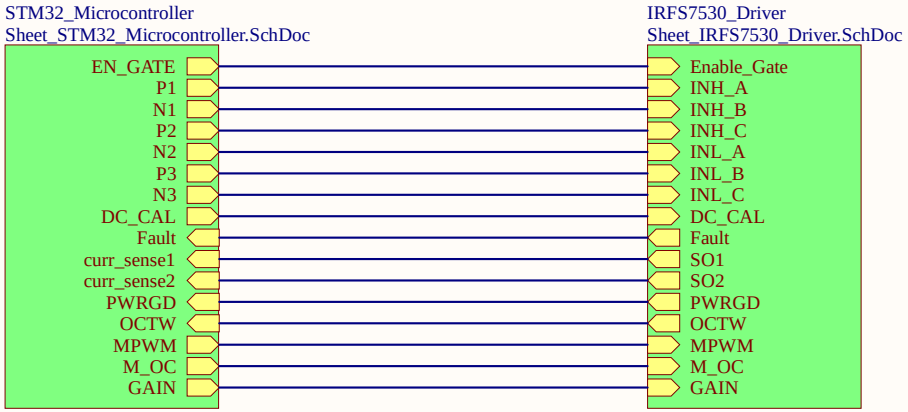

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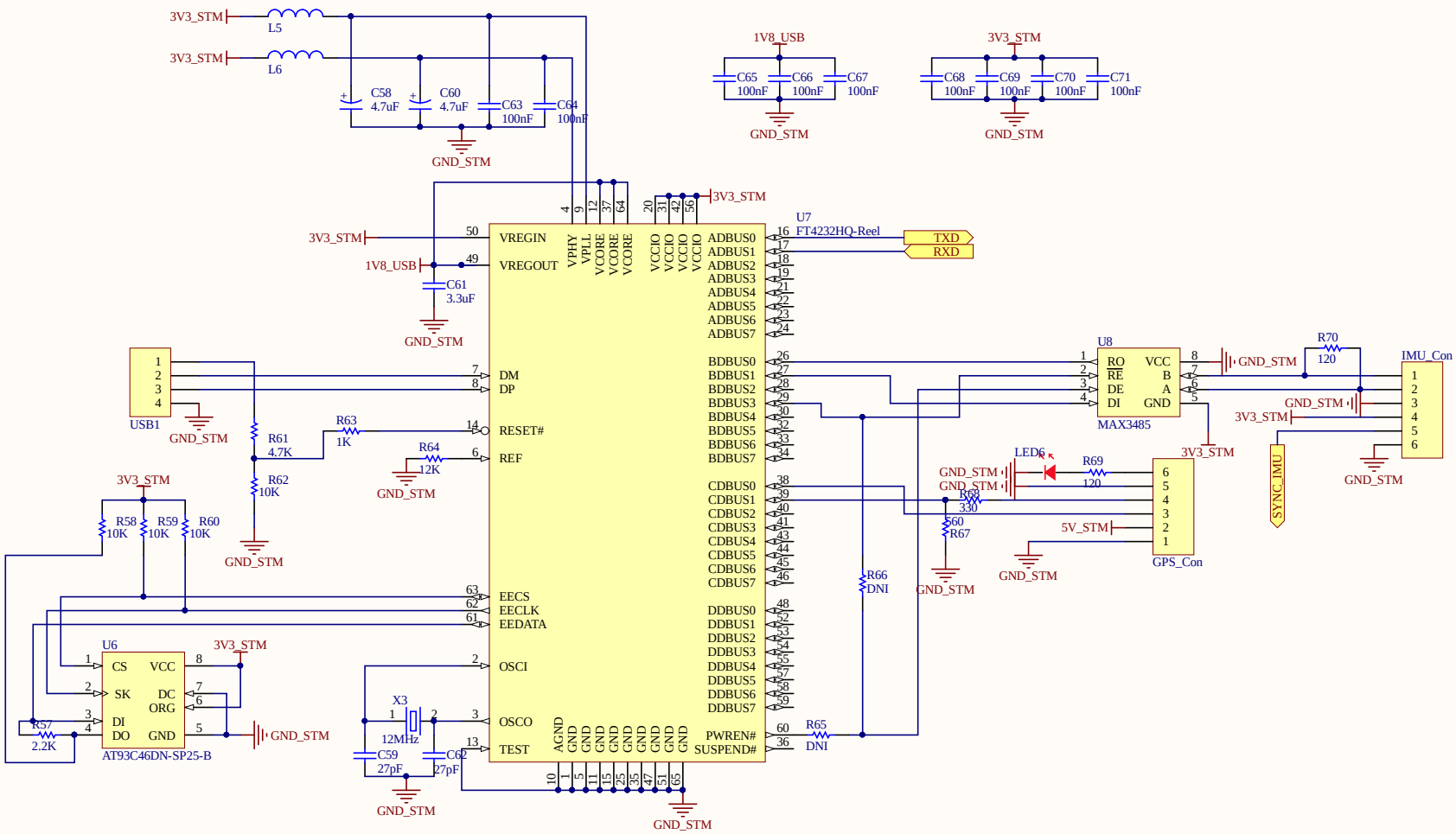
3V3_STM
L5
L6
C58 4.7uF
C60 4.7uF
C63 100nF
C64 100nF
GND_STM
1V8_USB
C65 100nF
C66 100nF
C67 100nF
C68 100nF
C69 100nF
C70 100nF
C71 100nF
U7
FT4232HQ-Reel
VREGIN
VREGOUT
C61 3.3uF
DM
DP
RESET#
REF
R61 4.7K
R62 10K
R63 1K
R64 12K
USB1
R58 10K
R59 10K
R60 10K
EECS
EECLK
EEDATA
OSCI
OSCO
TEST
X3 12MHz
C59 27pF
C62 27pF
U6
AT93C46DN-SP25-B
R57 2.2K
ADBUS0
ADBUS1
ADBUS2
ADBUS3
ADBUS4
ADBUS5
ADBUS6
ADBUS7
BDBUS0
BDBUS1
BDBUS2
BDBUS3
BDBUS4
BDBUS5
BDBUS6
BDBUS7
CDBUS0
CDBUS1
CDBUS2
CDBUS3
CDBUS4
CDBUS5
CDBUS6
CDBUS7
DDBUS0
DDBUS1
DDBUS2
DDBUS3
DDBUS4
DDBUS5
DDBUS6
DDBUS7
PWREN#
SUSPEND#
R65 DNI
R66 DNI
TXD
RXD
U8
MAX3485
R70 120
IMU_Con
SYNC_IMU
LED6
R69 120
R68 330
R67 60
5V_STM
GPS_Con
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Size A
Number
Revision
