FAIRLIGHT

Fairlight EVO
XCS/Xynergi Gen 2 conversion

5 September 2013

Version 1

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Introduction

This document outlines the conversion process of a USB-connected XCS panel to the new Ethernet-connected XCS Gen 2 format. This conversion allows an EVO console to be fully Ethernet connected.

Tools Required

To perform the conversion of a EVO XCS to XCS Gen 2 specification, the following tools will be required:

- #1 Pozi screwdriver
- #1 Phillips screwdriver
- 5.5mm socket driver
- Large flat-blade screwdriver
- Electrical nippers
- Minimum EVO software version 4.1.02 installed on the Host PC

It is assumed that the XCS or Xynergi to be converted is currently operating in a known working system.

Pre-Conversion Preparation

XCS Gen 2 Hardware Preparation

Unpack your XCS Gen 2 conversion kit, and confirm the following parts are included:

- Adaptor Plate
- XCS Gen 2 Tray (Inc Internal PC and Power PCB pre-mounted)
- XCS Gen 2 > TFT Data cable
- XCS Gen 2 > MFX4 Serial cable

Xynergi Gen 2 Hardware Preparation

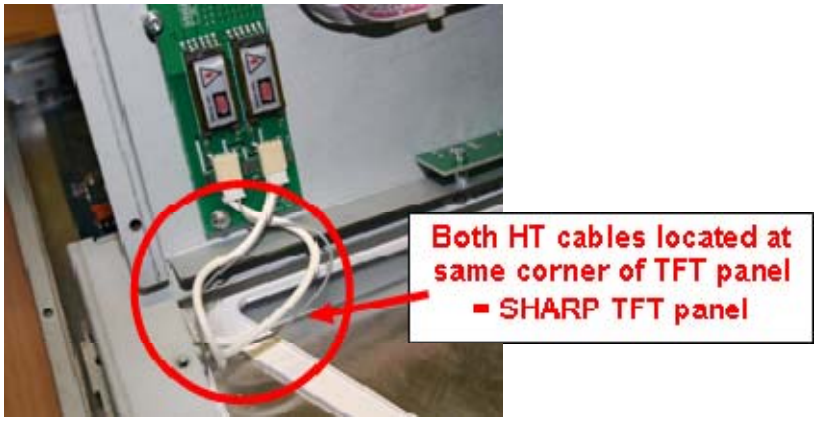
Unpack your XCS Gen 2 conversion kit, and confirm the following parts are included:

- Xynergi Gen 2 Tray (Inc Internal PC and Power PCB pre-mounted)
- XCS Gen 2 > TFT Data cable
- XCS Gen 2 > MFX4 Serial cable

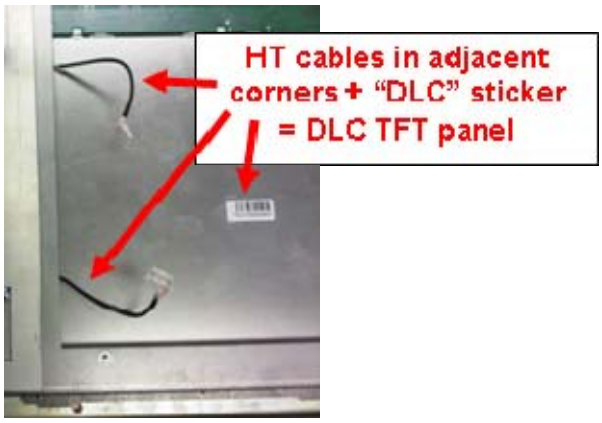
Confirm Screen Type (XCS and Xynergi)

It is also critical that you identify whether the donor panel is equipped with an older SHARP or newer DLC TFT panel and matching Inverter. The best way to confirm the brand of panel is:

- SHARP TFT panels have both HT cables located in one corner of the TFT panel, as shown below



- DLC TFT panels have the HT cables locate in adjacent corners of the panel, as shown below



Keep these details in mind as you perform the Upgrade procedure. There are subtle differences in cable lengths, component mounting, and configuration which will need to be heeded.

Host PC Software preparation

In order to prepare the Host PC for conversion to Gen 2 specification,
please ensure that the appropriate variant of 4.1.02 software has been installed on the host PC.

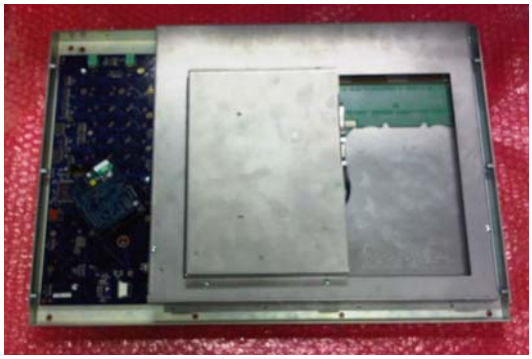
XCS Gen 2 Conversion Procedure

Removal of existing XCS panel from existing console

- Shutdown the Host PC, and power off the console
- Lift the XCS panel

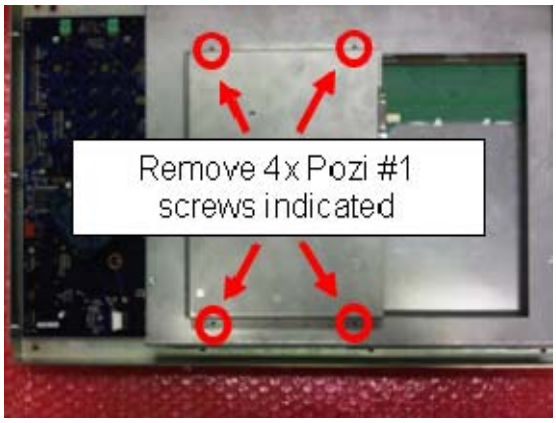
- Remove XCS panel screws, being careful to support both the XCS and the panel assembly.

