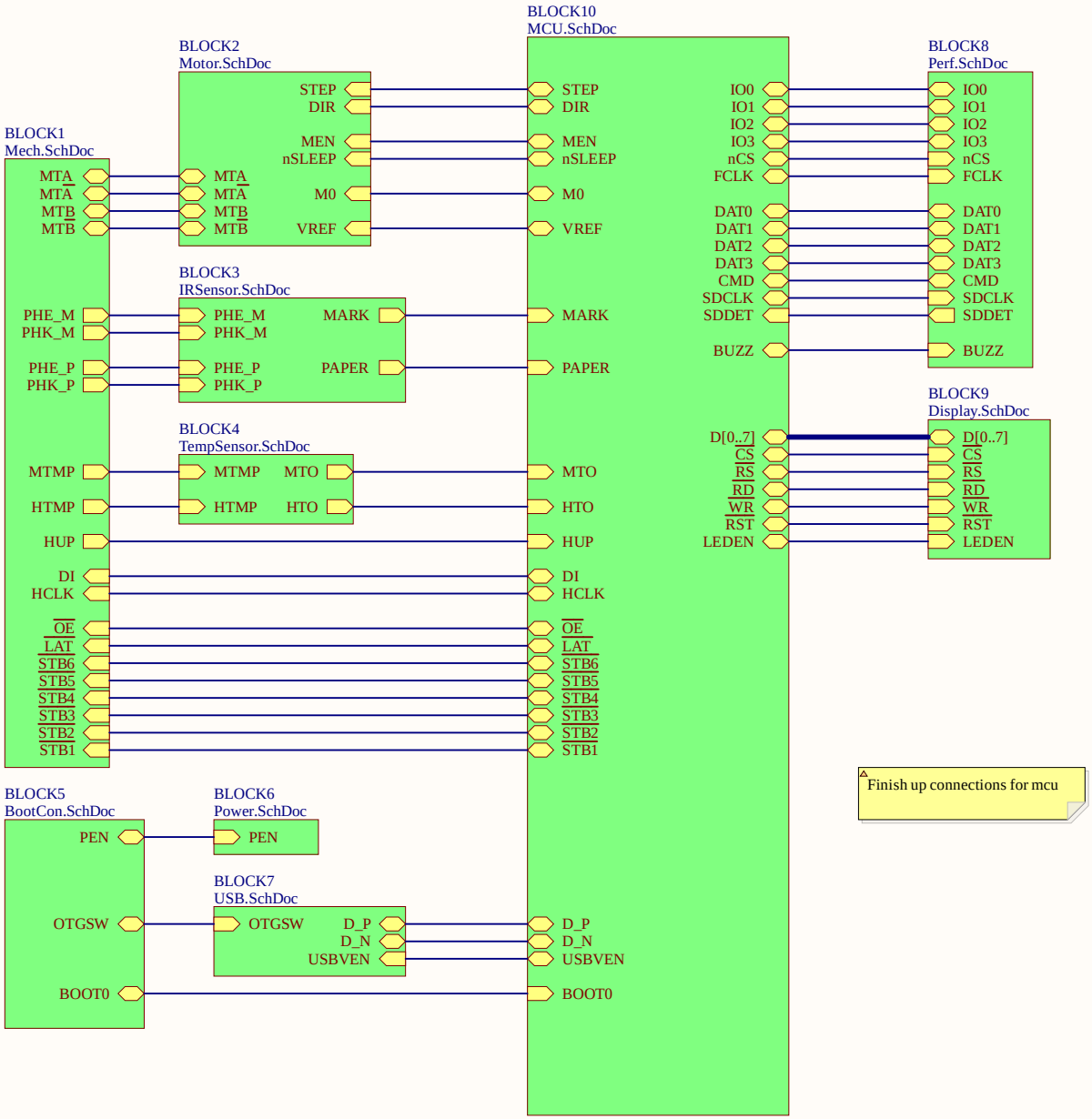

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Date: 12/10/2024		Sheet of
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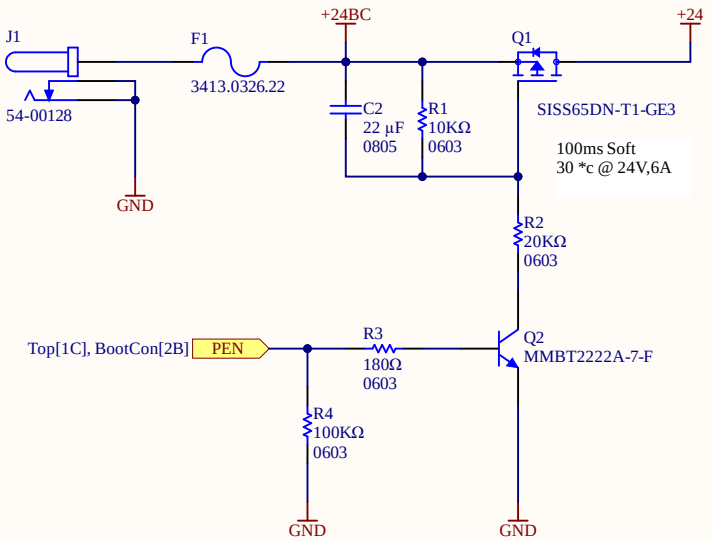