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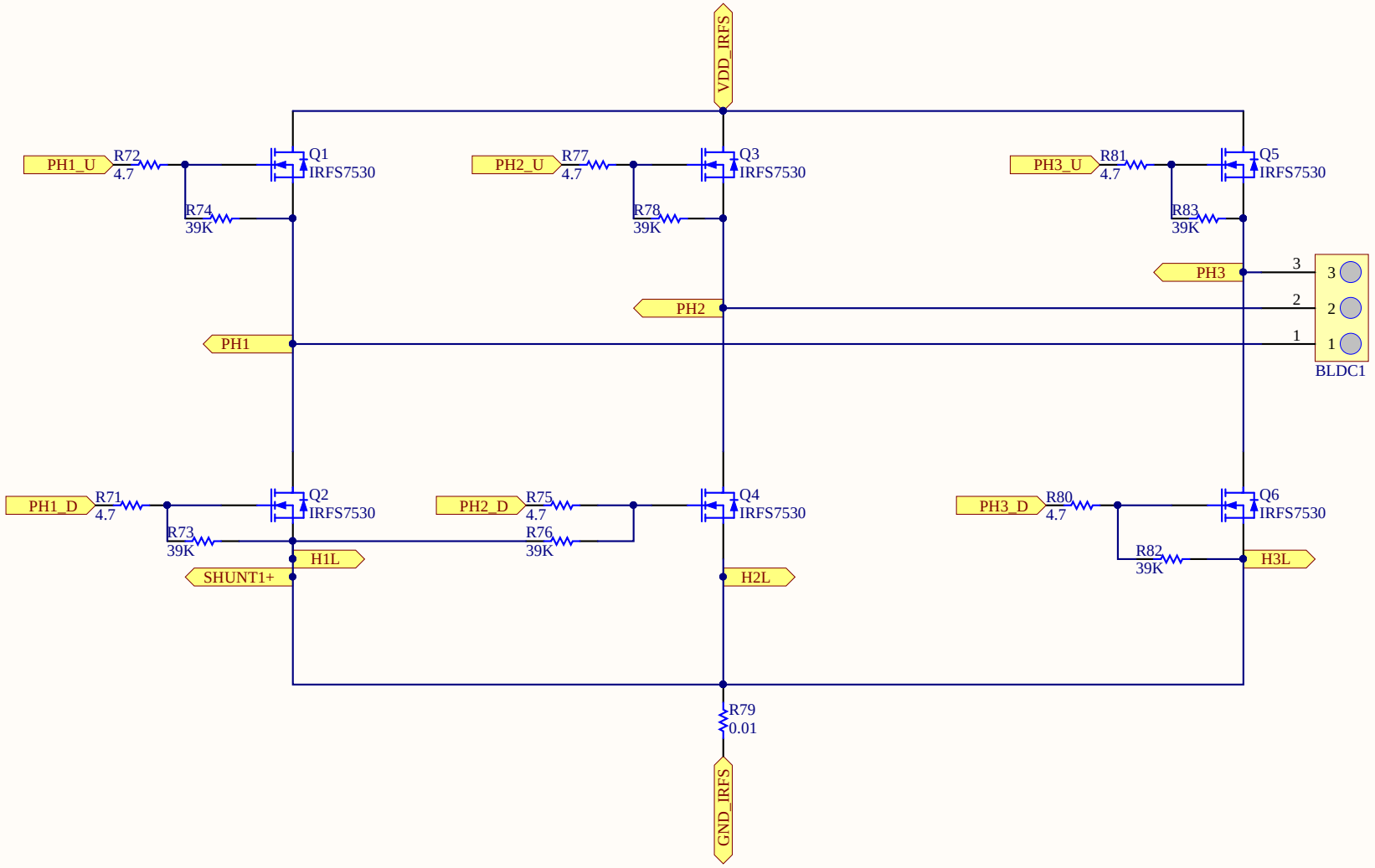

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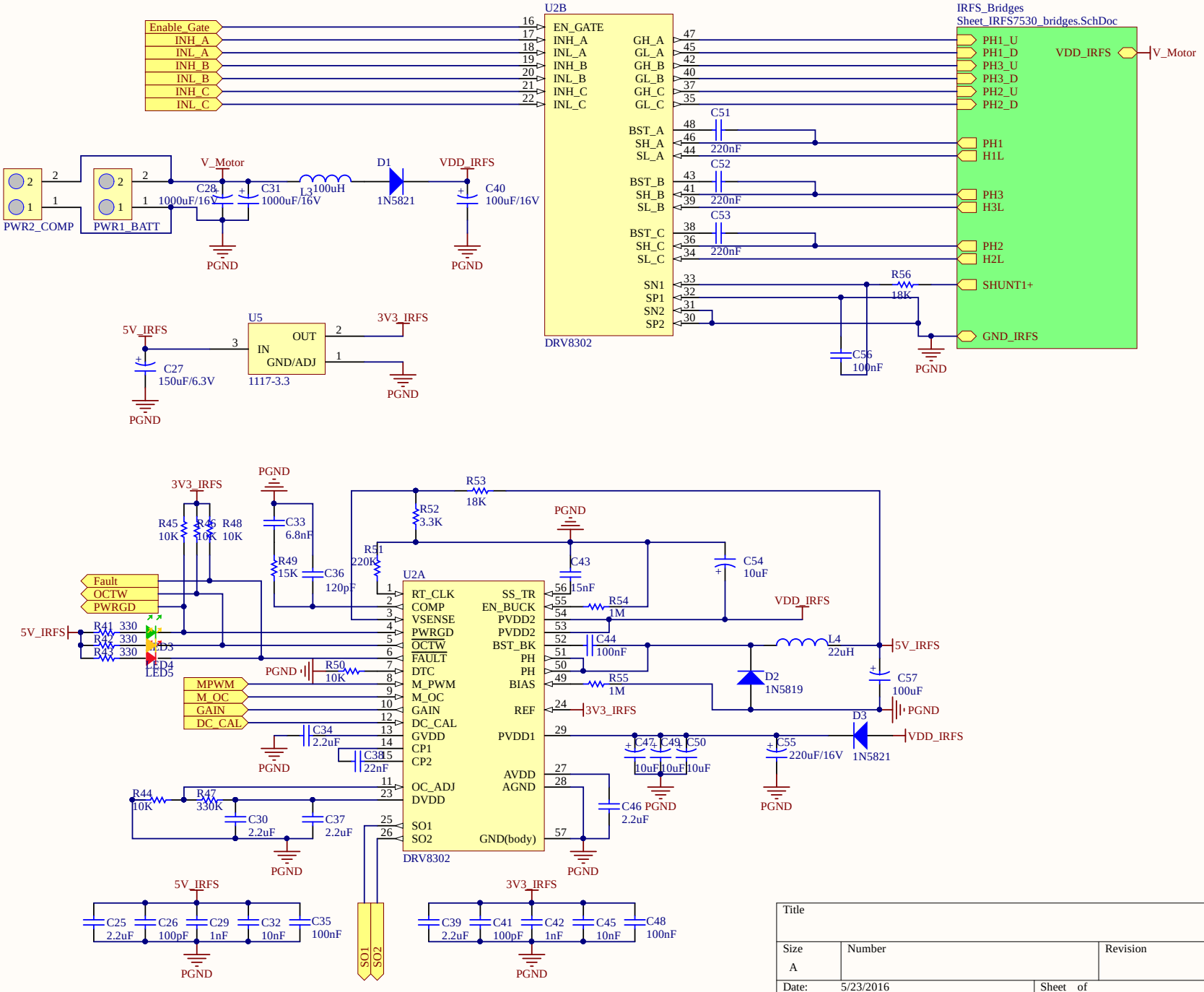
U2B
DRV8302
IRFS_Bridges
Sheet_IRFS7530_bridges.SchDoc
Enable_Gate
INH_A
INL_A
INH_B
INL_B
INH_C
INL_C
EN_GATE
GH_A
GL_A
GH_B
GL_B
GH_C
GL_C
BST_A
SH_A
SL_A
BST_B
SH_B
SL_B
BST_C
SH_C
SL_C
SN1
SP1
SN2
SP2
PH1_U
PH1_D
PH3_U
PH3_D
PH2_U
PH2_D
PH1
H1L
PH3
H3L
PH2
H2L
SHUNT1+
GND_IRFS
VDD_IRFS
V_Motor
C51
C52
C53
220nF
R56
18K
C56
100nF
PWR2_COMP
PWR1_BATT
V_Motor
C28
1000uF/16V
C31
1000uF/16V
L3
100uH
D1
1N5821
VDD_IRFS
C40
100uF/16V
PGND
U5
1117-3.3
5V_IRFS
3V3_IRFS
C27
150uF/6.3V
U2A
DRV8302
RT_CLK
COMP
VSENSE
PWRGD
OCTW
FAULT
DTC
M_PWM
M_OC
GAIN
DC_CAL
GVDD
CP1
CP2
OC_ADJ
DVDD
SO1
SO2
SS_TR
EN_BUCK
PVDD2
PVDD2
BST_BK
PH
PH
BIAS
REF
PVDD1
AVDD
AGND
GND(body)
R53
18K
R52
3.3K
R51
220K
C43
15nF
C54
10uF
R54
1M
R55
1M
C44
100nF
L4
22uH
D2
1N5819
C57
100uF
D3
1N5821
C47
C49
C50
10uF
10uF
10uF
C55
