Power

Sheet: BatteryChargerPower

File: BatteryChargerPower.sch

Ethernet

Sheet: ENC28J60

MISO
SCK
MOSI
CS

NANO_MISO
NANO_SCK
NANO_MOSI
NANO_CS

File: ENC28J60_Arduino.sch

Temperature

Sheet: MAX6675

MAX6675_SCK
MAX6675_CS
MAX6675_SO

NANO_SCK
MAX_CS
NANO_MISO

File: MAX6675.sch

CurrentSense

Sheet: CurrentSense_INA169_1

CurrentOUT
LOADIN
LOADOUT

P4
INA_ScrewTerminal

File: CurrentSense_INA169.sch

Sheet: sheet5CBEAB48

CurrentOUT
LOADIN
LOADOUT

P5
INA_ScrewTerminal

File: CurrentSense_INA169.sch

Sheet: sheet5CBEAC38

CurrentOUT
LOADIN
LOADOUT

P6
INA_ScrewTerminal

File: CurrentSense_INA169.sch

Microcontroller

P3 Nano_SerialBrk

J1 Arduino_Nano_Header

P28 Nano_Vinbrkout

P29 Nano_RST_Brkout

GND

P27 NanoExtraPins_oneinchbrkout

P1 ADC_TerminalBlock

P2 AREFBREAKOUT

P30 3v3Breakout

MAX_CS
NANO_CS
NANO_MOSI
NANO_MISO
NANO_SCK

Battery Chargers

Sheet: STC4054_Liion_Charge

BAT_LIION_CHRG

P7
LIION_CONN

GND

File: STC4054_Liion_Charge.sch

These connectors will be screw terminal and will be intended to be patched into the op amps for monitoring current, as well as as the ADC for voltage.

Sheet: LT1512

LTShutdownPin
LT_FloatVoltage

P20
LTSENSESCREWTERMINAL

LT_BATCHRG
LT_IFEEDBACK

P8
LT_CONN

GND

File: LT1512_universalcharger.sch

P17
CONN_01X03

R21 9100
R23 9100
R25 9100

A7
A6
A5

R22 1000
R24 1000
R26 1000

GND

MK1 Mounting_Hole
MK2 Mounting_Hole
MK3 Mounting_Hole
MK4 Mounting_Hole

Sheet: /
File: batterystation.sch

Title:

Size: USLetter | Date: | **Rev:**

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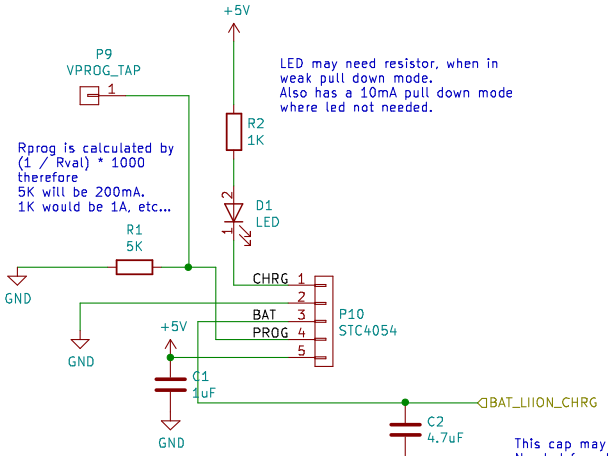
ST4054
Li-Ion 1 cell battery charger

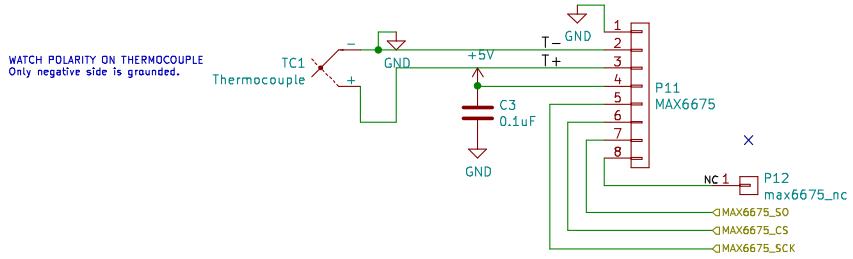


4.2 Volts ONLY (not 4.1 - and only ONE cell)

VCC must be always 30mV above BAT or else it will shut down (i.e. if charger is battery powered)

Sheet: /STC4054_Liion_Charge/ File: STC4054_Liion_Charge.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		Id: 2/9

