Installation Guide

HP 16600A Series
HP 16700A
HP 16702A
Measurement Modules

HP 16700A

Measurement Modules

HP 16600A Series

HP 16702A

Logic Analysis Systems
## Contents

**for HP 16600A Series/ 16700A/ 16702A/ Measurement Modules**

### HP 16600A Series, HP 16700A, HP 16702A

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### Measurement Modules

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HP 16600A Series Overview

HP 16600A Series Mainframe
(HP 16600A shown)

Power Cable

Keyboard and Mouse

General Purpose Probes

Training Kit and Demo Board

Additional Connections

CD-ROM Drive
(Required for software updates or install.)

Printer and Cable
HP 16700A Overview

Additional Connections

- CD-ROM Drive (Required for software updates or install.)
- Printer and Cable
- HP 16701A Expander Frame
- Power Cable
- Training Board and Training Kit
- Keyboard and Mouse
- Monitor
- Monitor Cable
- Monitor Power Cable
- HP 16700A Mainframe
Additional Connections

- **HP 16702A**
  - Mainframe
  - Mouse and Power Cable
  - Training Board and Training Kit

- **Monitor**
  - Monitor Cable and Monitor Power Cable (If ordered)

- **Keyboard**

- **CD-ROM Drive**
  - (Required to install software)

- **Printer and Cable**

- **HP 16701A**
  - Expander Frame

---

**HP 16702A Overview**

**HP 16702A**

Insert
Delete
Page Up
Page Down
Home
End

INTENSITY

POWER

BUSY
The system mouse and keyboard must be installed for the system to boot up properly.

Once enabled on the LAN, the system can be operated remotely without a keyboard or mouse.
Monitor Connection

HP 16600A Series/ HP 16700A/ HP 16702A

If applicable, international versions of the power cables can be found in the accessories box.

Monitor (Optional for HP 16702A)

HP 16600A Series Mainframe Power Cable

Note!
Proper Cooling

HP 16600A Series/ HP 16700A/ HP 16702A

Allow a minimum of 5 cm spacing between instruments for proper cooling.
Monitor Configuration

HP 16600A Series and HP 16700A

Note!

If you ordered the optional monitor with your logic analyzer, the monitor resolution setting is pre-configured for 1280 x 1024 at the factory.

If you already have a monitor and ordered your logic analysis system without the optional monitor, you will need to configure your monitor. The display will change on the screen every few seconds as the system cycles through the monitor resolution choices. Make the appropriate selection when it appears.

1. Monitor power
2. System power
3. Clear Images

Selection made and "Y" to confirm.
Note!

Use this procedure if you wish to configure an optional monitor to an HP 16702A.

1 Monitor power
2 System power

3 Immediately press the TAB key about ten times.

(Cycling choices)

4 Press ENTER to select the monitor choice and "Y" to confirm.

Clear Images
Monitor choice.
Changing Monitors
HP 16600A Series/ HP 16700A/ HP 16702A

1. Monitor power

2. System power

3. Immediately press the TAB key about ten times.

4. Press ENTER to select the monitor choice and "Y" to confirm.
LAN

HP 16600A Series/ HP16700A/ HP16702A

Online Help Icon

HP 16600 Series

10Base-T
OR 10Base2

To 16701 Expansion Frame

Target Control
Target Control

Keyboard Mouse

10Base-T 10Base2

HP 16600 Series

Keyboard Mouse

RS 232 Monitor Parallel Printer

LAN

10Base-T
SCSI-2 Single Ended

Target
TargetOut - Port - In

System Administration Tools

The System Administration window is where you set up system defaults, network configurations, and perform maintenance on the system file set.

Configuring the Network

NOTE

This operation may require System Administration Software. You configure a network to set connectivity between all other networks and computers on these networks. With a properly configured network, you can interact with other computers to run the logic analysis system as well as perform file operations or run programs on other computers.

Network Setup:
1. From the Networking tab in the System Administration Tool window, click Network Setup...
2. Click Networking Enabled.
3. Type the Host name.
4. Type the IPv4 address (IP).
5. Type the Subnet Mask.
6. Type the Default Gateway.
7. Type the File Server.
8. Click OK.

See Also

Using the Name Resolution to Add IP Addresses
Printers

HP 16600A Series/ HP16700A/ HP16702A

(Your printer)

HP 16600A Series

HP 16700A and HP 16702A

Select a system administration function to perform.

Networking Admin Security Software Install

Information

About... Licensing...

Utilities

Printers Time/Date... Self-Test...
Printers

HP 16600A Series/ HP 16700A/ HP 16702A

Status: No printer configured.

- Local
- Network

Printers: [Field]

Print Server: [Field]

[Network printer Berkeley UNIX] [No] [Yes]

Printer type: None

Note! Refer to the online help for networked printers setup.

Help Main Menu
System Administration
System Administration Tools
Print Options
See Also - Printer Setup
Printer Setup
Network Printer Setup

Select a system administration function to perform:

- Networking
- Security
- Software Installation
- Administration

Information:
- About...
- Licensing...
- Registration...

Utilities:
- Printers...
- Time/Date...
- Self-Test...

Printer Queue: 0

[OK] [Cancel]

Printer Setup

Done
CAUTION

A CD-ROM drive address setting of 6 or 7 could damage your hard drive. Use an address setting between 1 and 5.
Note!

When a system is shipped, the factory installs the current operating system and ordered processor support packages and tools.
Software Installation

HP 16600A Series/ HP 16700A/ HP 16702A

Note!
When a system is shipped, the factory installs the current operating system and ordered processor support packages and tools.
Software Installation
HP 16600A Series/ HP 16700A/ HP 16702A

Select Media Type
Additional Tools
System Software
Processor Support

Software Installation
Select a software package.

Select CD-ROM2 Packages
Package Version Title
ADsLITE 0.4 = #.00.00.02 HP Logic Analysis additional system
ADsLITE-DOA 0.4 = #.00.00.02 Processor Support Packages
ADsLITE-DGA 0.4 = #.00.00.02 Processor Support Packages

Install
Help...
Software Installation

HP 16600A Series/ HP 16700A/ HP 16702A

Select desired package.

Note!
The system will automatically reboot if it is required by the newly installed package.
HP 16701A Expander Frame

HP 16700A/ HP 16702A

1. Install your measurement modules in the HP 16701A expander frame.
2. Connect the desired length interconnect cable and tighten the connector screws with the screwdriver provided.
3. Connect the power cable to the HP 16701A.
4. Power up the HP 16700A or HP 16702A system.

HP 16701A Interconnect Cable
Choose from the 30cm (12 inch) length, or the 90 cm (36 inch) length.
General-purpose probing requires connecting probe leads to individual signal lines. It is generally the most cumbersome method, but it is also the most flexible. Because of the passive design of the probe, there are no active circuits at the outer end of the cable.

The advantages of this are:
- High input impedance. *(See Equivalent Load,)*
- Signal ground at the probe tip for high-speed timing signals.
- Inexpensive, removable probe tip assemblies.
The signal and ground leads can be connected directly to the target system. This requires installing 0.63 mm (0.025 inch) square pins, or round pins with a diameter between 0.66 and 0.84 mm (0.026 and 0.033 inch) directly on the board. You can also use an IC test clip with pins with those dimensions.

You can also connect the leads using through-hole grabbers, which have small enough hooks to fit around adjacent IC pins, or by using surface-mount grabbers designed for fine surface-mount component leads.

Proper grounding will improve the signal quality and is essential for high speed measurements. Each pod has a pod ground lead, which must be used. You can use only this ground, but signal quality for high speed signals will be poor.

For better results, ground not only the pod, but every third or fourth lead.

