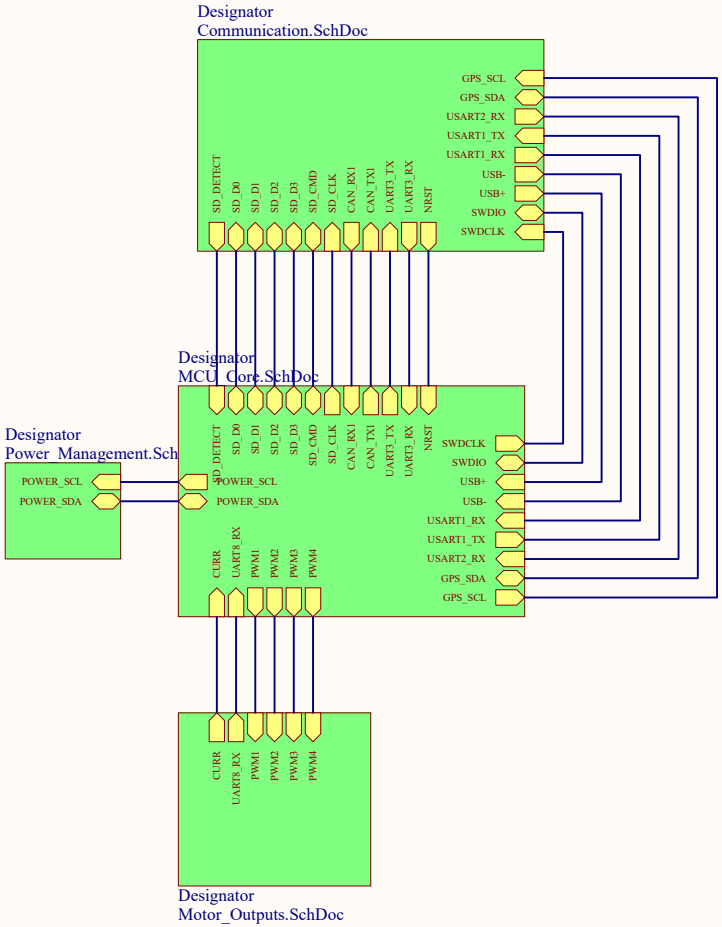

Title	EMP DRONE FLIGHT CONTROLLER		
Size	Number		Revision
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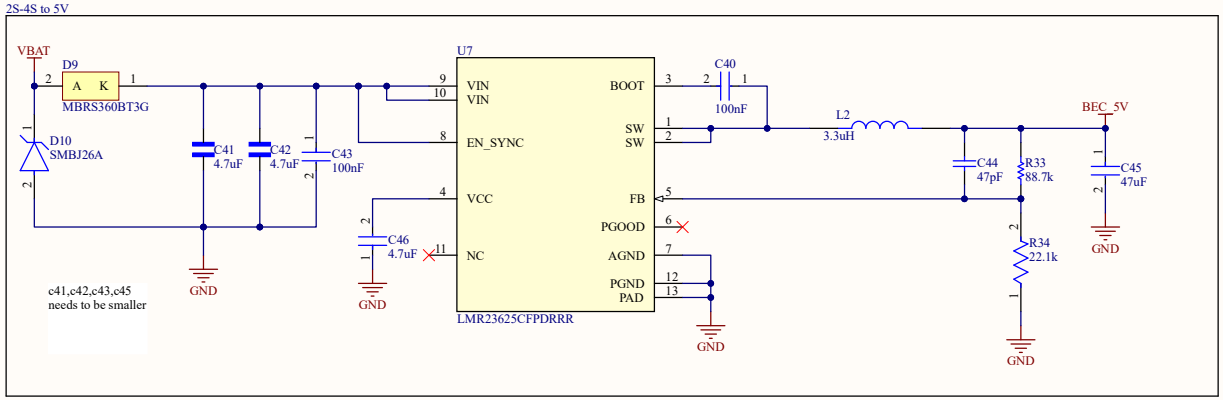
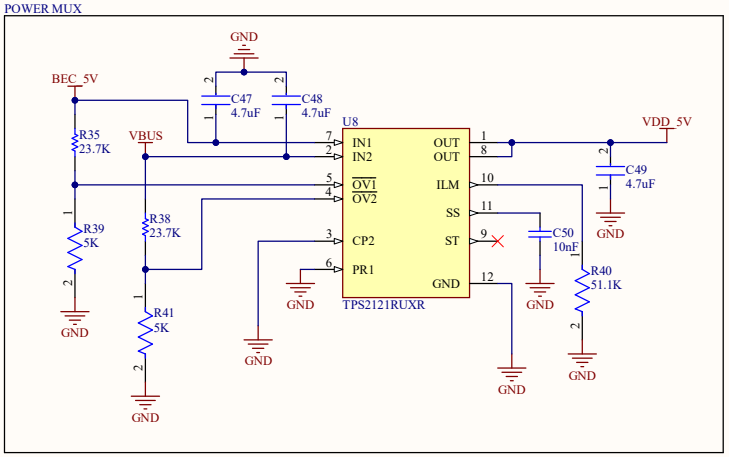
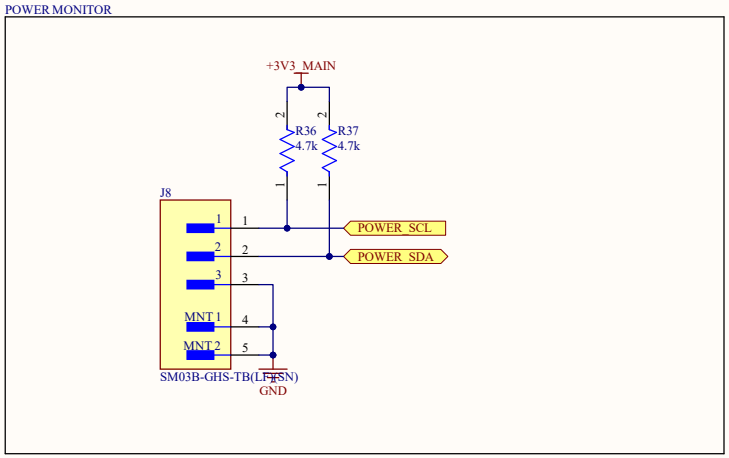
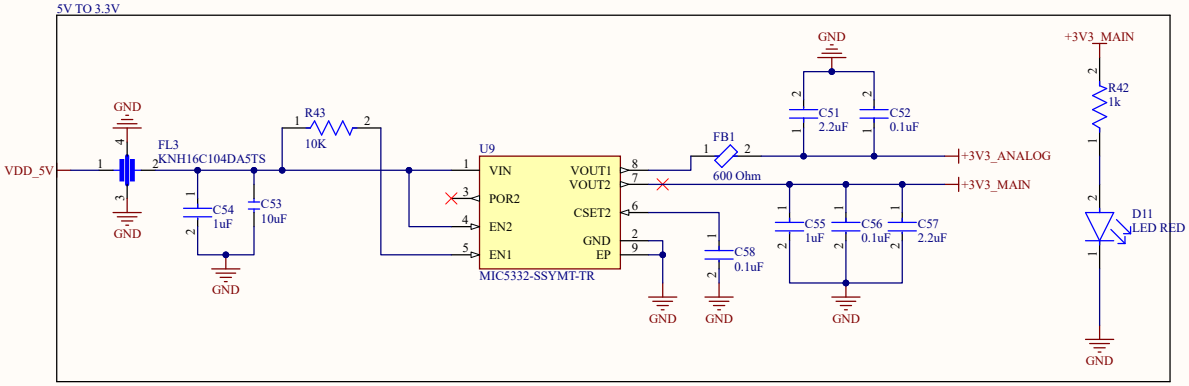
File:	D:\Nauras Final year project\..\EMP_FC_Main.SchDoc	Drawn By:	









Title: POWER MANAGEMENT		
Size: A3	Number	Revision
Date: 1-01-2026	Sheet of	
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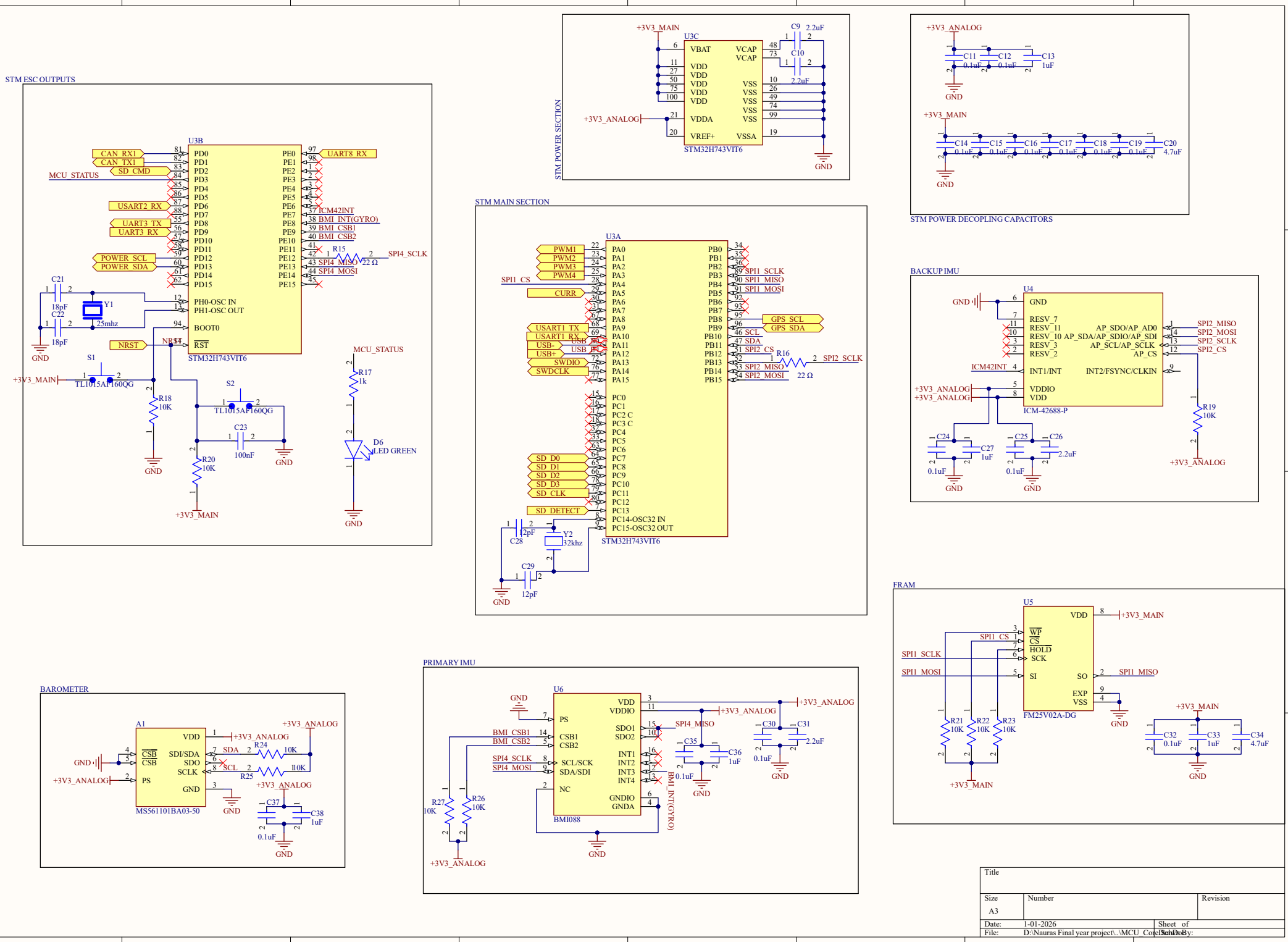
