DMS4 EFFORT ZERO INSTALLATION
INSTALLATION MANUAL

DMS4 E.Z.I. LITE and DMS 4 E.Z.I. PRO

V1.4

ENGLISH

Table of Contents

Disclaimer

IMPORTANT: PLEASE READ THE FOLLOWING DISCLAIMER BEFORE CONTINUING WITH YOUR DMS4 E.Z.I INSTALLATION.

DMS Technologies takes all precautionary measures to ensure that the E.Z.I range of products are free from manufacturing defects and each unit is tested before dispatch. However we cannot be held responsible for incorrect usage or damage to the console or modchip equipment due to incorrect usage, negligence, accidental damage, or other factors beyond our control. We have made every effort in our instruction manual to show that due care and attention must be exercised when connecting the DSP and BIOS clips. Furthermore, we would like to bring it your attention that excessive force or failure to connect the connectors in the way intended will more than likely cause severe damage to your console. These factors are beyond our control and therefore we will not be held liable for any damage to your console. By purchasing the DMS4 E.Z.I Lite or DMS4 E.Z.I Pro you agree to indemnify DMS Technologies from any libelous action, resulting from accidental damage or negligence on your part.

Document Change Log

Version 1.4 (10/2/2005)

- Added PS2 version identification table
- Added V5/V6 difference picture
- Added BIOS/DSP IC location pictures
- Added polarity info for LED panel power connector
- Small updates to various sections

Version 1.3 (7/2/2005)

- Added disclaimer
- Added change log
- Information regarding romeo mod added
- LED to letter mapping for LED panel added
- Links to DMS forums, FAQ's and Guides added
- Updated troubleshooting section
- Updated FAQ section

DMS4 E.Z.I Lite and E.Z.I. Pro Clip Installation

Package contents

- BIOS clip 50 pin Gap/No Gap x1
- DSP clip 208 pin x1
- Eject PCB assembly V9/v10 x1
- Eject PCB assembly V5-V8 x1
- E.Z.I. LED test panel X1
- DMS4 E.Z.I. Lite or E.Z.I. Pro main board x1
- Eject cable x1
- E.Z.I. test panel FFC cable x1

PS2 Version Identification

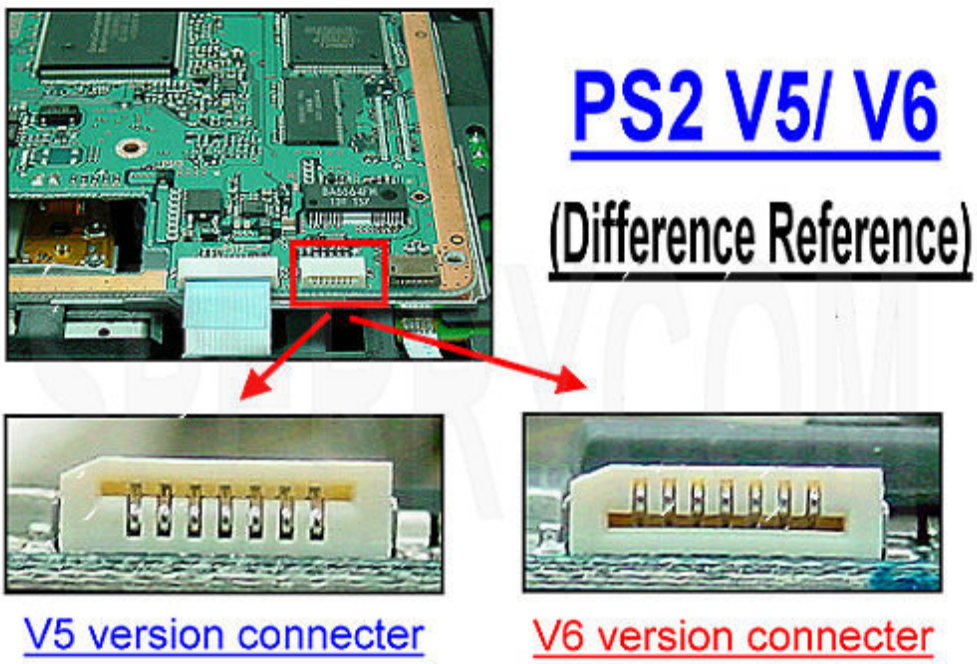
First disassemble your PS2 so that the motherboard is exposed. You may then determine the PS2 version as indicated by the motherboard revision (GH-0xx) marked on the top side of the motherboard (same side as the BIOS and DSP IC's are located on). **Currently V5-V10 PS2's are supported by DMS4 EZI.** V4 will be supported in the near future with the release of a V4 BIOS adapter (see FAQ section for more details).

GH-0xx Number	PS2 Version
GH-010	V4
GH-015	V5 **and** V6*
GH-019	V7
GH-022	V8
GH-023	V9
GH-026	V10

If you are having trouble determining your PS2 version, you may find the following website helpful:

http://www.psxservices.co.uk/ps2_version.htm

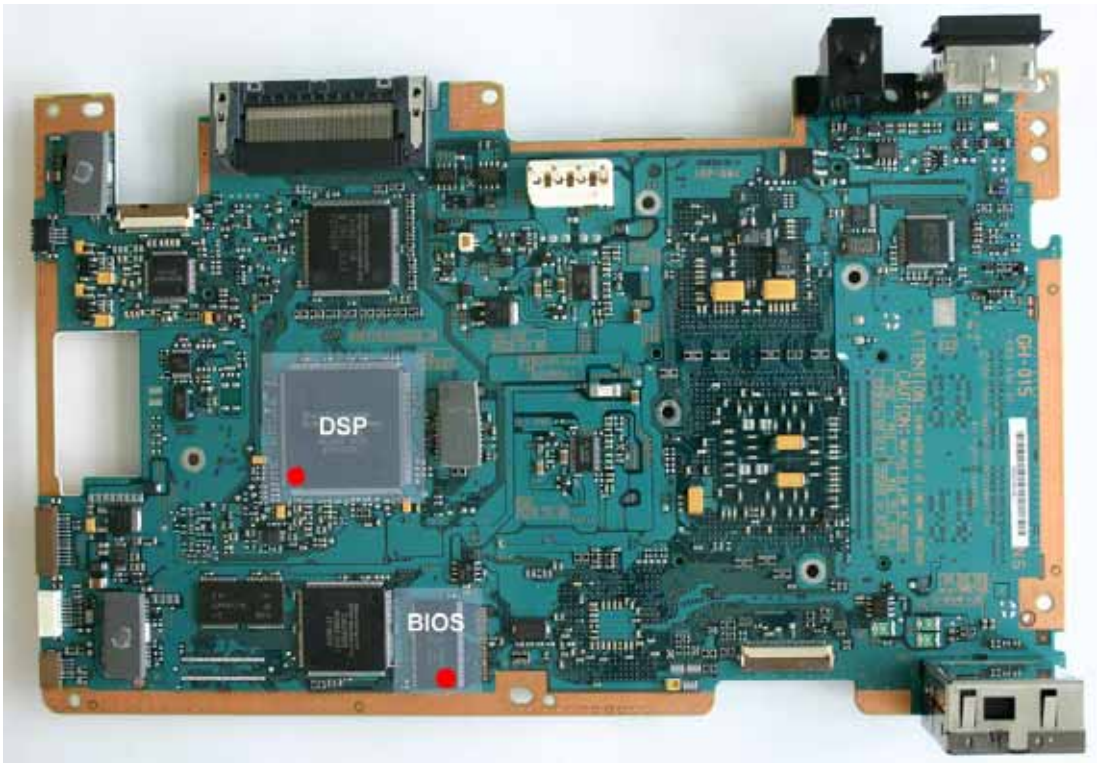
***V5 and V6 motherboards look almost identical. Here's how you can determine if you have a V5 or V6:



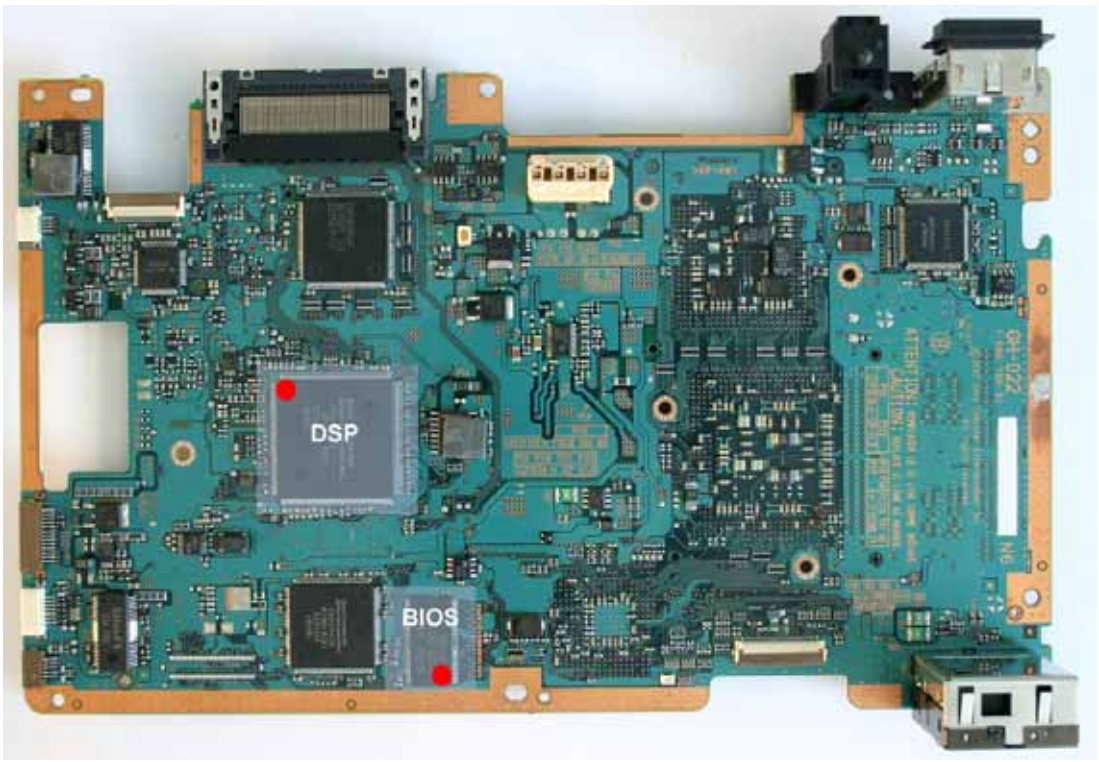
BIOS and DSP IC Location

Once you know your PS2 version you can determine the BIOS and DSP IC locations on your motherboard using the following pictures. They also show the location of **PIN 1** on each of the IC's, which is indicated by a red dot. The V4 motherboard is not shown here as it is not yet officially supported by DMS4 EZI.