220uF/16V
C46
2.2uF
R45
10K
R46
10K
R48
10K
C33
6.8nF
R49
15K
C36
120pF
R50
10K
C34
2.2uF
C38
22nF
R44
10K
R47
330K
C30
2.2uF
C37
2.2uF
Fault
OCTW
PWRGD
R41
330
R42
330
R43
330
LED3
LED4
LED5
MPWM
M_OC
GAIN
DC_CAL
C25
2.2uF
C26
100pF
C29
1nF
C32
10nF
C35
100nF
C39
2.2uF
C41
100pF
C42
1nF
C45
10nF
C48
100nF
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Size
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Number
Revision
Date:
5/23/2016
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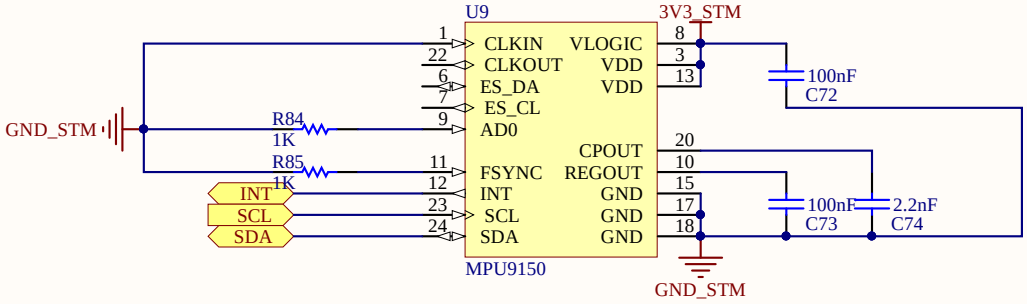

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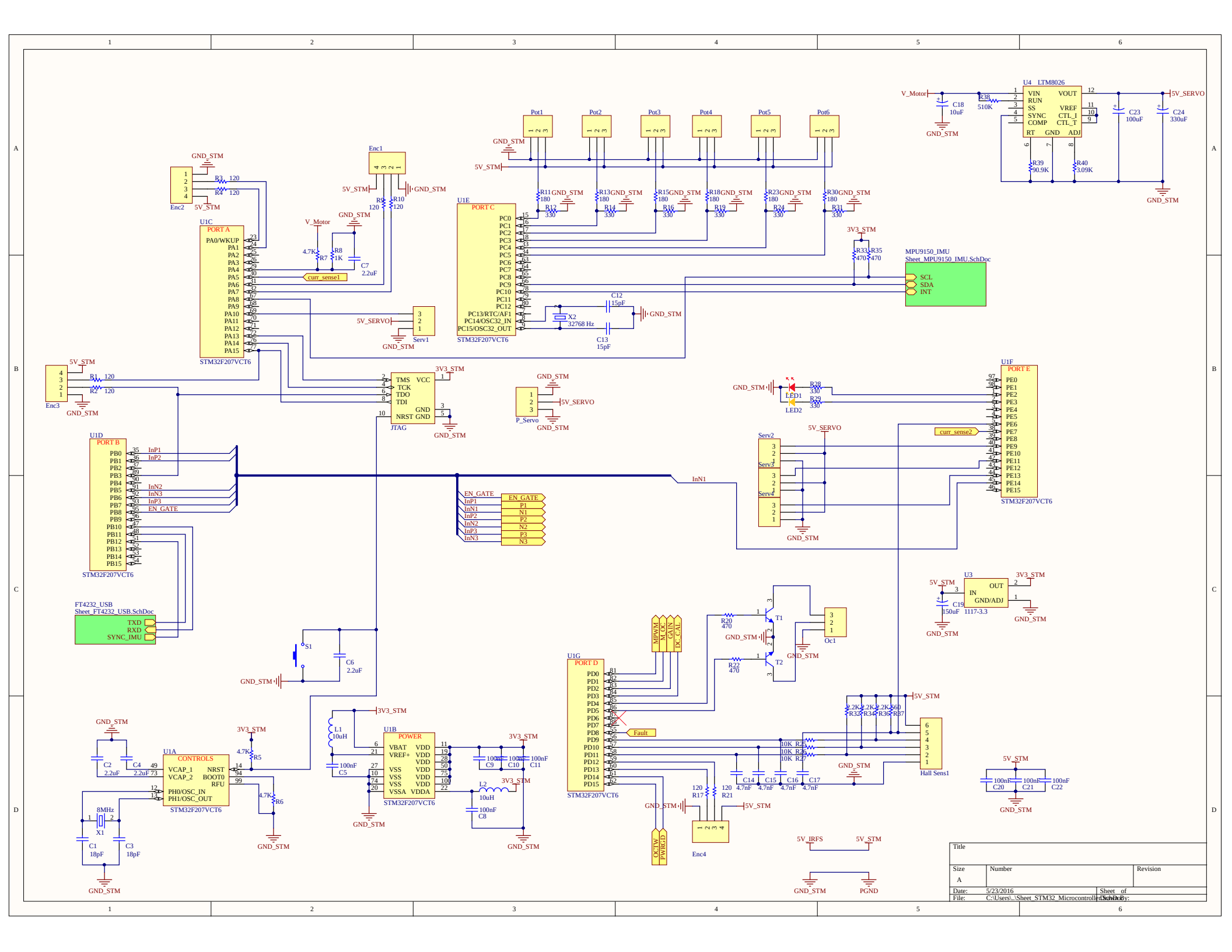
U4 LTM8026
VIN
VOUT
RUN
SS
VREF
SYNC
CTL_I
COMP
CTL_T
RT
GND
ADJ
V_Motor
5V_SERVO
5V_STM
GND_STM
3V3_STM
Pot1
Pot2
Pot3
Pot4
Pot5
Pot6
U1C
PORT A
U1E
PORT C
STM32F207VCT6
MPU9150_IMU
Sheet_MPU9150_IMU.SchDoc
SCL
SDA
INT
curr_sense1
curr_sense2
Enc1
Enc2
Enc3
Enc4
Serv1
Serv2
Serv3
Serv4
P_Servo
JTAG
TMS
TCK
TDO
