# **PS3 SYSCON UART CONNECTION GUIDE**

**Disclaimer:**

**I can not be held responsible for any damage made to you ps3 motherboard or issues that occur when following this guide! - At owners own risk!**

## **Why do this?**

- Diagnose YLOD issues commonly found on these old PS3 boards

- Adjust default fan speed policies

- Understand the workings of this machine

- Many other good reasons..

## **PS3 Motherboards**

*The guide is for the FAT PS3 motherboards, other type of PS3 boards can use this guide but will require knowledge of where to interface the serial connections!*

*Also note that not all revisions of syscon can be accessed or have all of the commands required!*
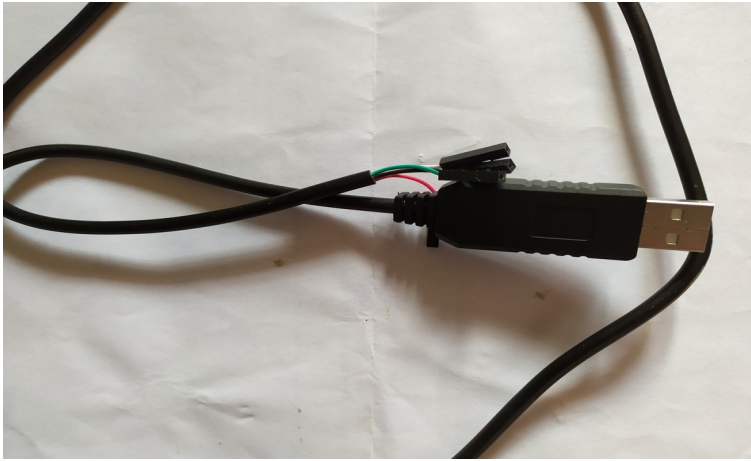
**COK-001**