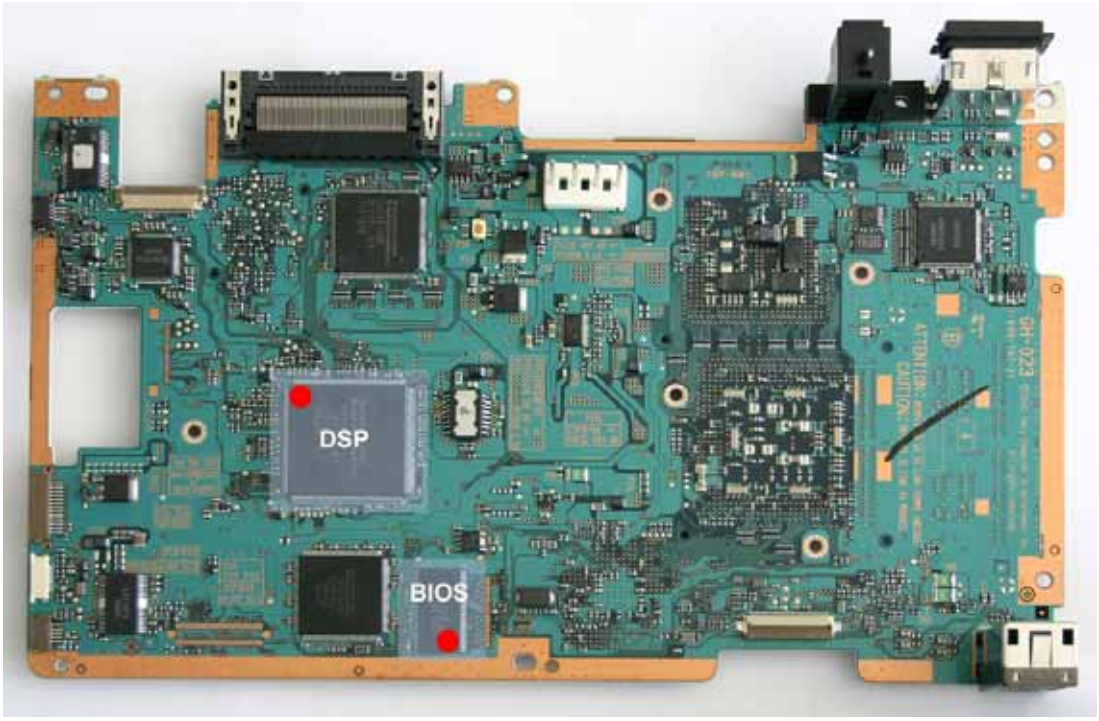
V5/V6 Motherboard



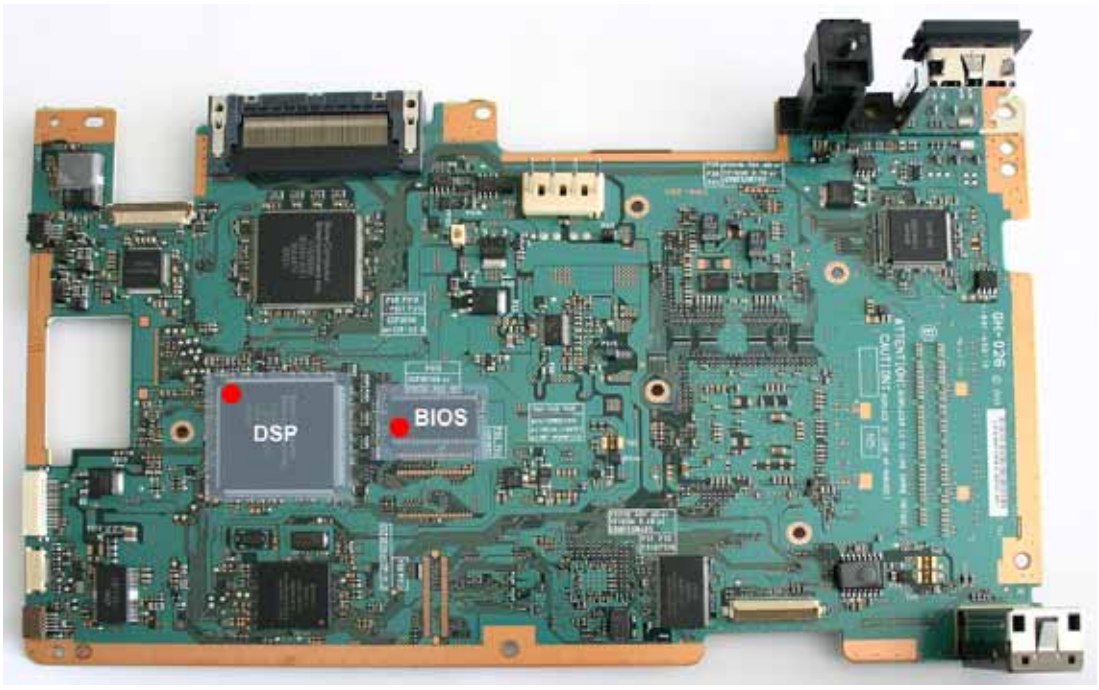
V7/V8 Motherboard



V9 Motherboard



V10 Motherboard



DSP Clip preparation

There are two types of DSP:

CXD3098Q and CXD1869/CXD1886

Please determine which type you have by reading the number from the top of the DSP IC and then snap of the portion of the DSP clip PCB which is not required. Be sure to get it right or you'll be left with a useless DSP clip. There are markings on the DSP clip PCB indicating which portion should be removed for the respective DSP type.

IMPORTANT NOTE:

We have found that the best way to remove the unwanted connection portion of the DSP clip PCB is to use a pair of sharp scissors and cut carefully along the perforated edge. This will avoid placing stress on the solder connections between the clip and the PCB. You SHOULD NOT use your hands to snap of the PCB portion, since this will lead to damage. Please take great care when cutting the PCB not so stray away from the perforated section, as this may cut into tracks which are essentially for patching functionality.

BIOS Clip preparation

Only one type of BIOS clip is supplied. It is suitable for the following model revisions:

V5-V12 No Gap/Gap = 50 pin BIOS without GAP

Eject signal PCB version determination

Select the appropriate Eject PCB according to which motherboard revision you have:

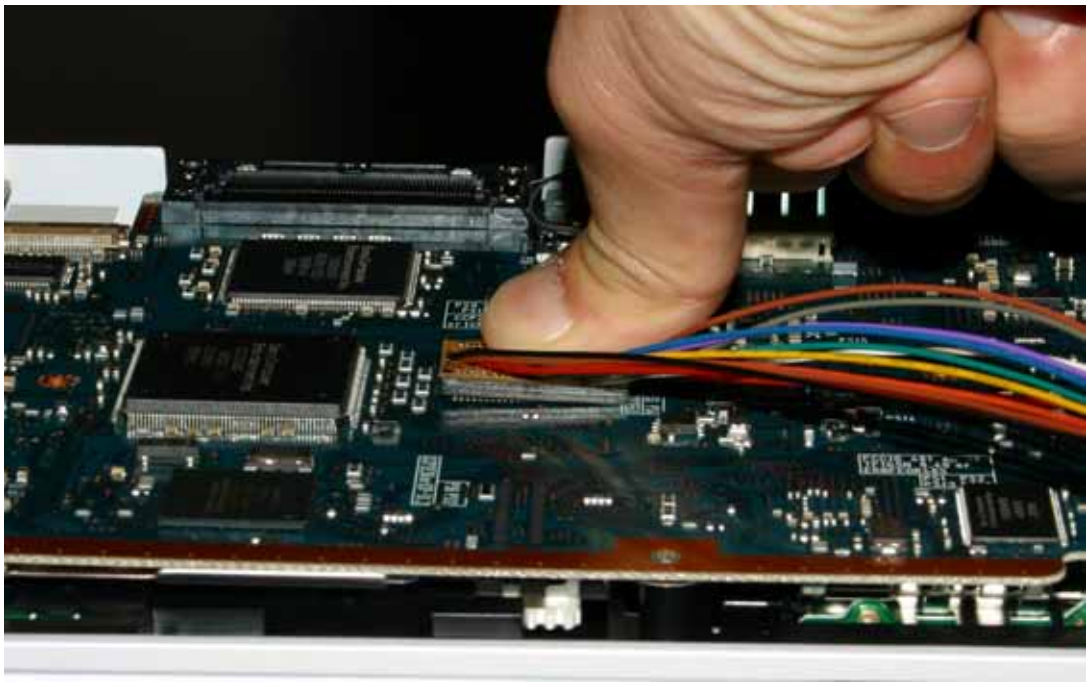
- GH015-GH022 = v5-v8 eject PCB (Please note that the FFC connector on the underside of this PCB assembly is only to be used for V6 consoles!)
- GH23-GH029 = V9/V11 eject PCB

Clip Installation

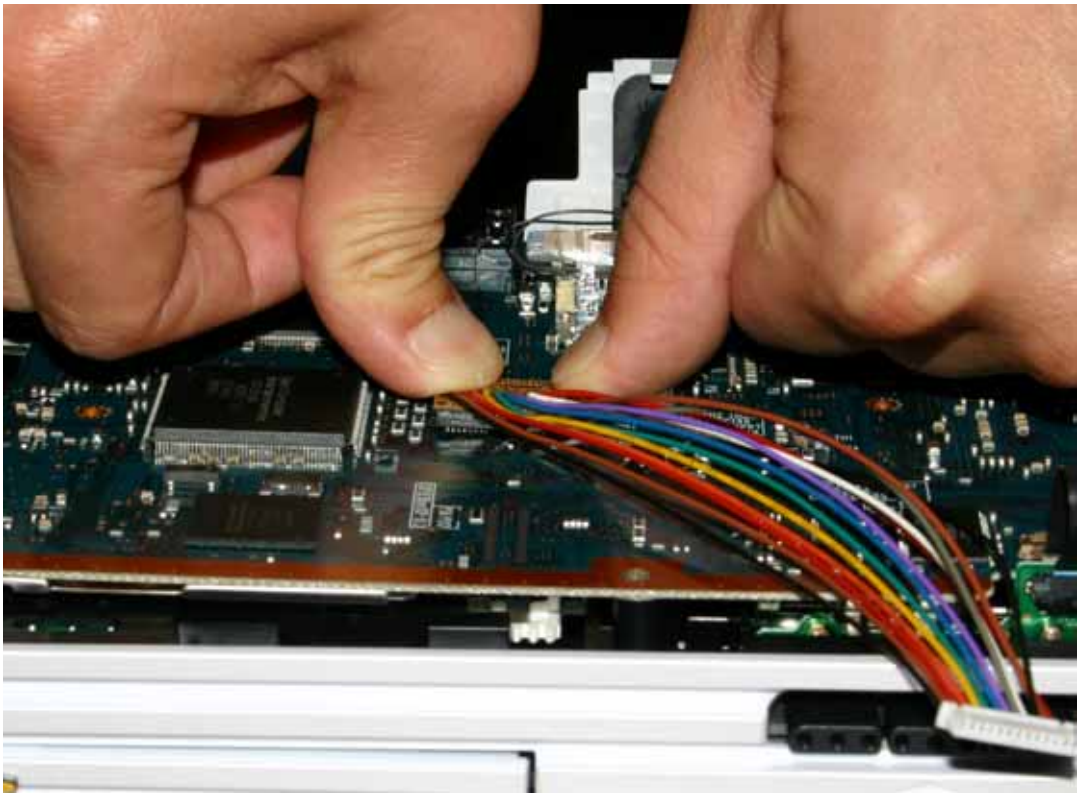
It is vitally important that the clips are installed precisely, carefully and correctly with as little pressure or insertion force as possible. Excess pressure will lead to damage to the clips or the console. Please bear in mind that the construction of the clips is very sensitive to excess force/pressure or improper connection.

BIOS CLIP installation procedures/recommendations

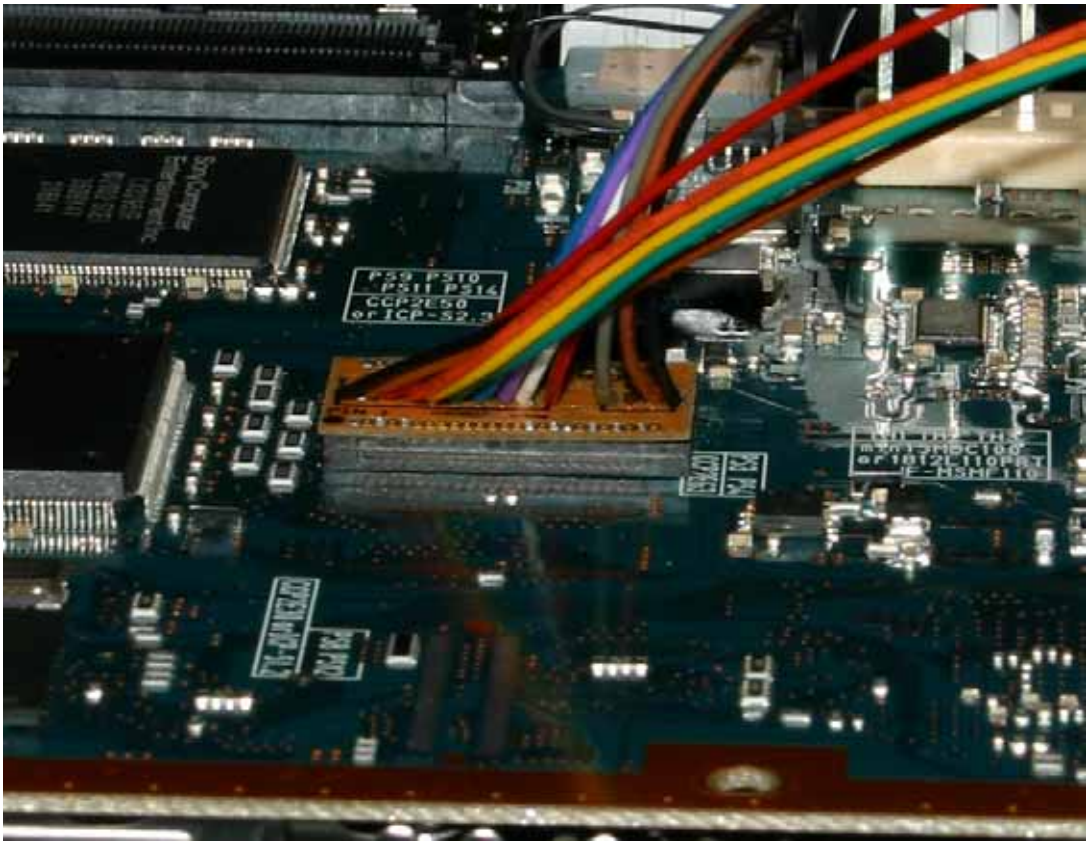
1) Align the BIOS clip properly by situating the “PIN 1” marking on the BIOS clip PCB over pin 1 of the BIOS IC. Make sure that the edge of the clip is parallel to the BIOS on both sides before connection.



2) Make sure that the BIOS clip has made a firm connection, by pressing down with both thumbs as shown in the photo.



