Cobra ODE

Cobra ODE Installation Manual (2k5 to 4k) (v3 / v4 / v4 QSV) v1.1

(with 4.55 bypass instructions)

February 2014

MANUAL VERSION INFORMATION

Language	English
Applicable Cobra PCB versions	v3.xx / v4.xx / v4.xx - QSV
Applicable Consoles	Slim and Super slim (2k5 to 4k)
Applicable software version(MCU)	2.0

TABLE OF CONTENTS

TABLE OF FIGURES

INDEX OF TABLES

USED ABBREVIATIONS

ODE	–	Optical Drive Emulator
PS3	–	PlayStation 3
SEN	–	Sony Entertainment Network
PSN	–	Play Station Network
PT	–	Pass-through Mode
EMU	–	Emulation Mode
PATA	–	Parallel Advanced Technology Attachment
SATA	–	Serial Advanced Technology Attachment
QSB	–	Quick Solder Board
XMB	–	Xross Media Bar
OFW	–	Official Firmware
CFW	–	Custom Firmware
PCB	–	Printed Circuit Board
BD	–	Blu-Ray Disk
MCU	–	MicroController Unit
FPGA	–	Field-Programmable Gate Array
LED	–	Light Emitting Diode

1 INTRODUCTION

The Cobra ODE is the world's most advanced and feature rich ODE for PS3 which is also simple and easy to use!

1.1 Supported consoles by the QSV version

1.1.1 SLIM – 2. Generation PlayStation 3

- CECH25XX (SATA)
- CECH3XXX (SATA)

Figure 1.1: PlayStation 3 SLIM.

1.1.2 SUPER SLIM – 3. Generation PlayStation 3

- CECH4XXX (SATA)

Figure 1.2: PlayStation 3 SUPER SLIM.

1.2 The Cobra ODE QSV Main Board

Installation of the Cobra ODE is quick and convenient

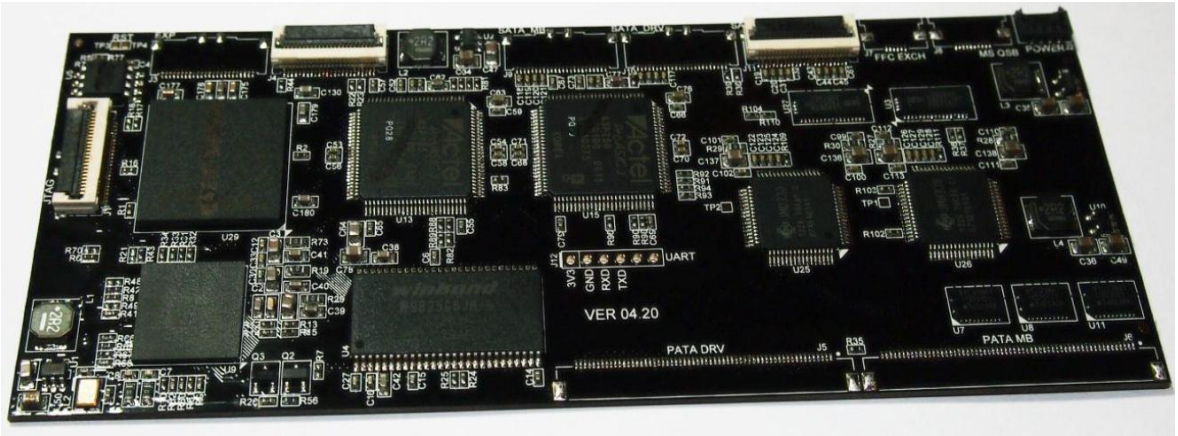

Figure 1.3: Cobra ODE – QSV main board.

1.3 Package content of the Cobra ODE package

- 1 x Cobra ODE Main board
- 1 x SATA QSB
- 1 x Clip on PCB
- 4 x plastic clips (type B)
- 1 x power cables (1 SLIM/SUPER SLIM SATA)
- 1 x Double sided adhesive Cobra ODE sticker (acts as an insulation shield)
- 1 x each of the following FFC cables:
- **Cable Types**
    - Type C FFC LVDS Cable, 24 Positions, Same side contact, 300mm
    - Type F FFC LVDS Cable, 24 Positions, Opposite side contact, 370mm

1.3.1 Allocation and positioning of the plastic clips

Console Model	Clip Position	Clip Type
2K5/3K	4,5 & 7	B
4K	4,5 & 6	B

Table 1.1: Installation clips and allocation positions.

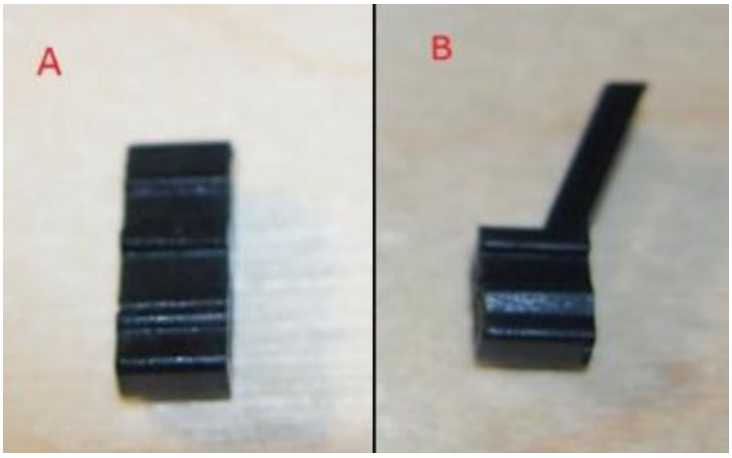

Figure 1.4: (A) Older PS3 Clip, (B) 2K5, 3K and 4K Clip.

2 INSTALATION INSTRUCTIONS

This chapter covers the installation of the Cobra ODE on SLIM and SUPER SLIM SATA models (see “Supported consoles by the QSV version” chapter).

Disassembly guide (link):

http://www.ifixit.com/Teardown/PlayStation+3+Super+Slim+Teardown/10670/1?singlePage

2.1 Cables used in the installation

Please note the usage of cables from the table below:

Model	Function	Cable	Length	Cable Type
25XX , 3XXX & 4XXX	QSB to ODE	FFC LVDS Cable, 24 Positions, Opposite side contact.	370mm	F
	ODE to Clip on	FFC LVDS Cable, 24 Positions, Same side contact.	300mm	C

Table 2.1: Flat cables used in the installation.

NOTE: From PCB revision 4.20 and higher, the mechanical switches on the PCB have been removed. On these versions of PCB, it is no longer necessary to select the model or drive type of your console, the process now use auto detection.

2.2 Capacitor removal on different motherboards

Carefully remove the capacitors in the SATA signals area highlighted in the red circle in the pictures below, for your respective console model, using a fine tip low power soldering iron. Please take absolute care when doing so, as these traces are essential for the console and ODE to function:

2.2.1 25XX JSD-001 Motherboard

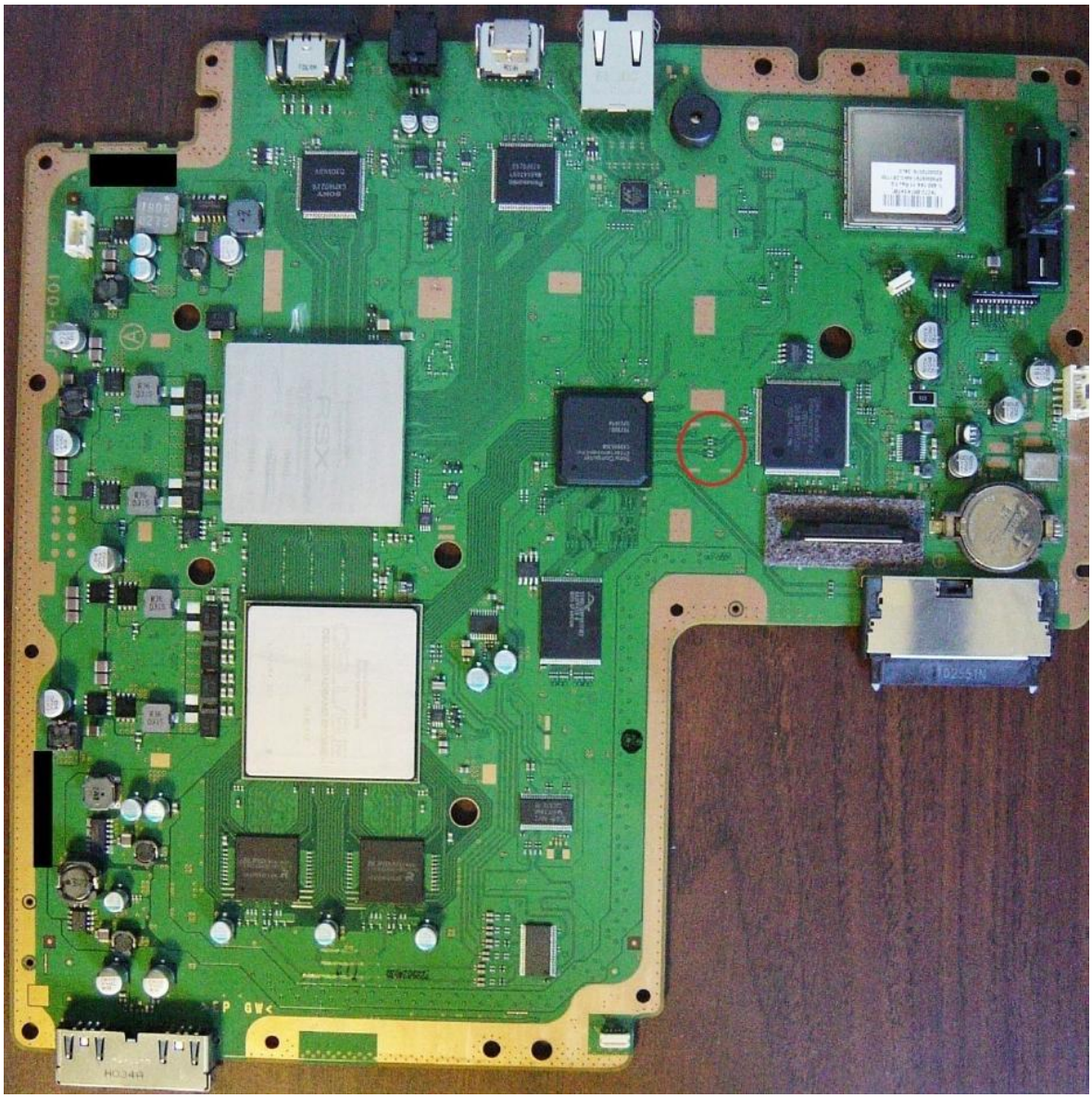

Figure 2.1: PlayStation 3 Slim (25XX) JSD-001 Motherboard.

