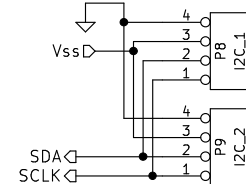
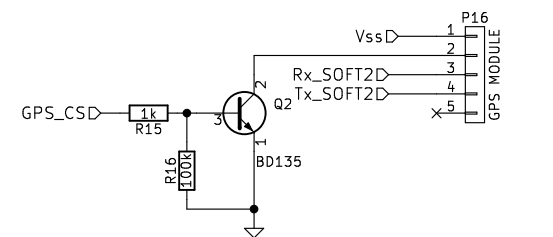


Grove Connectors:
 1 - D0 / Rx / SCLK
 2 - D1 / Tx / SDA
 3 - V+
 4 - GND

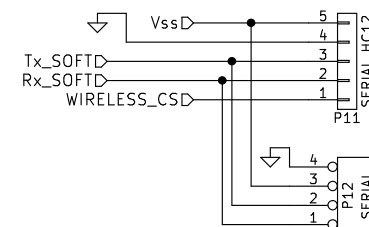


GPS connection

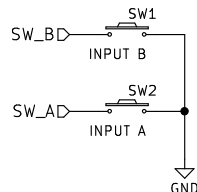
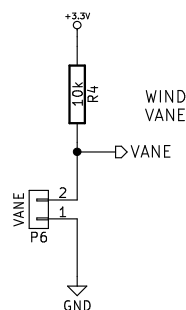
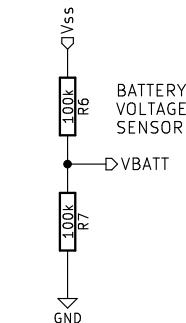
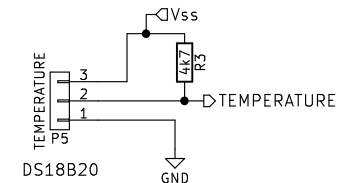
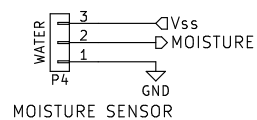
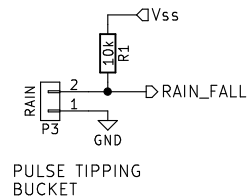
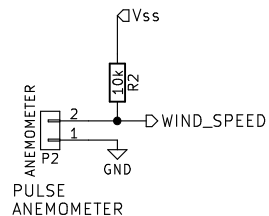
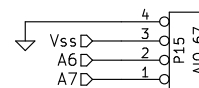


Serial1

HC12 Wireless Serial



Nano ONLY Additional AIO GROVE



Hardware

- EN1
- PCB1
- LOG01
- LOG02

For: Rachel Jacobs
 By: Matt Little
Renewable Energy Innovation
 Sheet: /
 File: MiniPredictionMachine_SensorPCB.sch

Title: Rediction Machine Mini – SENSOR

Size: A4 Date: 2017-06-14
 KiCad E.D.A. kicad 4.0.4-stable

Rev: 0
 Id: 1/3

Ts pulled high for solar charging applications
 Limited current mode to ensure battery temperature OK
 Pull high with 100k

