

INSTALLATION OF USB ADAPTOR

Use these instruction with ESCA 2005 GU Software

The USB upgrade requires Windows 2000 or XP. This upgrade requires USB 2.0 or higher. Most computers with Pentium 4 processors have USB 2.0. You will need to install a USB 2.0 - PCI Card on older computers.

PREPERATION

1. Install USB 2.0 – PCI card if version 2.0 is not on computer. To check for USB 2.0, right mouse click the “My Computer” Icon. This is on the Windows Desk Top for windows 2000 and on the Start Menu on XP Professional. Choose “Properties” at the bottom of the menu. Select the “Hardware Tab”. At the bottom of the list you will see “Universal Serial Bus Controllers”. Click on the + node box. A USB 2.0 Root Hub should be listed. If a yellow question mark is showing for the USB 2.0 Root Hub, the installation failed. **Do not proceed with the upgrade until this is resolved.**

IF NO USB 2.0 HUB IS PRESENT THEN A USB 2.0 – PCI CARD MUST BE INSTALLED.

2. GPIB Motor Interface. This configuration uses the GU version of the software. Install the National PCI – GPIB interface card in a PCI slot. The ESCA 2005 GU installation disk has the drivers for this interface card. Install the drivers and follow the install instructions. Verify that the card installation passes the National installation test. Attach the GPIB cable to the interface card.

USB ADAPTOR HARDWARE INSTALLATION

1. Modify the Digital Interface card in the 8724/8701 Spectrometer Power supply. The isolated drivers that send signals from the USB Adaptor to the Spectrometer Power Supply need to pick up the floating 5 volts from the Digital Interface Card at the back of the 8724/8701. In the 8724 and the 8701B this modification needs to be made on both of the interface cards. There are two versions of the card in circulation. Figure 1 and 2 show the modifications.
2. Use the pictures included with the manual as a guide for the installation of the USB Adaptor card into the 2503/2401.
3. Connect the Ribbon cable between the 8724/8701 Spectrometer Power Supply and the 2503/2401 Box that contains the USB Adaptor. See Figure 3.

4. Connect the accessories (X-Ray spot size, Flood Gun, Ion Gun) cables to the appropriate connectors. If you have an aperture then the cable connector will need modification. The aperture connector provides relay contact as shown in figure 4. I do not have documentation on the aperture.
5. The Data fan-out panel is no longer used.

SOFTWARE INSTALLATION

Be sure to finish the preparation section before performing the software installation. Start this section with the USB cable disconnected from the computer. Be sure the Windows operating system has the latest service pack installed.

1. The software disk provides all components for a full installation on a new computer. The USB provides a very efficient interface that is well supported on a Pentium 4 computer running Windows XP. The performance is quite impressive. The dead time for power supply setup and data transfer is less than 0.25 ms.
2. Find the ACCESSRT folder on the installation CD and click on the SETUP Icon. This will install the Access Runtime software.
3. Next find the ESCA 2005 G folder. Double click on the SetUp.exe file. Accept the standard installation. If you are asked if you want to keep newer files that exist on your hard drive select YES. After the install reboot the computer.
4. Plug the USB cable into the USB 2.0 card. The computer will report it found new hardware. It will open a wizard for installation. You will be given an opportunity to let Windows look for a driver or you may select from a list of possible drivers. Select the default to let Windows search for a driver. The next page will allow you to select where Windows should look. Click the button for CD drive and browse the ESCA 2005 EU CD for the "USB Driver" folder. Select the i386 subfolder and then select the "spiusbadp.inf" file. Accept this choice and continue with the Wizard. It should install the driver and notify you that all is OK. Reboot only if Windows suggest it.
5. Open the Start menu > Programs > ESCA 2005 and start the ESCA Capture program. You will a notification that the registry entries have been finished and you will need to restart the program. Upon the restart you will be presented with the registration dialog. Email the number in the dialog to barb@sphysics.com and we will e-mail back a matching serial number. Do not close the dialog until you receive the matching number. The dialog number is recalculated each time the application is opened until the registration is complete.

6. If you get a report that the Signature file was not found go to the Settings > Capture Settings and select the Detector Tab. Fix the path to your Sig.txt file.

NOTE ABOUT TRANSFERING CALIBRATION INFORMATION

This note applies if a new computer is replacing an old computer and the old computer is running ESCA VB, ESCA 2000 or ESCA 2005. These older programs do not have a utility built in to record the registry setting for the calibration parameters.

A utility called "RECOVER OLD REGISTRY SETTINGS" is available to upgrade the old software. The registry setting can then be saved to disk or "stick" memory and transferred to the new computer.

Install the "RECOVER OLD REGISTRY SETTINGS" program on old computer.

