Sheet: STM32F407VxT6

File: STM32F407VxT6.sch

Sheet: POWER

File: POWER.sch

Sheet: MOSFET

File: MOSFET.sch

Sheet: THM

File: THM.sch

Sheet: ENDSTOP

File: ENDSTOP.sch

Sheet: SD

File: SD.sch

Sheet: USB

File: USB.sch

Sheet: WIFI

File: WIFI.sch
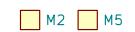
Sheet: DRIVE

File: DRIVE.sch

Sheet: P-AUX

File: P-AUX.sch

FID1   FID2   FID3
Fiducial Fiducial Fiducial

M2   M5

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Sheet: /
File: MKS Eagle.sch

Title: MKS Eagle

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BOOT0 2 S21 1 +3V3

R2 10K

1 S12 2 RESET 14 NRST

C5

BOOT0 94 BOOT0

C3 2.2uF 49 VCAP_1
C4 2.2uF 73 VCAP_2
GND 21 VREF+ +3V3

GND

C1 22pF
C2 22pF Y1 R1 1M
GND 12 PH0
13 PH1

+3V3
6 11 19 28 50 75 100 22
VBAT VDD VDD VDD VDD VDD VDDA

+3V3 C6 C7 C8 C9 C10 C11
100nF 100nF 100nF 100nF 100nF 100nF
GND

U1

PA0   23 HOTBED
PA1   24 E1_DIR
PA2   25 TH2
PA3   26 E1_EN
PA4   29 MT_DET1
PA5   30 SPI1_SCK
PA6   31 SPI1_MISO
PA7   32 SPI1_MOSI
PA8   67 3D_TOUCH
PA9   68 TXD1
PA10 69 RXD1
PA11 70 USB_D-
PA12 71 USB_D+
PA13 72 SW_DIO PW_DET
PA14 76 SW_CLK USB_CTRL
PA15 77 X-

PE0   97 Y_STEP
PE1   98 Y_EN
PE2   1   X_DIR
PE3   2   X_STEP
PE4   3   X_EN
PE5   4   HEATER1
PE6   5   MT_DET2
PE7   38 E1-
PE8   39 BTN_EN1
PE9   40 WIFI_CTRL
PE10 41 SPI1_CS
PE11 42 BTN_EN2
PE12 43 SPI1_RS
PE13 44 BTN_ENC
PE14 45 LCD_D4
PE15 46 LCD_D5

PB0   35 HEATER2
PB1   36 FAN2
PB2   37 PW_OFF R3 100K GND
PB3   89 E0_EN
PB4   90 Z_DIR
PB5   91 Z_STEP
PB6   92 I2C_SCL
PB7   93 I2C_SDA
PB8   95 Z_EN
PB9   96 Y_DIR
PB10 47 TXD3
PB11 48 RXD3
PB12 51 FL_CS
PB13 52 SPI2_SCK
PB14 53 OTG_HS_DM
PB15 54 OTG_HS_DP

J37
4 TMC_MOSI
3 TMC_MISO
2 TMC_SCLK
1
GND

PD0   81 TMC_SCLK
PD1   82 TMC_MISO
PD2   83 Y-
PD3   84 E0_DIR
PD4   85 Z_UART
PD5   86 X_UART
PD6   87 E0_STEP
PD7   88 Y_UART
PD8   55 E1_UART
PD9   56 E0_UART
PD10 57 LCD_D7
PD11 58 LCD_D6
PD12 59 SD_DET
PD13 60 LCD_EN
PD14 61 TMC_MOSI
PD15 62 E1_STEP

PC0   15 TB
PC1   16 TH1
PC2   17 SPI2_MISO
PC3   18 SPI2_MOSI
PC4   33 Z+
PC5   34 BEEPER
PC6   63 LCD_RS
PC7   64 IO1
PC8   65 Z-
PC9   66 SPI3_CS
PC10 78 SPI3_SCK
PC11 79 SPI3_MISO
PC12 80 SPI3_MOSI
PC13 7   WIFI_IO0
PC14 8   FAN1
PC15 9   WIFI_CS

