Installation Note

Agilent Technologies Firmware Upgrade Kit E4411-60005 for ESA-L1500A Spectrum Analyzer

Agilent Technologies

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Firmware Upgrade Kit E4411-60005 for ESA-L1500A Spectrum Analyzer

Product Affected:	ESA-L1500A Spectrum Analyzer
Serial Numbers:	All
Options:	All
To Be Performed By:	(X) Agilent Technologies Service Center (X) Personnel Qualified by Agilent (X) Customer
Estimated Installation Time:	30 minutes
Estimated Verification Time:	1 minute

Introduction

The firmware revision is changed by downloading the updated firmware files via a computer RS-232 interface. This installation note includes separate procedures for PC, Laptop, or Palmtop computers.

Installation Kit Parts List

Table 1 Firmware Upgrade Kit E4411-60005 Contents

Item	Quantity	Description	Part Number
1	1	Firmware upgrade (DOS disk)	E4411-10002
2	1	HP Palmtop serial cable	F1015A
3	1	Installation note	E4411-90026

Equipment Required

The computer controller may be a PC (IBM compatible), Laptop (HP OmniBook), or Palmtop (HP 200LX). Please note that the Palmtop must have 256KB available memory for DOS and a 5MB or larger flash disk.

Installation Procedure: PC Version

This procedure uses a PC (IBM-compatible computer) to download new firmware into an ESA- Series spectrum analyzer.

1. Connect the computer to the spectrum analyzer.
   a. Connect the dsub end of the HP Palmtop serial cable to the computer RS-232 port.
   b. Connect the other end of the HP Palmtop serial cable to the service connector on the rear panel of the spectrum analyzer. The logo should face the left side of the spectrum analyzer, as viewed from the front of the analyzer.

NOTE Typically, you would use the COM2 RS-232 port, but COM1 is acceptable if it is available. *No other program can make use of this port at any time during the procedure.*

2. Insert the firmware upgrade disk into the floppy drive of the computer.
   a. Create an empty directory called **esa_dnld** on the C:\ drive to unpack the self-extracting archive.
   b. Using MS Windows, go to File Manager and select drive (A:\ or B:\). The file **desa1500.exe** should be present.
   c. Copy **desa1500.exe**, to the **esa_dnld** directory on the C:\ drive:

      A:\copy desa1500.exe C:\esa_dnld

   d. Change to the **C:\esa_dnld** directory
   e. In MS-DOS®, type **desa1500.exe** and press **Enter**. In File Manager, double-click on **desa1500.exe**.
3. Verify that the following items were unpacked:

readme.txt	these instructions
desa1500.bat	script to perform the download
split_dl.exe	auxiliary program used by **desa1500.bat**
wait.exe	auxiliary program used by **desa1500.bat**
esa1500.out	the actual firmware image
desa1500.pif	Windows 386 enhanced mode program information
desa1500.ico	icon file for the program manager

NOTE The directory may also contain files which are used for other operating systems.

4. Execute the **desa1500.bat** script with the selected RS-232 port as the parameter.

   For example, if you are using COM1 and working in DOS, the commands are:

   C:\ cd\esa_dnld

   desa1500.bat com1

   If you are using Windows, you must execute **desa1500.pif** rather than directly executing **desa1500.bat**. Type **com1** in the parameter message box.

   See the Appendix for a DOS directory setup example.

5. Follow the instructions as they are presented. When the following prompt appears, you must respond within five seconds to avoid a synchronization problem: `Turn on the instrument NOW`.

NOTE When asked to press **Return**, this refers to the PC keyboard **Enter** key, not the **Enter** key on the ESA-Series spectrum analyzer.

6. Once the download starts, be patient. It will take several minutes to complete and requires no further user interaction.

NOTE While the download is in progress, **desa1500.ksh** will show the communication that is taking place with the spectrum analyzer. What appear to be several (non-highlighted) prompts will appear on the screen. These will be automatically answered by the **desa1500.bat** program.

7. When **desa1500.bat** completes and the spectrum analyzer is running the new firmware, disconnect the RS-232 cable.

NOTE If the procedure fails (due to loss of synchronization, accidental loss of power, etc.), repeat the procedure, starting with Step 4.

8. On the spectrum analyzer, press **System, Alignments, Align, Now, All**. Wait for the alignments to complete.

Troubleshooting Hints

If the spectrum analyzer is in the wrong mode (for instance, bootrom mode), the download program will not detect this condition. If this occurs, you must reboot the computer by pressing the following three keys: **Ctr Alt Del** and repeat the procedure from Step 4.

Installation Procedure: HP OmniBook PC Version

This procedure uses an HP OmniBook PC to download new firmware into an ESA- Series spectrum analyzer.