VDPM

Kept open for load tracking, such as solar PV

VDPM to ground using

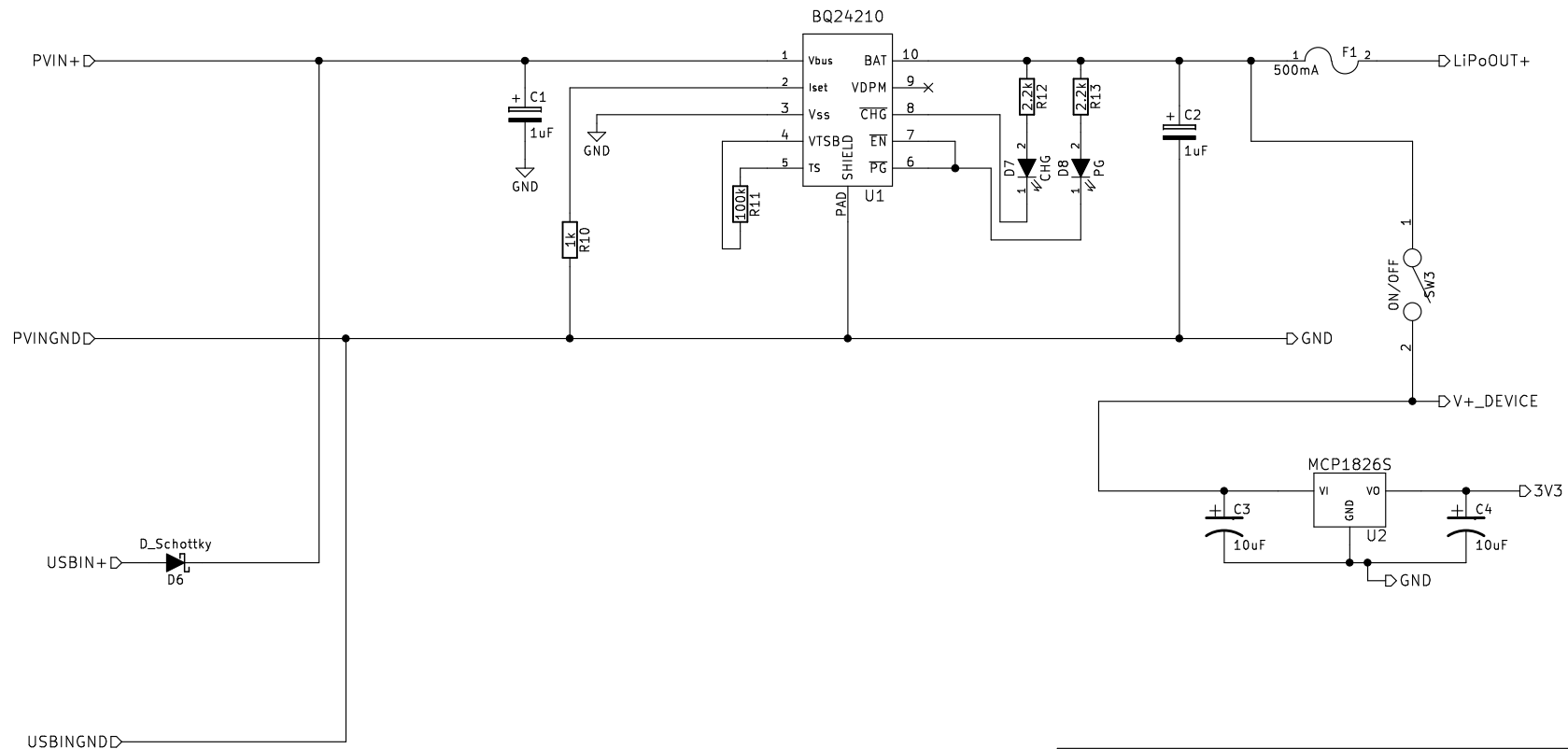
$R_{VDPM} = (V_{BUS_DPM} - V_{BUS_DPM_1}) / K_{V_{BUS_DPM}} = (4.6\text{ V} - 3.5\text{ V}) / (0.15\text{ V/k}\Omega) = 7.333\text{ k}\Omega \rightarrow 7.32\text{ k}\Omega$ closest 1% resistor

Iset

2W of solar PV gives 400mA maximum

$R_{iset} = K_{iset} / I_{out} \text{ } I_{out} = 400\text{ mA. } K_{iset} = 395\text{ Aohm. } R_{iset} = 987.5.$ Close to 1k