VSS VSS VSS VSS VSSA
10 27 74 99 20
GND

+3V3
R7 10K
R6 10K/NC
GND

J1 Header-2.54-2X3P
SW_DIO 1 2 +3V3
SW_CLK 3 4 GND
RESET   5 6

+3V3 C13 100nF GND +3V3
U2 AT24C32D
R8 4.7K R10 4.7K
1 A0 8 VCC
2 A1 7 WP
3 A3 6 SCL I2C_SCL
   GND SDA 5 I2C_SDA
4
GND

+3V3 +3V3 C12 100nF GND +3V3
R4 4.7K R5 4.7K
U3 W25Q64JVSSIQ
R9 4.7K R11 4.7K
FL_CS   1 CS 8 VCC   DI(IO0) 5 SPI2_MOSI
                       DO(IO1) 2 SPI2_MISO
SPI2_SCK 6 CLK   IO2 3
              GND   IO3 7 +3V3
4
GND

+5V   1
GND   2 J2 Header-2.54-1X4P
TXD3 3
RXD3 4
USART3

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Sheet: /STM32F407VxT6/
File: STM32F407VxT6.sch
Title: MKS Eagle
Size: A4   Date: 2021-08-27   Rev: V1.0_001
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MKS Makerbase

F1
F2
VIN0
J3
HG129-5.0-2P
1
2
D2
GND
GND
D4
GND
+12V1
C17
GND
C18
GND
C77
GND
D6
VIN

J4
XH2.54-2P
2
1
+12V1
GND

J5
XH2.54-2P
2
1
+12V1
GND

C20
L1
F3
+5V
U5
8
VIN
7
BST
SW
1
D7
R18
C22
1
2
EN
2
FB
4
GND
FREQ
6
GND PAD COMP
3
C21
R16
GND
C14
C15
GND
GND
VIN
R12
R13
GND
R14
GND
5
GND
R15
GND
GND

+3V3
R17
1.8K
D8
LED_Red
GND

D1
U5V
D3
+5V
U4
3
VIN
VO
2
+3V3
GND
1
TAP
4
C16
GND
GND
C19
GND
D5
GND

Sheet: /POWER/
File: POWER.sch
Title: MKS Eagle
Size: A4   Date: 2021-08-27   Rev: V1.0_001
KiCad E.D.A. kicad (5.1.4)-1   Id: 3/11

Makerbase

FAN2
R25
R26
Q4
D12
R32
+12V1
J9
1
2
GND

FAN1
R27
FAN_1
R28
Q5
D13
R33
+12V1
J10
1
2
GND

HE1
GND
J6
1
2
Header-2.54-1X2P

HEATER1
R19
HE1
R20
Q1
D9
R29
+12V1
J12
4
3
2
1

HE2
GND
J7
1
2
Header-2.54-1X2P

HEATER2
R21
HE2
R22
Q2
D10
R30

HB
GND
J8
1
2
Header-2.54-1X2P

HOTBED
R23
HB
R24
Q3
D11
R31
J11
1
2
VIN0

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Sheet: /MOSFET/
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Title: MKS Eagle

Size: A4 | Date: 2021-08-27 | Rev: V1.0_001
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+3V3
R34   C23
TB ───[====]──┤├──▷ GND   GND ◁─┐1
        R34   │2 TB1
       [====]
       R34...

+3V3 R35   C24
R36
TH1 ───[====]──┤├──▷ GND   GND ◁─┐1
       [====]   │2 TH1
        R37

+3V3
R38   C25
TH2 ───[====]──┤├──▷ GND   GND ◁─┐1
       [====]   │2 TH2
        R39
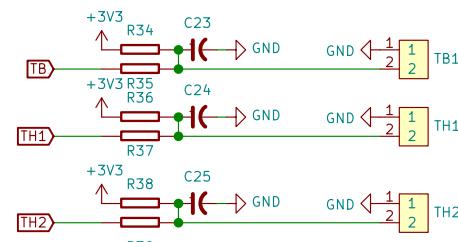
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Sheet: /THM/
File: THM.sch
Title: MKS Eagle
Size: A4   Date: 2021-08-27   **Rev: V1.0_001**
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X-(X-DIAG)   Y-(Y-DIAG)   Z-(Z-DIAG)   Z+(E0-DIAG)

