

# TM 500 / 5000

MODULAR TEST INSTRUMENTS

- PG 502 10 Hz - 250 MHz Pulse Generator

Whether testing wide-band systems simulating data transmission signals or driving a laser, TEGAM TM 500/5000 Series Pulse Generators offer a wide range of pulse capabilities to meet your needs efficiently and economically.

Paired pulses can be generated at selected repetition rates with delay control capability available for determining the time between the two pulses—a useful means by which

## Pulse Generator

to evaluate a circuit's ability to differentiate between two closely spaced pulses.

Pulse shaping capabilities is another requirement found in many applications. For example, typical rise and fall times vary widely between logic families and in order to accurately simulate logic transactions, variable rise and fall times are necessary.

Faster-than-specified drive signals can cause problems through capacitive coupling to adjacent circuitry. Conversely, slower-than-specified drive signals to a CMOS

gate will cause its dissipation to increase greatly during each transition. Adjustable rise and fall times make it possible to avoid these undesirable conditions.

Controllable rise and fall times are also useful in determining the characteristics of edge triggered devices. In 50  $\Omega$  systems, the repetition rates, amplitudes and transition times of the PG 502 is designed to be compatible with common TTL, DTL and ECL circuits.



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## PG 502 Pulse Generator

- 10 Hz to 250 MHz
- $\leq 1$  ns rise time
- 5 V output in a  $\pm 5$  V window
- Independent pulse top and bottom level controls
- Selectable 50  $\Omega$  back termination

The PG 502 is a 250 MHz Pulse Generator with rise and fall times of less than 1 ns. It has a single BNC output with independent controls of the top and bottom pulse levels which can be set to a maximum of 5 V in a window of  $\pm 5$  V. A front-panel push-button allows the user to select the normal output or the complement of it. A wide range of pulse period and pulse duration settings are provided through independent controls. A manual trigger button, external trigger output and trigger/duration input are also provided. A front-panel pull switch is provided for Back Termination of 50  $\Omega$ . The fast rep rate makes this instrument ideal for design and testing of fast logic and switching circuits.

The PG 502 is internally calibrated for use with a 3 ft., 50  $\Omega$  coaxial cable, part number 012-0482-00.

### Characteristics

**Pulse Period** —  $\leq 4$  ns to  $\geq 100$  ms (250 MHz to 10 Hz).

**Pulse Duration** —  $\leq 2$  ns to  $\geq 50$  ns.

**Duty Factor** —  $\geq 50\%$ .

**Square Wave Mode** — Yes.

**Pulse Delay** — Not Applicable.

**Double Pulse** — No.

**Transition Times** — Fixed  $\leq 1.0$  ns.

**Aberrations** — Within 5% at 5 V p-p (durations  $\geq 5$  ns).

**Amplitude: Into 50  $\Omega$**  —  $\geq 5$  V p-p  $\pm 5$  V window.

**Source Impedance** — 50  $\Omega$  with back termination.

**Complementary Outputs** — No.

**Pulse Coincidence** — Not Applicable.

**Output Controls** — Independent pulse top and pulse bottom.

**Normal/Complement** — Yes.

**Remote Amplitude** — No.

**Back Termination** — Yes, switchable.

**External Input** — 50  $\Omega$  input impedance.

**Trigger Level** — +1 V required.

**Slope** — + only.

**Manual Trigger** — Yes.

**Duration Mode** — Yes.

**Gate Mode** — No.

**Counted Burst** — No.

**Trigger Output** —  $\geq \pm 2$  V from 50  $\Omega$  approximately 10 ns prior to pulse output.

**Custom Timing Positions** — No.

**Control Error Light** — No.

**Temperature** — 0°C to +50°C Operating, -55°C to +75°C Nonoperating.

**Height** — 4.96 inches (126 mm).

**Width** — 2.64 inches (68 mm).

**Length** — 11.24 inches (286 mm).

**Weight** — 1 lb., 13 oz. (0.8 kg).

### Ordering Information

PG 502	250 MHz Pulse Generator
TM 502A	2 Wide Power Module Mainframe
TM 502A/TB	TM 502A w/Tool Box Plug-In
TM 503B	3 Wide Power Module Mainframe
TM 5003	3 Wide Power Module Mainframe, GPIB
TM 5003/RI	TM 5003 w/Rear Interface

TM 5006A	6 Wide Power Module Mainframe, GPIB
TM 5006A/R	TM 5006A w/Rack Mount
TM 5006A/RI	TM 5006A w/Rear Interface
TM 5006A/R/RI	TM 5006A w/Rack Mt & Rear Interface
TM 5006A/EMC	TM 5006A w/EMC Shielding

### Mainframe Power Plug Options

Standard	120V North American
UE220	220V Universal Euro & Switzerland
UK240	240V United Kingdom
A240	240V Australian
NA240	240V North American
S220	220V Switzerland

### Warranty

One year on materials and workmanship.

### Calibration Documentation

Contact TEGAM for OPTION Z540 NIST Traceable Compliance Certificate and Test Data.

### Calibration & Technical Services

For warranty and remedial repair, calibration services and spare parts, or for additional information on TEGAM sales and service offices around the world, contact us at 440-466-6100 (ph) or 440-466-6110 (fx).



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