- a. Copy the XpsSetup program to the ESCA program directory and double click.
- b. The program will update your "Set Up ESCA" utility and open a copy of the utility.
- c. Open the "Configuration" Tab and select the "Save to File" button.
- d. Provide a file name such as OldESCACal.hml, Select a directory and Select "Save"
- e. The OldESCACal.hml file can now be transferred to the New Computer. We recommend you make a folder in the ESCA 2005 folder. You can later name your calibration files Cal070119.hml, where the number is a date code.
- f. Open the Capture program. Open the Setting Menu in the top toolbar. Select "Set Up ESCA". Select the "Configuration" Tab and select the "Load From File" Button. Find the folder that contains the OldESCACal.hml file select the file and select "Open". The calibration has been transferred.

NOTE ABOUT THE USB INTERFACE

IF the USB interface connection is disconnected the ESCA capture program will provide a notification. This notification is triggered when the program tries to access the USB device on the Adaptor card. Instructions are provided on how to reestablish a connection. It is strongly advised to always use the Windows Device Manager to check that the SPI ESCA USB Adaptor is listed with out any yellow question marks or warnings.

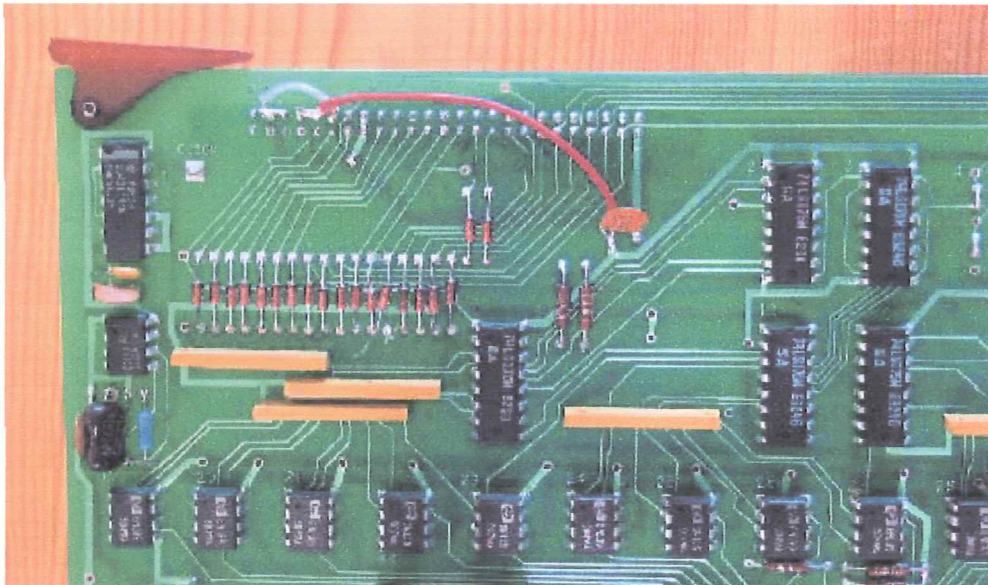


Figure 1. Old Style Digital Interface Board. (This board has numerous cuts, jumps and extra parts.) Add jumper from 5 Volt bus at capacitor to input connector pins 4 and 5. Also jumper from connector pin 6 to pins 2 and 3. Wire is white.

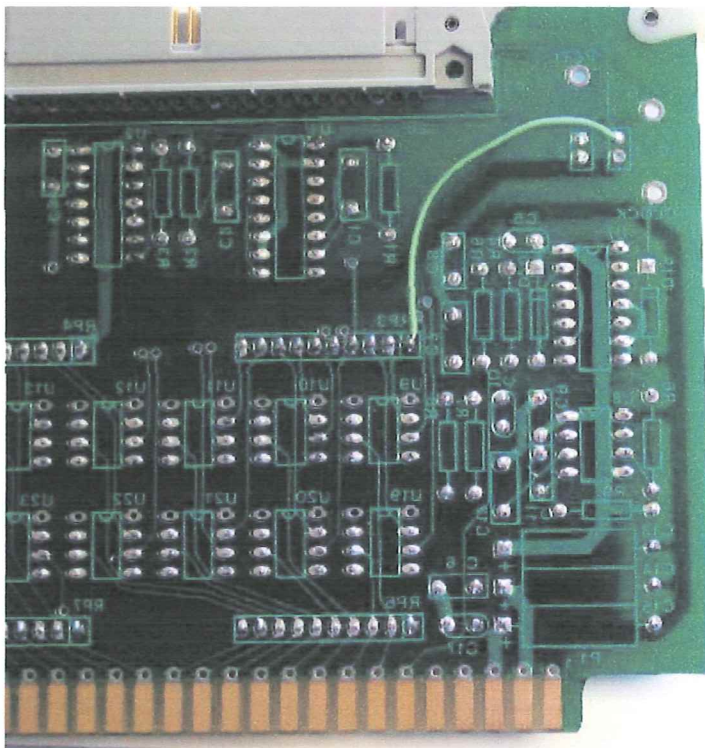


Figure 2a. New style Digital Interface Board. 5 Volt jumper from pin 1 of RP3 to ID1 top hole only. BE SURE NO JUMPER BETWEEN THE TWO HOLES OF ID1OR 2.

