

IMPORTANT!

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1. Disconnect the whip antenna, DC power adaptor or battery pack from the receiver. Remove the four black screws that secures the rear cover. Two are on the top side and two are in the battery compartment. Remove the two tapered side screws at the strap locks.
2. Gently lift the rear panel. Unsolder the .01uf (103) disc ceramic capacitor that connects to the battery tab. Using a fine tipped magic marker, mark this solder location for future reference.
3. Unplug the 7 pin multi-wire cable that connects the main body to the rear panel. Note: it helps to use a small screwdriver to dislodge the connector from the connector shell. Unscrew the top black screw between the VOL and SQL controls. Unscrew the black screw between the MW CH STEP and FREQ DISPLAT slide switches at the bottom of the main body assembly.
4. Slide the complete electronic assembly out from the front chassis. **DO NOT TILT THE FRONT PANEL FACE UP, OR ELSE ALL THE SWITCH CAPS WILL FALL OUT!** Note: The rubber switch membrane may dislodge from the front pc board. This is not a problem, in fact we recommend the membrane be removed and set aside as repairs are performed. With the LCD display side of the assembly facing you, remove the two black screws that secures the front pc board. Unsnap the the front pc board from the main body to expose the large filter capacitor (2200uf) on the left side (there is only one capacitor). Cut the capacitor leads close to the body. Remove the remaining lead lengths using a needle nose pliers and soldering iron. Use a large 40-60 broad tipped iron for removal. Clear the solder pads using desoldering wick or a vacuum desoldering tool.
5. Install a 1000uf/6.3 volt electrolytic cap at this location. Please be sure the negative side of the cap (bar side) is on the left. Re-install the front panel pc board to the main body. If you are installing only the capacitor upgrade, proceed to step 7.
6. **FILTER UPGRADE** If you are replacing the wide filter, you will have to unsolder the two wires that connects the ferrite bar antenna to the rear pc board. Also unsolder the wire that connects the whip antenna. Remove the three screws that secure the rear pc board to the main body. The filter that will require removal is marked on the filter 55H. Lift the board to expose the bottom side. The filter to be replaced is silkscreened CF3. Clear the four filter pins using solder wick or a vacuum tool. Using the double sided tape, secure the filter to the top side of the board just to the right of T10. Connect the white wire of the new filter to one of the ground pins. Refer to Figure 1. Connect the red wires to the signal input/output locations. Any red wire can be installed in either the input or output. Secure the pc board to the main assembly using the three screws. Resolder the antenna wires to the ferrite bar and whip antenna.
7. Begin replacement of the surface mount capacitors on the RF/IF board (bottom board). Refer to Figure 2 for component values. Be sure to orient the bar/black side of the capacitor towards the white dot silk screened on the pc board. Refer also to "Tips when replacing Surface Mount Caps".

Figure 2

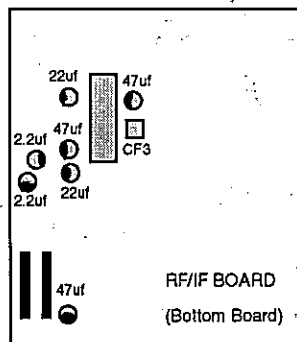
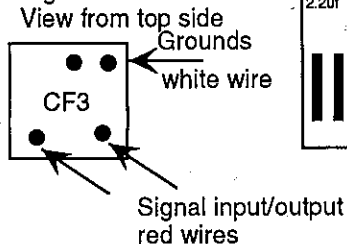


Figure 1



Tools Required:

1. 20 to 40 watt fine tipped soldering iron or soldering station. 40 to 60 watt broad tipped iron. **NO solder guns!**
2. Rosin core solder preferably with 2% silver, small flat end and Phillips screwdriver, magnifying glass, small needle nose pliers, small wire cutters, fine tipped magic marker, one or two band-aids, cotton q-tips, flux cleaning solvent.
3. Desoldering wick and/or a vacuum desoldering tool.