For best results, and when probing signals with rise and fall times of 1 ns or less, ground each probe lead with no more than a 2-inch ground lead as well as grounding the pod with the pod ground lead.

- You can replace damaged leads. Disconnect individual probe leads by pushing on the latch at the lead base with a ball-point pen.
- Connect grabbers to the leads by slipping the end of the lead over the recessed pin located in the side of the grabber.

**Note!** The minimum input overdrive is the greater of 250 mV or 30% of signal amplitude. The maximum probe input voltage of each logic analyzer probe is 40 volts peak.
The logic analyzer cable must have the proper RC network at its input in order to acquire data correctly. The optional Termination Adapter incorporates the RC network into a convenient package. It also reduces the number of pins required for the header on the target board from 40 pins to 20.

**Termination Adapter**

**Target Connector Pinout** (Top View)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+5V</td>
</tr>
<tr>
<td>3</td>
<td>CLK1</td>
</tr>
<tr>
<td>5</td>
<td>D14</td>
</tr>
<tr>
<td>7</td>
<td>D12</td>
</tr>
<tr>
<td>9</td>
<td>D10</td>
</tr>
<tr>
<td>11</td>
<td>D8</td>
</tr>
<tr>
<td>13</td>
<td>D6</td>
</tr>
<tr>
<td>15</td>
<td>D4</td>
</tr>
<tr>
<td>17</td>
<td>D2</td>
</tr>
<tr>
<td>19</td>
<td>D0</td>
</tr>
</tbody>
</table>

**Tip RC Network**

- **Signal**: 250 ohm, 90.9K ohm, 8.2pF
- **Ground**: 8.2pF

**Equivalent Load**

- **Signal**: 370 ohm, 4.6pF, 7.4pF
- **Ground**: 100k ohm

Includes logic analyzer
You can connect the logic analyzer cable directly to a 40-pin connector, but you must install the proper RC network directly onto the target system board. Hewlett-Packard recommends two types of RC networks which are described in detail in the Application Note: *Probing Solutions for HP Logic Analysis Systems*.

![Target Connector Pinout (Top View)](image)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5V 1</td>
<td>Power GND</td>
</tr>
<tr>
<td>CLK1 3</td>
<td>4 Signal GND</td>
</tr>
<tr>
<td>N/C 5</td>
<td>6 Signal GND</td>
</tr>
<tr>
<td>D15 7</td>
<td>8 Signal GND</td>
</tr>
<tr>
<td>D14 9</td>
<td>10 Signal GND</td>
</tr>
<tr>
<td>D13 11</td>
<td>12 Signal GND</td>
</tr>
<tr>
<td>D12 13</td>
<td>14 Signal GND</td>
</tr>
<tr>
<td>D11 15</td>
<td>16 Signal GND</td>
</tr>
<tr>
<td>D10 17</td>
<td>18 Signal GND</td>
</tr>
<tr>
<td>D9 19</td>
<td>20 Signal GND</td>
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<tr>
<td>D8 21</td>
<td>22 Signal GND</td>
</tr>
<tr>
<td>D7 23</td>
<td>24 Signal GND</td>
</tr>
<tr>
<td>D6 25</td>
<td>26 Signal GND</td>
</tr>
<tr>
<td>D5 27</td>
<td>28 Signal GND</td>
</tr>
<tr>
<td>D4 29</td>
<td>30 Signal GND</td>
</tr>
<tr>
<td>D3 31</td>
<td>32 Signal GND</td>
</tr>
<tr>
<td>D2 33</td>
<td>34 Signal GND</td>
</tr>
<tr>
<td>D1 35</td>
<td>36 Signal GND</td>
</tr>
<tr>
<td>D0 37</td>
<td>38 Signal GND</td>
</tr>
<tr>
<td>+5V 39</td>
<td>40 Power GND</td>
</tr>
</tbody>
</table>

**Target Connector Pinout (Top View)**

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**CAUTION**

⚠️ Do not exceed 0.33 amps per cable, or the cable will be damaged. The cable ground lines are chassis (earth) grounds and not "floating" grounds. All the lines are woven into a flat ribbon that is 4.5 feet long.

For more information, contact your Hewlett-Packard Sales office and ask for the Application Note: *Probing Solutions for HP Logic Analysis Systems*. (Or download from the web at: [http://www.hp.com/go/LA-AppNotes/](http://www.hp.com/go/LA-AppNotes/))
The HP E5346A high-density adapter provides a convenient and easy way to connect an HP logic analyzer to the signals on your target system for packages that are difficult to probe, such as BGAs. An Amp "Mictor 38" connector must be installed on your target system board.
The HP E5351A high-density adapter provides a convenient and easy way to connect an HP logic analyzer to the signals on your target system for packages that are difficult to probe, such as BGAs. The proper RC networks and an AMP "Mictor 38" connector must be installed on your target system board. See Application Note: Probing Solutions for HP Logic Analysis Systems.
Self-Test

HP 16600A Series/ HP 16700A/ HP 16702A

Choose a module and select the desired test.
Specifications & Characteristics
HP 16600 Series/16700A/HP 16702A/all Measurement Modules

Select a tool.

Master List of All Tool Help Volumes
All Instrument, Display, Utility, and Analysis tools have their own specific help volume. The Help menu within each tool window accesses its own help volume. You can access specific Tool Help Volumes below, or, you can return to the Main Help Volume.

The Instrument Tools
- HP 16600-Series Built-In Logic Analyzer
- HP 16517A High Speed Timing Analyzer
- HP 16532A Pattern Generator
- HP 16533/344 Oscilloscopes
- HP 16500A Logic Analyzer
- HP 16554A Logic Analyzer
- HP 16554A/D Logic Analyzer
- HP 16557C Logic Analyzer
- HP 16710A Logic Analyzer
- HP 16711A Logic Analyzer
- HP 16712A Logic Analyzer

See Also: Using Symbols
The Display Tools

Interface Reference
- The Sampling Tab
- The Format Tab
- The Trigger Tab
- The Symbols Tab
- Specifications and Characteristics
Main System Help
Glossary of Terms
Reinstalling the Operating System.

**CAUTION** Read this section carefully before you attempt to reinstall the operating system from the CD-ROM using this procedure. Everything on the hard drive will be overwritten, including user configuration, data files, and license passwords.

A batch process is used to autoload the software and then reboot the instrument. The batch process waits for only a short timeout period for user interaction to abort the process. Otherwise, the hard drive will be initialized, the operating system will be uploaded, and the instrument will reboot.

To save the license file, obtain a formatted 1.44Mb floppy disk and insert it in the floppy drive. In the system window, select File manager. In /hplogic/licensing, copy the license.dat file to the floppy disk. Save any other important files such as configurations that will be lost in the process.

The reinstallation process takes approximately one hour depending on the speed of the attached CD-ROM.

1. **If required, follow the steps in this book to setup the instrument and CD-ROM drive.** Insert the CD-ROM containing the instrument operating software into the CD-ROM drive. Allow a couple of moments for the media to settle after inserting the media.

2. If the LAN cable is connected, disconnect it from the instrument. If needed, turn on the system and initiate the monitor selection mode. (See the section in this book.) Otherwise, proceed to step 3.

3. Turn on the instrument and repeatedly press the [ESC] key on the keyboard to terminate the boot process. When the boot process is terminated, a prompt will be displayed.

Main Menu: Enter command >

Press: <Enter>

Type: SEA <Enter>

The instrument will search for all viable boot devices on the bus, including the CD-ROM drive. The display will then show the boot devices:

<table>
<thead>
<tr>
<th>Path Number</th>
<th>Device Path</th>
<th>Device Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>P0</td>
<td>SESCSI.6.0</td>
<td>QUANTUM FIREBALL ST4.3S</td>
</tr>
<tr>
<td>P1</td>
<td>SESCSI.1.0</td>
<td>TOSHIBA CD-ROM XM-5701TA</td>
</tr>
</tbody>
</table>
To abort the reinstallation process at this point:
Press the [Return] key on the keyboard within 10 seconds. (If you do nothing within the 10 second timeout, the reinstallation process will begin. The instrument will completely reload the operating system software onto the hard disk drive.)

