# 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)
                    `-----------'
```

**(/)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.**
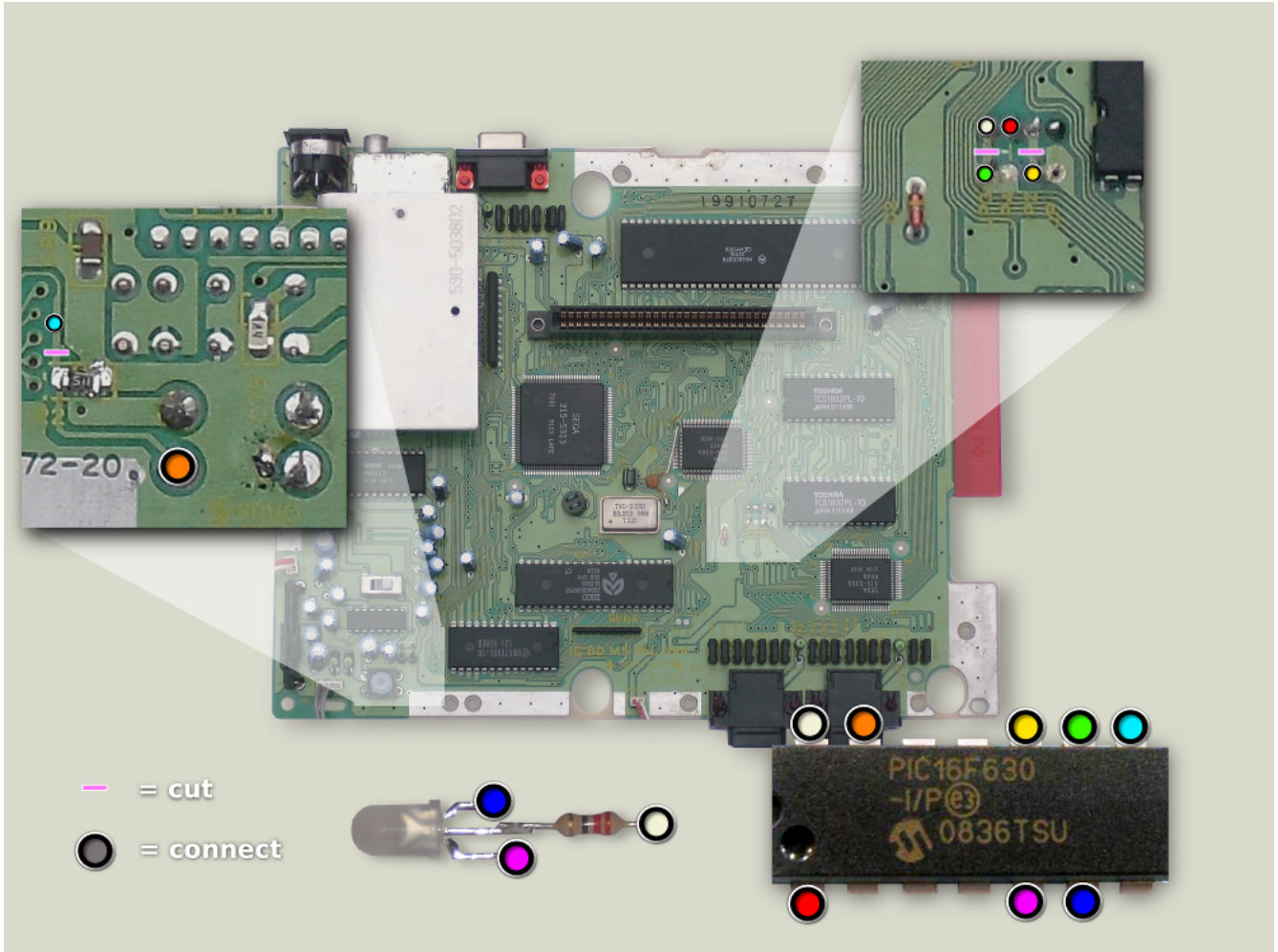
**Parts needed:**

      **-Microchip PIC 16F630**

      **-Some wire**

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