3) The installation should look like this:



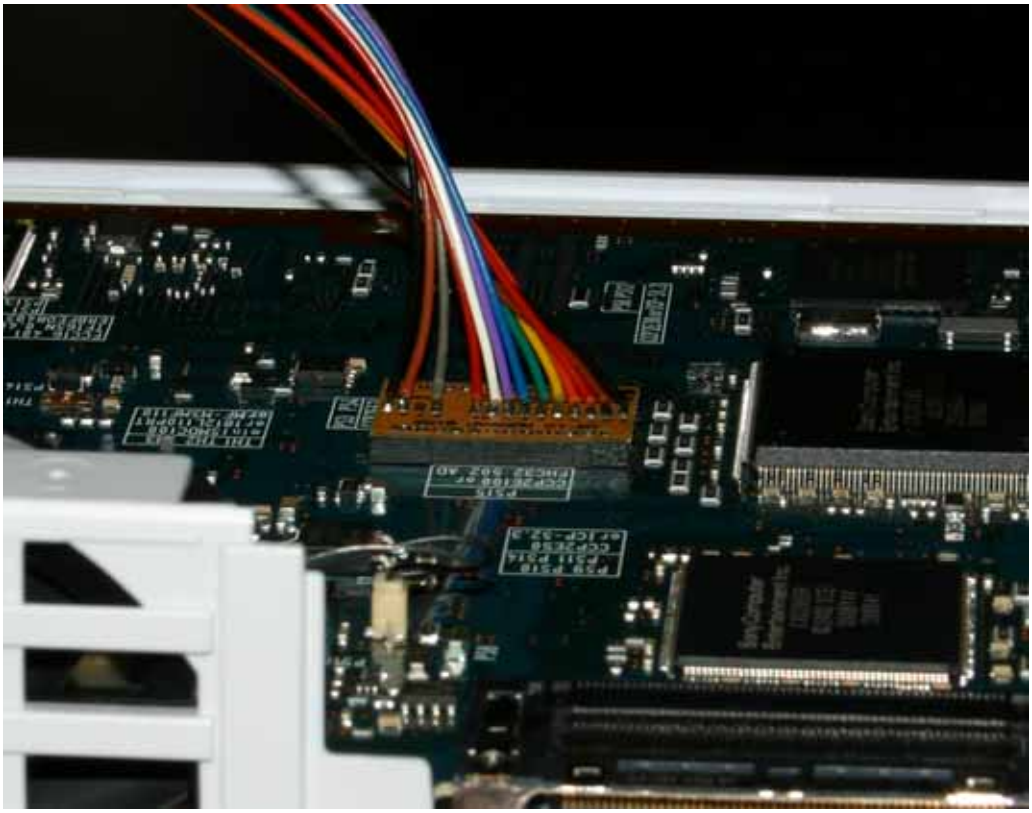
4) Take care not to damage any of the passive components around the BIOS, by exercising due care and attention.

5) Do not disconnect/reconnect the clip unnecessarily, this will lead to damage to the clips' housing and pins, and will ultimately render it useless.

6) **Do not attempt to install a clip to BIOS which has been soldered to by hand or had a previous solder type MOD installation, since our clips are extremely precision interconnects and cannot accommodate excess solder.**

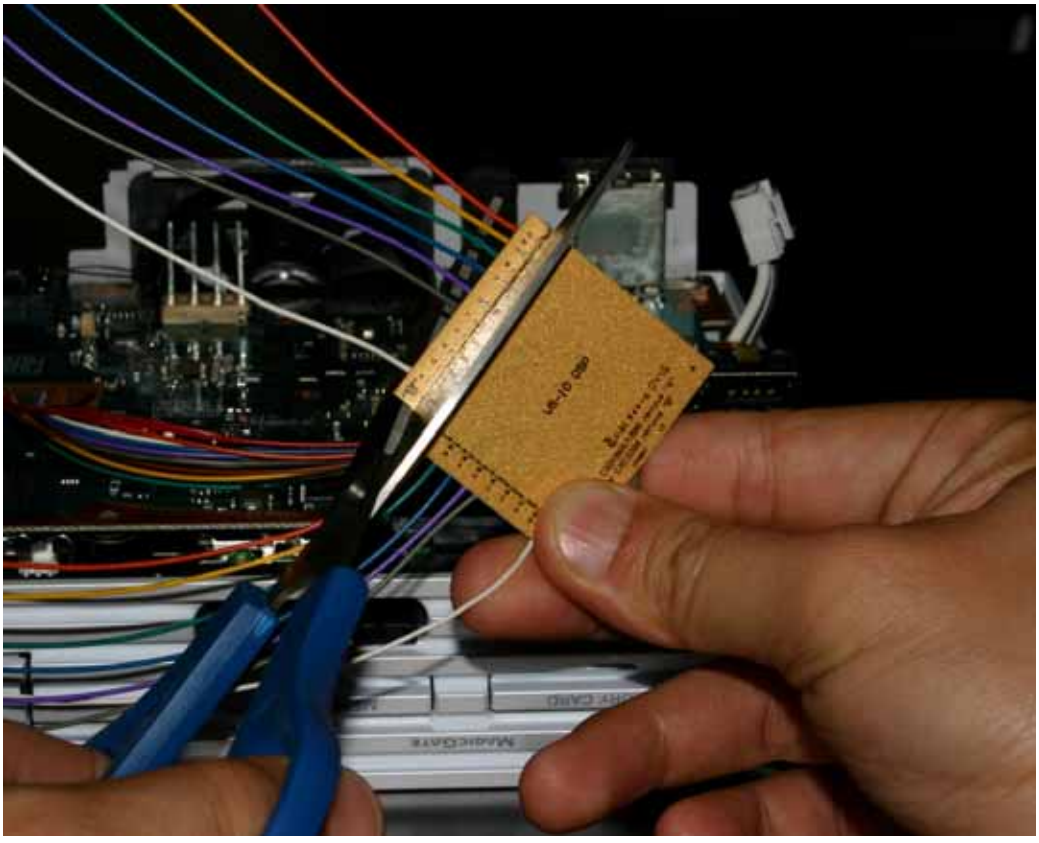
7) Do not attempt to connect a clip to another BIOS type for which it is not designed. This may cause damage to both the clip/BIOS or cause a short circuit.

8) Ensure that the clip orientation is correct, pay particular attention to the positioning of PIN 1.

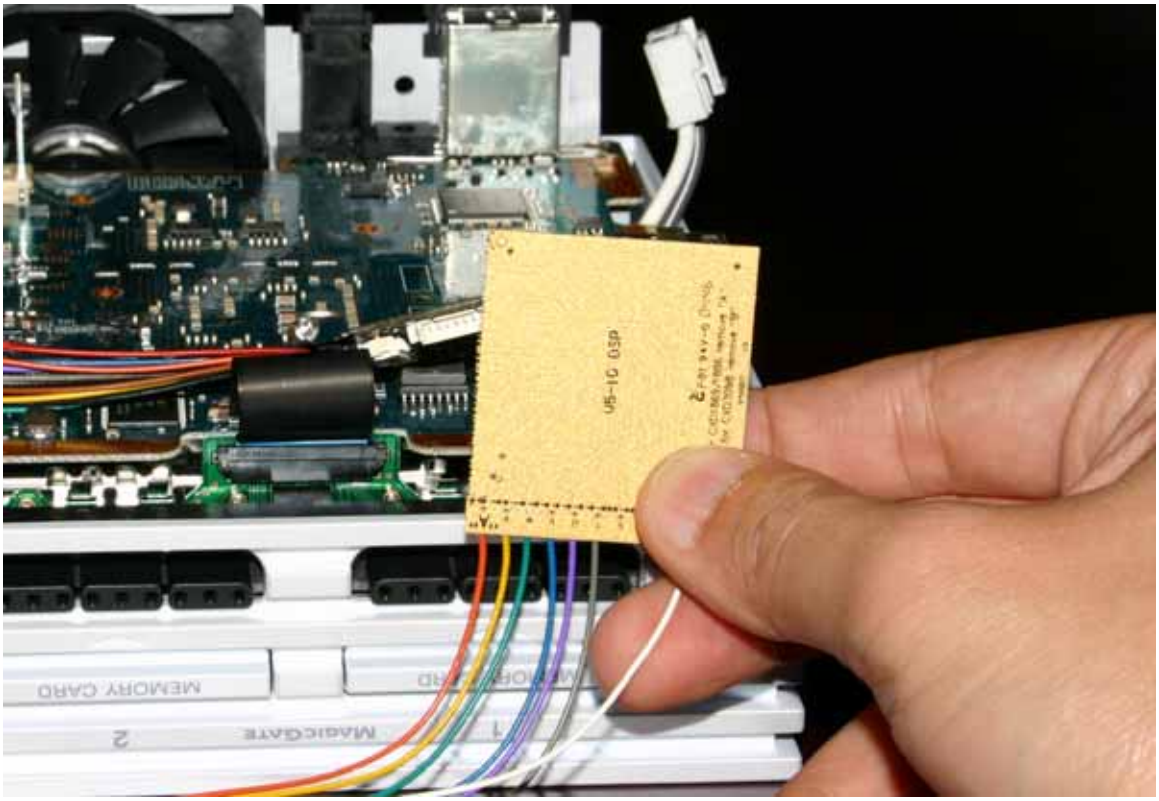


DSP CLIP installation procedures/recommendations

1) Cut off the unwanted part of the DSP clip assembly with sharp scissors BEFORE attempting connection to the DSP. Attempting to remove the unwanted assembly portion whilst connected to the DSP will result in severe damage to DSP and clip. BE WARNED!!!!!!!



2) Your DSP clip should look something like this now (Depending of course which side you trimmed):



3) Align the DSP clip properly by situating the “PIN 1” marking on the DSP clip PCB over pin 1 of the DSP IC. Make sure that the edge of the clip is parallel to the DSP on four sides before connection. Please ensure that the DSP clip is situated equally over each side, as this is paramount to proper connection.

3) Make sure that the DSP clip has made a firm connection, by pressing down with both thumbs as shown in the photo.

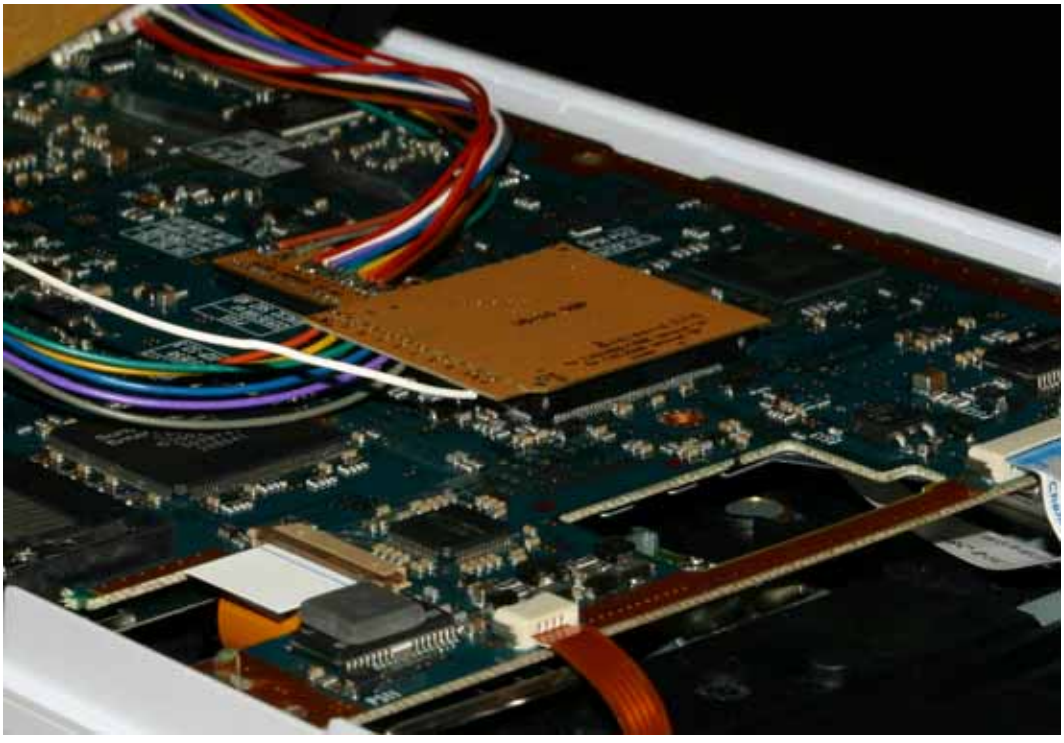
4) Take care not to damage any of the passive components around the DSP, by exercising due care and attention.

5) Do not disconnect/reconnect the clip unnecessarily, this will lead to damage of the clips' housing and pins, and will ultimately render it useless.

6) **Do not attempt to install a clip to a DSP which has been soldered to by hand or had a previous solder type MOD installation, since our clips are extremely precision interconnects and cannot accommodate excess solder.**

7) Do not attempt to connect a clip to another DSP type for which it is not designed. This may cause damage to both the clip/ DSP or cause a short circuit.

8) Ensure that the clip orientation is correct, pay particular attention to the positioning of PIN 1.