- Lift XCS panel clear, and set face _down_ on soft static-free work surface

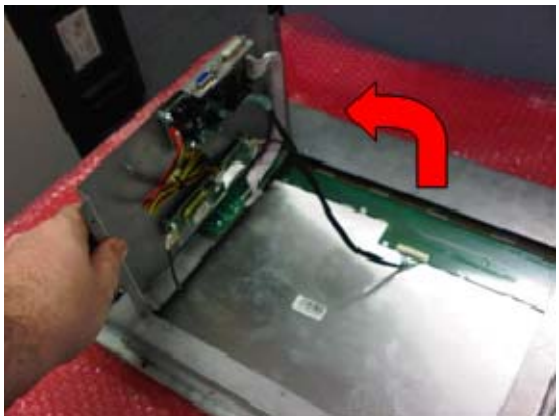


Dis-assembly of existing XCS

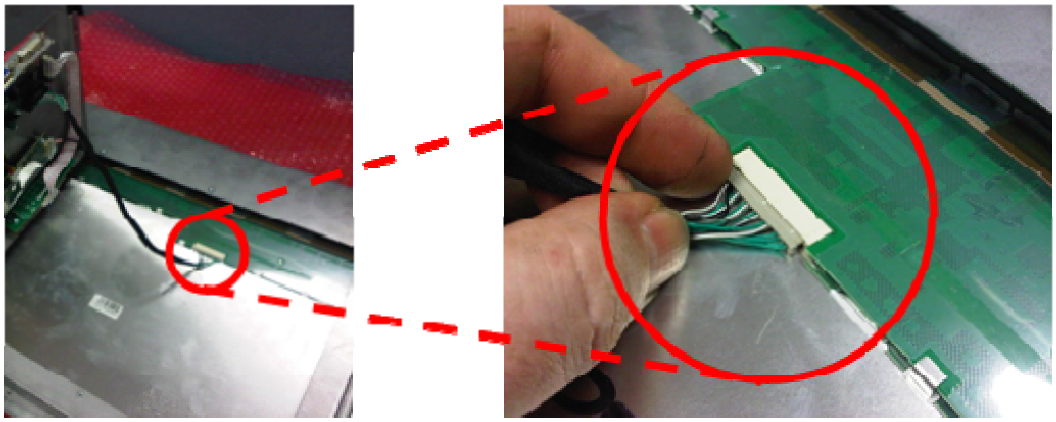
- Remove the 4x Pozi #1 screws indicated. Set aside for re-use.



- Carefully lift the XCS tray up towards the left. Do Not Exceed 90 degrees.



- Carefully disconnect the TFT Data cable from the TFT panel



- With the TFT data cable now free, the XCS tray may be laid flat against the XCS panel. Take care not to apply undue strain to the Inverter HT cables.
(Note: Example shows DLC panel inverter. Older SHARP panel inverter HT cables both exit towards the bottom of the panel)

- Disconnect both HT cables from the Inverter

- The XCS tray should now be free, and can be removed from the XCS panel.
- Locate the Inverter Power cable, and disconnect from both the TFT Controller and Inverter PCBs as shown.

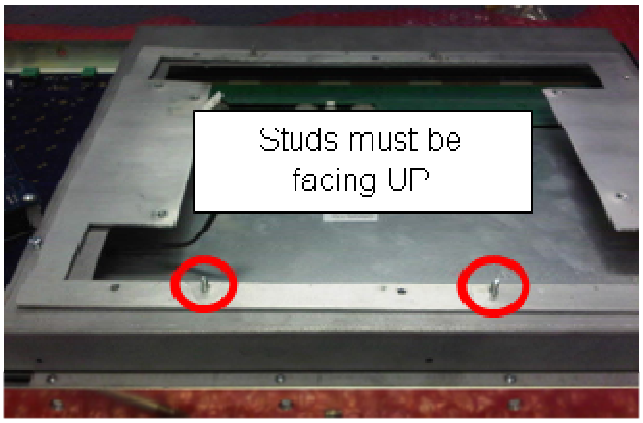
- There are 2x Pozi #1 screws anchoring the Inverter to th4e XCS tray. Remove these screws and the Inverter PCB. Set these aside for re-use.

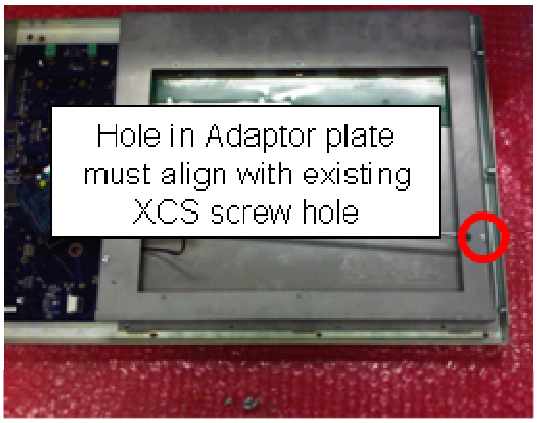
- To physically remove the Inverter Power Cable, carefully use nippers to cut the zip-tie anchoring the cable in position. Once free, set the Inverter Power Cable aside for re-use.

- With the Inverter PCB and Inverter Power Cable safely removed, the XCS tray and all remaining components are not longer required, These may be held as “known working spares”, or disposed-of as needs require

Assembly of XCS Gen 2

- Identify the XCS Gen 2 adaptor plate. This plate must be oriented correctly to ensure correct assembly of an XCS Gen 2 panel. It is suggested to place the Adaptor Plate on top of the XCS panel as shown below. The 4x mounting studs should be protruding UP towards the user. The screw hole indicated should align with a matching hole at the right-hand edge of the XCS panel metalwork. Remove the screw in this position, and set aside for re-use.



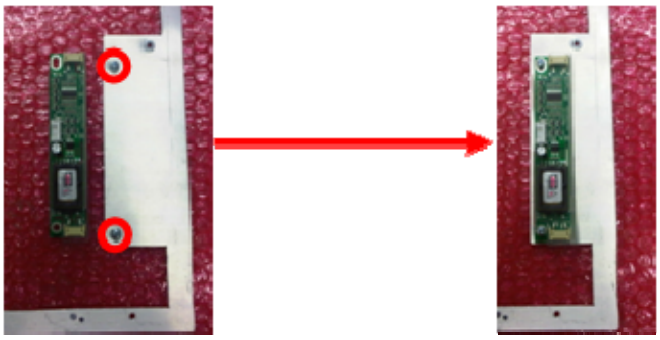


Once the starting position of the Adaptor Plate is established and confirmed, the assembly can continue.

- Flip the Adaptor Panel L>R, so that the mounting studs are protruding *Down*, and the indicated mounting hole is to the Left.

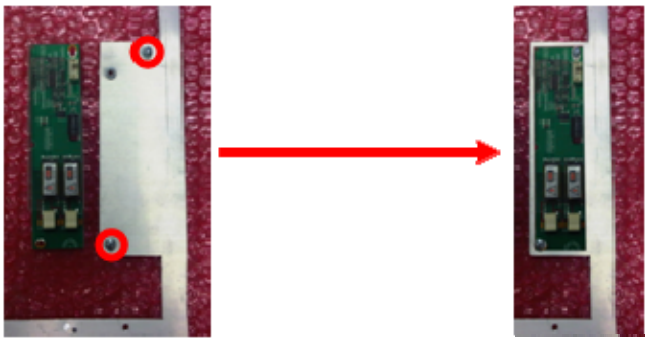
- Using the existing 2x Pozi #1 screws, mount the Inverter to the Adaptor Plate, as shown below.