**COK-002**

**DIA-001**

**DIA-002 (untested, ref pic only)**

**DYN-001 (**

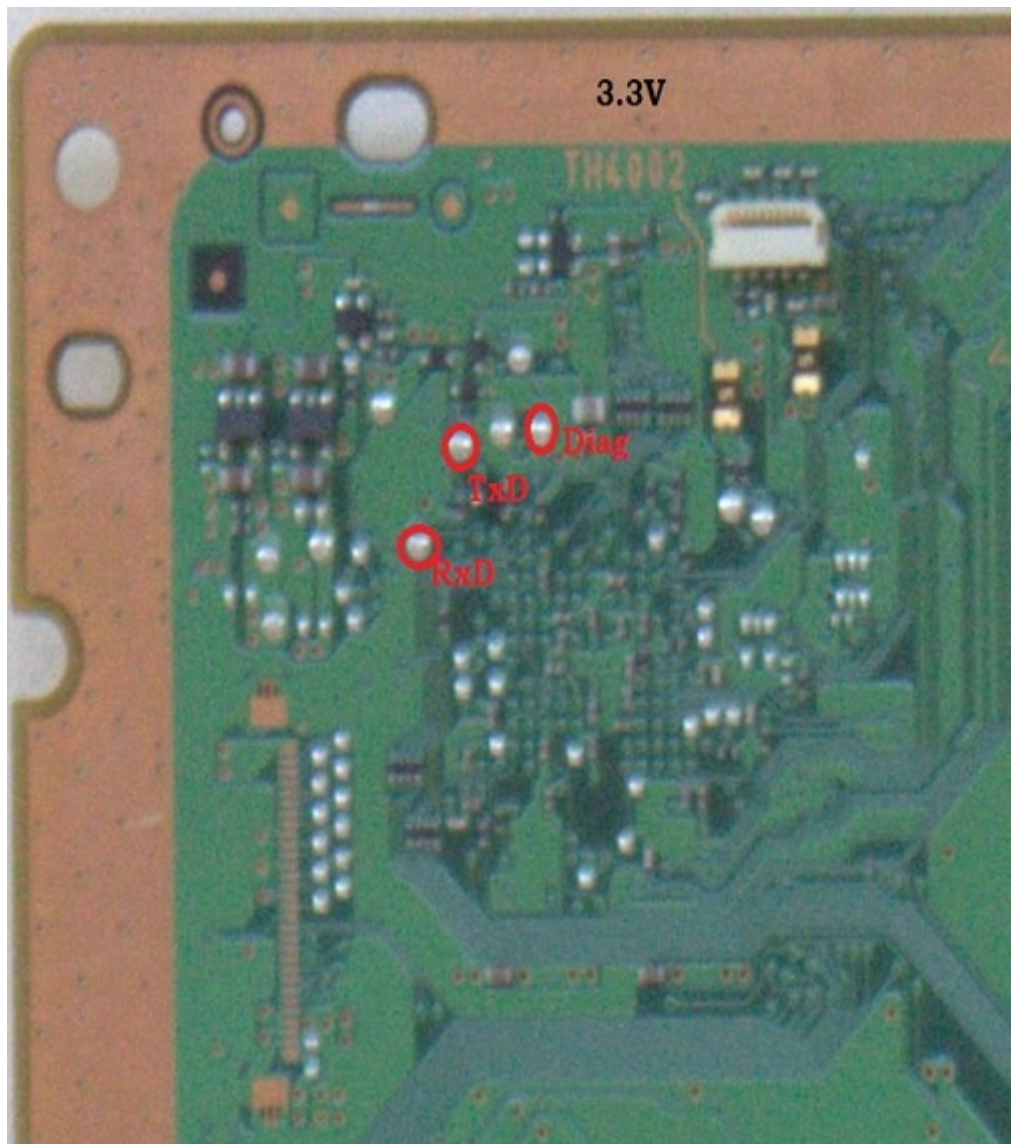**SEM-001**

# Required equipment



- **1x USB to TTL v3.3 Serial Converter Cable**

- **4x AWG 30 single core wire (keep length short)**

- **Soldering iron and solder**

- **Wire cutters**

- **Electrical tape (for insulation afterwards)**

# Required software (tested on Linux OS only)

- **Python 2 +3 (python-serial, python-crypto and pycryptodome modules needed)**

- **Serial communication program to check output is happening – putty, minicom, screen etc**
- **Syscon python communication script (used to action syscon commands) – ps3_syscon_uart_script.py (python 2 only) Support CXR and CXRF syscons**
- **ps3_syscon_uart_script23.py (python 2,3) Supports SW syscons**
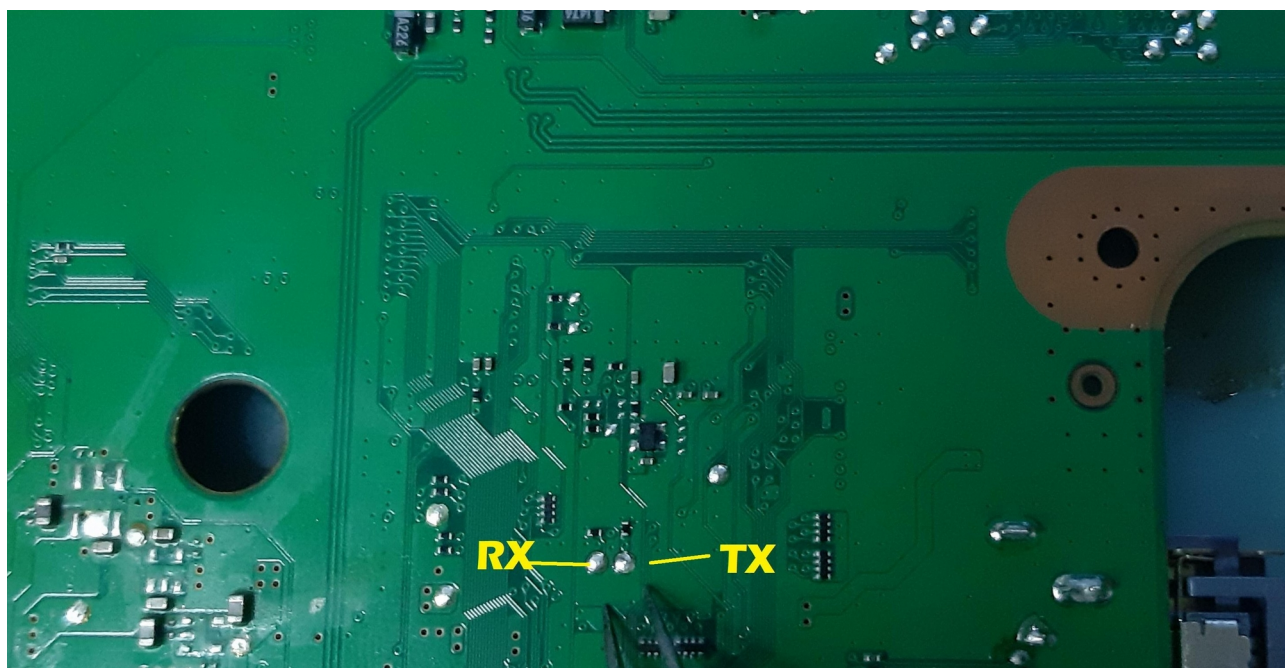
# Identify the serial connections