1. Connect the computer to the spectrum analyzer.
   a. Connect the dsub end of the HP Palmtop serial cable to the computer RS-232 port.
   b. Connect the other end of the HP Palmtop serial cable to the service connector on the rear panel of the spectrum analyzer. The logo should face the left side of the spectrum analyzer, as viewed from the front of the analyzer.

NOTE Typically, you would use the COM2 RS-232 port, but COM1 is acceptable if it is available. *No other program can make use of this port at any time during the procedure.*

2. Insert the firmware upgrade disk into the floppy drive of the computer.
   a. Create an empty directory called **esa_dnld** on the C:\ drive to unpack the self-extracting archive.
   b. Using MS Windows, go to File Manager and select drive (A:\ or B:\). The file **desa1500.exe** should be present.
   c. Copy **desa1500.exe**, to the **esa_dnld** directory on the C:\ drive:

      A:\copy desa1500.exe C:\esa_dnld

   d. Change to the **C:\esa_dnld** directory.
   e. In MS-DOS, type **desa1500.exe** and press **Enter**. In File Manager, double-click on **desa1500.exe**.
3. Verify that the following items were unpacked:

readme.txt	these instructions
desa1500.bat	script to perform the download
split_dl.exe	auxiliary program used by **desa1500.bat**
wait.exe	auxiliary program used by **desa1500.bat**
esa1500.out	the actual firmware image
desa1500.pif	Windows 386 enhanced mode program information
desa1500.ico	icon file for the program manager

NOTE The directory may also contain files which are used for other operating systems.

4. Execute the **desa1500.bat** script with the selected RS-232 port as the parameter.

   For example, if you are using COM1 and working in DOS, the commands are:

   C:\ cd\esa_dnld

   desa1500.bat com1

   If you are using Windows, you must execute **desa1500.pif** rather than directly executing **desa1500.bat**. Type com1 in the parameter message box.

   See the Appendix for a DOS directory setup example.

5. Follow the instructions as they are presented. When the following prompt appears, you must respond within five seconds to avoid a synchronization problem: `Turn on the instrument NOW`.

NOTE When asked to press **Return**, this refers to the PC keyboard **Enter** key, not the **Enter** key on the ESA-Series spectrum analyzer.

6. Once the download starts, be patient. It will take several minutes to complete and requires no further user interaction.

NOTE If the procedure fails (due to loss of synchronization, accidental loss of power, etc.), repeat the procedure, starting with Step 4.

7. When **desa1500.bat** completes and the spectrum analyzer is running the new firmware, disconnect the RS-232 cable.

NOTE While the download is in progress, **desa1500.ksh** will show the communication that is taking place with the spectrum analyzer. What appear to be several (non-highlighted) prompts will appear on the screen. These will be automatically answered by the **desa1500.bat** program.

8. On the spectrum analyzer, press **System, Alignments, Align, Now, All**. Wait for the alignments to complete.

Troubleshooting Hints

If the spectrum analyzer is in the wrong mode (for instance, bootrom mode), the download program will not detect this condition. If this occurs, you must reboot the computer by pressing the following three keys: **Ctr Alt Del** and repeat the procedure from Step 4.

Installation Procedure: HP Palmtop Version

This procedure uses an HP 200LX Palmtop computer to download new firmware into an ESA- Series spectrum analyzer.

Table 2

Quantity	Description	Part Number
1	10 MB flash disk	F1013C
1	HP connectivity pack (includes HP Palmtop serial cable, HP FL015A null modem adapter, and connectivity pack software, p/n 5181-6639.	F1021B/C

1. Insert the firmware upgrade disk into a PC compatible computer disk drive.
   a. Create an empty directory called **esa_dnld** on the C:\ drive to unpack the self-extracting archive.
   b. Using MS Windows, go to File Manager and select drive (A:\ or B:\). The file **desa1500.exe** should be present.
   c. Copy **desa1500.exe**, to the **esa_dnld** directory on the C:\ drive:

      A:\copy desa1500.exe C:\esa_dnld

   d. Change to the **C:\esa_dnld** directory.
   e. In MS-DOS, type **desa1500.exe** and press **Enter**. In File Manager, double-click on **desa1500.exe**.

NOTE When connecting the connectivity pack serial cable to the palmtop, make sure that the logo on the plug faces up.