  For DLC-equipped screens:

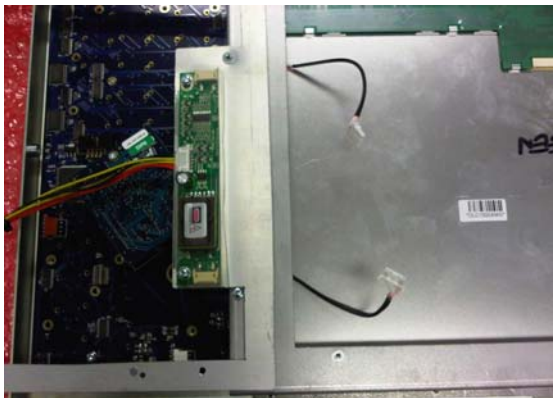


For SHARP equipped screens:

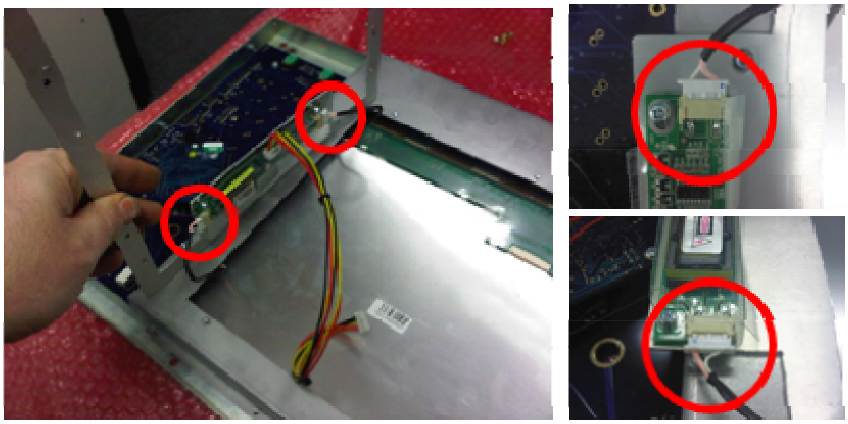
NOTE! The Inverter ***Must Not*** be allowed to short against the middle mounting stud!!! Ensure insulating washers are installed ***between*** the Inverter and the mounting studs. This will raise the mounting height of the Inverter, and avoid shorting against the extra mounting stud.



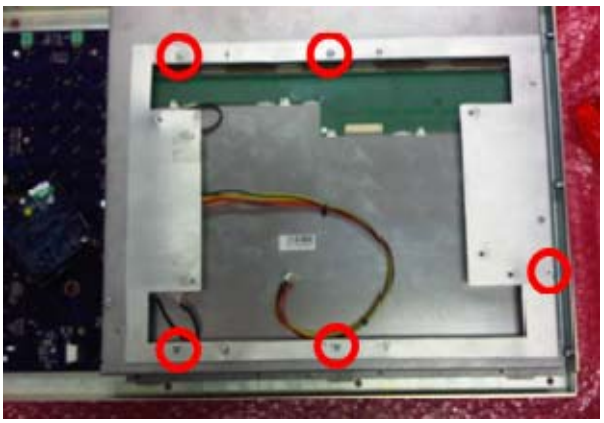
- Attach the existing Inverter Power Cable to the Inverter PCB. Place the panel to the Left of the tray area. (DLC Inverter shown)



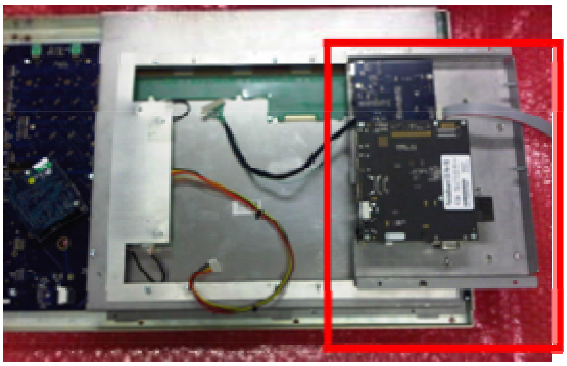
- Re-attach the Inverter HT cables to the Inverter PCB. The blue-dot shown below should be visible if the HT cable connectors are correctly oriented.
(DLC Inverter shown)



- Hinge the Adaptor Plate down and place it flat against the XCS panel. Reinstall the 4x Pozi #1 screws from the original XCS Tray, and the 1x Pozi #1 screw from the right-hand mounting hole. This will anchor the Adaptor Plate to the XCS Panel metalwork.



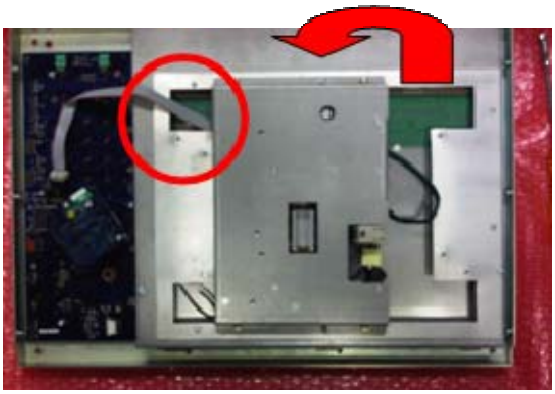
- Position the XCS Gen 2 tray assembly as shown.



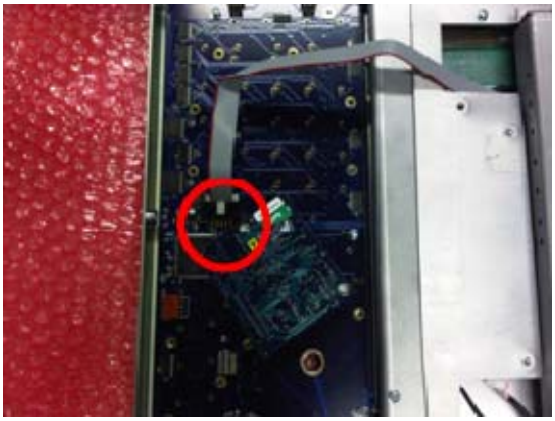
- Connect the XCS Gen 2 TFT Data cable to the TFT panel

- Connect the TFT Inverter Power Cable to the XCS Gen 2 Power PCB

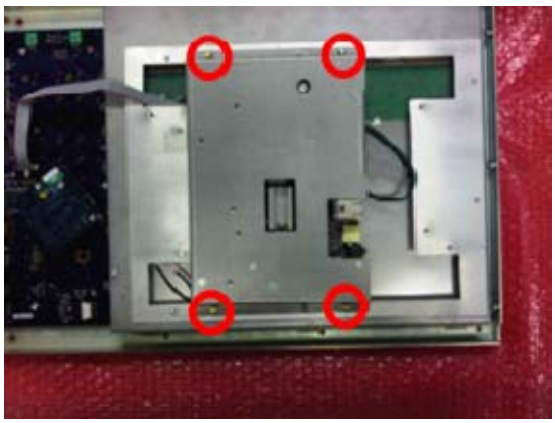
- Flip the XCS Gen 2 tray over towards the left.
  Make sure the grey XCS Gen 2 serial cable is routed as shown.