MAX6675



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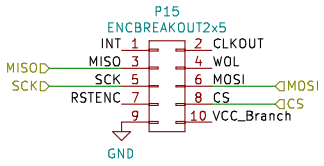
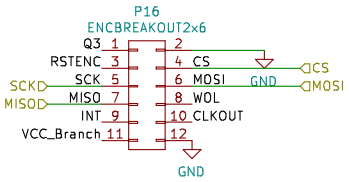
File: MAX6675.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		Id: 3/9

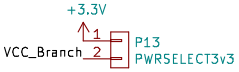
ENC28J60 Arduino Module

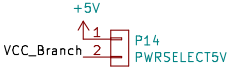
ENC28J60 modules
are loaded facing
down on the top
layer of the PCB.
This is good to double
check. The VCC here is
on the inside of the board.
Compare to existing PCBs.

HOW TO DOUBLE CHECK PINOUTS
Pick one pin, i.e. pin 10 which is VCC on this board.
(for the 5x2 connector)
Look at layout. make sure its in the right place,
so that the enc will be loaded correctly.









Jumpers. Most ENC28J60 Modules
are 3.3v, but some have vregs, or
vdividers. There are two possible
pinouts, from my collection that
I see. 2x5 or 2x6. On my 2x6 module
VCC is labeled as 5V. On the 2x5 it is
unlabeled.

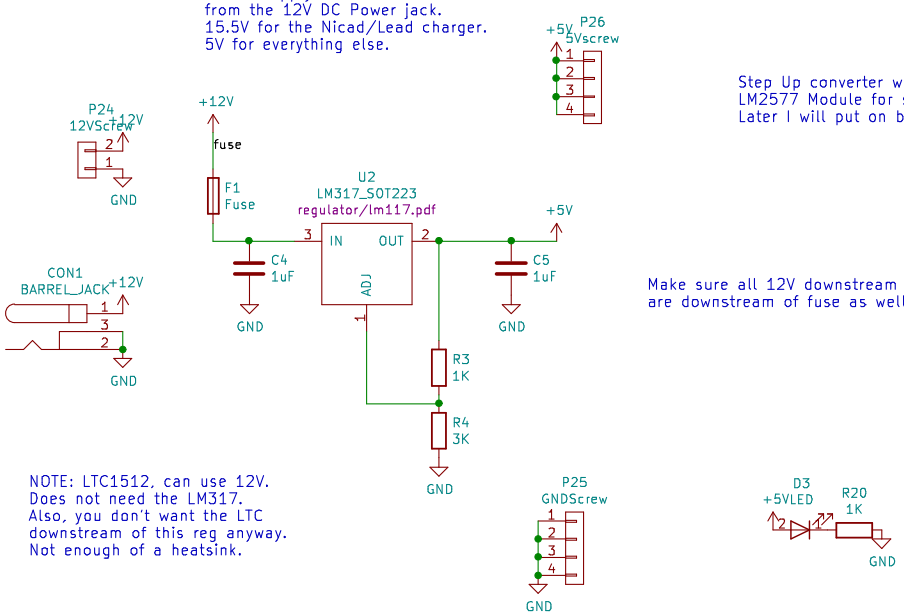
Sheet: /ENC28J60/		
File: ENC28J60_Arduino.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		Id: 4/9

Power Supply is 5V, and 15.5V
from the 12V DC Power jack.
15.5V for the Nicad/Lead charger.
5V for everything else.

