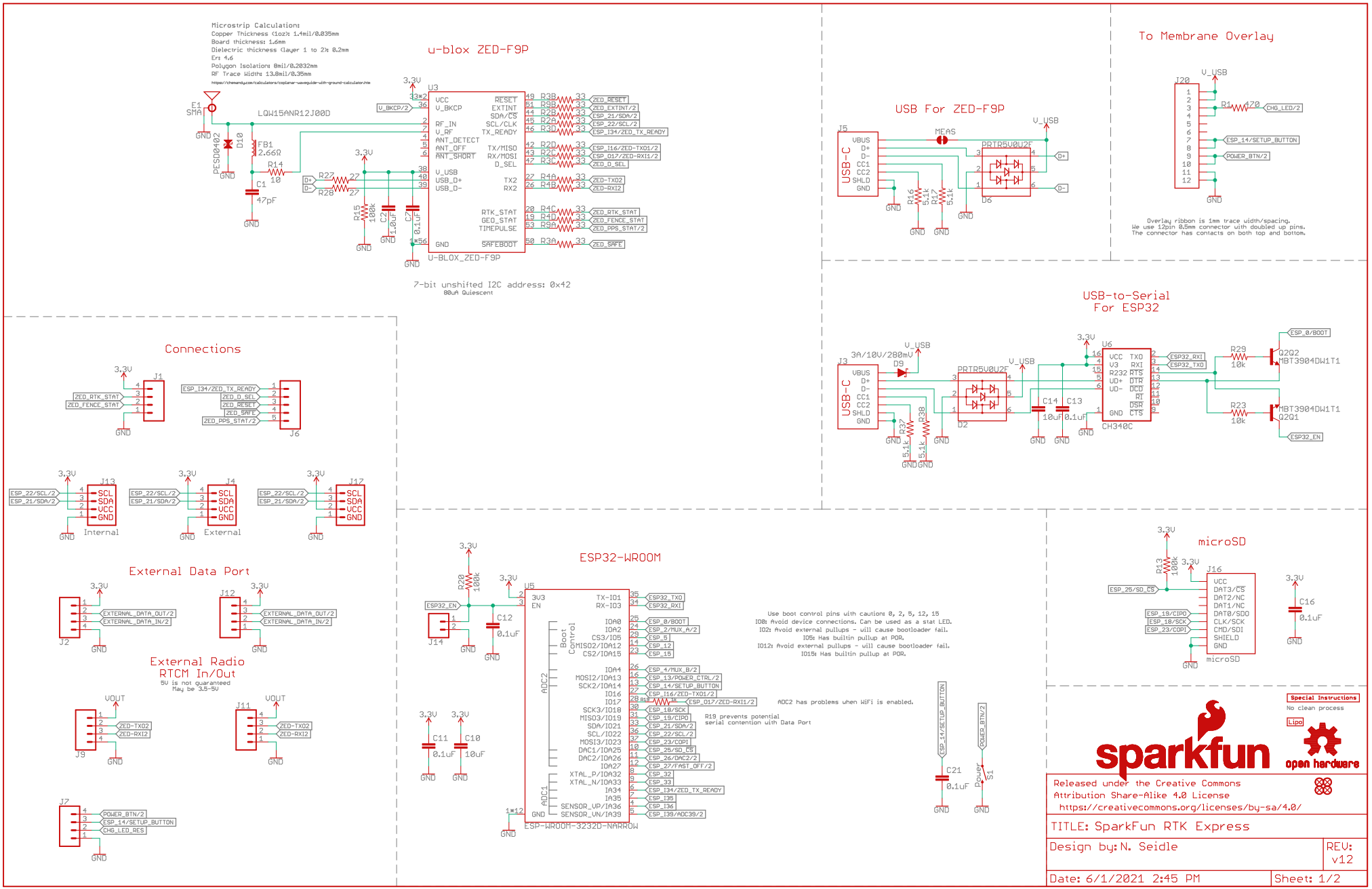
Microstrip Calculation:
Copper Thickness (1oz): 1.4mil/0.035mm
Board thickness: 1.6mm
Dielectric thickness (layer 1 to 2): 0.2mm
Er: 4.6
Polygon Isolation: 8mil/0.2032mm
RF Trace Width: 13.8mil/0.35mm
https://chemandy.com/calculators/coplanar-waveguide-with-ground-calculator.htm
u-blox ZED-F9P
U-BLOX_ZED-F9P
7-bit unshifted I2C address: 0x42
80uA Quiescent
USB For ZED-F9P
To Membrane Overlay
Overlay ribbon is 1mm trace width/spacing.
We use 12pin 0.5mm connector with doubled up pins.
The connector has contacts on both top and bottom.
USB-to-Serial
For ESP32
Connections
External Data Port
External Radio
RTCM In/Out
5V is not guaranteed
May be 3.5-5V
Internal
External
ESP32-WROOM
ESP-WROOM-3232D-NARROW
Use boot control pins with caution: 0, 2, 5, 12, 15
IO0: Avoid device connections. Can be used as a stat LED.
IO2: Avoid external pullups - will cause bootloader fail.
IO5: Has builtin pullup at POR.
IO12: Avoid external pullups - will cause bootloader fail.
IO15: Has builtin pullup at POR.
ADC2 has problems when WiFi is enabled.
R19 prevents potential
serial contention with Data Port
microSD
Special Instructions
No clean process
Lipo
Released under the Creative Commons
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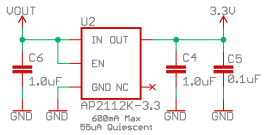
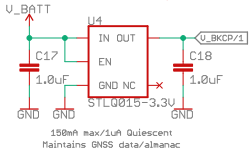
https://creativecommons.org/licenses/by-sa/4.0/
TITLE: SparkFun RTK Express
Design by: N. Seidle
REV: v12
Date: 6/1/2021 2:45 PM
Sheet: 1/2

