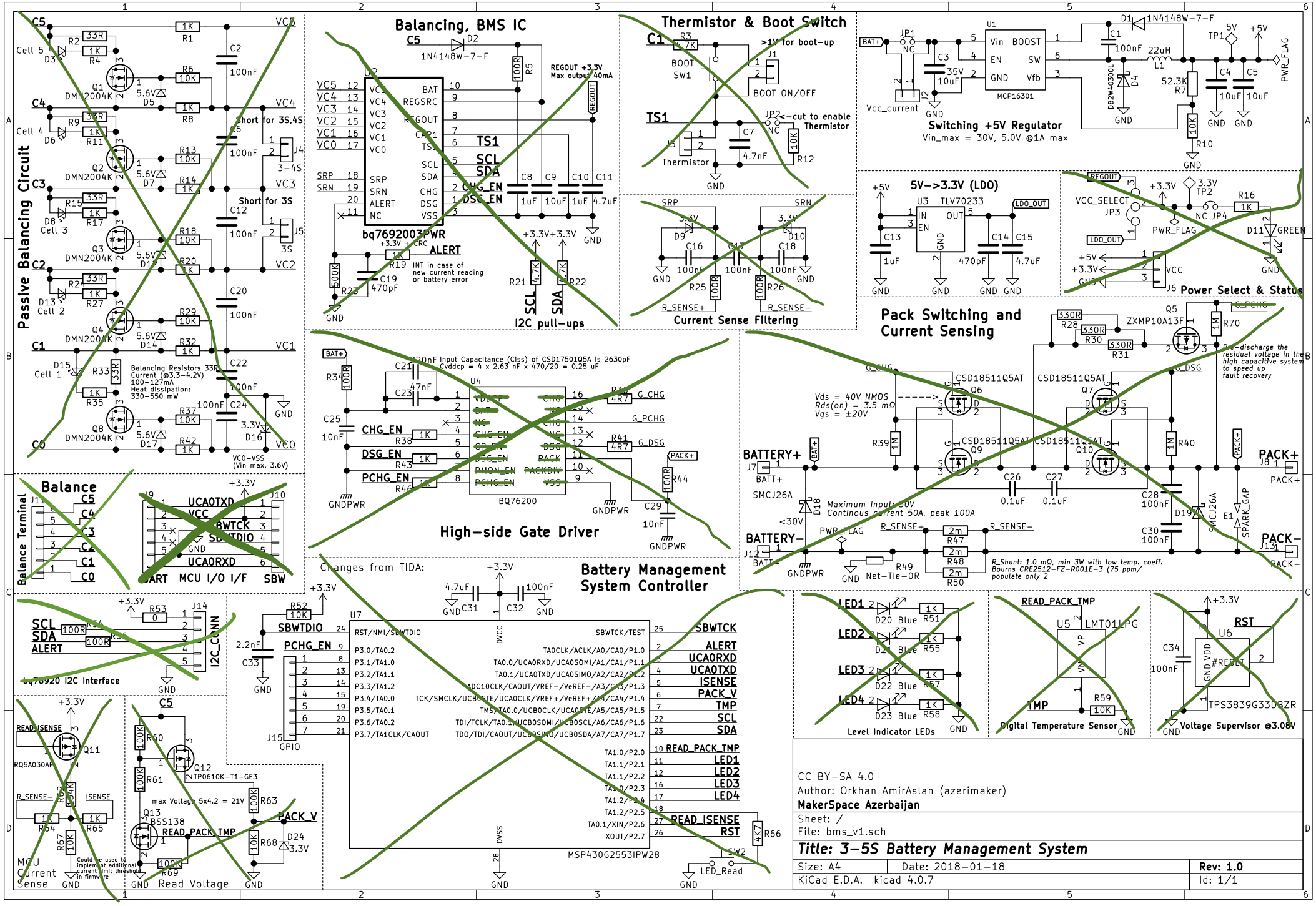
Passive Balancing Circuit
Balancing, BMS IC
Thermistor & Boot Switch
Switching +5V Regulator
Vin_max = 30V, 5.0V @1A max
5V->3.3V (LDO)
Power Select & Status
Pack Switching and Current Sensing
High-side Gate Driver
Balance
Battery Management System Controller
Current Sense Filtering
I2C pull-ups
Level Indicator LEDs
Digital Temperature Sensor
Voltage Supervisor @3.08V
MCU Current Sense
Read Voltage
bq76920 I2C Interface
Balance Terminal
UART MCU I/O I/F SBW
Balancing Resistors 33R
Current (@3.3-4.2V)
100-127mA
Heat dissipation:
330-550 mW
Short for 3S,4S
Short for 3S
Input Capacitance (Ciss) of CSD17501Q5A is 2630pF
Cvddcp = 4 x 2.63 nF x 470/20 = 0.25 uF
Vds = 40V NMOS
Rds(on) = 3.5 mΩ
Vgs = ±20V
Maximum Input: 30V
Continous current 50A, peak 100A
R_Shunt: 1.0 mΩ, min 3W with low temp. coeff.
Bourns CRE2512-FZ-R001E-3 (75 ppm/
populate only 2
Re-discharge the residual voltage in the high capacitive system to speed up fault recovery
Changes from TIDA:
MSP430G2553IPW28
bq76920032PWR
BQ76200
CC BY-SA 4.0
Author: Orkhan AmirAslan (azerimaker)
MakerSpace Azerbaijan
Sheet: /
File: bms_v1.sch
Title: 3-5S Battery Management System
Size: A4
Date: 2018-01-18
Rev: 1.0
KiCad E.D.A. kicad 4.0.7
Id: 1/1