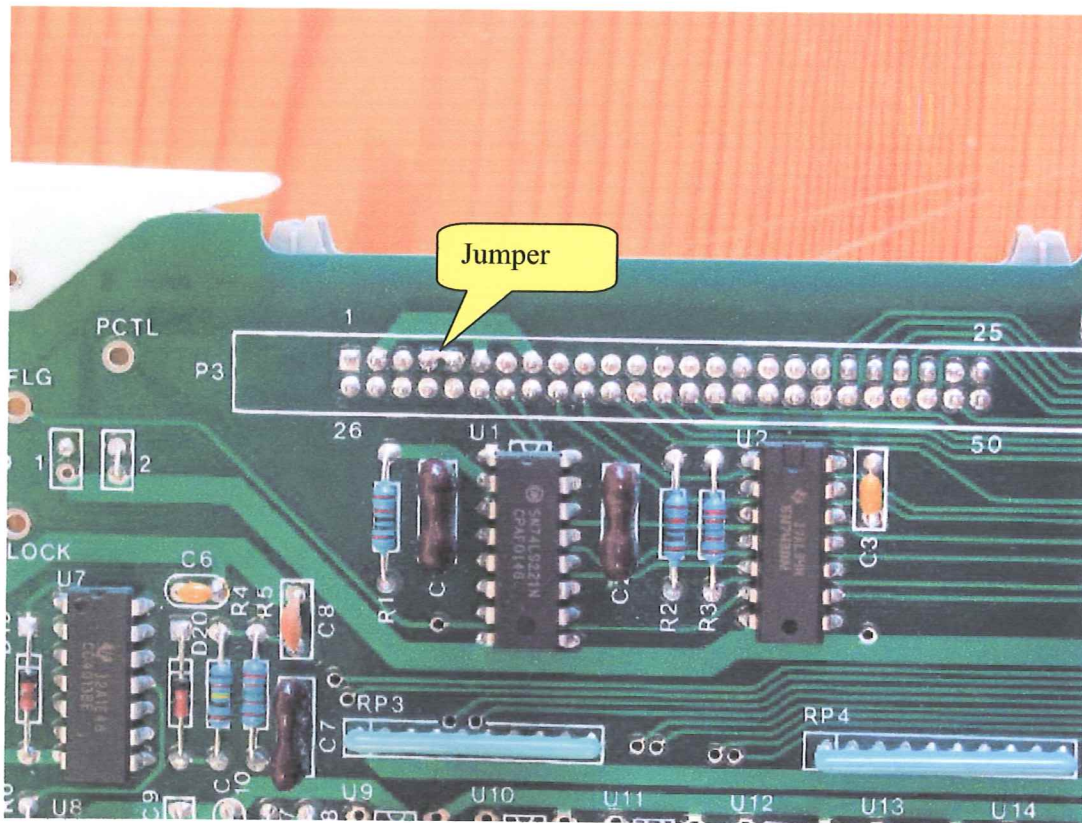


Figure 2b. Digital Interface Card – Component side. Jumper between Pins 4 and 5 of input connector.