TDI
NRST
U1D
PORT B
InP1
InP2
InN2
InN3
InP3
EN_GATE
InN1
FT4232_USB
Sheet_FT4232_USB.SchDoc
TXD
RXD
SYNC_IMU
U1F
PORT E
LED1
LED2
U1G
PORT D
Fault
MPWM
M_OC
GAIN
DC_CAL
T1
T2
Oc1
Hall Sens1
U3
1117-3.3
U1A
CONTROLS
U1B
POWER
8MHz
X1
X2
32768 Hz
OCTW
PWRGD
5V_IRFS
PGND
Title
Size
A
Number
Revision
Date: 5/23/2016
Sheet of
File: C:\Users\...\Sheet_STM32_Microcontroller.SchDoc
Drawn By:

Item #	Designator	Comment	#Column Name Error:Value	Quantity	Footprint
1	BLDC1	Terminal3		1	TERM3
2	C1, C3	18pF		2	1608[0603]
3	C2, C4, C6, C7, C25, C30, C34, C37, C39, C46	2.2uF		10	1608[0603]
4	C5, C8, C9, C10, C11, C20, C21, C22, C35, C44, C48, C56, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73	100nF		23	1608[0603]
5	C12, C13	15pF		2	1608[0603]
6	C14, C15, C16, C17	4.7nF		4	1608[0603]
7	C18, C47, C49, C50, C54	10uF		5	6032 [2312]
8	C19	150uF		1	6032 [2312]
9	C23, C57	100uF		2	6032 [2312]
10	C24	330uF		1	6032 [2312]
11	C26, C41	100pF		2	1608[0603]