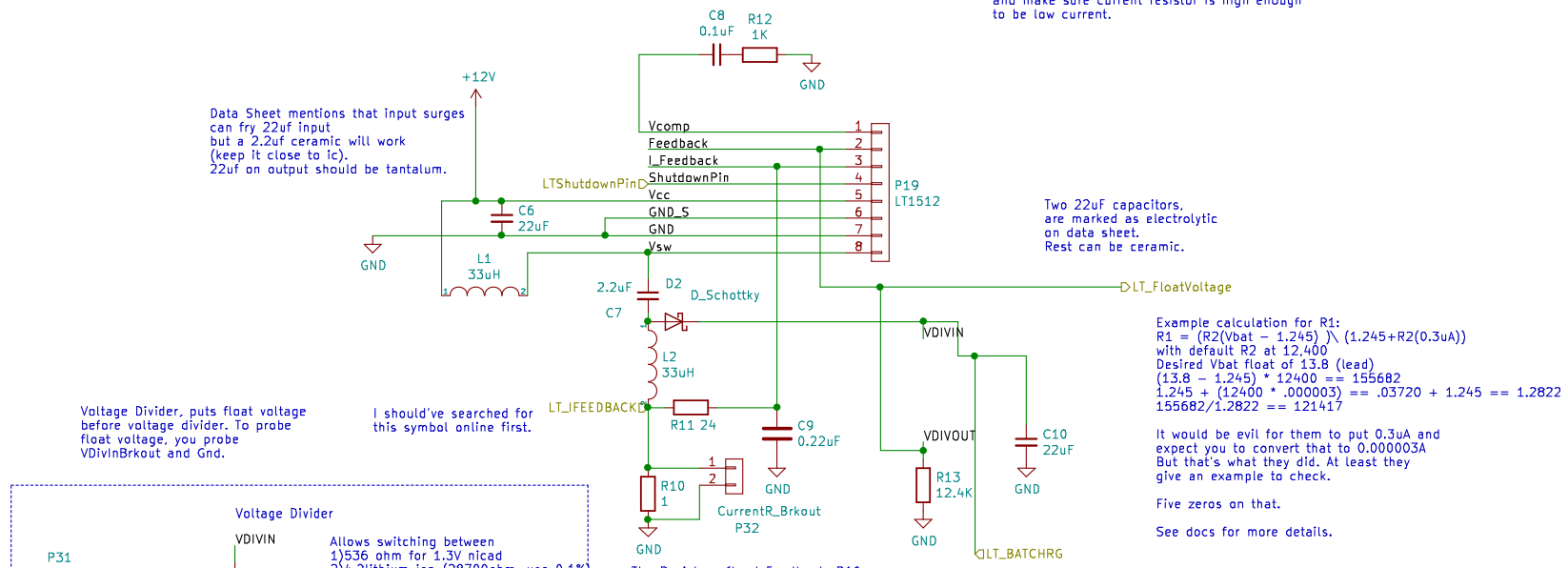
Step Up converter will be
LM2577 Module for starters.
Later I will put on board.

Make sure all 12V downstream
are downstream of fuse as well.

NOTE: LTC1512, can use 12V.
Does not need the LM317.
Also, you don't want the LTC
downstream of this reg anyway.
Not enough of a heatsink.



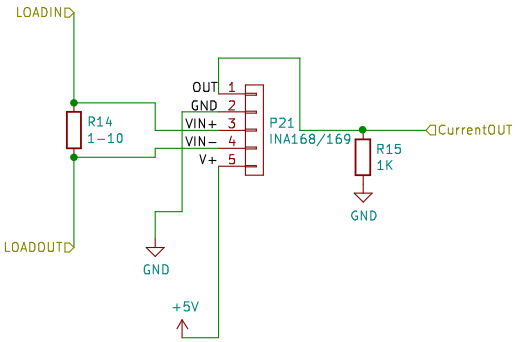
Sheet: /BatteryChargerPower/		
File: BatteryChargerPower.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		Id: 5/9



Sheet: /LT1512/		
File: LT1512_universalcharger.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		Id: 6/9

INA169 Current Sense

The Kicad symbol for INA168/169 was INCORRECT.
It has since been fixed (in official libraries),
but in Devuan Jessie it is wrong, so beware.



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Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		Id: 7/9

INA169 Current Sense

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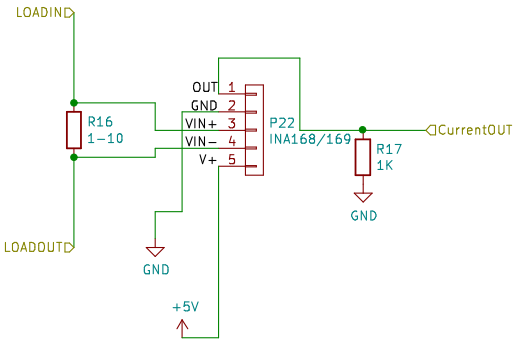

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File: CurrentSense_INA169.sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		Id: 8/9

INA169 Current Sense

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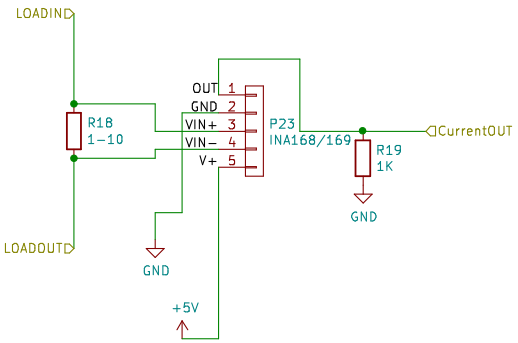

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Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		Id: 9/9