

Samsung TV Control with Serial Connection

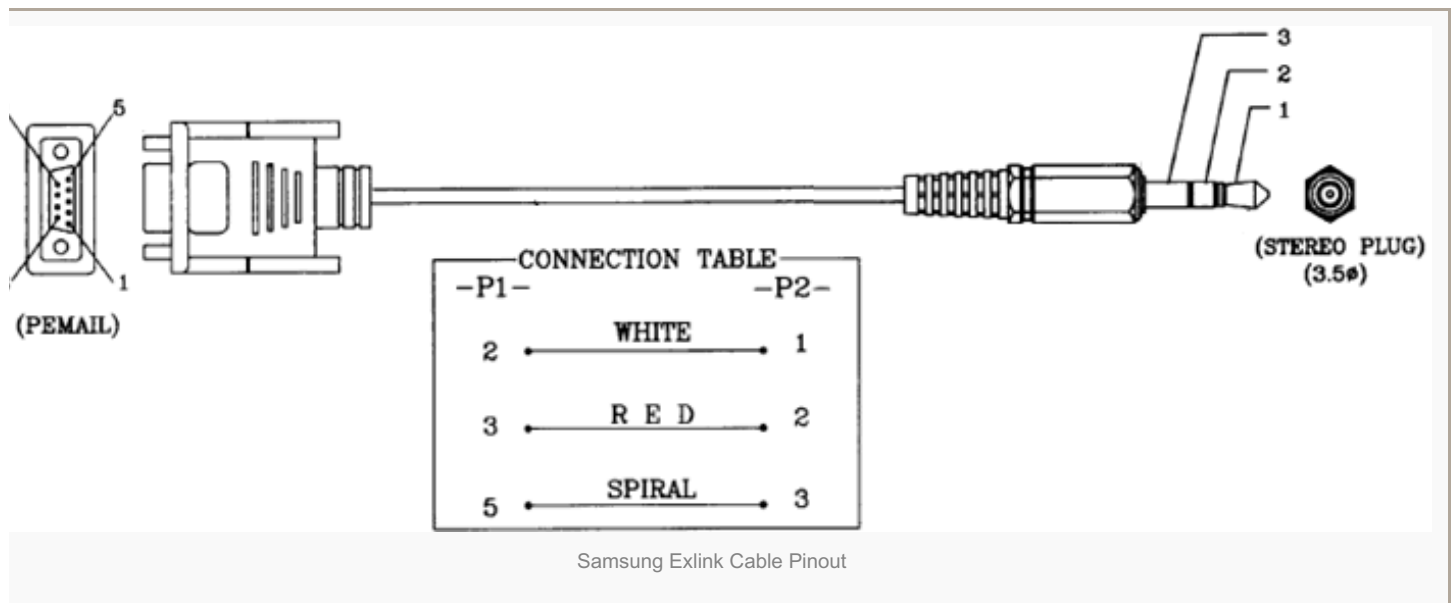
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I was fortunate to come across a 50" Samsung Plasma TV for about \$150. It had a minor problem that I solved by cutting 2 wires. It works great now and I love this thing. On the other hand I hate remotes. At least having more than one. Pretty Much all Samsung TV's have a 3.5mm jack labeled EX-Link. The EX-Link is a Samsung inter-device control interface. The protocol is a simple RS-232 AKA: Serial. So with a custom cable and a small python script can have you controlling your TV in no time.

The Cable –

We need a DB9 to 3.5mm Cable. These are pretty widely available. The only problem is the TX and RX lines are reversed on the TV. The simplest option I found was to cut the cable and swap the red and white wires inside. The black stays the same. You can see in this picture how the pinout should be set. If you can solder your own Cable this is what you need. Most computers dont have serial ports anymore. Some still have headers on the motherboard though. If you have them great, if not just get a good quality RS232 to USB adapter. Don't get a cheap Chinese knock off. It will ether not work at all or off and on.



The Script –

Now that we are connected we have to send commands to the TV. In this case hex codes. [Remote Central user Duct Tape](#) has made an great Excel document that has pretty much every command you could need. Including the number keys. And you can use it to generate other commands should new ones be needed in the future. The entire file is located here: [Samsung TV RS232 Codes](#). I will list the important ones here.

```
TV Toggle 08 22 00 00 00 00
D6
TV Off 08 22 00 00 00 01 D5
TV On 08 22 00 00 00 02 D4
Vol 50% 08 22 01 00 00 32 A3
Vol Up 08 22 01 00 01 00 D4
Vol Down 08 22 01 00 02 00 D3
Mute 08 22 02 00 00 00 D4
```

You can get those hex codes to the serial interface any way you know how. I personally use python. Save the following in a file called tvtoggle.py.

```
#!/usr/bin/env python
import time, serial
ser = serial.Serial(port='/dev/ttyUSB0', baudrate=9600,
timeout=1)
resp=""
loop="true"
string="030cf100"
while loop:
    if string in resp:
        print "found it"
        break
    ser.close()
    else:
        ser.write("\x08\x22\x00\x00\x00\x02\xd4")
        data = ser.read(24)
        resp=data.encode('hex')
        print resp
        time.sleep(1)
print "finished"
```

You can see all the settings. Like BaudRate is 9600. This script will retry the command until the TV responds with the success message (030cf100). I have a really long run so sometimes it take 2 or 3 attempts. You can change the (`"\x08\x22\x00\x00\x00\x02\xd4"`) to which ever command you need.

NOTE: My TV does not have a ON only. The commands ending in d4 and d6 both toggle ON and OFF. d5 is OFF only. The TV will not respond if its off.

UPDATE: If you use (`"\x08\x22\x00\x00\x00\x00\xD6"`) (Case Sensitive.)

Using the script in Kodi –

Now we can bring it all together by remapping our MCE remote power button to run the script set to toggle the tv on and off. Add the line below to `/.kodi/userdata/keymaps/keymap.xml`

```
RunScript("/home/kodi/scripts/tvtoggle.py")  
ContextMenu
```

Be sure to change the file path to where you saved the `tvtoggle.py`

To Be Continued –

You should be able to turn your Samsung TV on and off with your MCE remote. There is a plugin that allows you to run scripts on things like screen saver on or off. I will talk more about that later. In the mean time Enjoy, Comment, and Share.