



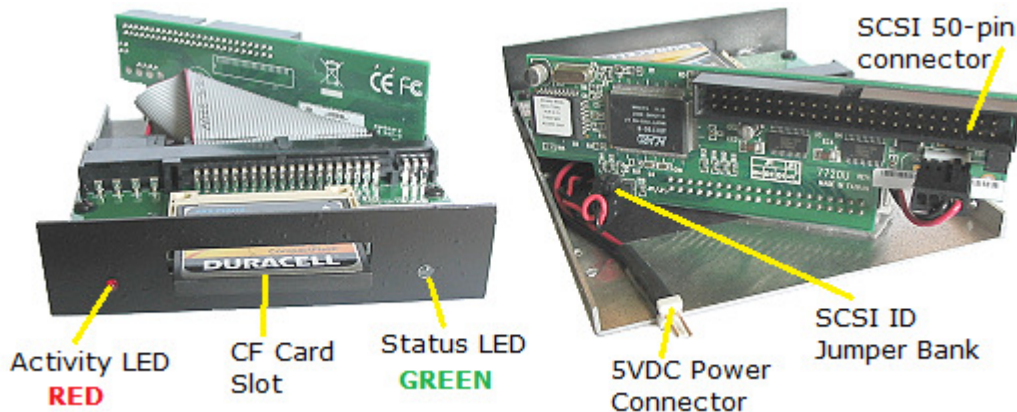
Installing the **CF-CARD** SCSI Card Reader/Writer Drive into the **EMU E4 Classic** and **E4 Platinum Samplers**



Thank you for purchasing the CF-CARD Internal Card Reader Drive Installation Kit from SCSICardReaders.com. This manual covers all the steps of opening your E4 or E4 Platinum rack sampler and installing the CF-CARD drive. Please read this entire manual before attempting to install the CF-CARD drive.

Technical Support: Email us at keyman@tampabay.rr.com for assistance.

