The definitive Samsung SD-616T modification tutorial
By: A@ron

Description:
This tutorial give you all the correct needed information to properly modify a SD-616T and have it work like a stock XBox SDG-605B drive. This allows users who want to replace their drives with something commercially available for the purpose of a drive replacement or a XBox to PC case modification to easily do so.

Difficulty:
3: hardmod

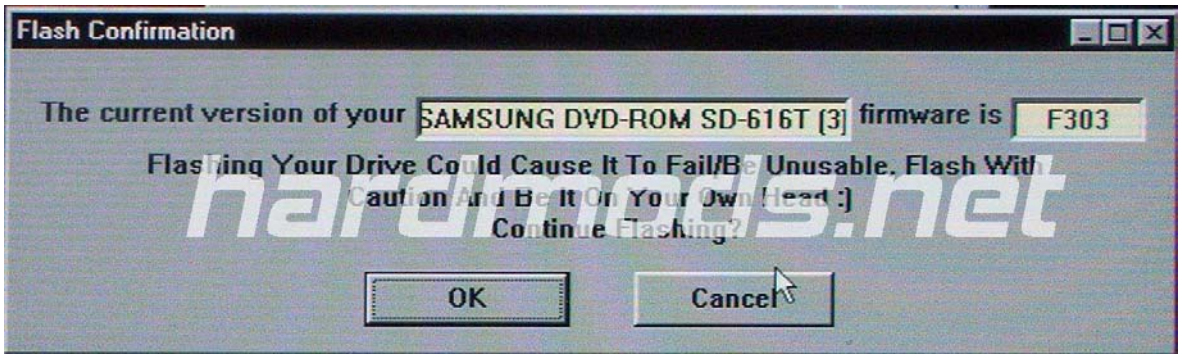
Required Tools:
1) Low power fine tip soldering iron (15 watt recommended such as Radioshack #64-2051)
2) Rosin core small diameter silver bearing solder (.022 dia like Radioshack #64-013E)
3) Desoldering braid (Radioshack #64-2090) or solder sucker (Radioshack #64-2086)
4) Black electrical tape
5) 30 gauge insulated wrapping wire (Radioshack #278-501 or similar) or 26 gauge braided wire
6) Windows/DOS computer with MTKWinFlash or MTKFlash and IDE interface
7) Samsung SDG-605B Firmware

Optional Tools:
1) Black fine tip sharpie marker
2) 12 pin 2 row male header for yellow cable connection (Available from me among other places)

Step 1:
Obtain the Samsung SDG-605B firmware from the usual places and a copy of MTKWinFlash or MTKFlash as well as a compatable Windows/DOS PC.

Step 2:
Plug in the SD-616T into the IDE interface of the computer and boot the computer into windows (for example). Then run MTKWinFlash and click the 'Launch ATAPI Version' button.

Step 3:
Select the SD-616T drive and the SDG-605B firmware as the one you would like to flash. Then proceed with the flashing by clicking on the 'Flash Drive' button and then click 'Ok'.



Step 4:

Use a long pin to open the drive tray and remove the front bezel to the drive's tray. This can be done by pulling the face gently away from the drive while sliding the face downwards (as in the picture).

Step 5:

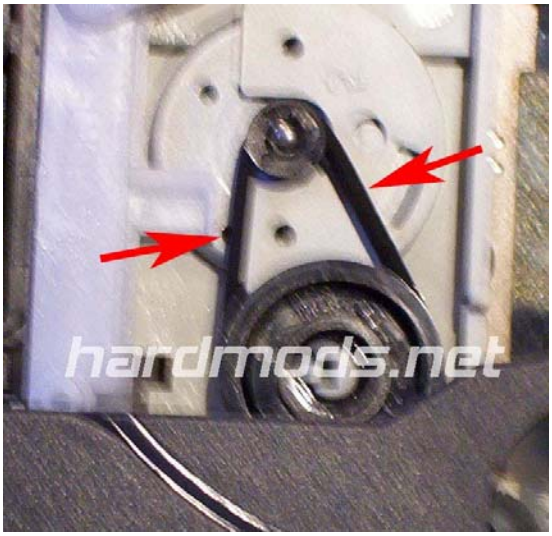
Remove the four bottom screws.

Step 6:

Remove the outter metal case to the drive.

