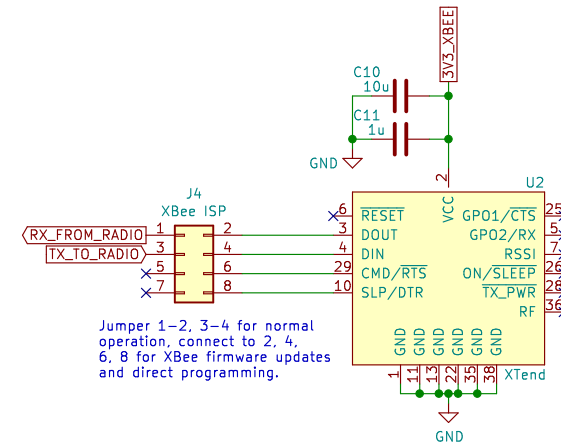
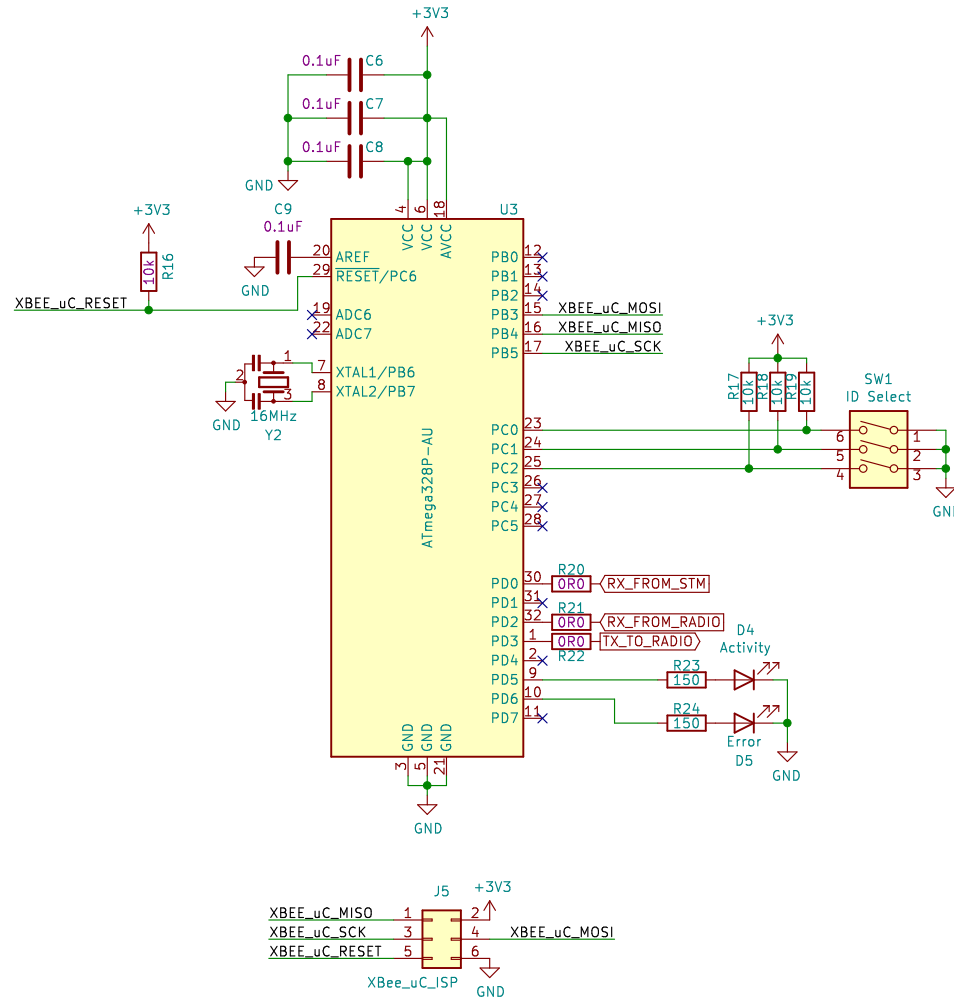


The XBee controller receives the serial stream from the STM32 of GPS and E-Field data and retransmits it to the ground via XBee XTend in serial pass through mode. The uC can perform downsampling or selective data transmission to reduce the amount of data sent through the link, but currently we simply operate in a pass through mode and it is there to allow for future expansion.



Jumper 1-2, 3-4 for normal operation, connect to 2, 4, 6, 8 for XBee firmware updates and direct programming.