Processor Support Packages, Auxiliary Software, and user files must be installed manually once the operating system has been reinstalled.

Copy the license.dat file into the /hplogic/licensing directory. If you were unable to save the license.dat file, contact the HP Password Center.

For Password Center contact information, click on System Admin, Admin, and Registration.

WARNING: The configuration information calls for a non-interactive installation.
Press <Return> within 10 seconds to cancel batch mode installation:

To abort the reinstallation process at this point:

At the prompt:
Main Menu: Enter command >
Type: BO P1 <Enter>
Interact with IPL (Y, N, Q) ?>
Type: N <Enter>

After about 30 seconds you will see the message:

WARNING: The configuration information calls for a non-interactive installation.
Press <Return> within 10 seconds to cancel batch mode installation:
Proper Cleaning

HP 16600A Series/ HP 16700A/ HP 16702A/ Measurement Modules

Instrument Cabinet and Module Front Panels

CAUTION

With the instrument unplugged, use mild soap and water to clean the cabinet of the instrument or the front of the modules. Harsh soap might damage the water-based paint. *Do not immerse the instrument or modules in water.*
Measurement Modules

HP 16600A Series/ HP 16700A/ HP 16702A

HP 16517/18A
HP 16522A
HP 16533/34A
HP 16550A
HP 16557A
HP 16710/11/12A
HP 16715/16/17A
HP E2485A
General Installation

**CAUTION** Be sure the frame is unplugged before removing or installing modules.

1. Power down the system.

2. Disconnect the power cable.

3. Insert or filler panels.

4. Remove modules or filler panels.

5. Insert modules or filler panels.

**CAUTION**

Use a grounded wrist strap and mat when handling the modules. Gently apply pressure to the center of the module or filler panel while tightening the thumb screws. Use filler panels in empty slots for proper cooling.

Carefully slide the module into the frame and hand tighten the thumb screws. *If you are inserting more than one module, the tightening order is bottom module to top module.*

A single-module configuration can be installed in any available slot.

**Note!**

Some modules require calibration if they are moved to a different slot. For calibration information, refer to the online help for the individual modules.
HP 16517A/18A

for HP 16700A and HP 16702A

2-Card Module

Expander

Master

2 Connector Cable

Expander

Master

2 Connector Cable

OR

(HP 16518A)
HP 16517A/18A
for HP 16700A and HP 16702A

3-Card Module

Master
Expander
Expander

3 Connector
Cable

3 (HP 16517A)

3 (HP 16518A)

3 (HP 16518A)
HP 16517A/18A
for HP 16700A and HP 16702A

3-Card Module

2 Connector Cable

Expander
Master
Expander

2 Connector Cable

(HP 16517A)

(HP 16518A)

(HP 16518A)
HP 16517A/18A
for HP 16700A and HP 16702A

3-Card Module
HP 16517A/18A
for HP 16700A and HP 16702A

4-Card Module

2 Connector Cable
Expander
Master
Expander
Expander

3 Connector Cable

(HP 16518A)
(HP 16518A)
(HP 16517A)
(HP 16518A)
HP 16517A/18A
for HP 16700A and HP 16702A

4-Card Module
HP 16517A/18A

for HP 16700A and HP 16702A

5-Card Module

Expander
Expander
Master
Expander
Expander

3 Connector Cables
( Need 2 )

(HP 16517A)

(HP 16518A)

(HP 16518A)
Each HP 16522A is shipped with the **2x10 cable** connected in the single-card module configuration.

A single-card module configuration can be installed in any available slot.

**CAUTION**

Be sure the frame is unplugged before removing or installing modules.

The following pages will show you how to connect the **2x10 cables** to configure two, three, four, and five-card modules.
HP 16522A
for HP 16700A and HP 16702A

2-Card Module

3-Card Module
**HP 16522A**

*for HP 16700A and HP 16702A*

**4-Card Module**

**Note!**

Carefully slide the four cards half way into the mainframe slots.

Cable the bottom Expander to the Master first.

Cable the upper two Expanders to the Card.

Gently slide the cabled assembly fully into the frame and tighten.
**HP 16522A**
*for HP 16700A and HP 16702A*

**5-Card Module**

**Note!**

Carefully slide the five cards half way into the mainframe slots.

Cable the bottom two Expanders to the Master first.

Cable the upper two Expanders to the Master.

Gently slide the cabled assembly fully into the frame and tighten.
HP 16533/34A Calibration
for HP 16600A Series/ HP 16700A/ HP 16702A
Single-Card Module

1. Power down the mainframe.

2. Remove the module from the mainframe and set the PROTECTED / UNPROTECTED switch to UNPROTECTED.

Note!
If you calibrate this module without unprotecting the memory, the new calibration settings will not be saved when the system is shut down. The system will default to the previous settings. The new calibration settings would be effective for the current active session only.
HP 16533/34A Calibration
for HP 16600A Series/ HP 16700A/ HP 16702A
Single-Card Module

3. Reinstall the HP 16533A/34A module into the mainframe.

4. Monitor power ON. (If applicable)

5. System power ON

---

Reinstall the HP 16533A/34A module into the mainframe.

Monitor power ON. (If applicable)

System power ON

---

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**HP 16533/34A Calibration**

*for HP 16600A Series/ HP 16700A/ HP 16702A*  

**Single-Card Module**

6. For more accurate calibration, allow the system 30 minutes to warm up.

7. Connect the BNC Tee and the (equal length) BNC cables to the module.
HP 16533/34A Calibration
for HP 16600A Series/ HP 16700A/ HP 16702A
Single-Card Module
**HP 16533/34A Calibration**

**for HP 16600A Series/ HP 16700A/ HP 16702A**

**Single-Card Module**

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<table>
<thead>
<tr>
<th>Procedure</th>
<th>CHAN 1</th>
<th>CHAN 2</th>
<th>EXT TRIG</th>
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</thead>
<tbody>
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<td>ADC</td>
<td>Pass</td>
<td>Pass</td>
<td></td>
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<tr>
<td>Gain</td>
<td>Pass</td>
<td>Pass</td>
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<tr>
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<td>Pass</td>
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</tbody>
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**Calibration Utility Controls**

<table>
<thead>
<tr>
<th>BNC Output Probe Comp</th>
<th>Default Factors</th>
</tr>
</thead>
</table>

---

Channels 1 and 2 must be connected to the rear panel N/J/DC CAL BNC with equal length cables. This will take approximately 15 minutes to complete. Are you ready to continue the calibration?

---

File | Run | Help
---|-----|-----
Navigate | Run | Help

---

**File**

**Run**

---

First select a Calibration Procedure, then press Run to begin calibration.
Connect the BNC Tee, adapter, and the (equal length) BNC cables to the module.
Single-Card Module

HP 16533/34A Calibration for HP 16600A Series/ HP 16700A/ HP 16702A

Note!
Remember to set the PROTECTED/UNPROTECTED switch back to PROTECTED.
Each of the individual boards of a multi-card module must first be calibrated as a single. (See previous pages: HP 16533/34A Single-Card Module.)

The following example is of a two-card module arrangement. Up to four cards may be configured as a module in an HP 16700A or an HP 16702A mainframe.

1. Connect the module cables.

2. Exit the current session and restart.
HP 16533/34A Calibration
for HP 16700A and HP 16702A

Multi-Card Module
Connect the (equal length) BNC calibration between channel 1, AC/DC cal, and channel 1 of the second card. (Channel 1 of the third card next time etc. up to four cards.)