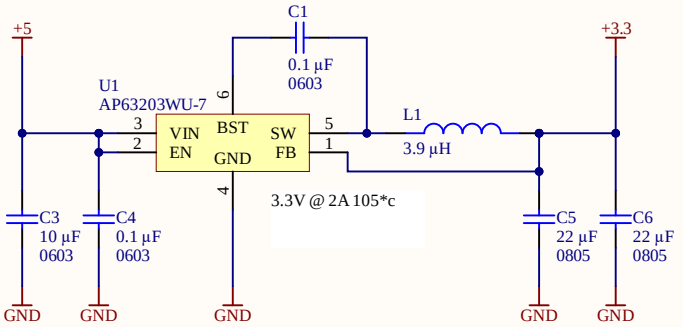

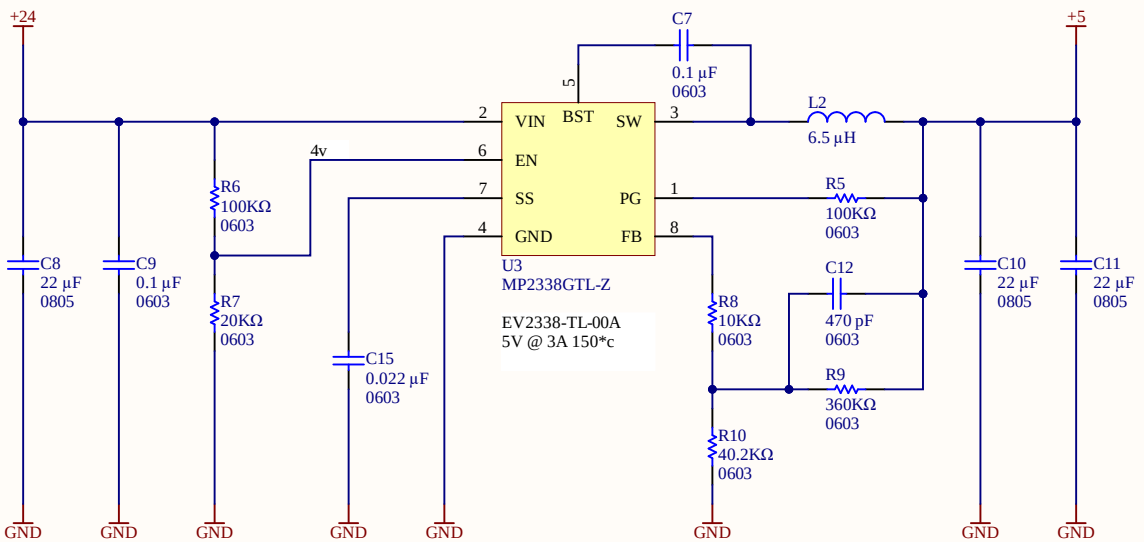

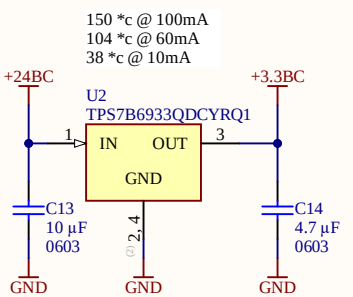

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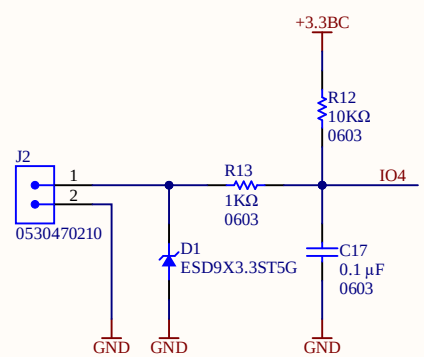