2.2.2 25XX JTP-001 Motherboard

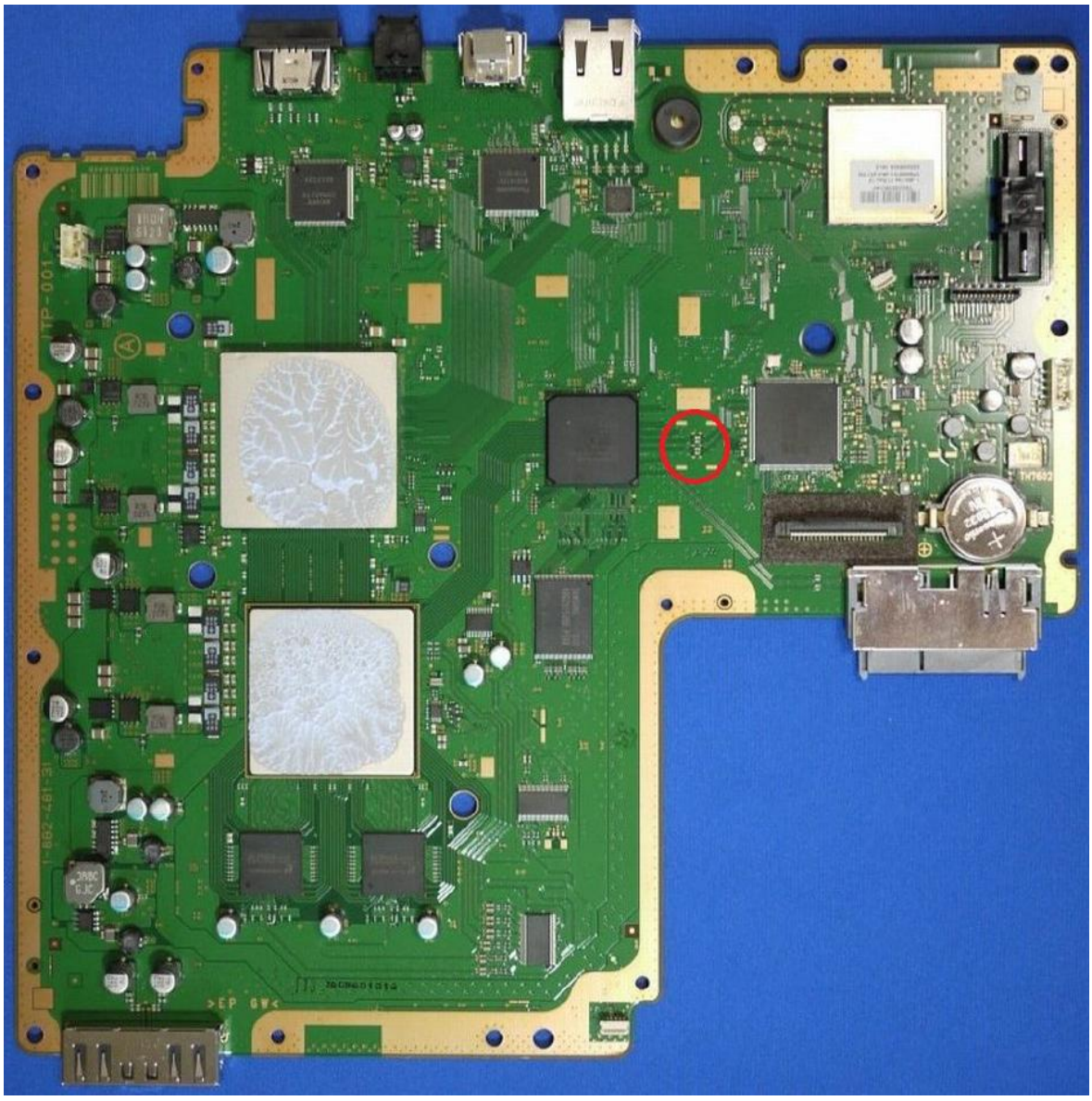

Figure 2.2: PlayStation 3 Slim (25XX) JTP-001 Motherboard.

2.2.3 3XXX KTE-001 Motherboard

Figure 2.3: PlayStation 3 Slim (3XXX) KTE-001 Motherboard.

2.2.4 4XXX MPX-001 Motherboard

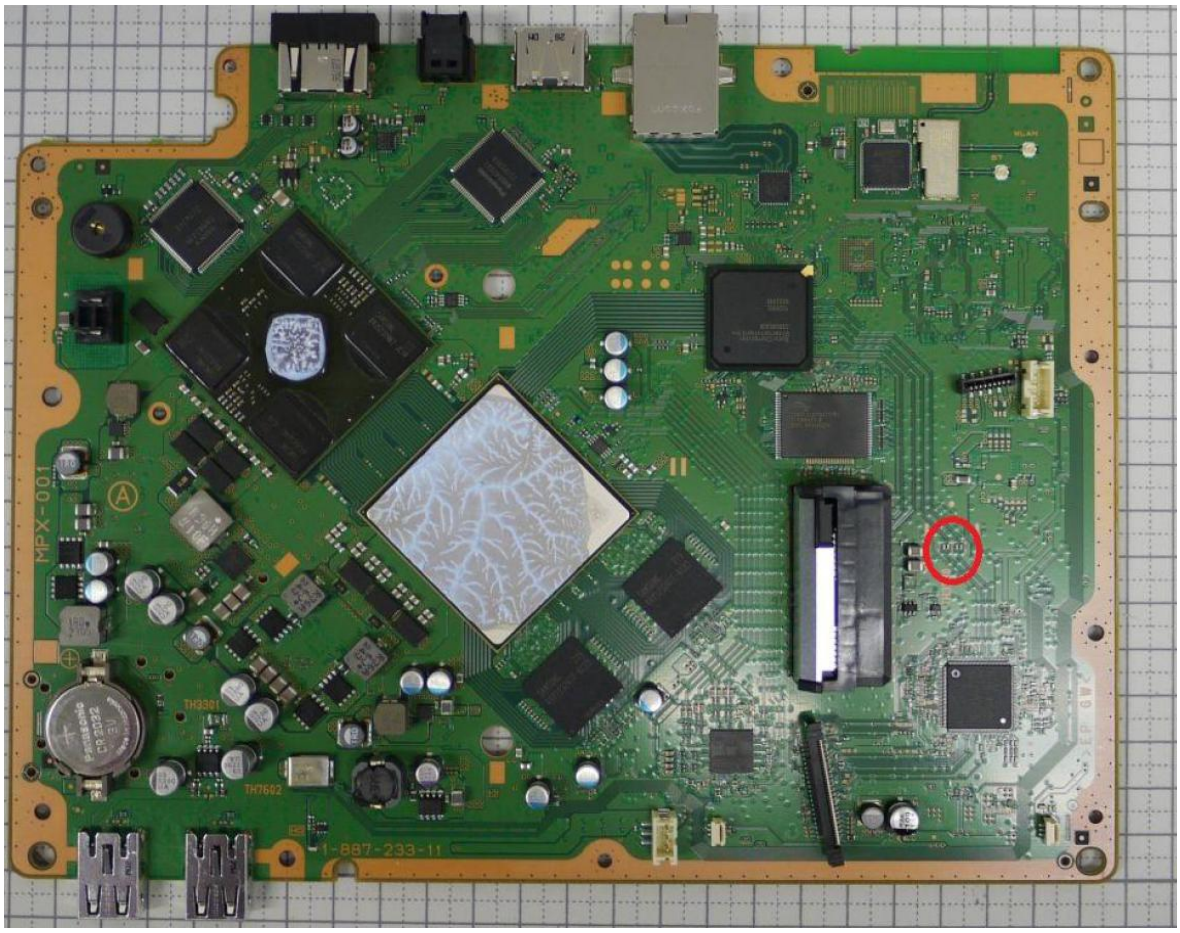

Figure 2.4: PlayStation 3 Super Slim (4XXX) MPX-001 Motherboard.