Repeat steps 3 through 6 for each additional card in your multi-card module.

Select the appropriate combination for each additional card.

Remember to set the PROTECTED/UNPROTECTED switch back to PROTECTED.
When ordered by itself, the card is cabled as a single module. Directions for connecting the cables are also printed on the circuit board.
HP 16550A
for HP 16700A and HP 16702A
2-Card Module

Leave this 80-pin cable connected
HP 16550A
for HP 16700A and HP 16702A
2-Card Module

Expander

Master

J7
J8
J6
J5
J4

100-pin Cable
80-pin Cable

Leave this 80-pin cable connected
HP 16550A
for HP 16700A and HP 16702A
2-Card Module

Gently slide the module into the frame and hand tighten the thumb screws.

If you are inserting more than one module, the tightening order is bottom module to top module.
Multi-Module

Here are some examples of HP 16550A single and multi-card module arrangements.
When ordered as a single card, the HP 16557D is shipped with the 2x10 cable factory configured as a single card module.
HP 16557D
for HP 16700A and HP 16702A
2-Card Module

Find the required two connector **2x25 cables**
and connect the cables as shown.

**2x25 Cables** (Need 2)

Connect the **2x10 cables** on the Expander to the Master.

**2x10 Cables**
Find the required three connector 2x25 cables and connect the cables as shown.

Connect the 2x10 cables on the Expanders to the Master.
HP 16557D
for HP 16700A and HP 16702A
4-Card Module

Find the required four connector **2x25 cables** and connect the cables as shown.

**2x25 Cables (Need 2)**

Connect the **2x10 cables** on the Expanders to the Master.

**2x10 Cables**

- Expander J10
- Expander J9 J8 J7 J6 J5 J4 J3
- Master J10
- Expander J9 J8 J7 J6 J5 J4 J3
- Expander J9 J8 J7 J6 J5 J4 J3
- Expander J9 J8 J7 J6 J5 J4 J3
Find the required five connector **2x25 cables** and connect the cables as shown.

**2x25 Cables** (Need 2)

- Expander
- Expander
- Master
- Expander
- Expander

Connect the **2x10 cables** on the Expanders to the Master.

**2x10 Cables**

- Expander J10
- Expander J10
- Master J10
- Expander J10
- Expander J10

for HP 16700A and HP 16702A
The HP 16600A, 16700A, and 16702A require Rev. A.01.20.00 or higher. See the Software Installation chapter in the book. Select HP1660x-70xA.
**HP 16710/11/12A**

*for HP 16700A and HP 16702A*

*Multi-Card Module*
Other modules or filler panels.
If ordered by themselves, all HP 16715, 16, and 17A's are cabled at the factory as a single-card module. Be sure the 2x10 cable is connected as shown below.

**Note!**

The HP 16715, 16, and 17A's require software Rev. A.01.40.00 or higher. See the Software Installation chapter in this book. Select HP 1660x-70x.
HP 16715/16/17A
for HP 16700A and HP 16702A

2-Card Module

Connect the 2x10 cable of the Expander to the Master.

Open the accessory pouch and find two of the required 2x40 cables. Connect the 2x40 cables on the modules as shown.
3-Card Module

Connect the 2x10 cables of the Expanders to the Master. Find the 2x40 cables in the accessory pouch and connect them between J19 and J14, and between J10 and J15 of the modules.
**HP 16715/16/17A**

for HP 16700A and HP 16702A

4-Card Module

Connect the **2x10 cables** of the Expander to the Master. Find the **2x40 cables** in the accessory pouch and connect them between J19 and J14, and between J10 and J15 of the modules.
Connect the 2x10 cables of the Expander to the Master. Find the 2x40 cables in the accessory pouch and connect them between J19 and J14, and between J10 and J15 of the modules.
HP E2485A for HP 16700A and HP 16702A

Logic Analyzer Modules. All are HP 16555, 556, 557, 715, 716, and 717A

Note!
The HP 16700A and HP 16702A require Rev. A.01.20.00 or higher and the HP E2485A software.
If this icon does not appear in the toolbox, install the HP E2485A software now. See the Software Installation chapter in this book. Select Auxiliary-SW and E2485A.
HP E2485A

for HP 16700A and HP 16702A

Move all pods to the unassigned pods list.
Connect the pods of the logic analyzer module in the order on screen.
HP E2485A
for HP 16700A and HP 16702A

External power supply

Power On Light

Press Reset to set the number of active pods.

Reset Button

Press Reset to set the number of active pods.
HP E2485A
for HP 16700A and HP 16702A

Load a configuration file.

Note! See online help for information on customizing measurements.
The HP E2485A uses the same probing equipment as the logic analyzer. For more information, see the Probing chapter in this book.
Vthresh is the threshold voltage of your target system. Data sent from the HP E2485A to the logic analyzer uses TTL logic levels.

The HP E2485A cannot sample on both clock edges.
**Specifications**

Specifications are the performance standards against which the instrument is tested. Characteristics are not specifications, but are included as additional information. This instrument has no specifications.

**Characteristics**

- **Maximum Memory Depth**: 40 M
- **Memory Depth Per Card**:
  - HP 16555/6A: 4 M
  - HP 16555/6/7D: 8 M
  - HP 16716A: 2M
  - HP 16715/17A: 8M
- **Channel Count**: 16
- **Max. State Clock**: 100 MHz
- **Setup/Hold time**: 3.5 ns / 0 ns
- **Min. Clock Pulse Width**: 5 ns
- **Clocking**: 1 edge, rising or falling
- **Input Resistance**: 100 Kohm ±2%
- **Input Capacitance**: approx. 8 pF

**Cleaning the State Analyzer**

With the E2485A unplugged, use mild soap and water to clean the cabinet of the instrument. Harsh soap might damage the water-based paint. Do not immerse the instrument in water.
DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company
Manufacturer's Address: Colorado Springs Division
1900 Garden of the Gods Road
Colorado Springs, CO 80907 USA

declares, that the product

Product Name: Logic Analyzer
Model Number(s): HP 16600A, HP 16601A, HP 16602A, HP 16603A
Product Options(s): All

conforms to the following Product Specifications:

UL 3111
CSA-C22.2 No. 1010.1:1993

EMC: CISPR 11:1990 / EN 55011:1991 Group 1, Class A
IEC 801-2:1991 / EN 50082-1:1992 4 kV CD, 8 kV AD
IEC 801-3:1984 / EN 50082-1:1992 3 V/m, {1kHz 80% AM, 27-1000 MHz}
IEC 801-4:1988 / EN 50082-1:1992 0.5 kV Sig. Lines, 1kV Power Lines

Supplementary Information:
The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC
and the EMC Directive 89/336/EEC and carries the CE marking accordingly.
This product was tested in a typical configuration with Hewlett-Packard test systems.

Colorado Springs, 08/18/98

John Strathman, Quality Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards
Europe, Herrenberger Strasse 130, D-71034 Böblingen Germany (FAX: +49-7031-14-3143)
Product Regulations

Safety
- UL 3111
- CSA-C22.2 No.1010.1:1993

EMC
- This Product meets the requirement of the European Communities (EC) EMC Directive 89/336/EEC.

Emissions
- EN55011/CISPR 11 (ISM, Group 1, Class A equipment), IEC 555-2 and IEC 555-3

Immunity
- EN50082-1

<table>
<thead>
<tr>
<th>Code</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>IEC 801-2 (ESD) 8kV AD</td>
<td>2</td>
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<tr>
<td>IEC 801-3 (Rad.) 3 V/m</td>
<td>1</td>
</tr>
<tr>
<td>IEC 801-4 (EFT) 1kV</td>
<td>1</td>
</tr>
</tbody>
</table>

Performance Codes:
1 PASS - Normal operation, no effect.
2 PASS - Temporary degradation, self recoverable.
3 PASS - Temporary degradation, operator intervention required.
4 FAIL - Not recoverable, component damage.

