Agilent 81250 Parallel Bit Error Ratio Tester

Installation Guide

Agilent Technologies

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Agilent Technologies certifies that this product met its published specifications at the time of shipment. Agilent Technologies further certifies that its calibration measurements are traceable to the United States Institute of Standards and Technology, to the extent allowed by the Institute's calibrating facility, and to the calibration facilities of other International Standards Organization members.

Services and Support

Any adjustment, maintenance, or repair of this product must be performed by qualified personnel. Contact your customer engineer through your local Agilent Technologies Service Center. You can find a list of local service representatives on the Web at:

http://www.agilent.com/Service/English/index.html

Safety Summary

The following general safety precautions must be observed during all phases of operation of this instrument. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument. Agilent Technologies Inc. assumes no liability for the customer's failure to comply with these requirements.

General

This product is a Safety Class 1 instrument (provided with a protective earth terminal). The protective features of this product may be impaired if it is used in a manner not specified in the operation instructions.

All Light Emitting Diodes (LEDs) used in this product are Class 1 LEDs as per IEC 60825-1.

Environmental Conditions

This instrument is intended for indoor use in an installation category II, pollution degree 2 environment. It is designed to operate at a maximum relative humidity of 95% and at altitudes of up to 2000 meters. Refer to the specifications tables for the ac mains voltage requirements and ambient operating temperature range.

Before Applying Power

Verify that the product is set to match the available line voltage, the correct fuse is installed, and all safety precautions are taken. Note the instrument's external markings described under "Safety Symbols" on page 8.

Ground the Instrument

To minimize shock hazard, the instrument chassis and cover must be connected to an electrical protective earth ground. The instrument must be connected to the ac power mains through a grounded power cable, with the ground wire firmly connected to an electrical ground (safety ground) at the power outlet. Any interruption of the protective (grounding) conductor or disconnection of the protective earth terminal will cause a potential shock hazard that could result in personal injury.

Fuses

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 fuse holders. To do so could cause a shock or fire hazard.

Do Not Operate in an Explosive Atmosphere

Do not operate the instrument in the presence of flammable gases or fumes.

Do Not Remove the Instrument Cover

Operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made only by qualified service personnel.

Instruments that appear damaged or defective should be made inoperative and secured against unintended operation until they can be repaired by qualified service personnel.

Parts of the instrument marked with this symbol are subject to damage by static electricity. In order to protect against electrostatic discharge to the instrument use static-free work stations.

Safety Symbols

Caution (refer to accompanying documents)

Protective earth (ground) terminal

In the manuals:

WARNING

Warnings call attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury or loss of life. Do not proceed beyond a Warning until the indicated conditions are fully understood and met.

CAUTION

Cautions call attention to a 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 equipment. Do not proceed beyond a Caution until the indicated conditions are fully understood and met.

Documentation History

All Editions and Updates of this manual and their creation date are listed below. The first Edition of the manual is Edition 1. The Edition number increments by 1 whenever the manual is revised. New Editions are complete revisions of the guide reflecting alterations in the functionality of the instrument. Updates are occasionally made to the guide between editions.

Edition 1, July 2000, related to Agilent E4875A Software Version 1.0 or higher

Literature Number: 81250-91010 Rev. 1.0

Trademarks

On-line Information

Please check the following Internet address on a regular base for additional information or updates:

http://www.agilent.com/find/dvt

Getting Started

This Installation Guide should guide you through a set of steps to identify, install and configure your Agilent 81250 System or any component of this system.

The Agilent 81250 is a modular platform consisting of front-ends, modules, mainframes and user interfaces which can be tailored to your specific test needs and how you want to integrate the Agilent 81250 into your test environment. In general two different fundamental possibilities in configuring the system are provided:

- The Agilent 81250 can be used as a proprietary system means that you cannot combine it with other VXI modules in one system. It can be controlled by a LAN or GPIB interface.

  Typically that system is factory pre-installed and only a small amount of activities is required to get this system up and running.

- The modules of the Agilent 81250 system can be combined with other VXI modules to build an open VXI system.

  Due to the flexibility of that solution a different set of activities must be done to integrate these modules into a new or existing VXI system. In addition during system installation you must take care of the other system components building up your complete test system. Therefore please use the manuals coming with the other system components in addition to this one.

This guide is addressing:

- the installation procedure for both system combinations
- the software installation procedure for not factory pre-installed systems
- required system modifications like adding printers or network connections

As soon as the user interface is running you should switch to on-line help or on-line documentation.

Steps to Get Started

Initial Inspection

When you receive your Agilent 81250 system inspect the container and its contents.

NOTE If the contents are incomplete, if there is mechanical damage or if the instrument does not pass the selftest, notify your nearest Agilent Technology office. Keep the shipping materials for inspection by the carrier. The Agilent office will arrange for repair or replacement without awaiting settlement.

1 Inspect the shipping container and its contents for damage.

If the container or cushioning material is damaged, keep it until the contents of shipment have been checked for completeness and the instrument has been verified both mechanically and electrically.

WARNING To avoid the hazard of electric shock, do not perform electrical tests when there are signs of shipping damage to any of the instrument's outer covers or panels.

2 Check the contents of shipment.

NOTE See the packing list which accompanied your system for exact details.

Determine Your System

Please use the box content list to determine your system configuration, than follow the setting up instructions provided for that system type.

Factory pre-installed as a proprietary system, the Agilent 81250 System has the following major configurations

- Based on the 10-slot mainframe Agilent E4860A, see setup instructions *"Setting up an Agilent 81250 System based on Agilent E4860A Mainframe" on page 10*.
- Based on the mainframe Agilent E4860A and extender frame Agilent E4860A Option 150 (first Extender) or Option 151, see setup instructions *"Setting up an Extended Agilent 81250 System" on page 12*.

  An extended Agilent 81250 system includes up to two Agilent E4860A Expander Frames, each equipped with an MXI/VXI Interface Card Agilent E1482B. Each Expander Frame has 12 free slots.

  The Agilent E4860A mainframe includes also an Agilent E1482A MXI/VXI Interface card, so there are at least 10 free slots.

If the Agilent 81250 System components are ordered to be used in an open VXI system your shipment may contain:

- at least one Agilent E4805B Central Clock Module.
- a number of Agilent E4861A or E4832A Data Generator & Analyzer Modules equipped with the ordered front-ends.
- the Agilent E4875A Agilent 81250 User Software on CD-ROM

  To install modules and User Software into a new or existing test system, see *"Setting up an Open VXI System" on page 21*.

Additional Information

On-line Help

As soon as the Agilent 81250 User Software is installed, you can access on-line help via the HELP buttons or by pressing F1.

On-line Documentation

Via the on-line help system you can also launch several guides stored on your system. These guides are displayed using the Acrobat Reader also coming with this system. You can print the whole guide or just the required part using the Acrobat Reader's printing features:

- The User Guide provides a system introduction and how to use the features and functions.
- The Programming Reference gives an programming overview and a complete reference to SCPI commands for remote control of the instrument.
- The System Specification summarizes the specification for all components available for the Agilent 81250 System.

To verify the warranted performance of this system a Performance Verification Procedure is provide at:

drive:\HP81250\Dsr\Doc\81250_perf_ver.pdf

Use the Acrobat Reader installed on your system to open and view this file.

World Wide Web

For latest information, frequently asked questions and related documentation, please check the following URL:

www.agilent.com/find/dvt

Setting up a Proprietary System

As the Agilent 81250 System is a very modular system which can be tailored to specific application needs, but offers the possibility to be upgraded for future requirements, there are mainly two pre-installed system configurations possible to order.

The initial setup of these Agilent 81250 System configuration is easy because the system is supplied fully hardware and software installed. Only some additional connections to peripherals or to interconnect the frames of an extended system need to be done.

NOTE Large system configurations have higher power consumptions, so please make sure that the overall system power requirements can be satisfied and is present at the place where the system has to be installed.

For the next steps, please select from the following list the system configuration you have ordered and received, then go to the section mentioned and perform the steps to set up the Agilent 81250 System from the components you have received.

The Agilent 81250 System has the following major configurations

- Based on the 10-slot mainframe Agilent E4860A, see setup instructions *"Setting up an Agilent 81250 System based on Agilent E4860A Mainframe" on page 10*.
- Based on the mainframe Agilent E4860A and extender frames, see setup instructions *"Setting up an Extended Agilent 81250 System" on page 12*.