J18   J19   J20   J21

+5V

GND

X-0   Y-0   Z-0   Z+0

X-0
1
2   J13
XDIAG

Y-0
1
2   J14
YDIAG

Z-0
1
2   J15
ZDIAG

Z+0
1
2   J16
E0DIAG

E1-0
1
2   J17
E1DIAG

+3V3
R42
X-   R40   X-0
C26
GND

+3V3
R46
Y-   R44   Y-0
C28
GND

+3V3
R49
Z-   R48   Z-0
C30
GND

+3V3
R43
Z+   R41   Z+0
C27
GND

+3V3
R47
E1-   R45   E1-0
C29
GND
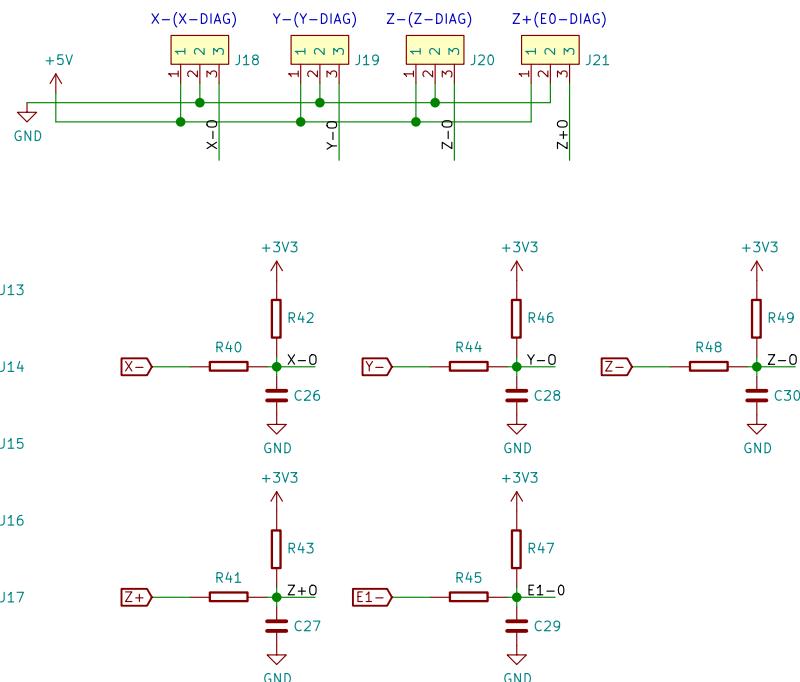
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File: ENDSTOP.sch

