Model 588 - 1U Rack Mount 8 Channel DDG

- 50pS Internal Jitter, 200pS trigger jitter
- 250pS Delay & Width resolution
- Multiplex up to 8 Channels
**MODULE SPECIFICATIONS**

**TTL/ADJUSTABLE CHANNEL OUTPUTS**

- output impedance: 50 ohm

**TTL/CMOS MODES**

- output level: 4.0 V typ into 1 kohm
- rise time: 3 ns typ
- slew rate: 0.6 V/µs
- jitter: 50 ps RMS

**ADJUSTABLE MODE**

- output level: 2.0 to 20 VDC into 1 kohm
- output resolution: 10 mV
- current: 200 mA typical, 400 mA max
- slew rate: > 0.1 V/µs
- overshoot: < 100 mV ± 10% of pulse amplitude
- rise time: 15 ns typ @ 20 V (High imp)
  25 ns typ @ 10 V (50 ohm)
  (10% - 90%)

**TRIGGER/GATE DUAL INPUT (STANDARD)**

- Standard dual channel input, providing one trigger input and one gate input. May be used with the dual trigger firmware option to provide two independent trigger sources.

- threshold: 0.2 to 15 VDC
- maximum input voltage: 60 V peak
- resolution: 1 mV
- input impedance: 1 MΩm + 40 pF or 50 ohm
- insertion delay: < 180 ns
- pulse inhibit delay: < 120 ns
- output inhibit delay: < 50 ns
- jitter: < 800 ps RMS

**SYSTEM EXTERNAL TRIGGER/GATE INPUT(S)**

- function: generate individual pulses, start a burst or continuous stream
- rate: DC to 1/200 ns ± longest active pulse
- slope: rising or falling (maximum of 5 MHz)
- behavior: used to control the internal rate

**GATE INPUT**

- function: pulse inhibit or output inhibit
- polarity: active high / active low
- behavior: used to control the internal rate generator

**STANDARD FEATURES & FUNCTIONS**

- communications: USB/RS232, Ethernet
- external clock in: 10 MHz - 100 MHz in 1 MHz increments
- external clock out: 5 MHz - 40 MHz
- configuration storage: TTL, Rate, Chan, 2x ExPll, 1x ExPll, 1/8 ExPll, % Ext, 40MHz, 10MHz, 5MHz, and Disabled

**STANDARD OUTPUT MODULES**

- AT20: quad channel TTL/CMOS & adjustable output module

**OPTIONAL MODULE**

- T259: quad channel, high current TTL/CMOS (for driving 50 ohm loads) & adjustable output module

**SYSTEM OPTIONS**

- DT15: dual trigger logic - provides additional trigger via gate input

- Independent Channel Enable/Disable
- Delayed Channel Enable - allows flash lamp/ diodes to be fired, stabilizing the laser before the Q-switch or shutter is enabled.
- Single shot or Burst mode laser pulse bursts, controlling either just the Q-switch or entire laser.
- Duty cycle mode allows firing laser at an optimal rate, but picking pulses out at the user required rate.
- Output multiplexer allows the timing of any combination of channels to be output on any of the output ports, providing very complex pulse trains.

**INTERNAL RATE GENERATOR**

- rate: 0.0002 Hz to 10.000 MHz
- resolution: 10 ns
- accuracy: 1 ns ± 0.001 x period
- jitter: 50 ps RMS
- settling: 1 period
- burst mode: 1 to 9,999,999 pulses
- timebase: 100 MHz, low jitter PLL
- oscillator: 50 MHz, 25 ppm
- system output: single shot, burst, duty cycle, continuous
- modes: pulse control modes, internal rate generator, external trigger, external gate

**PROGRAMMABLE TIMING GENERATOR**

- channel output: single shot, burst, duty cycle, normal
- control modes: internally triggered, externally triggered and external gate each channel may be independently set to any of the modes
- output multiplexer: any/all channels may be multiplexed to any/all outputs
- delayed output: 0 to 9,999,999 pulses
- timebase: same as internal rate generator

**DELAY**

- range: 0 - 1000 s
- accuracy: 1 ns ± 0.001 x setpoint
- resolution: 250 ps