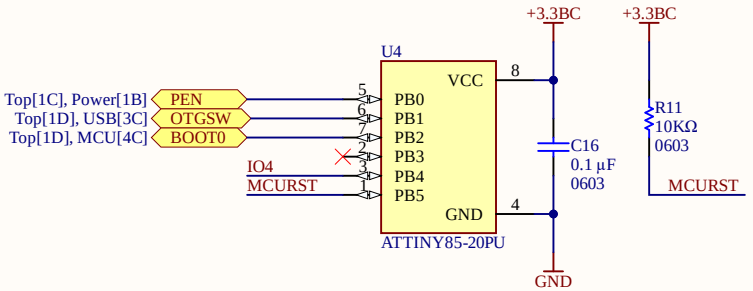

10mA

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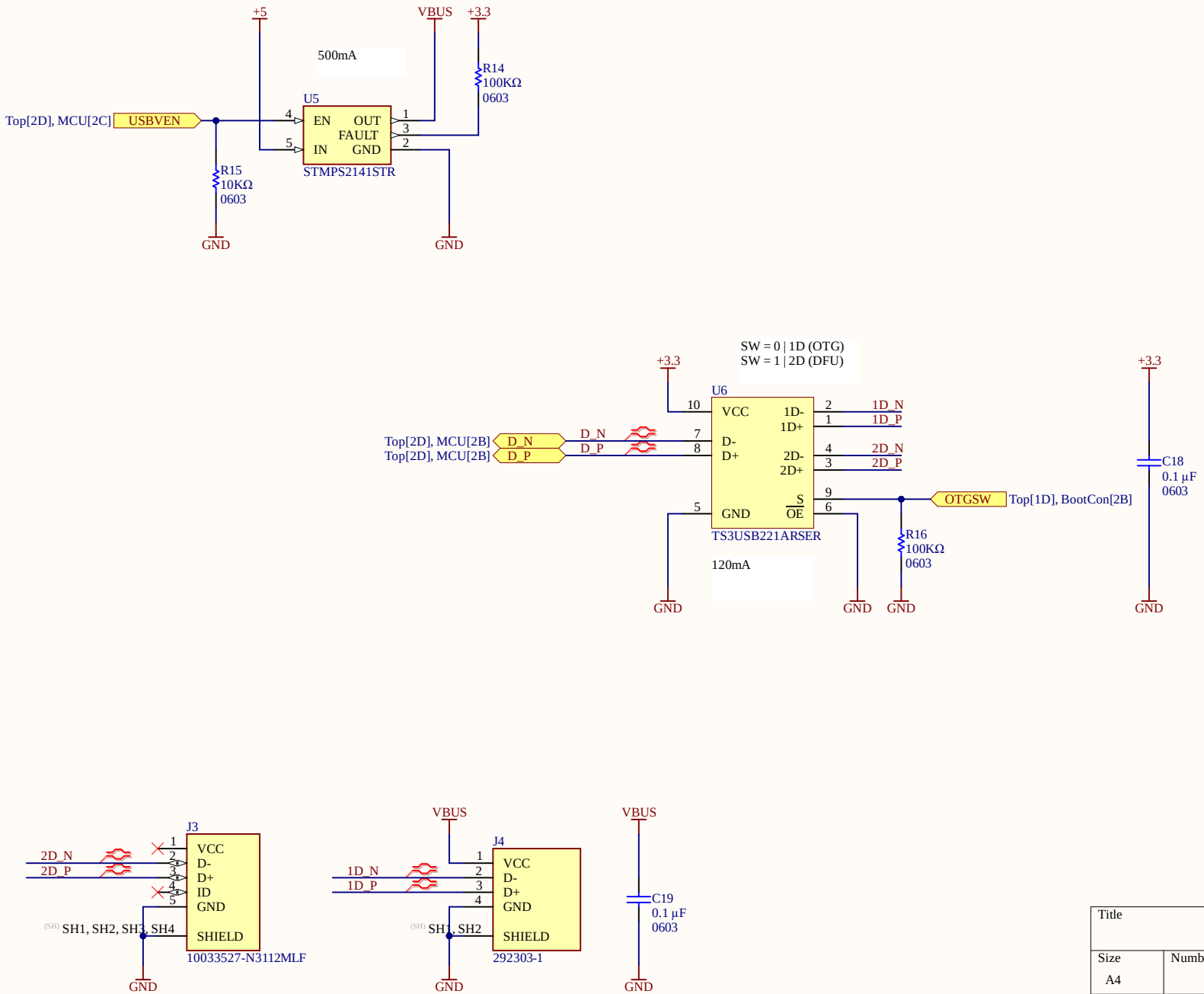
120mA
+5
VBUS
+3.3
500mA
R14
100KΩ
0603
U5
Top[2D], MCU[2C]
USBVEN
EN
OUT
FAULT
IN
GND
STMPS2141STR
R15
10KΩ
0603
GND
GND
SW = 0 | 1D (OTG)
SW = 1 | 2D (DFU)
+3.3
U6
VCC
1D-
1D+
D-
D+
2D-
2D+
S
OE
GND
TS3USB221ARSER
Top[2D], MCU[2B]
D_N
D_P
1D_N
1D_P
2D_N
2D_P
OTGSW
Top[1D], BootCon[2B]
120mA
R16
100KΩ
0603
C18
0.1 µF
0603
J3
VCC
D-
D+
ID
GND
SHIELD
SH1, SH2, SH3, SH4
10033527-N3112MLF
J4
SH1, SH2
292303-1
C19
0.1 µF
0603
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Size
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Date:
12/10/2024
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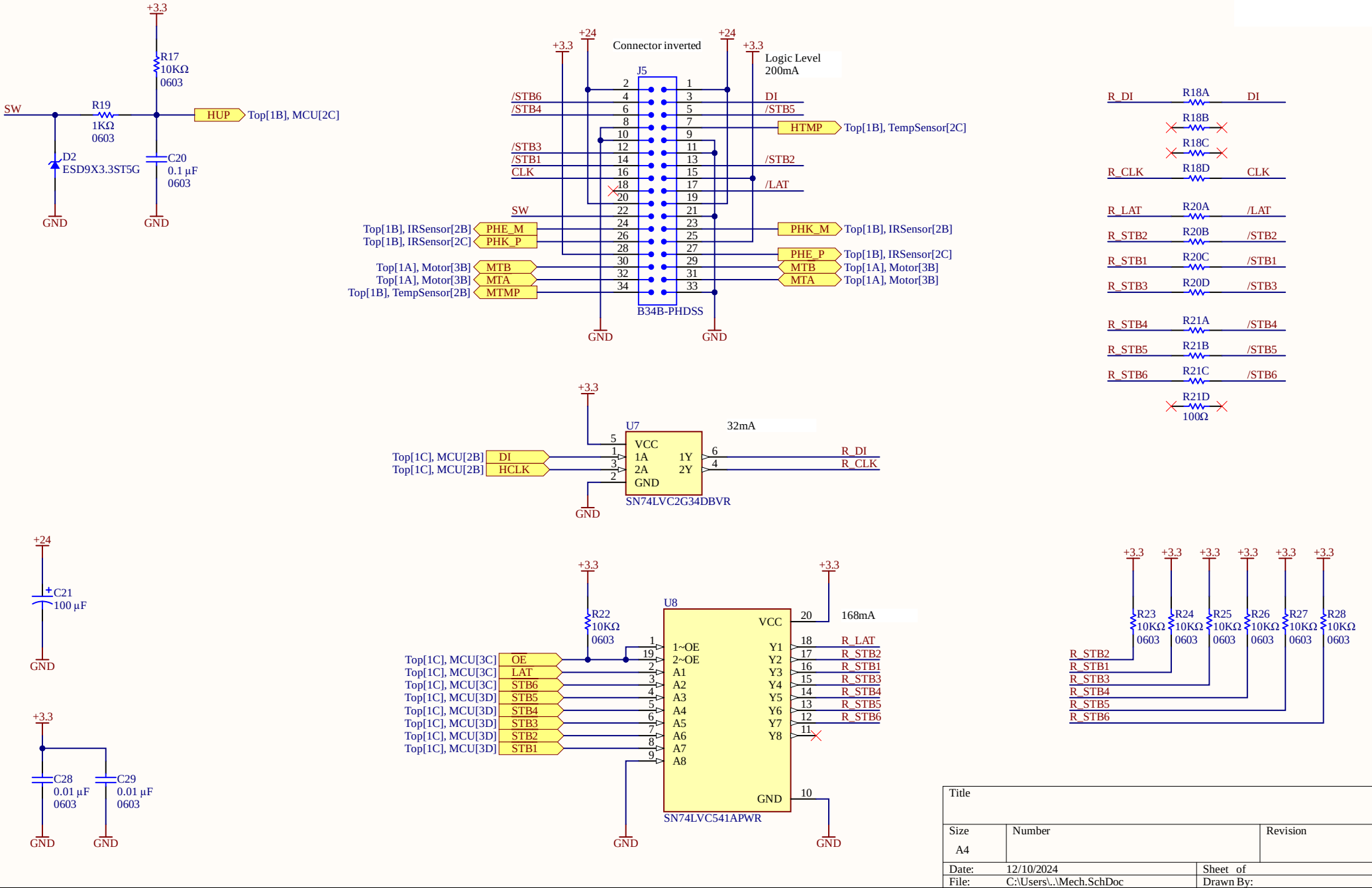
400mA
+3.3
R17
10KΩ
0603
SW
R19
1KΩ
0603
HUP
Top[1B], MCU[2C]
D2
ESD9X3.3ST5G
C20
0.1 µF
0603
GND
GND
+24
+3.3
Connector inverted
+24
+3.3
Logic Level
200mA
J5
/STB6
/STB4
/STB3
/STB1
CLK
SW
Top[1B], IRSensor[2B]
PHE_M
Top[1B], IRSensor[2C]
PHK_P
Top[1A], Motor[3B]
MTB
Top[1A], Motor[3B]
MTA
Top[1B], TempSensor[2B]
MTMP
DI
/STB5
HTMP
Top[1B], TempSensor[2C]
/STB2
/LAT
PHK_M
Top[1B], IRSensor[2B]
PHE_P
Top[1B], IRSensor[2C]
MTB
Top[1A], Motor[3B]
MTA
Top[1A], Motor[3B]
B34B-PHDSS
GND
GND
R_DI
R18A
DI
R18B
R18C
R_CLK
R18D
CLK
R_LAT
R20A
/LAT
R_STB2
R20B
/STB2
R_STB1
R20C
/STB1
R_STB3
R20D
/STB3
R_STB4
R21A
/STB4
R_STB5
R21B
/STB5
R_STB6
R21C
/STB6
R21D
100Ω
+3.3
U7
32mA
Top[1C], MCU[2B]
DI
Top[1C], MCU[2B]
HCLK
VCC
1A
2A
GND
1Y
2Y
R_DI
R_CLK
SN74LVC2G34DBVR
GND
+24
C21
100 µF
GND
+3.3
C28
0.01 µF
0603
C29
0.01 µF
0603
GND
GND
+3.3
+3.3
R22
10KΩ
0603
U8
168mA
Top[1C], MCU[3C]
OE
Top[1C], MCU[3C]
LAT
Top[1C], MCU[3C]
STB6
Top[1C], MCU[3D]
STB5
Top[1C], MCU[3D]
STB4
Top[1C], MCU[3D]
STB3
Top[1C], MCU[3D]
STB2
Top[1C], MCU[3D]
STB1
1~OE
2~OE
A1
A2
A3
A4
A5
A6
A7
A8
VCC
Y1
Y2
Y3
Y4
Y5
Y6
Y7
Y8
GND
R_LAT
R_STB2
R_STB1
R_STB3
R_STB4
R_STB5
R_STB6
SN74LVC541APWR
GND
GND
+3.3
+3.3
+3.3
+3.3
+3.3
+3.3
R23
10KΩ
0603
R24
10KΩ
0603
R25
10KΩ
0603
R26
10KΩ
0603
R27
10KΩ
0603
R28
10KΩ
0603
R_STB2
R_STB1
R_STB3
R_STB4
R_STB5
R_STB6
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12/10/2024
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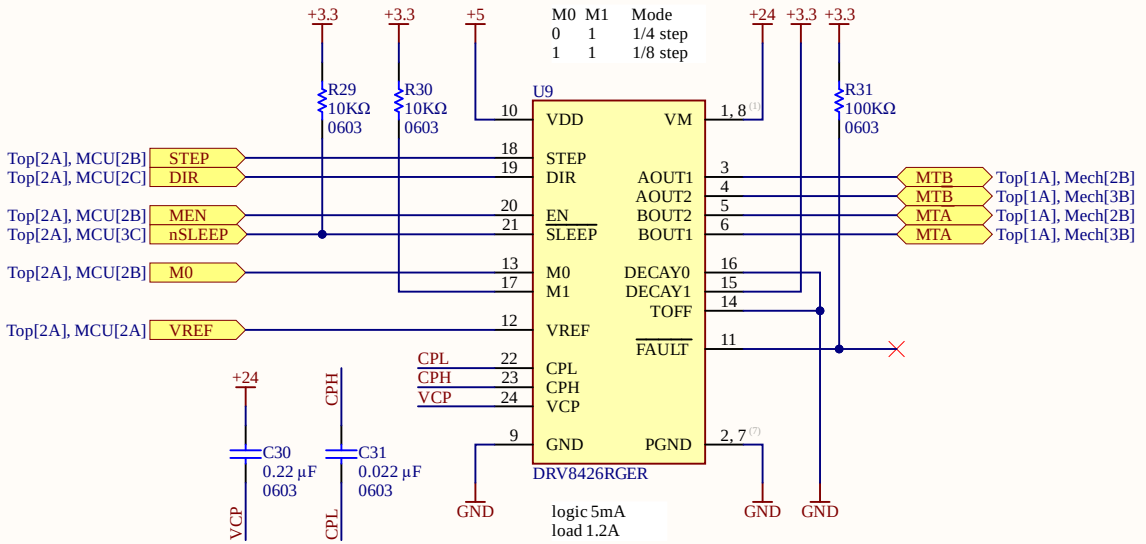

