Agilent B1500A
Semiconductor Device Analyzer

Manual Supplement for EasyEXPERT A.02.10

Agilent Technologies

In This Document

This document provides the additional information for the Agilent B1500A User's Guide, Edition 3 which supports the EasyEXPERT revision A.02.00, and contains the following sections. The description supports the EasyEXPERT revision A.02.10.

• "C-V Sweep Measurement Setup Screen"

This is the additional information to "C-V Sweep" in Chapter 5 Classic Test Definition.

• "Desktop EasyEXPERT"

This is the complete replacement with "Desktop EasyEXPERT" in Chapter 7 Function Details.

C-V Sweep Measurement Setup Screen

The following buttons are available for the C-V Sweep Measurement Setup screen of the EasyEXPERT revision A.02.10.

Range　　This button opens a window used to set the measurement ranging operation. See "CMU Range Setup Window".

Advanced　　This button opens a window used to set the other functions of the MFCMU (multi frequency capacitance measurement unit). See "Advanced Setup Window for C-V Sweep".

CMU Range Setup Window

This window is opened by clicking the Range button on the C-V Sweep Measurement Setup screen, and is used to set the measurement ranging operation.

Unit　　Module (MFCMU) used for the measurement

Mode　　Ranging mode, AUTO (auto ranging) or FIXED (fixed range). If Mode=AUTO, the MFCMU automatically searches for and measures at the range that provides the best resolution. If Mode=FIXED, the MFCMU measures at the range specified by the Range field.

Range　　Measurement range. This field is effective when Mode=FIXED. Available measurement ranges depend on the measurement frequency setting. See Table 1.

Table 1　　**Available Measurement Ranges**

Frequency	Available measurement ranges
≤ 200 kHz	50 Ω, 100 Ω, 300 Ω, 1 kΩ, 3 kΩ, 10 kΩ, 30 kΩ, 100 kΩ, 300 kΩ
≤ 2 MHz	50 Ω, 100 Ω, 300 Ω, 1 kΩ, 3 kΩ, 10 kΩ, 30 kΩ
≤ 5 MHz	50 Ω, 100 Ω, 300 Ω, 1 kΩ, 3 kΩ

Advanced Setup Window for C-V Sweep

This window is opened by clicking the Advanced button on the C-V Sweep Measurement Setup screen, and is used to set the following functions of the MFCMU.

AC Level/DC Bias Monitor Settings

This area defines the variables for the AC level data and the DC bias data monitored by the MFCMU while the capacitance measurement is performed.

Unit	Module (MFCMU) used for the measurement
AC Level Monitor Name	Variable name of the AC level monitor data
DC Bias Monitor Name	Variable name of the DC bias monitor data

After Measurement Settings

This area sets the bias hold function used to keep the source output after measurement. The source module applies the specified bias between a measurement and the next measurement performed in the repeat measurement or quick test. See "Bias Hold Function", Chapter 7 Function Details.

Bias Hold after Measurement	Bias hold function ON or OFF
Output Value after Measurement	Source output value after measurement
	START (sweep start value) or STOP (sweep stop value)