STM ESC OUTPUTS
U3B
STM32H743VIT6
CAN_RX1
CAN_TX1
SD_CMD
MCU_STATUS
USART2_RX
UART3_TX
UART3_RX
POWER_SCL
POWER_SDA
NRST
UART8_RX
ICM42INT
BMI_INT(GYRO)
BMI_CSB1
BMI_CSB2
SPI4_SCLK
SPI4_MISO
SPI4_MOSI
PH0-OSC IN
PH1-OSC OUT
BOOT0
C21
C22
18pF
25mhz
Y1
S1
TL1015AF160QG
S2
R18
10K
R20
10K
C23
100nF
R15
22 Ω
R17
1k
D6
LED GREEN
STM POWER SECTION
U3C
+3V3_MAIN
+3V3_ANALOG
GND
C9
2.2uF
C10
STM MAIN SECTION
U3A
PWM1
PWM2
PWM3
PWM4
SPI1_CS
CURR
USART1_TX
USART1_RX
USB-
USB+
SWDIO
SWDCLK
SD_D0
SD_D1
SD_D2
SD_D3
SD_CLK
SD_DETECT
SPI1_SCLK
SPI1_MISO
SPI1_MOSI
GPS_SCL
GPS_SDA
SCL
SDA
SPI2_CS
SPI2_MISO
SPI2_MOSI
SPI2_SCLK
R16
22 Ω
C28
12pF
Y2
32khz
C29
12pF
STM POWER DECOPLING CAPACITORS
C11
C12
C13
1uF
C14
C15
C16
C17
C18
C19
C20
4.7uF
0.1uF
BACKUP IMU
U4
ICM-42688-P
GND
RESV_7
RESV_11
RESV_10
RESV_3
RESV_2
INT1/INT
VDDIO
VDD
AP_SDO/AP_AD0
AP_SDA/AP_SDIO/AP_SDI
AP_SCL/AP_SCLK
AP_CS
INT2/FSYNC/CLKIN
SPI2_MISO
SPI2_MOSI
SPI2_SCLK
SPI2_CS
R19
10K
C24
C25
C26
C27
1uF
2.2uF
0.1uF
FRAM
U5
FM25V02A-DG
WP
CS
HOLD
