

# TCU-1

# Vision Ingenuity



# Versatility

## Seamless laser timing and synchronization

Laser and optical component synchronization requires an instrument to dependably produce clocked trigger information. The Continuum TCU-1 featuring a 19" 1U form factor, eight independent outputs, and external clock reference input, is the ideal tool for laser system timing.

The TCU-1 can directly phase lock to an external timebase up to 100MHz in frequency and down to 20mV in amplitude. This allows syncing directly to a laser photodiode signal and provides complete system timing relative to the laser timing with low jitter. The TCU-1 also provides a Clock Output that is capable of driving a 50 Ohm load and can be used to provide a master timebase to other delay generators or equipment.

### TCU-1 Key Features

- 250ps timing resolution with < 200ps jitter
- 8 independent outputs with full individual programming and control
- Internal rate generator --5ns period resolution over entire frequency range (20MHz)
- Complete channel and system setup stored in memory -- Provides 12 memory storage slots
- Remote programmability - RS232, USB and Ethernet
- Dual inputs (gate and/or trigger)

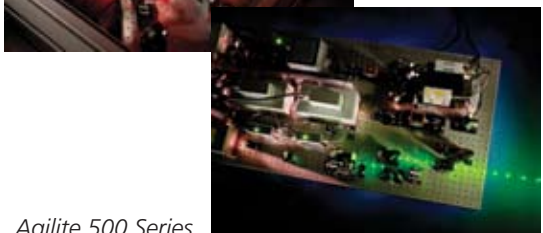
The TCU-1 is the perfect choice to accurately synchronize any series of optical events.



*Surelite™ OPO Plus*



*500 Hz System*



*Agilite 500 Series*

**Continuum**<sup>®</sup>  
The High Energy Laser Company™

# TCU-1



## TCU-1 Digital Delay / Pulse Generator Specifications Table

### Pulse Generation

Range		
	Delay	0-1000s
	Width	10ns -1000s
Resolution		250ps
Time Base		50MHz
Time Base Accuracy		25PPM
RMS Jitter		400PS
Pulse Inhibit Delay		250ns
Output Inhibit Delay		250ns

### Internal Rate Generator

Rate	0.0002Hz to 20.000MHz
Resolution	5ns
Accuracy	same as time base
Jitter	200ps
Settling	1 cycle
Burst Mode	1 to 9,999,999

### TTL/Adjustable Output

Number	8 channel outputs
Load	50 ohm
Rise Time	3ns typ TTL 15ns typ @ 20V (high imp) Adj 25ns typ @ 10V(50 ohms) Adj
Slew Rate	>0.5 V/ns TTL >0.1V/ns Adj
Overshoot	<100mV + 10% of pulse amplitude
Levels	TTL 0 to 4 VDC, VAR adjustable amplitude, 2.0 to 20.0 VDC with 10mV res 20.0 VDC max transition (into high impedance)
Accuracy	1ns + 0.001 x setpoint

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### External Inputs / Trigger Inputs

Rate	DC to 1/ (0.2us + longest delay)
Threshold	0.2 to 15VDC
Max Input Volt.	60V peak
Resolution	10mV
Impedance	1000 ohm
Slope	rising or falling
Jitter	800ps RMS
Insertion Delay	160ns
Min Pulsewidth	2ns

### Gate Inputs

Threshold	0.2 to 15 VDC
Max Input Voltage	60V Peak
Resolution	10mV
Polarity	active high/active low
Function	pulse inhibit or output inhibit
Channel Behavior	global w/individual channel
Pulse Inhibit Delay	120ns
Output Inhibit Delay	45ns

### Standard Features/Functions

Communications	USB/RS232/Ethernet
Global Gates/Triggers	2 global gate/trigger inputs
External Clock In	10MHz - 100MHz 0.02V / 1V user selectable in discrete values
External Clock Out	10MHZ - 100MHz user selectable in discrete values
Command Set Compatibility	backwards compatible

### Options

dual trigger

For more information, please contact your local Continuum Sales Engineer, [www.continuumlasers.com](http://www.continuumlasers.com), or call 1(866)532-1064.

**Continuum**<sup>®</sup>  
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