TODO: Current MIght exceed ACS, BM04B port order not correct, bandwidth select

RESET.
GND
VCC
R1 10K
OSC_IN
OSC_OUT
GND
0.1uF C1

STM32F334K8T
PF0/OSC_IN   PA0   6   IN_CURRENT_SENSE
PF1/OSC_OUT   PA1   7   CAP_CURRENT_SENSE
              PA2   8   MTR_CURRENT_SENSE
NRST   PA3   9
              PA4   10   BAT_VSENSE
R2 10K   PA5   11   CAP_VSENSE
BOOT0   PA6   12   OUT_VSENSE
              PA7   13
              PA8   18   DRV_HS_IN
              PA9   19   DRV_LS_IN
              PA10   20   DRV_EN
              PA11   21
VDDA/VREF   PA12   22
              PA13   23   SYS_SWDIO
              PA14   24   SYS_SWCLK
VDD_2   PA15   25
VDD_1   PB0   14   MTR_EN
              PB1   15
              PB2   26   LEDR
              PB3   27   LEDG
VSS_1   PB4   28
VSS_2   PB5   29   TX
              PB6   30   RX
              PB7

FB1
6000/1.8A
GND
C2 4.7uF
OSC_IN
VCC
C12 22p
Y1 16MHz
C13 22p
OSC_OUT
GND
C9 4.7uF
C4 0.1uF
C3 0.1uF
GND

SIG_VCC VCC VCC SIG_VCC
R2410K R2510K R2610K R2710K
SIG_TX

USART
TX
RX
U1
TX 220 R23
RX 220 R22
SIG_VCC
SIG_TX
SIG_RX
SIG_GND
JST1
JST2
JST3
JST4
GND*2
DUAL-OPTOISOLATOR_PC817
SIG_GND
Q3 NPN
NPN
SIG_GND

VBAT_RAW
TO_BAT
GND
XT60PW-M
VCAP
TO_CAP
GND
XT60PW-M
VMTR
TO_MOTOR
GND
XT60PW-M

VBAT
R16 100
LM5050
OUT IN
VS   GATE
GND OFF
C17 0.1uF
GND
BSC018N04
MOSFET1
VBAT_RAW
VBAT

BM04B
P4 4
P3 3   SYS_SWDIO
P2 2   SYS_SWCLK
P1 1
VCC
GND

MP2451
BST SW
GND VIN
FB   EN
3V3_FB
R3 100K
GND
C6 0.1uF
SWPA3012S4R7MT
L1
D1
3A/40V/500mV
VCC
VBAT
C7 0.1uF
C8 0.1uF
C5 4.7uF
GND
VCC
R4 124K
3V3_FB
R5 40.2k
GND

MP2451
BST SW
GND VIN
FB   EN
12V_FB
R17 100K
GND
C23 0.1uF
SWPA3012S4R7MT
L2
D5
3A/40V/500mV
VCC_12V
VBAT
C24 0.1uF
C25 0.1uF
C26 4.7uF
GND
VCC_12V
R18 124K
12V_FB
R19 8.87k
GND
VCC
C40 4.7uF
C41 0.1uF
VCC

BAT_VSENSE
VBAT
R6 16.2k
C10 0.1uF
R7 1.69k
GND
CAP_VSENSE
VCAP
R8 16.2k
C11 0.1uF
R9 1.69k
GND
OUT_VSENSE
VOUT
R10 16.2k
C14 0.1uF
R11 1.69k
GND

D2 RED 1k R12 LEDR
D3 GREEN 1k R13 LEDG
GND

MOTOR ENABLE CONTROLLER
VOUT
VMTR_T
D4
MMSZ5242/12v
R15 10k
IRF4905S
MOTOR_MOS
MTR_EN
R14 100
Q1
S8050/25v 500mW
GND

MOSFET DRIVER
DRV_EN   6   EN   BST   3
DRV_HS_IN 7 INH NC
DRV_LS_IN 8 INL
VCC_12V   VDD SW   5
C22 4.7uF C21 4.7uF C18 0.1uF
         VSS DRVH
             DRVL 10
C27 4.7uF
VSW_NODE
R20 470
D6 1N4148WS
DRV_H
R21 470
D7 1N4148WS
DRV_L
GND

Main PWM Constant Power MOSFET
VBAT
VSW_T
C31 4.7uF C30 4.7uF C29 4.7uF C28 4.7uF
DRV_H
DRV_L
H_MOS BSC018N04
L_MOS BSC018N04
VSW_NODE
VOUT
GND

CAP_CHARGING_CURRENT
VOUT
VCAP
ACS723
IP+ 1   VCC   8
IP+ 2   VIOUT 7   CAP_CURRENT_SENSE
IP- 3   BW_SEL 6   BW_SEL
IP- 4   GND   5
VCC
GND
C15 0.1uF
C16 1nF
GND

TOTAL_BAT_CURRENT
VBAT
VSW_T
ACS723
IP+ 1   VCC   8
IP+ 2   VIOUT 7   IN_CURRENT_SENSE
IP- 3   BW_SEL 6   BW_SEL
IP- 4   GND   5
VCC
GND
C19 0.1uF
C20 1nF
GND

MTR_OUT_CURRENT1
VMTR_T
VMTR
ACS723
IP+ 1   VCC   8
IP+ 2   VIOUT 7   MTR_CURRENT_SENSE
IP- 3   BW_SEL 6   BW_SEL
IP- 4   GND   5
VCC
GND
C32 0.1uF
C33 1nF
GND

VSW_NODE
WHC1265-10UH
L3
VOUT
C34 22uF C35 22uF C36 22uF C37 22uF C38 22uF C39 22uF
GND
BW_SEL_HIGHT_RES
BW_SEL
GND