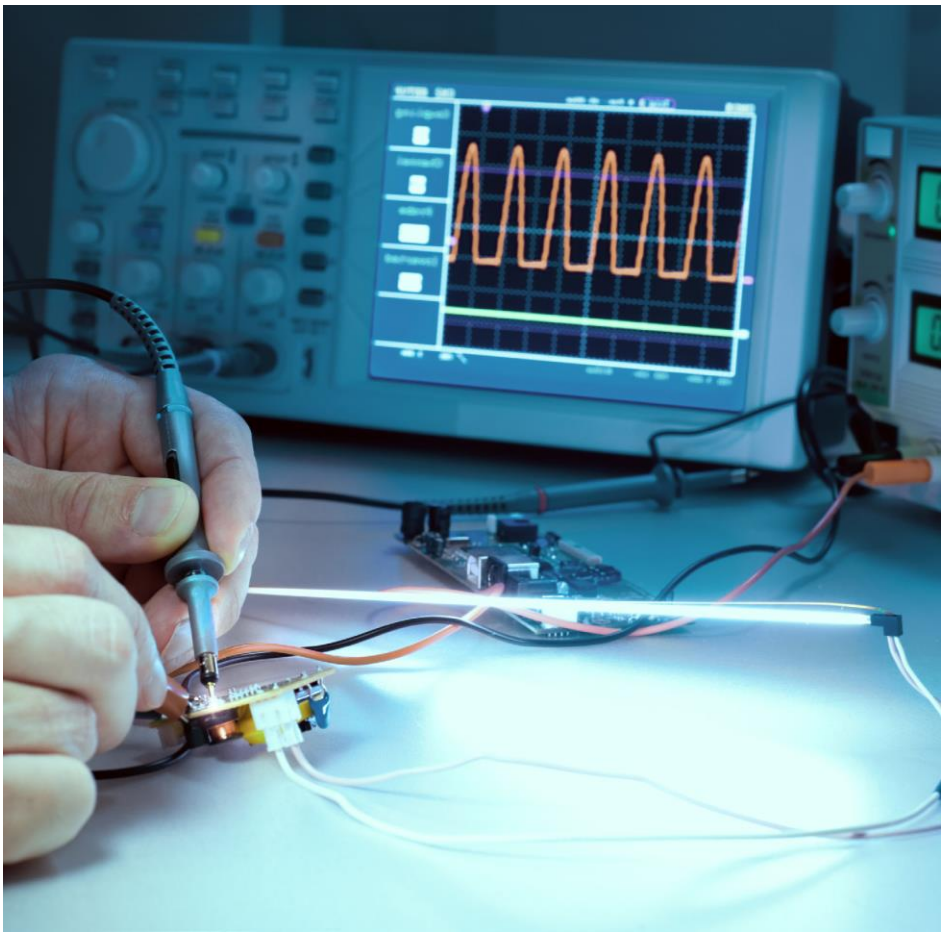
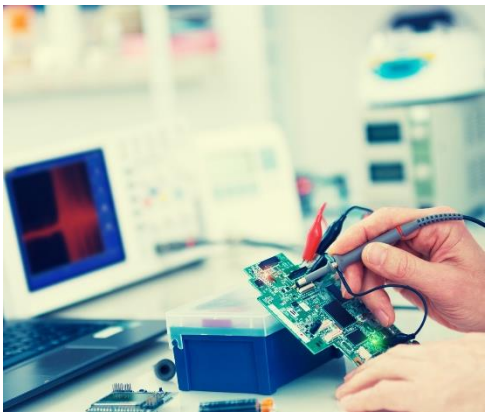
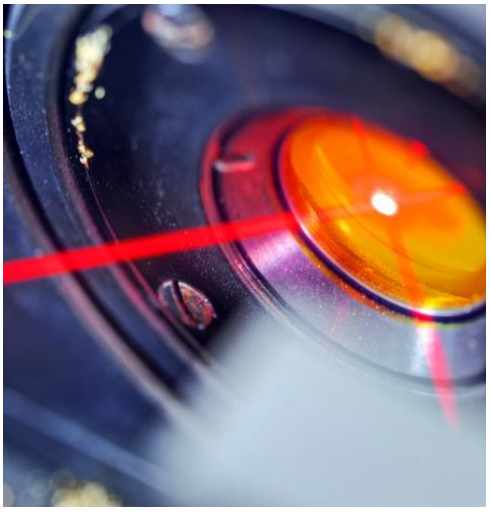
Model 588B
Rackmount Pulse Generator







Features

- 250 ps Delay Resolution
- < 5 ps RMS Jitter
- 1 ns + .0001 x period Delay Accuracy
- USB / RS232 / Ethernet Communications

Model 588

12 or 24 Channels Pulse Generator

Applications

- ICCD/PIV Testing
- Laser Triggering / Gating
- Pulse DUTs and Pump Lasers
- Radar / Sonar Simulation
- High Speed Photography

INTRODUCTION

The Model 588B Pulse Generator has a powerful set of functions that serve various modes of operations and applications. Both the system timer and the channel timer combine to provide the ability to generate complex waveforms. BNC has the 1U units available for 12 channels or 2U units for 24 channels.