The CF-CARD Drive

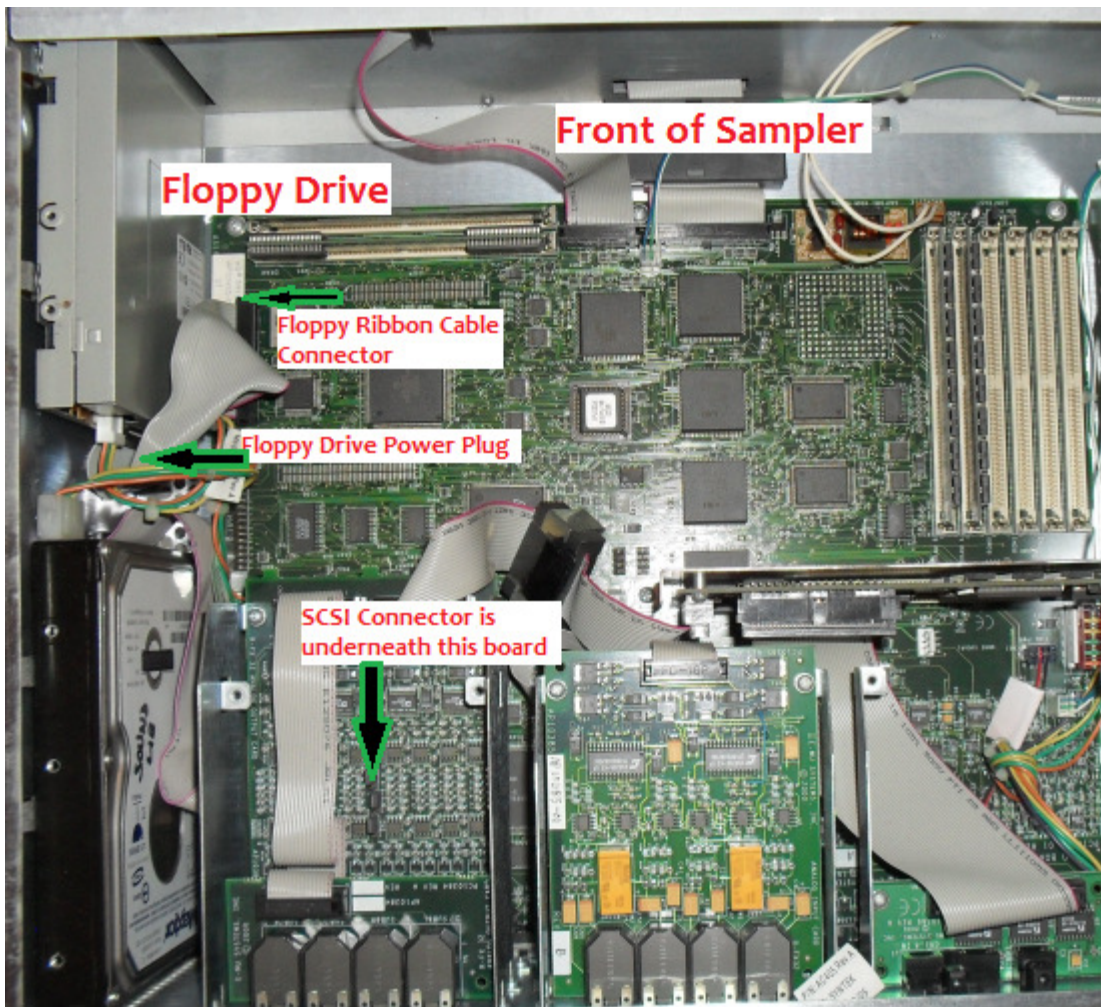


The complete CF-CARD assembly consists of two main parts: the CF-CARD drive and the SCSI adapter board. There is a power cable assembly that powers both the CF-CARD drive and the SCSI adapter board. It has a two-pin power plug on the rear which is where the floppy drive power plug will connect.

Installation of the CF-CARD into the EMU E4 Rack

There are two LEDs on the front bezel of the CF-CARD drive. The LED on the right is the Status LED and will light solid green when the CF-CARD is properly connected and has a CF card inserted. If you try to use the CF-CARD drive and this LED is not lit, then you have something wrong such as the CF-CARD not fully inserted or a problem with the sampler connection. The red LED on the left is the Activity LED and this LED will light up whenever there is read or write activity on the drive.

Installing the CF-CARD Drive



Overview

The basics of the CF-CARD installation are as follows: remove the existing floppy drive, mount the CF-CARD drive in its place, connect the SCSI ribbon cable to both the CF-CARD drive and the SCSI 50-pin header on the E4 board, modify the wiring on the floppy power plug and connect the floppy power plug to the CF-CARD power connector.

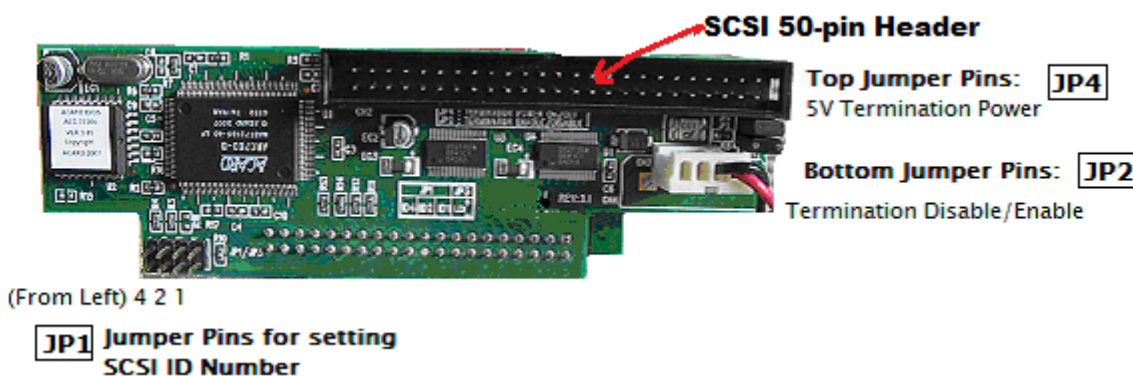
Installation of the CF-CARD into the EMU E4 Rack

1. Check the SCSI ID Number of the Adapter Board

The SCSI Adapter board has a jumper bank consisting of 4 sets of pins on the lower left edge of the card and this is where you set the SCSI ID number of the CF-CARD drive (some boards will only have three pin sets – see the alternate board below). There are two other jumper pin sets over on the right edge of the card, just above the power plug, that control Active Termination and 5 volt Termination Power. You control the SCSI ID and Termination parameters by adding or removing the black plastic jumper plugs on the pin sets. To enable a pin set, you cover both pins with the jumper plug. If the jumper plug is placed on just one pin, then that setting is disabled. By placing the jumper plug on just one pin, you can keep it handy in case you ever need to use it. We send the CF-CARD drive with two spare jumper plugs on the first and second pin sets of the SCSI ID jumper bank. Those can be use if you need to change the SCSI ID number of the CF-CARD drive.