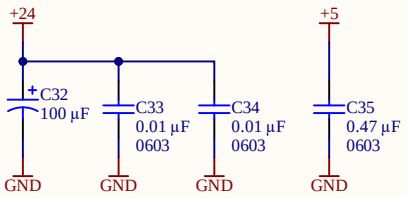

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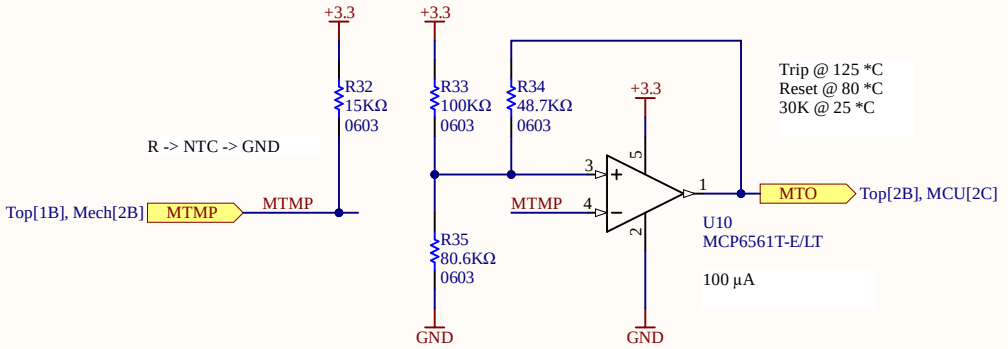
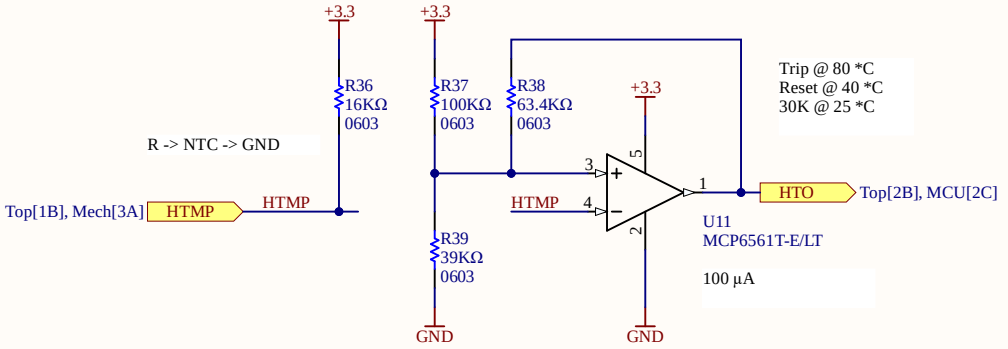
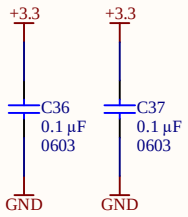
Date: 12/10/2024		Sheet of
File: C:\Users\..\Motor.SchDoc		Drawn By:

2mA







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Date: 12/10/2024		Sheet of
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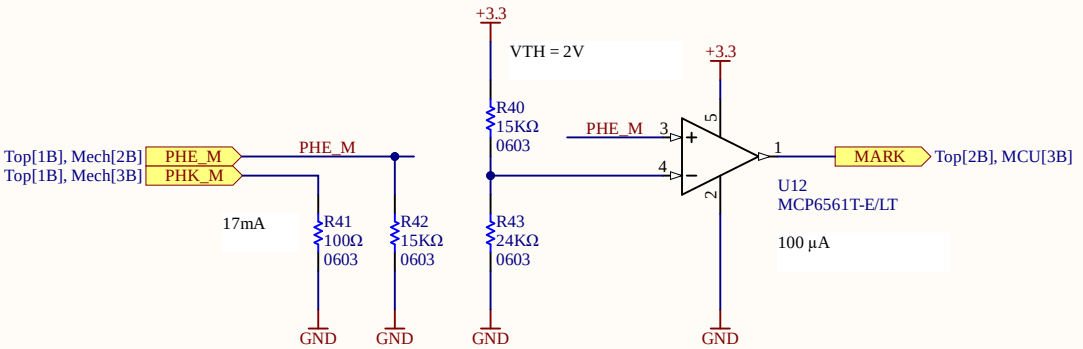
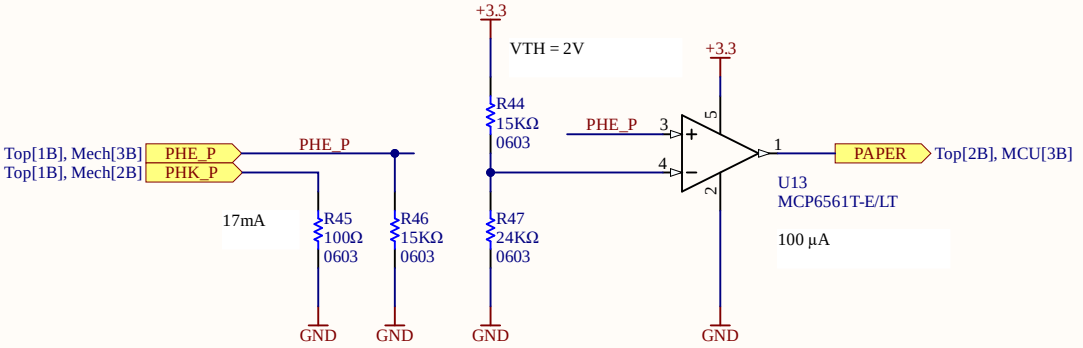
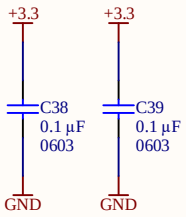
40mA







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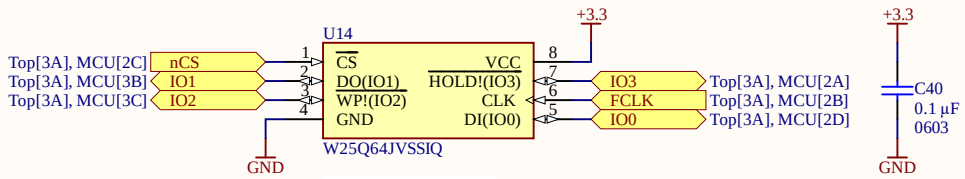
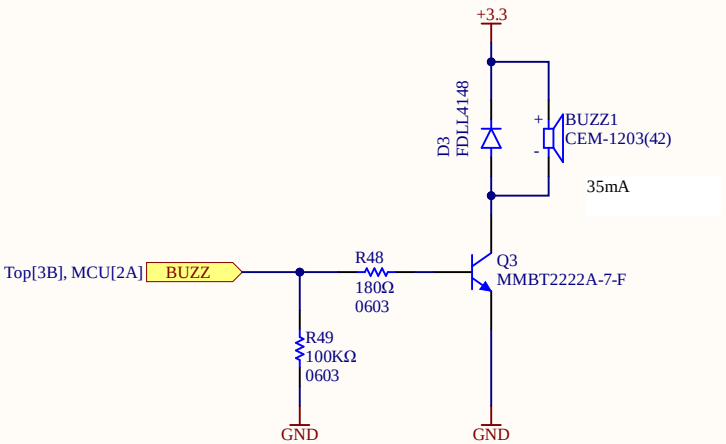
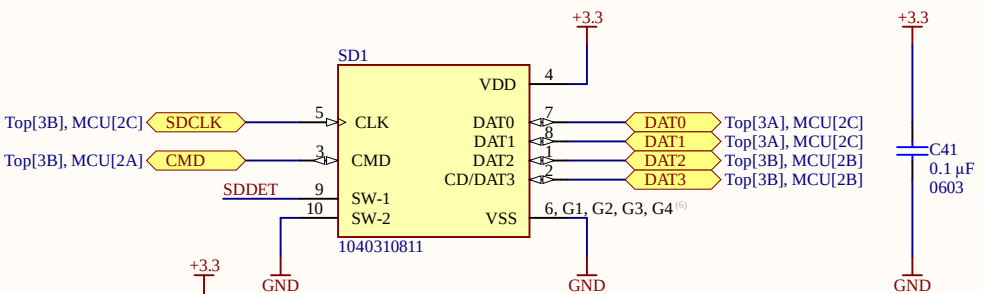
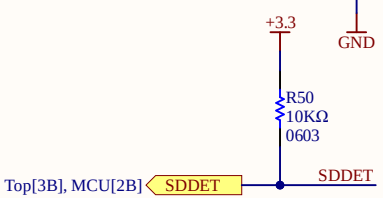