2.2.5 4XXX MSX-001 Motherboard

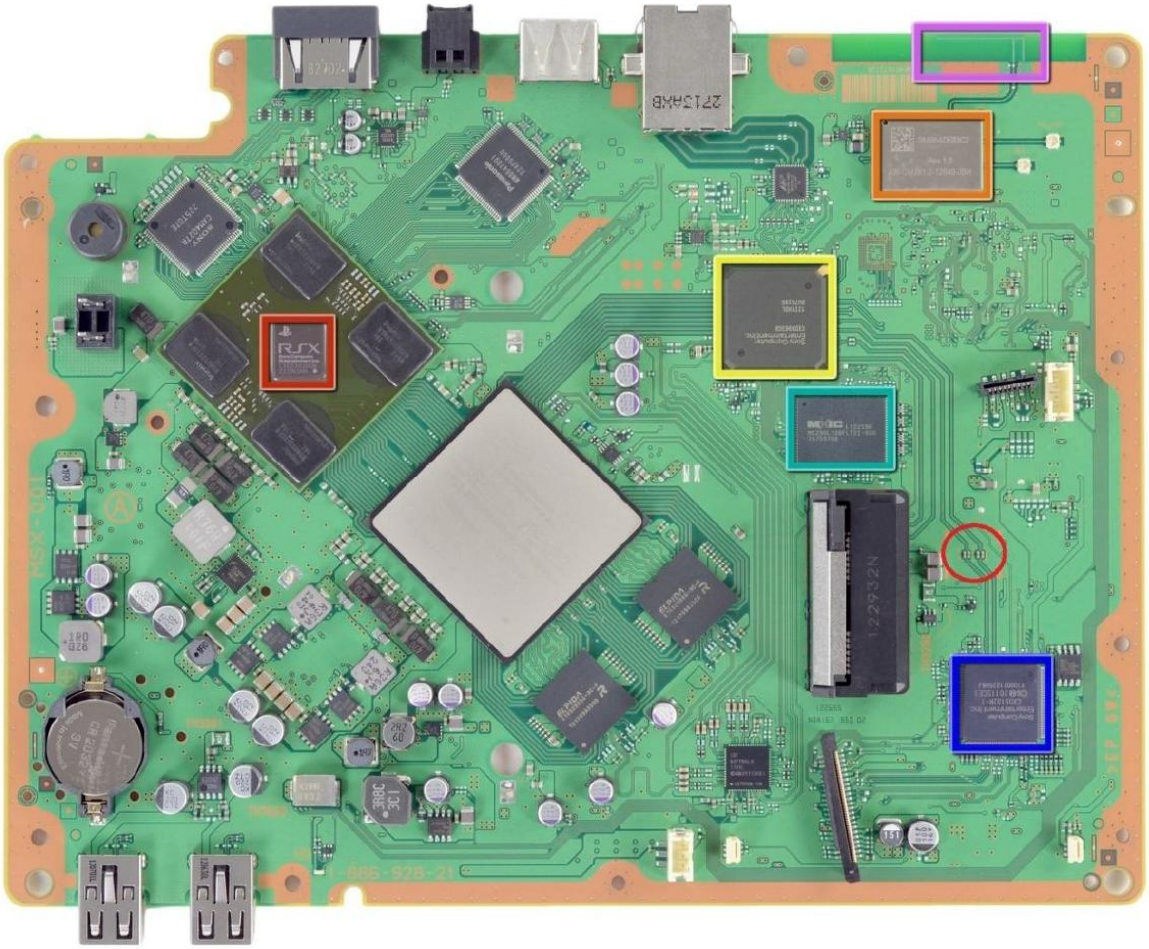

Figure 2.5: PlayStation 3 Super Slim (4XXX) MSX-001 Motherboard.

Explanation of marked elements on motherboard:

- Red Square: Sony RSX CXD530 "Reality Synthesizer"
- Orange Square: Marvell Avastar 88W8781 SoC WLAN/Bluetooth chip
- Yellow Square: Sony CXD9963GB I/O bridge controller
- Turquoise Square: Macronix MX29GL128FLT2I flash storage
- Blue Square: Sony CXD5132R SATA/PATA Blu-ray drive controller
- Purple Square: Integrated PCB Wi-Fi antenna
- Red Circle: Capacitors

Credit to PS3 Dev Wiki for Motherboard images shown.

2.3 QSB installation

Once you have removed the capacitors from the SATA lines and placed the QSB on top of your Motherboard in alignment with solder pads, it should look something like this:

Figure 2.6: Soldered QSB.

Please ensure that the soldering is done cleanly and avoiding any excess solder. Also ensure that the board sits symmetrically so as to avoid signal issues on SATA lines. The soldering of the pads should be done one at a time resulting in something like the image below:

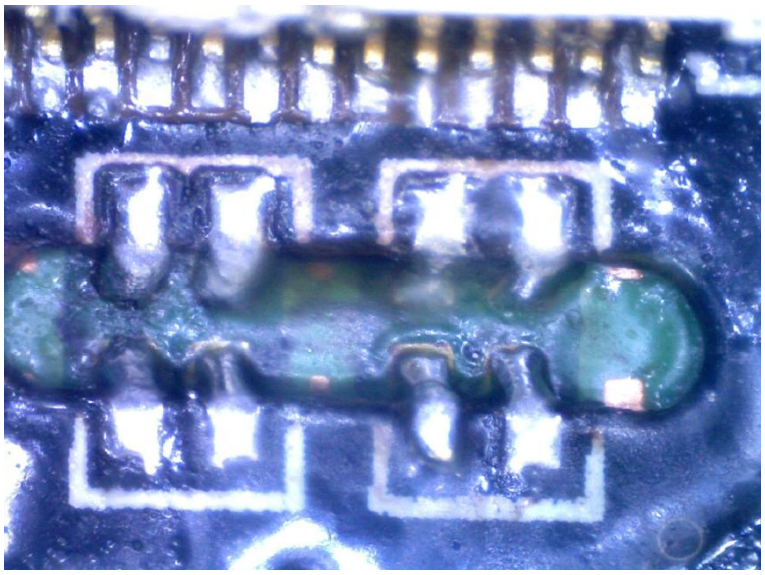

Figure 2.7: Close-up of clean soldered QSB.

Once you have soldered the SATA QSB to your console Motherboard, it should look similar to the images below (different models).

2.3.1 25xx/3xxx Models

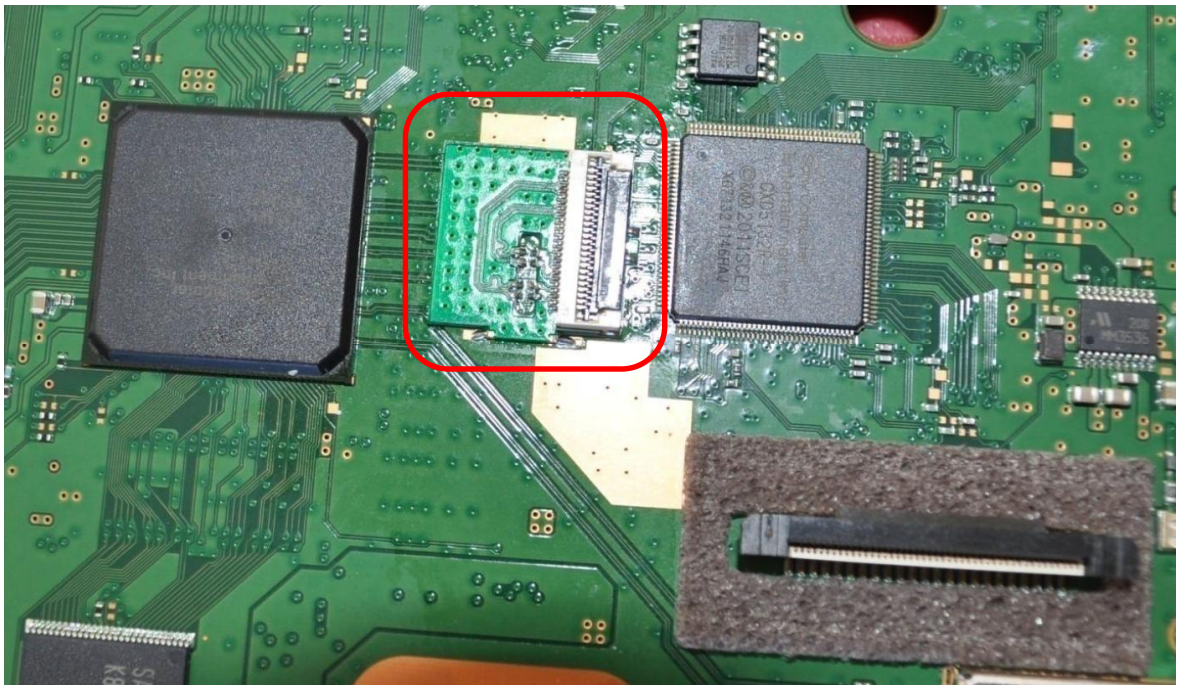

Figure 2.8: 25xx/3xxx Model with soldered QSB.

2.3.2 4xxx Models

Figure 2.9: 4xxx Model with soldered QSB.

Should you wish to restore you motherboard to its original state, carefully de-solder de QSB then cleanup the solder traces and re-solder the original capacitors or replacement capacitors (10nf).

2.4 Insertion of flat cables

After you soldered the QSB insert the 24 pin FFC LVDS cable (Marked as F the table above) between SATA QSB on the ODE and 24 pin FFC LVDS connector on the QSB which you soldered to the console motherboard.

2.4.1 25xx/3xxx Models

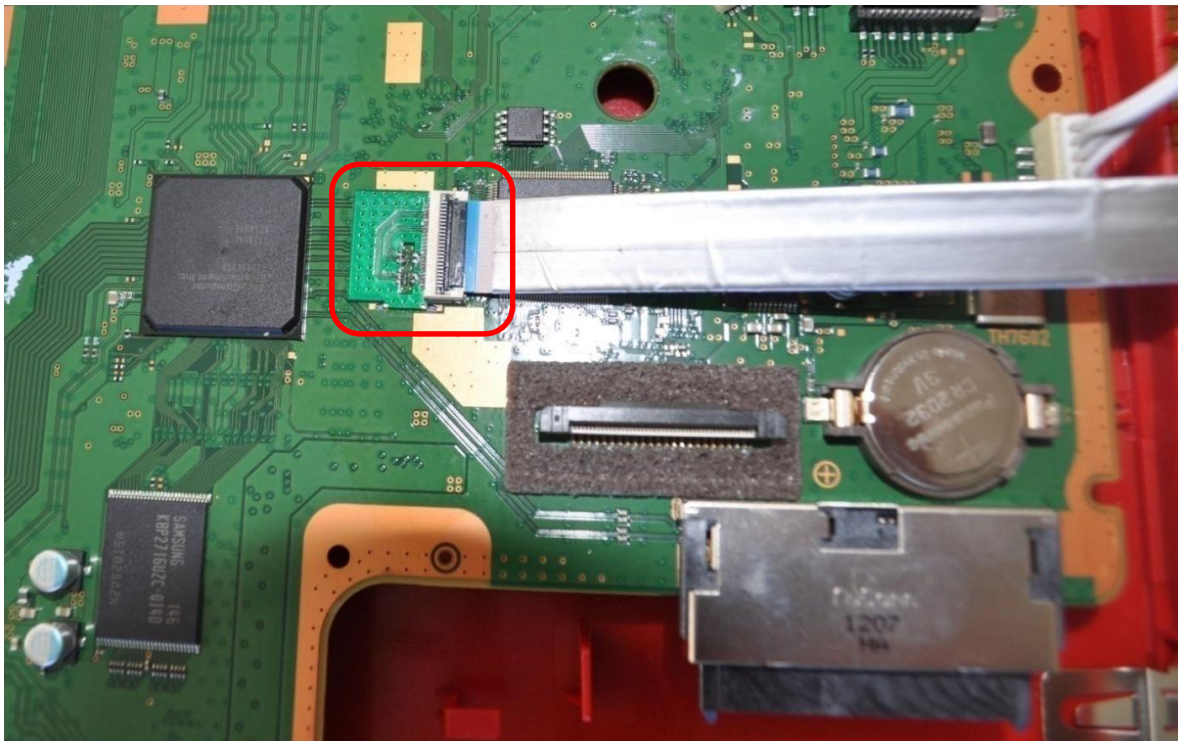

Figure 2.10: 25xx/3xxx Model with flat(FFC) cable installed.