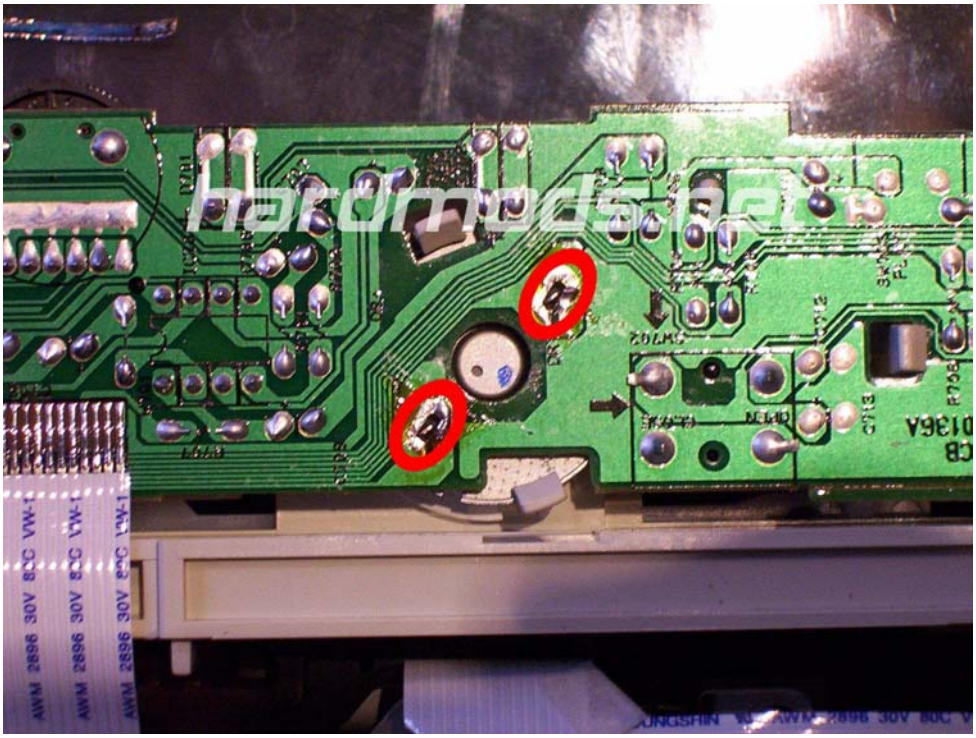
Step 7:

Remove the black rubber band that connects the drive tray gears to the motor.



Step 8:

Use the desoldering braid or bulb to remove the solder to the motor connection points.



Step 9:

Mark the motor using the fine point sharpie as shown below.

Step 10:

Rotate the motor until the marks line up to the other plastic clip (refer above).

Step 11:

Resolder the motor to the front PCB.

Step 12:

Replace the black rubber band that connects the drive tray gears to the motor.

Step 13:

Desolder the headphone jack and snap off the volume knob. Do this by placing your pointer finger under the front PCB to the left of the knob and push down with your thumb until the knob snaps off.

Step 14:

Lift up the bottom PCB (the larger one) by pressing on the locking tab and swinging it up.

Step 15:

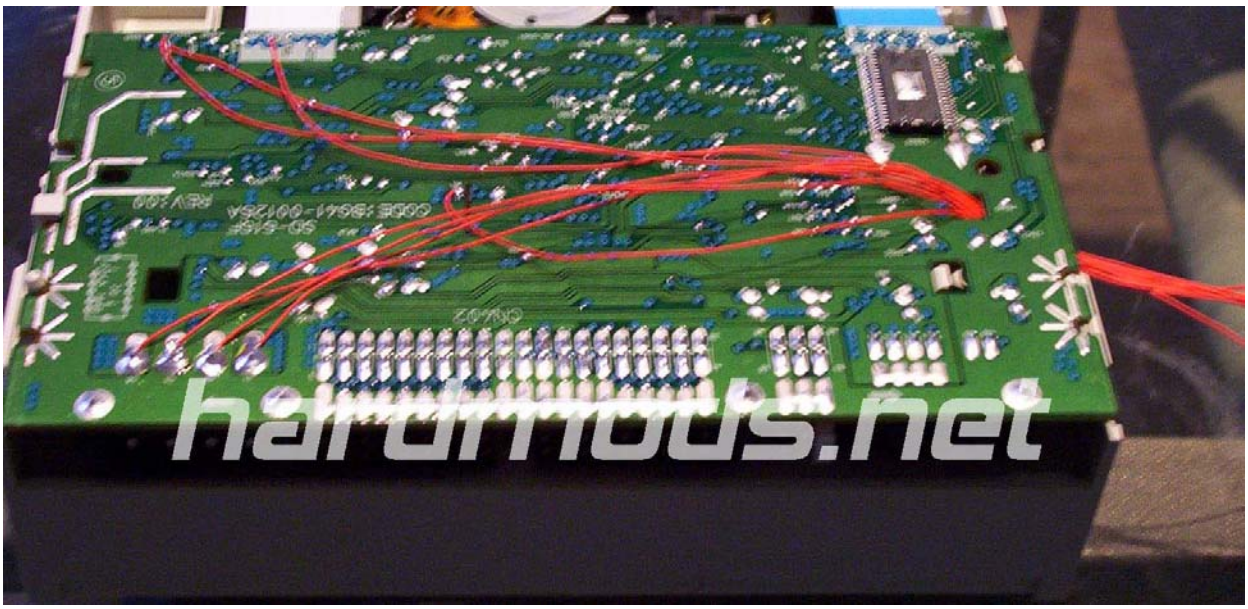
Use wire cutters, dremel, hack saw or similar to make a small cut in the plastic case just to the right of the locking clip for the motherboard.

