PB-505 **Advanced Analog & Digital Design Workstation**

Global Specialties Model PB-505 is an Advanced Analog & Digital Design Workstation. The PB-505’s robust design makes it a trainer suitable for all levels of electronics instruction and design.

The PB-505’s breadboarding area is comprised of Global’s “Premium” solderless breadboards and is backed by an industry leading 3-year warranty.

The PB-505 can be used to construct basic series and parallel circuits up to the most complicated multi-stage microcomputer circuits, incorporating the latest in industrial technology.

The PB-505 allows students to learn valuable hands-on lab experience by employing necessary breadboarding techniques, which provide a solid foundation in circuit experimentation, analyzing and troubleshooting.

Experienced designers will also find the PB-505 an invaluable, capable and reliable instrument, suitable for the most advanced and demanding design applications.

Global Specialties trainers provide the most complete platform required to enable engineers and technicians to train for careers in the rapidly growing field of electronics technology.

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**Features:**

Ideal for analog, digital and microprocessor circuits
Includes built-in Function Generator with continuously variable waveforms
Triple output power supply for a variety of DC voltage levels
Two Digital Pulsers for logic test circuits
High & low buffered logic indicators
Logic Probe
AC Output
2 BCD to LED display circuits
8 channel logic monitor
Audio experimentation speaker
Removable breadboard plate allows the flexibility of building circuits away from the lab
Analog & Digital optional courseware available
Input Power Source, AC Line: Switchable between 110-120VAC @ 60Hz & 210-220VAC @ 50Hz
3-year warranty on all parts and workmanship.
PB-505

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>PB-505</th>
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<tbody>
<tr>
<td><strong>Input power Source</strong></td>
<td>Input Power Source, AC Line: Switchable between 110-120VAC @ 60Hz &amp; 210-220VAC @ 50Hz</td>
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<tr>
<td><strong>Power Supplies</strong></td>
<td>Fixed DC: +5VDC 1.0A max, current limited Ripple, &lt;5mV Variable + DC: +1.3V @ 150mA to +15VDC @ 500mA, Ripple &lt;5mV Variable - DC: -1.3VDC @ 150mA to -15VDC @ 500mA, Ripple &lt;5mV</td>
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<td><strong>Binding Posts</strong></td>
<td>(4) Ground, +5 VDC, Variable + DC &amp; Variable - DC Power Supply Outputs</td>
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<tr>
<td><strong>Pulsers</strong></td>
<td>(2) Pushbutton-operated, open-collector output pulsers. Each with 1 normally-open, 1 normally-closed output. Each output sinks up to 250 mA</td>
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<td><strong>Logic Probe</strong></td>
<td>Detects Logic High, Logic Low and Single Shot events. Logic High: 2.2V (nominal) in TTL mode, 70% of Vcc in CMOS mode. Logic Low: 0.8V in TTL mode, 30% of Vcc in CMOS mode. Memory Mode: Detects single shot events and holds indication until Pulse/Mem switch is toggled</td>
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<tr>
<td><strong>Function Generator</strong></td>
<td>Frequency Range: 0.1Hz to 100KHz, six ranges Output Voltage: 0 to +10Vp-p into 50 Ω Load (20Vp-p in open circuit), short circuit protected Output Impedance: 600Ω except TTL Output waveforms: Sine, Square, Triangle &amp; TTL Sinewave Distortion:&lt;3% @ 1kHz Typical TTL Pulse: Rise &amp; fall time: &lt;25ns, drive 10 TTL Loads (TTL available when function generator is set to Square Wave Mode) Square Wave: Rise and fall times &lt;0.5μs</td>
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<tr>
<td><strong>Logic Switches</strong></td>
<td>(8) Logic Switches select Logic High and Logic Low Logic Low Level: Ground Logic High Level: Switchable between +5V and the variable positive power supplies.</td>
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<tr>
<td><strong>Switches</strong></td>
<td>(2) Single Pull Double Throw (SPDT) - uncommitted</td>
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<tr>
<td><strong>Logic Indicators</strong></td>
<td>LEDs: 16 LEDs; (8) red to indicate logic high and (8) green to indicate logic low Logic High Threshold: 2.2V (nominal) in TTL+5V mode, 70% (nominal) of selected operating voltage in CMOS mode Logic Low Threshold: 0.8V (nominal) in TTL+5V mode, 30% (nominal) of selected operating voltage in CMOS mode</td>
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<tr>
<td><strong>Connectors</strong></td>
<td>2 ea BNC - uncommitted</td>
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<tr>
<td><strong>Potentiometers</strong></td>
<td>2: 1 kΩ and 10 kΩ - uncommitted</td>
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<tr>
<td><strong>Speaker</strong></td>
<td>8 Ω, 0.25 W - uncommitted</td>
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<td><strong>Displays</strong></td>
<td>(2) BCD to 7 Segment Display Circuits include (20 red LEDs and decoder/driver circuitry)</td>
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<tr>
<td><strong>Breadboards</strong></td>
<td>Removable Plexiglas Socket Plate (PB-3) with 2520 Tie points with 200 additional bus strip tie points internally connected to power supply outputs and ground</td>
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<tr>
<td><strong>Weight</strong></td>
<td>10 lbs (4.6 kg)</td>
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<tr>
<td><strong>Dimensions</strong></td>
<td>6.5 x 19 x 11.5” (165 x 482 x 292 mm)</td>
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Technical data subject to change without notice.

Optional Accessories

Courseware: Available separately or as a package (Model PB-505 Lab).
- WK-1: Jumper Wire Kit, 350 pieces
- WK-2: Jumper Wire Kit, 140 pieces
- WK-3: Jumper Wire Kit, 70 pieces
- WK-4: Wire Jumper Kit, 100 wires with machined tips

GSPA Series: Prototyping adapters
- GSPA-K1: Surface mount to DIP adapter kit, 6 adapter boards
- GSPA-K2: Surface mount to DIP adapter kit, 11 adapter boards
- GSA-3185: Minipro Test Clip Set
- PRO-50A: Digital Multimeter

The PB-505 Lab package offers comprehensive course instruction covering the following areas:

Electronic Fundamentals

Fundamentals of Electricity
- Ohm’s Law
- Series Circuits, Parallel Circuits
- Current Control
- Closed, open, shorts
- Switches
- Thevenin’s Theorem
- Wheatstone Bridge
- Capacitors, Inductors
- Phase Shift Circuits
- Impedance
- Resonant Circuits
- Transformers
- Rectifiers & Filtering
- Integrated Circuits
- Oscillators
- Power Control Circuits

Digital Electronics

Number Systems & Codes
- Binary, Decimal, Hexadecimal, Octal & ASCII
- Logic Gates & Boolean Algebra
- Combinational Logic Circuits
- Flip-Flops
- Digital Arithmetic
- Counters & Registers
- Integrated Circuit Logic Families
- TTL Logic
- MOSFETS
- CMOS
- Interfacing CMOS & TTL
- Medium Scale Integration
- Decoders
- Encoders
- Data Conversion & Acquisition
- Microcomputer Concepts