EN tied to PG as load mode never used



By: Matt Little

Renewable Energy Innovation

Sheet: /Solar Charging/

File: ChargeCircuit.sch

Title: Rediction Machine Mini – SENSOR

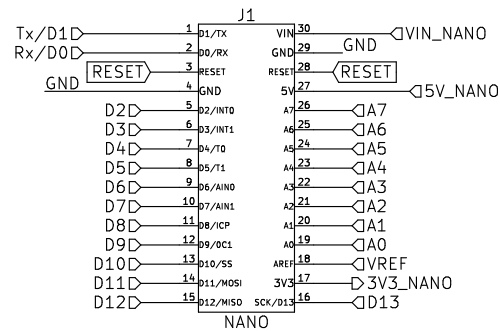
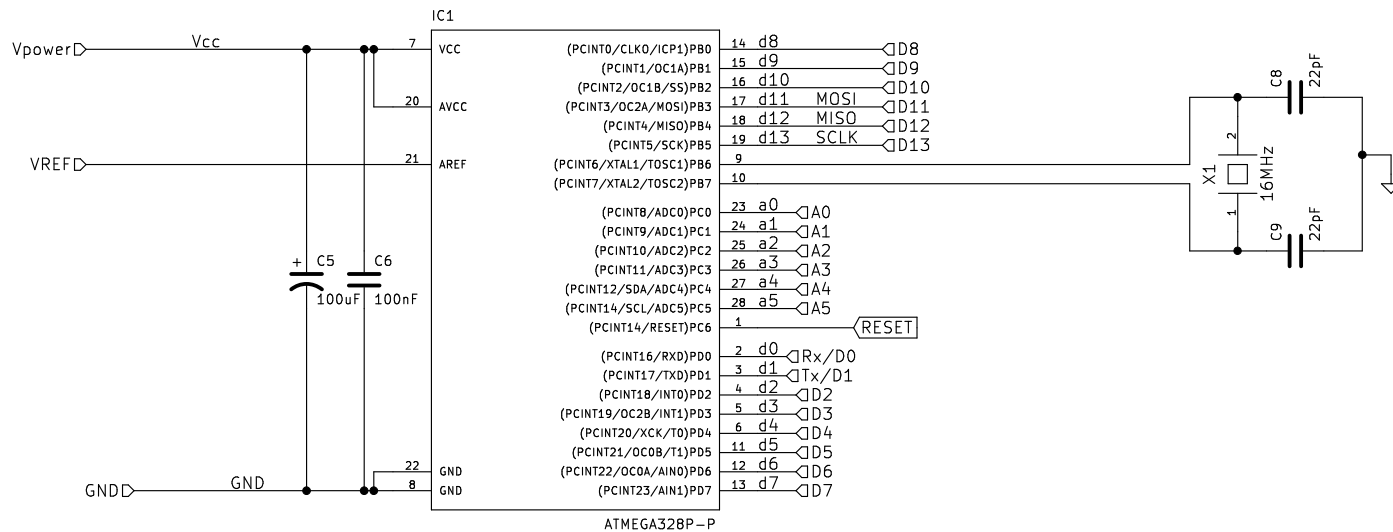
Size: A4

Date: 2017-06-14

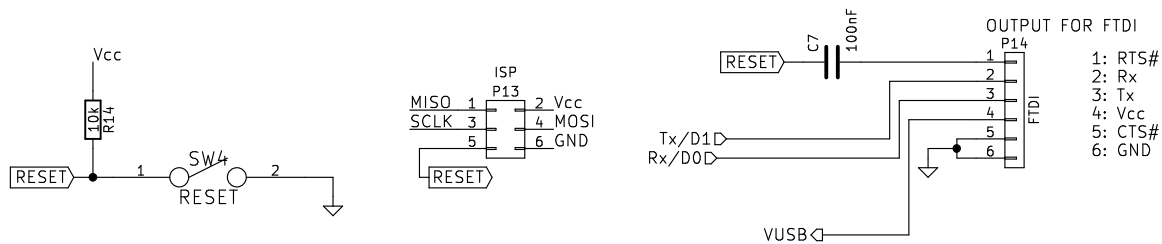
Rev: 0

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Id: 2/3



This sheet is for the either a Nano or a direct ATMEGA328-P DIL IC with FTDI



By: Matt Little

Renewable Energy Innovation

Sheet: /Arduino Nano or IC/

File: ArduinoNanoIC.sch

Title: Rediction Machine Mini – SENSOR

Size: A4 Date: 2017-06-14

KiCad E.D.A. kicad 4.0.4-stable

Rev: 0

Id: 3/3