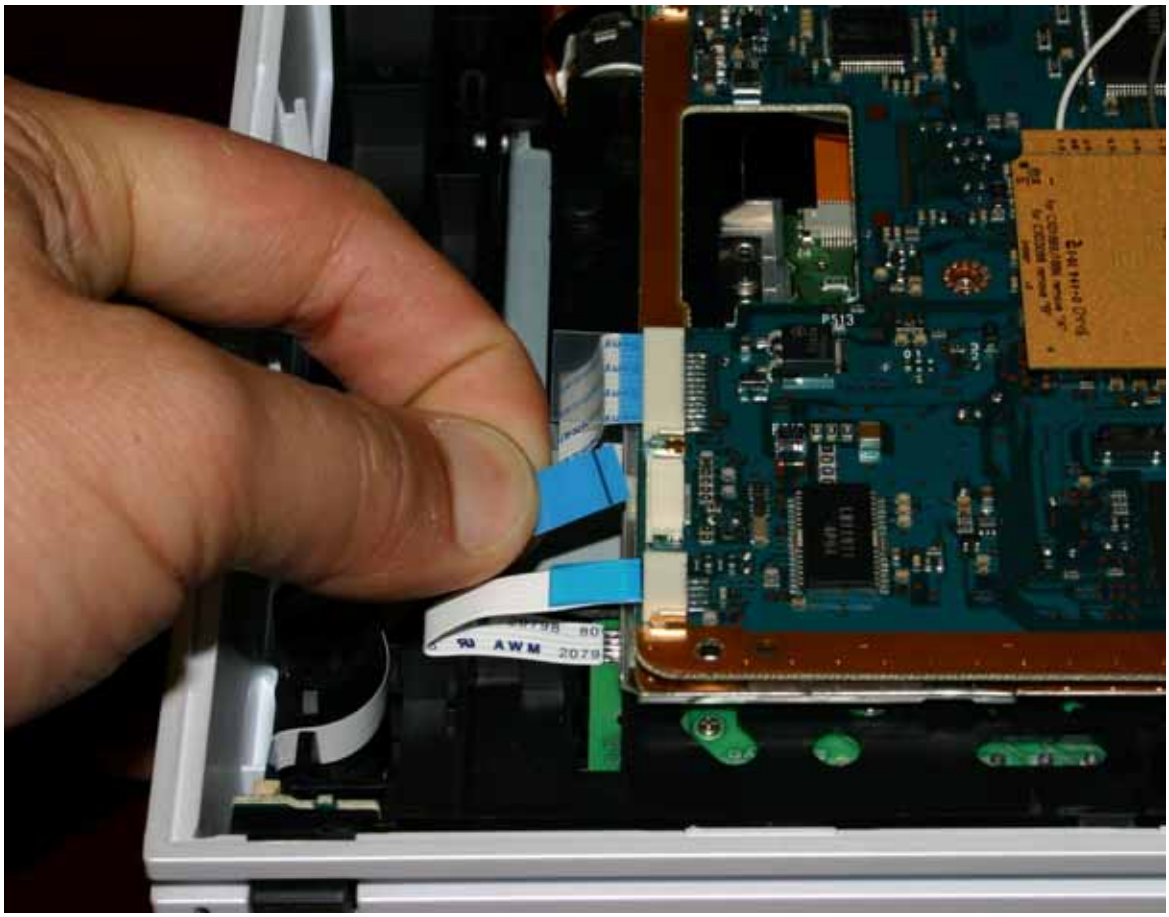


IMPORTANT NOTE:

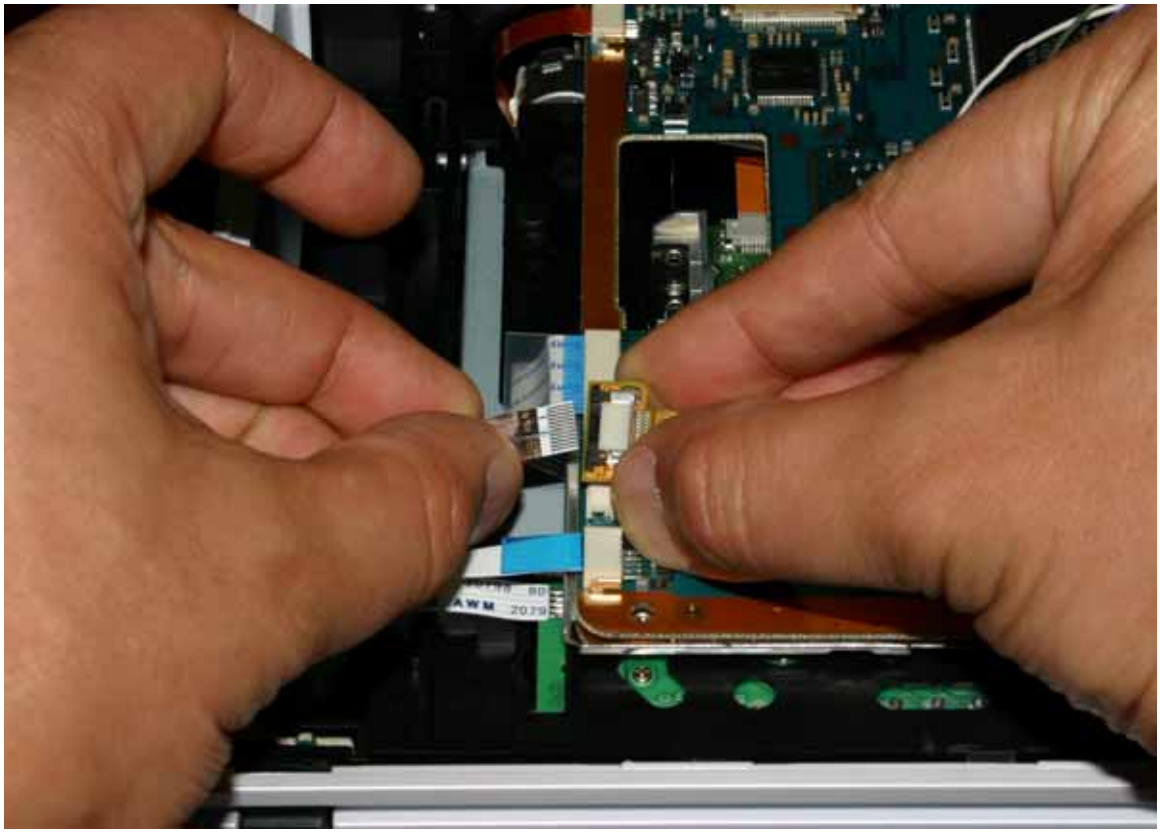
We have found that the best way to remove the unwanted connection portion of the DSP clip PCB is to use a pair of sharp scissors and cut carefully along the perforated edge. This will avoid placing stress on the solder connections between the clip and the PCB. You SHOULD NOT use your hands to snap of the PCB portion, since this will lead to damage. Please take great care when cutting the PCB not so stray away from the perforated section, as this may cut into tracks which are essentially for patching functionality.

Eject signal PCB installation (V9-V11 only)

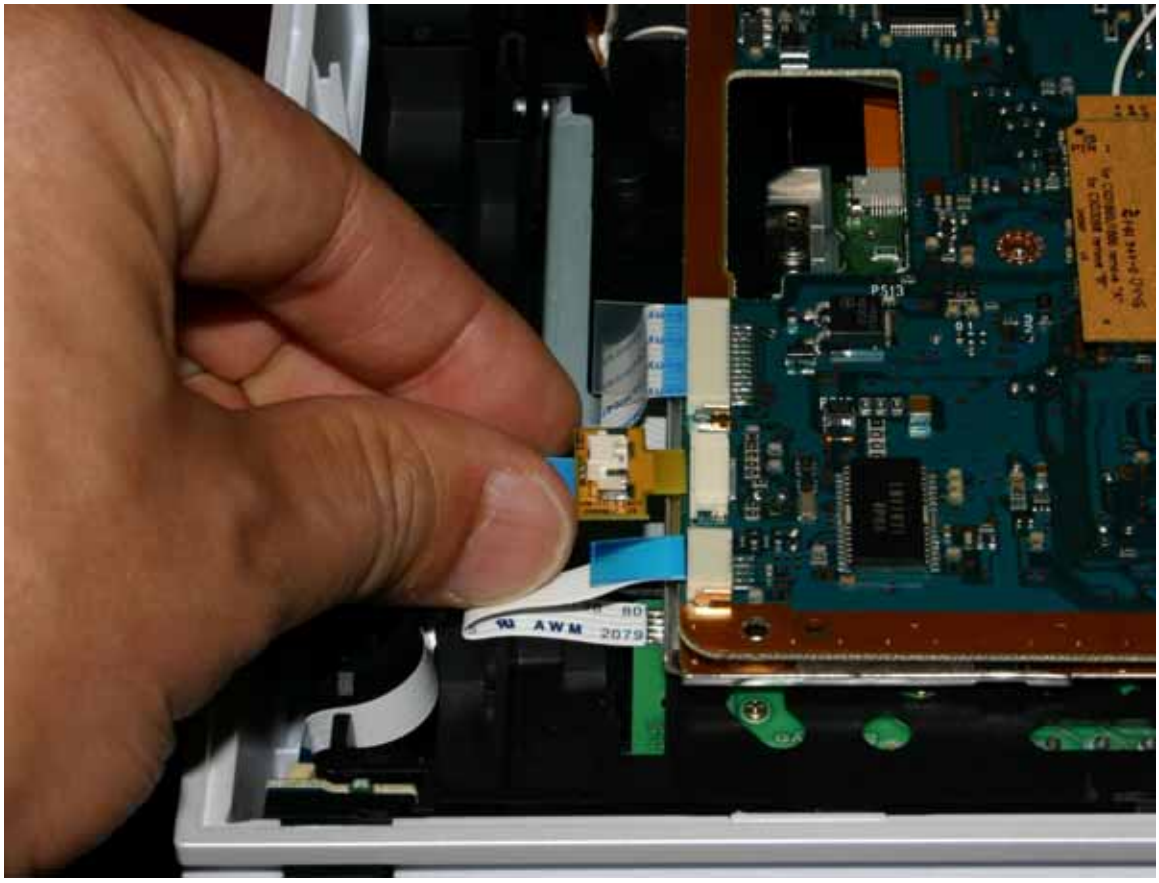
1) Disconnect the eject cable from the PS2.

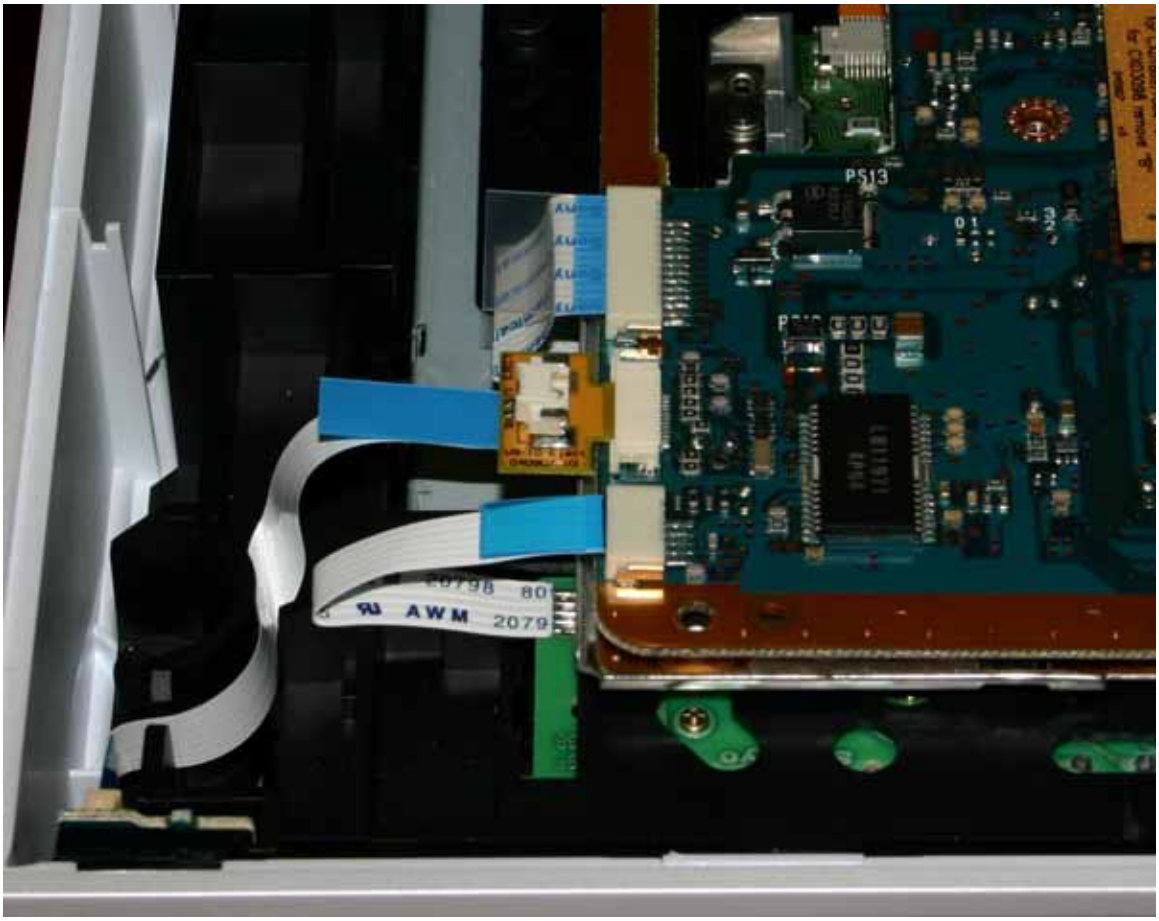


2) Connect the PS2 eject cable into the eject signal assembly.



3) Connect the eject cable assembly to the connector from which you removed the ribbon cable.