60mA







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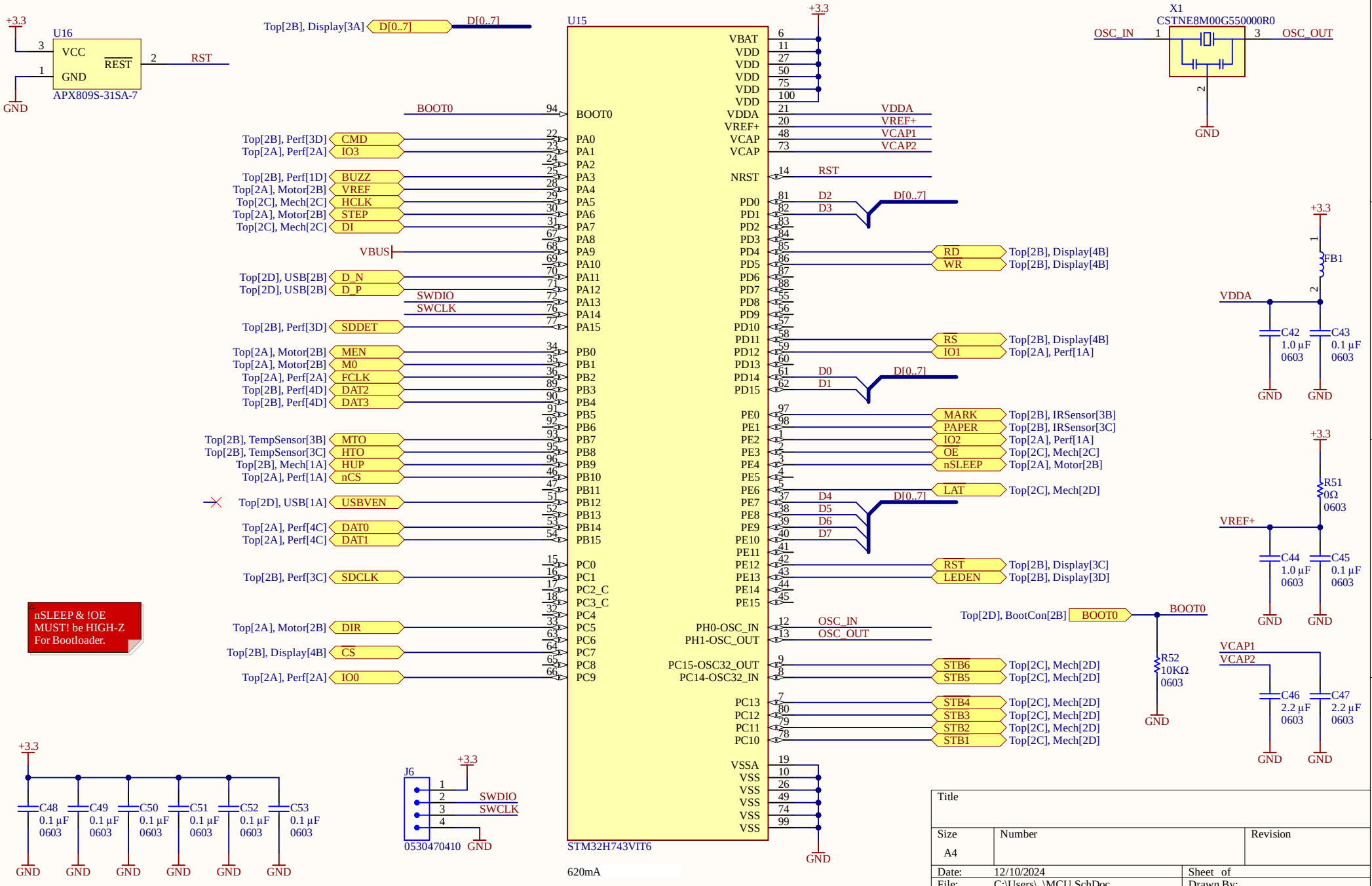
U16
APX809S-31SA-7
VCC
GND
REST
+3.3
GND
RST
U15
STM32H743VIT6
620mA
BOOT0
SWDIO
SWCLK
VBUS
RST
VDDA
VREF+
VCAP1
VCAP2
OSC_IN
OSC_OUT
X1
CSTNE8M00G550000R0
FB1
R51
0Ω
0603
R52
10KΩ
0603
C42
1.0 µF
0603
C43
0.1 µF
0603
C44
1.0 µF
0603
C45
0.1 µF
0603
C46
2.2 µF
0603
C47
2.2 µF
0603
C48
0.1 µF
0603
C49
0.1 µF
0603
C50
0.1 µF
0603
C51
0.1 µF
0603
C52
0.1 µF
0603
C53
0.1 µF
0603
J6
0530470410
nSLEEP & !OE
MUST! be HIGH-Z
For Bootloader.
Top[2B], Display[3A] D[0..7]
Top[2B], Perf[3D] CMD
Top[2A], Perf[2A] IO3
Top[2B], Perf[1D] BUZZ
Top[2A], Motor[2B] VREF
Top[2C], Mech[2C] HCLK
Top[2A], Motor[2B] STEP
Top[2C], Mech[2C] DI
Top[2D], USB[2B] D_N
Top[2D], USB[2B] D_P
Top[2B], Perf[3D] SDDET
Top[2A], Motor[2B] MEN
Top[2A], Motor[2B] M0
Top[2A], Perf[2A] FCLK
Top[2B], Perf[4D] DAT2
Top[2B], Perf[4D] DAT3
Top[2B], TempSensor[3B] MTO
Top[2B], TempSensor[3C] HTO
Top[2B], Mech[1A] HUP
Top[2A], Perf[1A] nCS
Top[2D], USB[1A] USBVEN
Top[2A], Perf[4C] DAT0
Top[2A], Perf[4C] DAT1
Top[2B], Perf[3C] SDCLK
Top[2A], Motor[2B] DIR
Top[2B], Display[4B] CS
Top[2A], Perf[2A] IO0
Top[2D], BootCon[2B] BOOT0
Top[2B], Display[4B] RD
Top[2B], Display[4B] WR
Top[2B], Display[4B] RS
Top[2A], Perf[1A] IO1
Top[2B], IRSensor[3B] MARK
Top[2B], IRSensor[3C] PAPER
Top[2A], Perf[1A] IO2
Top[2C], Mech[2C] OE
Top[2A], Motor[2B] nSLEEP
Top[2C], Mech[2D] LAT
Top[2B], Display[3C] RST
Top[2B], Display[3D] LEDEN
Top[2C], Mech[2D] STB6
Top[2C], Mech[2D] STB5
Top[2C], Mech[2D] STB4
Top[2C], Mech[2D] STB3
Top[2C], Mech[2D] STB2
Top[2C], Mech[2D] STB1
D[0..7]
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Size
A4
Number
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Date: 12/10/2024
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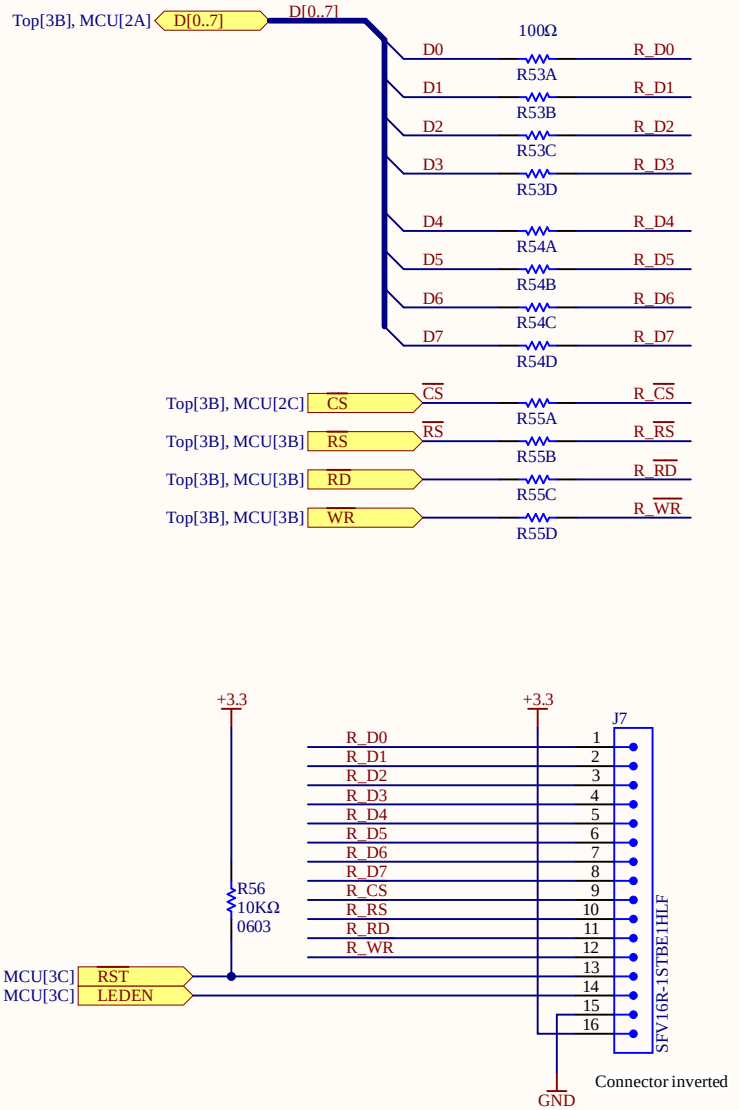