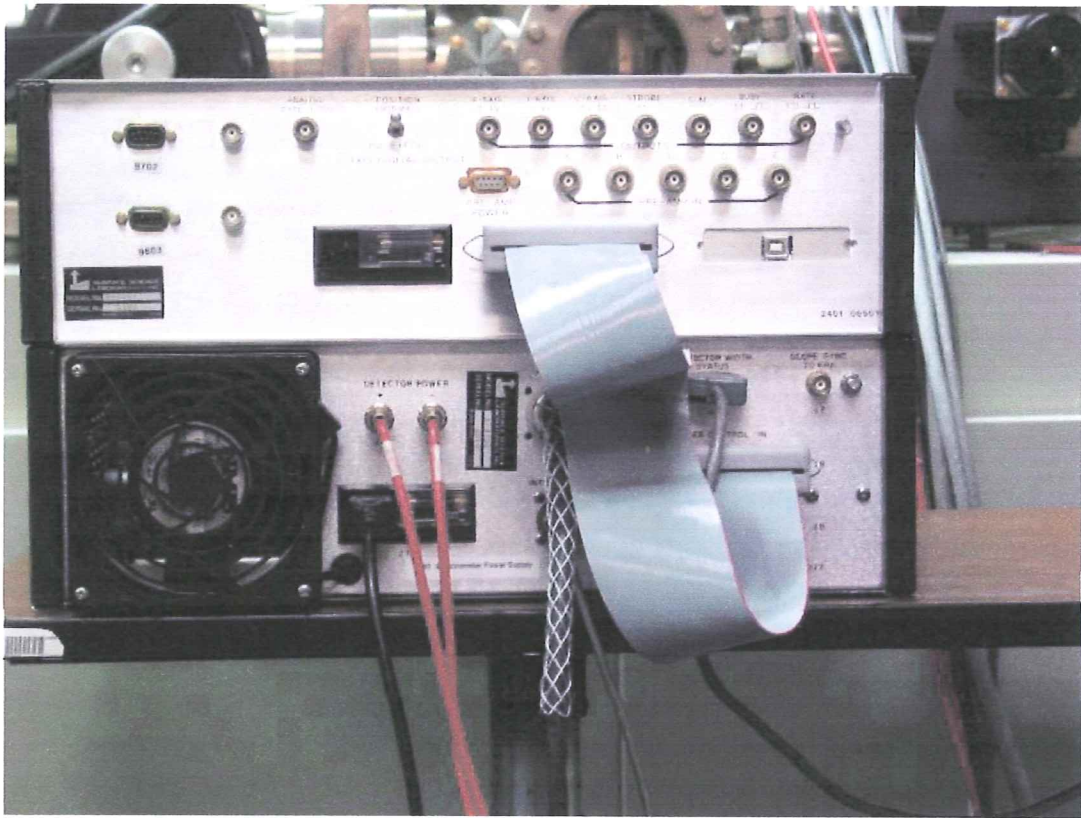


Figure 3 Ribbon Cable from USB Adaptor to 8701/8724 Spectrometer Power Supply.

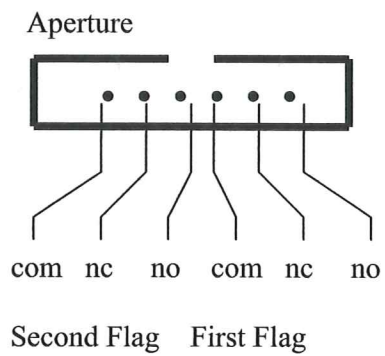


Figure 4. The first flag will come up when "ONE" is selected. The second flage will come up when "BOTH" is selected. The software switches both relays when "Both" is selected.

SOFTWARE UPGRADE INSTRUCTIONS

The USB will not work with a NT operating system. It is recommended that a complete installation of XP be used. The upgrade will work with Win 2000.

This upgrade will not affect the registration, calibration constants, signature files or user defined databases. A new folder named ESCA 2005 will be used for this installation and your older files will remain in ESCA 2000 or folders you have set up.

Some installation have had components changed since the UNINSTALL file was created. An incomplete uninstall will lead to incompatibilities in software modules. PLEASE FOLLOW THE INSTRUCTIONS ABOUT REMOVING MODULES THAT WERE NOT UNINSTALLED. This is a little tedious but the problems from an incomplete uninstall are much worse. Sorry for the inconvenience

Install RegSvr utility. Put the ESCA 2005 EU CD in the drive and find the "misc. goodies" folder. Copy the "RegSvr.reg" file to the root of the C: drive. Double click on the "RegSvr.reg" file. It will ask if you are sure you want to write to the registry. Respond Yes.

1.

Uninstall the existing ESCA 2000 program. Open the Windows Control Panel from the Windows Start Menu. Select the Install/Uninstall Software utility. Find the ESCA 2000 program and click the install/uninstall button. Select "Uninstall All". If it reports it can't uninstall a module select OK and keep going. Just keep making selection that do the best you can at removing all modules even the shared ones

REMOVING MODULES THAT WERE NOT UNINSTALLED.

First open "Windows Explorer". Go to C:\Programs Files\ESCA 2000. If you see a Viewer folder delete it and the Viewer.ocx it contains. Look for the following files and delete them if they exist.

- TestJoystick.exe
- SixKWiz.exe
- Analysis.exe
- DosImport.exe
- ESCA 2000 E.exe
- StartRupE.exe
- StartRupA.exe
- All files that end in .OCX or .DLL

Go to C:\Winnt\System 32. Go to the bottom of the list. Look for any of the following files. Right mouse click on each dll file that exist.

- XprobeController.dll
- XprobeMotorControllib.dll
- XprobeSerialize.ocx
- XprobeSetUp.dll
- XprobeSetUp1.dll
- XpsDataLib.dll

In the menu select "Unregister Com Server". Windows will report if it is successful. After the file is unregistered delete the file.

Open the Start menu > Programs > ESCA 2000. Delete all entries. Remove all ESCA related Desk Top short cuts.

Now proceed with the Software Installation instructions above.