

The diagram illustrates the internal circuit of the LED module. It features five LEDs (D1-D5) connected to a common ground. Each LED is driven by a resistor (R1-R5) and a switch (SW1-SW2). The switches are connected to a +3.3V supply. The module is connected to a USB-C port (J2) via a connector (Conn\_01x04\_I2L-C4).

The diagram illustrates the connection of the Raspberry Pi 4B to the HAT using four ribbon cables, labeled J3, J4, J6, and J7. Each cable is shown with its pin numbers and the corresponding connections to the HAT components.

- J3 Conn\_01x08:** This cable connects the Raspberry Pi pins 1 through 8 to the HAT. The connections are:
  - Pin 1 to +3.3V
  - Pin 2 to +5V
  - Pin 3 to GND
  - Pin 4 to GND
  - Pin 5 to GND
  - Pin 6 to GND
  - Pin 7 to GND
  - Pin 8 to GND
- J4 Conn\_01x06:** This cable connects the Raspberry Pi pins 1 through 6 to the HAT. The connections are:
  - Pin 1 to GPIOI\_0
  - Pin 2 to GPIOI\_1
  - Pin 3 to GPIOI\_2
  - Pin 4 to GND
  - Pin 5 to GND
  - Pin 6 to GND
- J6 Conn\_01x08:** This cable connects the Raspberry Pi pins 1 through 8 to the HAT. The connections are:
  - Pin 1 to XSHUT\_0
  - Pin 2 to LED\_1
  - Pin 3 to LED\_2
  - Pin 4 to LED\_3
  - Pin 5 to LED\_4
  - Pin 6 to LED\_5
  - Pin 7 to LED\_6
  - Pin 8 to LED\_7
- J7 Conn\_01x10:** This cable connects the Raspberry Pi pins 1 through 10 to the HAT. The connections are:
  - Pin 1 to XSHUT\_1
  - Pin 2 to LED\_8
  - Pin 3 to LED\_9
  - Pin 4 to LED\_10
  - Pin 5 to LED\_11
  - Pin 6 to LED\_12
  - Pin 7 to LED\_13
  - Pin 8 to LED\_14
  - Pin 9 to LED\_15
  - Pin 10 to LED\_16

Figure 1 shows three empty sheets of paper, each labeled with a sheet name and a corresponding file name. The sheets are arranged horizontally. The first sheet is labeled 'Sheet: VL53L3CX left' and 'File: VL53L3CX\_LEFT.sch'. The second sheet is labeled 'Sheet: VL53L3CX\_center' and 'File: VL53L3CX\_CENTER.sch'. The third sheet is labeled 'Sheet: VL53L3CX\_right' and 'File: VL53L3CX\_RIGHT.sch'.

Sheet: MCU

File: STM32F401RET6U.sch







