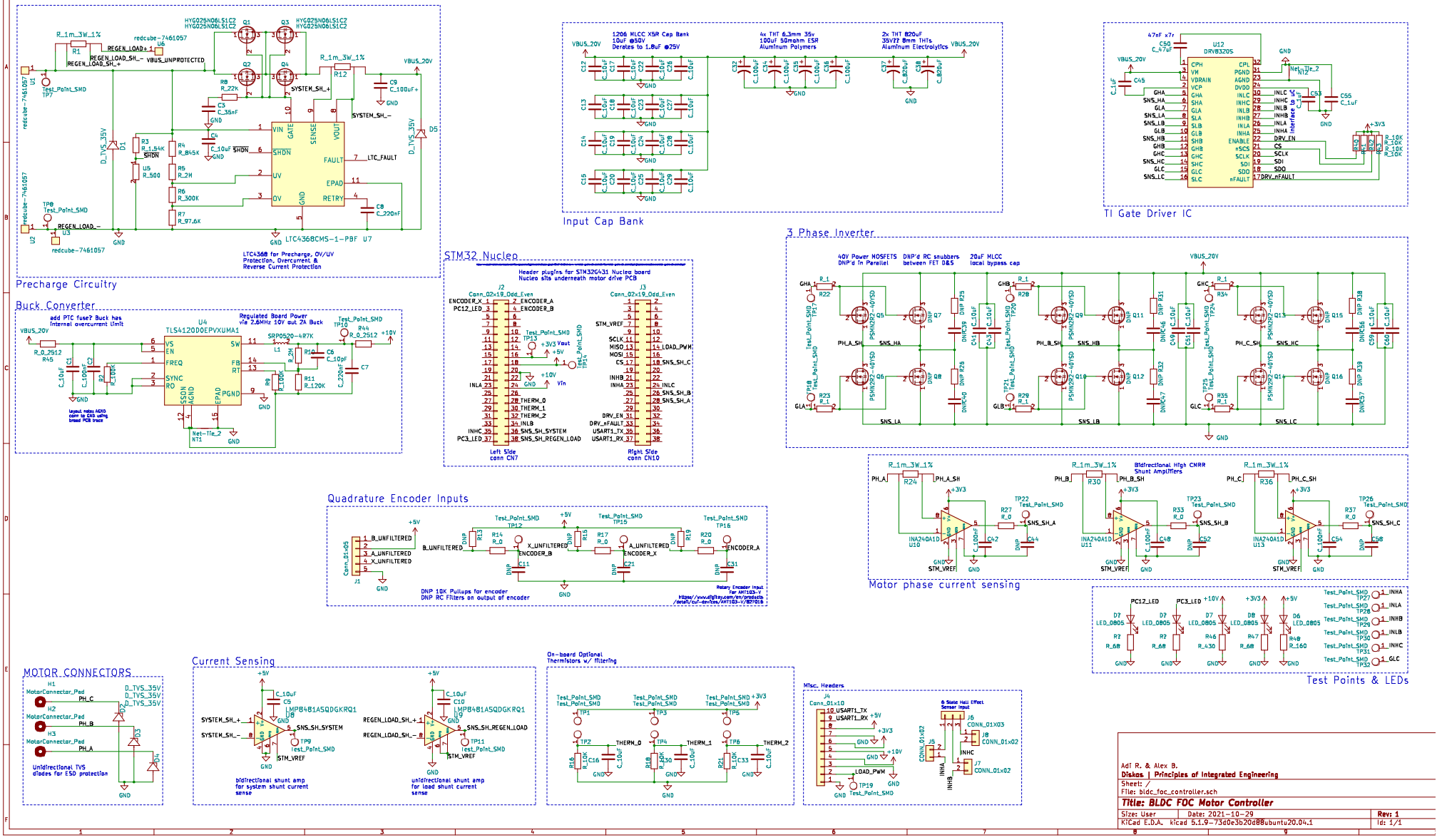
Precharge Circuitry
LTC4368 for Precharge, OV/UV Protection, Overcurrent & Reverse Current Protection
Input Cap Bank
1206 MLCC X5R Cap Bank
10uF @50V
Derates to 1.8uF @25V
4x THT 6.3mm 35v
100uF 50mohm ESR
Aluminum Polymers
2x THT 820uF
35V22 8mm THTs
Aluminum Electrolytics
TI Gate Driver IC
DRV8320S
Buck Converter
TLS4120D0EPVXUMA1
Regulated Board Power
via 2.6MHz 10V out 2A Buck
STM32 Nucleo
Header plugins for STM32G431 Nucleo board
Nucleo sits underneath motor drive PCB
3 Phase Inverter
40V Power MOSFETS
DNP'd In Parallel
DNP'd RC snubbers
between FET D&S
20uF MLCC
local bypass cap
PSMN2R2-40YSD
Motor phase current sensing
Bidirectional High CMRR
Shunt Amplifiers
INA240A1D
Quadrature Encoder Inputs
DNP 10K Pullups for encoder
DNP RC filters on output of encoder
Test Points & LEDs
MOTOR CONNECTORS
Unidirectional TVS
diodes for ESD protection
Current Sensing
MP8481ASQDGKRQ1
bidirectional shunt amp
for system shunt current
sense
unidirectional shunt amp
for load shunt current
sense
On-board Optional
Thermistors w/ filtering
Misc. Headers
Adf R. & Alex B.
Diskos | Principles of Integrated Engineering
Sheet: /
File: bldc_foc_controller.sch
Title: BLDC FOC Motor Controller
Size: User
Date: 2021-10-29
Rev: 1
KiCad E.D.A. kicad 5.1.9-73d0e3b20d88ubuntu20.04.1
Id: 1/1