- Connect the XCS Gen 2 USB cable to the 10-way header on the XCS PCB



- Using a 5.5mm nut socket driver, install the 4x supplied castlated nuts to anchor the XCS Gen 2 tray into position



Re-assembling XCS Gen 2 into existing console

- Mount the XCS Gen 2 panel into the panel assembly datum arms.

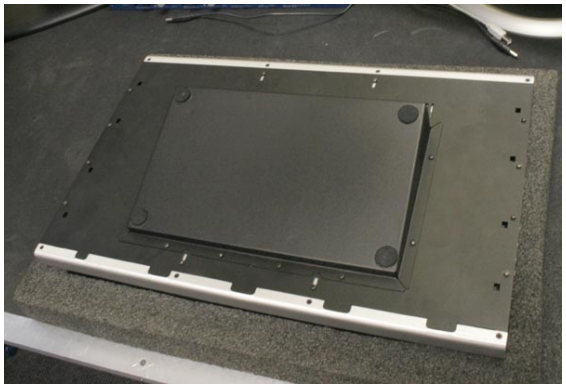
- Carefully supporting both the XCS Gen 2 panel and the panel assembly, re-install 6x panel screws

- Connect an Ethernet cable betwee the XCS Gen 2 panel and the Ethernet Switch located inside the console chassis.
- Connect an EVO power cable between the XCS Gen 2 panel an the nearest PDB Power Distribution Board.
- Lower the Panel Assembly down into position
- Re-install the Console nosing.

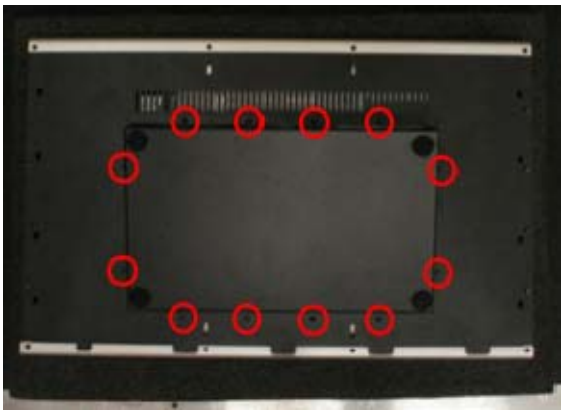
Xynergi Gen 2 Conversion

Dis-assembly of existing Xynergi

– Make sure you have some suitable padding, and place the Xynergi Face DOWN on the work surface

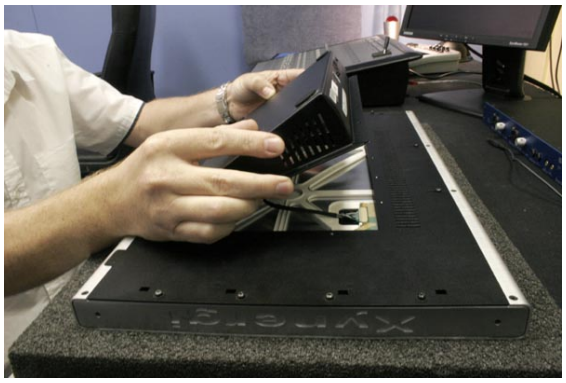


– Using a #1 Phillips screwdriver, remove the 12x screws indicated. Set aside for re-use.

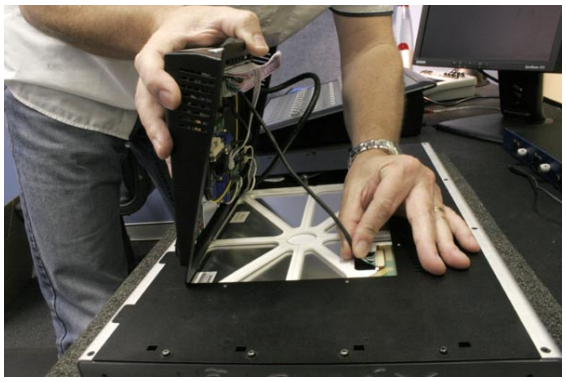


– CAREFULLY hinge the tray up <TOWARDS> you
NOTE! There are SHORT CABLES which may be TERMINALLY DAMAGED if you do this incorrectly, too FAST, or with TOO MUCH FORCE!

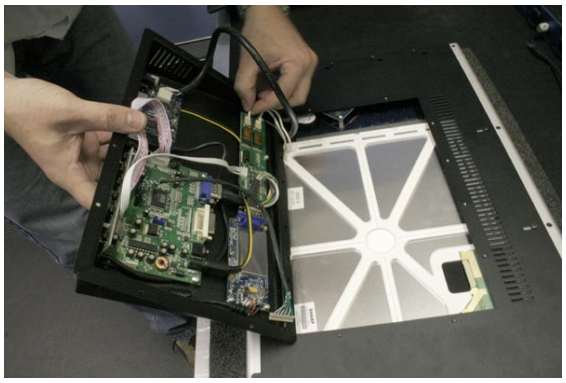
NOTE! STOP when you get to 90 degrees!!!
DO NOT EXCEED 90 DEGREES!!!!



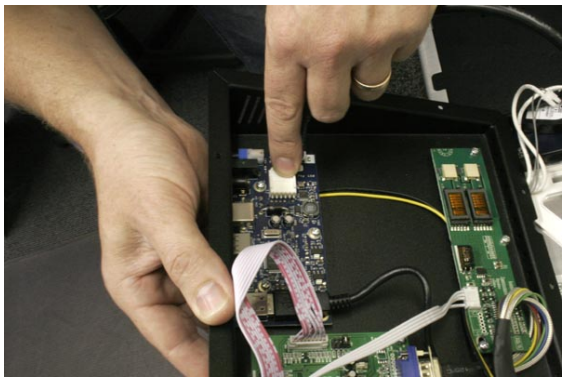
– CAREFULLY disconnect the TFT drive cable connector



– CAREFULLY disconnect the 2 (TWO) HT lines from the Inverter (SHARP screen and HT lines shown)

