GFT1040
40 Channel Digital Delay Generator

Features
- 40 independent delay Channels
  - 100 ps resolution (standard)
  - 1ps resolution (option)
  - 25 ps RMS jitter
  - 10 second range
- Output pulse up to 6 V/50 Ω
- External Clocking up to 100 MHz
- Controlled via Front panel, Ethernet, Internet (Web page)
- Option: Output pulse 10V/20V/32V

Applications
- Sync with selectable external clock frequency - Mode locked Lasers
- Picoseconds Laser Timing System
- Control Flasclamps and Q-switches
- Gate high speed Cameras
- ATE Application
- Components Test
- Precision Pulse Application
- Synchronous Multi-channel
- Radar / Lidar testing

Description
The GFT1040 generator provides forty independent delay channels. It’s a system made with two synchronized GFT1020 unit. One unit is the Master and provides the triggers and the time base to other Slave unit. The delay resolution on the standard unit is 100ps with an optional 1ps resolution. Channel to channel jitter is less than 25ps. In standard BNC outputs deliver 3ns/6V level into 50Ω. In option each output can be independently factory configured in 2.5 to 10V/1ns or 5 to 20V/5ns or 32V/5ns amplitude into 50 Ω.
Amplitude, polarity and Width are independently adjustable on each output pulse giving you complete time and amplitude domain control.
One input trigger (TRIG IN), or one of the three synchronized internal generators or command is used to trigger all output channels. A T0 output pulse marks zero delay for each trigger.
All parameters (delay/amplitude/width/trigger source for each channel ...) may be local controlled over touch screen and remote controlled over Ethernet and Internet (Internal web server) interface (10 / 100 Mb/s).
The GFT1040 is well suited in Picoseconds Laser System to synchronize all the equipments and functions (Flasclamps, Q-switches, high speed Cameras...) with only two compact units.
GFT1040, 40 Digital delay channels

**Specifications**

**Delays**
- **Channels**: 40 independent delay outputs
- **Range**: 0 to 10 s
- **Resolution**: 100 ps
- **RMS jitter**: 25 ps (T0 to any output)
- **Accuracy**: < 250 ps + delay x 10⁻⁷
- **Time base**: 0.05 ppm stability

**Trigger source**
- **Internal**: 3 generators: 0.1Hz to 10 kHz (1, 2, 5 steps)
- **External**: 2 Single Shots (0s and -1s)
- **Command**: 2 Single shots (0s and -1s)

**Output T0**
- **Amplitude**: 3 V to 6 V / 50 Ω
- **Rise / fall time**: 5 ns / 5 ns max.
- **Width**: 100 ns to up 300 ms
- **Polarity**: positive/negative
- **Connector**: BNC

**Clock input**
- 10 MHz to 100 MHz

**General**
- **Interface control**: Front panel, Ethernet / Internet (Web page)
- **Software**: Free Labview and EPICS driver
- **Size**: Two Racks 19”, 2U, 300 mm (Include Rack mount kit)
- **Power**: 90 to 220 V / 1 A

**Options**
- 1. **Channel Output**
  - 2.5 to 10 V, rise time < 1ns
  - 5 to 20 V, rise time < 5ns
  - 32 V, rise time < 5ns
- 2. **1 ps delay resolution**
  - RMS jitter: <10 ps (T0 to T1..T10 outputs Master)
  - <20 ps (T0 to other outputs)
- 3. **Optical output**
  - With GFT100 module

1) User Specified, settable at factory
2) This option can be independently applied to every output.

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Master or Slave Rear panel

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