  An extended Agilent 81250 system includes up to two Agilent E4860A Option 150 or Option 151 Expander Frames, each equipped with an MXI/VXI Interface Card Agilent E1482B. Each Expander Frame has 12 free slots.

  The Agilent E4860A mainframe includes also an Agilent E1482A MXI/VXI Interface card, so there are up to 10 free slots.

Setting up an Agilent 81250 System based on Agilent E4860A Mainframe

The E4860A mainframe consists of the 13-slot frame E8403A, an embedded Pentium based two slot controller and Windows NT 4.0, E4875A user software and SICL installed. In addition there is in minimum one Central Clock Module E4805B installed. It is possible to add up to 10 Agilent E4861A or E4832A Data Generator and Analyzer Modules to this systems.

In case more Modules are required you need to set up an extended system with additional Extender frames.

Figure 1 A typical Agilent 81250 System based on Agilent E4860A Mainframe

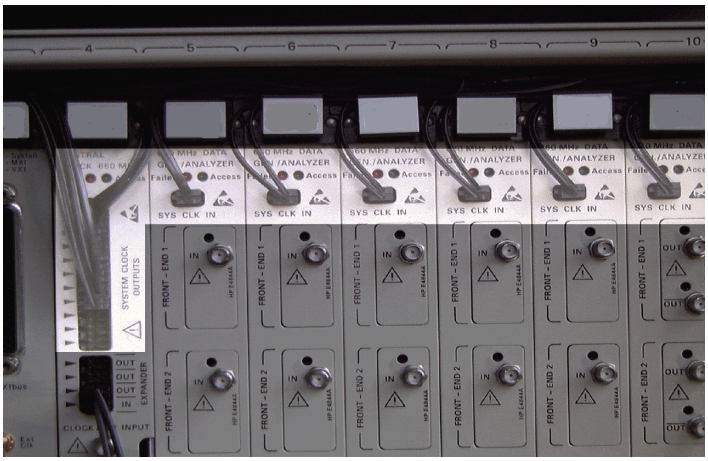
WARNING

The Agilent 81250 System is not designed for outdoor use. Do not expose the Agilent 81250 System to rain or other excessive moisture. Protect the Agilent 81250 System from humidity and temperature changes which could cause condensation within the instrument.

Connecting the clock distribution

Check that all generator/analyzer modules are connected to the clock module by a clock distribution cable, Agilent part number E4805-61601.

Figure 2 Check whether all modules are connected to clock module



Connecting external peripherals

For displaying and data entry with the Agilent E460A based systems the following peripherals are required:

- Super VGA monitor
- Keyboard with PS2 connector.
- Mouse with PS2 connector.

NOTE Monitor, Keyboard and Mouse are not supplied as part of the Agilent 81250 Data Generator and Analyzer System.

Plug these peripherals into the appropriate connectors located on the front of the embedded controller.

Apply AC Line Voltage to the Agilent 81250 System

1 Check that the mainframe is set to the appropriate voltage range, required in your country. The voltage range selector is located at the rear panel. Usually the mainframes leave the factory prepared for the correct voltage range for the country of destination.

2 Connect all mainframes and all peripherals which require line voltage to the ac line voltage. Connect the power cord delivered to the line in connector at the rear panel of the mainframe. Connect the other end of the power cord to an AC Line Voltage outlet which provides the required power.

Next Step After making all the required connections the system can be started, go to *"Starting the System" on page 27*.

Setting up an Extended Agilent 81250 System

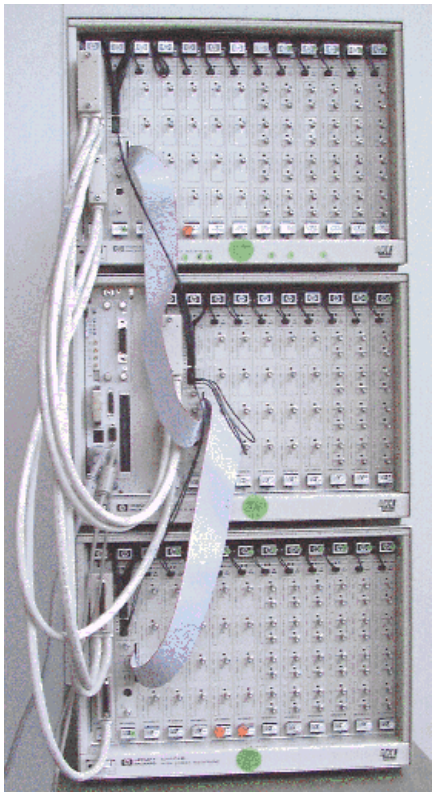
An extended Agilent 81250 System consists of one Agilent E4860A mainframe and up to two Agilent E4860A option 150 or 151 extender mainframes.

The E4860A mainframe consists of the 13-slot frame E8403A, an embedded Pentium based two slot controller and Windows NT 4.0, E4875A user software and SICL installed.

Each of the Agilent E4860A mainframes and Agilent E4860A extender frames contain one Agilent E1482A MXI Interface card and one Agilent E4805B Central Clock module.

So, it is possible to add up to nine Agilent E4861A or E4832A modules in the Agilent E4860A mainframe, and up to eleven Agilent E4861A or E4832A modules in each of the extender frames to this systems.

Figure 3 A typical Extended Agilent 81250 System based on Agilent E4860A Mainframe and two Extender Frames



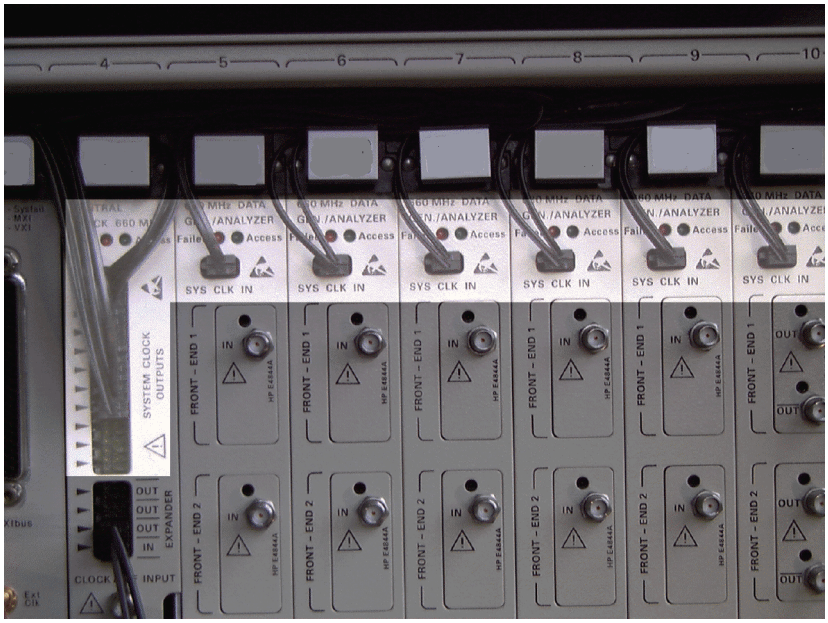
WARNING

The Agilent 81250 System is not designed for outdoor use. Do not expose the Agilent 81250 System to rain or other excessive moisture. Protect the Agilent 81250 System from humidity and temperature changes which could cause condensation within the instrument.

Connecting the clock distribution

Check that all generator/analyzer modules are connected to the clock module by a clock distribution cable, Agilent part number E4805-61601.

Figure 4 Check Clock Cable Connections in all Mainframes



Connecting external peripherals

For displaying and data entry with the Agilent E460A based systems the following peripherals are required:

- Super VGA monitor
- Keyboard with PS2 connector.
- Mouse with PS2 connector.

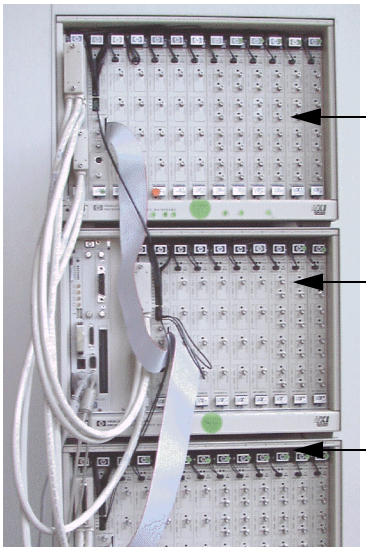
NOTE Monitor, Keyboard and Mouse are not supplied as part of the Agilent 81250 Data Generator and Analyzer System.