2.4.2 4xxx Models

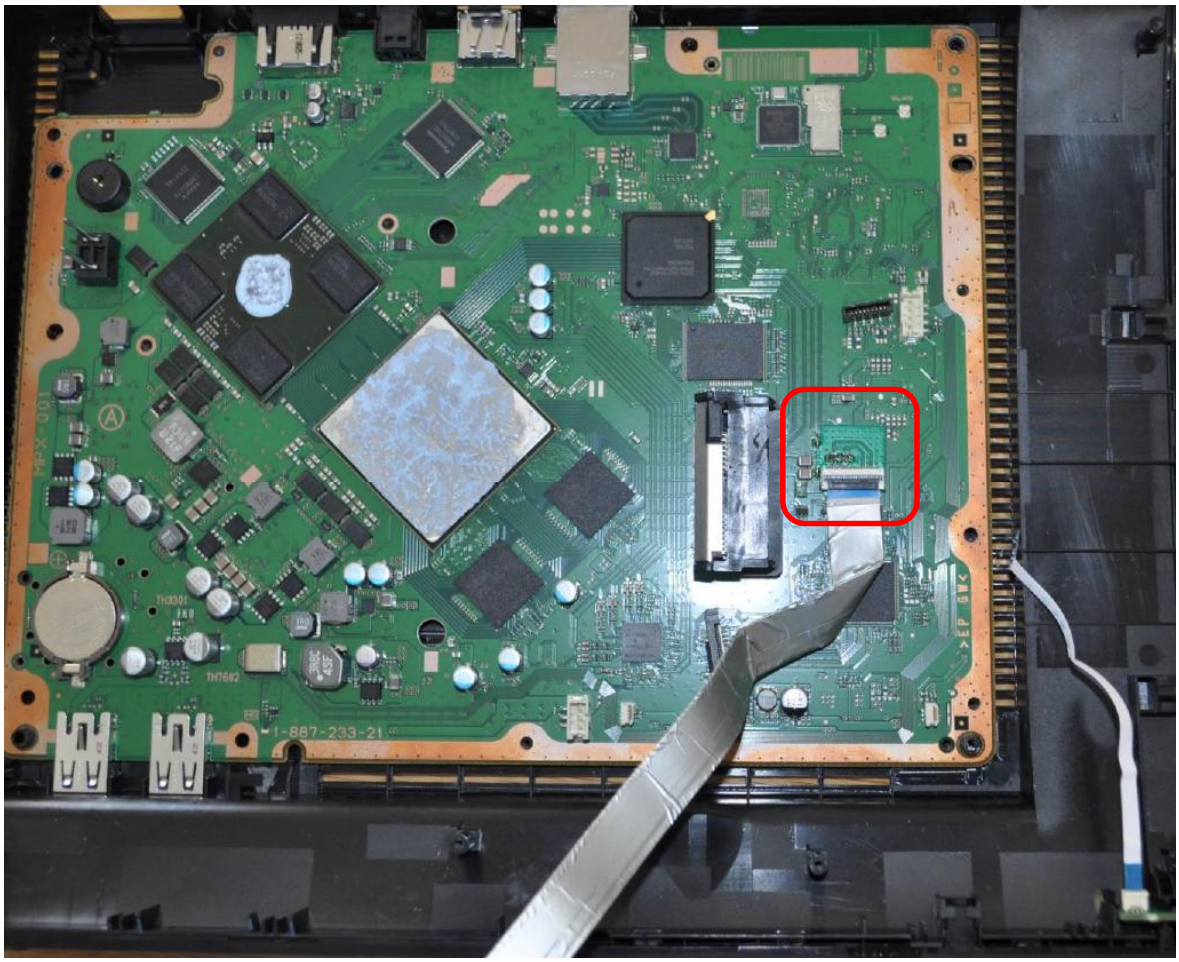

Figure 2.11: 4xxx Model with installed flat(FFC) cable.

2.5 Routing of the flat (FFC) cable

Route the FFC cable out of the shielding as shown on both models on the pictures below.

2.5.1 25xx/3xxx Models

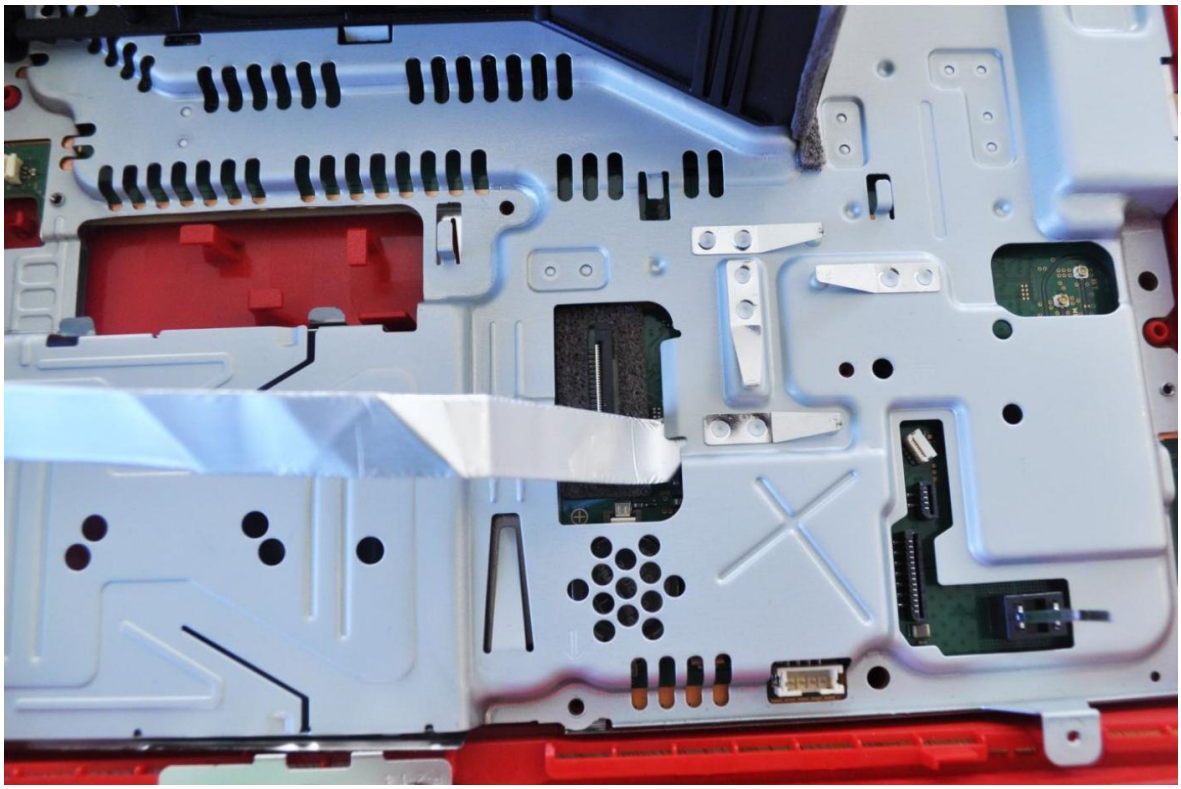

Figure 2.12: 25xx/3xxx Model with routed flat (FFC) cable.

2.5.2 4xxx Models

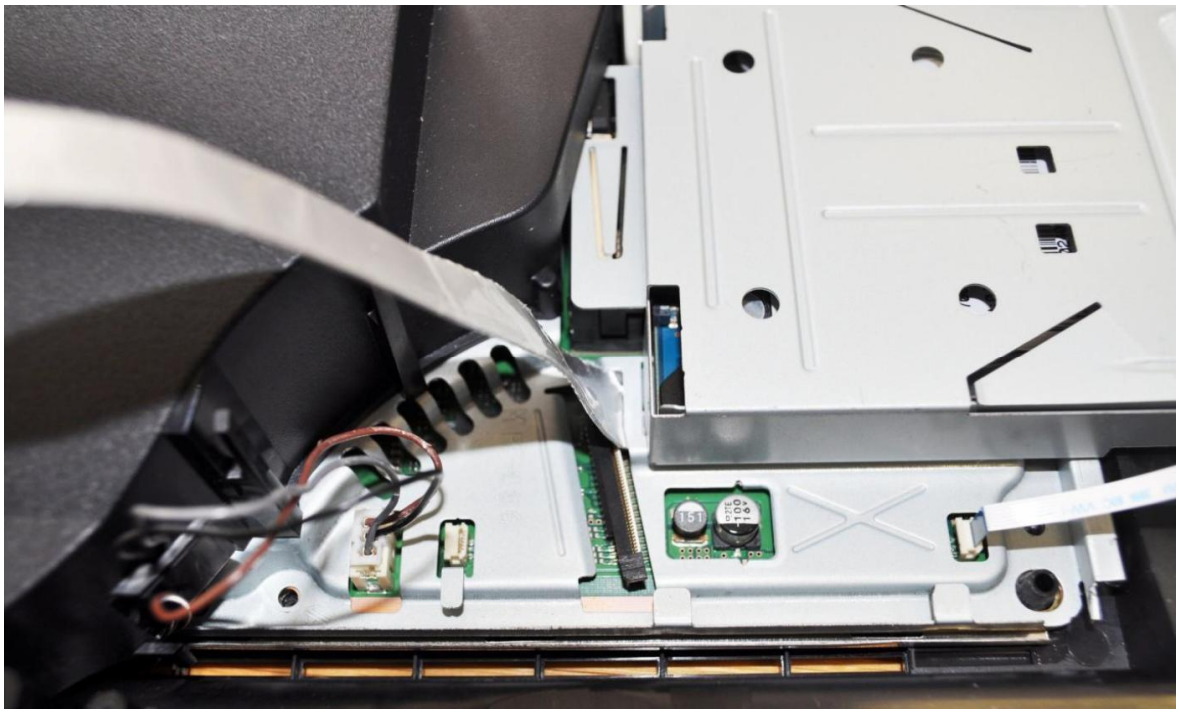

Figure 2.13: 4xxx Model with flat (FFC) cable routed.