## COK-001 and COK-002:

**DIA-001 and DIA-002:**



**DYN-001:**

**SEM-001:**
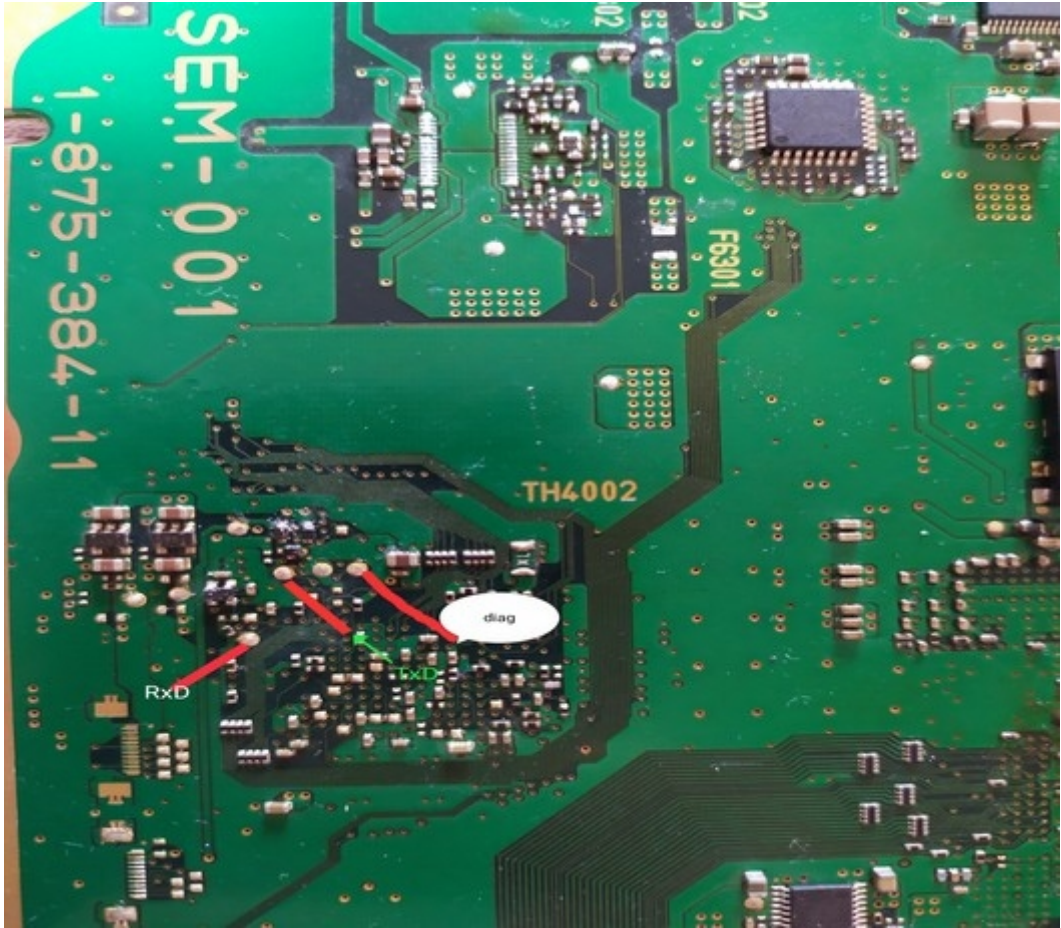
# Connecting the serial connection

4x Jumper wires will be needed – 1x Rxd, 1x TxD, 1x Diag and 1x GND

These jumper leads will need to be cut and stripped on one end to solder onto the motherboards points.

| Motherboard pin | USB TTL Cable pin | Pin type |
|---|---|---|
| RxD | RX | Receive transmission |
| TxD | TX | Transmit transmission |
| GND | Ground | Ground connection |
| Diag | Connect to GND to activate | Diagnose mode – connects to a Ground point to set low |
| | 3.3v | 3.3v – DO NOT CONNECT! |

# Setup software and usage

This guide will be using an Ubuntu OS to action the commands – Any OS can be used as it just requires Python 2 or 3 and the supplied '**ps3_syscon_uart_script.py' and** serial terminal program to work.

Copy the supplied python script and open up a terminal:

(make sure your user has permissions to use *"/dev/ttyUSB0" - add user to the dialout group)*

Plug in your USB TTL cable and make sure its connected as described in the above table!

Do a dmesg command to verify what port its on

**$# dmesg**

Usually it will be the first ttyUSB0

**$# python ps3_syscon_uart_script.py**

*ps3_syscon_uart_script.py <serial port> <sc type ["CXR", "CXRF"]>*

This help will show you the options. So to explain each option:

<serial port> = "/dev/ttyUSB0" - serial device to use to connect to

<sc type> = The SYSCON mode to use:

**CXR (57600 baud rate) will be External command mode**

**CXRF (15200 baud rate)  will be Internal command mode – activated by shorting the DIAG jumper cable to the GND pin and clearing offset 0x3961 01 to 00 from FF**

The following tables will show you what commands are available for each mode:

***If the commands dont work they most likely need a patch to make them work!***

## External commands

| Address | Command | Subcommand | Permission |
|---------|---------|------------|------------|
| 0x32959 | BOOT | MODE | 0x000080D6 |
| 0x329D5 | BOOT | CONT | 0x000080D5 |
| 0x342D7 | SHUTDOWN | - | 0x0000C0D5 |
| 0x32A51 | HALT | - | 0x0000C0D5 |