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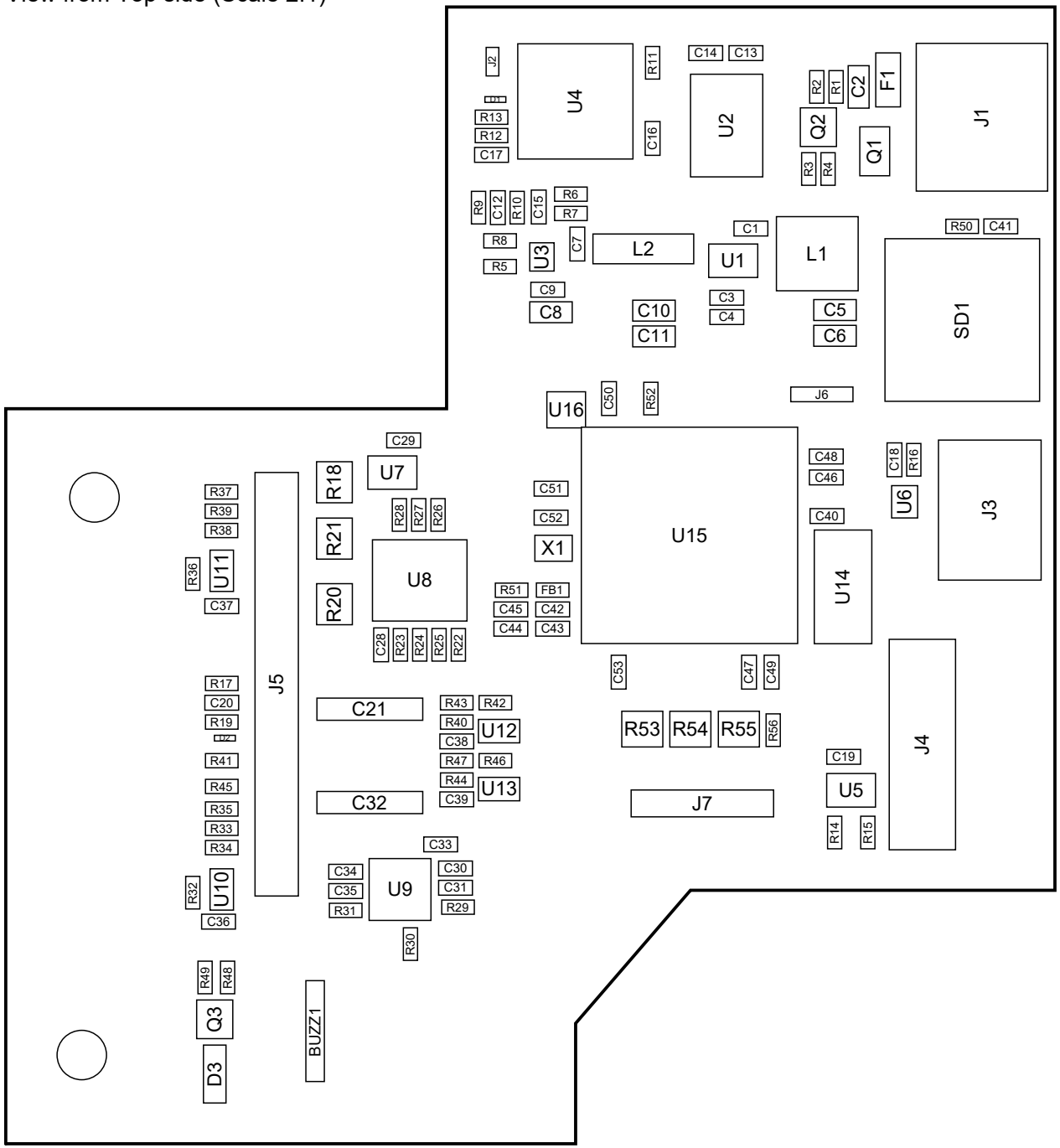
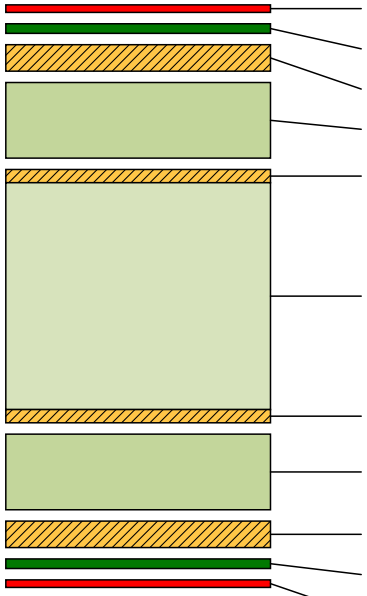
View from Top side (Scale 2:1)