2.5.3 Relevant Cobra ODE mainboard connector

The flat (FFC) cable, routed from the previous chapter must be connected to the connector highlighted on the figure below (Figure 2.14).

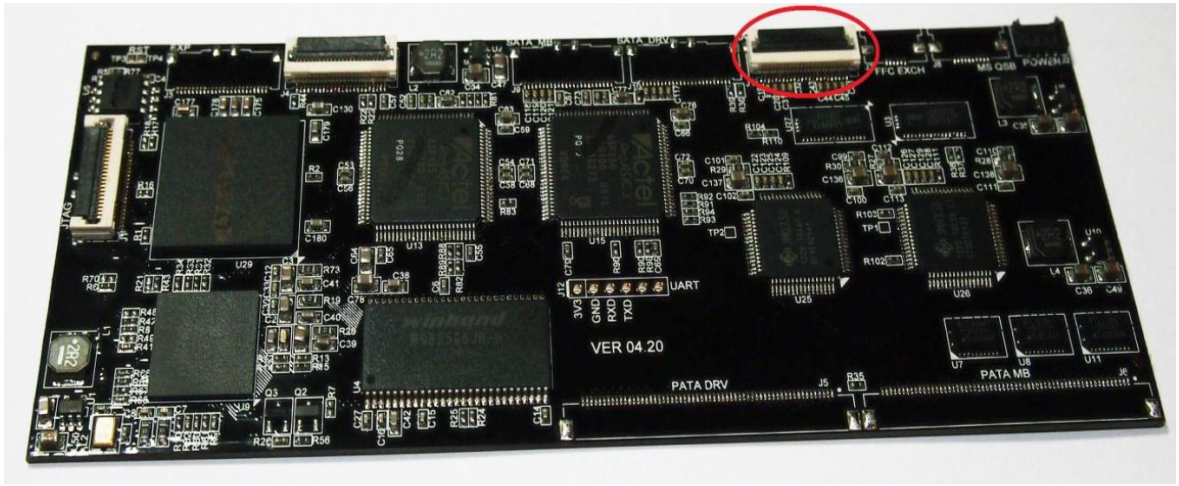

Figure 2.14: Cobra ODE mainboard with highlighted connector (QSV side).

2.6 Super Slim (4xxx Models) cover switch installation (4.55 Bypass)

On PS3 Super Slim (4xxx models), from 4.55 official firmware update onwards, in order to bypass the new drive protection added in the 4.55 firmware update, it is required to solder a wire between the drive's cover switch and the ODE main PCB.

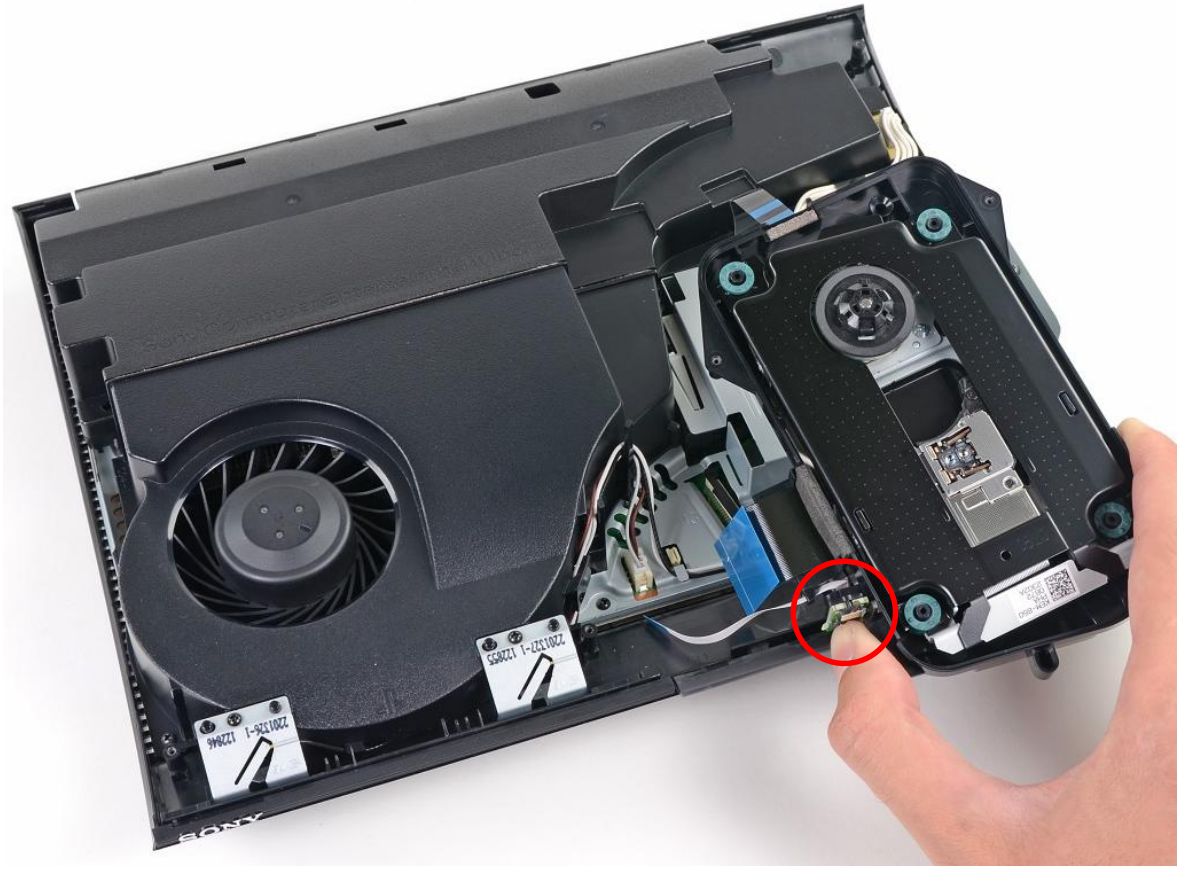

Figure 2.15: Cover switch location.

Figure 2.16: Close-up of the Cover switch location.

Now you have to solder a wire (you can use any wire as long as it conducts electricity) between the left pin of the **cover switch** (Figure 2.17) and the RDX pin hole on the main ODE PCB board (Figure 2.18, close-up Figure 2.19).

Figure 2.17: Solder point on Cover Switch.

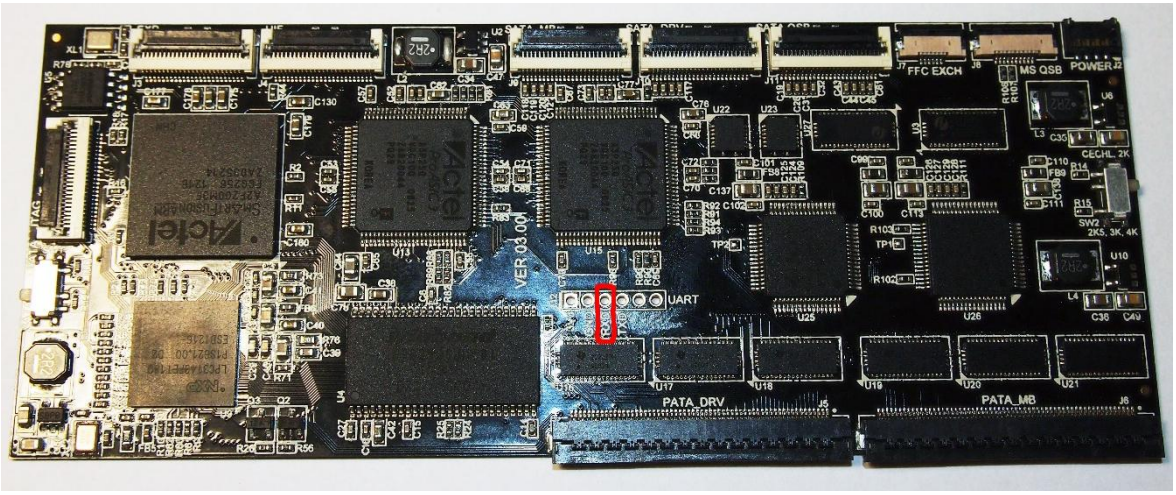

Figure 2.18: Solder point on ODE PCB board.

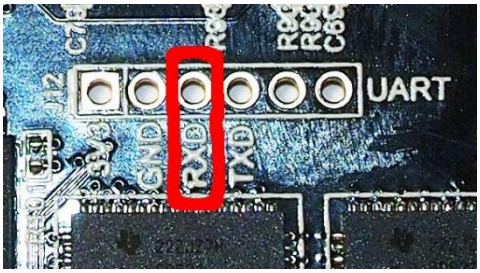

Figure 2.19: Close-up of the ODE PCB solder point.

A wire soldered to the RXD pin hole (Figure 2.20).