| | | | |
|---|---|---|---|
| 0x32A85 | BOOTENABLE | - | 0x0000809A |
| 0x33491 | AUTH1 | - | 0x0000C0EF |
| 0x33525 | AUTH2 | - | 0x0000C0EF |
| 0x33619 | AUTHVER | SET | 0x0000C0DF |
| 0x335BF | AUTHVER | GET | 0x0000C0FF |
| 0x32AC3 | EEP | INIT | 0x000080DA |
| 0x32C51 | EEP | SET | 0x0000C0DF |
| 0x32D3D | EEP | GET | 0x0000C0DF |
| 0x32EA7 | PDAREA | SET | 0x0000C0DF |
| 0x32E3B | PDAREA | GET | 0x0000C0DF |
| 0x330C5 | CSAREA | SET | 0x0000C0DF |
| 0x33057 | CSAREA | GET | 0x0000C0DF |
| 0x33169 | VID | GET | 0x0000C0D5 |
| 0x331D7 | CID | GET | 0x0000C0D5 |
| 0x3321D | ECID | GET | 0x0000C0D5 |
| 0x3325D | REV | SB | 0x0000C0D5 |
| 0x3328D | SPU | INFO | 0x0000C0D5 |
| 0x332E1 | KSV | - | 0x0000C0D5 |
| 0x33685 | FAN | SETPOLICY | 0x0000C0D7 |
| 0x33717 | FAN | GETPOLICY | 0x0000C0D7 |
| 0x33781 | FAN | START | 0x0000C0D7 |
| 0x33781 | FAN | STOP | 0x0000C0D7 |
| 0x33951 | FAN | SETDUTY | 0x0000C0D7 |
| 0x339C3 | FAN | GETDUTY | 0x0000C0D7 |
| 0x33A27 | R8 | - | 0x0000C0DF |
| 0x33AD1 | W8 | - | 0x0000C0DF |
| 0x33B71 | R16 | - | 0x0000C0DF |
| 0x33C19 | W16 | - | 0x0000C0DF |
| 0x33CBB | R32 | - | 0x0000C0DF |
| 0x33E49 | W32 | - | 0x0000C0DF |
| 0x33EE9 | RBE | - | 0x0000C0D5 |
| 0x33F91 | WBE | - | 0x0000C0D5 |
| 0x34049 | PORTSTAT | - | 0x0000C0DF |
| 0x332BF | VER | - | 0x0000C0FF |
| 0x341C5 | BUZ | - | 0x00008096 |
| 0x342D7 | SERVFAN | - | 0x0000C0D7 |
| 0x341F9 | ERRLOG | START | 0x0000C0DF |
| 0x34221 | ERRLOG | STOP | 0x0000C0DF |
| 0x34249 | ERRLOG | GET | 0x0000C0FF |
| 0x342B3 | ERRLOG | CLEAR | 0x0000C0DF |

# Internal commands

| Command | Address | Perms | SubCommands | Description |
|---------|---------|-------|-------------|-------------|
| becount | 0xCA7D | 0xDD0C0000 | - | Display bringup/shutdown count + Power-on time |
| bepgoff | 0xA4E7 | 0xD00C0000 | - | BE power grid off |
| bepkt | 0x2435D | 0xDC0C0000 | show/set/unset/mode/debug/help | Packet permissions |
| bestat | 0xD413 | 0xFD0F0000 | - | Get status of BE |
| boardconfig | 0x99C7 | 0xDC0C0000 | - | Displays board configuration |
| bootbeep | 0x1EA67 | 0xF0000000 | stat/on/off | Boot beep |
| bringup | 0xD597 | 0xFD0F0000 | - | Turn PS3 on |
| bsn | 0xD805 | 0xF00F0000 | - | Get board serial number |
| bstatus | 0x24269 | 0xDD0C0000 | - | HDMI related status |
| buzz | 0xA4FF | 0xDC0C0000 | [freq] | Activate buzzer |
| buzzpattern | 0xA8B7 | 0xDC0C0000 | [freq] [pattern] [count] | Buzzer pattern |
| clear_err | 0x2595B | 0xDD0C0000 | last/eeprom/all | Clear errors |
| clearerrlog | 0xB8CB | 0xDD0C0000 | - | Clears error log |
| comm | 0x9919 | 0xDC0C0000 | - | Communication mode |
| commt | 0x24907 | 0xDC0C0000 | help/start/stop/send | Manual BE communication |
| cp | 0x1E077 | 0xF0000000 | ready/busy/reset/beepremote/beep2kn1n3/beep2kn2n3 | CP control commands |
| csum | 0xD687 | 0xFF0F0000 | - | Firmware checksum |
| devpm | 0xD053 | 0xDD0C0000 | ata/pci/pciex/rsx | Device power management |
| diag | 0x9AAD | 0xD00C0000 | ... | Diag (execute without param to show help) |
| disp_err | 0x25911 | 0xDD0C0000 | - | Displays errors |
| duty | 0x9B23 | 0xDD0C0000 | get/set/getmin/setmin/getmax/setmax/getinmin/setinmin/getinmax/setinmax | Fan policy |
| dve | 0x2995D | 0xDC0C0000 | help/set/save/show | DVE chip parameters |
| eepcsum | 0xAA65 | 0xDD0C0000 | - | Shows eeprom checksum |