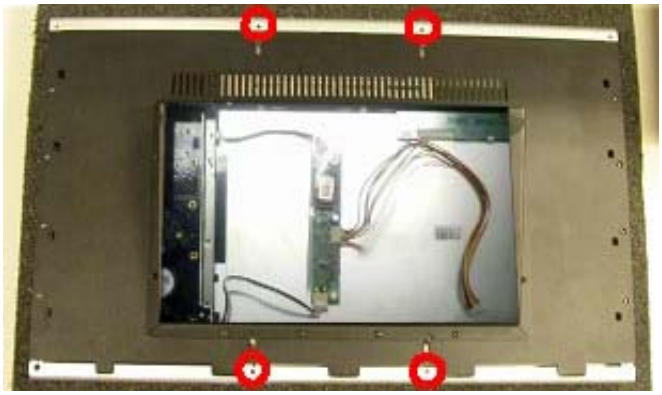


– Disconnect the USB cable from the Xynergi USB hub

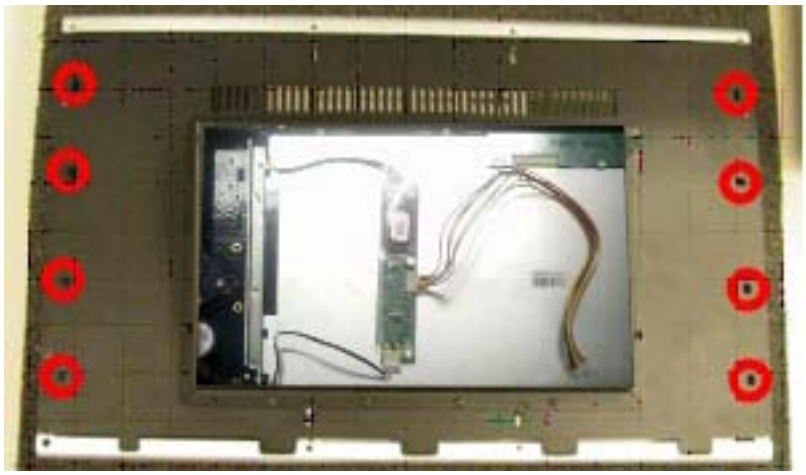


- You should now be able to remove the tray and all associated electronics away from the Xynergi screen, and set it aside on the workbench.

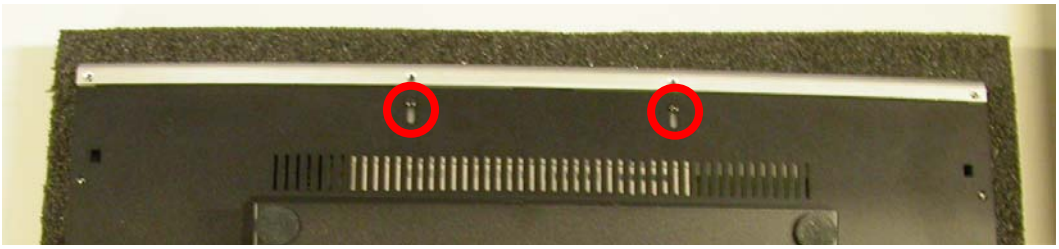
- Using a #1 Pozi-drive screwdriver, remove 4 x screws from the aluminium plate. Set aside for re-use.

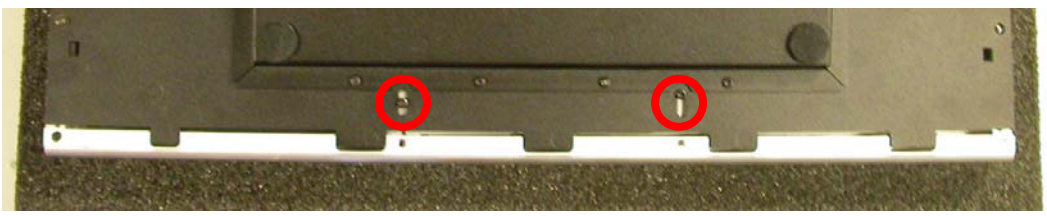


- Using a #2 Phillips-head screwdriver, remove 8 x screws from the black baseplate. Set aside for re-use.

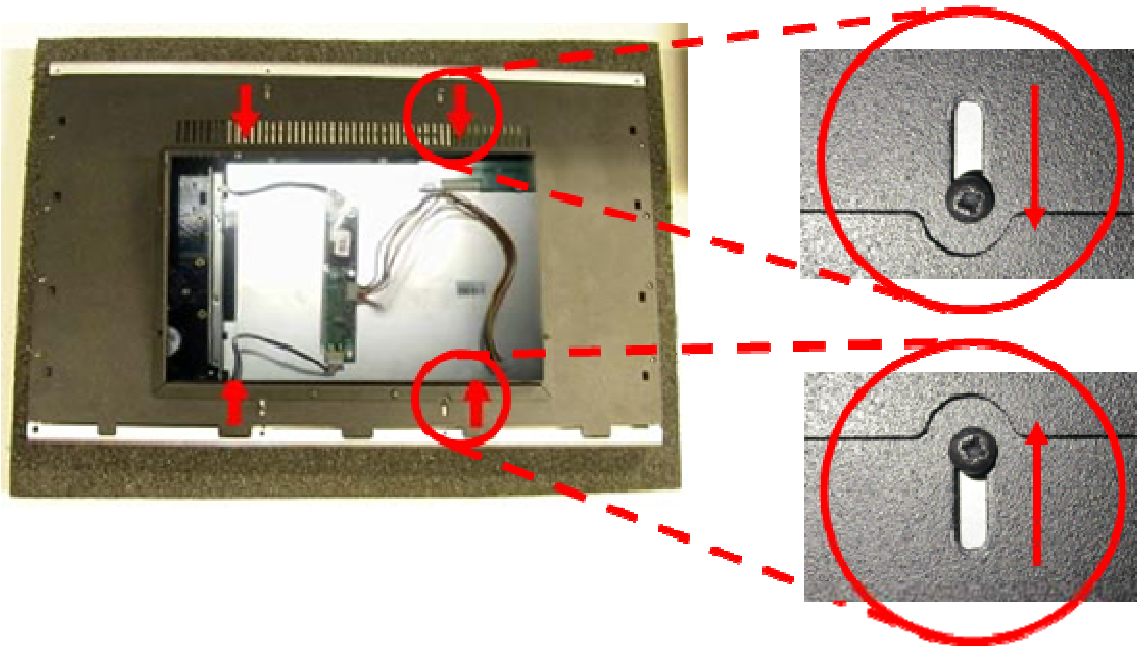


- Loosen the screws shown below. They should NOT be removed!