Sound Pressure Level
- Less than 60 dBA

Definitions
- Installation category (overvoltage category) I: Signal level, special equipment or parts of equipment, telecommunication, electronic etc., with smaller transient overvoltages than installation (overvoltage category) II.

- Installation category (overvoltage category) II: Local level, appliances, portable equipment etc., with smaller transient overvoltages than installation category III.

Environmental Conditions
- Indoor use only.
- Altitude up to 3000 m. (10,000 ft.)

Temperature
- Instrument: 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F)
- Disk Media: 10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
- Probes/cables: 0 degrees C to 65 degrees C (32 degrees F to 149 degrees F)

Humidity
- Relative humidity 8 to 80% at 40 degrees C (104 degrees F)

Power
DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company
Manufacturer's Address: Colorado Springs Division
                     1900 Garden of the Gods Road
                     Colorado Springs, CO 80907 USA

declares, that the product

Product Name: Logic Analyzer Mainframe
Model Number(s): HP 16700A
Product Options(s): All

conforms to the following Product Specifications:

       UL 3111
       CSA-C22.2 No. 1010.1:1993

     IEC 801-2:1991 / EN 50082-1:1992 4 kV CD, 8 kV AD
     IEC 801-3:1984 / EN 50082-1:1992 3 V/m, 1kHz 80% AM, 27-1000 MHz
     IEC 801-4:1988 / EN 50082-1:1992 0.5 kV Sig. Lines, 1kV Power Lines

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC
and the EMC Directive 89/336/EEC and carries the CE marking accordingly.

This product was tested in a typical configuration with Hewlett-Packard test systems.

Colorado Springs, 9/22/97.

John Strathman, Quality Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards
Europe, Herrenberger Strasse 130, D-71034 Böblingen Germany (FAX: +49-7031-14-3143)
Product Regulations

Safety

UL 3111
CSA-C22.2 No.1010.1:1993

EMC

This Product meets the requirement of the European Communities (EC) EMC Directive 89/336/EEC.

Emissions

EN55011/CISPR 11 (ISM, Group 1, Class A equipment),
IEC 555-2 and IEC 555-3

Immunity

EN50082-1

<table>
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<td>IEC 801-3 (Rad.) 3 V/m</td>
</tr>
<tr>
<td>1</td>
<td>IEC 801-4 (EFT) 1kV</td>
</tr>
</tbody>
</table>

Performance Codes:

1 PASS - Normal operation, no effect.
2 PASS - Temporary degradation, self recoverable.
3 PASS - Temporary degradation, operator intervention required.
4 FAIL - Not recoverable, component damage.

Sound Pressure Level

Less than 60 dBA

Definitions

Installation category (overvoltage category) I: Signal level, special equipment or parts of equipment, telecommunication, electronic etc., with smaller transient overvoltages than installation (overvoltage category) II.

Installation category (overvoltage category) II: Local level, appliances, portable equipment etc., with smaller transient overvoltages than installation category III.

Environmental Conditions

Indoor use only.
Altitude up to 3000 m. (10,000 ft.)

Temperature

Instrument - 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F)
Disk Media - 10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
Probes/cables - 0 degrees C to 65 degrees C (32 degrees F to 149 degrees F)

Humidity

Relative humidity 8 to 80% at 40 degrees C (104 degrees F)

Power

CAT II, Pollution degree 2
DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company
Manufacturer's Address: Colorado Springs Division
1900 Garden of the Gods Road
Colorado Springs, CO 80907 USA

declares, that the product

Product Name: Logic Analyzer Mainframe
Model Number(s): HP 16702A
Product Options(s): All

characterizes to the following Product Specifications:

UL 3111
CSA-C22.2 No. 1010.1:1993

EMC: CISPR 11:1990 / EN 55011:1991 Group 1, Class A
IEC 801-2:1991 / EN 50082-1:1992 4 kV CD, 8 kV AD
IEC 801-3:1984 / EN 50082-1:1992 3 V/m, (1kHz 80% AM, 27-1000 MHz)
IEC 801-4:1988 / EN 50082-1:1992 0.5 kV Sig. Lines, 1kV Power Lines

Supplementary Information:
The product hereinafter complies with the requirements of the Low Voltage Directive 73/23/EEC
and the EMC Directive 89/336/EEC and carries the CE marking accordingly.

This product was tested in a typical configuration with Hewlett-Packard test systems.

Colorado Springs, 04/16/98

Ken Wyatt / Product Regulations Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards
Europe, Herrenberger Strasse 130, D-71034 Böblingen Germany (FAX: +49-7031-14-3143)
Product Regulations

Safety
- UL 3111
- CSA-C22.2 No.1010.1:1993

EMC
This Product meets the requirement of the European Communities (EC) EMC Directive 89/336/EEC.

Emissions
- EN55011/CISPR 11 (ISM, Group 1, Class A equipment), IEC 555-2 and IEC 555-3

Immunity
- EN50082-1
- Code
- Notes
  - IEC 801-2 (ESD) 8kV AD [2]
  - IEC 801-3 (Rad.) 3 V/m [1]
  - IEC 801-4 (EFT) 1kV [1]

Performance Codes:
1. PASS - Normal operation, no effect.
2. PASS - Temporary degradation, self recoverable.
3. PASS - Temporary degradation, operator intervention required.
4. FAIL - Not recoverable, component damage.

Sound Pressure Level
- Less than 60 dBA

Definitions
Installation category (overvoltage category) I: Signal level, special equipment or parts of equipment, telecommunication, electronic etc., with smaller transient overvoltages than installation (overvoltage category) II.

Installation category (overvoltage category) II: Local level, appliances, portable equipment etc., with smaller transient overvoltages than installation category III.

Environmental Conditions
- Indoor use only.
- Altitude up to 3000 m. (10,000 ft.)

Temperature
- Instrument - 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F)
- Disk Media - 10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
- Probes/cables - 0 degrees C to 65 degrees C (32 degrees F to 149 degrees F)

Humidity
- Relative humidity 8 to 80% at 40 degrees C (104 degrees F)

Power
- CAT II, Pollution degree 2
DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company
Manufacturer's Address: Colorado Springs Division
1900 Garden of the Gods Road
Colorado Springs, CO 80907 USA

declares, that the product

Product Name: Logic Analyzer Module
Model Number(s): HP 16517A and 16518A
Product Options(s): All

conforms to the following Product Specifications:

UL 3111
CSA-C22.2 No. 1010.1:1993

EMC: CISPR 11:1990 / EN 55011:1991 Group 1, Class A
IEC 801-2:1991 / EN 50082-1:1992 4 kV CD, 8 kV AD
IEC 801-3:1984 / EN 50082-1:1992 3 V/m, {1kHz 80% AM, 27-1000 MHz}
IEC 801-4:1988 / EN 50082-1:1992 0.5 kV Sig. Lines, 1kV Power Lines

Supplementary Information:
The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC
and the EMC Directive 89/336/EEC, and carries the CE marking accordingly.
This product was tested in a typical configuration with Hewlett-Packard test systems.

Colorado Springs, 10/03/96

[Signature]
John Strathman, Quality Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards Europe, Herrenberger Strasse 130, D-71034 Boblingen Germany (FAX: +49-7031-14-3143)
Product Regulations

Safety

- UL 1244
- CSA-C22.2 No. 231 (Series M-89)

EMC

This Product meets the requirements of the European Communities (EC) EMC Directive 89/336/EEC.