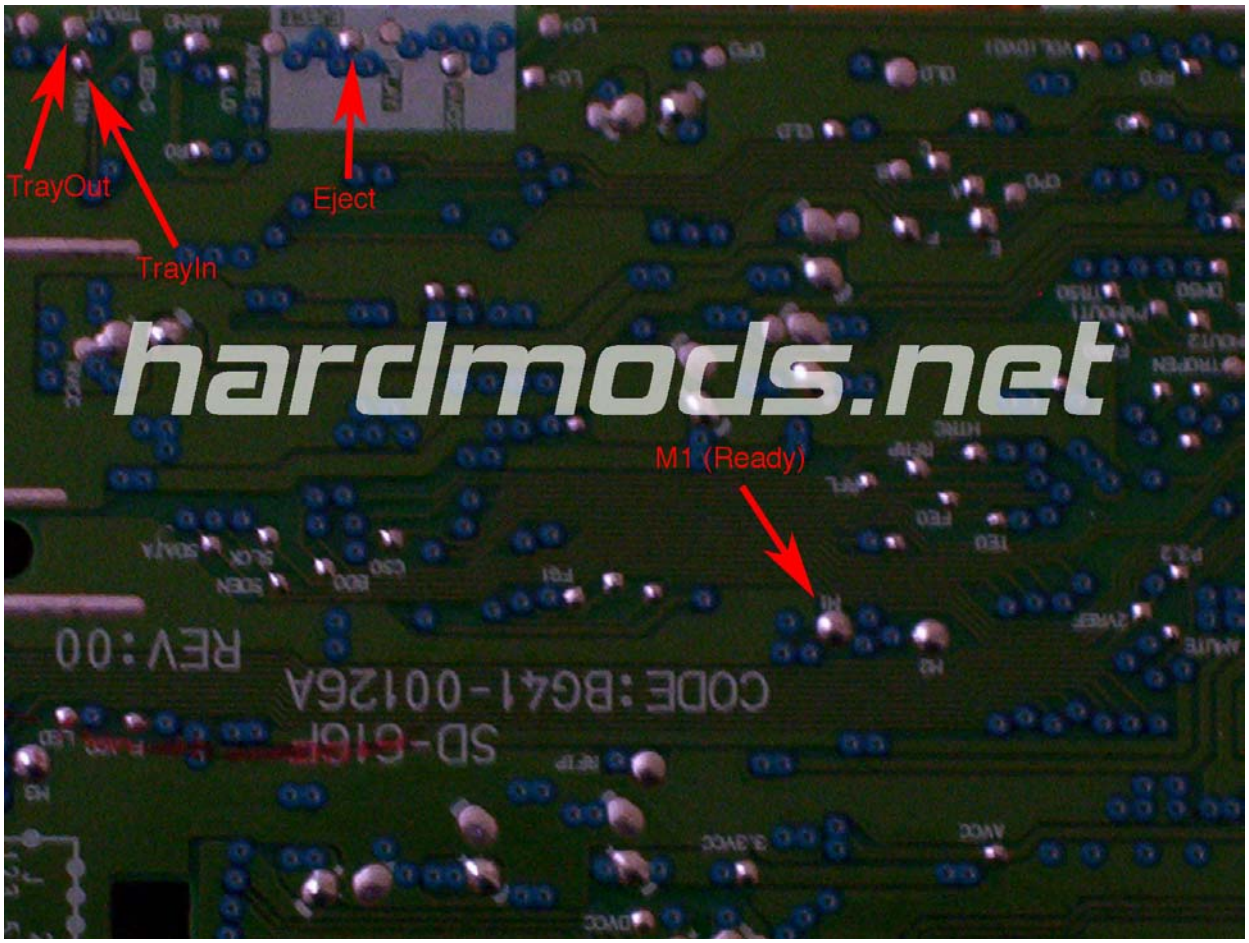
Step 16:

Thread eight approximately 14" lengths of wire through the hole in the motherboard.