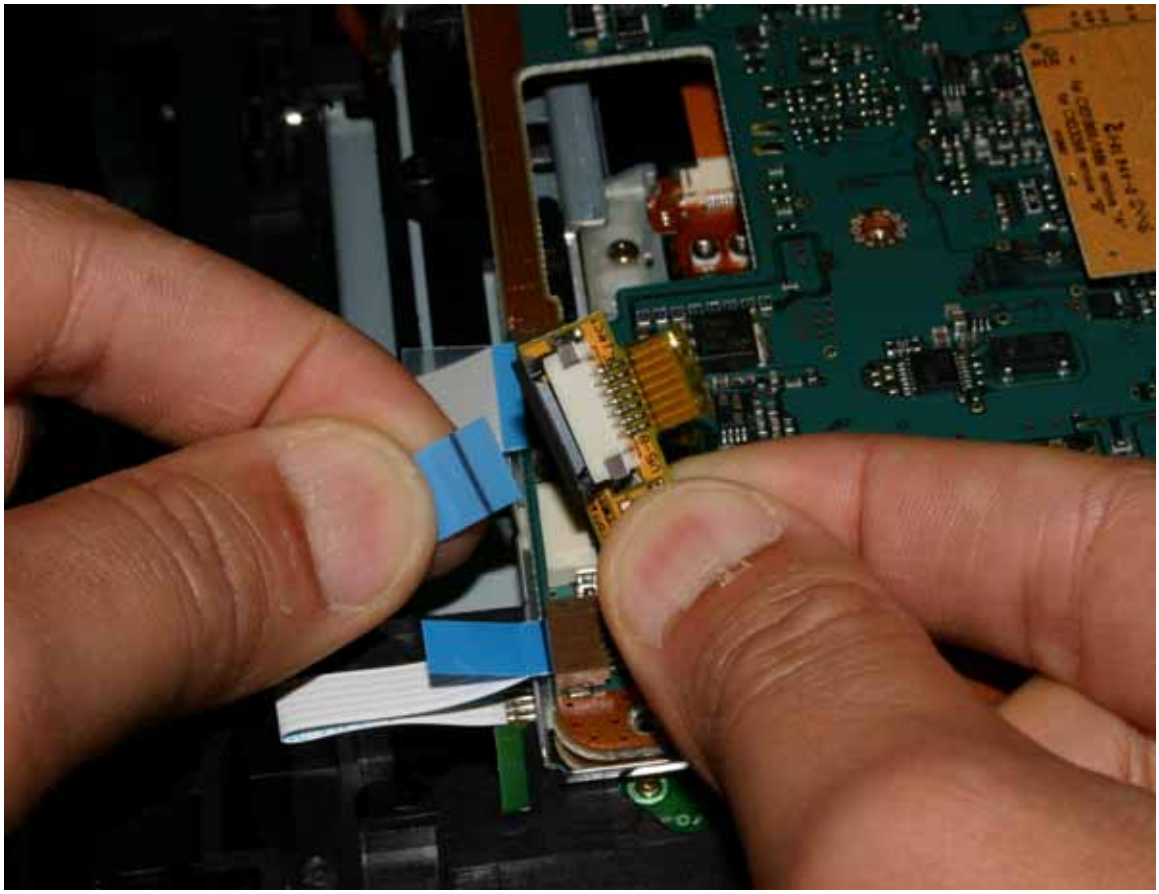


PLEASE TAKE GREAT CARE WHILST DISCONNECTING THE RIBBON CABLE NOT TO TEAR IT! PLEASE ALSO ENSURE THAT EXCESSIVE FORCE IS NOT USED WHILST CONNECTING THE EJECT ASSEMBLY TO THE CONSOLE.

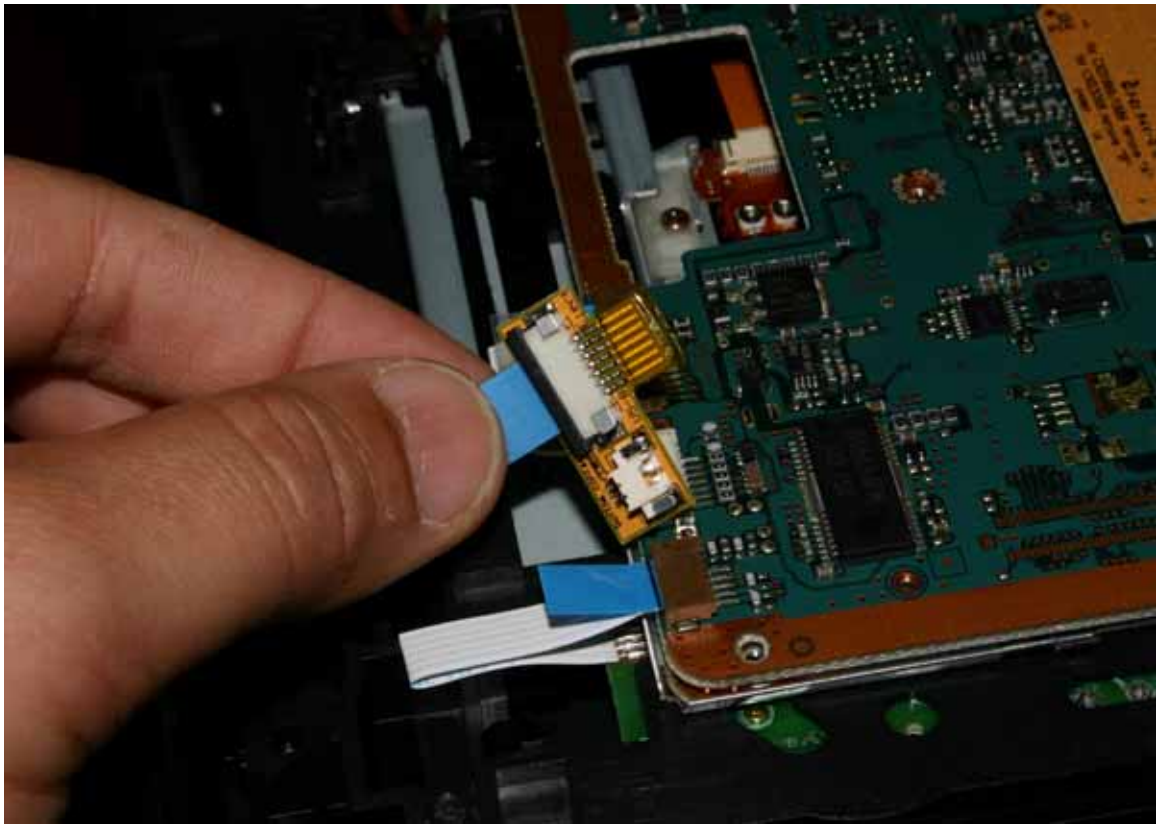
Eject signal PCB installation (V5-V8 only)

1) Disconnect the eject cable from the PS2.

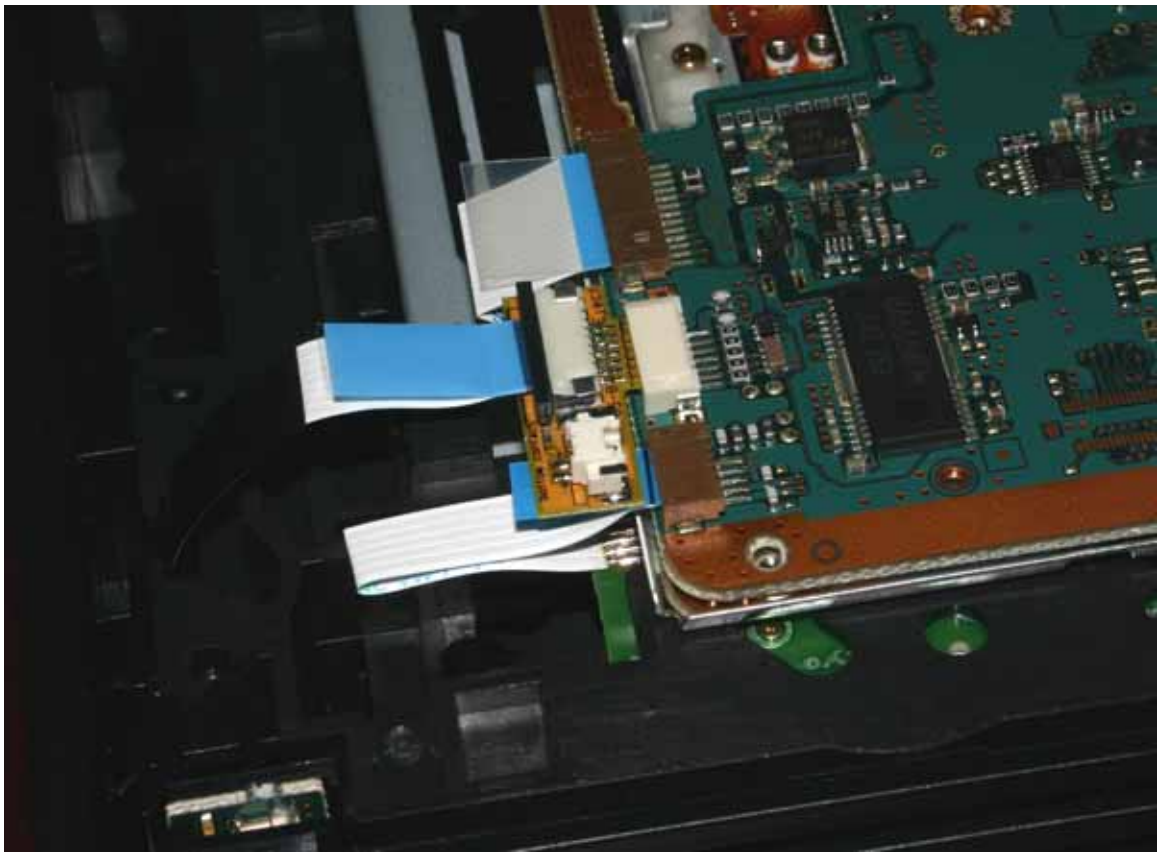
2) Connect the PS2 eject cable into the eject signal assembly.



(Please note that the FFC connector on the underside of the V5-V8 PCB assembly is only to be used for V6 consoles!)



3) Connect the eject cable assembly to the connector from which you removed the ribbon cable.

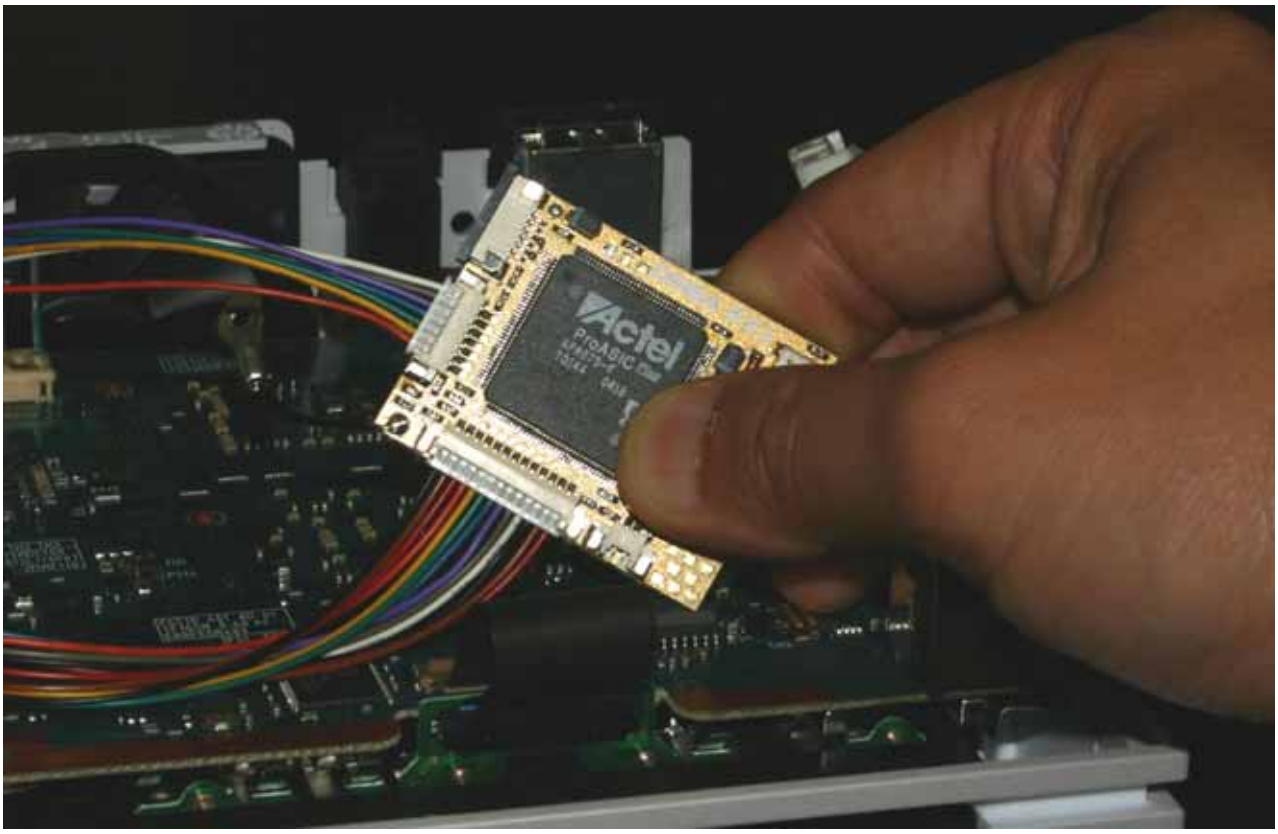


PLEASE TAKE GREAT CARE WHILST DISCONNECTING THE RIBBON CABLE NOT TO TEAR IT! PLEASE ALSO ENSURE THAT EXCESSIVE FORCE IS NOT USED WHILST CONNECTING THE EJECT ASSEMBLY TO THE CONSOLE.