Plug these peripherals into the appropriate connectors located on the front of the embedded controller. This controller is located in the E4860A mainframe.

MXI/VXI and INTX Interconnection

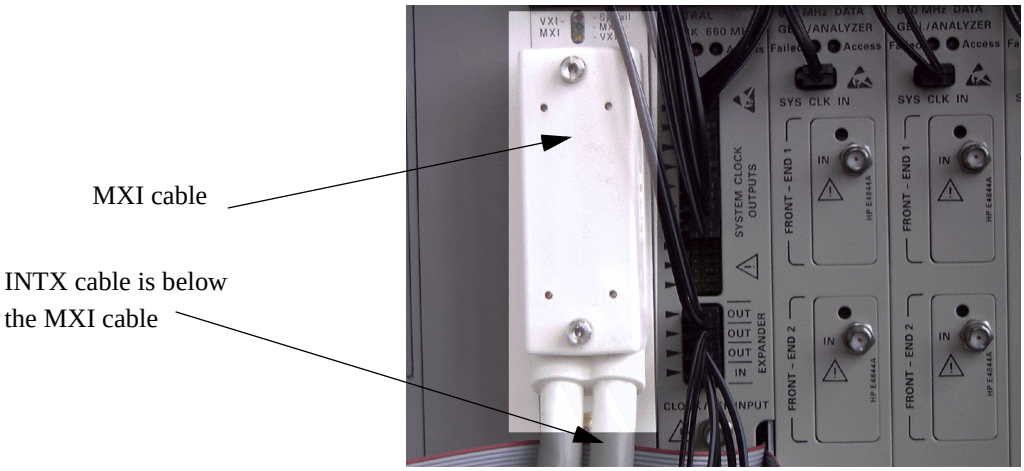
Each of the mainframes is equipped with an Agilent E1482A MXI Interface Card. Use the delivered MXI cables to connect from one Agilent E1482A card in one mainframe to the other Agilent E1482A card in the other mainframe. Up to two additional mainframes can be connected.

Figure 5 Recommended Positioning of Master and Slave Mainframes in a typical Extended Agilent 81250 System based on Agilent E4860A Mainframe and two Extender Frames



1 Connect the MXI and INTX Extender cables' connectors where only single connection can be made to the Agilent E1482A card in the Master mainframe, see Figure.

Figure 6 MXI/VXI Interconnection of the Extended Agilent 81250 System



2 Connect the other end of the MXI and INTX cables coming from the Master mainframe to the Agilent E1482A card in the Extender 1 Mainframe.

Figure 7 MXI/VXI Interconnection of the Extended Agilent 81250 System

3 Connect the second set of MXI and INTX cables on top of the connectors of the cables coming from Master Mainframe, see Figure above.

4 Connect the other end of the second MXI and INTX cable set coming from the Extender 1 to the Agilent E1482A card in the Extender 2 Mainframe, see previous figure.

Clock Reference Interconnection

Tools Required

You need a flat screw driver and a TORX No. 362 screw driver. A TORX screw driver is attached to the shipment.

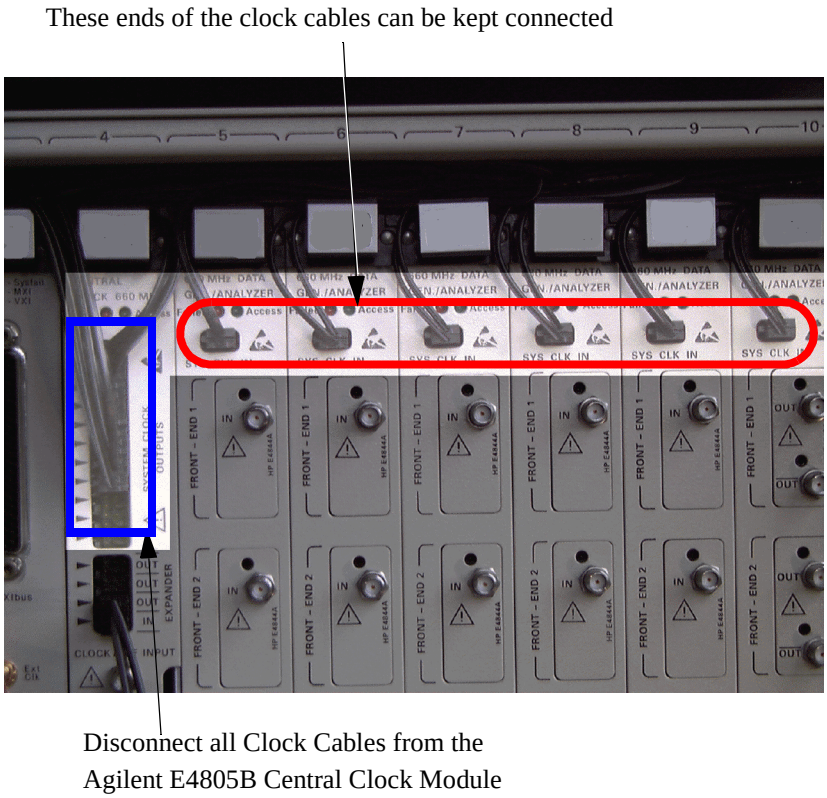
Steps to perform

Each of the mainframes is equipped with an Agilent E4805B Central Clock Module. Use the delivered clock distribution cables (p/n E4805-61601, the cables are already connected to the clock module in the Extender mainframes) to connect from one Agilent E4805B module in one mainframe to the other Agilent E4805B module in the other mainframe. Up to two additional mainframes can be connected.

It is necessary to unplug the Agilent E4805B Central Clock Module from the Master mainframe, open the side panel and connect the flat cable from Extender 1 and Extender 2 into the connectors on the main board of the module.

1 In the Master mainframe, disconnect all clock distribution cables to the Agilent E4861A modules going from the Central Clock module of the Master mainframe.

Figure 8 Disconnect all Clock Distribution Cables from the Clock Module

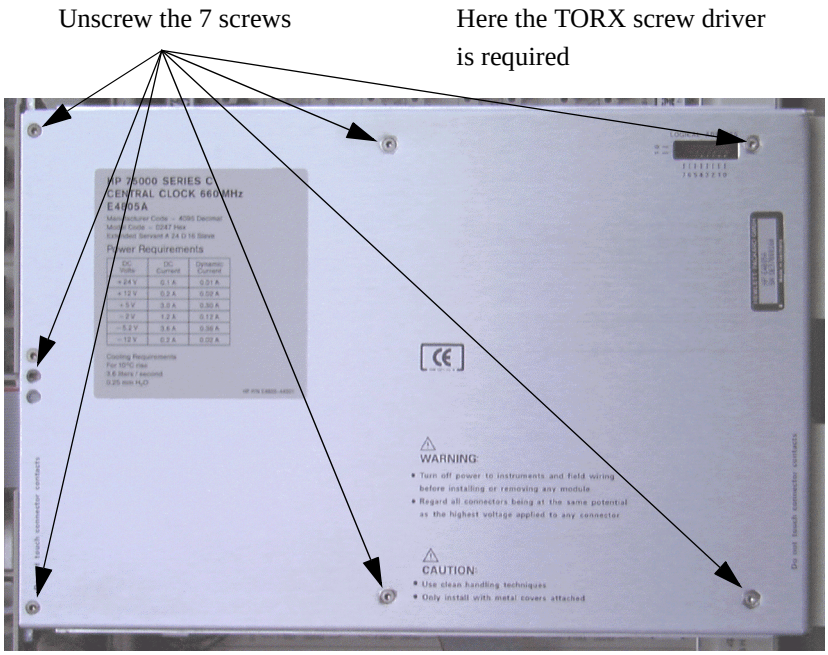


2 Unscrew the two screws, on top and bottom of the front panel of the Agilent E4805B Clock Module, which secure the module to the mainframe. A flat screw driver is required.

