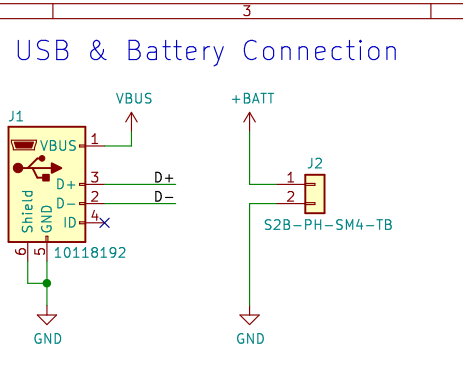


Power Supply and Filtering

The diagram illustrates a power supply and filtering circuit. It features a voltage divider consisting of a 100k resistor (R1) and an AP2112K-3.3 voltage regulator (U2). The input voltage is VBUS, which is filtered by capacitor C5 (10uF). The divider output is connected to the EN pin of U2. The regulator's output (VOUT) is filtered by capacitor C6 (10uF) and provides +3.3V. A Schottky diode (D1, MBR120) is connected from +BATT to the input of the divider. Other capacitors C7 (1uF) and C8 (10uF) are also shown at the output.



Battery Charging

The diagram illustrates a battery charging circuit using the MCP73831T-2ACI/OT (U3). The circuit is powered by a USB source (VBUS, GND) and a battery (+BATT, GND). The IC's pins are configured as follows:

- VBUS** (Pin 4) is connected to the USB source.
- GND** (Pin 2) is connected to the common ground.
- PROG** (Pin 5) is connected to GND through a 10k resistor (R4).
- CHG** (Pin 3) is connected to the battery (+BATT) through a 1k resistor (R3).
- STAT** (Pin 1) is connected to the battery (+BATT) and has a 10uF capacitor (C9) connected to GND.
- A voltage divider network (R5, R6) is connected to the battery (+BATT, GND) to monitor the battery voltage. The divider output is connected to the **D9** pin.

Connection Headers

The diagram illustrates the connection headers for a microcontroller. It shows two headers, J5 and J6, with their respective pin connections. J5 has pins 1 to 3 connected to DI05, DI03, and DI02. J6 has pins 1 to 12 connected to +BATT, EN, D13, D12, D11, D10, D9, D6, D5, SCL, and SDA. There is also a header J7 with pins 1 to 16 connected to D101, D1, D0, MISO, MOSI, SCK, A5, A4, A3, A2, A1, A0, GND, AREF, and RESET. A +3.3V supply is connected to the GND pin of J7.

Header	Pin	Signal
J5	1	DI05
J5	2	DI03
J5	3	DI02
J6	1	+BATT
J6	2	EN
J6	3	D13
J6	4	D12
J6	5	D11
J6	6	D10
J6	7	D9
J6	8	D6
J6	9	D5
J6	10	SCL
J6	11	SDA
J6	12	
J7	1	D101
J7	2	D1
J7	3	D0
J7	4	MISO
J7	5	MOSI
J7	6	SCK
J7	7	A5
J7	8	A4
J7	9	A3
J7	10	A2
J7	11	A1
J7	12	A0
J7	13	GND
J7	14	AREF
J7	15	
J7	16	RESET

Radio Module

The diagram shows the following connections for the RFM95W-915S2 module:

- Power:** +3.3V supply connected to pin 13, with a 10uF capacitor (C10) to ground.
- Antenna:** Pin 9 (ANT) connected to a 50 Ohm line, which is terminated by a 100 Ohm resistor (J3) to ground.
- Control:** Pin 12 (DIO4) is connected to pin 12 of the Arduino, but it is marked with a red 'X' and the text "Keep it short!".
- Digital I/O:**
 - Pin 7 (DIO5) to Arduino pin 7
 - Pin 11 (DIO3) to Arduino pin 11
 - Pin 16 (DIO2) to Arduino pin 16
 - Pin 15 (DIO1) to Arduino pin 15
 - Pin 14 (DIO0) to Arduino pin 14
- Other Pins:**
 - Pin 4 (SCK) to Arduino pin 4
 - Pin 3 (MOSI) to Arduino pin 3
 - Pin 2 (MISO) to Arduino pin 2
 - Pin 5 (DB_CS) to Arduino pin 5
 - Pin 6 (D4_RST) to Arduino pin 6

Reset

SW1

1 2


KMR2

RESET


GND

Notes

- 1) Originally, all resistors were 0603. For this project, they were all changed to 0805.
- 2) Capacitors C5, C6, C8, C9 and C10 are 0805 size.
- 3) Originally, capacitors C1, C2, C3, C4 and C7 were 0603 size. For this project, they were all changed to 0805.
- 4) All LEDs are 0805 size for better visibility.



Mounting Holes & Fiducials



H1 H2 H3 H4

FID1
Fiducial

4 X M2.5 Screws

Sheet: /		D
File: Feather.sch		
Title: Adafruit Feather M0 with LoRa Radio Module		
Size: A4	Date: 2021-06-26	
KiCad E.D.A.	kiCad (5.1.10)-1	Id: 1/1



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