Connecting the clip assembly cables to the DMS4 E.Z.I. modchip

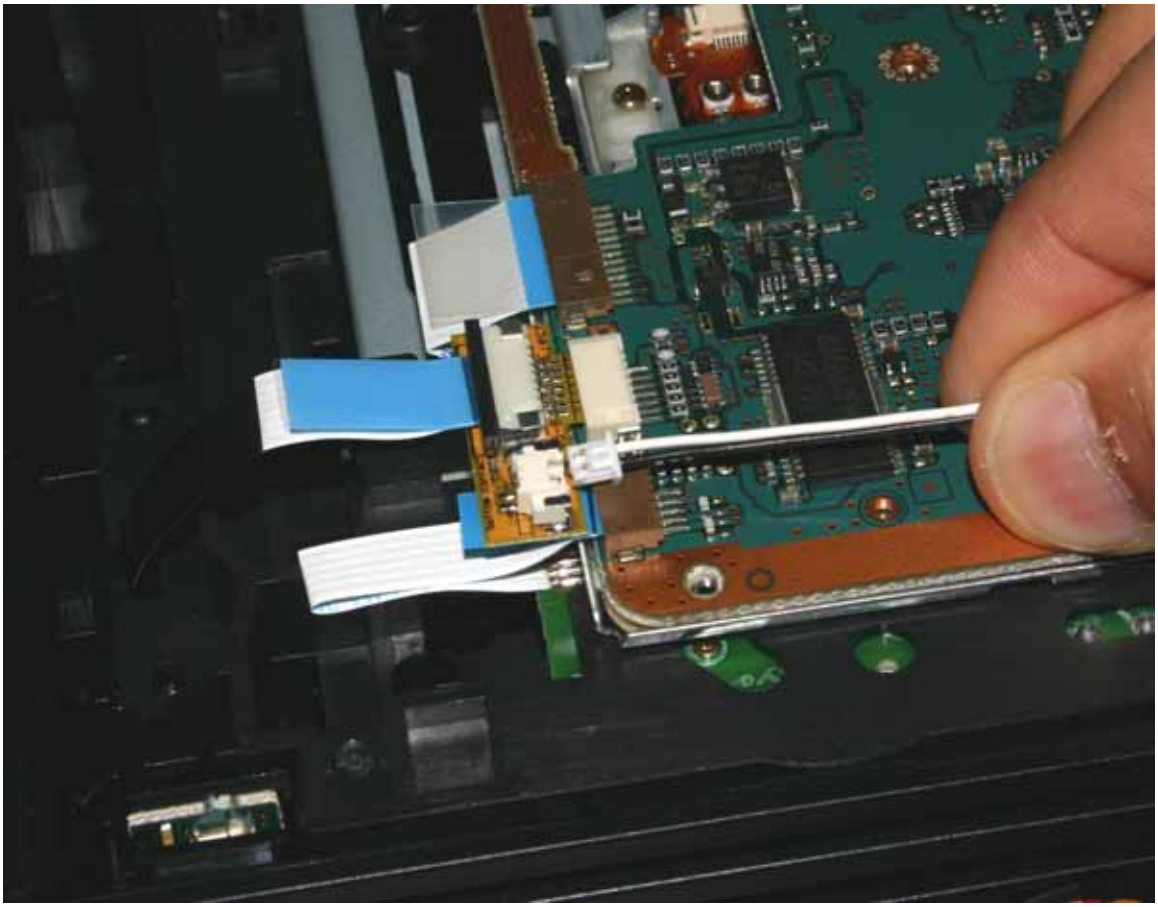
1) Connect the BIOS cables first by mating the 10 wire BIOS cable connector to the female 10 pin connector on the MOD.

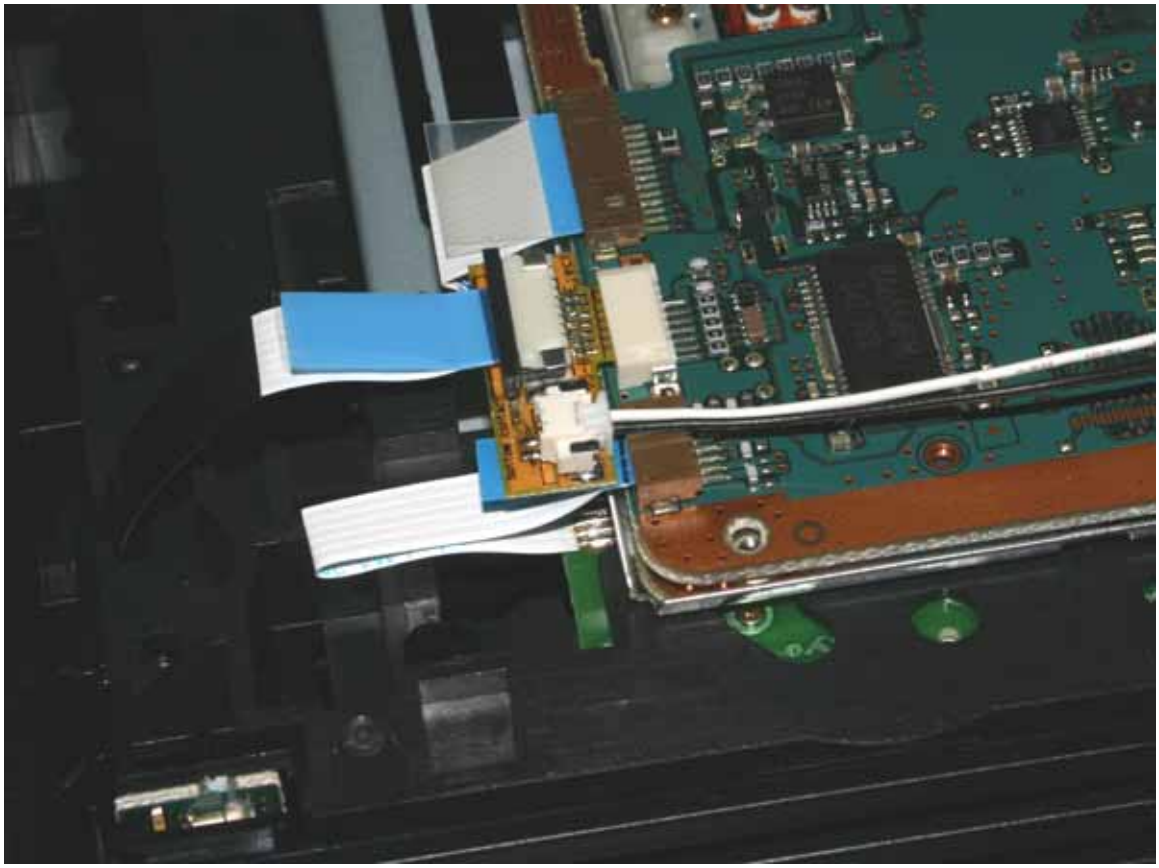
2) Connect the DSP cables next by mating the 7 wire DSP cable connector to the female 7 pin connector on the MOD.

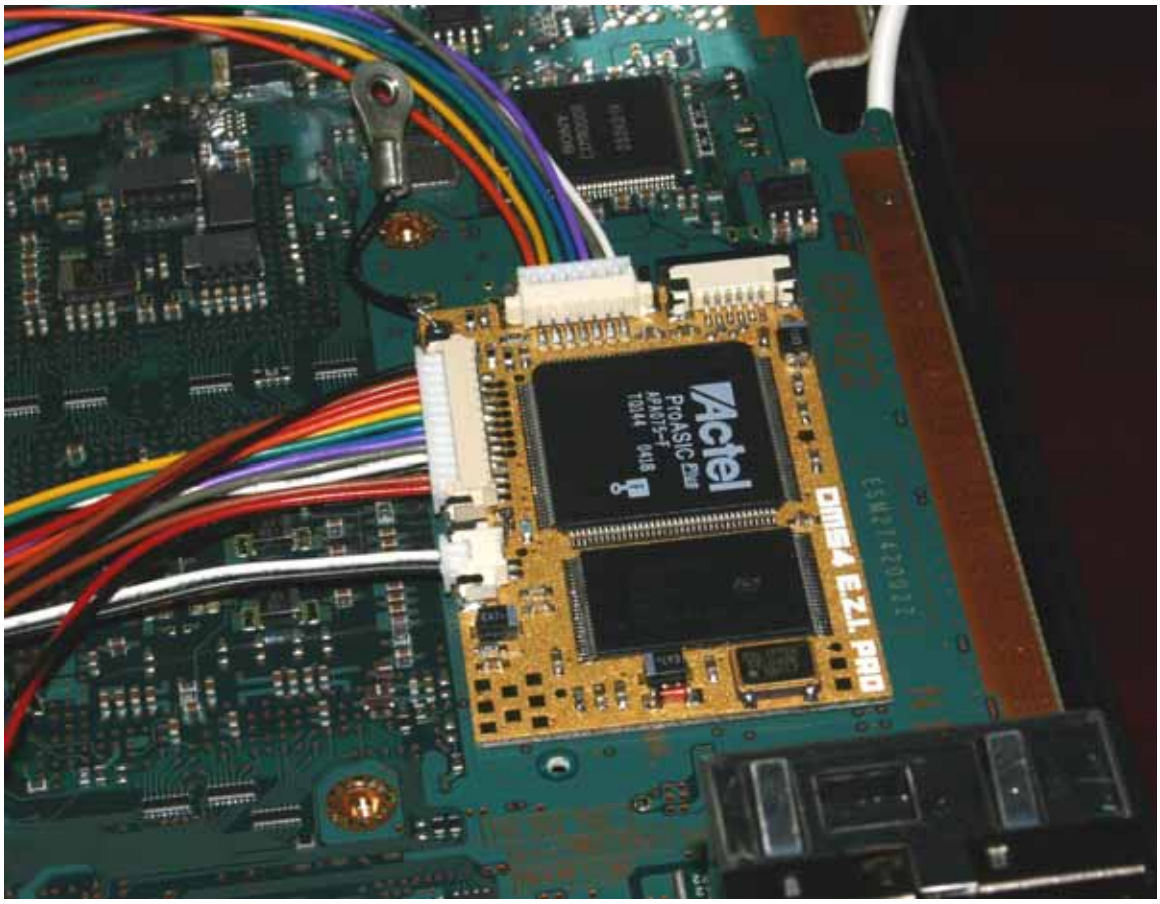


3) Connect the 2 wire eject cable connector to the eject signal assembly, and then to the eject 2 pin connector on the MOD.