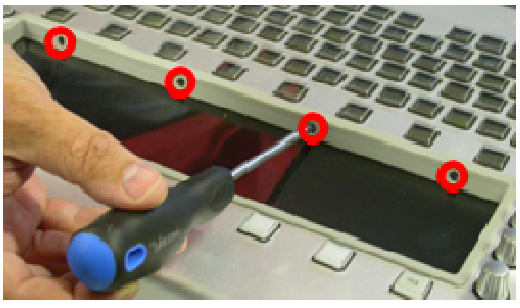


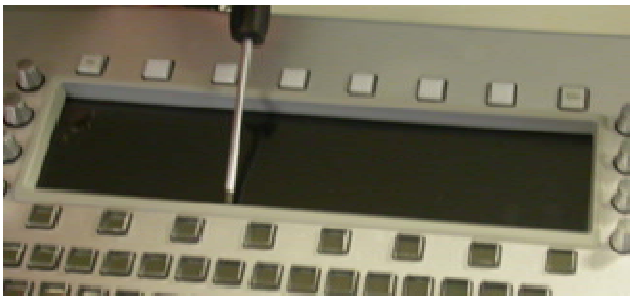
- Slide the loosened screws as shown to release the silver faceplate.



- Carefully flip the Xynergi over so it is sitting on the work surface facing UP
- Remove the rubber O-ring from the Jog wheel. This will reveal an access hole for the locking grub-screw. Use a 1.5mm Allen key to loosen the locking grub-screw. DO NOT REMOVE the grub-screw from the wheel!

- With the grub-screw now loose, the jog-wheel should be easily lifted straight up and away from the encoder shaft. Ensure the foam and felt pads under the jog wheel are kept safe.
- There are 4 screws on the lower edge of the display bezel. Using a #1 Pozi-drive screwdriver, remove each of these screws. Set aside for re-use.



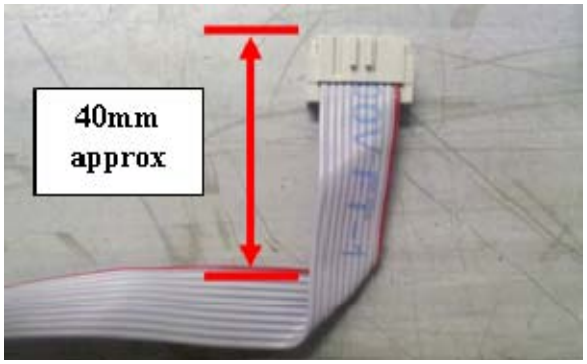


- The bezel should hinge up along its top edge, and be easily removed.
  CAUTION! Make sure the bezel and see-through panel is protected from scratches while it is removed from the Xynergi chassis!

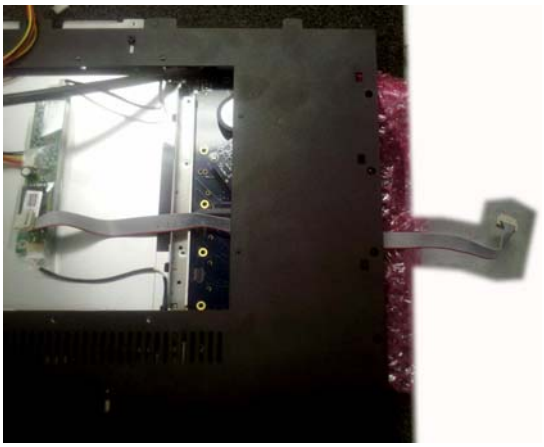
- With the jog-wheel and the display bezel removed, the brushed aluminium faceplate can now be carefully removed from the Xynergi.

Assembly of Xynergi Gen 2

- Locate the Xynergi Gen 2 Serial cable. Pre-fold one end of the cable as shown.

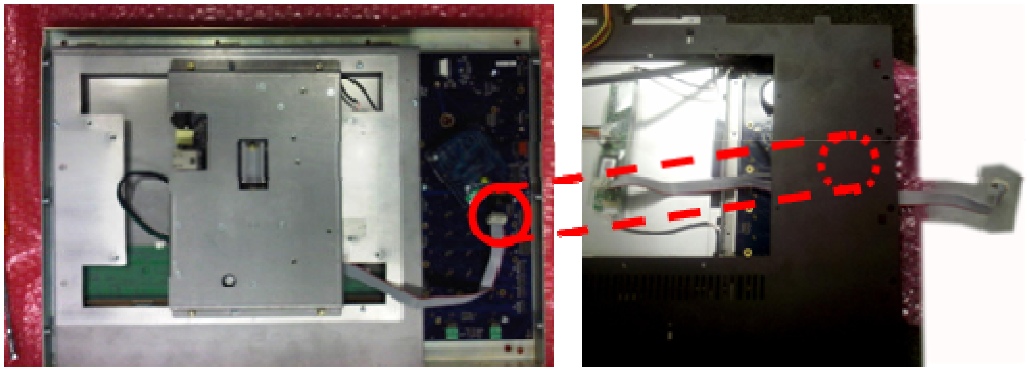


- Thread the free end of the cable through the Xynergi metalwork as shown



- Carefully attach the Serial Data cable to the PCB.
  Access on a Xynergi is via the RH edge of the assembly. This will require some patience.

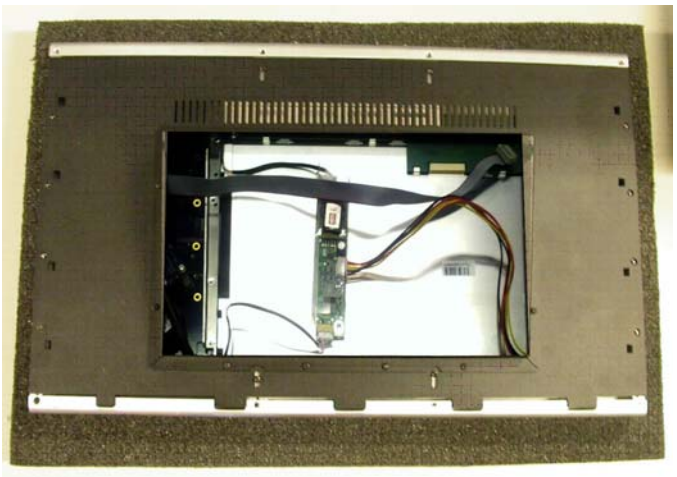
  Do Not Use any metallic tools, as this may damage the Xynergi Main PCB!
  (Compare the position of the 10-way Serial Connector on an XCS PCB to the Xynergi PCB)