These units provide precision timing and synchronization to effectively trigger any series of events or necessary equipment with up to 36 independent outputs, dual inputs with gate/trigger or optional dual trigger, and external clock reference input.

SPECIFICATIONS

Internal Rate Generator

Rate (T_0 period)	50ns to 5,000s (0.0002 Hz to 20.000 MHz)
Resolution	5 ns
Accuracy	1 ns + .0001 x period
Jitter	< 5 ps RMS
Settling	1 period
Burst Mode Counter	1 to 4,000,000,000 pulses
Duty Cycle Mode Counters	1 to 4,000,000,000 pulses
Cycle Counter	1 to 10,000,000 cycles
Timebase	200 MHz, low jitter PLL
Oscillator	50 MHz, 25 ppm
System Output Modes	Single pulse, burst, duty cycle, external gate/trigger
Pulse Contol Modes	Internal rate generator, external trigger/gate

Channel Timing Generator

Channel Output Modes	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.
Burst Mode Counter	1 to 10,000,000 pulses
Duty Cycle Mode Counters	1 to 10,000,000 pulses
Wait Function Counter	0 to 10,000,000 pulses
Output Multiplexer	Up to five (5) channel timers may be routed to each output channel.
Timebase	Same as internal rate generator

Delays

Delay Range	0 - 2,000 s
Width Range	10ns – 2,000s
Accuracy	1 ns + 0.0001 x Delay
Resolution	250 ps
Pulse Inhibit Delay	< 120 ns typical
Output Inhibit Delay	< 50 ns typical

Output Module Specifications

TTL/Adjustable Dual Channel Output Module (Standard)

Output Impedance	50 oHm

TTL/CMOS Mode

Output Level	4.0 V typ into 1 kohm
Rise Time	3 ns typ (10% - 90%)
Slew Rate	> 0.5 V/ns
Jitter	50 ps RMS channel to channel

Adjustable Mode

Output Level	2.0 to 20 VDC into 1 k ohm 1.0 to 10.0 VDC into 50 ohm
Output Resolution	10 mV
Current	200 mA typical, 400 mA (short pulses)
Rise Time	15 ns typ @ 20 V (high imp) 25 ns typ @ 10 V (50 ohms) (10% - 90%)
Slew Rate	>0.1 V/ns
Overshoot	<100 mV + 10% of pulse amplitude

System External Trigger/Gate Input(s)

Trigger Input	
Type	Pulse 0.5 to 30v, switch closure (footswitch, safety interlock, etc.)
Function	Generate individual pulses, start a burst or continuous
Rate	DC to 1/ (200 ns + longest active pulse). Maximum of 5 MHz
Slope	Rising or Falling
Gate Input	
Mode	Pulse inhibit or output inhibit
Polarity	Active high/active low
Channel Behavior	Global w/Individual Channel Control

Trigger/Gate Dual Input Module (Standard)

Standard dual channel input module, providing one trigger input, one gate input and one dual purpose input on the front panel.

Threshold	0.2 to 15 VDC
Maximum Input Voltage	60 V Peak
Impedance	1.5 K ohm + 40pF
Resolution	10 mV

Trigger Input

Slope	Rising or Falling
Jitter	800 ps RMS

Insertion Delay	<120 ns
Minimum Pulse Width	10 ns

Gate Input

Pulse Inhibit Delay	120 ns
Output Inhibit Delay	50 ns

Standard Features

Communications	USB / RS232 / Ethernet
External Clock In	10 MHz, 20 MHz, 25 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 80 MHz, 100 MHz
External Clock Out	T_0, 10 MHz, 20 MHz, 25 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 80 MHz, 100 MHz

General

Storage	6/12 ch = 12 storage bins 24 ch = 24 storage bins
Dimensions	19” x 10” x 1.75” 6/12 ch 19” x 10” x 3.50” 12/24 ch
Weight	8 lbs
Power	100 - 240 VAC 50/60 Hz <3 A
Fuse	(Qty 2) 630 mA, 250 V Time-lag

DOCUMENT HISTORY

Version	Date	Author	Notes
V1.0	1/13/25	At	New datasheet

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