GH-026



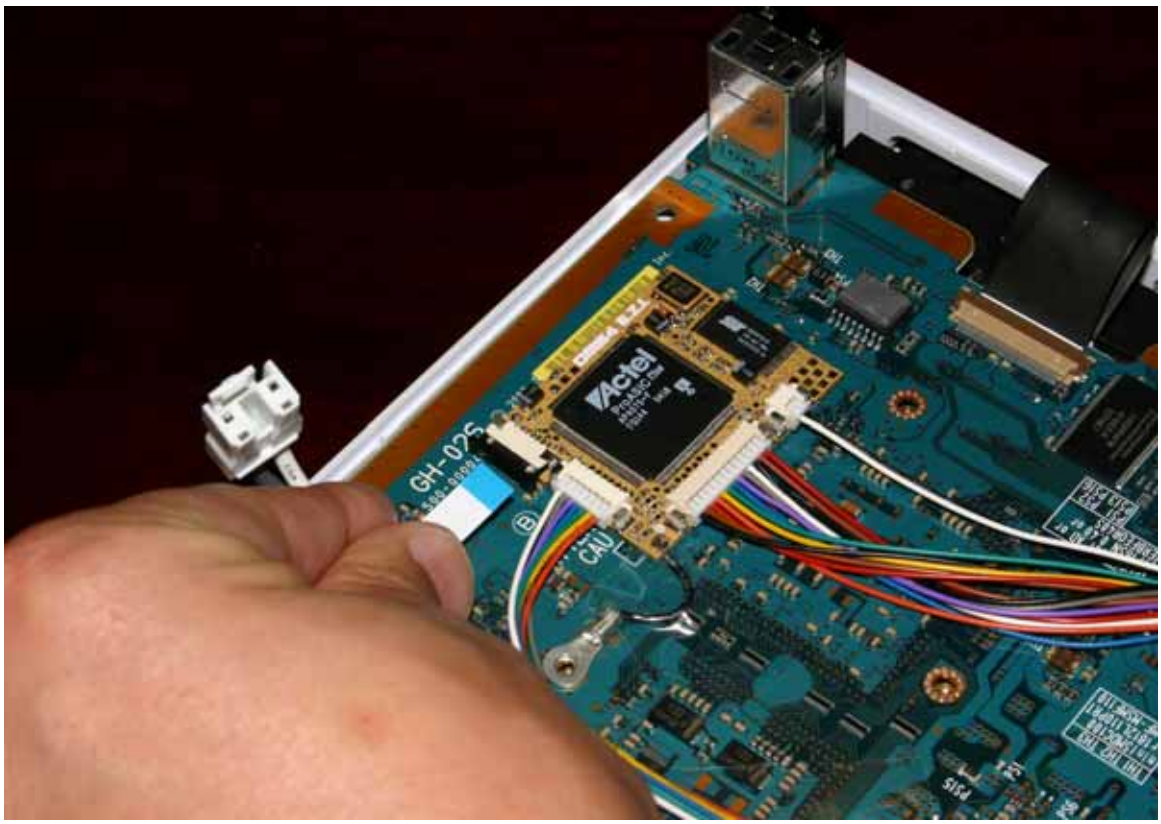



Actel
ProASIC
DMA EZL PRO

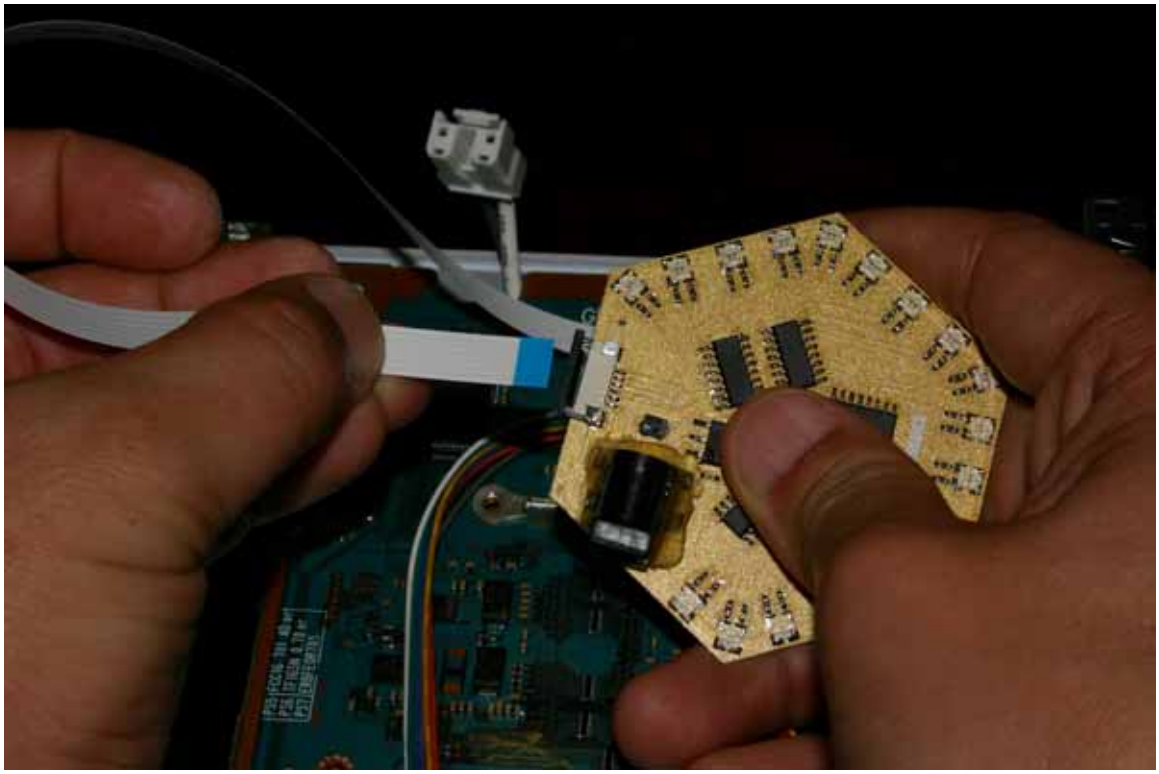
DMS4 E.Z.I LED diagnostics panel preparation

Included with your DMS4 E.Z.I modchip package is the LED diagnostics panel. This can be used to help diagnose any problems which may arise due to a bad installation, however installing the LED diagnostics panel is completely optional and the modchip will work fine without it connected. If you wish, can have the LED panel connected until you have verified that the console is working properly with the modchip installed and then remove it. You need to power the LED panel with a separately purchased 9V DC (polarity: center = +ve) 2.5mm power jack. Please note that the pictures for the remaining installation steps assume that the LED panel has been connected.

1) Connect the FFC cable to the DMS4 E.Z.I. clip and then route the cable as shown to the exterior of the console.

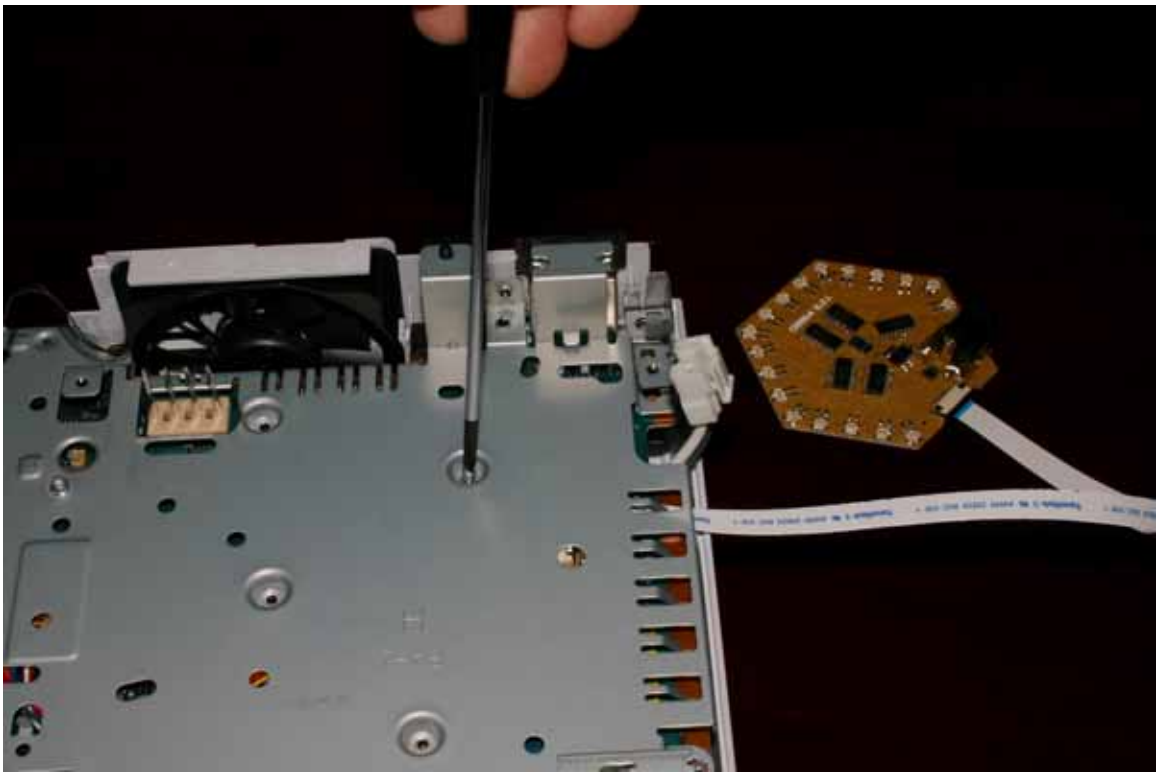


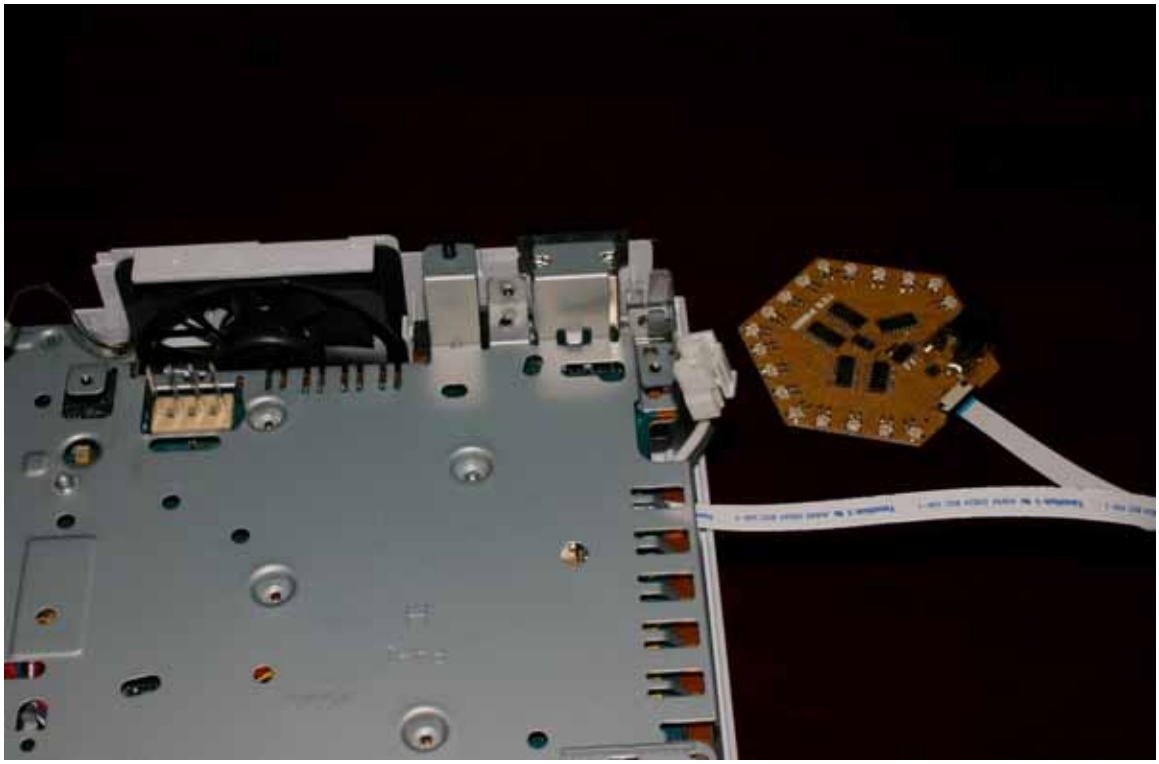
2) Connect the FFC cable to the E.Z.I. LED test panel.



Main modchip preparation

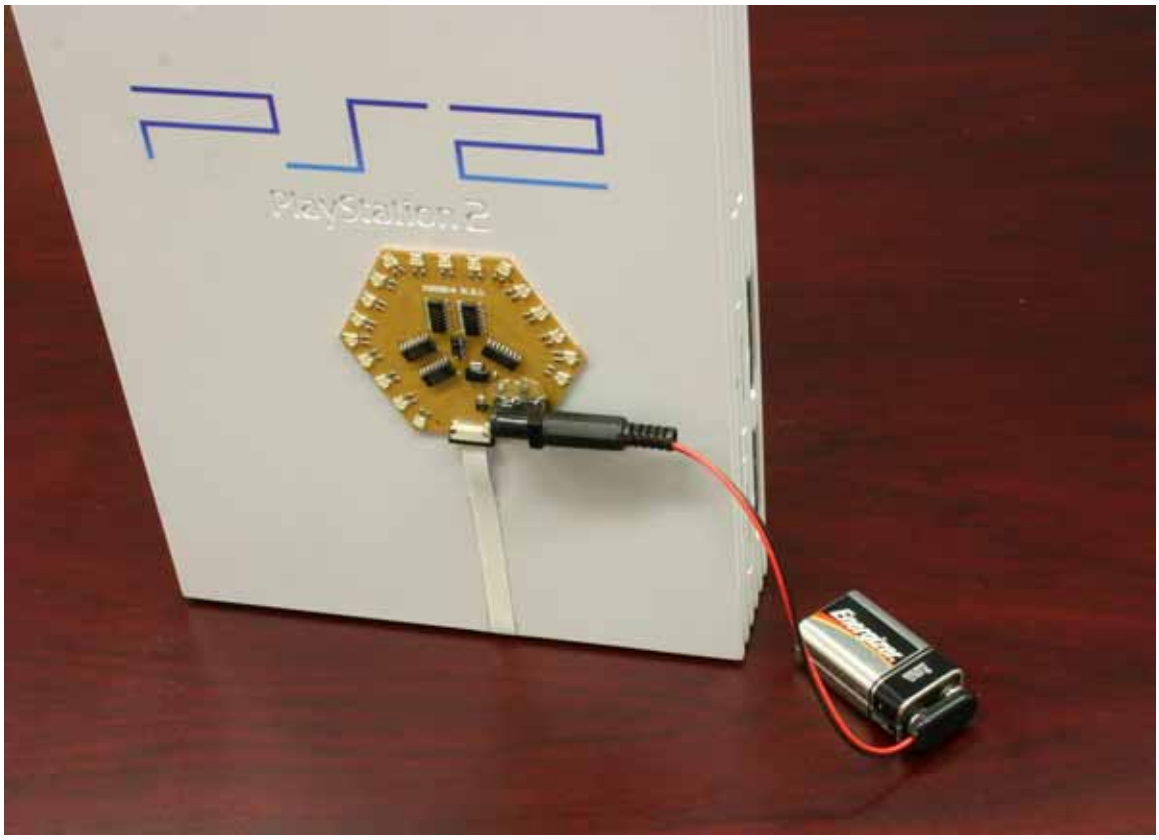
1) Affix the DMS 4 E.Z.I to the console in the illustrated position, using some adhesive such as double sided tape. Then tape the ground (B wire) terminal loop in place as shown. When you reassemble the console after installation of clips, the ground loop should be screwed to ground as per usual re-assembly procedure. Be sure that the ground loop terminal is secured tightly with the screw, otherwise this can affect functionality. This is **VERY** important. We can advise that a ground connection soldered directly to the console will provide optimum performance. Should you decide to do this simply cut the terminal loop off, strip the wire bare and then solder the wire directly to the nearest GND point.