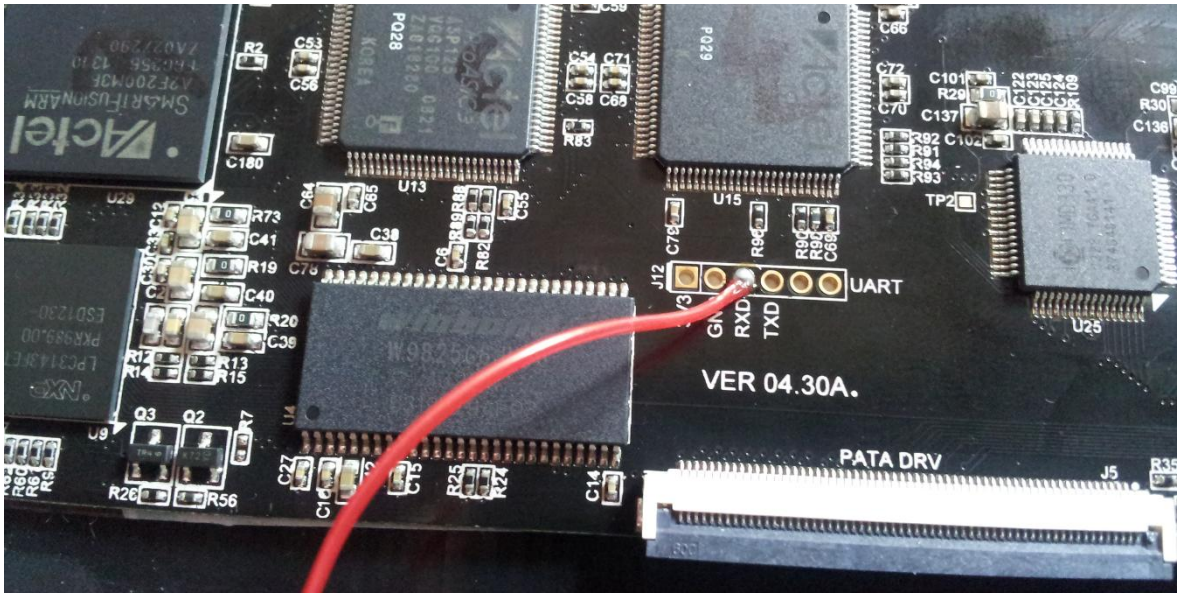

Figure 2.20: Wire soldered to the RXD pin hole.

The wire soldered to the cover switch (the color of this wire is different because it is two different wires connected into one, using one wire is recommended thou) can be seen on Figure 2.21.

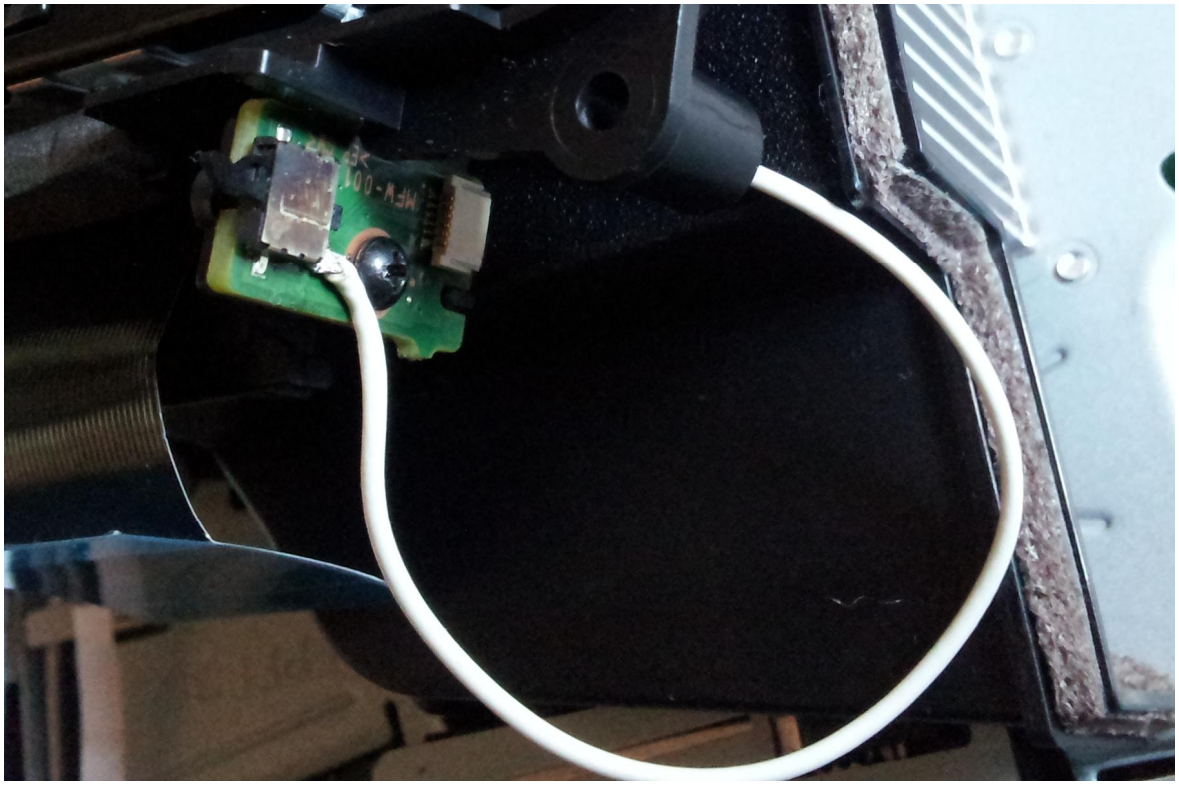

Figure 2.21: Wire soldered to the cover switch of the PS3 Super Slim (4xxx model).

2.7 Connection of the power cables

Disconnect the power cable between the console power supply and the console motherboard. Replace the cable with the correct type which has connector matching that of your console. Insert the 4 pin low profile connector to your Cobra ODE board connecter marked power as shown here (note that the connector is top down press fit, not slide in) kindly, note carefully the orientation and direction of the cable, failure to do so could cause damage or malfunction.

NOTE: picture of PCB used in this illustrated installation may differ from the QSV revision but the connectors are located at the same exact place on the board.

2.7.1 25xx/3xxx Models

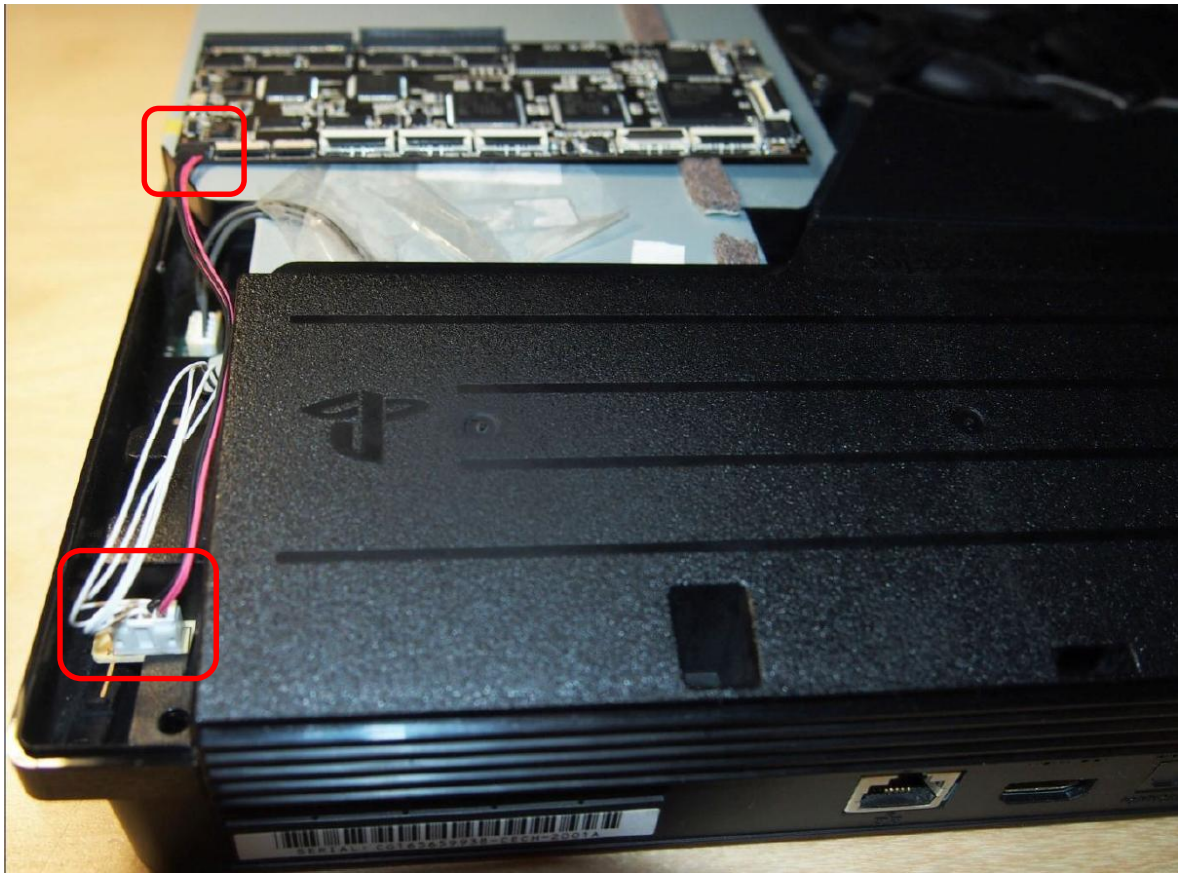

Figure 2.22: 25xx/3xxx Model with installed power connectors.

2.7.2 4xxx Models

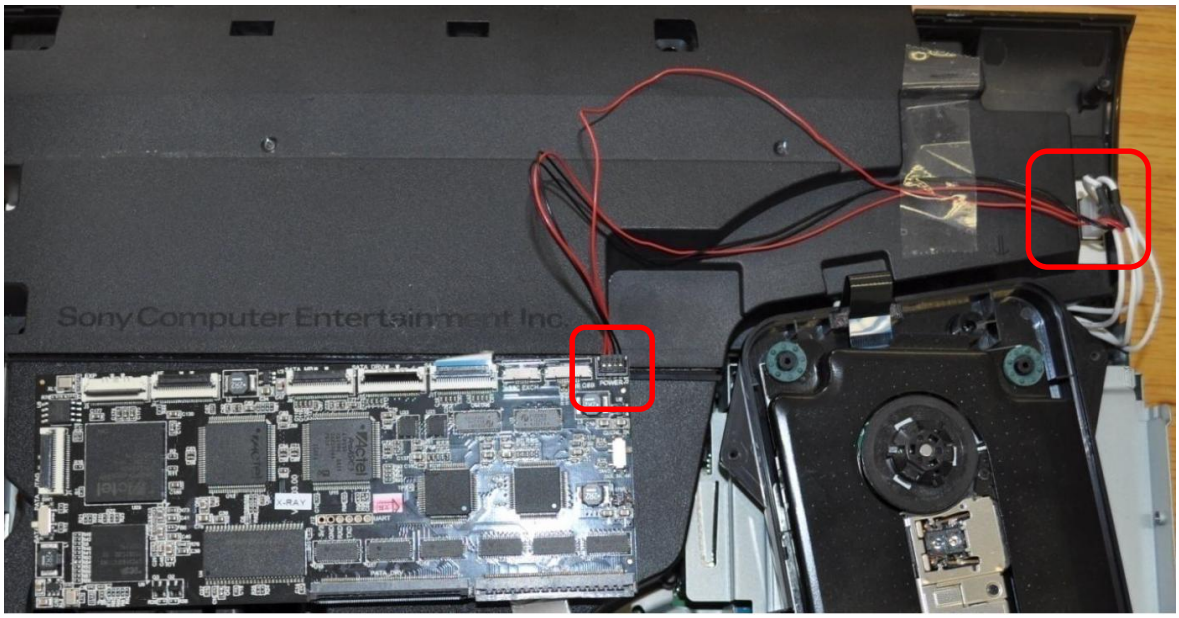

Figure 2.23: 4xxx Model with installed power connectors.

