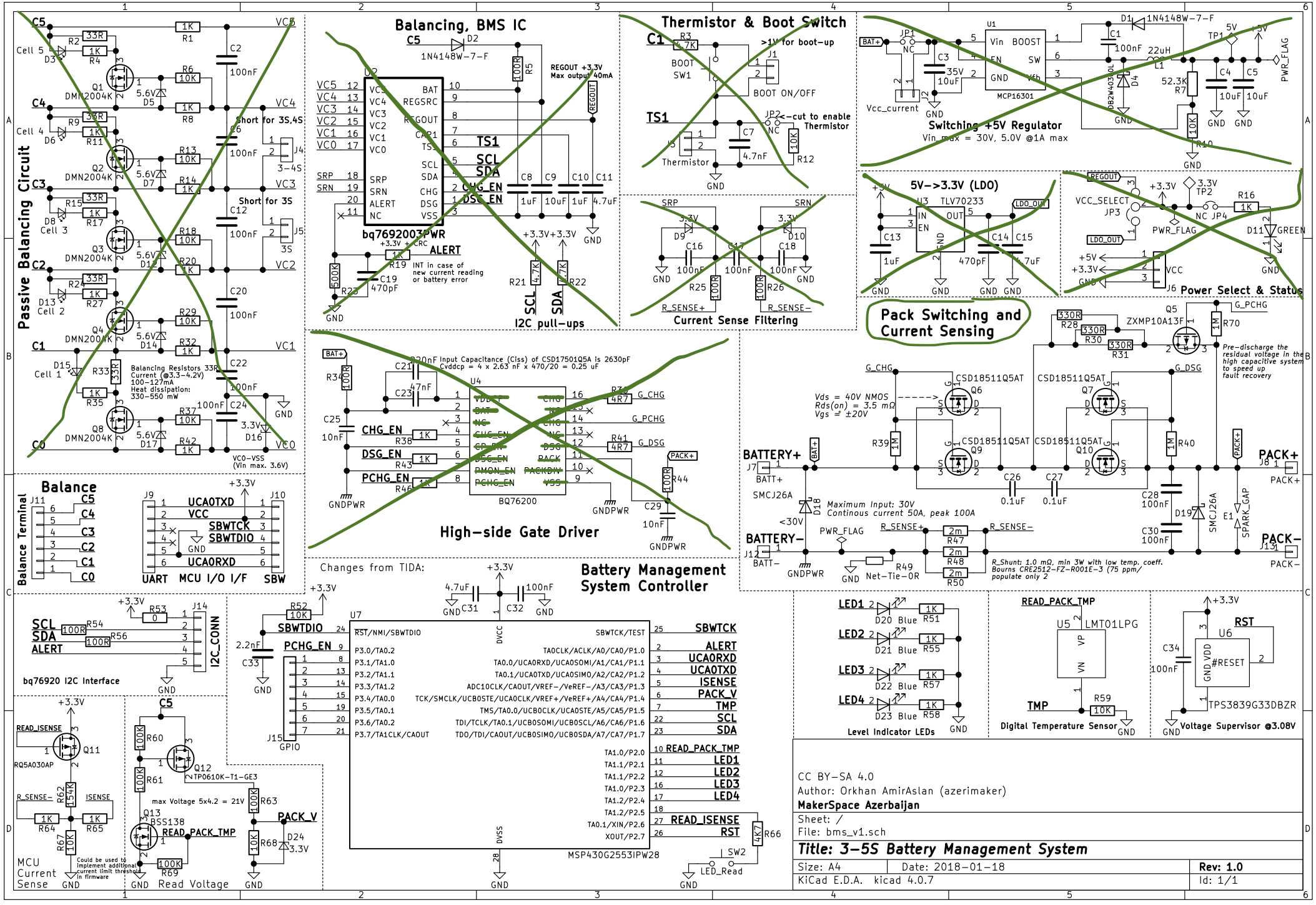
Passive Balancing Circuit
Balancing, BMS IC
Thermistor & Boot Switch
Switching +5V Regulator
Vin max = 30V, 5.0V @1A max
5V->3.3V (LDO)
Power Select & Status
Pack Switching and Current Sensing
I2C pull-ups
Current Sense Filtering
High-side Gate Driver
Balance
Balance Terminal
UART MCU I/O I/F SBW
bq76920 I2C Interface
Battery Management System Controller
Level Indicator LEDs
Digital Temperature Sensor
Voltage Supervisor @3.08V
MCU Current Sense
Read Voltage
Balancing Resistors 33R
Current (@3.3-4.2V)
100-127mA
Heat dissipation:
330-550 mW
Short for 3S,4S
Short for 3S
Vds = 40V NMOS
Rds(on) = 3.5 mΩ
Vgs = ±20V
Maximum Input: 30V
Continuous 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
Pre-discharge the residual voltage in the high capacitive system to speed up fault recovery
Changes from TIDA:
MSP430G2553IPW28
bq76920PWR
BQ76200
MCP16301
TLV70233
CSD18511Q5AT
ZXMP10A13F
LMT01LPG
TPS3839G33DBZR
BATTERY+
BATTERY-
PACK+
PACK-
BATT+
BATT-
GNDPWR
Net-Tie-OR
SPARK_GAP
SMCJ26A
READ_PACK_TMP
READ_ISENSE
PACK_V
LED_Read
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