

SX-48 “Q Fan” Replacement Procedure

Introduction

The following procedure has been developed after a number of users expressed concern regarding the operational noise levels of the SX-48 unit (December 2006).

The primary source of the objectionable noise was traced to the cooling fan, mounted at front right of the unit.

The solution appears to be replacement of the OEM fan with a quieter unit, while ensuring that the SX-48 operational cooling requirements are met.

Parts required

- 1 X AcoustiFan AFDP-8025B 12VDC 80mm Ball Bearing PC fan
Available in UK via Maplin
<http://www.maplin.co.uk/Module.aspx?TabID=1&ModuleNo=48496&doy=29m12>
- 1 X Molex 5 Pin 2.5mm pitch Crimp Housing
Available in Australia via Farnell
<http://au.farnell.com/jsp/endecaSearch/partDetail.jsp?sku=257412>
<http://au.farnell.com/jsp/endecaSearch/partDetail.jsp?SKU=9731474> (Matching Pins)
Available in Germany via Farnell
<http://de.farnell.com/jsp/endecaSearch/partDetail.jsp?SKU=257412>
<http://de.farnell.com/jsp/endecaSearch/partDetail.jsp?SKU=9731474> (Matching Pins)

Similar suitable connectors may also be available via local electronics or PC component stores.

- 3 x small “zip tie” cable retension ties
Available in Australia via Farnell
<http://au.farnell.com/jsp/endecaSearch/partDetail.jsp?sku=1168935>
Available in Germany via Farnell
<http://de.farnell.com/jsp/endecaSearch/partDetail.jsp?sku=1168935>

Tools required

- 1 X small Phillips head screwdriver
- 1 X small flat screwdriver
- 1 X large Phillips head screwdriver
- Small side cutters
- 1 X small spanner
- 1 X soldering iron + solder (???)

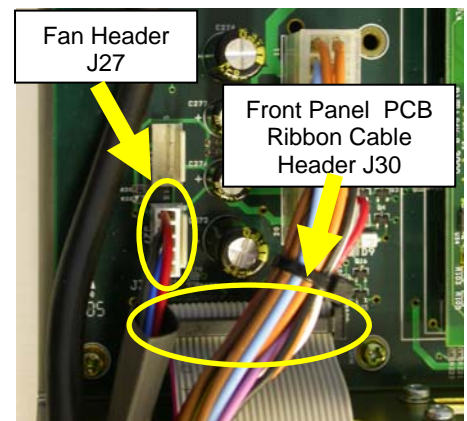
Procedure

The following procedure requires significant disassembly of the SX-48 unit. It is strongly recommended that the SX-48 be moved to a suitable workbench type location, clear of obstructions and "clutter".

Please note that there are 5 different combinations of screws and washers involved in this procedure. Each combination has a specific location and function.

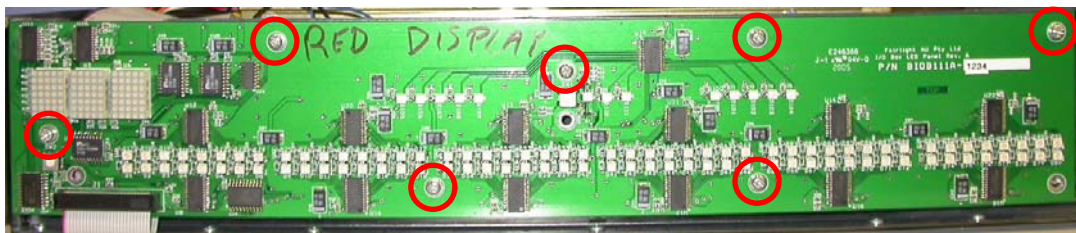
It is strongly recommended that some form of container for each screw/washer combination is used, to avoid mixing or loss of any screws.

