PDG-2520 Four Channel Digital Pulse Generator w/Digital Delay

- **Sync (T_0) Plus Four Independent, Digitally Controlled Outputs**
- **0 to 99.9S Delay and Pulse Width Ranges With 25ns Resolution**
- **3MHz Maximum Frequency (Internal Trigger), 5MHz (External Trigger)**
- **Store & Recall Up To 5 System Configurations**
- **Continuous, Single-Shot, External Trigger, Burst, Counted Burst, Pulse Count And Divide-By-N Modes**

The PDG-2520 is a precision digital delay and pulse generator providing four output channels, each with independently adjustable delay and pulse width, plus a Sync (T_0) output. The accuracy, precision and flexibility of the PDG-2520 makes it well suited for use in laser timing, automated testing and precision pulse applications.

The PDG-2520's Sync (T_0) output marks the beginning of a timing cycle, and is generated by the internal rate generator or in response to an external trigger. The delay and pulse width of the two outputs can be set from 0 to 99.9S relative to the T_0 trigger with 25 ns resolution on its highest precision range.

The PDG-2520 can be triggered internally from 100 millihertz to 3MHz. Three digit frequency resolution up to 1MHz, frequency accurate to 2% above 1MHz. External, single-shot (front panel push-button) and burst mode triggers are also supported. In external trigger mode, the maximum trigger frequency is 5MHz.

Operating modes include continuous (pulse generator), pulse count, divide-by-N, burst and counted burst, providing flexible control of the pulse outputs. The output pulse waveforms may be inverted in all operating modes. Additionally, Output and Output 2 can be internally logically ANDed or ORed together as can Output 3 and Output 4.

The PDG-2520 may be operated through its intuitive front panel controls. Up to five system configurations may be stored in internal non-volatile memory, providing instant recall of frequently-used configurations.

The PDG-2520's versatility, ease of use and Sync (T_0) plus four independent outputs make it well suited for a wide variety of test and measurement tasks. It is also ideal for laser timing applications, in which the Sync (T_0) output is used to trigger the pulsed laser and set the system's repetition frequency. Delayed Output 1 controls the laser Q-Switch, and Output 2, 3 and 4 can be used to synchronize other elements in the system, such as a detector or data acquisition hardware.

Operating Modes:

Pulse Generator Mode	Generates pulses at the rate set by the internal frequency generator, or by an external trigger
Pulse Count Mode	Outputs pulses at the rate set by the internal frequency generator or external trigger and stops after N pulses
Divide By N (Output-2 Mode)	Channel 1 & 3 operates in continuous mode, channel 2 & 4 pulses every Nth pulse of channel 1 & 3
Burst Mode	Generates a burst of pulses, repeating at a set interval on channel 1. Provides user-control over the number of pulses in each burst, the frequency of the pulses within the burst, and the interval of the bursts
Counted Burst Mode	Generates a burst of pulses, and stops after N bursts on channel 1

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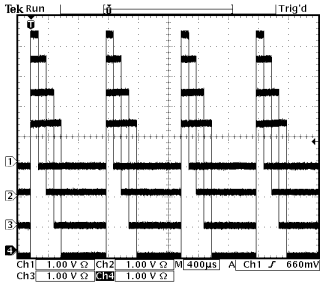
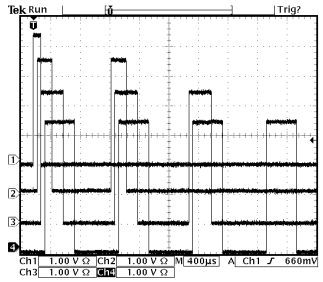
SPPDG-2520

SPECIFICATIONS

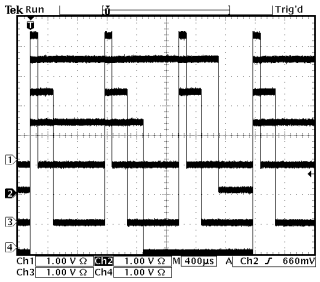
PARAMETER	Value
OUTPUTS	
Output Channels	Four (4) outputs, each with independent digitally controlled delay and pulse width
Delay Range	0 to 99.9 Seconds
Pulse Width Range	25 Nanoseconds to 99.9 Seconds
Delay And Pulse Width Resolution	25 Nanoseconds below 1 Microsecond 50 Nanoseconds from 1 Microsecond to 10 Microseconds 3 Digits Above 10 Microseconds
Accuracy (Delay and Pulse Width)	±2%
Time Base	120MHz Frequency Synthesizer
Trigger Delay (External Trigger to SYNC (T_0) Output	75 Nanoseconds
Internal Throughput Delay (SYNC (T_0) To Output 1 Or Output 2 Rising Edge)	<25 Nanoseconds
Output Rise & Fall Times (Into 50Ω)	<5 Nanoseconds
Over/undershoot	<5%
Amplitude	+4V into 50W
Output Connectors	BNC, Front Panel
INTERNAL RATE GENERATOR	
Modes	Continuous, Single-Shot, Burst, External Trigger, Divide By N, Pulse Count
Rate	Single-Shot or 100 millihertz to 3MHz (Internal) Single-Shot to 5MHz (External Trigger)
Resolution	3 Digits (<1MHz), 2 Digits (>1MHz)
Accuracy (Continuous, Pulse Count, Output-2 Modes)	25 PPM
Accuracy (Burst Mode)	±2%
Burst and Pulse Count Mode	1 to 65,535 Pulses per Burst or Count
EXTERNAL TRIGGER INPUT	
Type	Positive Edge Trigger
Input Amplitude	TTL into 1KΩ
Input Impedance	1KΩ
Minimum Trigger Pulse Width	25ns
Input Trigger Connector	BNC, Front Panel
T_0 (SYNC) OUTPUT	
T_0 (Sync) Output	TTL output into 1 MegΩ, 4.5V into 50Ω
Connector	BNC, Front Panel
COMPUTER INTERFACE	
Interface Type	Optional GPIB or RS232
Interface Connector	N/A
GENERAL	
Internal Non-Volatile Storage	5 Configurations
Operating Temperature Range	0°C to +40°C
Cooling Requirements	Air cooled
Input AC Power	90-264VAC, 47-63Hz, 28W Maximum
Dimensions (H X W X D)	3 ½" H x 8" W x 6 1/4" D (8.9cm H x 20.3cm W x 15.9cm D)
Weight	2 lbs. (.9kg) Approximate
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE	



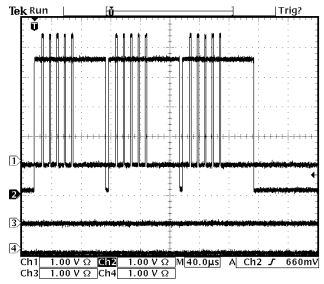
Pulse Generator Mode



Pulse Count Mode: Output 1 = 1 Counts, Output 2 = 2 Counts Output 3 = 3 Counts Output 4 = 4 Counts, Delayed 50µs per channel



Divide By N Mode: N=3



Burst Mode
Burst Freq: 100KHz,
Packet Freq: 10KHz
2 µS pulses
Burst Count: 5
Packet Count: 3

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