



# 9420 Series

## Digital Delay Pulse Generator

The 9420 series pulse generator was designed to meet the growing demand for an affordable yet flexible system synchronizer. This benchtop, lab ready, delay generator comes standard with a 10ns timing resolution and a low jitter of less than 400ps. The simple programming, high functionality, and easy memory recall makes this model ideal for multiple projects and a wide variety of applications.

- 2, 4, or 8 Independent Channel Outputs
- 10 ns Timing Resolution
- < 400 ps RMS Jitter
- RS232, USB, and GPIB
- 12 Memory Recall Slots
- Full Customer Support
- 2 Year Warranty



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## SPECIFICATIONS

## 9420 Series

MODEL 9422	2 independent channel outputs	Standard Communications: GPIB, USB, & RS232 ports
9424	4 independent channel outputs	Configurations: 12 Memory Slots
9428	8 independent channel outputs	Inputs: 2 Inputs (1 Trigger & 1 Gate Input)

### INTERNAL RATE GENERATOR

Rate (T0 period)	0.0002 Hz to 5Mhz
Resolution	10 ns
Accuracy	1ns + (0.0001 x Period)
T0 Period Jitter (RMS)	< 250 ps
Timebase	100 MHz, low jitter PLL
Oscillator	50 MHz, 20 ppm crystal oscillator
System Output Modes	Single, continuous, burst, duty cycle, external gate/trigger
Burst Mode	1 to 1,000,000 pulses
Duty Cycle Mode	1 to 1,000,000 pulses
Pulse Control Modes	Internal rate generator, external trigger/gate

### CHANNEL TIMING GENERATOR

Pulse Width Range	10 n-1,000 s
Width Accuracy	1.5 ns + [0.0001 x (width+delay)]
Width Resolution	1 ns
Pulse Delay Range	-999.999999999 to 1000 s
Delay Accuracy	1.5 ns + (0.0001 x delay)
Delay Resolution	1 ns
Jitter (Channel to Channel RMS)	< 400 ps
Channel Modes	Single Shot, normal, burst, duty cycle
Control Modes	Internally triggered or externally gated. Each channel may be independently set.

Trigger Edge	Rising/Falling
Threshold	0.2 to 15 V
Max Input Voltage	30 V
Resolution	10 mV
Trigger Rate	DC to 5 MHz
Trigger Input Jitter (RMS)	2.5 ns
Trigger Input Insertion Delay	180 ns
Trigger Input Minimum Pulse Width	2 ns
Gate Pulse Inhibit Delay	120 ns
Gate Output Inhibit Delay	50 ns

### OUTPUT MODULE

#### TTL/CMOS MODE

Output Impedance	50 Ohms
Output Level	4.0 VDC into $\geq 1$ K ohm
Rise Time (10%-90%)	< 3ns typical into $\geq 1$ K ohm
Output Current	5 mA typical into 1 K ohm 50 mA typical into 50 ohm

#### ADJUSTABLE MODE

Output Level	2.0 to 20 VDC into $\geq 1$ K ohm, 1.0 to 10 VDC into $\geq 50$ ohms
Resolution	10 mV
Output Current	200 mA typical, 400 mA (short pulses)
Rise Time (10%-90%)	15 ns typical @ 20 V (High Imp) 25 ns typical @ 10 V (50 ohm)
Overshoot	< 100 mV + 10% of pulse amplitude

### GENERAL

Communications	GPIB, USB 2.0, RS232
Dimensions	10.5 x 8.25 x 5.5 inches (25.7 x 21 x 14 cm)
Weight	8 lbs
Power	Power is provided by an external wall adapter power supply (included)
Voltage	100 to 240 VAC
Current	3A
Memory	12 Slot



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