850 South Lincoln St.
Siloam Springs, AR 72761
(479) 373-3736
Leeman Geophysical LLC



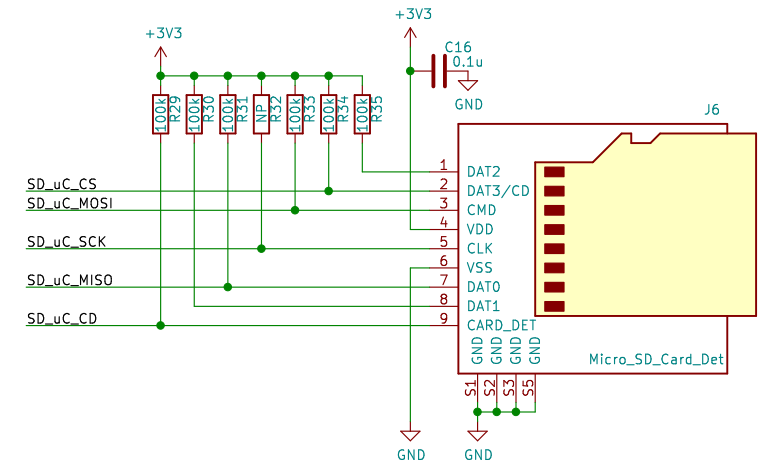
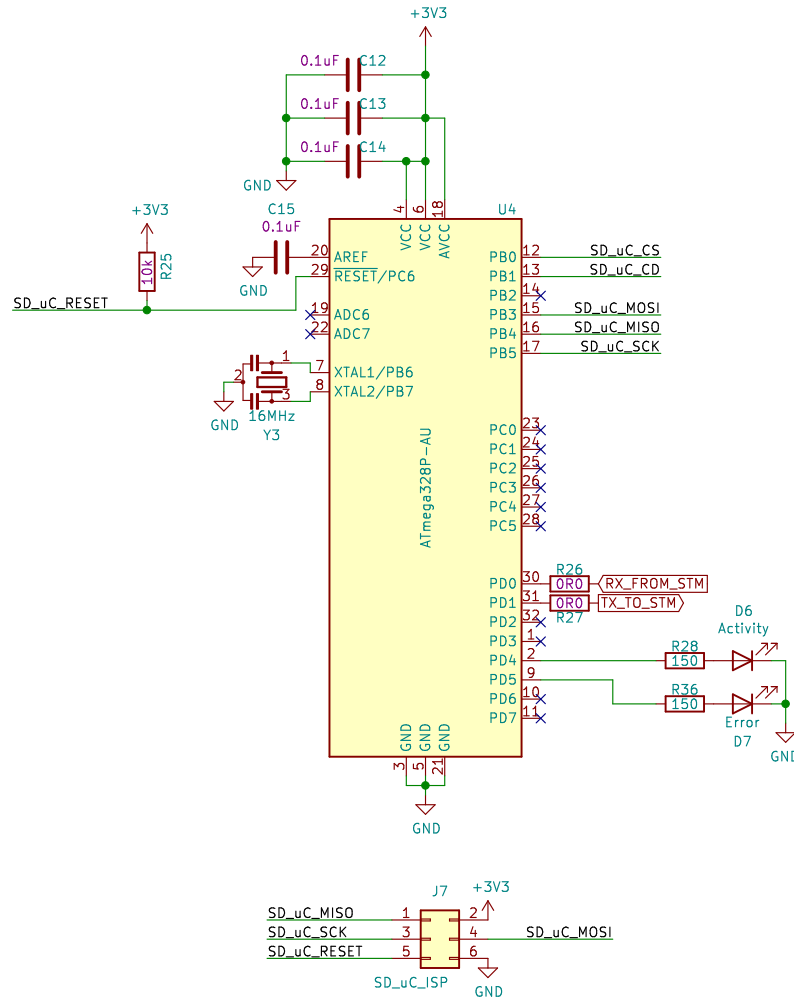
Sheet: /radio/
File: radio.sch

Title: Control Paddle Electronics – NSSL EFM

Size: A4
Date: 2020-12-30
KiCad E.D.A. kicad (5.1.7)-1

Rev: 3.0
Id: 2/6

SD uC gets the serial data stream from the STM32 and writes it all to the SD card. It handles rolling the file name to the next available and then simply dumps everything it receives which should only be complete packets since the STM32 takes care of that.