- Shut down and disconnect the SX-48 from the CC-1 host machine
- Place the SX-48 on the workbench face UP, and remove the top case panel (20 small black screws)
- Remove 2 small black screws from the edge of the BLUE front face panel
- Flip the SX-48 over so it is laying face DOWN, and remove the bottom case panel (20 small black screws)
- Remove 2 small black screws from the edge of the BLUE front face panel
- Flip the SX-48 back face UP, and remove the BLUE SX-48 front face panel
- Locate the ribbon cable header J30, at front left of the Mainboard. (See picture at right). Disconnect the ribbon cable from this header.



NB: The ribbon cable is permanently fixed to the Front Panel Display PCB. DO NOT attempt to disconnect the ribbon cable from the Front Panel PCB!

- There should be 7 (SEVEN) screw + Spring Washer + Flat washer sets holding the Front Panel display PCB to the chassis. Remove all 7 screw/Spring/Flat washer sets, and CAREFULLY remove front panel display PCB.



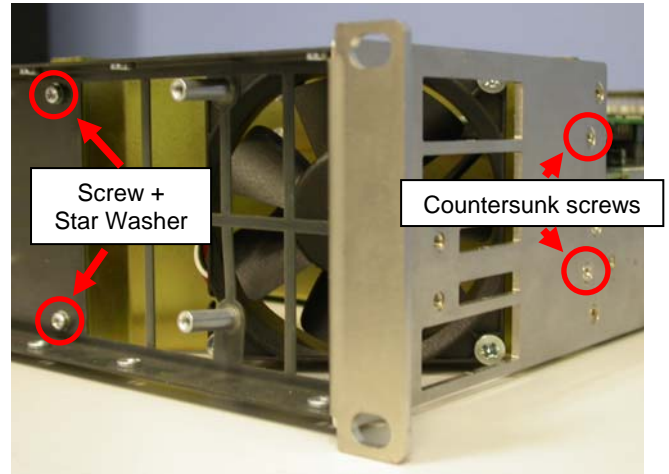
○ = Screw locations

- Locate the Fan header J27, at front left of Mainboard, (Near PCB ribbon cable header, See picture above). Disconnect the 5 pin Molex fan connector from this header

- The Mains Power cable and fan loom is anchored to the front chassis member by 3 X "Zip Tie" cable ties. Carefully cut and remove all 3 ties.
- The fan mount assembly is held in place by 2 screw + star washer sets through the chassis FRONT member, and 2 countersunk screws through the chassis Right SIDE member. (See picture for specific location and type).

Remove these screws.

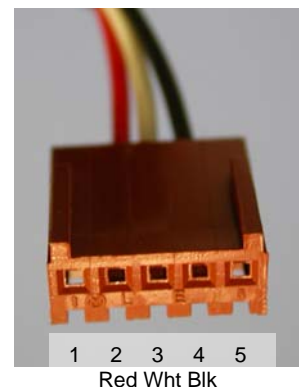
- The fan mounting assembly should now be free of the chassis. Carefully trace the fan wiring loom, and remove fan mount assembly.
- The fan is attached to the fan mount plate by 4 long screws + locking nuts. Use a small spanner to remove the locking nuts. Now unscrew each of the 4 long fan mounting screws. The fan should now be free of the mounting plate.



At this point, it is time to modify the replacement fan so that it is suitable for use in the SX-48.

- On the OEM SX-48 fan, cut off the 5 pin header connector. Remove the length of black rubbery heatshrink tubing from the wiring loom, and set it aside for re-use.
- On the NEW fan, cut off the PC style 3 pin connector, as close to the connector body as possible.
- Thread the NEW fan wiring loom through the length of heatshrink tubing from the OEM SX-48 fan. The heatshrink tubing may require trimming to suit the length of the new fan wiring loom.
- The picture at left shows the pin-out for the SX-48 fan header J27. Using the specified Molex 5 pin connector and crimp pins or equivalent, please assemble the replacement connector onto the NEW fan wiring loom, using the following configuration.

Fan Positive (Red) wire to Pin 2.
Fan RPM Sense (White) wire to Pin 3
Fan Ground (Black) wire to Pin 4.



