The Agilent “Multipurpose Lab Station” is an integrated system comprised of a:

1. Mixed signal oscilloscope (MSO) or digital signal oscilloscope (DSO)
2. Function/arbitrary waveform generator
3. Precision programmable DMM
4. Triple-output DC power supply
5. GPIB-to-USB adaptor
6. Electronic instruments trainer kit lab exercises and assessment tests
7. VEE pro test, measurement & automation software
8. Vector signal analysis (VSA) software

Features and benefits of MPLS

- Measure voltage, current, resistance, capacitance, frequency, and temperature using a single system.
- View, capture, edit, and generate custom signals including modulated signals.
- Configure, customize and automate measurements using visual engineering environment (VEE) pro software.
- Vector signal analysis software enables demodulation and measurement of complex modern-day, communication-specific signals.
- Pre-written lab exercises allows for exploration of the entire functionality of individual subsystems.

The multipurpose lab station is an ideal fit for applications and experiments in education labs. Different instrument setups can be used for everything from simple, basic electronics and instrumentation labs up to advanced signal analysis. The advanced lab station can be effectively and efficiently employed for conducting experiments and developing customized test systems, while its software capability enables post-processing and analysis of the measured data — all of which make the multipurpose lab station the ideal choice for allowing today’s aspiring engineers to explore real-world applications and scenarios.

Targeted engineering classroom curriculums:
- Basic electronics
- Communications
- Signal processing
- Control systems
- Instrumentation
### Multipurpose Lab Station

<table>
<thead>
<tr>
<th><strong>1000/6000 series oscilloscope</strong></th>
<th><strong>33210A/3220A function generator</strong></th>
<th><strong>34405A digital multimeter</strong></th>
<th><strong>E3630A/1A triple output power supply</strong></th>
<th><strong>82357B GPIB/USB adapter</strong></th>
<th><strong>Electronic instruments trainer kit</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand design challenges and how to overcome them using Agilent’s revolutionary digital or mixed-signal oscilloscopes.</td>
<td>The 33210A/3220A function generator offers uncompro-mising performance for function and waveform generation.</td>
<td>This feature-rich, affordable measurement tool is the late member in the Agilent’s DMM family.</td>
<td>A stable and accurate power supply like the E3630A/1A is at the heart of every instrumentation system.</td>
<td>Gain the ultimate speed and efficiency by connecting your PC or laptop to your test and measurement instruments.</td>
<td>The trainer kit provides a learning and teaching solution for electronic instrumentation. It offers:</td>
</tr>
<tr>
<td>• 2 or 4 analog channels and 16 digital channels for complete insight into mixed-signal designs.</td>
<td>• Generate signals of your choice, up to 20 MHz (3220A), with the flexibility to change all signal parameters.</td>
<td>• Diode test and continuity well-suited to perform industry-standard measurements with five ½ digit accuracy.</td>
<td>• Resolution of 0.5 mV and 0.1 mA.</td>
<td>• Eight modes of operation.</td>
<td>• Eight modes of operation.</td>
</tr>
<tr>
<td>• High sampling rate of 2-GSa/sec for the best signal integrity.</td>
<td>• Built-in modulation capability makes it a good source for generating common modulated signals such as AM, FM and PM.</td>
<td>• Temperature from –80 ºC to 150 ºC.</td>
<td>• Low noise and excellent regulation.</td>
<td>• Pre-written labs, procedures and other teaching materials</td>
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</tr>
<tr>
<td>• Fast waveform update of up to 100,000 per second, to capture the most elusive of signals and ensure a thorough, hands-on debugging.</td>
<td>• Generation of a custom, application-specific signal is made possible by the function generator’s direct digital synthesis platform. Custom values for different instances of the waveform can be stored in the internal memory and then accurately generated.</td>
<td>• Capacitance from 1000 pF to 1000 µF.</td>
<td>• 3 programmable outputs 0 V to 6 V/0 A to 5 A, 0 V to –25 V/0 A to 1 A (E3631A).</td>
<td>• Multi-language content.</td>
<td>• Multi-language content.</td>
</tr>
</tbody>
</table>

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**34405A digital multimeter**

This feature-rich, affordable measurement tool is the late member in the Agilent’s DMM family.

- Diode test and continuity well-suited to perform industry-standard measurements with five ½ digit accuracy.
- Temperature from –80 ºC to 150 ºC.
- Capacitance from 1000 pF to 1000 µF.