      **-220 Ohm resistor**          **(optional)**

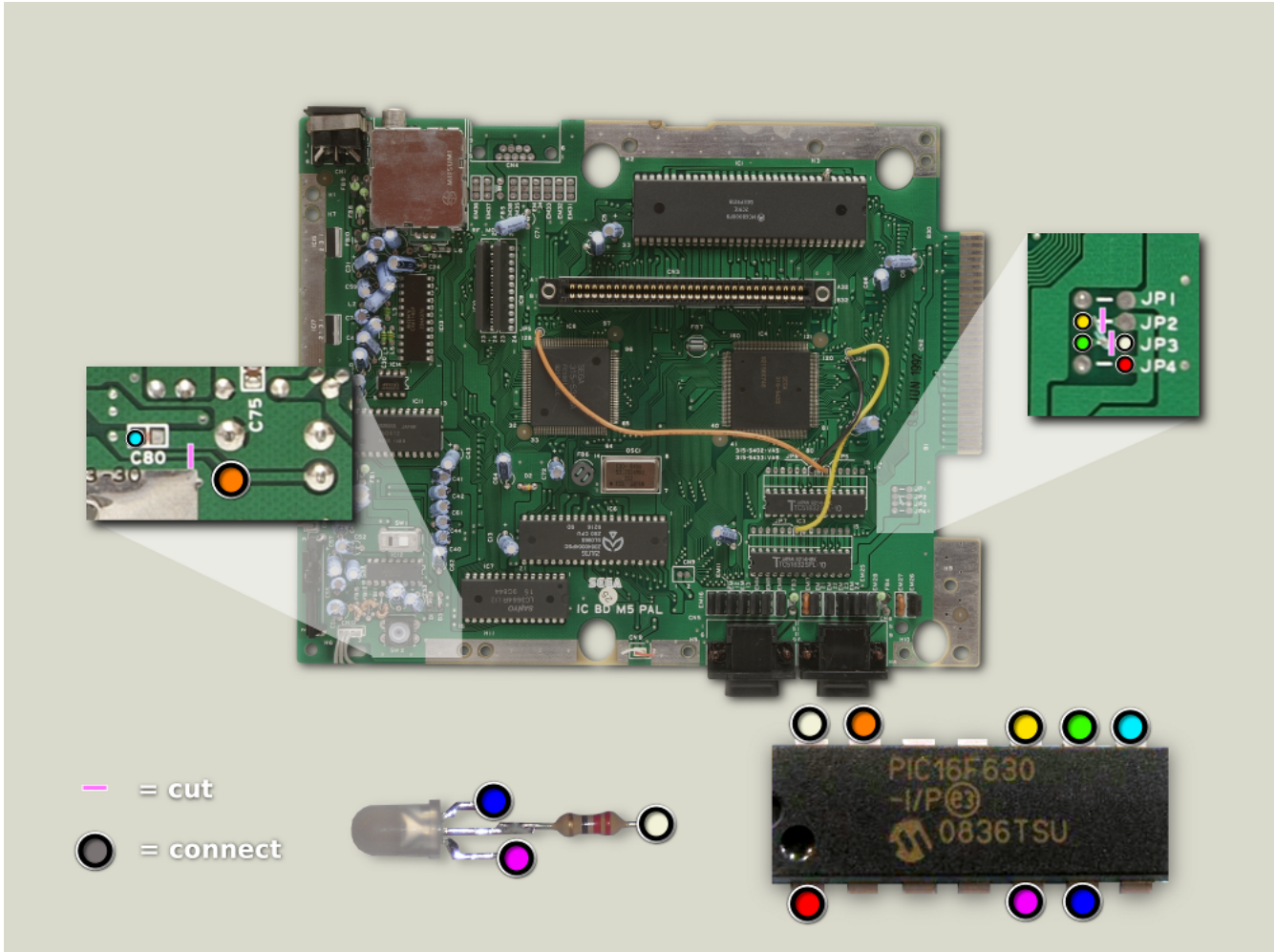      **-100nF Ceramic Capacitor**    **(optional)**

**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)**



— = cut

⬤ = connect

# Mk1 Mega Drive (IC BD M5 PAL )



— = cut

⬤ = connect

# Mk2 Mega Drive (PC BD MD2 VA1.8 )



— = cut

◯ = connect

ᑭ = lift from pcb and connect