12	C27	150uF/6.3V		1	6032 [2312]
13	C28, C31	1000uF/16V		2	Large_SMD_Cap
14	C29, C42	1nF		2	1608[0603]
15	C32, C45	10nF		2	1608[0603]
16	C33	6.8nF		1	1608[0603]
17	C36	120pF		1	1608[0603]
18	C38	22nF		1	1608[0603]
19	C40	100uF/16V		1	6032 [2312]
20	C43	15nF		1	1608[0603]
21	C51, C52, C53	220nF		3	1608[0603]
22	C55	220uF/16V		1	6032 [2312]
23	C58, C60	4.7uF		2	6032 [2312]
24	C59, C62	27pF		2	1608[0603]
25	C61	3.3uF		1	1608[0603]
26	C74	2.2nF		1	1608[0603]
27	D1, D3	1N5821		2	DIODE-2
28	D2	1N5819		1	DIODE-3
29	H1	Enc3		1	Header 4 -MolexPicoBlade
30	H2	Enc2		1	Header 4 -MolexPicoBlade
31	H3	Enc1		1	Header 4 -MolexPicoBlade
32	H4	JTAG		1	HDR-2*5-0.05
33	H5	Serv1		1	Header 3 -MolexPicoBlade
34	H6	P_Servo		1	Header 3 -MolexPicoBlade
35	H7	Pot1		1	Header 3 -MolexPicoBlade
36	H8	Pot2		1	Header 3 -MolexPicoBlade
37	H9	Pot3		1	Header 3 -MolexPicoBlade
38	H10	Pot4		1	Header 3 -MolexPicoBlade
39	H11	Enc4		1	Header 4 -MolexPicoBlade
