

Sega Mega Drive/Genesis switchless mod

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Holding reset switch cycles through three available modes indicated by Status LED color:

- 50Hz/en (Europe, green)
- 60Hz/en (USA, orange)
- 60Hz/jp (Japan, red)

Releasing switch sets mode without resetting console. Triggering reset switch resets console.

Both active-high and active-low reset consoles are supported by sensing the reset line level on startup.

Indicator LED is optional, but strongly recommended.

Tested working on the following pcb versions:

- IC BD M5 PAL VA4 (PAL early Mega Drive Mk1, active-high reset)
- IC BD M5 PAL (PAL late Mega Drive Mk1, active-low reset)
- PC BD MD2 VA1.8 PAL (PAL Mega Drive Mk2, active-low reset)

Untested on american, japanese or Mk3 consoles, but should work in theory.

Please report your experience with any pcb versions not listed here.

pin configuration:

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      ,-----,
+5V |1          14| GND
    |2 A5 A0 13| RESET_IN, /RESET_IN (Reset Button)
    |3 A4 A1 12|
    |4 A3 A2 11|
(red) LED_OUT2 |5 C5 C0 10| LANGUAGE_OUT (en/jp)
(grn) LED_OUT1 |6 C4 C1 9| VIDEOMODE_OUT (50/60Hz)
    |7 C3 C2 8| RESET_OUT, /RESET_OUT (VDP reset line)
      `-----'
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(/)/RESET_IN - Reset Button Input (needs pulldown resistor (5 KOhm) on active-high reset consoles). *

LANGUAGE_OUT - English(high)/Japanese(low), JP1/JP2 on Mega Drive Mk1, C65/C68 on Genesis 3. **

VIDEOMODE_OUT - 60Hz(high)/50Hz(low), JP3/JP4 on Mega Drive Mk1, C63/C64 on Genesis 3. **

(/)/RESET_OUT - Reset output to videochip. *

LED_OUT1, LED_OUT2 - Use 3-pin dual-color (red/green) LED here. Connect common base of LED to GND via 220 Ohm resistor.

* Cut reset line between reset button and videochip. Be sure to leave pulldown resistor connected to reset button on active-high reset units.

** Make sure to remove/cut any connection on set jumpers. Mk2 consoles don't have any jumpers, you'll have to cut lines here.

If you experience noise problems, you may add a capacitor near the PIC between the +5V and GND lines. I never had any, though.

Parts needed:

