

# PG100VXI

## **100 MHz Pulse Generator**



TECHNOLOGY

- 10 Hz to 100 MHz
- Two Output Channels
- Programmable Pulse Widths or Duty Cycles
- 24 V p-p Programmable Amplitude, ±12 V Range
- Programmable Transition Times or Slew Rates
- Programmable Delay
- Double Pulse and Inverted Pulse Modes
- Auto, Triggered, Counted Burst, Timed Counted Burst, Gated, External Width, and Master/Slave Modes

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- Internal, External, or VXI TTLTRG Triggers
- Save/Recall Up to 10 Setups to Nonvolatile RAM
- Supports SCPI and IEEE 488.2 Commands



The PG100VXI is a full performance 100 MHz pulse generator housed in a single VXI C-size enclosure. Rivaling the performance of costlier standalone models, the PG100VXI sets a new standard for VXI based instrumentation. Clean edges and accurate control of frequency, pulse widths, amplitude, offset, and transition times, mean you can perform not only functional tests, but parametric tests at frequencies up to 100 MHz.

The PG100VXI provides two output channels, trigger input, trigger output and external clock input. Each module may be used in a stand-alone mode or in a Master/Slave configuration. In the Master/Slave mode, PG100 slave modules receive clock and trigger timing from the master module via two interconnect cables, ensuring tight timing specifications across all modules.

Frequency and leading and trailing edge rates are programmable per module. Amplitude, offset, pulse width, polarity, single or double pulse mode and trigger delays are all programmable per channel. The external trigger input, or the selected VXITTLTRG line, may be used as either an edge trigger or a synchronous gate trigger to the PG100VXI. Alternate methods of triggering the PG100VXI include software commands and an internal timer.

## **SPECIFICATIONS**

All timing specifications are measured at 50% amplitude, fastest transition times and output high and low levels at +1.0 V and 0.0 V, respectively. All delay times are measured relative to trigger out.

## Software Drivers

National Instruments LabWindows/CVI

## **Timing Parameters**

### **Common Specifications**

Spec. Clock Reference Clock Accuracy Resolution Repeatability RMS Jitter Period < 100 ns Period > 100 ns Overshoot / Undershoot Setting Time

## **Pulse Period**

Range Accuracy Period > 500 ns Period ≤ 500 ns **Pulse Width** 

Range Duty Cycle Accuracy

#### Width > 500 ns Width $\leq$ 500 ns

Pulse Delay Range

Accuracy Delay > 500 ns Delay  $\leq$  500 ns

## Slew Rates Range 2

Range 3 Range 4 Accuracy

## **Transition Times**

Slew Range 2 Slew Range 3 Slew Range 4 VXI 10 MHz clock  $\pm 0.01\%$ 12-bits 4 times bettern than accuracy, typical

0.05% of period + 15 ps 0.025% of period + 15 ps ± (8% of setting + 10 mV) < 20 ns to 2.0% of level

10 ns to 100 ms

 $^{\pm \, 0.02\%}_{\pm \, 1.0\%}$ 

5 ns to (period - 5 ns) 1 to 99%

 $\pm 0.02\% \pm 1 \text{ ns}$  $\pm 1.0\% \pm 1 \text{ ns}$ 

0 ns to (period - 1.5 ns)

 $\pm 0.02\% \pm 1 \text{ ns}$  $\pm 1.0\% \pm 1 \text{ ns}$ 

 $\begin{array}{l} 33 \text{ V/}\mu\text{s to } 1300 \text{ V/}\mu\text{s} \\ 1 \text{ V/}\mu\text{s to } < 33 \text{ V/}\mu\text{s} \\ 33 \text{ mV/}\mu\text{s to } < 1 \text{ V/}\mu\text{s} \\ \pm 20\% \text{ of setting} \end{array}$ 

 $\begin{array}{l} 3.3 \text{ ns to} < 130 \text{ ns} \\ 130 \text{ ns to} < 1 \ \mu\text{s} \\ 1 \ \mu\text{s to} \ 581 \ \mu\text{s} \end{array}$ 

## Outputs

## **Output Channels**

Number Connector Impedance Output Amplitude Slew range 2 Slew ranges 3 & 4 Output Offset Slew range 2 Slew ranges 3 & 4 Output Low Level Slew range 2 Slew ranges 3 & 4 Output High Level Slew range 2 Slew ranges 3 & 4 Level Accuracy **Trigger Output** 

Connector Output Level Width Transition Time

## Trigger

Connector Sensitivity Termination Transition Minimum Width Threshold Range Threshold Resolution

## Clock

Connector Range Level Termination Functional Modes

#### Modes

#### Douple Pulse Burst Count Range Auto Timer Range VXI Interface

Size Type Logical Address Interrupt Level Other

## Power Requirements

 +5.0 volts
 5.0 A

 -5.2 volts
 4.0 A

 +12.0 volts
 0.5 A

 -12.0 volts
 0.5 A

 -2.0 volts
 4.5 A

 +24.0 volts
 0.25 A

 -24.0 volts
 0.25 A

25 W 20.8 W

2 single ended

0.5 V to 7.0 V

0.5 V to 24.0 V

-1.75 V to +6.75 V

-2.0 V to +6.5 V

-1.5 V to +7.0 V

SMB

< 1 ns

SMB

< 50 ns

3.5 ns

 $50\,\mathrm{mV}$ 

SMB

Negative level

50 ohms to -2.0 V

1 MHz to 20 MHz

100K ECL 50 ohms to -2.0 V

Master/Slave

1 to 536870944

80 µs to 10 seconds

C-size, single slot

Static or dynamic

Programmable

TTLTRG 0-7

Message-based, servant

-12.0 V to +11.5 V

-11.5 V to +12.0 V

100K ECL into 50 ohm load

-5.0 V to +5.0 V, programmable

Auto, Timer, Gate, Burst, External Width.

Either channel, both or neither

-11.75 V to +11.75 V

50 ohms, ± 1 ohm, source terminated

 $\pm$  (1% of level + 1% of amplitude + 40 mV)

Width of first pulse of output channel 2

SMB

0 1
6 W
9 W
6 W
6 W

#### Total 78.8 W Environmental Specifications

Temperature	
Airflow	

Storage =  $-40^{\circ}$  C to  $+75^{\circ}$  C Operating =  $0^{\circ}$  C to  $45^{\circ}$  C 6L/sec @ 0.3 mm water pressure drop for  $10^{\circ}$  C temp rise

## **Ordering Information**

PG100VXI PG100_001	100 MHz dual-channel pulse generator.
PG100-001 PG100-002	Interconnect cables for slaving 2 PG100 modules together. On
PG100-003	cable set required for each PG100 slave module. SMB to SMB 50 ohm coaxial cable; 1 cable, 3 ft long.

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