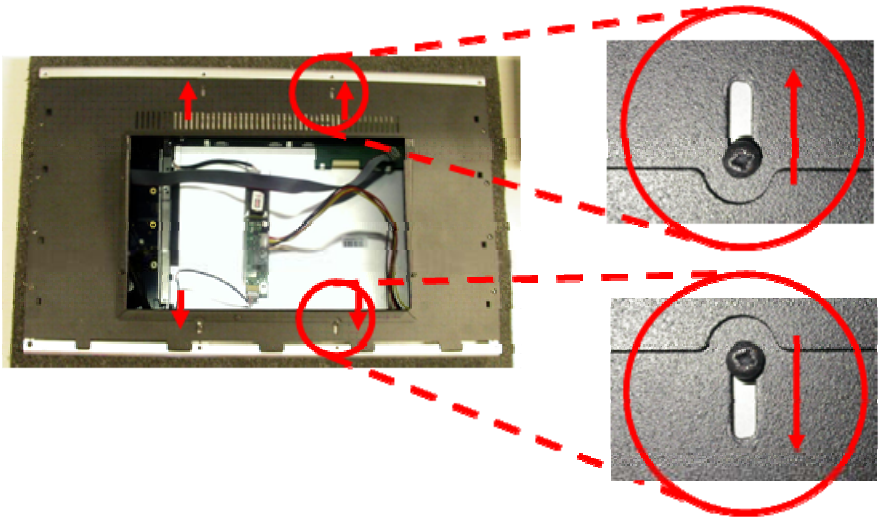
As viewed from the RH side of the panel

- Re-mount the silver front panel onto the Xynergi.
  Do Not re-install the Bezel or Jogger at this time.

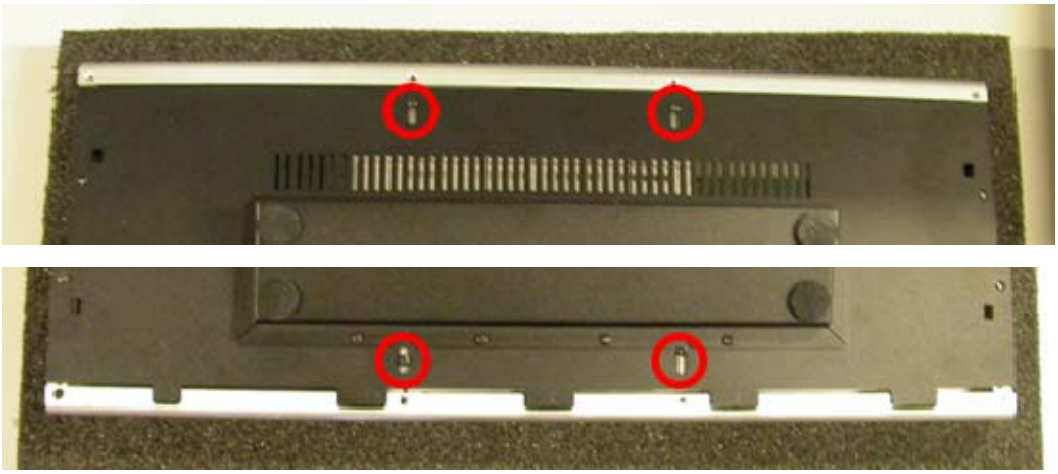
- Flip the entire assembly over so the Xynergi is face Down



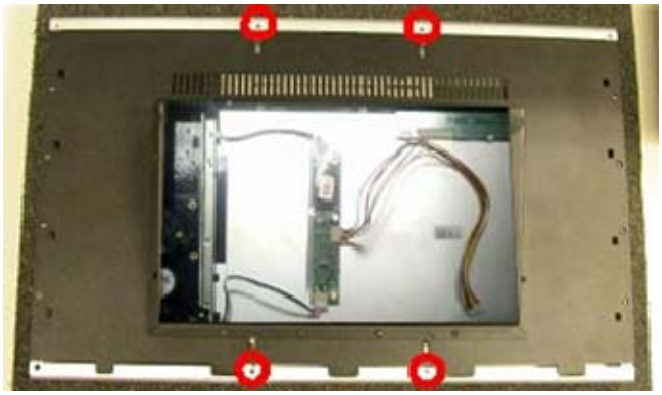
- Slide the locking screws as shown to lock the silver faceplate into position.



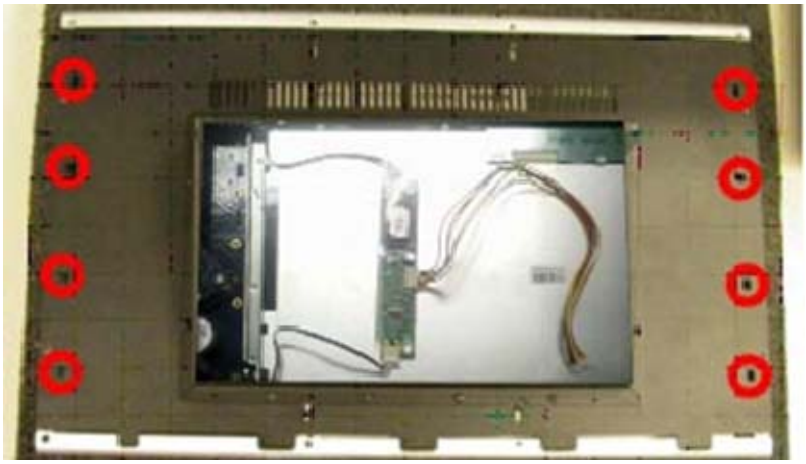
- Re-tighten the screws shown below.



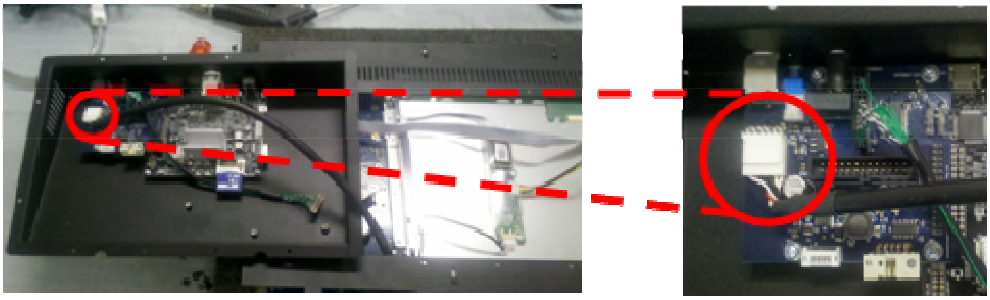
- Using a #1 Pozi-drive screwdriver, re-install 4x screws into the aluminium plate.