Emissions

- EN55011/CISPR 11 (ISM, Group 1, Class A equipment)

Immunity

<table>
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<th>Code</th>
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<tr>
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<td>IEC 801-3 (Rad.) 3V/m</td>
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<td>IEC 801-4 (EFT) 1kV</td>
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Performance Codes:

1 Pass - Normal operation, no effect.
2 Pass - Temporary degradation, self recoverable.
3 Pass - Temporary degradation, operator intervention required.
4 Fail - Not recoverable, component damage.

Notes: (none)

Sound Pressure Level

- N/A

Definitions

- Installation category (overvoltage category) I: Signal level, special equipment or parts of equipment, telecommunication, electronic etc., with smaller transient overvoltages than installation (overvoltage category) II.

- Installation category (overvoltage category) II: Local level, appliances, portable equipment etc., with smaller transient overvoltages than installation category III.

Enviromental Conditions

- Indoor use only.
- Altitude up to 3000 m. (10,000 ft.)

Temperature

- Instrument - 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F)
- Disk Media - 10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
- Probes/cables - 0 degrees C to 65 degrees C (32 degrees F to 149 degrees F)

Humidity

- Relative humidity 8 to 80% at 40 degrees C (104 degrees F)

Power

(From host frame.)
DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company
Manufacturer's Address: Colorado Springs Division
1900 Garden of the Gods Road
Colorado Springs, CO 80907 USA

declares, that the product

Product Name: Pattern Generator Module
Model Number(s): HP 16522A
Product Options(s): All

conforms to the following Product Specifications:

UL 3111
CSA-C22.2 No. 1010.1:1993

EMC: CISPR 11:1990 / EN 55011:1991 Group 1, Class A
IEC 801-2:1991 / EN 50082-1:1992 4 kV CD, 8 kV AD
IEC 801-3:1984 / EN 50082-1:1992 3 V/m, {1kHz 80% AM, 27-1000 MHz}
IEC 801-4:1988 / EN 50082-1:1992 0.5 kV Sig. Lines, 1kV Power Lines

Supplementary Information:

This product was tested in a typical configuration with Hewlett-Packard test systems.

Colorado Springs, 4/03/95

John Strathman, Quality Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards Europe, Herrenberger Strasse 130, D-71034 Boblingen Germany (FAX: +49-7031-14-3143)
Product Regulations

Safety
UL 3111
CSA-C22.2 No.1010.1:1993

EMC
This Product meets the requirements of the
European Communities (EC) EMC Directive 89/336/EEC.

Emissions
EN55011/CISPR 11 (ISM, Group 1, Class A equipment)

Immunity

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<td>IEC 555-3</td>
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<tr>
<td>IEC 801-2 (ESD) 8kV AD</td>
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<td>IEC 801-3 (Rad.) 3V/m</td>
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<tr>
<td>IEC 801-4 (EFT) 1kV</td>
<td>1</td>
</tr>
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</table>

Performance Codes:
1 Pass - Normal operation, no effect.
2 Pass - Temporary degradation, self recoverable.
3 Pass - Temporary degradation, operator intervention required.
4 Fail - Not recoverable, component damage.

Notes: (none)

Sound Pressure
N/A

Level

Definitions
Installation category (overvoltage category) I: Signal level, special equipment or parts of
equipment, telecommunication, electronic etc., with smaller transient overvoltages than
installation (overvoltage category) II.

Installation category (overvoltage category) II: Local level, appliances, portable
equipment etc., with smaller transient overvoltages than installation category III.

Environmental Conditions
Indoor use only.
Altitude up to 3000 m. (10,000 ft.)

Temperature
Instrument - 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F)
Disk Media - 10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
Probes/cables - 0 degrees C to 65 degrees C (32 degrees F to 149 degrees F)

Humidity
Relative humidity 8 to 80% at 40 degrees C (104 degrees F)

Power
(From host frame.)
DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer’s Name: Hewlett-Packard Company
Manufacturer’s Address: Colorado Springs Division
1900 Garden of the Gods Road
Colorado Springs, CO 80907 USA

declares, that the product

Product Name: Digitizing Oscilloscope Module
Model Number(s): HP 16533A and 16534A
Product Options(s): All

conforms to the following Product Specifications:

UL 3111
CSA-C22.2 No. 1010.1:1993

EMC: CISPR 11:1990 / EN 55011:1991 Group 1, Class A
IEC 801-2:1991 / EN 50082-1:1992 4 kV CD, 8 kV AD
IEC 801-3:1984 / EN 50082-1:1992 3 V/m, {1kHz 80% AM, 27-1000 MHz}
IEC 801-4:1988 / EN 50082-1:1992 0.5 kV Sig. Lines, 1kV Power Lines

Supplementary Information:
The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC
and the EMC Directive 89/336/EEC and carries the CE marking accordingly.

This product was tested in a typical configuration with Hewlett-Packard test systems.

Colorado Springs, 4/03/95

John Strathman, Quality Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards
Europe, Herrenberger Strasse 130, D-71034 Böblingen Germany (FAX: +49-7031-14-3143)
Product Regulations

Safety

UL 3111
CSA-C22.2 No.1010.1:1993

EMC

This Product meets the requirements of the European Communities (EC)
EMC Directive 89/336/EEC.

Emissions

EN55011/CISPR 11 (ISM, Group 1, Class A equipment)

Immunity

<table>
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IEC 555-2 1
IEC 555-3 1
IEC 801-2 (ESD) 8kV AD 1
IEC 801-3 (Rad.) 3V/m 1
IEC 801-4 (EFT) 1kV 1

Performance Codes:
1 Pass - Normal operation, no effect.
2 Pass - Temporary degradation, self recoverable.
3 Pass - Temporary degradation, operator intervention required.
4 Fail - Not recoverable, component damage.

Notes: (none)

Sound Pressure Level

N/A

Definitions

Installation category (overvoltage category) I: Signal level, special equipment or parts of equipment, telecommunication, electronic etc., with smaller transient overvoltages than installation (overvoltage category) II.

Installation category (overvoltage category) II: Local level, appliances, portable equipment etc., with smaller transient overvoltages than installation category III.

Environmental Conditions

Indoor use only.
Altitude up to 3000 m. (10,000 ft.)

Temperature

Instrument - 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F)
Disk Media - 10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
Probes/cables - 0 degrees C to 65 degrees C (32 degrees F to 149 degrees F)

Humidity

Relative humidity 8 to 80% at 40 degrees C (104 degrees F)

Power

(From host frame.)
DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer’s Name: Hewlett-Packard Company
Manufacturer’s Address: Colorado Springs Division
1900 Garden of the Gods Road
Colorado Springs, CO 80907 USA

declares, that the product

Product Name: Logic Analyzer Module
Model Number(s): HP 16550A
Product Options(s): All

conforms to the following Product Specifications:

UL 3111
CSA-C22.2 No. 1010.1:1993

EMC: CISPR 11:1990 / EN 55011:1991 Group 1, Class A
IEC 801-2:1991 / EN 50082-1:1992 4 kV CD, 8 kV AD
IEC 801-3:1984 / EN 50082-1:1992 3 V/m, {1kHz 80% AM, 27-1000 MHz}
IEC 801-4:1988 / EN 50082-1:1992 0.5 kV Sig. Lines, 1kV Power Lines

Supplementary Information:
The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC
and the EMC Directive 89/336/EEC and carries the CE marking accordingly.
This product was tested in a typical configuration with Hewlett-Packard test systems.

Colorado Springs, 10/14/96

John Strathman, Quality Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards
Europe, Herrenberger Strasse 130, D-71034 Boblingen Germany (FAX: +49-7031-14-3143)
Product Regulations

Safety
UL 1244
CSA-C22.2 No. 231 (Series M-89)

EMC
This Product meets the requirements of the European Communities (EC) EMC Directive 89/336/EEC.