Tips when replacing Surface Mount Caps

1. Use a fine tipped soldering iron. Unsolder one end and gently lift the cap from the board. Do the same for the other side. This may have to be repeated several times to free the cap completely. Do not force the cap from the board, otherwise you might lift the trace.
2. Look for traces of leaked electrolyte. If you see a chemical residue, this will have to be cleaned. A cotton Q-tip and some sort of solvent works best. We use lacquer thinner but please be aware that lacquer thinner is extremely flammable. Keep the container away from any heat or flame source. You can also use denatured alcohol (also flammable).
3. Using desoldering wick, clean the pc board traces and apply a fresh layer of solder. Do not apply too much. A thin layer works best.
4. Tin the surface mount caps with a small amount of solder on the bottom sides of the pins.
5. Orient the capacitor on the pc board making sure the black/bar side is towards the white dot silkscreened on the pc board. You can hold the cap in place using needle nose pliers. It often helps to wrap the ends of the pliers with the plastic adhesive ends of a band-aid, with the sticky side on the outside (in other words, cut the adhesive tape ends from the cloth bandage). This keeps the cap from slipping from the pliers.
6. Solder each end. Gently rock the cap back and forth to make sure the solder connection is secure. If not, reapply heat with the soldering iron. Evidence of good solder flow should be present when inspecting the connections with a magnifying glass.

Sony PRO80 Cap Restoration

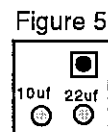
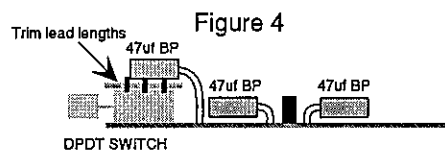
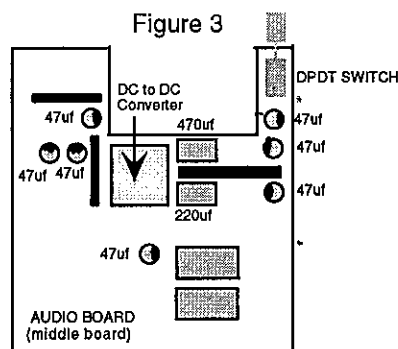
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page 1

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8. Remove the two screws on the sides of the assembly. Lift the RF/IF board up and over to expose the audio board. Refer to Figure 3 for the next steps.
9. Remove the 220uf radial cap by cutting the leads close to the cap body. Remove the leads using a 40-60 watt broad tipped iron. Clear the solder pads using desoldering wick. Install a 220uf BP - Bipolar cap. Note: these caps do not have polarity and can be installed in any direction.
10. Likewise, remove the 470uf radial cap and replace it with a 330uf Bipolar cap.
11. Remove the three 47uf surface mount caps along the right side. Note: Unsoldering the right side of these caps is very difficult. It may be necessary to cut the lead closest to the right wall once the left side has been lifted. Clean the solder traces with solder wick and apply a fresh layer of solder.
12. Refer to Figure 4. Clip any excessive lead length to the DPDT Power switch. Install the three 47 uf Bi-polar caps as shown in Figure 4. Note how one cap will lay flat onto the DPDT Power switch board. (That is why any protruding leads from the DPDT switch needs to be trimmed) The cap that lays flat on the DPDT switch has teflon insulation.
13. Replace the remaining surface mount caps on the audio board as shown in Figure 3. A total of four will be replaced.
14. This next step is more difficult, because it involves disassembling the DC to DC converter which is the small square metal box on the audio board. The metal shield box must be removed to expose the last two surface mount capacitors. Gently lift the front pc board from the audio board to expose the bottom of the audio board. The bottom shield plate is soldered to the pc board at three points. Using a broad tipped 40-60 watt iron and desoldering wick, clear the solder points and remove the bottom plate. The metal shield box is soldered to the board at two points. Clear these solder points and remove the shield box. Refer to Figure 5. Unsolder the two surface mount caps and replace them as shown in Figure 5.
15. Mount and solder the metal shield box. Install the shield plate and solder at the three locations. This completes the cap restoration.
16. Reassembly: stack the three boards together as one assembly. Install the two black screws at the front panel. Install the two side screws (holes closest to the ferrite bar antenna).
17. Install the rubber switch membrane to the front pc board. The membrane has alignment tips that must be inserted into the correct holes to guarantee alignment. Gently tap the perimeter of the membrane with a finger to assure that the membrane has seated completely.
18. Slide the assembly into the front chassis. Secure the assembly with the top and bottom screws.
19. Plug the 7 pin cable to the rear chassis. Install the the speaker to the front chassis. Note that there is a frame molding for the speaker and it must be correctly seated into this molding to assure alignment. Swing the rear chassis down and resolder the .01uf (103) capacitor to the previously marked battery terminal.
20. Secure the rear chassis to the main body using the four black screws - two above and two in the battery compartment. Install the two tapered head black screws on the sides. These screws hold the strap locks.
21. This completes installation of the capacitor restoration.



Sony PRO80 Cap Restoration

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page 2