Layer Stack Legend

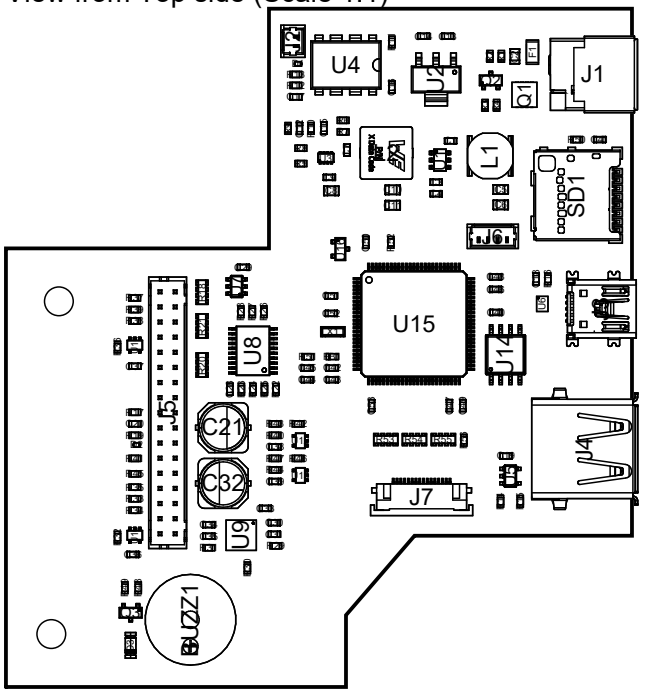


Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Overlay			Legend	GTO
Surface Material	Top Solder	0.01mm	Solder Resist	Solder Mask	GTS
Copper	**Top Layer**	**0.04mm**		**Signal**	**GTL**
Prepreg		*0.10mm*	*2313*	*Dielectric*	
Copper	**Mid Layer 1**	**0.02mm**		**Signal**	**G1**
Core		*1.26mm*	*FR-4*	*Dielectric*	
Copper	**Mid Layer 2**	**0.02mm**		**Signal**	**G2**
Prepreg		*0.10mm*	*2313*	*Dielectric*	
Copper	**Bottom Layer**	**0.04mm**		**Signal**	**GBL**
Surface Material	Bottom Solder	0.01mm	Solder Resist	Solder Mask	GBS
	Bottom Overlay			Legend	GBO

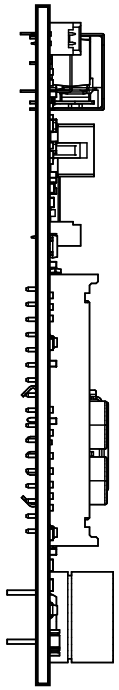
Total thickness: 1.60mm

USE: JLC04161H-3313 Stackup

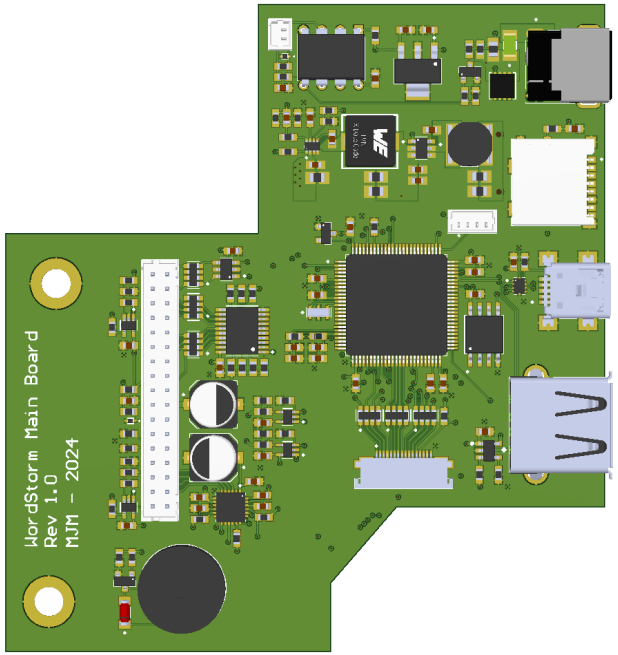
View from Top side (Scale 1:1)



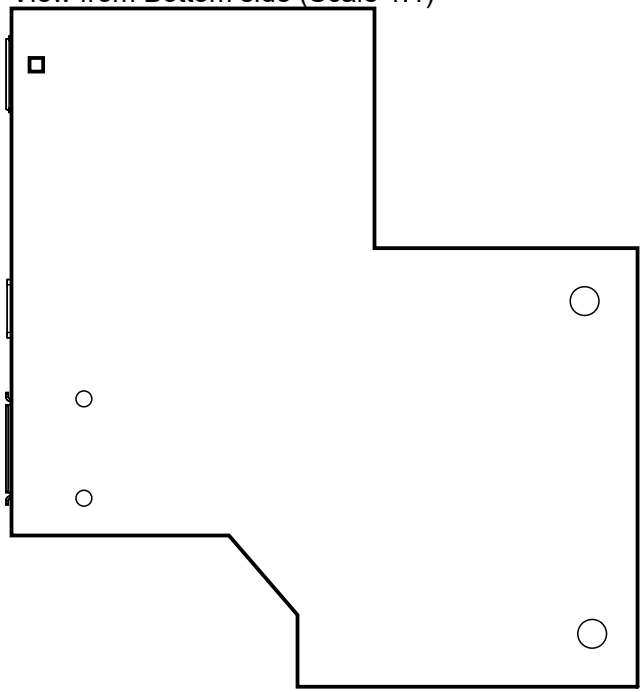
View from Left side (Scale 1:1)



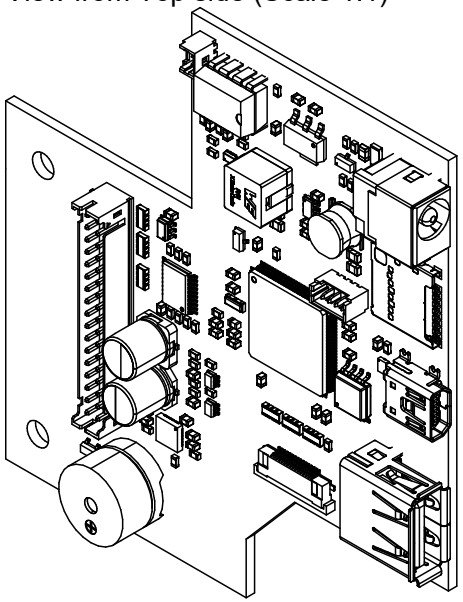
Realistic View



View from Bottom side (Scale 1:1)



View from Top side (Scale 1:1)



Realistic View