3 Remove the Agilent E4805B Clock Module from the Master mainframe.

4 Unscrew the 7 screws securing the side panel of the module. A TORX No. 362 screw driver is required.

Figure 9 Unscrew the 7 screws of the Agilent E4805B Clock Module to open it

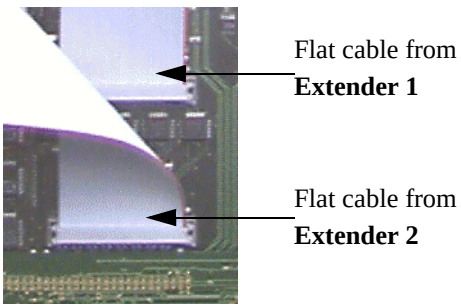


5 Put the opened clock module, with its front panel on top, vertical in front of the racked mainframes

Figure 10 Put the Clock Module in front of the racked mainframes

6 Connect the flat cables from Extender 1 and Extender 2 into the connectors on the main board of the Agilent E4805B Central Clock module which goes into the Master mainframe.

Figure 11 Connect Flat Cables coming from Extender 1 and Extender 2



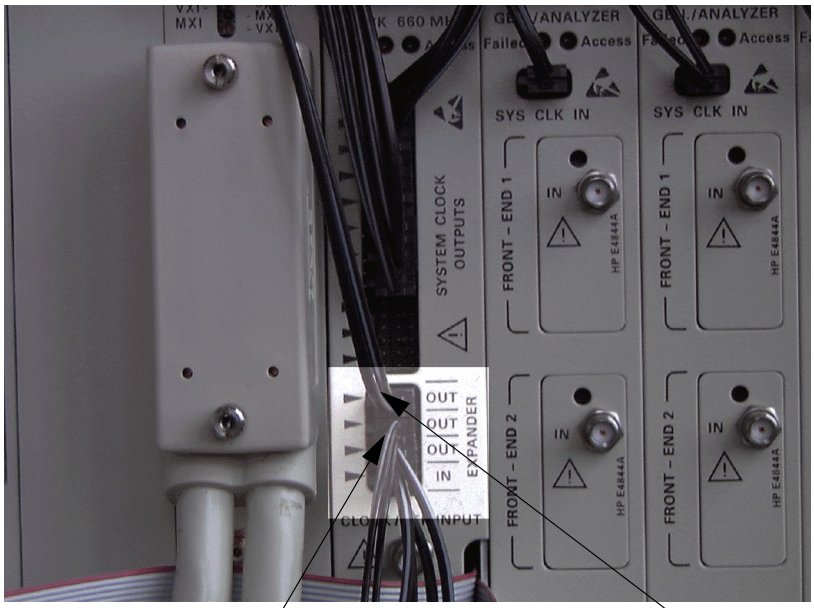
7 Carefully refit the side panel again, start with the middle screw of the three ones which are close to the front panel. These three screws are short ones (5 mm). The other four screws are long ones (14 mm).

8 Plug in the Agilent E4805B Clock module into its place in the Master mainframe.

9 Re-connect all clock cables which go to the Agilent E4861A modules in the Master mainframe.

10 Now connect the two clock distribution cables which go from the Master mainframe's Agilent E4805B Clock Module Extender Connection to Extender 1 and Extender 2 mainframes, see next figure. The clock cable connects to Extender OUT in the Master mainframe and to Extender IN in the Extender mainframes.

Figure 12 Clock Reference Distribution of the Extended Agilent 81250 System



Apply AC Line Voltage to the Agilent 81250 System

1 Check that all mainframes are set to the appropriate voltage range, required in your country. The voltage range selector is located at the rear panel. Usually the mainframes leave the factory prepared for the correct voltage range for the country of destination.

2 Connect all mainframes and all peripherals which require line voltage to the ac line voltage. Connect the power cord delivered to the line in connector at the rear panel of the mainframe. Connect the other end of the power cord to an AC Line Voltage outlet which provides the required power.

Next Step After making all the required connections the system can be started, go to *"Starting the System" on page 27*.

Setting up an Open VXI System

If you are installing the Agilent 81250 System components into an existing or new VXI system maybe together with other modules to build up your own test system, you have to differentiate between:

- an embedded PC VXI system and
- an external PC VXI system

Depending on this main configurations you have different choices of interfaces and where to install the User Software.In both cases this PC needs to run Windows NT 4.0.

Use the System Configuration Overview to identify your system and after that follow the required steps to install hardware and software.

System Configuration Overview

Embedded PC VXI System

In this guide, embedded PC VXI systems are defined to consist of a Windows-based PC installed in slots 0 and 1 of a C-Size VXI mainframe.The interface to the Agilent 81250 modules is the VXI backplane. Peripherals and additional equipment are connected to this embedded PC.

If you are installing the Agilent 81250 modules in such a system, please proceed with *"Installing Agilent 81250 Modules into Embedded PC VXI Systems" on page 23*.

External PC VXI System

In this guide, external PC VXI systems are defined to consist of an external Windows-based PC and an interface between the PC and a VXI mainframe.

If you are installing the Agilent 81250 modules in such a system, please proceed with *"Installing Agilent 81250 Modules into External PC VXI Systems" on page 24*.

Installing Agilent 81250 Modules into Embedded PC VXI Systems

WARNING

During all phases of installation, operation, service or repair of any equipment for any step in this guide, you must follow all safety instructions in the applicable manual or guide.

Install VXI hardware

Install Mainframe(s)

As required, rack mount the mainframe(s) for your VXI system using the procedures in the applicable *Rack Mount Installation Guide*.

1. Install the ground connector (for 66 Hz and above operation ONLY), connect the power cord, and configure each mainframe as required as shown in the applicable Mainframe User/Service Manual.
2. Turn mainframe(s) power ON and observe the power-on sequence (if any) for the mainframe(s). See the applicable Mainframe User/Service Manuals for details.
3. Turn mainframe power OFF. If required, correct hardware errors and retest before installing the PC or any VXI instrument.

Install PC in Mainframe

1. Set any required switches on the PC. Then, install the PC in Slots 0 and 1 of the mainframe. See the applicable PC User's Manual for details. Be sure to observe all ESD precautions when handling, installing and removing the PC.
2. Connect Interface devices, such as monitor, keyboard, mouse, external CD-ROM, etc. to the installed PC. See the applicable PC User's Manual for instructions.

Install Agilent 81250 System Components

The Agilent 81250 System consists of one or multiple modules building the complete system. All modules must be kept together, other VXI modules can be added to the cardcage but must be plugged into adjacent slots of the cardcage.

Please refer to *"Adding a Module" on page 40* for details on how to set VXI Instrument Logical Addresses and how to install the modules.

Configure your PC

1 If not already done so, turn the PC ON and install the application programs you intend to use to program the VXI system, such as Visual C/C++, HP VEE, Visual Basic. etc.

2 Install the applicable I_O Library on the PC, if not already done as part of the HP VEE installation process or an adequate program.The version of the HP I/O Library must be G.xx.xx.xx or higher.

3 Install the Agilent 81250 User Software E4875A on your PC following *"Software Installation and Update" on page 33*.

Installing Agilent 81250 Modules into External PC VXI Systems

WARNING

During all phases of installation, operation, service or repair of any equipment for any step in this guide, you must follow all safety instructions in the applicable manual or guide.

Configure your PC

1 If not already done so, turn the PC ON and install the application programs you intend to use to program the VXI system, such as Visual C/C++, VEE, Visual Basic. etc.

2 Then turn the PC OFF and install required PC I_O cards into your PC. See the applicable PC I_O Card Installation Guide for instructions.

3 Turn the PC ON and verify proper operation of the PC.

4 Connect peripherals to the PC as required.

5 As required, connect the PC to your network. See your System Administrator for connection requirements.

Install VXI Hardware

Install Mainframe(s)

As required, rack mount the mainframe(s) for your VXI system using the procedures in the applicable *Rack Mount Installation Guide*.

1 Install the ground connector (for 66 Hz and above operation ONLY), connect the power cord, and configure each mainframe as required as shown in the applicable Mainframe User/Service Manual.

2 Turn mainframe(s) power ON and observe the power-on sequence (if any) for the mainframe(s). See the applicable Mainframe User/Service Manuals for details.

3 Turn mainframe power OFF. If required, correct hardware errors and retest before installing the PC or any VXI instrument.

Install Slot 0 Card

As Slot 0 Controller Card, you can choose between:

- GP-IB Command Module
- IEEE-1394 PC Link to VXI
- MXI-2 Interface Module

or similar.

Install the VXI Slot 0 Card into your VXI mainframe. See the applicable Slot 0 Controller User's Manual for installation steps.

Install Agilent 81250 System Components

The Agilent 81250 System consists of one or multiple modules building the complete system. All modules must be kept together, other VXI modules can be added to the cardcage but must be plugged into adjacent slots of the cardcage.