Desktop EasyEXPERT

The Desktop EasyEXPERT software CD-ROM is included with Agilent B1500A. This section describes the following topics.
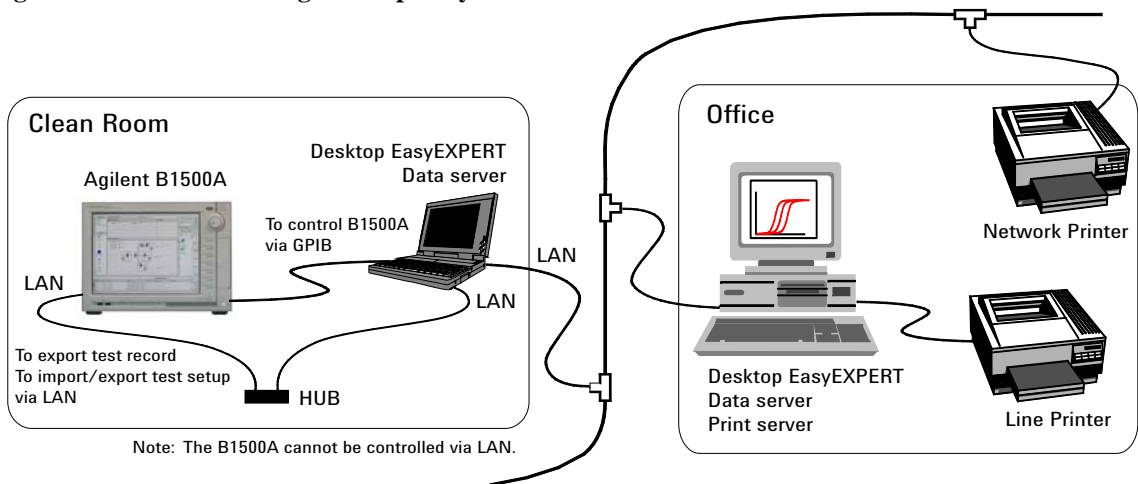
• "About Desktop EasyEXPERT"

• "System Requirements"

• "To Install Desktop EasyEXPERT"

• "To Change Execution Mode and GPIB Settings"

• "To Move the EasyEXPERT Database"

• "Before Starting Desktop EasyEXPERT"

• "To Start Desktop EasyEXPERT"

• "Start EasyEXPERT window"

• "Execution Mode dialog box"

• "EasyEXPERT Database dialog box"

About Desktop EasyEXPERT

The Desktop EasyEXPERT software provides the following additional advantages to the B1500A, allowing you to minimize the amount of offline tasks performed on B1500A and increase the working ratio for measurements.

- Allows B1500A to be controlled from an external computer via GPIB while online.

- Allows test setup to be created on an external computer while offline.

- Allows data analysis to be performed on an external computer while offline.

Figure 1   Using Desktop EasyEXPERT

NOTE   Desktop EasyEXPERT supports most B1500A/EasyEXPERT functions. However, some functions are not supported on an external computers due to differences in hardware and so on.

System Requirements

The following are the minimum requirement for executing Desktop EasyEXPERT.

- Processor: Intel Celeron 2 GHz

- Memory: 512 MByte DDR266

- Display: XGA 1024×768. SXGA 1280×1024 is recommended.

- Hard disk drive: 1 GB free space in the C drive, 10 GB (30 GB recommended) free space in a drive for test setup/result data storage.

- GPIB interface: Agilent 82350B GPIB interface

- Operating system: Windows XP Professional SP2

- Software:

  - Microsoft .NET Framework Version 1.1 Redistributable Package

  - Microsoft .NET Framework 1.1 Service Pack 1

  - Agilent IO Library Suite 14.0

    Agilent IO Library Suite 14.0 is *not* needed for the Offline execution mode.

  - Agilent T&M Programmers Toolkit Redistributable Package 1.1

    Agilent T&M Programmers Toolkit revision 2.0 is *not* supported.

NOTE   If your computer does not install all required software, install them in the above sequence.

If your computer does not install a software, install it and the following software. For example, if your computer does not install Microsoft .NET Framework 1.1 Service Pack 1, install it, Agilent IO Libraries (if you use the Online execution mode), and Agilent T&M Programmers Toolkit in this sequence.

If the Agilent IO Library is not installed, the T&M Toolkit setup program will open a message box which asks you to install the IO Library after setup of the Toolkit. However, if you use the Offline mode only, you do not need to install the IO Library.

Prepare the Agilent IO Libraries software CD-ROM furnished with Agilent GPIB interface to install the IO Libraries.

Open the Desktop EasyEXPERT Prerequisites folder to get installation packages for the other required software.

To Install Desktop EasyEXPERT

To install Desktop EasyEXPERT onto your computer, follow the procedure below. See also "Execution Mode dialog box" on page 10 and "EasyEXPERT Database dialog box" on page 10.