Before you install the drive, you should determine if you need to change the default SCSI ID number setting of the CF-CARD. We ship the drive set on ID 0 and that should be fine unless you have an external drive that is also set to ID 0 that you cannot change. The E4 by default uses ID 6 but that can be changed on the Global Settings page, so you should check and see what ID number the E4 is set to use and make sure that you do not set the CF-CARD or any other SCSI drive to that same ID number.

This picture shows the two jumper bank locations (JP1, JP2/ JP4) and settings that are on most of the SCSI Adapter Boards (some are different – see the alternate layout below if yours doesn't match this picture):



If you need to change the ID number of the drive, it is done by adding or removing jumper plugs on the first three sets of jumper pins. From the left side, the first pin set has a value of 4, the second has a value of 2 and the third has a value of 1. So if you wanted the CF-CARD to be accessed on ID 3, you would place jumper plugs on the second and third set of pins ($1+2=3$). If you wanted the CF-CARD to be accessed on ID 5, you'd place jumper plugs on the first and third set of pins ($4+1=5$). By placing

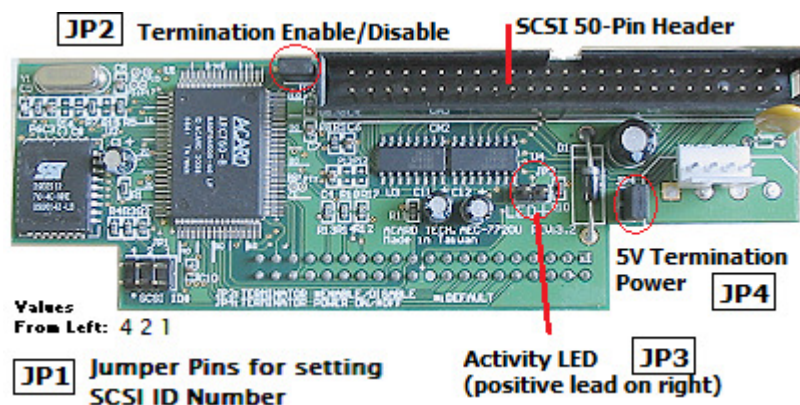
Installation of the CF-CARD into the EMU E4 Rack

jumper plugs on different combinations of the pin sets, you can select any ID number between 0 (no jumper plugs enabled) or 7 (all three pins sets covered by jumper plugs).

The two jumper banks (JP2, JP4) over on the right edge of the card controls the active termination circuit and the termination power circuit. Both of these pins sets will normally be enabled so that termination and term power are active. To disable termination, you would remove the jumper plug from the bottom pin set. To disable 5 volt term power from being applied to the SCSI bus, you would remove the jumper plug from the upper pin set. We recommend that you leave both of these pins sets exactly as we send them, enabled, as this setting works best for most samplers. If you feel that you need to change either of these pin sets, please contact us first and let us know why you want to disable termination or term power.

Alternate ACARD SCSI Adapter Board Layout

Some of the SCSI Adapter boards will have a slightly different layout than the one we showed you above; yours may have the layout shown here. Both boards have the exact same functionality, it's just that the manufacturer changed the design of the board somewhere during their production run. In this configuration, the jumper pins for the Termination and Term Power settings are in different locations, as shown here:



All of the explanations for setting the jumper plugs from above work the same for this alternate jumper pin set layout.