40	H12	Pot5		1	Header 3 -MolexPicoBlade
41	H13	Serv2		1	Header 3 -MolexPicoBlade
42	H14	Serv3		1	Header 3 -MolexPicoBlade
43	H15	Serv4		1	Header 3 -MolexPicoBlade
44	H16	Pot6		1	Header 3 -MolexPicoBlade
45	H17	Oc1		1	Header 3 -MolexPicoBlade
46	H18	Hall Sens1		1	Header 6 ZH-SM4
47	H19	USB1		1	Header 4 -MolexPicoBlade
48	H20	GPS_Con		1	Header 6 ZH-SM4
49	H21	IMU_Con		1	Header 6 -MolexPicoBlade
50	L1, L2	10uH		2	0805
51	L3	100uH		1	VLC2
52	L4	22uH		1	VLC2
53	L5, L6	?H		2	0805
54	LED1, LED5, LED6	LEDR		3	2012[0805]
55	LED2, LED4	LEDY		2	2012[0805]
56	LED3	LEDG		1	2012[0805]
57	PWR1_BATT, PWR2_COMP	Terminal2		2	TERM2
58	Q1, Q2, Q3, Q4, Q5, Q6	IRFS7530		6	D2PAK-7Pin
59	R1, R2, R3, R4, R9, R10, R17, R21, R69, R70	120		10	1608[0603]
60	R5, R6, R7, R61	4.7K		4	1608[0603]
61	R8, R63, R84, R85	1K		4	1608[0603]
62	R11, R13, R15, R18, R23, R30	180		6	1608[0603]
63	R12, R14, R16, R19, R24, R28, R29, R31, R41, R42, R43, R68	330		12	1608[0603]