Please refer to *"Adding a Module" on page 40* for details on how to set VXI Instrument Logical Addresses and how to install the modules.

Connect Interface Cable

Connect one end of the interface cable to the PC I_O card you installed during configuring your PC. Connect the other end of the cable to the Slot 0 Controller card.

If you have GP-IB Rack & Stack equipment in your system, you can also connect the GP-IB cable to the Rack & Stack instruments.

Install Libraries and User Software

1 Install the applicable I_O Library on the PC, if not already done as part of the VEE installation process or an adequate program.The version of the I/O Library must be G.xx.xx.xx or higher.

2 Install the Agilent 81250 User Software E4875A on your PC following *"Software Installation and Update" on page 33*.

Starting the System

1. Switch ON all peripherals connected to the mainframe and if applicable Extenter mainframes
2. Switch ON the mainframe itself

   Configured as a proprietary Agilent 81250 system, the Windows NT automatic log-in script is enabled. After power on, you are automatically registered as user DVT and the Windows desktop appears.

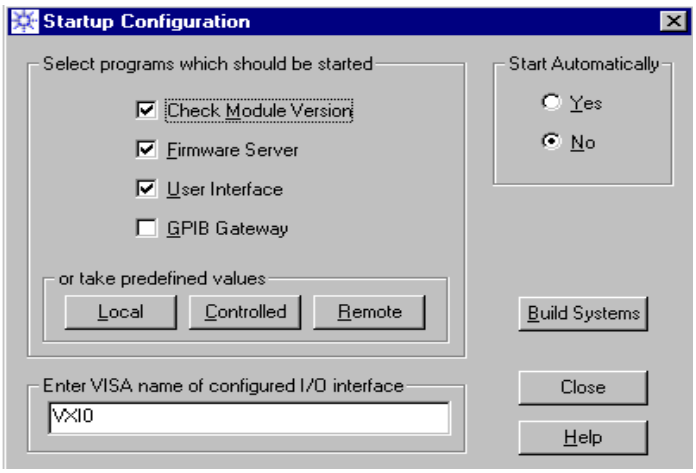
   Configured as a open Agilent 81250 system you have to login as user or administrator defined for your Windows NT operating system.
3. Select the System Operating Mode

   Depending on the operating modes LOCAL, CONTROLLED or REMOTE you can define which software components need to be started.See *"Select the System Operating Mode" on page 28*.
4. Start the system in a chosen operating mode.See *"How to Start the Agilent 81250 User Software" on page 30*.
5. Verify your system

Select the System Operating Mode

After installation of the HP E4873A User Software the Agilent 81250 Configuration screen pops up automatically. In other cases it can be opened with double-click the “Agilent 81250 Config” icon on the Windows desktop.

Figure 13 Agilent 81250 Configuration Window



The Agilent 81250 software can be run in one of three modes. Selecting one of these modes automatically selects the recommended programs required for that mode.

- Local:

  Used, if the hardware shall be controlled and the system operated from the same embedded computer. The Agilent 81250 server and user interface are started.

  Also needed, if the system is controlled via an IEEE-1394 or MXI-2 interface by an external PC.

- Controlled:

  Used, if the hardware shall be controlled but the system shall not be operated from the built-in computer. The system can then be operated via GP-IB or LAN. The Agilent 81250 server is started.

- Remote:

  Used to operate a system which is in controlled mode remotely. The Agilent 81250 user interface is started.

Changing this predefined values is recommended for experienced users only:

- Check Module Version

  If activated, the firmware located on hardware modules is checked for consistency with the current used User Software during power up. In case of inconsistency a BIOS update program is activated to guide you through the procedure. Field should be deactivated if the User Software is used in off-line mode or remotely.

- Firmware Server

  Must be activated on the machine controlling the hardware, because it build the connection between hardware modules and interfaces.

- User Interface provides the user access

- GPIB Gateway

  If you intend to start the system in controlled mode and operate it via GPIB, you must enable the GP-IB Gateway.

  If you intend to start the system in controlled mode and operate it via LAN, you can disable the GP-IB Gateway.

Select Auto Start Option

Start Automatically If “Yes” is activated the User Software starts automatically after logon. This can be useful for a controlled system where you don't have to care about display properties. The setting takes effect as soon as the DVT user logs in.

Build your System

Build Systems Checks the available modules and creates new configuration files dvtsys txt and dvtits.txt. The present files are saved as dvtsys.bak and dvtits.bak.

NOTE Executing Build System twice will overwrite your backup files.

The default generated system name is DSRA. If the mainframe contains more than one master clock module, additional systems (DSRB, DSRC,...) are automatically set up.

Build System must be processed due to any change in your hardware.

Build System is not needed if you are upgrading from a previous User Software version without changing hardware.

Define your I/O Interface

Enter the VISA name according to your chosen VXI I/O configuration.

Please refer to “Start”–> “HP I_O Libraries”–> “I/O Config” to find the appropriate VISA name for your configured interfaces.

Typically the VISA name for a VXI interface is VXI0, for a GP-IB interface it is GPIB0.

If you are upgrading from a previous User Software version, you need to enter the interface name you have used before to ensure that you can still run existing programs after the upgrade. Please refer to the file dvtits.txt to find your previously used interface name.

How to Start the Agilent 81250 User Software

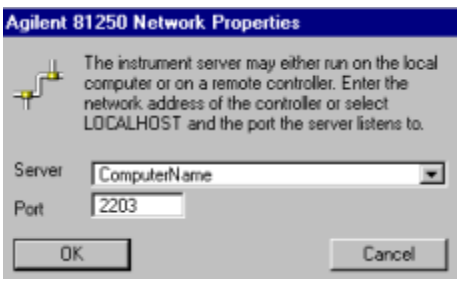
Double-click the Agilent 81250 User Software icon on the Windows desktop to start the User Software in the mode defined in the Agilent 81250 Configuration Window, which could be Local, Controlled or Remote.

In Local Mode the user interface windows will appear on your display.

In Controlled Mode the firmware server and gateways will be started assuming the user interface to be on a different computer.

If the system is started in Remote Mode, a screen pops up asking for hostname and network port number.

Figure 14 Agilent 81250 Start in Remote Mode



Enter the computer name or the IP and the associated port of the instrument controller you would like to connect to. You will find the appropriate setting on the controlled machine by opening the Agilent 81250 DVT Server located on the task bar.

Getting Help

For context-sensitive help press Fl, the help button on the window or the button shown here in the margin column.

The Help menu is supposed to be self-explanatory. You can also start with the table of contents or search from the alphabetical index.

How to Test your System

The System menu has functions for testing the systems integrity. These tests can be performed at any time, as long as no test is running. It is highly recommended to execute these test after changing the hardware components or after software upgrades.

Note that the optional Diagnostics software package provides additional tests which in case of problems can identify defective field replaceable units.

System Self-test Provides a window, from which the complete self-test or subsets can be started. Ensures that all modules respond. Returns the current firmware revisions of the modules and the identification numbers of installed front-ends.

Module Self-test Enables you to check all or single modules. Checks the front-ends built into the modules and may take a minute.

Power On Test Is automatically performed at power on. Checks all modules. The result of this test can be reviewed.

BIOS Revisions Returns the current firmware revisions of the modules.

Software Installation and Update

Factory pre-installed systems based on the Agilent E4840A mainframe have the Agilent E4875A User Software already installed.

You should follow this procedure

- if you are upgrading from a previous version

  or

- if the Agilent 81250 System User Software Agilent E4875A needs to be installed on an other system than mentioned above.

Installing/Updating the Agilent E4875A User Software

Prerequisites

- CD-ROM drive
- HP I/O Libraries for Instrument Control Revision G or higher
- Agilent 81250 User Software
- Windows NT 4.0 as the Operating system
- TCP/IP Network Protocol must be enabled

Installation Procedure

1. Prepare system for software update

Power down and switch off the system.

Connect the CD-ROM drive to the appropriate SCSI connector of the controller.

Make sure you have selected a free SCSI ID number, ID=3 is recommended.

Switch on the CD-ROM, after that switch on the system and wait until the boot is finished.

2. Login as administrator

Under *Start – Shut Down* select *Close all programs and logon as a different user?*.

Click on the *Yes* button and immediately afterwards the *SHIFT* key and keep it down until the logon window appears.

Change the user to Administrator and enter the administrator password DVTADM (factory default).