Emissions
EN55011/CISPR 11 (ISM, Group 1, Class A equipment)

Imunity
EN50082-1

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Performance Codes:
1 Pass - Normal operation, no effect.
2 Pass - Temporary degradation, self recoverable.
3 Pass - Temporary degradation, operator intervention required.
4 Fail - Not recoverable, component damage.

Notes: (none)

Sound Pressure
N/A

Level
Definitions
Installation category (overvoltage category) I: Signal level, special equipment or parts of equipment, telecommunication, electronic etc., with smaller transient overvoltages than installation (overvoltage category) II.

Installation category (overvoltage category) II: Local level, appliances, portable equipment etc., with smaller transient overvoltages than installation category III.

Environmental Conditions
Indoor use only.
Altitude up to 3000 m. (10,000 ft.)

Temperature
Instrument - 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F)
Disk Media - 10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
Probes/cables - 0 degrees C to 65 degrees C (32 degrees F to 149 degrees F)

Humidity
Relative humidity 8 to 80% at 40 degrees C (104 degrees F)

Power
(From host frame.)
DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company

Manufacturer's Address: Colorado Springs Division
1900 Garden of the Gods Road
Colorado Springs, CO 80907 USA

declares, that the product

Product Name: Logic Analyzer Module
Model Number(s): HP 16557A
Product Options(s): All

conforms to the following Product Specifications:

        UL 3111
        CSA-C22.2 No. 1010.1:1993

EMC:      CISPR 11:1990 / EN 55011:1991 Group 1, Class A
          IEC 801-2:1991 / EN 50082-1:1992  4 kV CD, 8 kV AD
          IEC 801-3:1984 / EN 50082-1:1992  3 V/m,1kHz 80% AM, 27-1000 MHz
          IEC 801-4:1988 / EN 50082-1:1992  0.5 kV Sig. Lines, 1kV Power Lines

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC
and the EMC Directive 89/336/EEC, and carries the CE marking accordingly.

This product was tested in a typical configuration with Hewlett-Packard test systems.

Colorado Springs, 7/02/97

John Strathman, Quality Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZO / Standards
Europe, Herrenberger Strasse 130, D-71034 Böblingen Germany (FAX: +49-7031-14-3143)
**Product Regulations**

**Safety**
- UL 3111
- CSA-C22.2 No.1010.1:1993

**EMC**
- This Product meets the requirements of the European Communities (EC) EMC Directive 89/336/EEC.

**Emissions**
- EN55011/CISPR 11 (ISM, Group 1, Class A equipment)

**Immunity**
- Code
- Notes

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Performance Codes:
- 1 Pass - Normal operation, no effect.
- 2 Pass - Temporary degradation, self recoverable.
- 3 Pass - Temporary degradation, operator intervention required.
- 4 Fail - Not recoverable, component damage.

Notes: (none)

**Sound Pressure Level**
- N/A

**Definitions**
- Installation category (overvoltage category) I: Signal level, special equipment or parts of equipment, telecommunication, electronic etc., with smaller transient overvoltages than installation (overvoltage category) II.
- Installation category (overvoltage category) II: Local level, appliances, portable equipment etc., with smaller transient overvoltages than installation category III.

**Environmental Conditions**
- Indoor use only.
- Altitude up to 3000 m. (10,000 ft.)

**Temperature**
- Instrument - 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F)
- Disk Media - 10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
- Probes/cables - 0 degrees C to 65 degrees C (32 degrees F to 149 degrees F)

**Humidity**
- Relative humidity 8 to 80% at 40 degrees C (104 degrees F)

**Power**
- (From host frame.)
DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company
Manufacturer's Address: Colorado Springs Division
1900 Garden of the Gods Road
Colorado Springs, CO 80907 USA
declares, that the product

Product Name: Logic Analyzer Module
Model Number(s): HP 16710A, 16711A and 16712A
Product Options(s): All

conforms to the following Product Specifications:

UL 3111
CSA-C22.2 No. 1010.1:1993

EMC: CISPR 11:1990 / EN 55011:1991  Group 1, Class A
IEC 801-2:1991 / EN 50082-1:1992  4 kV CD, 8 kV AD
IEC 801-3:1984 / EN 50082-1:1992  3 V/m,{1kHz 80% AM, 27-1000 MHz}
IEC 801-4:1988 / EN 50082-1:1992  0.5 kV Sig. Lines, 1kV Power Lines

Supplementary Information:
This product was tested in a typical configuration with Hewlett-Packard test systems.

Colorado Springs, 09/01/98

Ken Wyatt / Product Regulations Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards Europe, Herrenberger Strasse 130, D-71034 Böblingen Germany (FAX: +49-7031-14-3143)
Product Regulations

Safety

UL 3111
CSA-C22.2 No.1010.1:1993

EMC

This Product meets the requirement of the European Communities (EC) EMC Directive 89/336/EEC.

Emissions

EN55011/CISPR 11 (ISM, Group 1, Class A equipment), IEC 555-2 and IEC 555-3

Immunity

Code Notes
IEC 801-2 (ESD) 8kV AD 2
IEC 801-3 (Rad.) 3 V/m 1
IEC 801-4 (EFT) 1kV 1

Performance Codes:
1 PASS - Normal operation, no effect.
2 PASS - Temporary degradation, self recoverable.
3 PASS - Temporary degradation, operator intervention required.
4 FAIL - Not recoverable, component damage.

Sound Pressure Level

Less than 60 dBA

Definitions

Installation category (overvoltage category) I: Signal level, special equipment or parts of equipment, telecommunication, electronic etc., with smaller transient overvoltage than installation (overvoltage category) II.

Installation category (overvoltage category) II: Local level, appliances, portable equipment etc., with smaller transient overvoltages than installation category III.

Environmental Conditions

Indoor use only.
Altitude up to 3000 m. (10,000 ft.)

Temperature

Instrument - 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F)
Disk Media - 10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
Probes/cables - 0 degrees C to 65 degrees C (32 degrees F to 149 degrees F)

Humidity

Relative humidity 8 to 80% at 40 degrees C (104 degrees F)

Power

(From host frame.)
DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer’s Name: Hewlett-Packard Company
Manufacturer’s Address: Colorado Springs Division
1900 Garden of the Gods Road
Colorado Springs, CO 80907 USA

declares, that the product

Product Name: Logic Analyzer Module
Model Number(s): HP 16715A, 16716A, and 16717A
Product Options(s): All

conforms to the following Product Specifications:

UL 3111
CSA-C22.2 No. 1010.1:1993

EMC: CISPR 11:1990 / EN 55011:1991 Group 1, Class A
IEC 801-2:1991 / EN 50082-1:1992 4 kV CD, 8 kV AD
IEC 801-3:1984 / EN 50082-1:1992 3 V/m, {1kHz 80% AM, 27-1000 MHz}
IEC 801-4:1988 / EN 50082-1:1992 0.5 kV Sig. Lines, 1kV Power Lines

Supplementary Information:

This product was tested in a typical configuration with Hewlett-Packard test systems.

Colorado Springs, 3/19/99

Ken Wyatt / Product Regulations Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards Europe, Herrenberger Strasse 130, D-71034 Bottlingen Germany (FAX: +49-7031-14-3143)
UL 3111
CSA-C22.2 No.1010.1:1993

This Product meets the requirement of the European Communities (EC) EMC Directive 89/336/EEC.

**Emissions**

EN55011/CISPR 11 (ISM, Group 1, Class A equipment),
IEC 555-2 and IEC 555-3

**Immunity**

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</table>

Performance Codes:
1 PASS - Normal operation, no effect.
2 PASS - Temporary degradation, self recoverable.
3 PASS - Temporary degradation, operator intervention required.
4 FAIL - Not recoverable, component damage.