Title: MKS Eagle

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+3V3   +3V3

C31   C32
4.7uF   100nF

R50   R52 R55
10K   10K 10K 10K

GND

SPI3_CS	1 NC
SPI3_MOSI	2 CS
	3 DI
	4 VDD
SPI3_SCK	5 SCK
	6 VSS
SPI3_MISO	7 DO
	8 NC
SD_DET	9 CD
	10 PAD

SD1

GND

D14
LED_White

R51
1.8K

+3V3
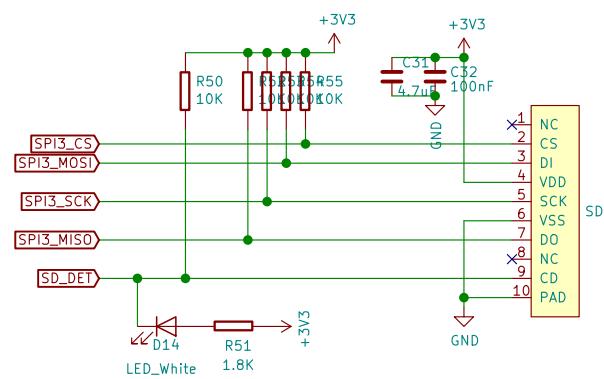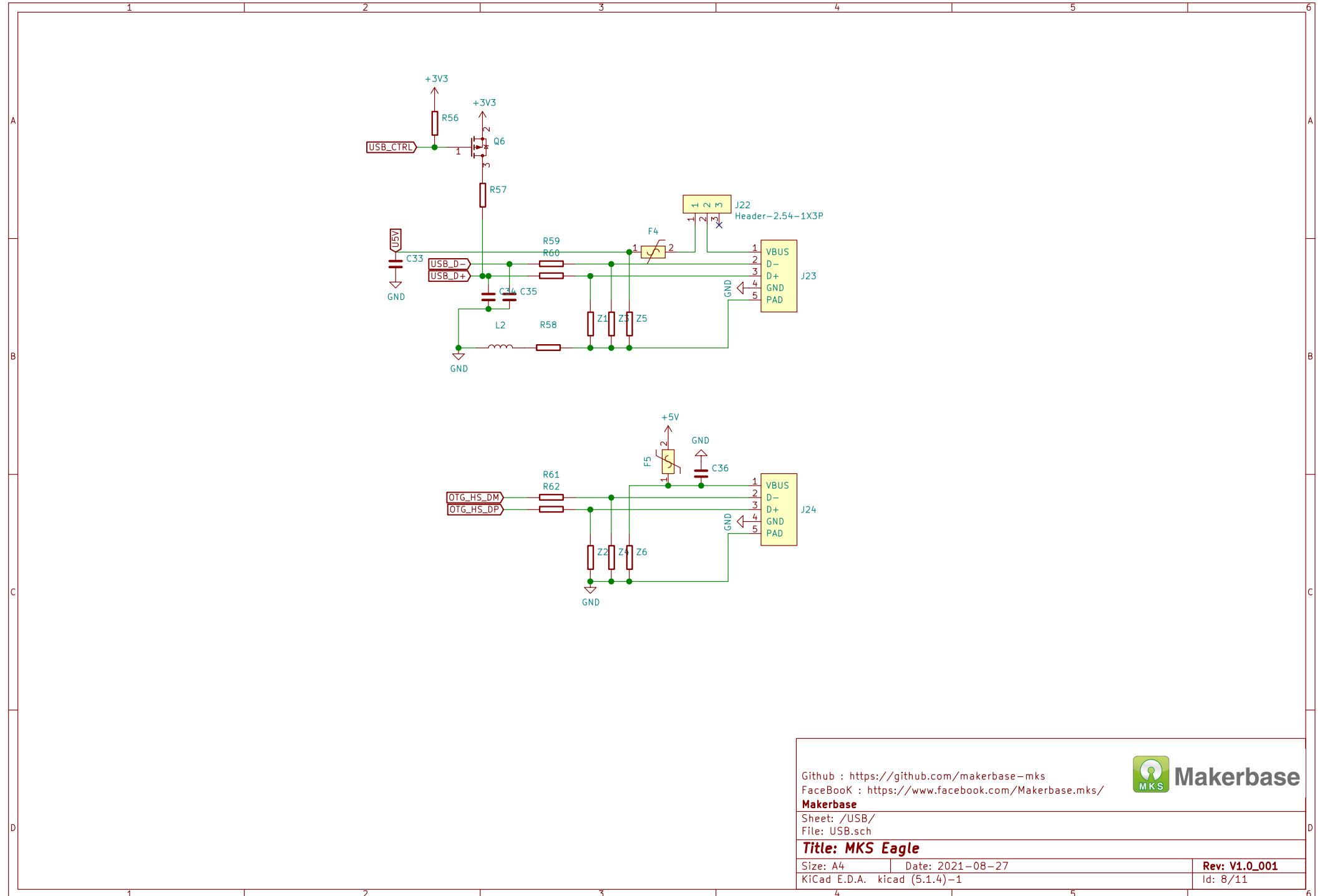
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Sheet: /SD/
File: SD.sch
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+3V3