3. Check the status of your HP I/O Library

Execute *Start – Programs – HP I_O Libraries – I_O Config*. After the I/O Config Application appears, select in the upper main window *Help – About I/O Config*.

The version shown must be G.xx.xx.xx or higher. If that is the case no update is required and you should proceed with step 7.

4. Uninstall the existing HP I/O Library

Go to *Start – Settings – Control Panel – Add/Remove Programs* and select HP E4801/E4806 I/O Library.Press add/remove and confirm dialog. Select HP I/O Libraries and press add/remove and confirm dialog.

Double check within the Windows NT explorer that the complete directory *Siclnt* or *Sicl* is removed from your C: drive. If that is not true, delete any remaining part.

5. Install the new HP I/O Library

Insert the HP I/O Library CD into your CD-ROM drive and follow the instructions on the cover.

Check the box *Install HP 8491 VXI Components* only, if you have installed an IEEE-1394 to VXI interface. Disable *Configure interface* and enable *No, I will restart my computer later*, because additional software needs to be installed.

6. Configure the HP I/O Library

Reboot the system and login as administrator.

Go to *Start – Programs – HP I_O Libraries – I_O Config*.

Select E4801A/E4806A if shown in the selection list, press *Configure* and accept all defaults. Finish this step with OK.

If your system is equipped with an E623xA Controller, select HP-22/EXM-22 HPIB. Otherwise select HP 82340/82341 HP-IB and press Configure.

Set the following values:

- SICL Interface Name = hpib or any preferred name
- Bus Address = 11
- Deactivate System Controller if system should be controlled via GPIB by another controller.

Finish Interface Configuration with OK.

7. Install the Agilent 81250 User Software

Insert the Agilent 81250 User Software CD into the CD-ROM drive. Execute CD:\setup.exe and follow the instructions on screen.

A Microsoft Internet Explorer is required for on-line help. The installation procedure checks your system for an appropriate version and suggests installing an Internet Explorer if that isn't the case. Please follow the instructions on screen, reboot the system when it is requested and logon as administrator again to finalize the installation.

Verify your display properties:

Start – Settings – Control Panel – Display – Settings.

Your setting should be:

- Color Palette = 65536 Colors
- Font Size = Small Fonts

When the installation is completely done, reboot your system again.

8. First Login

If you are using a Agilent E4860A System you can login as administrator or as user 'dvt' with password 'DVT'. The user 'dvt' is factory default.

NOTE The administrator password DVTADM is set from the factory. When the Agilent 81250 System will be connected to the local network it is highly recommended to change this password.

After logging in the first time the Agilent 81250 Configuration window pops up which allows defining your preferred operating mode.

If the Agilent 81250 Application should start automatically after logon enable *Yes* in the *Start Automatically* field.

Start the application by pressing the Agilent 81250 User Software Icon.

For more details on how to configure your system for first time usage please refer to *"Starting the System" on page 27*.

Using a different Controller

If you are using the Agilent 81250 modules in a VXI system controlled by a non-Agilent controller, make sure that you have installed the appropriate I/O library for this controller. Please use the documentation coming with this controller.

Standalone or Connecting to the LAN

Please contact your network administrator for the necessary information, if you are connecting the system to your local area network.

If the system is not connected to the LAN make sure that the network is configured as follow:

IP Address:	192.000.000.001
Subnet Mask:	255.255.255.0
Default Gateway:	none
Domain:	standalone

Updating the Firmware (BIOS)

If you have upgraded from a previous version, the new Agilent E4875A User Software may be incompatible with the firmware version installed in your modules.

Starting the Agilent E4875A User Software checks whether a firmware update is necessary as long as this check is activated. Starting the User Software the first time after an update automatically launches the Agilent 81250 Start-up Window. Please make sure, that the *Check Module Version* option is activated to ensure an automatic version test each time you are starting the system.

If a version conflict is detected a window pops up letting you know that a firmware update is highly recommended. Please press the OK button.

After the firmware update it proceeds with starting the new application software.

NOTE For downgrading the BIOS to be used with a previous User Software version refer to the Agilent 81250 Support page on the web.

Next Step You will find more details on how to select the different configuration possibilities in *"Starting the System" on page 27*.

Modify Your System

This chapter describes the following procedures:

Adding a Module

All modules available are one-slot, C-sized VXI modules to be plugged into a VXI mainframe.

Installing the module requires the following steps:

- Shutdown the Agilent 81250 System
- Select a mainframe slot.
- Set the VXI instrument logical address.
- Install the instrument in the mainframe.
- Build the new system
- Deskew the module

The first step to install the VXI instrument is to select a free slot in the VXI mainframe.

When you have selected a slot, enter the instrument model number, name, and serial number for the instrument in the VXI Mainframe Overview table. You should maintain such a table for each mainframe in order to keep track of the installed instruments.

Slot	Model Number	Instrument Name	Logical Address	Serial Number
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

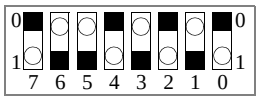
Setting the VXI Instrument Logical Address

When you have selected the slot for the VXI instrument, the next step is to set the instrument logical address (LADDR) as required. In general, you can use the factory-set (default) logical address.

If you need to set another logical address, use the following guidelines.

The logical address for each VXI instrument is set by the Logical Address (LADDR) switch on the instrument. The logical address value is the sum of the values of the logical address switches set to the closed position.

The following figure shows an example:



Address Switches set to 106

After setting the address switches, record the logical address in the VXI Mainframe Overview table.

Installing the Instrument in the Mainframe

After setting the logical address as required, you can now install the instrument in the mainframe.

1. Turn mainframe power off.
2. Install the instrument in the slot you previously identified.

   Make sure, that the Agilent E4805B Central Clock Module is at the leftmost position.

   Make sure, that no VXI Module other than Agilent 81250 System Components are installed in between this set of modules building the system.
3. Secure the module to the mainframe with the two retaining screws on top and bottom of the front panel.
4. Connect Clock Distribution Cable

Build the new System

After powering up the system, open the Agilent 81250 Start-up Window and press the *Build System* button. A diagnostic tool will be started which automatically updates your system configuration files. If that step is not done, the User Software will not recognize new modules.

Deskew the Module

After installing new modules or after replacement of front-ends a Zero Adjust procedure has to be performed to synchronize the outputs or inputs of the new module to the existing ones. Please refer to the chapter *"Using Auxiliary Functions"* in the User Guide located on your system or just use the on-line help system.

Removing Modules

Removing a module is the reverse procedure of adding a module

1 Shutdown the Agilent 81250 System

2 Remove the two screws on the top and bottom of the front panel.

3 Press the upper release to the top, and the lower release to the bottom and pull out the module from the slot.

Build the new System

After powering up the system, open the Agilent 81250 Start-up Window and press the “Build System” button. A diagnostic tool will be started which automatically updates your system configuration files. If that step is not done, the User Software will not recognize that a modules is being removed.

Adding the Trigger Input Pod

If you have ordered the 8-line Trigger Input Pod E4805A/B Option 002 separately, you need to install it into the Agilent 81250 System.

Prerequisites

Prerequisites for this installation are:

- an Agilent E4805AB Central Clock Module
- the Agilent E4875A User Software Revision 1.0 or higher
- a flat screw driver and a TORX No.362 screw driver

Installing the Trigger Input Pod

To connect the Trigger input pod, it is necessary to unplug the E4805B module from the mainframe, to open the module and to plug the pod cable into the board.

