications
- Components Testing
- ATE Application
- Laser Timing System
- Precision Pulse Application
- Picosecond timing system

Description
The GFT1208 module provides eight independent delay channels. The delay resolution on all channels is < 1 ps and channel to channel jitter is less than 15 ps. LEMO outputs deliver up to 10 V level with a 1.5 ns typical rise time into 50 Ω. Output pulse Amplitude and width are adjustable.

One input trigger (Trig In), or one internal frequency programmable generator, or software command is used to trigger off all output channels. One output Trigger channel (Trig out) is used to mark zero delay for the each trigger in different operation modes.

This output (Trig out) can also allow to synchronize several GFT1208 delay generator by daisy chaining several modules. In this way up to 256 GFT1208 generators can be synchronized (See two daisy chained modules example).

In timing system mode (option 1) the module could be optical synchronized via an optical network and a GFT3001 Master Oscillator Transmitter who provides triggers and time base. Up to 256 GFT1208 generators can be synchronized.

Control panel software for Windows
This free software provides a simple method to configure settings for each channel (delay, output amplitude, output width), trigger source, trigger mode, and to control operation and status of the generator.

Users can store and recall the configuration and parameters from the control panel.

The software is designed to allow multiple GFT1208 to be installed and operate in the same cPCI rack. Each module is addressed by its serial number.
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Specifications
Delays
Channels 8 independent delay channel
Range 0 to 10 s
Resolution 1 ps
RMS jitter 15 ps (Channel to channel)
500 ps + 10^{-7} x delay (External trigger to any output)
Trigger Delay < 100 ns (insertion delay)
Accuracy < 250 ps + delay x 10^{-7}
Time base 10 MHz internal clock, 25 ppm

Trigger source
External Trigger input Repetition rate < 50 KHz, Level 1V, slope positive, impedance 50Ω or high impedance, width > 20 ns
Internal Trigger 1 Hz to 50 kHz, resolution : 1 Hz

Trigger out Same specifications as Output pulse

Output pulse T1 to T8
Level 2.5 to 10 V, resolution : 1 mV
Width 200 ns to 1 µs
Load 50 Ω external
Rise time, fall time < 2 ns, < 5 ns
Connector LEMO

General
Size CPCI, 1 slot
Power 15 W
Led Red: / Green: Power on
Software Free driver and control panel for Windows 7

Options
Option 1 : Optical input for timing system
Option 2: 50ps RMS jitter (External trigger to any output)