-Microchip PIC 16F630

-Some wire

-Dual-color LED **(optional)**

-220 Ohm resistor **(optional)**

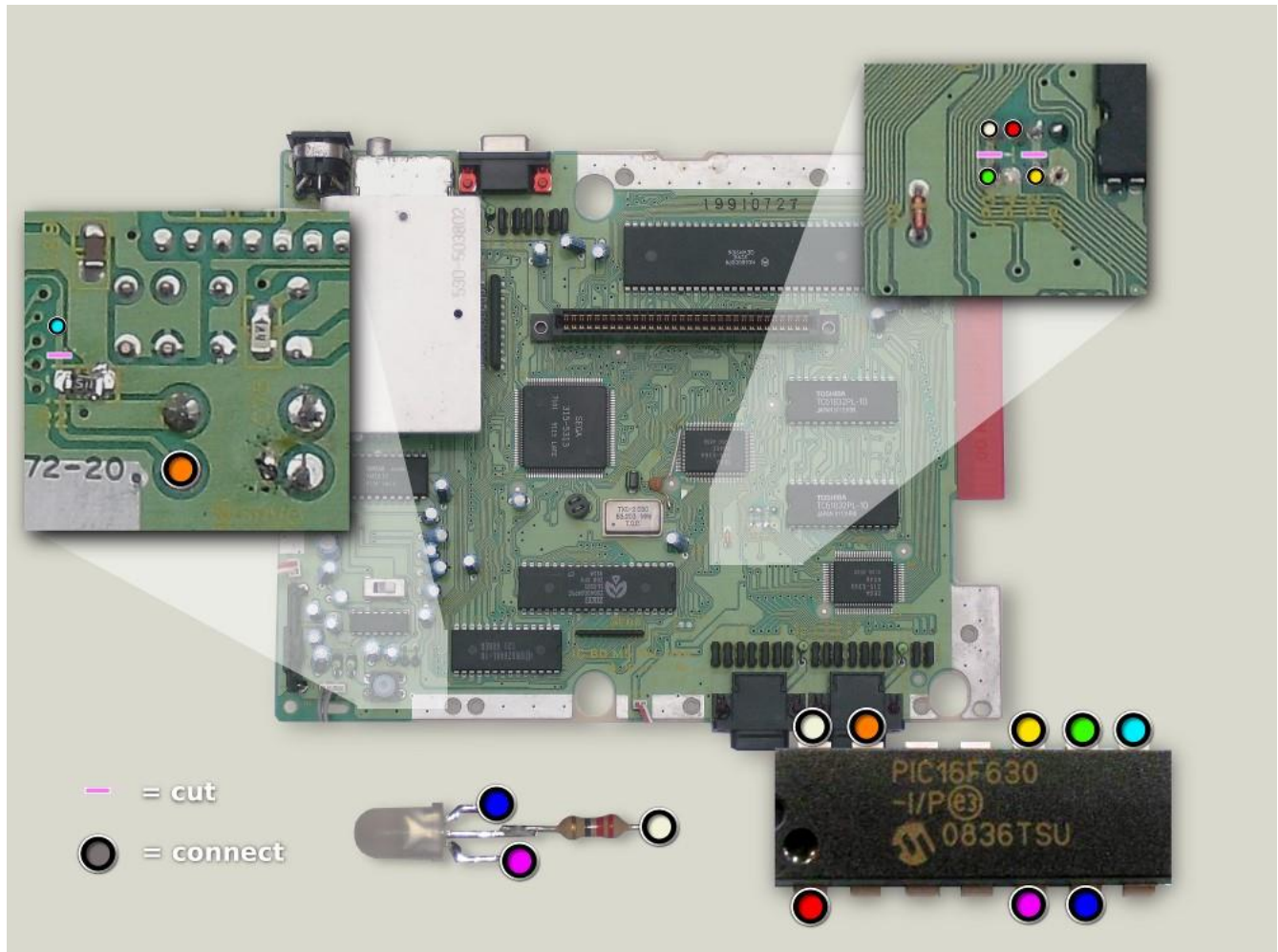
-100nF Ceramic Capacitor **(optional)**

Steps required:

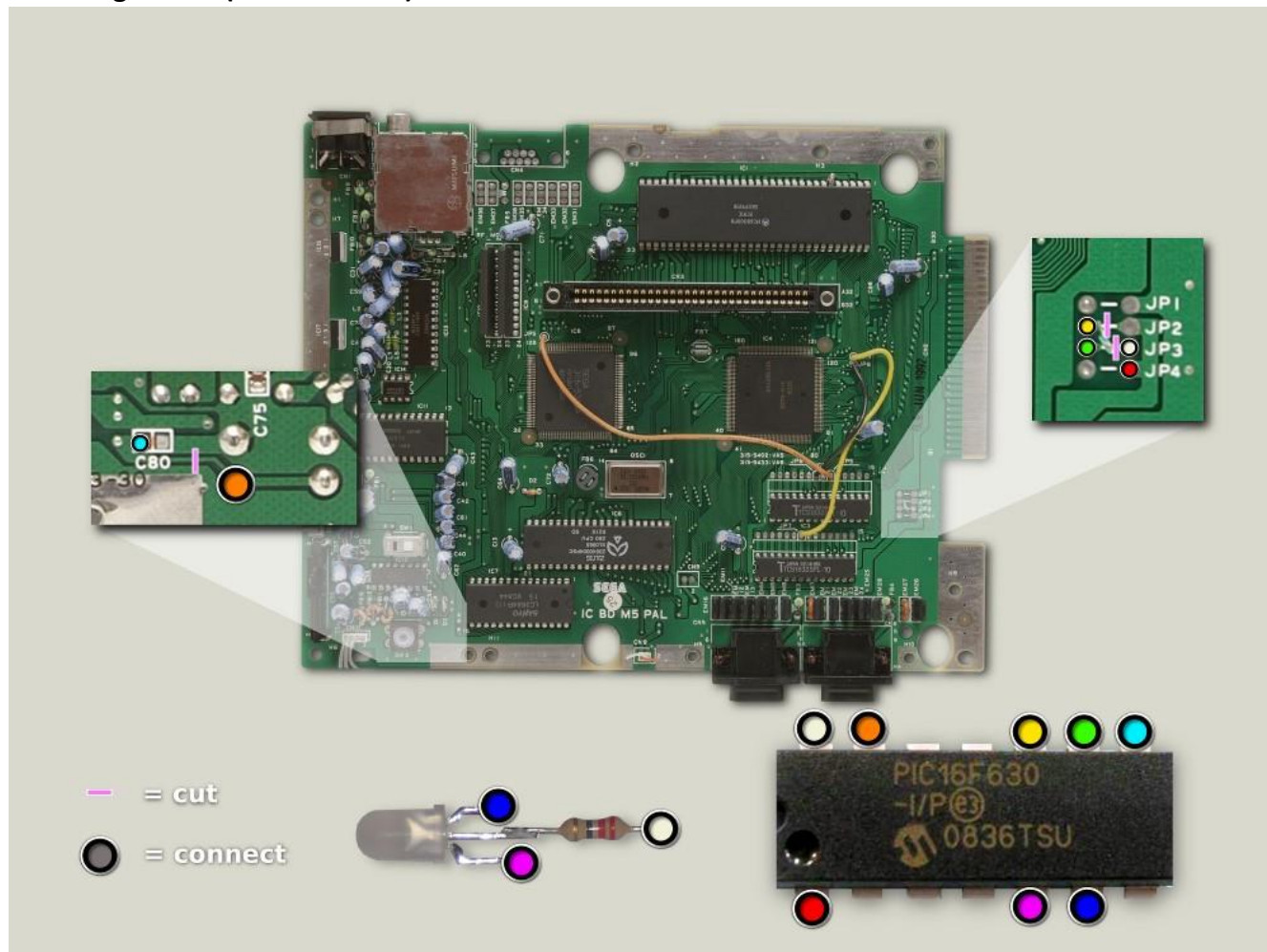
-Program supplied hex file to 16F630.

-Solder parts to console PCB according to one of the following diagrams, depending on your PCB version.

Mk1 Mega Drive (IC BD M5 PAL VA4)



Mk1 Mega Drive (IC BD M5 PAL)



Mk2 Mega Drive (PC BD MD2 VA1.8)