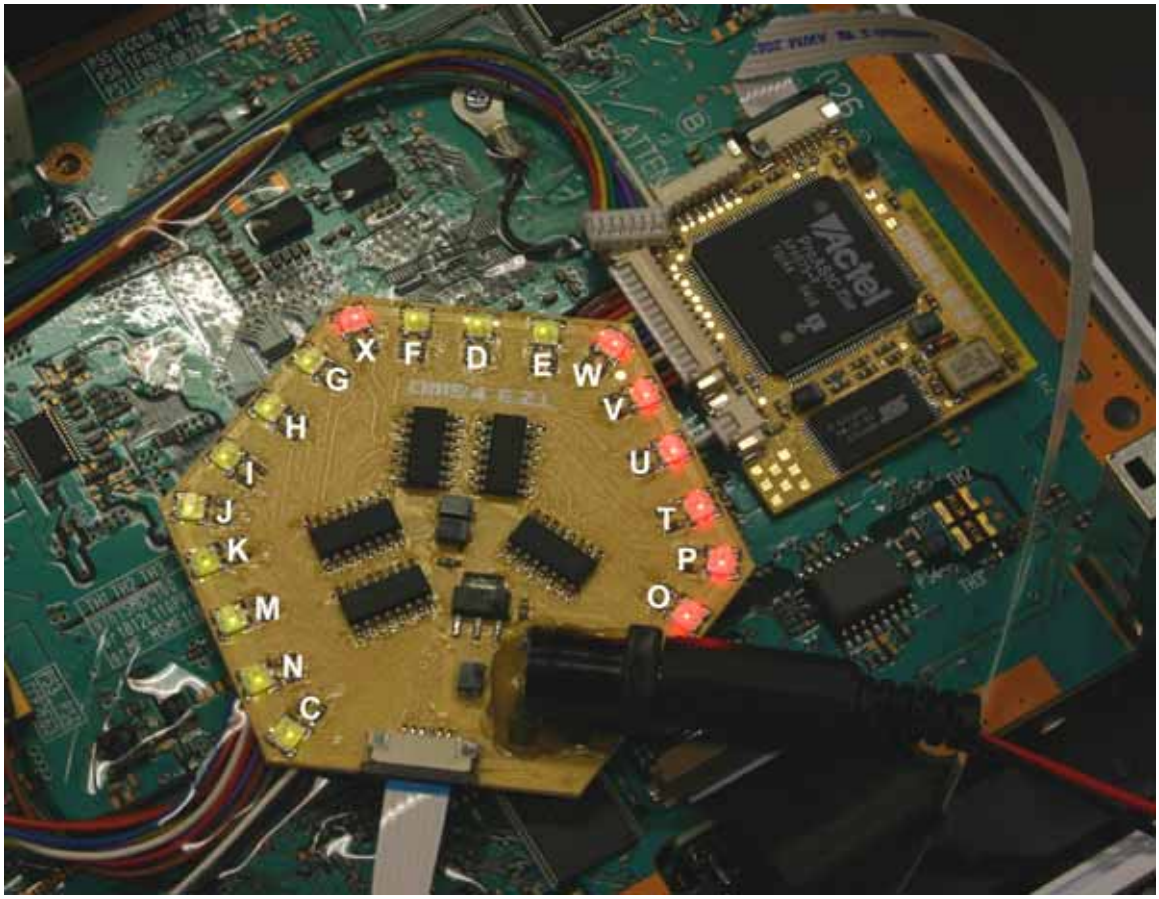
2) Now reassemble your console and if you decided to connect the LED panel, tape it to the console as shown.

3) If you have connected the LED panel, connect a 9V DC (polarity: center = +ve) 2.5mm power jack P.S.U. (not included) to the jack on the E.Z.I. LED panel.



4) You can now test the functionality of the modchip. Installation is complete.

DMS4 E.Z.I Troubleshooting



NOTE: Due to manufacturing error, the initial batch of LED panels shipped out did not have letters marked on the PCB next to each LED. In the case that you have one of these LED panels, the letter to LED mapping is shown above. The DMS4 EZI part which each led/letter corresponds to is as follows:

C: Eject connector
O – X: CDVD DSP clip
D – N: BIOS clip

- One or more BIOS connections (D-N) are showing a bad connection result (RED state) on the E.Z.I. LED panel (shown below) How can I resolve this?

There are three possible solutions:

1) The pins of the BIOS have some surface oxidation and require cleaning. To remove the oxidation from the surface of the BIOS pins, use a light abrasive paper and rub the respective BIOS pins gently until the metal lead pin is shiny. Be sure to clean away any dust or fragments carefully to prevent damage.

2) You have improperly connected the BIOS clip with too much pressure and bent or distorted one of the connection pins of the BIOS clip. You will have to check which pin of the BIOS clip has been damaged and then bend it gently back into shape using fine tweezers.

3) The BIOS clip is not seated properly. Remove the BIOS clip carefully and reconnect it with as little pressure as possible. Ensure all edges of BIOS clip are parallel to PS2 motherboard.

- One or more DSP connections (O-X) are showing a bad connection result (RED state) on the E.Z.I. LED panel. How can I resolve this?

1) The pins of the DSP have some surface oxidation and require cleaning. To remove the oxidation from the surface of the DSP pins, use a light abrasive paper and rub the respective DSP pins gently until the metal lead pin is shiny. Be sure to clean away any dust or fragments carefully to prevent damage.

2) You have improperly connected the DSP clip with too much pressure and bent or distorted one of the connection pins of the DSP clip. You will have to check which pin of the DSP clip has been damaged and then bend it gently back into

shape using fine tweezers or a razor blade. Do not use excessive force, or you may end up destroying the solder connection between the DSP lead pins and the PS2 motherboard.

3) The DSP clip is not seated properly. Remove the DSP clip carefully and reconnect it with as little pressure as possible. Ensure all edges of DSP clip are parallel to PS2 motherboard.

- The eject signal (C) is showing as a bad connection how can I fix this?

1) Ensure that the eject PCB assembly is plugged in properly to the PS2 FFC connector and ensure that the PS2 FFC cable is also connected to the DMS4 E.Z.I. motherboard and eject PCB assembly. Make sure that the layer of film covering the PCB gold fingers has been removed.

2) Ensure that the 2p-2p male eject cable is securely connected between the E.Z.I. motherboard and eject board.

- None of the Lights on the DMS4 E.Z.I. LED panel light up. What's wrong?

1) Check the power connection and Ground connections are connected properly!
2) Check that the E.Z.I. LED panel P.S.U. voltage and polarity are set correctly.

Since the E.Z.I. LED panel is designed to report any connection errors, other problems are unlikely to be undiagnosed by the LED panel!

- I am getting a black screen when I boot my PS2 randomly or all the time. What's wrong?

You most likely have a problem with your ground connection (ground loop). You need to make sure that when you re-assemble the console the ground loop is in the correct place and gets screwed in **tight**. If you make sure the screw which goes through the ground loop is done up tight and this does not help, you can try soldering the ground connection rather than using the ground loop. Simply de-solder the ground loop wire from the DMS4 EZI modchip PCB and replace with some thick (ie: 20-22awg) wire. Solder the other end of the wire to the nearest ground point on the PS2 motherboard.

- When I try to boot import or backup games I get the red "Please insert a Playstation format disc".

In its factory default state DMS4 E.Z.I is programmed with the official DMS4 flash which only supports booting homebrew software, **not imports or backups**. To enable booting of these you must program your DMS4 EZI with 3rd party flash content. For more information please see the DMS FAQ's and Guides forum at **http://www.dms3.com/guides**

It is also possible that you have a V6 console but have mistaken it for a V5 or vice versa, and have used the wrong FCC connector on the eject PCB. In this case the modchip will not authenticate discs when you insert them. Please see the image in the PS2 Version Identification section to find out how to determine if you have a V5 or V6.

- I'm still stuck, where can I get additional support?

The DMS forums provide a wealth of information and are a great place to get support. They also contain a dedicated FAQ's and Guides section which includes in-depth troubleshooting information and tutorials. Follow the links below:

DMS Forums – **http://www.dms3.com/forums**
DMS Forums FAQ's & Guides – **http://www.dms3.com/guides**

DMS4 E.Z.I F.A.Q

Q) Where can I get more information and take part in discussion relating to the DMS4 E.Z.I modchips?

DMS provides its own forums for discussion and support relating to the DMS product line. The forums provide a wealth of information and are a great place to get support. You can reach them at the following location:

http://www.dms3.com/forums

Q) I have heard that V9-V10 consoles sometimes have problems with lasers burning out. People apply the "romeo" mod to prevent such burnouts from occurring. Do I need to do this modification or does DMS4 E.Z.I do it for me?

The DMS4 E.Z.I does not do anything similar to the romeo mod. It is recommended that you apply the romeo mod in order to protect your laser, however this is an entirely optional step and it does require a small amount of soldering (you need to lift the leg of an IC and solder 1 wire). You can omit this step if you wish, however then your laser will potentially be at risk of burnout if you are using poor quality media. If you stick to good media which the PS2 will not have any trouble reading then you should be ok regardless. Please note that this is only relevant to console versions V9-V10. If you have an earlier console then your laser is not at risk from burnout. For information on how to apply the romeo mod see the following website:

http://www.cyber-mag.com/station/laserV9.htm

Q) How long will it take me to install the DMS4 E.Z.I modchips?

A) We'd estimate 15-20 minutes from start to finish, for a first time user, or 10 minutes if you've done it before.

Q) Are the DMS4 E.Z.I. Lite and E.Z.I Pro modchips really a solderless solution?

A) Yes, 100% solderless technology, using high precision clips and cable interconnects to take away the hassle of Modchip installation.

Q) What is the main difference between Lite and Pro versions of the DMS4 E.Z.I.?

A) The flash memory size of the Lite is 128KB where as the flash size of the Pro is 2 Megabytes. The pro version therefore offers more space for OS or Homebrew type applications.

Q) Can I buy replacement DSP or BIOS clips, in case I break them?

A) We will offer a range of spare parts through our retailer network.

Q) What quality checks are in place, ensuring that I get a high end product?

A) We ensure that each of our mods is connected to a microcontroller test rig, which verifies the patching ability of every single unit, before dispatch to our distributor occurs. Each DSP and BIOS clip is inspected under a high power microscope for defects or abnormalities, ensuring that you get a high quality interconnect. Furthermore, each modchip is packed in an anti static bag to protect against static electricity damage. The clips are packed in foam and ESD bags to protect them during transit.

Q) Will a V12 version (PSTwo) of the DMS4 E.Z.I. Lite and E.Z.I. Pro become available in the future?

A) Yes! We're currently working on an innovative solution for the PSTwo.... Stay tuned for more info!

Q) Do the DMS4 E.Z.I Modchips have the same features of their solder installation cousins?

A) Yes the DMS4 E.Z.I. Lite has the same features as DMS4 Lite and the DMS4 E.Z.I. Pro has the same features as the DMS4 Pro.

Q) What are the advantages of the E.Z.I. range of products over swap technology discs or Modchips?

A) The E.Z.I. range of products offer all the advantages of their solder type cousins (Direct boot, Auto Media detect, etc) and other Modchips, yet do not require the user to solder a single wire. Of course the DMS4 products offer such features as DEV.olution mode, DVD Region Free, Green Screen Fix, Auto Detect Media patching, HDD Explorer.

Q) Will there be an adapter kit available for the V4 PS2 consoles?

A) We have already designed and tested V4 BIOS clips. They are available in two variants - V4 44 pin No Gap and V4 44 pin Gap, they will be available through your retailer shortly after release. The eject PCB V5-V8 and the DSP clip, are in fact, already actually compatible, so you will only need a V4 version of the BIOS clip to be able to use the E.Z.I. products on your V4.

About the DMS4 E.Z.I. range of products

The DMS4 is the world's first direct boot, auto detect modchip to offer 100% solderless installation. The research and development stages of this project took 12 months of exhausting work and many hundreds of thousands of dollars. High power microscopes and latest Japanese mold making equipment were required to analyze and construct the precise dimensions, contours and physical tolerances required to connect with the DSP and BIOS integrated circuits. Other so called solderless mods, have relied on swap technology with a cheat device.

Many people had doubts we could pull it off, citing the complexity of micro molds and ingenuity required to complete such a task, as next to impossible. Well guys, it's here, and we're first :)

We're very proud to offer a product which we're sure will revolutionise the PS2 Modchip world. As you've come to expect, you can be sure of world class quality software and technical innovation, from the scene's most innovative MOD maker.

We thought it would be a nice touch to use golden coloured PCB's to represent the uniqueness and special nature of our product :)

For further installation support, refer to the DMS4 E.Z.I installation FAQ’s and forums at:

http://www.dms3.com/forums