| Command | Address | Perms | SubCommands | Description |
|---|---|---|---|---|
| eepromcheck | 0x9A1D | 0x000C0000 | [id] | Check eeprom |
| eeprominit | 0x9A65 | 0x000C0000 | [id] | Init eeprom |
| ejectsw | 0xD611 | 0xFD0F0000 | - | Eject switch |
| errlog | 0xB7ED | 0xFF0C0000 | - | Gets the error log |
| fancon | 0xD26D | 0x0D000000 | - | Does nothing |
| fanconautotype | 0xC075 | 0xDD0C0000 | - | Does nothing |
| fanconmode | 0xBF35 | 0xDD0C0000 | get | Fan control mode |
| fanconpolicy | 0xBBC9 | 0xDD0C0000 | get/set/getini/setini | Fan control policy |
| fandiag | 0x1E91B | 0xF0000000 | - | Fan test |
| faninictrl | 0xD3D9 | 0x0D000000 | - | Does nothing |
| fanpol | 0xCA31 | 0xDD0C0000 | - | Does nothing |
| fanservo | 0xBF29 | 0xDD0C0000 | - | Does nothing |
| fantbl | 0xC087 | 0xDD0C0000 | get/set/getini/setini/gettable/ settable | Fan table |
| firmud | 0xD61D | 0xFDFF0000 | - | Firmware update |
| geterrlog | 0xB84F | 0xDD0C0000 | [id] | Gets error log |
| getrtc | 0xA6F3 | 0xDD0C0000 | - | Gets rtc |
| halt | 0x1E107 | 0xF0000000 | - | Halts syscon |
| hdmi | 0x29F39 | 0xDD0C0000 | ... | HDMI (various commands, use help) |
| hdmiid | 0x29D1D | 0xDC0F0000 | - | Get HDMI id's |
| hdmiid2 | 0x29D81 | 0xDC0F0000 | - | Get HDMI id's |
| hversion | 0x2422F | 0xDD0C0000 | - | Platform ID |
| hyst | 0xAEF5 | 0xDD0C0000 | get/set/getini/setini | Temperature zones |
| lasterrlog | 0xB7FF | 0xDD0C0000 | - | Last error from log |
| ledmode | 0xA80B | 0xDC0C0000 | [id] [id] | Get led mode |
| LS | 0x2421B | 0xDD0C0000 | - | LabStation Mode |
| ltstest | 0xCB97 | 0xDD0C0000 | get/set be/rsx | ?Temp related? values |
| osbo | 0x1EA3F | 0xF0000000 | - | Sets 0x2000F60 |
| patchcsum | 0xD9F7 | 0xDD0C0000 | - | Patch checksum |
| patchvereep | 0xD9B1 | 0xDD0C0000 | - | Patch version eeprom |
| patchverram | 0xD965 | 0xDD0C0000 | - | Patch version ram |
| poll | 0x240E3 | 0xDD0C0000 | - | Poll log |
| portscan | 0xDA0D | 0xDD0C0000 | [port] | Scan port |
| powbtnmode | 0xB911 | 0xDC0C0000 | [mode (0/1)] | Power button mode |
| powerstate | 0xCE6F | 0xDD0C0000 | - | Get power state |
| powersw | 0xD5F9 | 0xFD0F0000 | - | Power switch |
| powupcause | 0xB621 | 0xDD0C0000 | - | Power up cause |
| printmode | 0x99D9 | 0xDC0C0000 | [mode (0/1/2/3)] | Set printmode |
| printpatch | 0xD94F | 0xDD0C0000 | - | Prints patch |
| r | 0x8CA5 | 0xDD0C0000 | [offset] [length] | Read byte from SC |
| r16 | 0x8ED5 | 0xDD0C0000 | [offset] [length] | Read word from SC |
| r32 | 0x9191 | 0xDD0C0000 | [offset] [length] | Read dword from SC |

| Command | Address | Perms | SubCommands | Description |
| --- | --- | --- | --- | --- |
| r64 | 0x935D | 0xDD0C0000 | [offset] [length] | Read qword from SC |
| r64d | 0x948F | 0xDD0C0000 | [offset] [length] | Read ?qword data? from SC |
| rbe | 0x96F9 | 0xDD0C0000 | [offset] | Read from BE |
| recv | 0x24135 | 0xDD0C0000 | - | Receive something |
| resetsw | 0xD605 | 0xFC0F0000 | - | Reset switch |
| restartlogerrtoeep | 0xB903 | 0xDD0C0000 | - | Reenable error logging to eeprom |
| revision | 0xD7E1 | 0xFFFF0000 | - | Get softid |
| rrsxc | 0xD313 | 0xDD0C0000 | [offset] [length] | Read from RSX |
| rtcreset | 0xA7BB | 0x000C0000 | - | Reset RTC |
| scagv2 | 0xE24F | 0xFF000000 | - | Auth related? |
| scasv2 | 0xE207 | 0xDD000000 | - | Auth related? |
| scclose | 0xE1EF | 0xFF000000 | - | Auth related? |
| scopen | 0xE121 | 0xFF000000 | - | Auth related? |
| send | 0x2416F | 0xDD0C0000 | [variable] | Send something |
| shutdown | 0xD5C5 | 0xFD0F0000 | - | PS3 shutdown |
| startlogerrtsk | 0xB8E7 | 0xDD0C0000 | - | Start error log task |
| stoplogerrtoeep | 0xB8F5 | 0xDD0C0000 | - | Stop error logging to eeprom |
| stoplogerrtsk | 0xB8D9 | 0xDD0C0000 | - | Stop error log task |
| syspowdown | 0xB6E9 | 0xDD0C0000 | 3 params 0 0 0 | System power down |
| task | 0x15005 | 0xDD0C0000 | - | Print tasks |
| thalttest | 0xD813 | 0x000F0000 | - | Does nothing |
| thermfatalmode | 0xCA3B | 0xDD0C0000 | canboot/cannotboot | Set thermal boot mode |
| therrclr | 0xD3E5 | 0xDD0C0000 | - | Thermal register clear |
| thrm | 0xBF1D | 0xDD0C0000 | - | Does nothing |
| tmp | 0xAA69 | 0xDD0C0000 | [zone] | Get temperature |
| trace | 0xB951 | 0xDD0C0000 | ... | Trace tasks (use help) |
| trp | 0xAB2F | 0xDD0C0000 | get/set/getini/setini | Temperature zones |
| tsensor | 0xA279 | 0xDD0C0000 | [sensor] | Get raw temperature |
| tshutdown | 0xB2A1 | 0xDD0C0000 | get/set/getini/setini | Thermal shutdown |
| tshutdowntime | 0xC95D | 0xDD0C0000 | [time] | Thermal shutdown time |
| tzone | 0xB5E1 | 0xDD0C0000 | - | Show thermal zones |
| version | 0xD65F | 0xFFFF0000 | - | SC firmware version |
| w | 0x8BF9 | 0xDD0C0000 | [offset] [value] | Write byte to SC |
| w16 | 0x8E2D | 0xDD0C0000 | [offset] [value] | Write word to SC |
| w32 | 0x8FED | 0xDD0C0000 | [offset] [value] | Write dword to SC |
| w64 | 0x92A9 | 0xDD0C0000 | [offset] [value] | Write qword to SC |
| wbe | 0x9665 | 0xDD0C0000 | [offset] [value] | Write to BE |
| wmmto | 0xCB3B | 0xDC0C0000 | get | Get watch dog timeout |
| wrsxc | 0xD279 | 0xDD0C0000 | [offset] [value] | Write to RSX |
| xdrdiag | 0x1E711 | 0xF0000000 | start/info/result | XDR diag |
| xiodiag | 0x1E875 | 0xF0000000 | - | XIO diag |
| xrcv | 0x25313 | 0xDC0C0000 | - | Xmodem receive |