Step 17:

Solder wires to the TrayIn, TrayOut, M1(Ready), Eject, +5V, Grounds (two of them), and +12V.





Step 18:

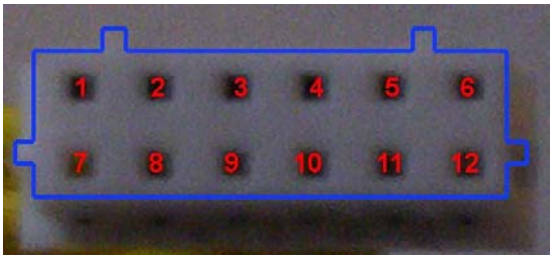
Clip motherboard back onto the locking clip while making sure that the wires run through the notch created in step 15.

Step 19:

Use a multimeter, the 'pull test', or color coding (if you had the forethought to do so) to identify which wires are connected to what. The 'pull test' is where you gently pull on a wire at a time and see which one moves according.

Step 20:

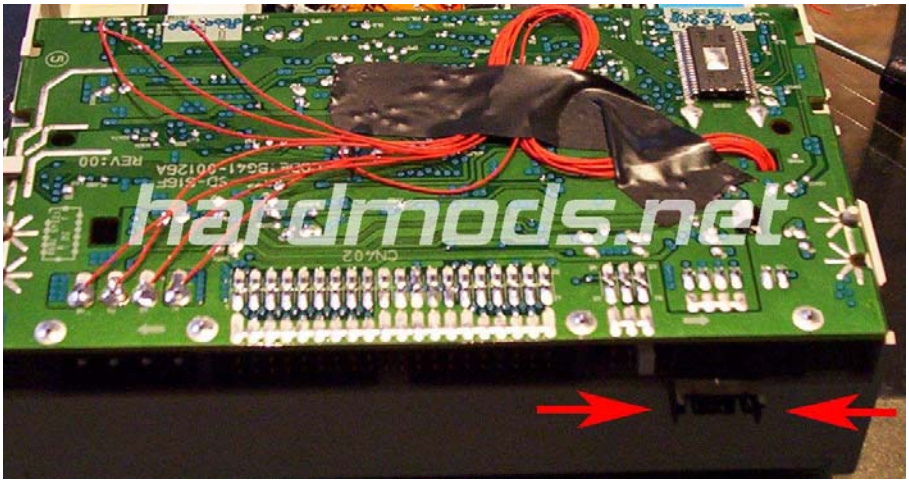
Use the following diagram to connect the wires. An area of confusion often caused by these tutorials is that the TrayIn wire gets connected to the TrayOut solder pad and visa versa. In addition you need only use two of the three grounds and only one of the two +5 V and +12 V.



1: Ground
2: +12 V
3: Tray In (goes to tray out solder pad)
4: Tray Out (goes to tray in solder pad)
5: Ground
6: +12 V
7: Ground
8: +5 V
9: Ser. Data - NOT USED –
10: Ready (goes to M1 solder pad)
11: Eject
12: +5 V

Step 21:

If using a pin header pull the slack of wire up onto the large PCB and tape it to the board with electrical tape. Mount the connector wherever you want or it fits nicely right above the audio connector. In addition, you can use some super glue to attach the header pin connector to the drive. If splicing the yellow cable to the previously soldered wires you may want to use plenty of electrical tape and hot glue to secure them to the motherboard.



Optional- fitting the drive in the case

Step 22:

Cut the front left post of the drive carrier flush with the drive support piece. Also cut the corresponding piece off the lid of the XBox and the small plastic supports to the right and left of controller ports 1 and 2.

Step 23:

To keep the drive from sliding back you can drill a small screw hole in the carrier 2 cm up from the drive seat and 10 cm forward from the right back leg. Then you can screw the drive into the carrier and the drive will not slide back.