+3V3

M3
ROBIN-WIFI

R63 R64 R65
10K 1K 10K

R67
10K

RXD1   22   TX   20   20
TXD1   21   RX   19   19   IO1
WIFI_IO0 18 IO0
       17   IO2
+3V3   GND 15   15
       8   8
       EN   3   +3V3
C37   EN   1   EN
100nF WIFI_CTRL 16   16
GND   WIFI_CS   2   2   7   SPI2_MOSI
                  4   4   6   SPI2_MISO
C38   5   SPI2_SCK
100nF
GND   R66
       10K

GND

+5V   1   1
GND   2   2
       TXD13 3   3   J25
       RXD14 4   4

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Motor X

Motor Y

Motor Z

Motor E0

Motor E1

Integrated

TMC2209 Uart Mode X5

M4

Title: MKS Eagle

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EXP1

Pin		Pin	
BEEPER	1	2	BTN_ENC
LCD_EN	3	4	LCD_RS
LCD_D4	5	6	LCD_D5
LCD_D6	7	8	LCD_D7
GND	9	10	+5V

EXP2

Pin		Pin	
SPI1_MISO	1	2	SPI1_SCK
BTN_EN1	3	4	SPI1_CS
BTN_EN2	5	6	SPI1_MOSI
SPI1_RS	7	8	RESET
GND	9	10	+3V3

MT_DET1 — R108 — +3V3 / R112 / C74 / GND — J32 (1 +5V, 2 GND, 3)

MT_DET2 — R109 — +3V3 / R113 / C75 / GND — J33 (1 +5V, 2 GND, 3)

PW_DET — R110 — +3V3 / R114 / C76 / GND — J34 (1 +5V, 2 GND, 3)

PW_OFF — R115 100 — +5V / GND — J35 (1 +5V, 2 GND, 3)