Now that the commands are established lets start getting the PS3 into the correct mode:

## External Command mode usage:

**Note: Not all boards have external mode, the default mode is internal mode but patched to prevent access from sony.**

Without grounding the DIAG lead the default mode is 'external mode'

1. Before switching on the PS3, make sure the USB TTL lead is connected – **Rxd, Txd and GND**
2. Turn on the PS3, and open up a terminal shell
3. Execute the python script - '**python ps3_syscon_uart_script.py /dev/ttyUSB0 CXR**'

4. Some commands can be used with requiring the higher privilage mode (auth) and a patched syscon based on your model of board!

   An error on the terminal 'F000005' will show saying that you have not authenticated (decrypted master key and signed in).

5. To sign in you need to 'auth', then run those higher privilege commands, for example:

   **> AUTH**

   **> Auth successful**

   **If you get 'Auth1 response invalid', swap the RX and TX wires!, if same check wiring and connection.**

   **Make sure to exit script, switch off PS3 and back on again, then load the script again!**

6. Now you can run high level commands – **EEP SET**

To gain access to the internal commands you need to set offset 0x3961 01 value to 00 (originally FF – not set)

External commands are limited in use and will be using a couple of limited commands to allow internal command mode to be activated.

**Before attempting this please be aware that setting the offset will temporarily prevent the PS3 from booting when turned off then on again – as this invalidates the eeprom checksum for the syscon This will be fixed in the later steps!**

So to allow internal command we will need to set the offset:

1. On the terminal already loaded the python script and run
   '**auth**'
2. Check current offset value for 0x3961 01 – this should be
   value '**FF**'
   
   **EEP GET 3961 01**
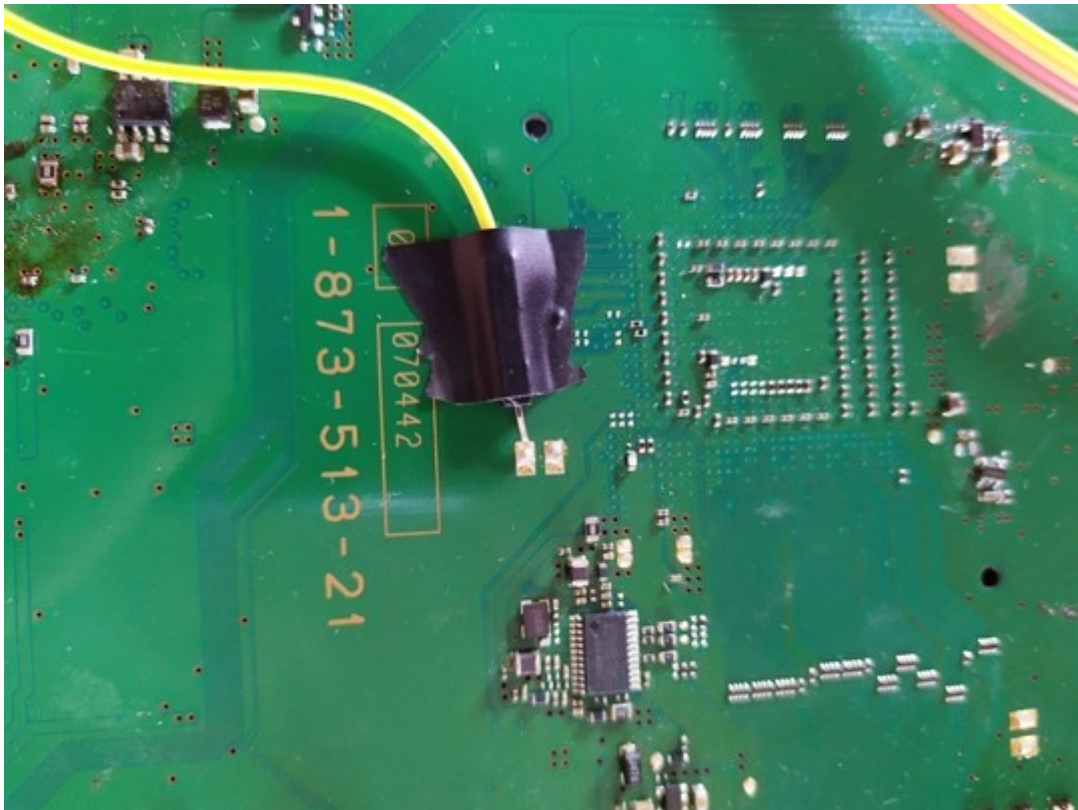   **00000000 FF**
3. We need now change this value – **EEP SET 3961 01 00**