1. Insert the Desktop EasyEXPERT software CD-ROM into the CD-ROM drive.

2. Execute Setup.exe and follow the instructions of the setup wizard.

3. Wait for installation to complete, and remove the CD-ROM from the CD-ROM drive.

4. Launch Start EasyEXPERT by selecting from the Start menu or by double clicking the Start EasyEXPERT icon on the desktop. The Start EasyEXPERT window and the Execution Mode dialog box are displayed.

5. In the dialog box, set the execution mode to Online or Offline.

6. If you select the Online mode, set the GPIB interface on your computer and the GPIB address of the B1500A connected to your computer via GPIB.

To Change Execution Mode and GPIB Settings

To change the Desktop EasyEXPERT execution mode, the GPIB setting of your computer, or the GPIB address of B1500A, follow the procedure below. See also "Execution Mode dialog box" on page 10.

1. Launch Start EasyEXPERT by selecting from the Start menu or by double clicking the Start EasyEXPERT icon on the desktop. The Start EasyEXPERT window is displayed.

2. In the Start EasyEXPERT window, click Option > Execution Mode. The Execution Mode dialog box is displayed.

3. In the dialog box, set the execution mode to Online or Offline.

4. If you select the Online mode, set the GPIB interface on your computer and the GPIB address of the B1500A connected to your computer via GPIB.

To Move the EasyEXPERT Database

When the HDD (hard disk drive) is full, add a humongous HDD and move the EasyEXPERT Database to it. To move the database, follow the procedure below. EasyEXPERT Database is the folder used to store your test setup data and such. See also "EasyEXPERT Database dialog box" on page 10. The database move operation will take a long time.

1. Launch Start EasyEXPERT by selecting from the Start menu or by double clicking the Start EasyEXPERT icon on the desktop. The Start EasyEXPERT window is displayed.

2. In the Start EasyEXPERT window, click Option > EasyEXPERT Database. The EasyEXPERT Database dialog box is displayed.

3. In the dialog box, enter the name of the target folder. For example, C:\EasyEXPERT\database.

Before Starting Desktop EasyEXPERT

Note the following when starting Desktop EasyEXPERT.

- When using the Offline mode, use the data import/export function to transfer your test setup data files and test result records.

- When using the Online mode, exit EasyEXPERT on B1500A. The Start EasyEXPERT window (button) must be displayed or be minimized to the Windows task bar on the B1500A screen.

- When using the Online mode, do not send a control command to B1500A by using a programming environment except for Desktop EasyEXPERT.

- Do not send a control command to B1500A by using the GPIB IO statement in a test definition of EasyEXPERT.

To Start Desktop EasyEXPERT

To launch Desktop EasyEXPERT, follow the procedure below.

1. Launch Start EasyEXPERT by selecting from the Start menu or by double clicking the Start EasyEXPERT icon on the desktop. The Start EasyEXPERT window is displayed.

2. Click the Start EasyEXPERT button to launch Desktop EasyEXPERT.

Start EasyEXPERT window

The Start EasyEXPERT window provides the following graphical user interface.

File menu Provides the following function.

    Exit Close the Start EasyEXPERT window.

Option menu Provides the following functions.

    Execution Mode Opens the Execution Mode dialog box.

    EasyEXPERT Database Opens the EasyEXPERT Database dialog box.

Start EasyEXPERT This button launches Desktop EasyEXPERT.

Execution Mode dialog box

The Execution Mode dialog box provides the following graphical user interface.

Online Click the Online radio button to select the online execution mode. Then the following fields are available.

    VISA interface ID VISA interface ID of the GPIB interface installed in your computer. Select one from the pop-up menu.

    GPIB address GPIB address of B1500A. Select one from the pop-up menu. 0 to 30 are available.

Offline Click the Offline radio button to select the offline execution mode.

EasyEXPERT Database dialog box

The EasyEXPERT Database dialog box provides the following field.

Database Path Enter the name of the folder you want to move EasyEXPERT Database to. EasyEXPERT Database is the folder used to store your test setup data and so on. For example, enter C:\EasyEXPERT\database.