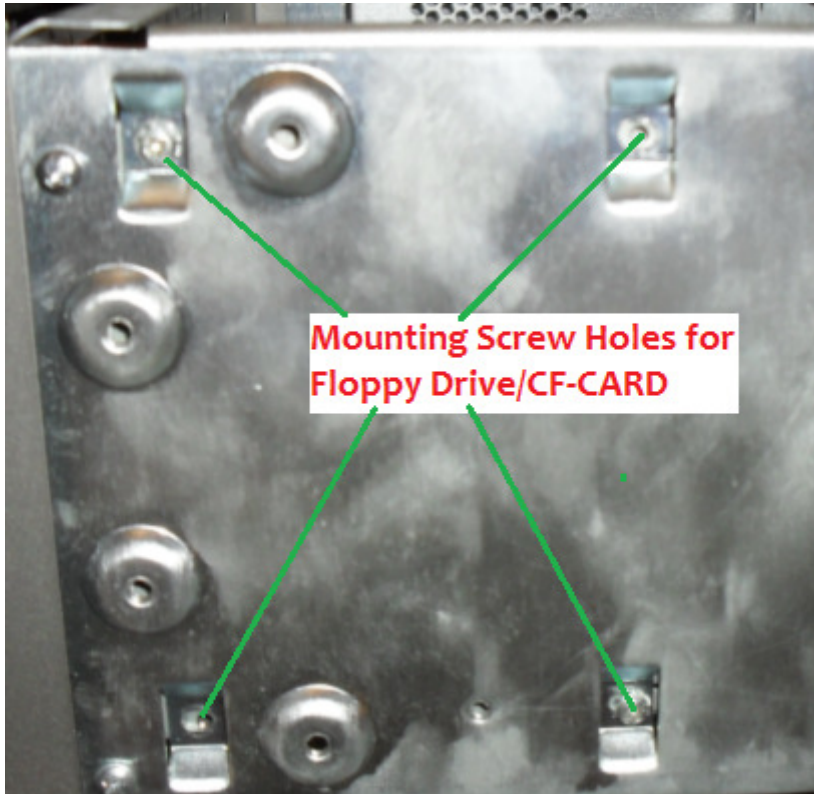
2. Open the E4 Rack Case

First, remove the external power cable and all other cables from the E4. This is very important – never open or touch anything inside the E4 when the power cable is attached to the back of the sampler and to the AC outlet. Always remove the power cable from the socket on the back of the EMU before touching anything inside.

Installation of the CF-CARD into the EMU E4 Rack

If your E4 has rack ears attached to the side, you will need to remove the two screws on each side that hold them in place. After you remove the rack ears, you can remove the two screws on each side and the three screws across the top on the rear that hold the rack cover in place. Slide the cover back and off. Put the screws and the cover aside in a safe place where you will not lose anything.

3. Remove the existing Floppy drive and mount the CF-CARD drive



Unplug both cables (data and power) from the floppy drive and remove the drive by taking out the four screws that hold it in place. As shown in this picture, the screw holes are located on the outer right side of the E4 case.

Then locate the other end of the floppy data cable and remove it completely from the main board. Store the floppy drive, screws and data cable together for safekeeping.

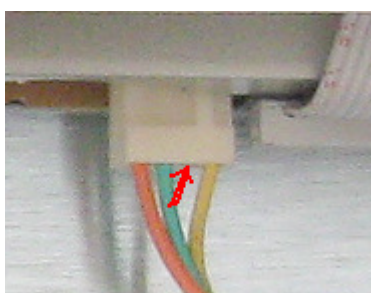
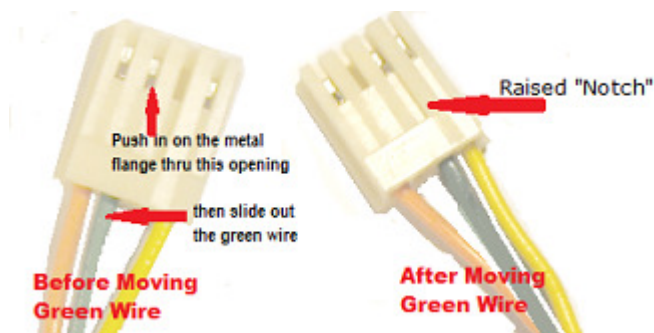
Position the CF-CARD where the floppy drive was and screw the drive into the same spot using the four black 4-40" screws that were supplied. Be careful when positioning the CF-CARD through the hole in the front of the E4 case, as you can scratch the paint on the drive.