4. Verify that it is changed before switching to internal mode –
   **EEP GET 3961 01**
   **00000000 00**

Now you can switch off the PS3.
Now we ground the DIAG pin cable to a GND or the GND pin on the
usb cable



## Internal Command mode usage:

(Not all revisions of boards have all of the commands)


Now that the diag pin is grounded we can turn the PS3 on.

1. Run the python command script -
   `python ps3_syscon_uart_script.py /dev/ttyUSB0 CXRF`
2. Authenticate to syscon (decrypt and gain high privilege)

**> auth**
**Auth successful**

Now check the eeprom checksum and what needs correction

**> eepcsum**
Addr:0x000032fe should be 0x528c
Addr:0x000034fe should be 0x7115
sum:0x0100
**Addr:0x000039fe should be 0x0038**
Addr:0x00003dfe should be 0x00ff
Addr:0x00003ffe should be 0x00ff

Highlighted in yellow is what needs to be fixed as its the correct value that needs to be set

PLEASE NOTE: This is an example, you need to use the value specified for your board that shows on the eepcsum result!

Another way to see the whole table is run:

**> r 3900 FF**
r 3900 FF
+0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +A +B +C +D +E +F
----------------------------------------------------
FF BF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
31 40 11 FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF 00 FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
02 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF

```
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF 02
```

As you can see from this table F and E is misaligned (02) and
needs to be corrected to fix the checksum.

So as it is an endian byte we need to swap them around when fixing
this table.

Now we set the correct checksum using the write command (w)
(byte):

**> w 39FE 38 00**
Remember we are doing the swap as its an endian byte swap.

To validate the change:

**> r 39fe 02**
**+0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +A +B +C +D +E +F**
**-------------------------------------------------**
**38 00**

Run eepcsum and '**r**' command to validate correct checksum:

```
> eepcsum
eepcsum
Addr:0x000032fe should be 0x528c
Addr:0x000034fe should be 0x7115
Addr:0x000039fe should be 0x0038
Addr:0x00003dfe should be 0x00ff
Addr:0x00003ffe should be 0x00ff
```

**As you can see the sum value is missing meaning that the table is**
**correct**
**sum:0x0100**

**r 3900 FF**
```
+0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +A +B +C +D +E +F
-------------------------------------------------
FF BF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
31 40 11 FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF 00 FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
02 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
```

```
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF 38
```

The PS3 will now be able to boot normally.

Note: if the value has an extended ffff, then just ignore that and use the last 4 digit values – remember to swap them as endian.

**Example below of a fantbl change ignoring the extra ffff**

**eepcsum**
**Addr:0x000032fe should be 0x1596**
**sum:0xf812**
**Addr:0x000034fe should be 0xffff3aee**
**Addr:0x000039fe should be 0x7360**
**Addr:0x00003dfe should be 0x00ff**
**Addr:0x00003ffe should be 0x00ff**

**w 34FE ee 3a – to fix the checksum in internal mode**

Examples of the **internal commands** as follows:

**lasterrlog** – Show last known errors since boot
Last Error Code:0xa0801001, Time:0x0bacd69b 2006/03/17 02:08:27

**errlog –** Show full error log (this example shows issues with the RSX chip)
ofst[ 48]:err_code:0xffffffff, clock:0x211a31c0  2017/08/06 20:00:00
ofst[ 52]:err_code:0xa0404412, clock:0x211ba360  2017/08/07 22:17:04
ofst[ 56]:err_code:0xa0403034, clock:0x211ba361  2017/08/07 22:17:05
ofst[ 60]:err_code:0xa0404412, clock:0x211f92e6  2017/08/10 21:55:50
ofst[ 64]:err_code:0xa0403034, clock:0x211f92e6  2017/08/10 21:55:50
ofst[ 68]:err_code:0xa0404412, clock:0x24da1cd0  2019/08/04 22:46:40
ofst[ 72]:err_code:0xa0403034, clock:0x24da1cd0  2019/08/04 22:46:40
ofst[ 76]:err_code:0xa0404412, clock:0x24da1cda  2019/08/04

22:46:50
ofst[ 80]:err_code:0xa0403034, clock:0x24da1cda  2019/08/04
22:46:50
ofst[ 84]:err_code:0xa0404412, clock:0x24f32fd9  2019/08/23
23:14:33
ofst[ 88]:err_code:0xa0403034, clock:0x24f32fd9  2019/08/23
23:14:33
ofst[ 92]:err_code:0xa0404412, clock:0x24f33013  2019/08/23
23:15:31
ofst[ 96]:err_code:0xa0403034, clock:0x24f33013  2019/08/23