3D_TOUCH — R111 100 — D16 +3V3 / D15 GND / +5V — J36 (1 +5V, 2, 3 GND)
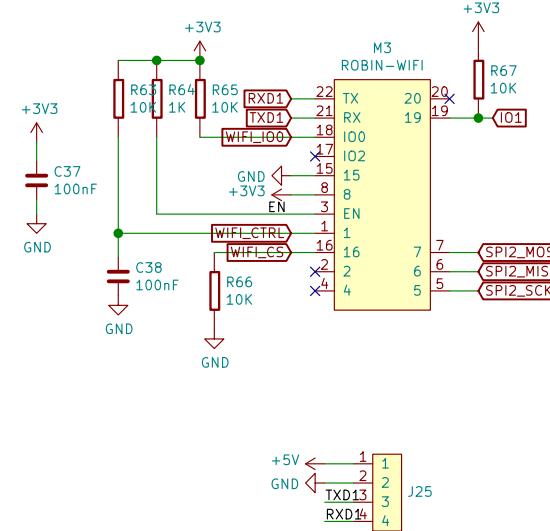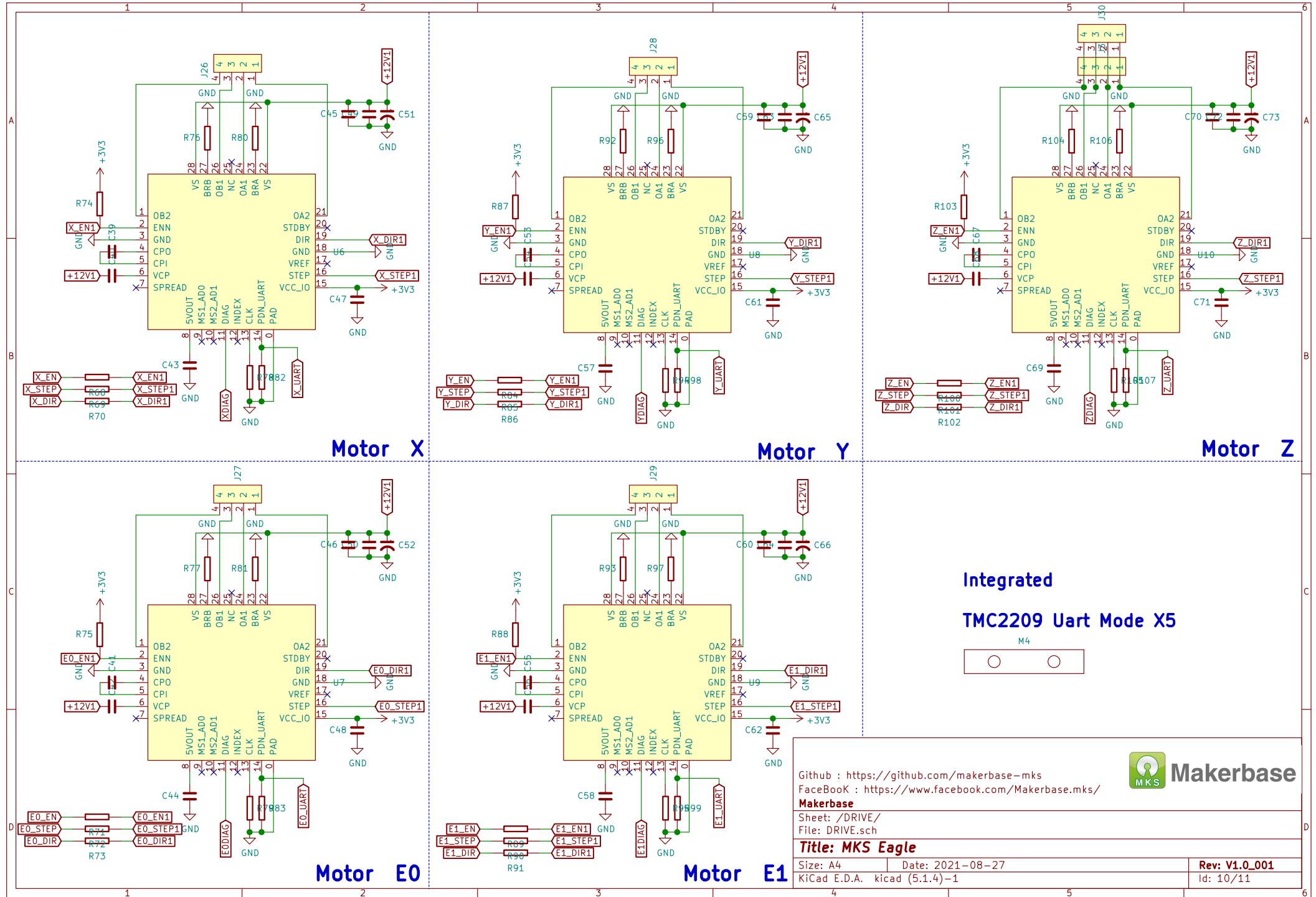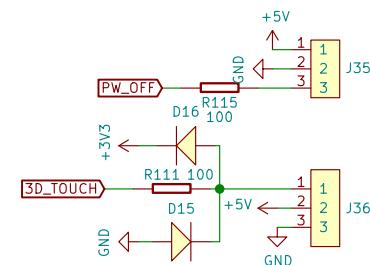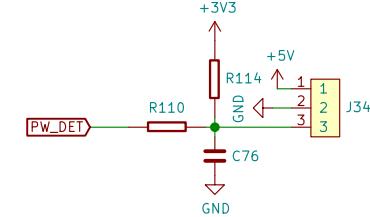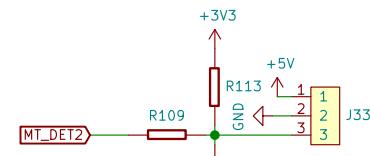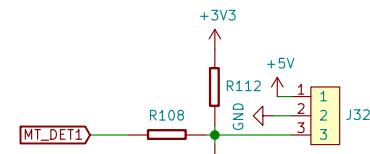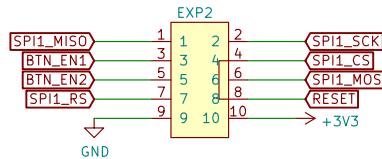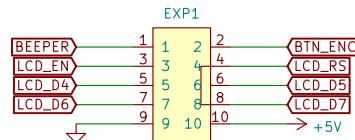
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Sheet: /P-AUX/
File: P-AUX.sch

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