850 South Lincoln St.
Siloam Springs, AR 72761
(479) 373-3736
Leeman Geophysical LLC



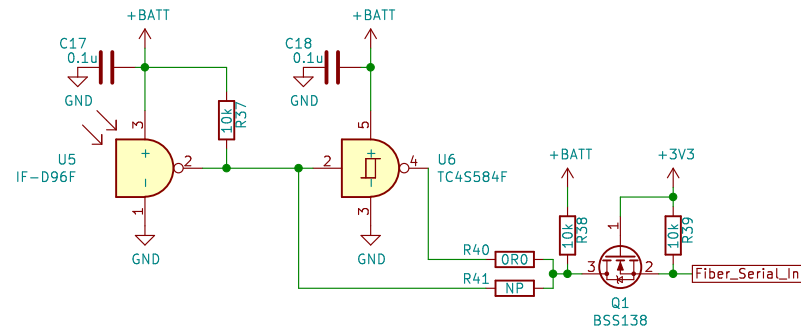
Sheet: /SD/
File: sd.sch

Title: Control Paddle Electronics – NSSL EFM

Size: A4
Date: 2020-12-30
KiCad E.D.A. kicad (5.1.7)-1

Rev: 3.0
Id: 3/6

Receives the fiber optic signal, buffers, and creates a level shifted serial output of the signal. Optionally can invert the signal if the transmitter is ever changed.



850 South Lincoln St.
Siloam Springs, AR 72761
(479) 373-3736
Leeman Geophysical LLC



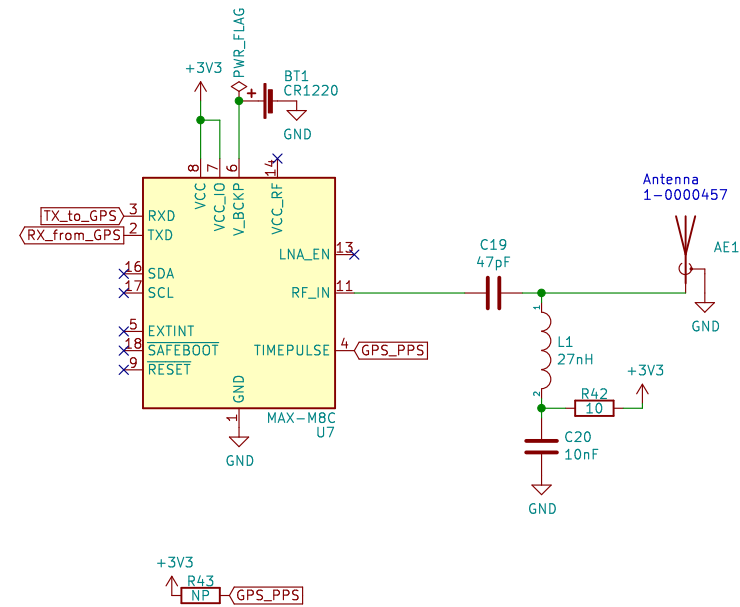
Sheet: /FiberOptics/
File: fiber.sch

Title: Control Paddle Electronics – NSSL EFM

Size: A4 Date: 2020-12-30
KiCad E.D.A. kicad (5.1.7)-1

Rev: 3.0
Id: 4/6

Active antenna GPS receiver sends GPS packets via serial to the STM32.



850 South Lincoln St.
Siloam Springs, AR 72761
(479) 373-3736
Leeman Geophysical LLC



Sheet: /GPS/
File: GPS.sch

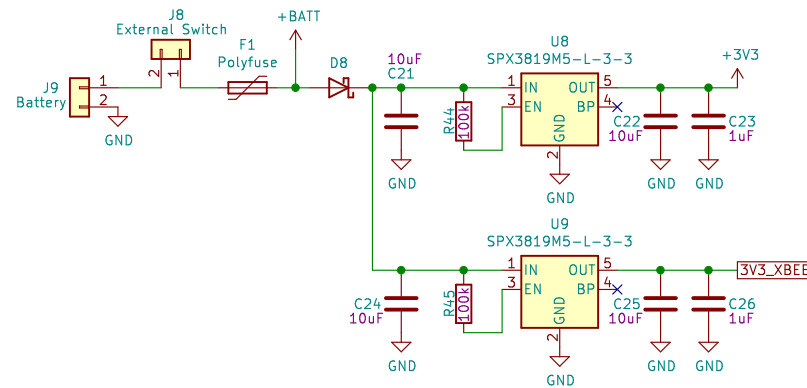
Title: Control Paddle Electronics – NSSL EFM

Size: A4
KiCad E.D.A. kicad (5.1.7)-1

Date: 2020-12-30

Rev: 3.0
Id: 5/6

Regulate the incoming voltage to the 3V3 needed for almost all components in the design. The fiber receiver/buffer uses raw battery voltage.



850 South Lincoln St.
Siloam Springs, AR 72761
(479) 373-3736
Leeman Geophysical LLC



Sheet: /Power/
File: Power.sch

Title: Control Paddle Electronics – NSSL EFM

Size: A4
KiCad E.D.A. kicad (5.1.7)–1

Date: 2020–12–30

Rev: 3.0

Id: 6/6