**E3630A/1A triple output power supply**

A stable and accurate power supply like the E3630A/1A is at the heart of every instrumentation system.

- Resolution of 0.5 mV and 0.1 mA.
- Low noise and excellent regulation.
- 3 programmable outputs 0 V to 6 V/0 A to 5 A, 0 V to –25 V/0 A to 1 A (E3631A).

**82357B GPIB/USB adapter**

Gain the ultimate speed and efficiency by connecting your PC or laptop to your test and measurement instruments.

- The Agilent 82357B USB/GPIB interface provides instant connections, enabling a direct connection from the USB port on your PC to GPIB instruments.
- There are no switches to set and no PC cards to install.

**Electronic instruments trainer kit**

The trainer kit provides a learning and teaching solution for electronic instrumentation. It offers:

- Eight modes of operation.
- Pre-written labs, procedures and other teaching materials
- Multi-language content.
Integration of various multifunctional instruments in this solution is made possible through Agilent VEE pro automation software.

**Features and benefits**

- Supports instruments with multiple connectivity options, all integrated into one system; whether LAN, USB, RS-232 or VXI.
- Built-in MATLAB® scripting allows use of MATLAB functions, thus making processing and analysis easy for MATLAB users.
- Large choice of pre-written example programs for instant instrument connectivity and system startup.

Complex modulation schemes are today being employed for optimum bandwidth utilization. These signals can be analyzed using the Agilent VSA software.

**Features and benefits**

- VSA integrates seamlessly with the MSO 6000 series oscilloscope.
- The MSO captures the time domain signal whose frequency domain information and other parameters can be obtained by employing the VSA software on the captured waveform. The multipurpose lab station is therefore an important solution for the communications lab.
**Interfacing the solution to your PC**

*Multipurpose lab station setup interfaced with a PC for an automated lab setup (PC running VEE and VSA software).*

The unique combination of bench-top hardware, automation software and vector signal analysis tools are easily set up thru USB or GPIB connections.
The Agilent multipurpose lab station consists of the following standard equipment and software:

### Basic lab
*The lowest priced lab setup for your most popular classes.*

<table>
<thead>
<tr>
<th>Scope options</th>
<th>2-channel, 60 MHz, 2-GSa/s oscilloscope</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSO1002A</td>
<td></td>
</tr>
<tr>
<td>DSO1012A</td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>Laboratory DC power supply, triple-output</td>
</tr>
<tr>
<td>Multimeter</td>
<td>Digital multimeter, 5.5 digit</td>
</tr>
<tr>
<td>Function generator</td>
<td>10-MHz function/arbitrary waveform generator</td>
</tr>
<tr>
<td>Training kit</td>
<td>EI training kit</td>
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<tr>
<td>U3000A</td>
<td></td>
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</tbody>
</table>

### Advanced lab
*The solution for your circuit, digital and communication classes.*

<table>
<thead>
<tr>
<th>Scope options</th>
<th>2+16-channel, 100-MHz mixed signal oscilloscope</th>
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</thead>
<tbody>
<tr>
<td>MSO6012A</td>
<td></td>
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<tr>
<td>MSO6014A</td>
<td></td>
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<tr>
<td>DSO6012A</td>
<td>100-MHz oscilloscope</td>
</tr>
<tr>
<td>DSO6014A</td>
<td>4-channel, 100-MHz oscilloscope</td>
</tr>
<tr>
<td>Power supply</td>
<td>DC power supply, triple output: 0 to 25 V, 0 to 1 A; 0 to –25 V, 0 to 1 A; 0 to 6 V, 0 to 5 A, 80 W</td>
</tr>
<tr>
<td>Multimeter</td>
<td>Digital multimeter, 5.5 digit</td>
</tr>
<tr>
<td>Function generator</td>
<td>10-MHz function/arbitrary waveform generator</td>
</tr>
<tr>
<td>Interface module</td>
<td>USB/GPIB interface</td>
</tr>
<tr>
<td>Training kit</td>
<td>EI training kit</td>
</tr>
<tr>
<td>Software</td>
<td>VEE Pro 8.5</td>
</tr>
<tr>
<td>W1141B</td>
<td></td>
</tr>
<tr>
<td>89600SPC-HE1</td>
<td>VSA software</td>
</tr>
</tbody>
</table>
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