64	R20, R22, R33, R35	470		4	1608[0603]
65	R25, R26, R27, R44, R45, R46, R48, R50, R58, R59, R60, R62	10K		12	1608[0603]
66	R32, R34, R36, R57	2.2K		4	1608[0603]
67	R37, R67	560		2	1608[0603]
68	R38	510K		1	1608[0603]
69	R39	90.9K		1	1608[0603]
70	R40	3.09K		1	1608[0603]
71	R47	330K		1	1608[0603]
72	R49	15K		1	1608[0603]
73	R51	220K		1	1608[0603]
74	R52	3.3K		1	1608[0603]
75	R53, R56	18K		2	1608[0603]
76	R54, R55	1M		2	1608[0603]
77	R64	12K		1	1608[0603]
78	R65, R66	DNI		2	1608[0603]
79	R71, R72, R75, R77, R80, R81	4.7		6	1608[0603]
80	R73, R74, R76, R78, R82, R83	39K		6	1608[0603]
81	R79	0.01		1	1608[0603]
82	S1	SW_TACT		1	PTS645SH50SMTR92_LFS
83	T1, T2	BC817		2	SOT-23
84	U1	STM32F207VCT6		1	LQFP100_M
85	U2	DRV8302		1	DRV8302
86	U3, U5	1117-3.3		2	SOT-223
87	U4	LTM8026		1	LGA_Package
88	U6	AT93C46DN-SP25-B		1	8S1_M
89	U7	FT4232HQ-Reel		1	QFN64_2_L
90	U8	MAX3485		1	SOIC8
91	U9	MPU9150		1	QFN24
92	X1	8MHz		1	ABM7
93	X2	32768 Hz		1	0805
94	X3	12MHz		1	ABM7