SCK
SI
SO
VDD
EXP
VSS
SPI1_CS
SPI1_SCLK
SPI1_MOSI
SPI1_MISO
+3V3_MAIN
R21
R22
R23
10K
C32
C33
C34
4.7uF
0.1uF
1uF
BAROMETER
A1
MS561101BA03-50
CSB
SDI/SDA
SDO
SCLK
PS
GND
VDD
SDA
SCL
R24
R25
10K
C37
C38
1uF
0.1uF
PRIMARY IMU
U6
BMI088
PS
CSB1
CSB2
SCL/SCK
SDA/SDI
NC
VDD
VDDIO
SDO1
SDO2
INT1
INT2
INT3
INT4
GNDIO
GNDA
SPI4_MISO
SPI4_SCLK
SPI4_MOSI
BMI_INT(GYRO)
R26
R27
10K
C30
C31
C35
C36
2.2uF
1uF
0.1uF
Title
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Revision
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1-01-2026
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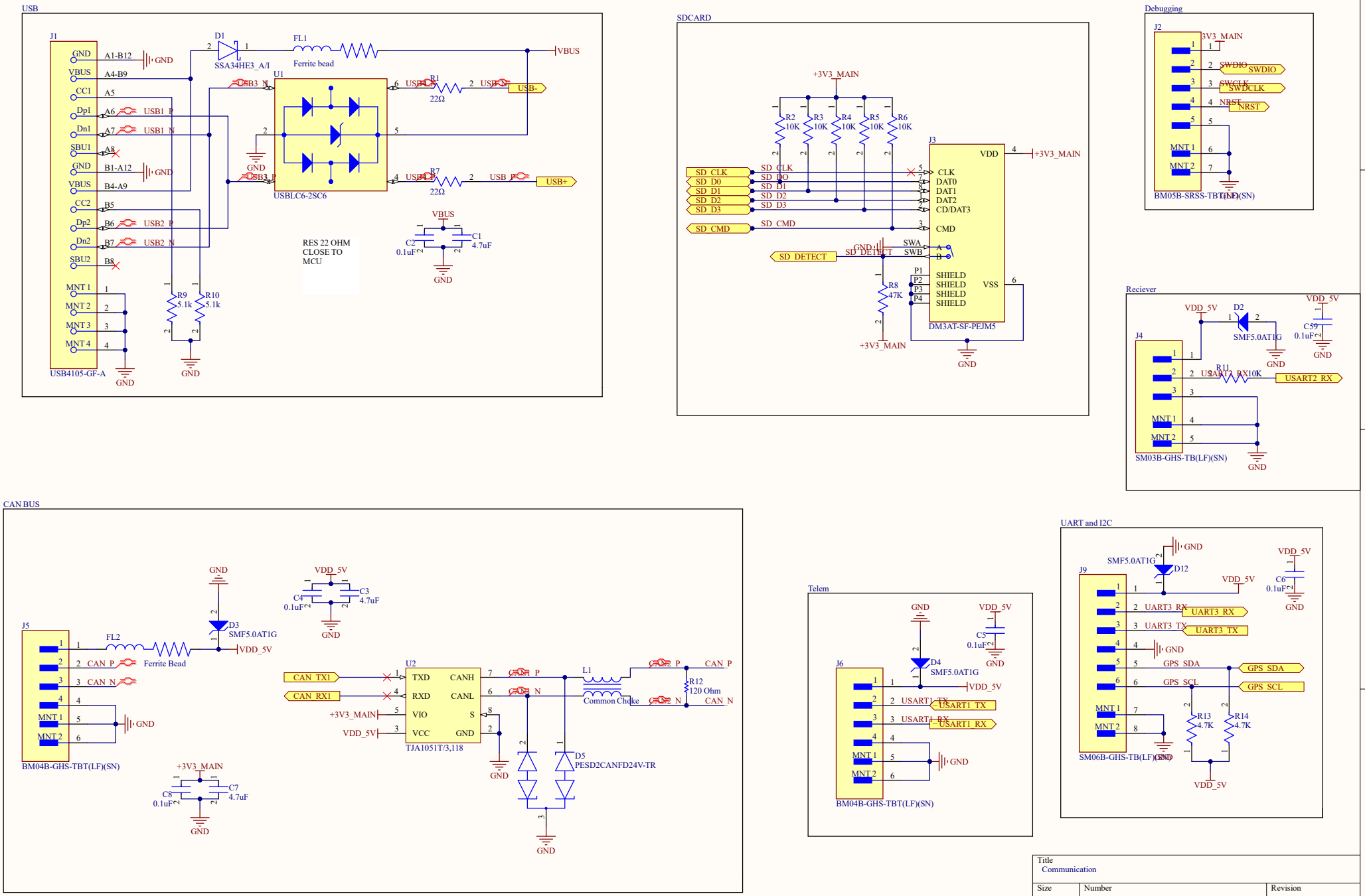
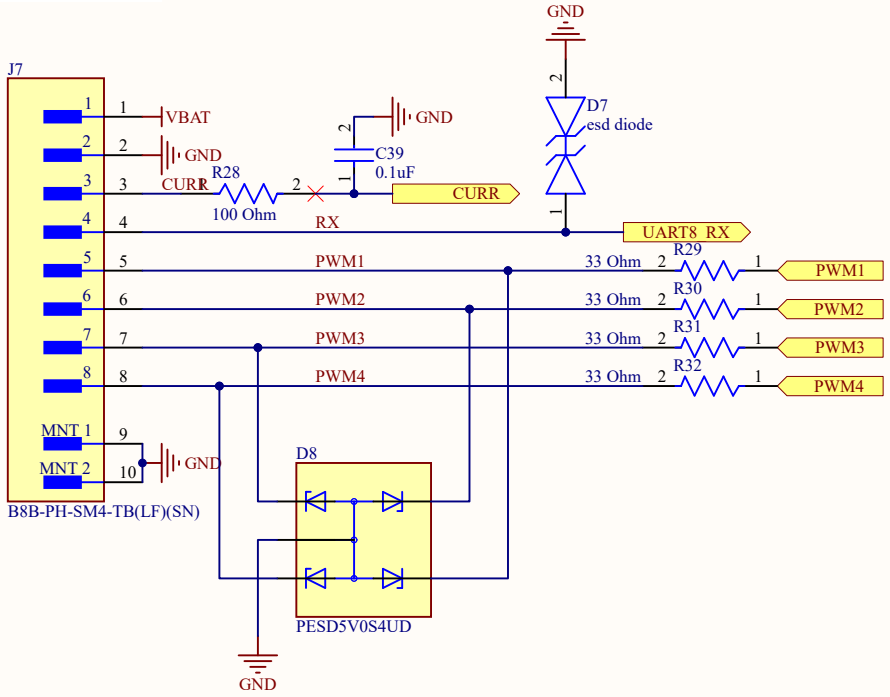


Title: Communication		
Size: A3	Number	Revision
Date: 1-01-2026		Sheet of
File: D:\Nauras Final year project\...\Communication.SchDoc		Drawn By

RES Place them as close to the MCU pin as possible
and ESD diode near connector



Title: CONNECTION TO ESC		
Size: A4	Number:	Revision:
Date: 1-01-2026	Sheet of	
File: D:\Nauras Final year project\..\Motor_Outputs.SchDoc	Drawn By:	