4. Modify the Floppy Power Plug for the CF-CARD

Before you plug it into the small two-pin power connector on the rear of the CF-CARD drive, you will need to modify the floppy drive power plug. It is very important that you do this before you try to plug in the CF-CARD power connector or you might burn out the CF-CARD SCSI adapter board. The EMU samplers all have the floppy power plug set up so that the green ground wire is next to the orange 12-volt wire, not the yellow 5-volt wire, which is where it needs to be. You will need to fix this by moving the green

Installation of the CF-CARD into the EMU E4 Rack

ground wire over so that it is next to the yellow 5 volt wire. Start by holding the plastic floppy power plug upright, as shown in this picture, and the raised "notch" on your right:



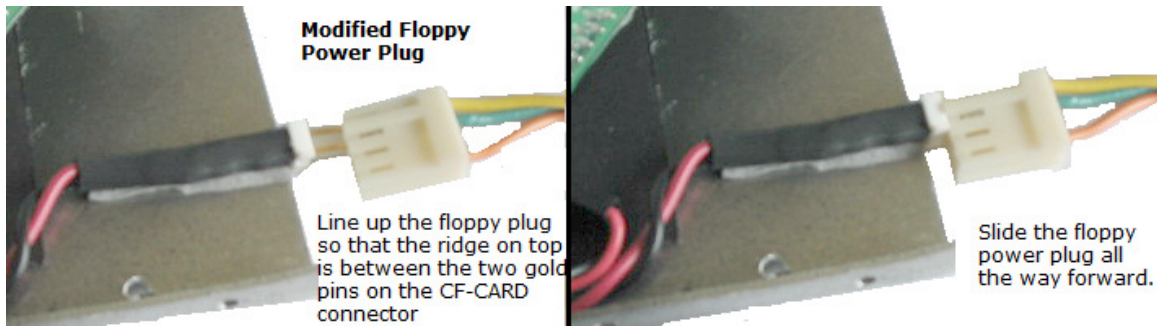
You will see four tiny slits at the top of the plug with a metal terminal inside each slit (only three of the four have a wire inside). The terminal has a tiny metal flange at the bottom that sticks out enough to keep it from sliding out of the plug. If you pull on a wire, you'll see that the flange catches and keeps the terminal from coming out of the plug. Find the slit for the green wire (second from the

left) and use a small flat blade screwdriver to press in on the metal flange at the bottom of the slit. Once you push in on the flange using the flat blade screwdriver, pull on that wire and the terminal should slide right out of the plug housing. Then use the blade of the screwdriver to pry the little metal flange piece on top of the terminal back up so that it will hold the terminal in place once you reinsert it into the plug. Slide the green wire you just removed back up into the plug housing so that the green wire is now next to the yellow wire. The empty space will now be between the green and orange wires. Push the wire all the way up into the plug (with the slit and flange facing you) and the flange should catch and hold the wire securely in the housing. If it doesn't stay in, take the screwdriver and bend the flange up more by running the screwdriver blade underneath it. Reinsert the wire into the plug housing again and it should catch and stay securely in the plug. That will complete the floppy power plug modification.

5. Connect the Floppy Drive Power Plug to the CF-CARD

Once the plug has been modified so that the yellow 5-volt wire and the green ground wire are next to each other, you can plug the floppy power plug into the two-pin power connector located on the rear of the CF-CARD metal bracket, as shown in this picture:

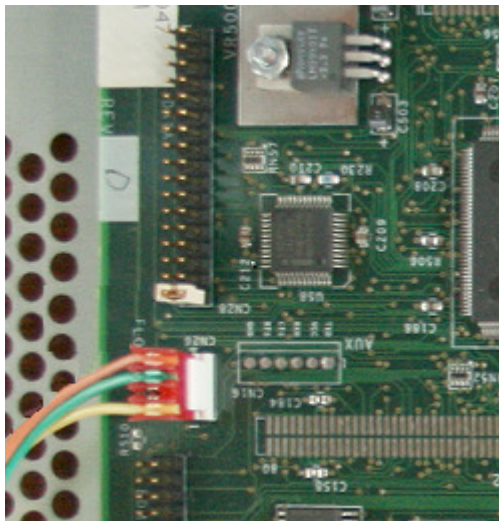
Installation of the CF-CARD into the EMU E4 Rack



Make sure that you line up the right edge of the floppy power plug with the right edge of the two-pin connector on the CF-CARD and slide the floppy plug all the way forward. Take notice of the ridge of the top of the floppy plug and make sure it is between the two gold pins. **Do not power on the sampler until you are sure you have the CF-CARD power connected correctly**, so if there is any question at all, call or email us before proceeding.

