Model 5600
Universal Test System

Universal Mid-to-High Power Test System for Testing Power Supplies with DC Outputs

Features
- Maximum configuration flexibility with multi-bay capacity
- Digital measurement system (DMS)
  - 2 waveform digitizers
  - 2×16, 100MHz multiplexer
- Expandable input measurement channels
- Common interface panel
- emPower™ Test Executive

Applications
The 5600 Series Power Supply Test System is a high performance ATE platform that makes all critical measurements through a waveform digitizer. This allows more comprehensive measurements, higher test speeds, smaller cabinet/footprint size and ultimately, a simpler, more reliable system. The 5600 targets mid-to-large AC-DC or DC-DC power supplies and can be configured from a wide variety of power stimulus options.

Greater Testing Capability
More complete testing of power supplies, bulk converters, and rectifiers is now possible through the Digital Measurement System (DMS) that is core to the 5600 System. The DMS works by immediately digitizing analog signals for digital processor analysis. Through this technique, the DMS replaces several single-function instruments and extracts extensive information on UUT performance in a single pass.

Lower Testing Costs
The 5600 establishes a new standard in lowering unit testing costs by dramatically improving tester throughput. Because there is a minimum ensemble of instruments required to perform testing, switching between instruments is minimized and test speed is significantly improved. Further gains are achieved with the powerful 32-bit, multi-threaded test executive that contains a speed-tuned execution engine.

Ready-to-Run Test Executive
The new emPower® Test Executive is optimized for power supply test within a computer-controlled manufacturing environment. It is a ready-to-run application that assures the fastest path to testing power supplies. Straight forward factory integration is achieved with software interfaces based on Microsoft® ActiveX/COM (Common Object Model) standards. These interfaces make it compatible with internal network communication and reporting protocols, as well as third-party extensions. Faster test program development is achieved through an intuitive, notebook-like guide that leads one through the entire sequence of building a test program and data logging the results.
## Model 5600 Universal Test System Specifications

### SYSTEM CONTROL
- **PC**: Rack Server, 3.33 GHz, 533 MHz, 512k Cache
- **Memory**: 512 MB
- **Drives**: 80 GB HD, 24 X CD-RW/DVD ROM
- **Monitor**: 17” Flat Panel
- **Accessories**: Mouse & Keyboard

### SOFTWARE
- **Operating System**: Windows XP Professional
- **Test Executive**: emPower® - An integrated environment for creating, debugging, running and collecting data during functional testing of power supplies. Includes a test routine library and interactive instrument panels. Fully network-compatible.
- **Custom Test Program Languages**: To extend the user-modifiable test routine library written in Visual Basic, test programs can also be written in any language supporting the Microsoft™ ActiveX control interface, including LabVIEW and LabWindows CVI.

### PHYSICAL
- **Configuration**: Single Bay: 57 x 23 x 30 in (1448 x 584 x 762 mm) | Dual Bay: 57 x 46 x 30 in (1448 x 1168 x 762 mm), Weight: ~500 lbs/cabinet, ~1000 lbs/cabinet
- **Weight**: 0-50°C C max power derates > 38%
- **Operating Temp**: 0-50°C C max power derates > 38%
- **Facility Power**: All US and Intl. options available

### DIGITAL SYSTEM MEASUREMENT

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Range/Bandwidth</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Volts</td>
<td>±2, 20, 200, 500 V</td>
<td>±0.003% FS</td>
<td>±0.1% R + 0.01% FS</td>
</tr>
<tr>
<td>AC RMS Volts</td>
<td>14, 140, 350 V</td>
<td>±0.004% FS</td>
<td>±1.0% R + 0.005% FS</td>
</tr>
<tr>
<td>DC Peak Volts</td>
<td>±20, 200, 500 V</td>
<td>±0.012% FS</td>
<td>±1.0% R + 0.02% FS</td>
</tr>
<tr>
<td>RMS Noise 10Hz-1MHz</td>
<td>70 mV, 350 mV, 3.5 V</td>
<td>±0.012% FS</td>
<td>1.0% R + 0.5% FS</td>
</tr>
<tr>
<td>Peak to Peak Noise 5 kHz to 100 MHz</td>
<td>100 mV, 500 mV, 5 V</td>
<td>±0.02% FS</td>
<td>1.0% R + 2.0% FS</td>
</tr>
<tr>
<td>Frequency</td>
<td>10 Hz to 5 MHz</td>
<td>0.016% R</td>
<td>1% FS</td>
</tr>
<tr>
<td>Timing</td>
<td>0 to 7 minutes</td>
<td>100 nS</td>
<td>0.02% R + 200 ns</td>
</tr>
<tr>
<td>Waveform Capture</td>
<td>DC to 100 MHz</td>
<td>±0.003%</td>
<td>1% FS</td>
</tr>
<tr>
<td>Phase Angle</td>
<td>0 to 360°</td>
<td>1°</td>
<td>±1% @ 50/60 Hz</td>
</tr>
<tr>
<td>THD (2-64Hz)</td>
<td>0 to 100%</td>
<td>0.01%</td>
<td>1% R</td>
</tr>
</tbody>
</table>

### I/O MODULE (Expandable to 8)

<table>
<thead>
<tr>
<th>Multiplexer</th>
<th>Quantity</th>
<th>Contact Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Channels</td>
<td>16, differential</td>
<td>5 A, 30 VDC or 120/240 VAC</td>
</tr>
<tr>
<td>Bandwidth (-3db)</td>
<td>2, differential</td>
<td></td>
</tr>
<tr>
<td>Output 1</td>
<td>100 MHz</td>
<td></td>
</tr>
<tr>
<td>Output 2</td>
<td>10 MHz</td>
<td>± 500 V</td>
</tr>
<tr>
<td>Max Voltage</td>
<td>100 mA</td>
<td></td>
</tr>
<tr>
<td>General Purpose Relays</td>
<td>8 DPDT</td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Digital Drivers</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>100 mA, 70 VDC, 0.5 W</td>
<td></td>
</tr>
<tr>
<td>Digital Receivers</td>
<td>8 total consisting of two groups of four, each group with a common programmable threshold</td>
<td>1%</td>
</tr>
</tbody>
</table>

### STIMULUS INSTRUMENTATION OPTIONS (Contact factory for higher power solutions)

#### AC/DC Source
- **Power**: 4.5 kVA/3000 W/1ø
- **AC Voltage**: 140/280 Vrms
- **DC Voltage**: 100/200/400 VDC
- **Current**: 25 Arms/50 A DC
- **Peak Current**: 200 A
- **Frequency**: 40 to 500 Hz

#### DC High-Power Sources
- **Power**: 5, 10, 15 kW
- **Voltage to 600 V**
- **Current to 500, 1000, 1400 A**

#### DC High-Power Load
- **Power**: 6 kW (parallelizable for higher power)
- **Voltage**: 0.25 to 6.6, 20, 66, 120 V
- **Current**: 0 to 120, 1200 A
- **Modes**: CC, CV, CP, CR, SC & Pulse

### Modular Power Subsystem (6 any type modules/chassis, like modules parallelable)
- **DC Sources**: 450 W
- **Power Voltage/Current**: 20 V/60 A, 40 V/30 A, 80 V/15 A or 450 V/8 A

#### DC Loads
- **Power**: 300 W
- **Voltage**: 0.7 to 120 V or 2.1 to 450 V
- **Current**: 60 A