2.8 Connecting Cobra ODE to the outside clip-on PCB

Finally, connect the clip on board between the FFC connector on the Cobra ODE marked UIF and FFC connector on the clip on PCB, using cable C, demonstrated in the table above (CECH25XX/3XXX) & (CECH4XXX).

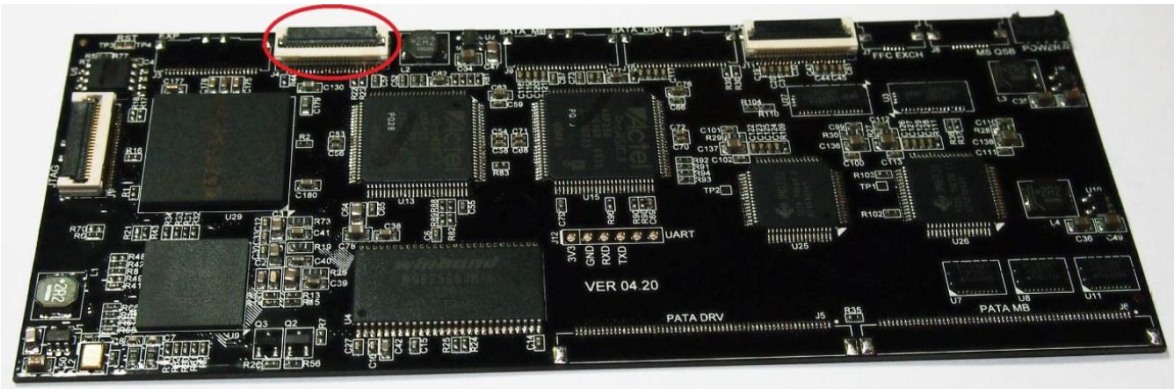

Figure 2.24: Cobra ODE mainboard with highlighted connector (clip-on PCB side).

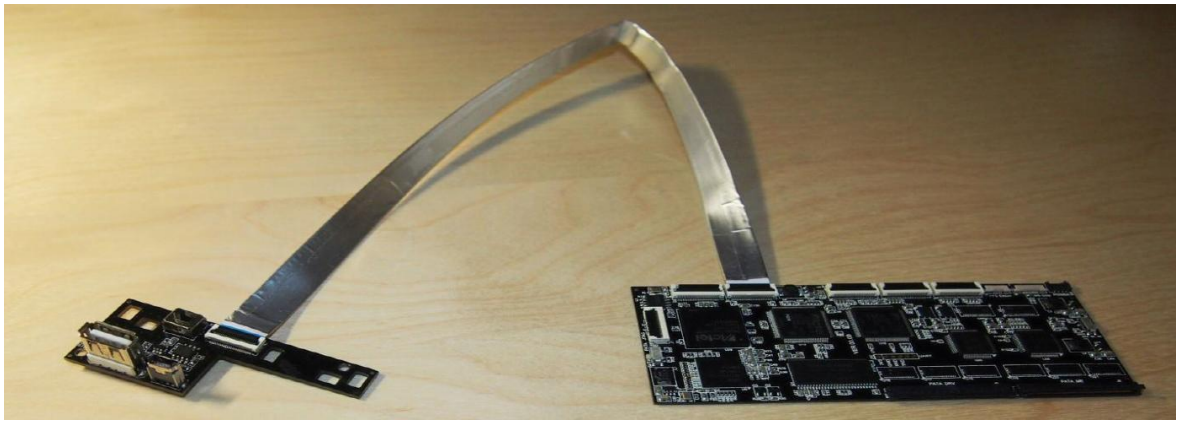

Figure 2.25: Cobra ODE mainboard with connected clip-on PCB.

2.9 Positioning of the Cobra ODE mainboard

Please add here the double side adhesive Cobra ODE sticker between metal casing of drive and bottom of Cobra ODE main board to act as an insulating shield.

2.9.1 25xx/3xxx Models

The Cobra ODE should be positioned inside the console as shown (CECH25XX/3XXX):

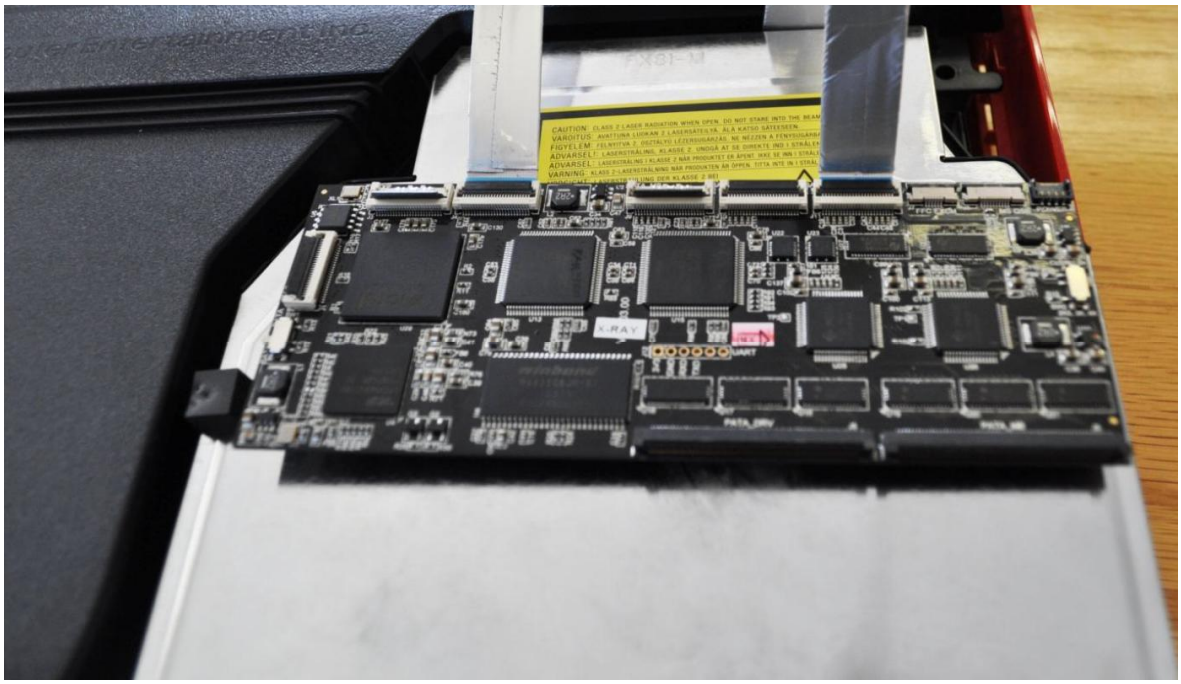

Figure 2.26: Cobra ODE mainboard position on 25xx/3xxx models.

2.9.2 4xxx Models

The Cobra ODE should be positioned inside the console as shown (CECH4XXX):

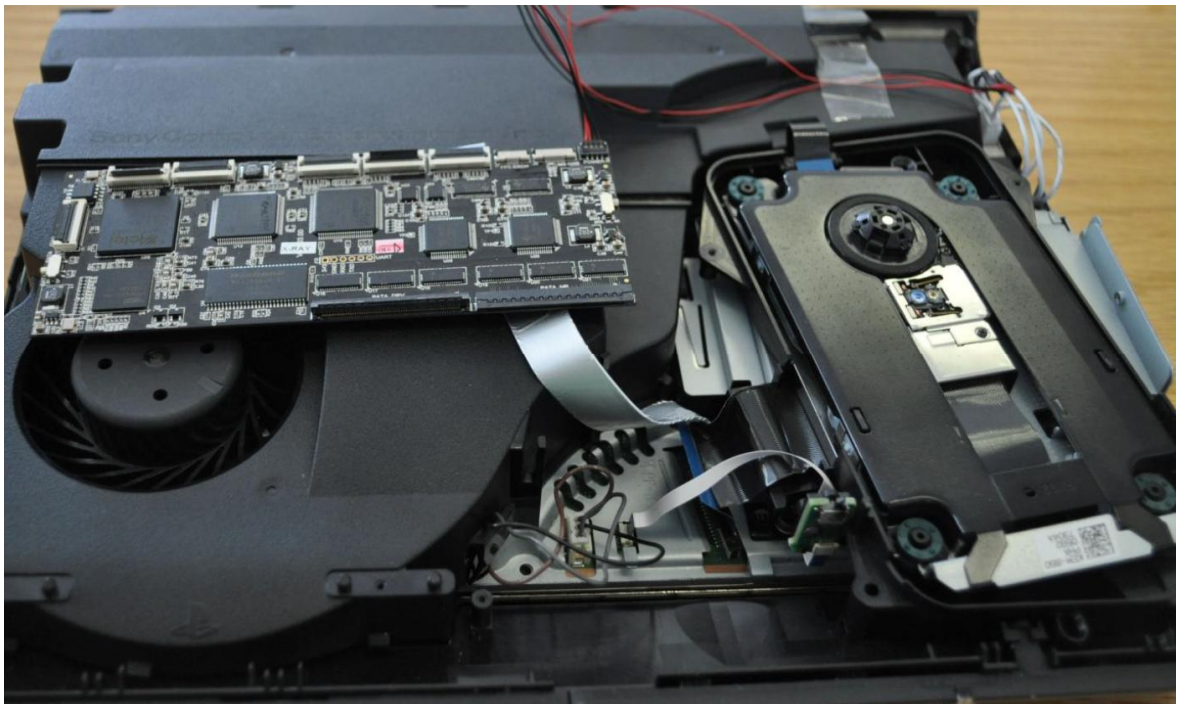

Figure 2.27: Cobra ODE mainboard position on 4xxx models.