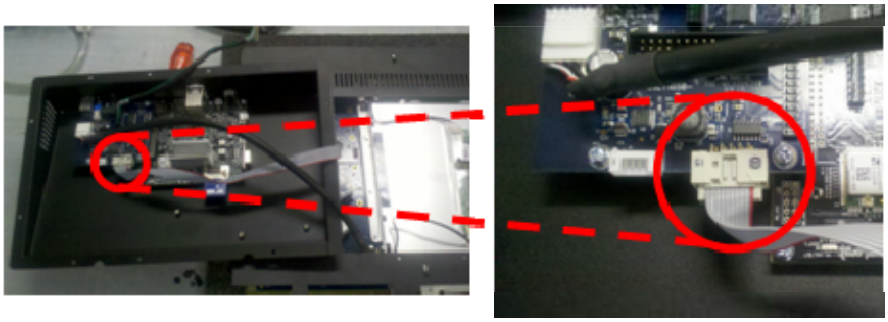
- Using a #2 Phillips-head screwdriver, re-install 8x screws into the black baseplate.



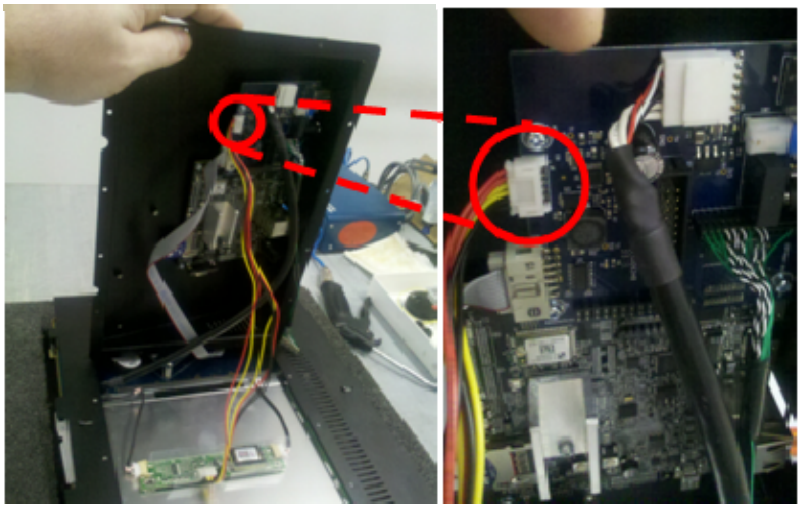
- Locate new Xynergi Gen 2 tray as shown below, and connect the Xynergi USB cable



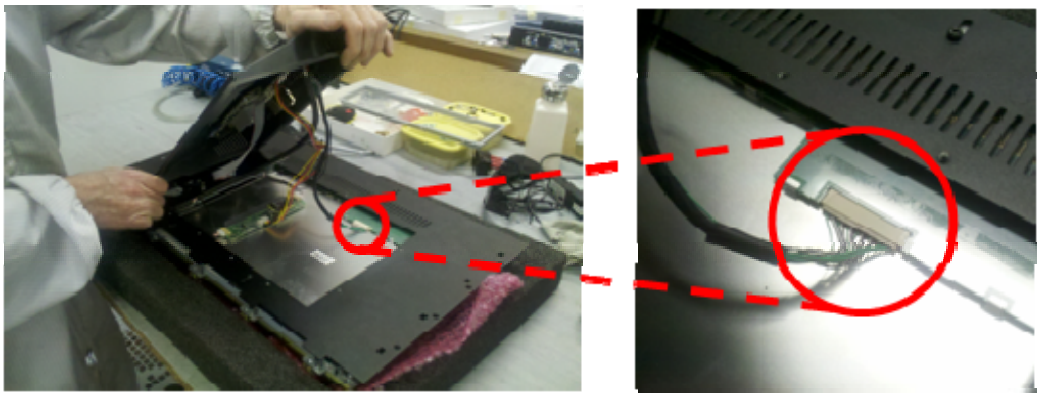
- Connect the Xynergi Serial cable as shown



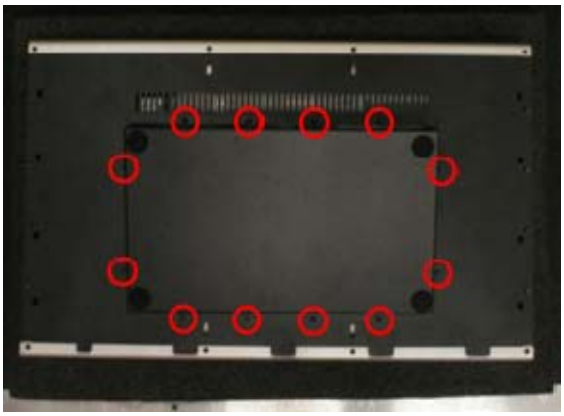
- Hinge the Tray to the Right. Connect the Inverter power cable



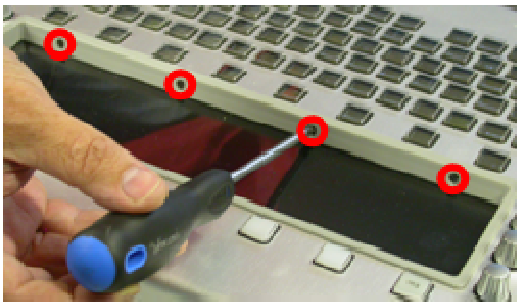
- Carefully connect the TFT Data cable

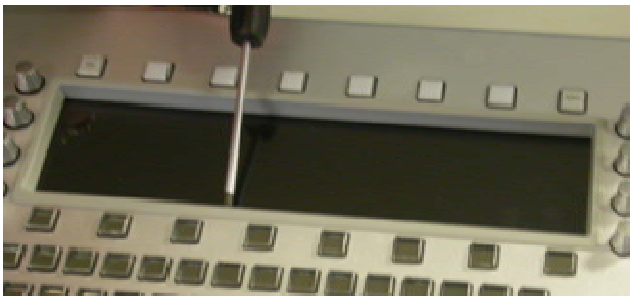


- Carefully lay the tray down into final position, making sure that no cables are trapped between the tray and the Xynergi. Re-install 16x original tray screws.



- Turn the Xynergi over, and re-install jog wheel and bezel





Post-Conversion Software Configuration

- Launch FSU from Desktop Shortcut with "-TEST" switch
- Select "Xynergi" panel
  (Both XCS and Xynergi will detect as "Xynergi")
- Click "Attach"
- Set "Range" to "1"
- Ensure the "Xynergi" panel is selected
- Click "ReProgram"
- The Programming GUI will appear.
  DO NOT CHANGE the status of the "Rotated" Tickbox! *
- Click "Program" and let the reprogramming process complete. You will likely be prompted to relaunch the panel. Accept this action.
- The Programming System ***SHOULD*** then prompt you to reprogram the CPU2 to suit the new "Gen 2" panel. This process is currently (05/09/13) unknown. Contact Gary L gary@fairlight.com.au or Rod S rod@fairlight.com.au for details.
- Once all programming of both the Gen 2 panel and CPU2 is complete,
  back on FSU, click "OK" at bottom right to accept all changes
- Restart the Host PC