



GFT1040

40 Channel Digital Delay Generator

Features

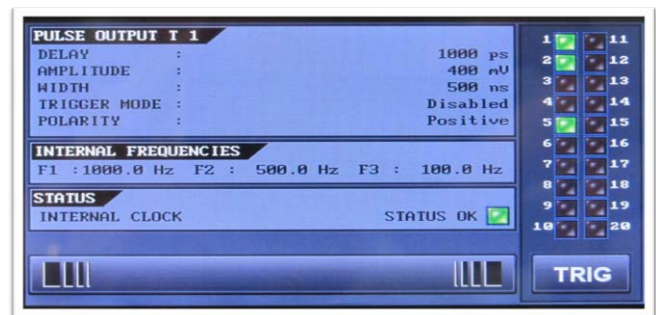
- 40 independent delay Channels
- 100 ps resolution (standard)
- 1ps resolution (option)
- 25 ps RMS jitter
- 10 second range
- Output pulse up to 6 V/50 Ω
- External Clocking up to 100 MHz
- Controlled via Front panel, Ethernet, Internet (Web page)
- Option: Output pulse 10V/20V/32V



GFT1040 is a system made with two synchronized GFT1020

Applications

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



Touch screen: Main menu

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.

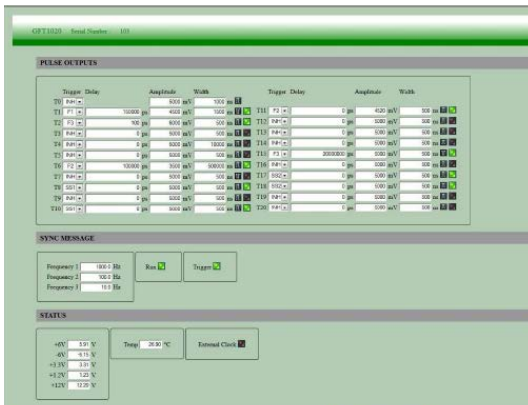
The delay resolution on the standard unit is 100ps with an optional 1ps resolution. Channel to channel jitter is less than 25ps. In standard BNC outputs deliver 3ns/6V level into 50 Ω . In option each output can be independently factory configured in 2.5 to 10V/1ns or 5 to 20V/5ns or 32V/5ns amplitude 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 (Flaschlamps, Q-switches, high speed Cameras...) with only two compact units.



Master unit web page

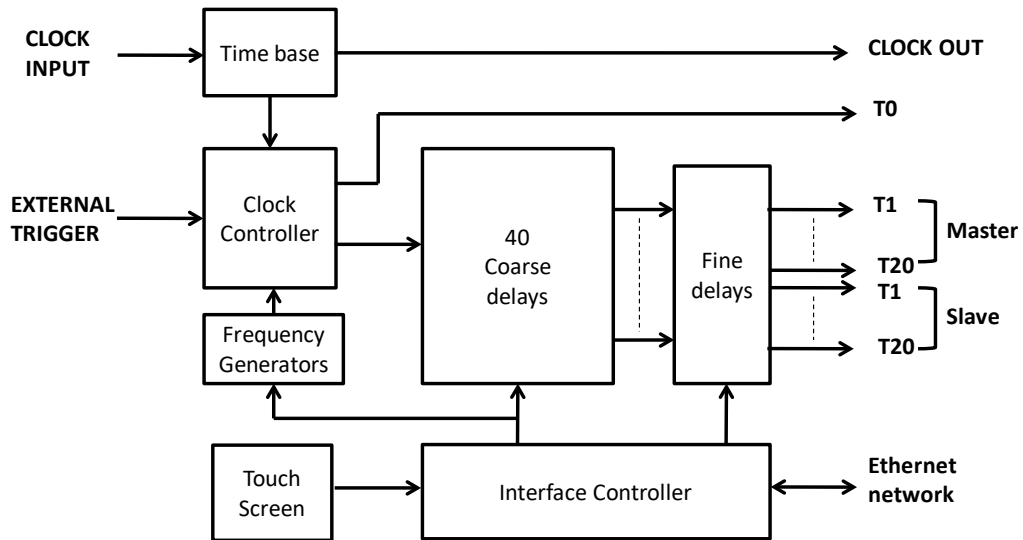
Alls parameters may be remote controlled with an embedded GUI that opens in an HTML browser such as Internet Explorer or Chrome.



LabView panel

A LabView VI is provided to control the forty channels of the two units in the same time.

GFT1040, 40 Digital delay channels



Functional block diagram

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 |

Clock input⁽¹⁾

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 |

Trigger source

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

Options

- Channel Output⁽²⁾

| |
|-------------------------------|
| 2.5 to 10 V, rise time < 1 ns |
| 5 to 20 V, rise time < 5 ns |
| 32 V, rise time < 5 ns |
- 1 ps delay resolution

RMS jitter : < 10 ps (T0 to T1..T10 outputs Master)
< 20 ps (T0 to other outputs)

Other specifications are identical has the basic version

Output T0

6V / 50 Ω, 100ns

Outputs T1 to T20 (Master and Slave)

| | |
|------------------|---------------------|
| 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 |

3 Optical output

With GFT100 module



Master or Slave Rear panel

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