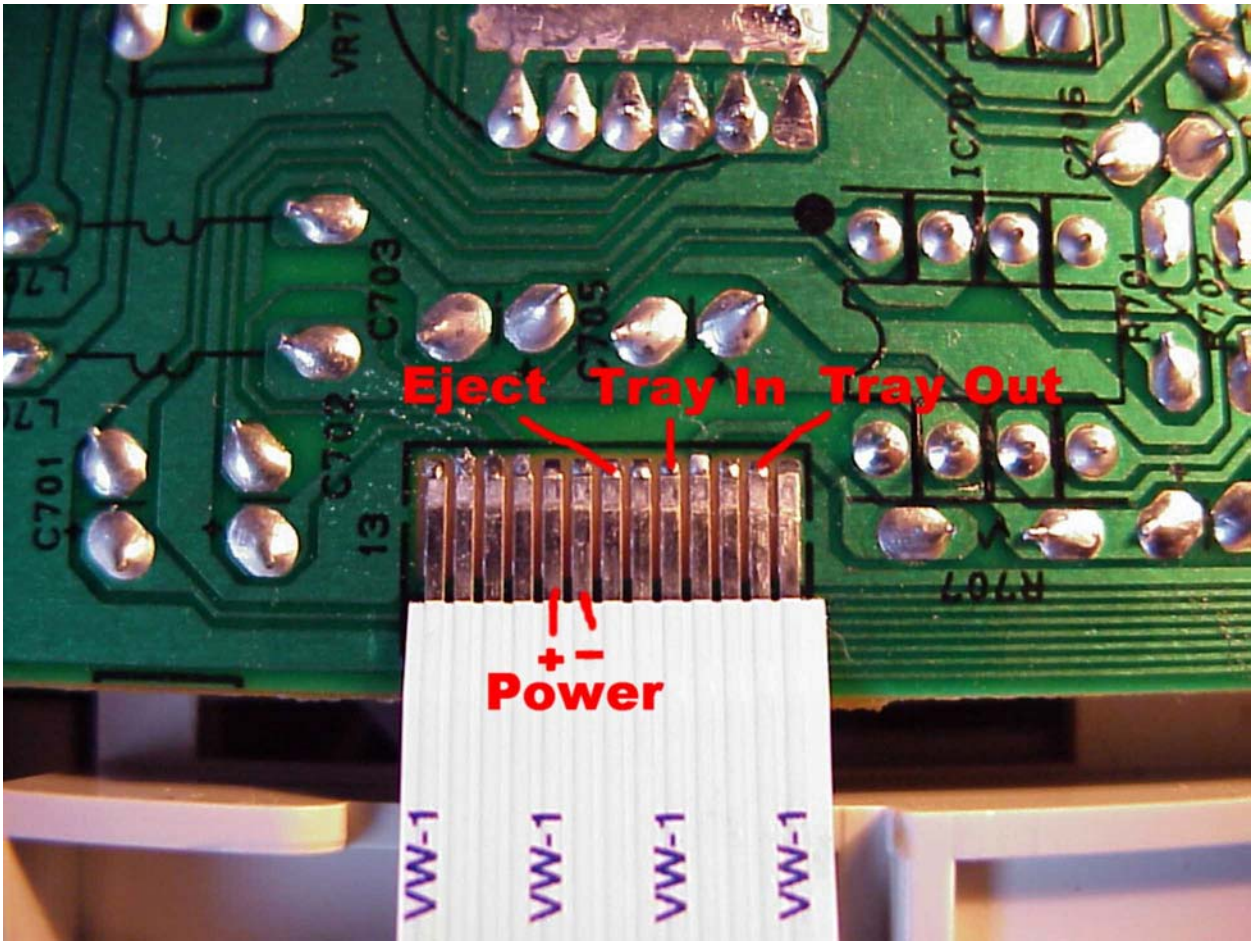
Troubleshooting:

Problem: The drive will not read any disk but I can see the green led on the drive blinking and the eject button on the xbox never stops blinking green.
Solution: Switch the trayin and trayout wires

Problem: My unmodified xbox attempts to boot but I get a service screen.
Solution: A few things to try, first being plug the drive in. Did the firmware get flashed? Does the drive have power?

Problem: I go to flash the firmware but I get an error from MTKWinFlash saying ‘input file format mismatched!’
Solution: Use a different windows computer, sorry just the way it is.

Problem: Help I lifted a solder pad!
Solution: You’re just lucky there are some alternate points (not my image):



Acquired from: http://www.fullburn.com/xbox/xboxsammy_files/image017.png