2.10 Attachment of the outside clip-on PCB

2.10.1 25xx/3xxx Models

You can now attach the plastic clips to the clip on PCB as per drawing below and secure to the back of your console as shown here (CECH25XX/3XXX) (Refer to table at the beginning of guide for usage/allocation of clips) :

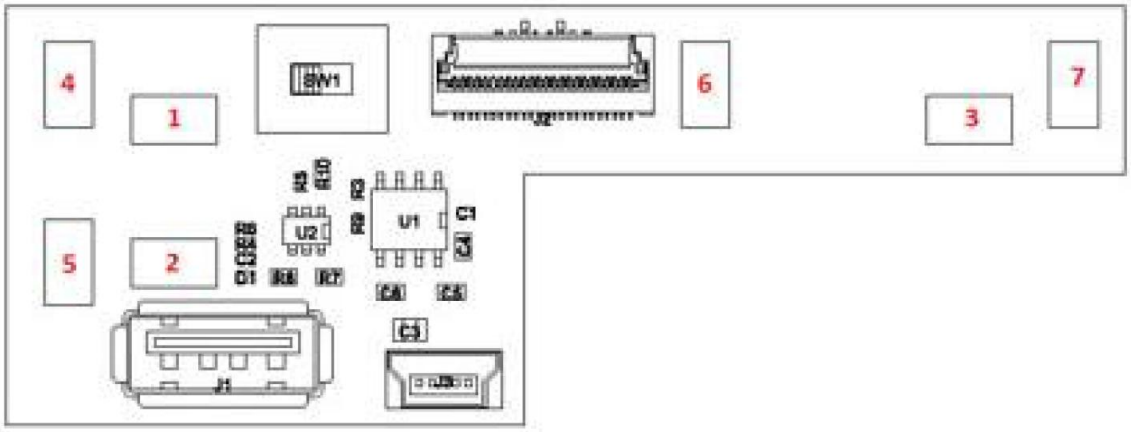

Figure 2.28: Schematics of the outside clip-on PCB.

Figure 2.29: Final positioning of the clip-on PCB on 25xx/3xxx Models.

2.10.2 4xxx Models

You can now attach the plastic clips to the clip on PCB as per drawing below and secure to the back, of your console as shown here (CECH4XXX) (Refer to table at the beginning of guide for usage/allocation of clips) :

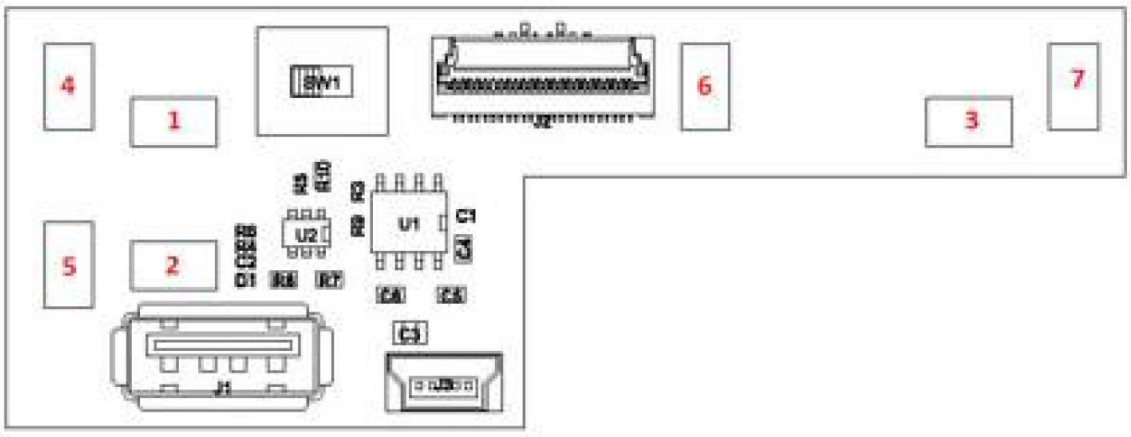

Figure 2.30: Schematics of the outside clip-on PCB.

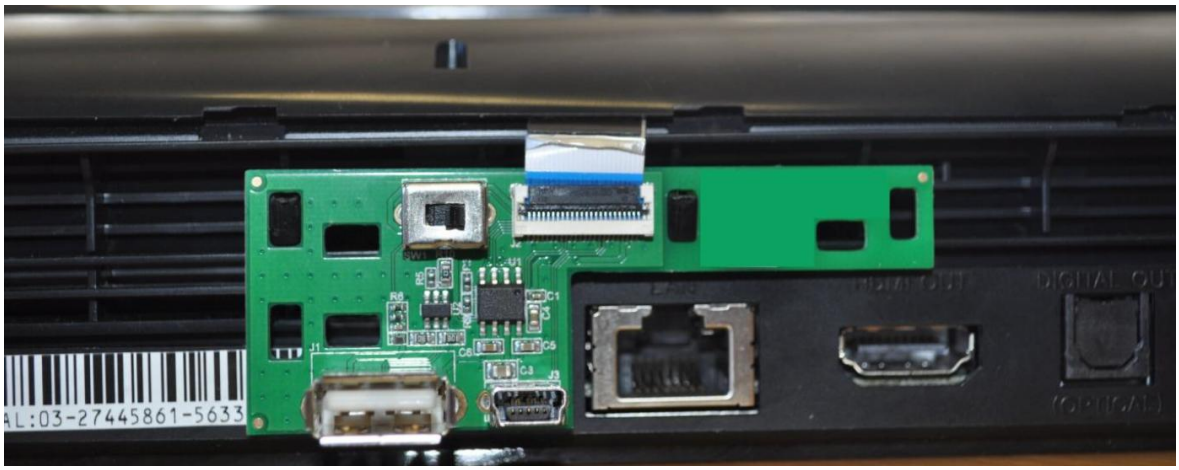

Figure 2.31: Final positioning of the clip-on PCB on 4xxx Models.

You can now re-assemble your console and get ready to play games…

Thanks for purchasing the Cobra ODE!

3 CHECKLIST AND TROUBLESHOOTING

3.1 Checklist

- Make sure you used the right cables, the length may not matter but pay attention to the same side contacts and opposite-side contacts cables, where same-side contacts has the blue side on the same side of the cable, and opposite-side contacts have the blue side on opposite sides of the cable.

- Make sure all the cables are connected on the COBRA ODE with the blue side on the top, and in the connectors on the motherboard and drive with the blue side towards the brown/black latch.

- Make sure you open the latch first, push the cables all the way in, close the latch and they are securely in place. The cable must not come from an angle that would tilt the cable out of its connector.

- Make sure the power cable is connected in the right direction. The white cable can be plugged in both directions between the power supply and the PS3 motherboard, but only one direction will work. Refer to the pictures in the installation manual for the way to install it properly.

- Make sure the ODE board is isolated from the drive. The COBRA ODE bundle comes with a sticker with the COBRA ODE logo on it, that's a double-sided sticker and must be used to isolate the board to avoid shorts which can cause failure or instability.

- Make sure the PATA/SATA and CECHL,2K/2k5,3k,4k switches on the ODE are set to the correct position.

- Make sure the QSB is soldered correctly, that all 8 contacts are soldered properly and there are no shorts between them.

- If using NTFS, make sure that NTFS partition is using a 4096 cluster size, and that all the files are correctly placed in the COBRA directory.

- If using FAT32, make sure the FAT32 partition is the first partition on the drive.

- Make sure you always "safely remove hardware" or eject in Windows before removing your HDD from your PC. Not doing that could cause the partition to be corrupted when you remove the HDD and may not work with the ODE until the partition is repaired.

- If the HDD is using too much power, make sure you connect it properly with the USB Y for that purpose. Connect the USB Y cable to a USB wall charger or a PC nearby. (Not Include with QSV version.)

3.2 Troubleshooting guide

Q: When I connect the power, the PS3's LED turns off

A: make sure you used the right side cables between the motherboard and the ODE and the ODE and the drive. Also make sure you connected the power cable in the right direction for the ODE. If an HDD is inserted, try using the USB Y Cable. Also make sure the ODE is properly isolated using the double sided sticker.

Q: PT works, but not EMU:

A: You used the wrong cable, for the QSB, use the opposite-side cable between the QSB and the ODE.

Q: EMU works, but not PT:

A: one of the pins on the QSB was not soldered correctly.

Q: When I insert the HDD, the PS3 shuts down:

A: The HDD uses too much power, use the USB Y Cable to provide it with additional power.

Q: I use the USB Y cable but the PS3 still shuts down when I insert the HDD:

A: Alternatively, you can connect a mini-usb cable to the mini-usb port on the clip-on PCB and use a wall charger to power the board.

Q: There is no disc icon when I boot the PS3:

A: Your cables are not connected correctly, or you used the wrong type of cable, or the QSB was not soldered properly.

Q: I get error 8001003E when I try to run a game :

A: You generated the iso with an old version of genps3iso tool. Download the latest version from www.cobra-ode.com and regenerate your iso file.

Q: When I run the game, it shows error 80010007 or returns to the XMB directly:

A: You generated your iso using a modified rip. DUPLEX releases will modify the EBOOT.BIN which makes them invalid, there will usually be a EBOOT.BIN.ORIG file in the rip, simply replace the EBOOT.BIN with the original file and regenerate your iso.

4 REFERENCES

[1] Team COBRA, 2014: Anti-ODE Security Bypass Manual, http://www.cobra-ode.com/downloads/Anti-ODE_Security_Bypass_Manual_(English)_v1.0.pdf

[2] Team COBRA, 2014: Cobra ODE User Manual, http://www.cobra-ode.com/downloads/Cobra_ODE_User_Manual_(English)_v2.0.pdf