2. Using the Palmtop connectivity pack software and hardware, download the upgrade firmware files from the C:/ drive of the PC to the Palmtop flash disk, into a directory named **A:/esa_dnld**. See the Appendix for a DOS file copy example. Refer to the HP Palmtop owner's manual for this procedure.
3. Verify that the following items were copied:

readme.txt	these instructions
desa1500.bat	script to perform the download
split_dl.exe	auxiliary program used by **desa1500.bat**
wait.exe	auxiliary program used by **desa1500.bat**
esa1500.out	the actual firmware image
desa1500.pif	Windows 386 enhanced mode program information
desa1500.ico	icon file for the program manager

NOTE The directory may also contain files which are used for other operating systems.

4. Connect the Palmtop to the spectrum analyzer:

   a. Connect the dsub ends of the two HP Palmtop serial cables to the null modem adapter. (One cable is supplied with the firmware upgrade kit, and one with the connectivity pack.)

   b. Connect the remaining ends of the serial cables to the service connector of the spectrum analyzer rear panel, and to the HP Palmtop serial port. When connecting to the Palmtop serial port, make sure the logo faces up. When connecting to the service connector, make sure the logo faces the left side of the analyzer (as viewed from the front of the analyzer).

NOTE Use the COM1 RS-232 port. *No other program can make use of this port at any time during the procedure.*

5. Use the following procedure to set up the HP Palmtop application manager:

   a. Press the Palmtop **MENU** key.

   b. Press **A** for application.

   c. Press **A** for add (The Add Application window appears).

   d. In the **Name** box, type **ESA Download**, and then press **tab**.

   e. In the Path box, type **a:esa_dnld\desa1500.bat com1|250**, and then press **tab**. (To type the | symbol, hold down the **Shift** key and press ****).

   f. In the Comments box, type **¿ (Fn, 3)** and **¡ (Fn, Filer)** then tab to the ICON box.

   These settings prevent the system manager from interfering with the download. The **|250** entry in the path box provides sufficient DOS memory for the programs.

6. Within the Icon box, scroll by using the up arrow key to select the spectrum analyzer icon.If everything is correct, press **F10 OK** on the screen. This will activate the applications manager screen. The new application icon should be present.

7. To start the download program, select the spectrum analyzer icon and press **enter**.

8. Follow the instructions as they are presented. When the following prompt appears, you must respond within five seconds to avoid a synchronization problem: `Turn on the instrument NOW`.

NOTE When prompted to press **Return**, this refers to the Palmtop keyboard **ENTER** key, not the similarly-labeled key on the ESA-Series Spectrum Analyzer.

9. Once the download starts, be patient. It will take 15 minutes to complete, and requires no further user interaction.

NOTE While the download is in progress, **desa1500** will show the communication that is taking place with the spectrum analyzer. What appear to be several (non-highlighted) prompts will appear on the screen. These will be automatically answered by the **desa1500.bat** program.

10. When **desa1500.bat** completes and the spectrum analyzer is running the new firmware, disconnect the RS-232 cables.

NOTE If the procedure fails (due to loss of synchronization, accidental loss of power, and so forth), repeat the procedure starting with Step 7.

11. On the spectrum analyzer, press **System, Alignments, Align Now, All.** Wait for the alignments to complete.

Troubleshooting Hints

If the spectrum analyzer is in the wrong mode (bootrom mode, for example), the download program will not detect this condition. If this occurs, you must reboot the computer by pressing the following three keys: **Ctr Alt Del** and repeat the procedure from Step 4.

Appendix

Copying Files to a Directory Using DOS

The PC MS-DOS command line example below shows how to create a new file directory on the PC hard drive and move the necessary files from the firmware upgrade disk into the new directory.

1. Go to MS-DOS and create this directory on the PC hard drive.
   a. **C:\>md esa_dnld** (make the directory called esa_dnld)
   b. **C:\>cd esa_dnld** (change to the esa_dnld directory)
   c. **C:\esa_dnld>**
2. Copy files into the esa_dnld directory. Press enter on the PC to transfer files.
   a. **C:\esa_dnld> copy a: split_dl.exe**
   b. **C:\esa_dnld> copy a: desa1500.bat**
   c. **C:\esa_dnld> copy a: wait.exe**
   d. **C:\esa_dnld> copy a: esa1500.out**
   e. **C:\esa_dnld> copy a: desa1500.pif**
   f. **C:\esa_dnld> copy a: desa1500.ico**

Deleting Files Using MS Windows and DOS

When the self-extracting archive is unpacked, the individual files might be marked as **read-only**. If you attempt to delete these files in MS Windows, the File Manager will warn you that the files are read-only, hidden, or system files. You will still be permitted to delete the files.

In DOS, you must toggle off the read-only attribute before the files can be deleted. To do this, change to the directory containing the files to be deleted, then type **ATTRIB -R *.*** and press **Enter**. The files may then be deleted using the **del** command.