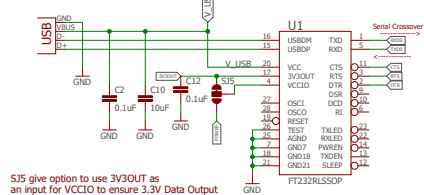


USB

V_USB = 5V



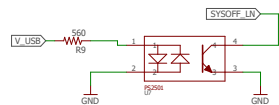
SJS give option to use 3V3OUT as an input for VCCIO to ensure 3.3V Data Output

FTDI

USB to UART Bridge

Optoisolator

Bootstrap USB Powerup for Run & Charge from USB Input



- Three States:
1. Battery -> Supply (Battery RUN) - SW Active, Optoisolator inactive.
 2. USB -> Supply (USB RUN) - SW Active, Optoisolator Active.
 3. USB -> Battery (Charging) - SW Inactive, Optoisolator Active.
 4. NA (OFF) - SW Inactive, Optoisolator Inactive.

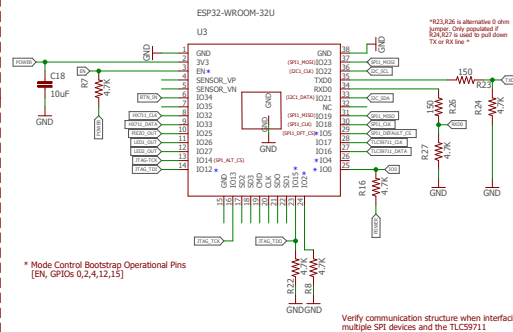
Bottom Board Connectors

JST XH Connectors

Default I2C Pins:
GPIO 21 - SDA
GPIO 22 - SCL

Default SPI Pins:
GPIO 23 - MOSI
GPIO 19 - MISO
GPIO 18 - CLK
GPIO 5 - Default CS

JTAG Pins:
GPIO 15 - TDO
GPIO 12 - TDI
GPIO 13 - TCK
GPIO 14 - TMS



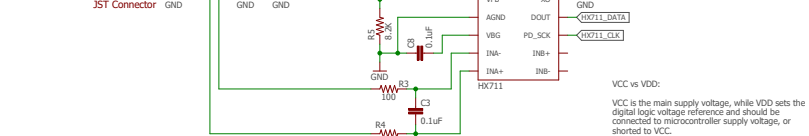
ESP32 Microcontroller & Bluetooth Low Energy Radio

* Mode Control Bootstrap Operational Pins
[EN, GPIOs 0,2,4,12,15]

Verify communication structure when interfacing multiple SPI devices and the TLC59711

Load Cell Interface:
(Common Load Interface Colors)

Red
Black
White
Green or Blue

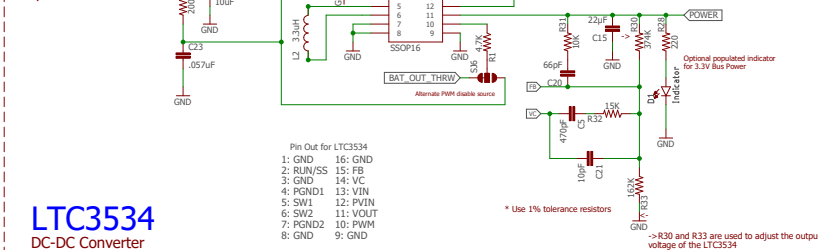


HX711

Load Cell Amplifier

VCC vs VDD:
VCC is the main supply voltage, while VDD sets the digital logic voltage reference and should be connected to microcontroller supply voltage, or shorted to VCC.

Input 2.7V - 5.0V



LTC3534
DC-DC Converter

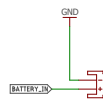
Pin Out for LTC3534:
1: GND
2: RUN/SS
3: GND
4: POND1
5: SW1
6: SW2
7: POND2
8: GND
9: GND
10: POND2
11: VOUT
12: PVIN
13: VIN
14: VC
15: FB
16: GND

* Use 1% tolerance resistors

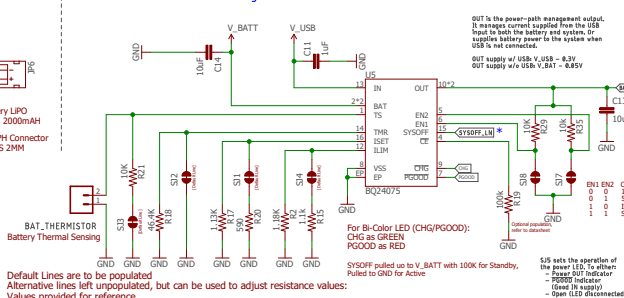
-> R30 and R33 are used to adjust the output voltage of the LTC3534

Battery Input

Battery Range: 3.3-4.2V



BQ24075 - 1.5A USB-Friendly LiPo Battery Charger & Power-Path Management



Default Lines are to be populated
Alternative lines left unpopulated, but can be used to adjust resistance values:
Values provided for reference.

I2C Pull-Ups

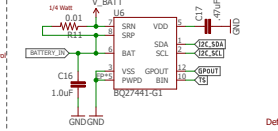
V_PU is an externally supplied voltage to set the pull-up resistor value.

Allowable range: 1.8-5.5V



B027441-G1 Fuel Gauge

Monitor Battery Voltage & Charge/Discharge Current



Default I2C Address: 0x55

California Institute for Telecommunications & Information Technology (Calit2)

University of California, Irvine v.2.6 (c)2018

TITLE: UFS (Urology) Device-V2: Bottom Board

DESIGNED BY:
Sean Santarsiero, Lifeng Liang, Josefina Zinkewich,
Michael Klopfer, & GP Li

Date: 4/22/2018 12.36 PM

Sheet: 1/1