**Sound Pressure Level**

N/A

**Definitions**

Installation category (overvoltage category) I: Signal level, special equipment or parts of equipment, telecommunication, electronic etc., with smaller transient overvoltages than installation (overvoltage category) II.

Installation category (overvoltage category) II: Local level, appliances, portable equipment etc., with smaller transient overvoltages than installation category III.

**Environmental Conditions**

Indoor use only.
Altitude up to 3000 m. (10,000 ft.)

**Temperature**

Instrument - 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F)
Disk Media - 10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
Probes/cables - 0 degrees C to 65 degrees C (32 degrees F to 149 degrees F)

**Humidity**

Relative humidity 8 to 80% at 40 degrees C (104 degrees F)

**Power**

(From host frame.)
DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Company
Manufacturer's Address: Colorado Springs Division
1900 Garden of the Gods Road
Colorado Springs, CO 80907 USA

declares, that the product

Product Name: Logic Analyzer Memory Expansion
Model Number(s): HP E2485A
Product Options(s): All

conforms to the following Product Specifications:

UL 3111
CSA-C22.2 No. 1010.1:1993

EMC: CISPR 11:1990 / EN 55011:1991 Group 1, Class A
IEC 801-2:1991 / EN 50082-1:1992 4 kV CD, 8 kV AD
IEC 801-3:1984 / EN 50082-1:1992 3 V/m, {1kHz 80% AM, 27-1000 MHz}
IEC 801-4:1988 / EN 50082-1:1992 0.5 kV Sig. Lines, 1kV Power Lines

Supplementary Information:


This product was tested in a typical configuration with Hewlett-Packard test systems.

Colorado Springs, 06/11/97.

John Strathman, Quality Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ / Standards Europe, Herrenberger Strasse 130, D-71034 Boblingen Germany (FAX: +49-7031-14-3143)
Product Regulations

Safety

UL 3111
CSA-C22.2 No.1010.1:1993

EMC

This Product meets the requirement of the European Communities (EC) EMC Directive 89/336/EEC.

Emissions

EN55011/CISPR 11 (ISM, Group 1, Class A equipment)
IEC 555-2 and IEC 555-3

Immunity

EN50082-1  Code  Notes
IEC 801-2 (ESD) 8kV AD  3
IEC 801-3 (Rad.) 3 V/m  3
IEC 801-4 (EFT) 1kV  3

Performance Codes:
1 PASS - Normal operation, no effect.
2 PASS - Temporary degradation, self recoverable.
3 PASS - Temporary degradation, operator intervention required.
4 FAIL - Not recoverable, component damage.

Sound Pressure Level

N/A

Definitions

Installation category (overvoltage category) I: Signal level, special equipment or parts of equipment, telecommunication, electronic etc., with smaller transient overvoltages than installation (overvoltage category) II.

Installation category (overvoltage category) II: Local level, appliances, portable equipment etc., with smaller transient overvoltages than installation category III.

Environmental Conditions

Indoor use only.
Altitude up to 3000 m. (10,000 ft.)

Temperature

Instrument - 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F)
Probes/cables - 0 degrees C to 65 degrees C (32 degrees F to 149 degrees F)

Humidity

Relative humidity 8 to 80% at 40 degrees C (104 degrees F)

Power

CAT II, Pollution degree 2
HP E2485A: ~Line 100-240 volts ± 20%, 50-60 Hz, 40 Watts max.
Safety

This apparatus has been designed and tested in accordance with IEC Publication 1010, Safety Requirements for Measuring Apparatus, and has been supplied in a safe condition. This is a Safety Class I instrument (provided with terminal for protective earthing). Before applying power, verify that the correct safety precautions are taken (see the following warnings). In addition, note the external markings on the instrument that are described under “Safety Symbols.”

Warning

● Before turning on the instrument, you must connect the protective earth terminal of the instrument to the protective conductor of the (mains) power cord. The mains plug shall only be inserted in a socket outlet provided with a protective earth contact. You must not negate the protective action by using an extension cord (power cable) without a protective conductor (grounding). Grounding one conductor of a two-conductor outlet is not sufficient protection.

● Only fuses with the required rated current, voltage, and specified type (normal blow, time delay, etc.) should be used. Do not use repaired fuses or short-circuited fuseholders. To do so could cause a shock or fire hazard.

● Service instructions are for trained service personnel. To avoid dangerous electric shock, do not perform any service unless qualified to do so. Do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.

● If you energize this instrument by an auto transformer (for voltage reduction), make sure the common terminal is connected to the earth terminal of the power source.

● Whenever it is likely that the ground protection is impaired, you must make the instrument inoperative and secure it against any unintended operation.

● Do not operate the instrument in the presence of flammable gasses or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.

● Do not install substitute parts or perform any unauthorized modification to the instrument.

● Capacitors inside the instrument may retain a charge even if the instrument is disconnected from its source of supply.

● Use caution when exposing or handling the CRT. Handling or replacing the CRT shall be done only by qualified maintenance personnel.

Safety Symbols

Instruction manual symbol: the product is marked with this symbol when it is necessary for you to refer to the instruction manual in order to protect against damage to the product.

Hazardous voltage symbol.

Earth terminal symbol: Used to indicate a circuit common connected to grounded chassis.

WARNING

The Warning sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a Warning sign until the indicated conditions are fully understood and met.

CAUTION

The Caution sign denotes a hazard. It calls attention to an operating procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product. Do not proceed beyond a Caution symbol until the indicated conditions are fully understood or met.
Product Warranty
This Hewlett-Packard product has a warranty against defects in material and workmanship for a period of one year from date of shipment. Some newly manufactured HP products may contain remanufactured parts which are equivalent to new in performance. During the warranty period, Hewlett-Packard Company will, at its option, either repair or replace products that prove to be defective.

For warranty service or repair, this product must be returned to a service facility designated by Hewlett-Packard. For products returned to Hewlett-Packard for warranty service, the Buyer shall prepay shipping charges to Hewlett-Packard and Hewlett-Packard shall pay shipping charges to return the product to the Buyer. However, the Buyer shall pay all shipping charges, duties, and taxes for products returned to Hewlett-Packard from another country.

Hewlett-Packard warrants that its software and firmware designated by Hewlett-Packard for use with an instrument will execute its programming instructions when properly installed on that instrument. Hewlett-Packard does not warrant that the operation of the instrument software, or firmware will be uninterrupted or error free.

Limitation of Warranty
The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by the Buyer, Buyer-supplied software or interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation or maintenance.

No other warranty is expressed or implied. Hewlett-Packard specifically disclaims the implied warranties of merchantability or fitness for purpose.

Exclusive Remedies
The remedies provided herein are the Buyer's sole and exclusive remedies. Hewlett-Packard shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory.

Assistance
Product maintenance agreements and other customer assistance agreements are available for Hewlett-Packard products. For any assistance, contact your nearest Hewlett-Packard Sales Office.

Certification
Hewlett-Packard Company certifies that this product met its published specifications at the time of shipment from the factory. Hewlett-Packard further certifies that its calibration measurements are traceable to the United States National Institute of Standards and Technology, to the extent allowed by the Institute's calibration facility, and to the calibration facilities of other International Standards Organization members.

About this edition
This is the second edition of the HP 16600A Series, 16700A, 16702A, and Measurement Modules Installation Guide.

Publication number
16700-97010, May 1999
Printed in USA.

Print history as follows:
16700-97008, Nov, 1998
16700-97010, May 1999

New editions are complete revisions of the manual. Many product updates do not require manual changes; and, conversely, manual corrections may be done without accompanying product changes. Therefore, do not expect a one-to-one correspondence between product updates and manual updates.