6. Place a Jumper on the Floppy Drive Connector

The E4 will always search for a floppy drive upon startup and doesn't particularly like it when it doesn't find a floppy drive installed. You can place a jumper plug over pins 32 and 33 (as shown here) – this will make the sampler think the floppy drive is still installed.



Note that adding this jumper plug is optional and the sampler will operate just fine if you omit this step but it may be slower to start up.

If you do not have a jumper plug handy, you can use one of the spares on the JP1 jumper bank (assuming they are not in use). Do not take either jumper plug from JP2 or JP4.

7. Connect the SCSI Ribbon Cable

Next take the ribbon cable we supplied and plug one end of it into the 50pin connector on the Adapter board that is mounted on the CF-CARD bracket. The cable can only plug in one way because of the notch in the black plastic. Then take the other end of the cable and plug it into the 50-pin SCSI header on the E4 board. You will need to remove the expansion board that is on top of it temporarily in order to access the SCSI header. refer to the picture on page 2 for the location of this expansion board. There will be a small 1 beside one end of the 50-pin header on the main board – look for this and be sure that you plug the side of the ribbon cable that has the red stripe on it into the end of the pins that have the 1 beside them. If you get this backwards, the E4 will not boot properly, so be sure to get it plugged in the correct way.

Before replacing the expansion board, you should test the installation and make sure the CF-CARD drive is working properly.

That completes the installation ... now you just need to make sure the CF-CARD drive is working.

8. Test the Installation

Review everything and make sure you have installed the drive correctly. Make sure the altered floppy power plug is attached properly to the two-pin power connector on the rear of the CF-CARD and the SCSI ribbon cable is correctly connected to the E4 board and the CF-CARD drive. If everything is correct, put a CF card into the card slot of the CF-CARD drive (brand label up), attach the power cable to your E4 Rack and power it up. You can test the availability of the CF-CARD drive from the Disk menu (follow the normal Disk selection methods outlined in the sampler manual). The CF card will have to be formatted by the E4 before it will be ready for use because the ESI uses a proprietary EMU file system (unless you are using EOS 4.7). Execute the format option and once it completes, then see if you can access the CF card.

Once you have verified the CF-CARD works and you can access the CF card in the card slot, **turn off the E4 Rack and unplug it from the wall.** Check again inside the case and make certain that everything is securely attached. If it is, you can put the case back together with the screws.

This concludes the installation procedure.

Choosing Media Cards for the CF-CARD Drive

CF stands for Compact Flash and this is the type of media storage cards you will be using with this drive. The CF-CARD drive can use both Type I and Type II compact flash cards. As for brand of cards, we recommend buying Sandisk, Lexar or Transcend brand CF cards, as these have proven to work well with the CF-CARD drive and most samplers.

Note: Newer Kingston CF cards are not compatible with this drive, so do not purchase any of those. If you already own some older Kingston CF cards, they will probably work fine but sometime around April 2010, Kingston made a change to their CF cards that rendered them incompatible with our CF-CARD drive. So any Kingston cards made after that period will not work.

Using the CF-CARD Drive

The CF-CARD drive must always have a Compact Flash (CF) card inserted into the slot before you power on your sampler. This is important for correct operation of the drive. The CF-CARD drive does not support hotswapping cards (that is, removing a CF card and inserting a different card while the sampler is powered on). Doing this can damage the drive or the CF card, so be sure that you follow these guidelines:

1. Always make sure the CF card you want to use is fully inserted into the CF-CARD before powering anything on.
2. Insert the CF card carefully into the slot, making sure the CF card is put in label up and is aligned correctly before gently pushing it all the way in.
3. Never remove a CF card from the card slot on the CF-CARD while the sampler is powered on.
4. When you want to change CF cards, you must first power down the sampler, change the CF card, then power back on the sampler.

Following these rules will ensure that you have no problems using the CF-CARD drive.

Refer to the E4 manual for more information about the functions of the Disk mode and contact us if you have any questions. This concludes the CF-CARD installation and usage manual. Thank you for your business and we hope you enjoy using the CF-CARD drive.