System Power

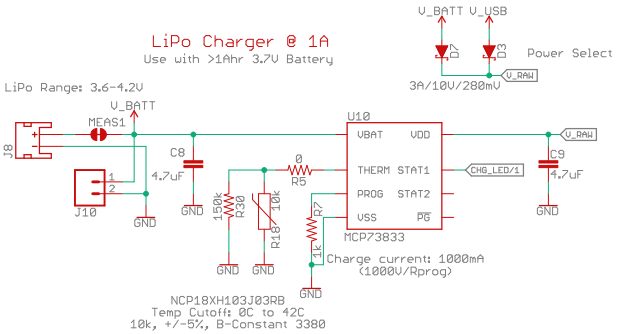


RTC Backup

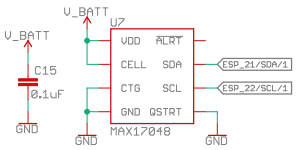


LiPo Charger @ 1A

Use with >1Ahr 3.7V Battery

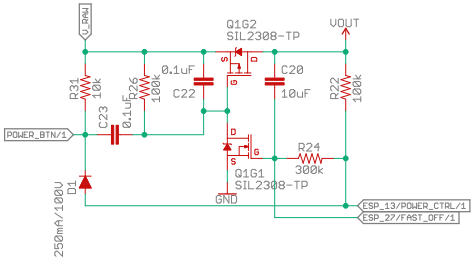


Fuel Gauge

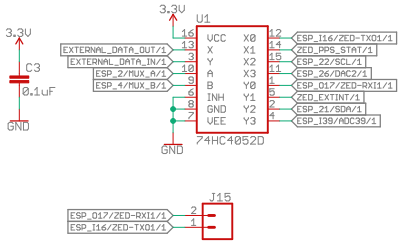


3uA Hibernate

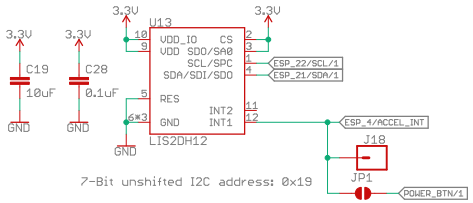
Soft Power Switch



Data Output Selection



LIS2DH12 / Accelerometer



7-Bit unshifted I2C address: 0x19

TITLE: SparkFun RTK Express	
Design by:>DESIGNER	REV: >REV
Date: 6/1/2021 2:45 PM	Sheet: 2/2