**eepcsum** — Show current eeprom checksum state
Addr:0x000032fe should be 0x1596
Addr:0x000034fe should be 0x3aee
Addr:0x000039fe should be 0x7360
Addr:0x00003dfe should be 0x00ff
Addr:0x00003ffe should be 0x00ff

**r** 3900 ff — Read areas of the eeprom (390 hex area to end)
+0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +A +B +C +D +E +F
-------------------------------------------------
FF BF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
40 50 11 FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF 00 FF FF FF FF FF FF FF FF FF FF FF FF
FF 03 C8 78 FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
02 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
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FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF 60

**w** — Write to eeprom
w 34fe d5 e5
w complete!

**fanconpolicy get 0** — Show or set fan policy for CELL
fancon No:00
policy01: Auto

**fanconpolicy get 1** – Show or set fan policy for RSX
fancon No:01
policy01: Auto


**tmp 0** – Show current temp for the CELL chip
TZone No:00
1st BE Primary  Temperature:43.70(0x2bb5)


**tmp 1** – Show current temp for the RSX chip
TZone No:01
RSX Primary  Temperature:36.75(0x24c0)


**duty get 0** – Show current running fan mode for CELL
CrntDuty(0x0):27%(0x47)


**duty get 1** – Show current running fan mode for RSX
CrntDuty(0x1):27%(0x47)


**tsensor 0** – Show thermal monitor sensor temp for CELL
Raw:60.00(0x3c00), Offset:0.00(0x0000)
Temperature:60.70(0x3cb5)


**tsensor 1** – Show thermal monitor sensor temp for RSX
Raw:56.25(0x3840), Offset:2.00(0x0200)
Temperature:56.25(0x3840)


**tsensor 3** – Show thermal monitor sensor temp for Southbridge
Temperature:49.25(0x3140)


**tzone** – Show thermal zones available
00: 1st BE Primary
01: RSX Primary
14: SB


**tshutdown get 0** – View or Set (set) Thermal shutdown mode CELL in
hex or percentage value
TZone No:00
1st BE Primary  Temperature:91.0(0x5b00)


**tshutdown get 1** - View or Set (set) Thermal shutdown mode RSX in
hex or percentage value
TZone No:01
RSX Primary  Temperature:95.0(0x5f00)


**trp get 0** – View or Set (set) Temperature zones CELL in hex or
percentage value
TZone No:00
1st BE Primary  Temperature:90.0(0x5a00)

**trp get 1** - View or Set (set) Temperature zones RSX in hex or percentage value
TZone No:01
RSX Primary  Temperature:94.0(0x5e00)


**version** – Show syscon firmware version
v1.2.3_k1

**powerstate** – Show current running power states (good for diagnose)
ATA Power          : ON
PCI Power          : OFF
RSX Power          : ON
XDR Power          : ON
Eurus Power        : ON
SB Power           : ON
RSX Thermal Sensor : AVAILABLE
BE Thermal Sensor  : AVAILABLE

**bringup** – Power cycle the board to come on

**syspowdown –** System power down if running
> syspowdown 0 0 0

**shutdown –** Power off immediately

There are many more commands, but the examples are the most useful

| Offset | Cytology | Cookie (old) | Cookie (new) | Note |
|---|---|---|---|---|
| 0x2600 - 0x27FF | System Info | System Info | System Info | Encrypted |
| 0x2800 - 0x2BFF | Patch Part 1 | Patch Part 1 | Patch Part 1 | Encrypted |
| 0x2C00 - 0x2EFF | not used | not used | not used | |
| 0x2F00 - 0x2FFF | Industry Area | Industry Area | Industry Area | |
| 0x3000 - 0x30FF | Board/Hardware/Platform Config | Customer Service Area | Customer Service Area | |
| 0x3100 - 0x31FF | XDR Config | Platform Config | Platform Config | |
| 0x3200 - 0x32FF | not used | Hardware/XDR Config | Hardware/XDR Config | |
| 0x3300 - 0x33FF | Board Config | Fan/Thermal Config | Fan/Thermal Config | |
| 0x3400 - 0x34FF | BE/SB (FlexIO) Config | Fan/Thermal Config | Fan/Thermal Config | |
| 0x3500 - 0x35FF | not used | On/Off Count, On-Time | On/Off Count, On-Time | |
| 0x3600 - 0x36FF | On/Off Count, On-Time | On/Off Count, On-Time | On/Off Count, On-Time | |
| 0x3700 - 0x37FF | CP Config/Serial | Errorlog | Errorlog | |
| 0x3800 - 0x38FF | Errorlog | not used | not used | |
| 0x3900 - 0x39FF | not used | Board Config | Board Config | |
| 0x3A00 - 0x3AFF | HDMI/DVE Config | HDMI/DVE Config | HDMI/DVE Config | |
| 0x3B00 - 0x3DFF | Fan/Thermal Config | not used | not used | |
| 0x3E00 - 0x3FFF | not used | not used | not used | |
| 0x4000 - 0x43FF | not used | not used | System Software Config | |
| 0x4400 - 0x4FFF | not used | not used | Patch Part 2 | Encrypted |
| 0x5000 - 0x6FFF | not used | not used | not used | |
| 0x7000 - 0x73FF | System Software Config | System Software Config | not used | |
| 0x7400 - 0x7FFF | Patch Part 2 | Patch Part 2 | not used | Encrypted |