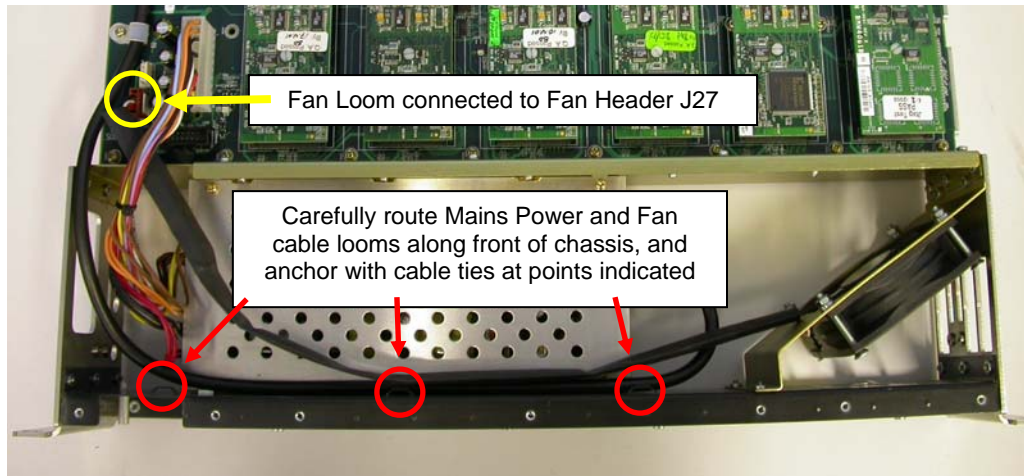
With the replacement fan modifications completed, the SX-48 can be re-assembled.

- Mount the replacement fan on the fan mounting plate, using the 4 long fan screws + locking nuts.

NOTE: ensure that the fan is orientated correctly with respect to the fan mounting plate. The OPEN side of the fan should face AWAY from the mounting plate. This will ensure the fan blows air through the case properly.



- Carefully lay the new fan loom along the front of the case, following the mains power loom. The fan header should easily reach to the fan header J27.



- Re-install fan mount plate + fan, using the 2 screw + star washer sets through the chassis FRONT member, and 2 countersunk screws through the chassis Right SIDE member.
([See picture above for specific location and type](#)).

- Connect the new fan connector onto [fan header J27](#).

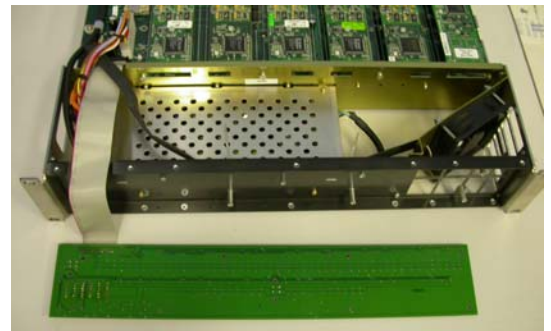
- Install 3 new "zip tie" cable ties to anchor the new fan loom and mains cable to the front chassis member. (There are 3 cable retention anchor points located on the front chassis member, see picture above).

- Place the Front panel PCB face DOWN in front of the SX-48 unit.

There are cut-outs in the chassis members to permit the PCB ribbon cable. Route the cable via these cut-outs, (See picture at right).

[Plug the Front Panel PCB ribbon cable into Header J30](#)

- Re-install front panel PCB, using the 7 supplied screw/spring/flat washer sets.
([See picture above for screw locations](#))



- Slide the BLUE front panel onto the front of the chassis. Insert 2 small black screws into the locations indicated below.



Flip the SX-48 over so that it is face DOWN on the workbench, and insert 2 small black machine screws into the BOTTOM of the BLUE front panel, into the matching locations.

- While the SX-48 is upside-down, re-install the BOTTOM case panel, using 20 small black screws.

NOTE : Ensure that the bottom case panel cooling slots are oriented to the Front Right hand side of the chassis.

- Flip the SX-48 unit back face UP, and re-install the TOP case panel, using 20 small black screws.

NOTE : Ensure that the top case panel cooling slots are oriented to the Front Right hand side of the chassis.

Regards,
FairlightAU