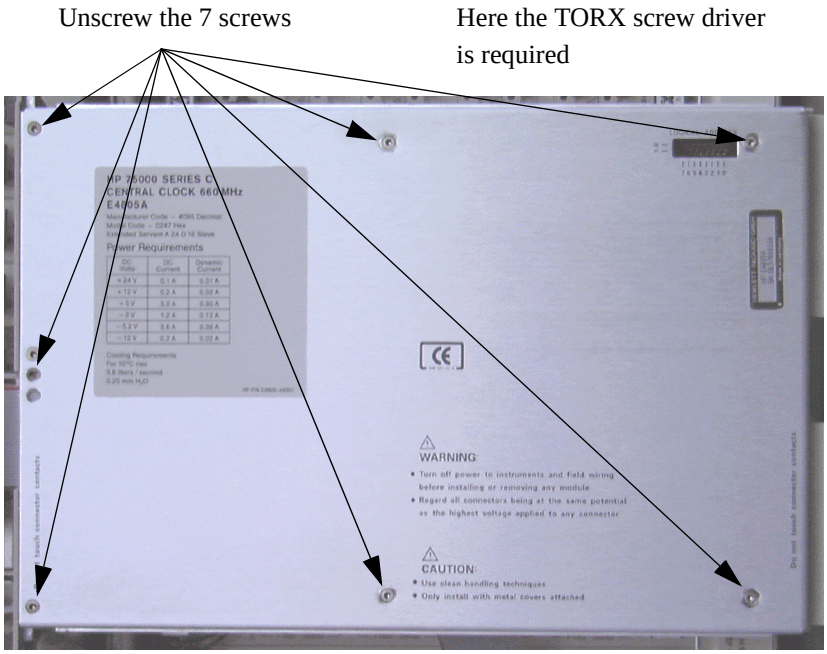
1 Switch off the system and disconnect the power cord

2 Disconnect all cables from the E4805B Central Clock Module. If necessary, mark the cables to make it easier to re-connect the cables into the right position

3 Remove the E4805B Central Clock Module from the mainframe

4 Unscrew the 7 screws to open the side panel of the module using a TORX screw driver

Figure 15 Open the Agilent E4805B Central Clock Module



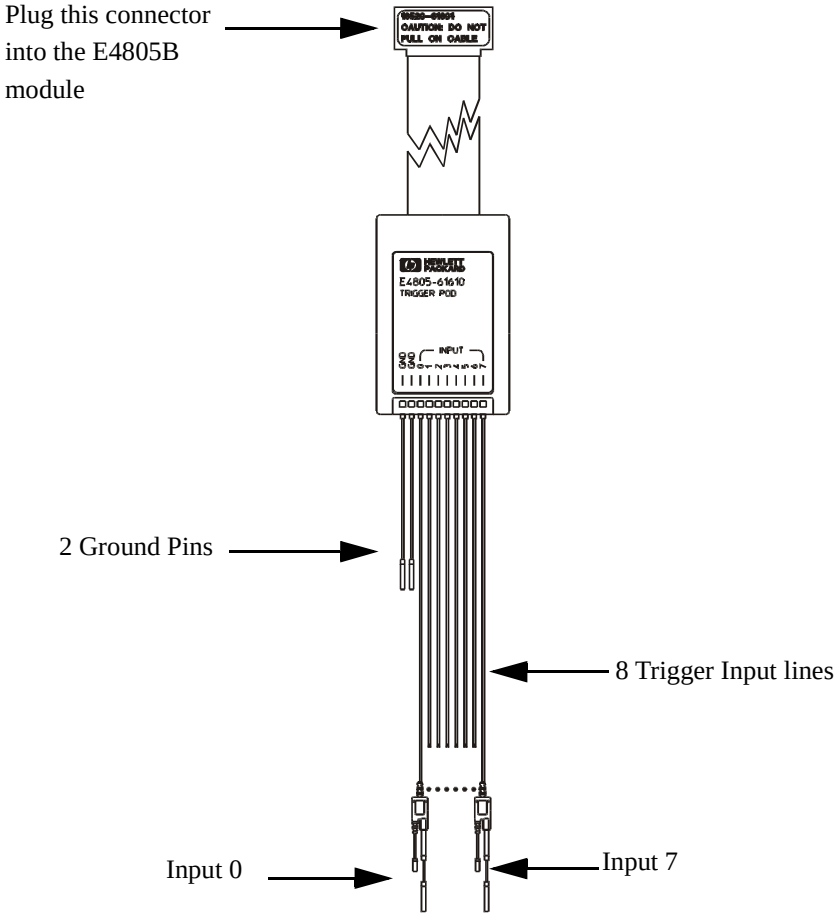
5 Plug the connector attached to the ribbon cable into the appropriate 16-pin socket on the E4805B board

6 Carefully refit the side panel. Start with the three screws located nearby the front panel, which are the shorter ones

7 Plug the module into the mainframe again and fasten the module

8 Re-connect all cables disconnected during step 2

Figure 16 Trigger Input Pod



Replacement Call the Agilent support if you need additional probe leads. The required part number is16520-62102.

You need to remove the leads from the probe adapter header before plugging them into the pod housing.

Connecting the Agilent 81250 to LAN

The Agilent 81250 System controller provides an Ethernet Interface.

NOTE Connecting the Agilent 81250 System to LAN can only be done with administrator privileges.

Receiving Administrator Privileges

The Agilent 81250 System has the Windows NT auto-logon and auto-start feature set. So, whenever the Agilent 81250 System is switched on it automatically logs on as user “DVT” and starts automatically the user software of the Agilent 81250 System.

To logon as a different user, especially as Administrator, the following steps have to be performed.

1 Close the Agilent 81250 System’s user software.

2 Click the **Start** button, point to **Shut Down**, and select the **Close all programs and log on as a different user** in the **Shut Down Window**.

3 Now hold down the Shift key and keep it pressed until the new logon dialog box appears.

4 Click on the **Yes** button in the **Shut Down Window**.

5 When the new logon dialog box is displayed you can release the Shift key again.

6 In the new logon dialog box type in *Administrator* as the User name. Enter as Password *DVTADM*. The password is case sensitive, so type it in as shown.

NOTE When you switch on the Agilent 81250 System the next time you will get an error dialog, stating that the password was not typed correctly. This is due to the Windows NT feature to logon as the last known user, e.g. “Administrator”. As the auto-logon is set, also, the password for the “DVT” user is used, as this is not the correct password for the “Administrator” an error dialog is displayed.

To come across this error state, you only have to close the error dialog and enter the user “DVT” and the password “DVT” in the logon dialog box, then click the OK button.

NOTE All passwords used in this chapter are the factory set default passwords. It is recommended to change these passwords. If the passwords are changed, it is important to remember them as they have to be used for future support tasks or software updates.

Configuring the Agilent 81250 System for LAN Connection

Connect a network cable with a 10base-T connector to the Agilent 81250 System.

The Windows NT 4.0 operating system in the Agilent 81250 System is configured to support the following network protocols:

- TCP/IP
- NetBIOS

The Agilent 81250 System is shipped with default settings of the network parameters, which are:

- IP Address: 192.0.0.1
- Subnet Mask: 255.255.255.0
- Default Gateway: none
- Domain: standalone

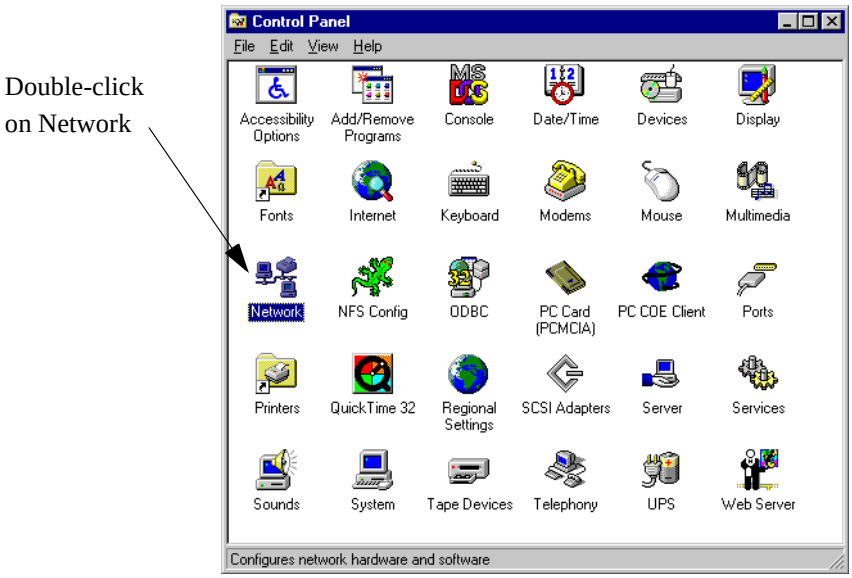
You have to collect the necessary information you require in your network. Please ask your local system or network administrator for help.

When you have collected all the data, please follow the following steps:

1 Click *Start* button, point to *Settings*, and then click on *Control Panel*.

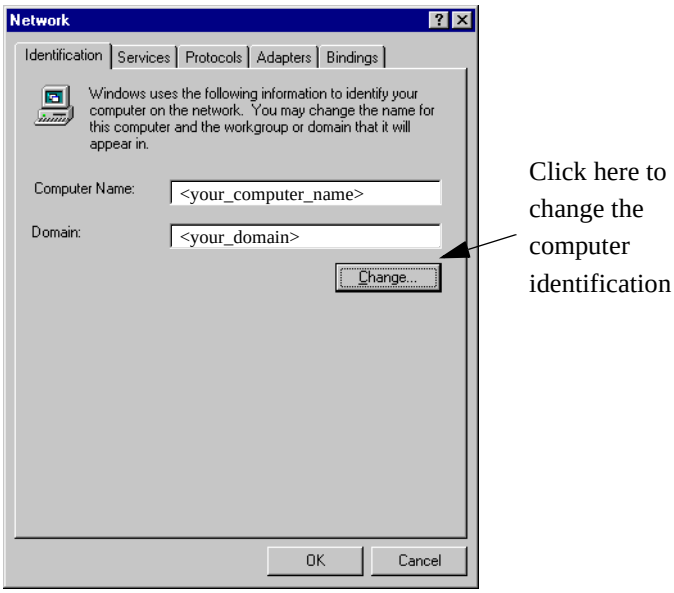
2 Double-click on *Network*.

Figure 17 Open Control Panel



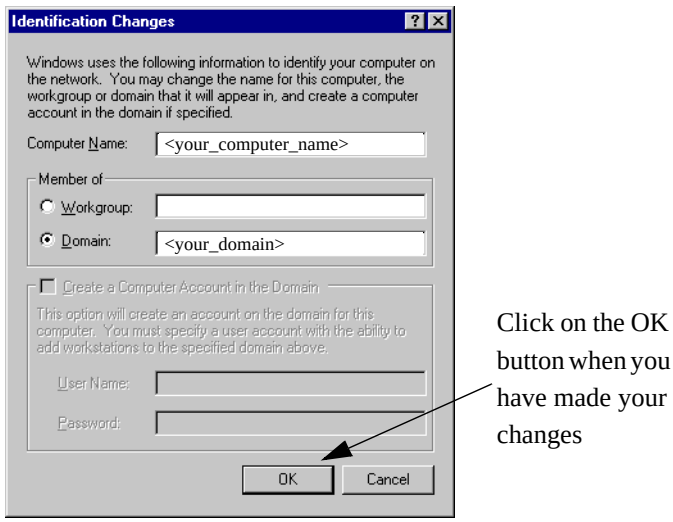
3 To change the default Computer Name, Workgroup and Domain on the Identification card click on the *Change* button.

Figure 18 Change Identification



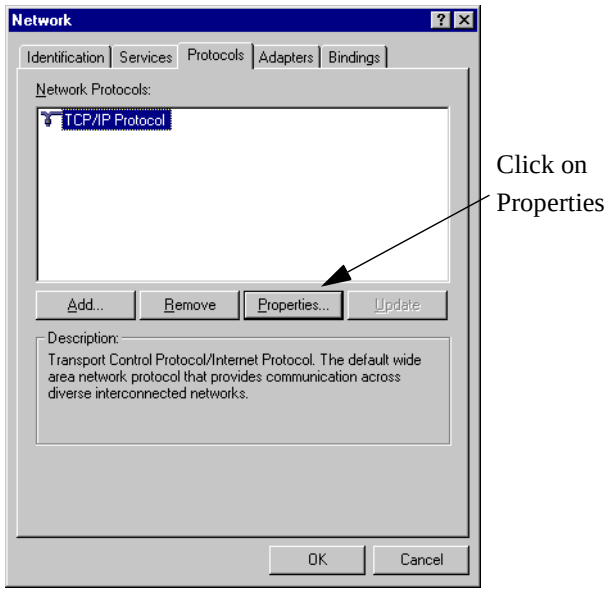
4 The Identification Changes window appears. Make the necessary changes and click *OK*.

Figure 19 Make your changes



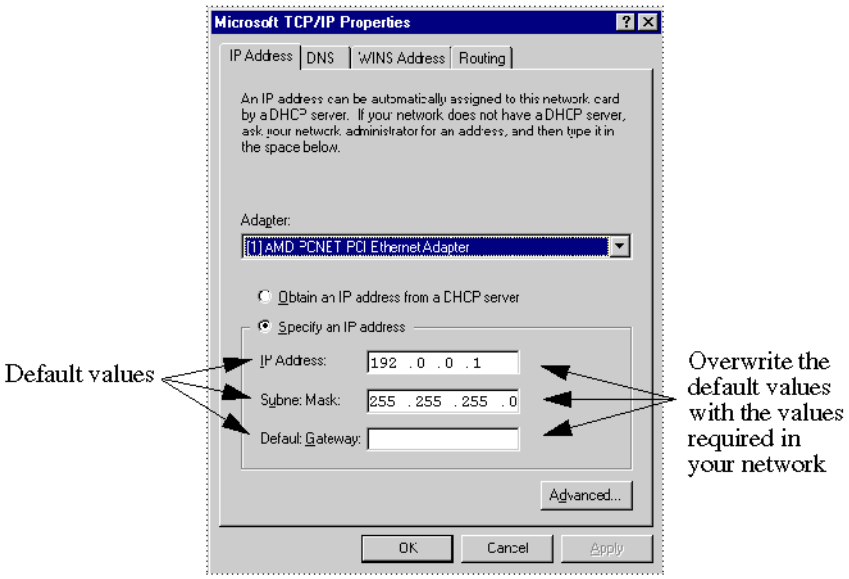
5 Select the Protocol card and click on the Properties button to make the necessary changes to IP Address, Subnet Mask and Default Gateway.

Figure 20 Protocol Card



6 Make the necessary changes to the TCP/IP Properties and click the OK button.

Figure 21 Make your changes to the TCP/IP Properties



7 You have made all necessary changes and entries. Click as often OK button to leave the Network setup. Then click the  button in the upper right-hand side corner of the Control Panel.

Appendix: Declaration of Conformity

DECLARATION OF CONFORMITY

According to ISO/IEC Guide 22 and CEN/CENELEC EN 45014

Manufacturer's Name: Agilent Technologies Deutschland GmbH
Manufacturer's Address: Boeblingen Verifications Solutions (BVS)
Herrenberger Str. 130
D-71034 Boeblingen

Declares, that the product system

System Name:	Parallel Bit Error Ratio Tester	
System Number:	81250	With products
Product Names:	E8403A	VXI Mainframe, 13 slots
	E4805B	667 MHz Central Clock Module
	E4832A	667 MHz Generator/Analyzer Module
	E4861A	2.67 Gb/s Generator/Analyzer Module
	E4835A	2 Differential Analyzer Front-Ends, 667 Msa/s
	E4838A	Differential Generator Front-End, 667 MHz
	E4843A	Differential Generator Front-End, 667 MHz
	E4862A	Generator Front-End 2.67 Gb/s
	E4863A	Analyzer Front-End 2.67 Gb/s
	E4864A	Generator Front-End 1.33 Gb/s
	E4865A	Analyzer Front-End 1.33 Gb/s
	E4875A	User Software

Conforms with the following product standards:

	Standard	Limit
EMC	IEC 61326-1:1997+A1:1998 / EN 61326-1:1997+A1:1998	
	CISPR 11:1990 / EN 55011:1991	Group 1 Class A [1]
	IEC 61000-4-2:1995+A1:1998 / EN 61000-4-2:1995	4kV CD, 8kV AD
	IEC 61000-4-3:1995 / EN 61000-4-3:1995	3 V/m, 80-1000 MHz
	IEC 61000-4-4:1995 / EN 61000-4-4:1995	0.5kV signal lines, 1kV power lines
	IEC 61000-4-5:1995 / EN 61000-4-5:1995	0.5 kV line-line, 1 kV line-ground
	IEC 61000-4-6:1996 / EN 61000-4-6:1996	3V, 0.15-80 MHz
	IEC 61000-4-11:1994 / EN 61000-4-11:1994	I cycle, 100%
	Canada: ICES-001:1998	
Safety	IEC 61010-1:1990+A1:1992+A2:1995 / EN 61010-1:1994+A2:1995	
	Canada: CSA C22.2 No. 1010.1:1992	

Conformity / Supplemental Information:

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC (including 93/68/EEC) and carries the CE Marking accordingly (European Union).

[1] The products were tested in a typical configuration with Agilent Technologies test systems.

2000-July-05
Date

Hans-Martin Fischer
Name

Product Regulations Engineer
Title

For further information, please contact your local Agilent Technologies sales office, agent or distributor.

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