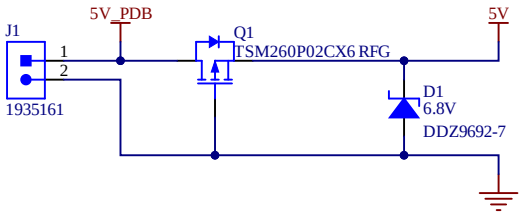
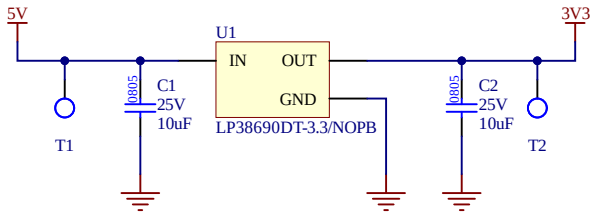
*

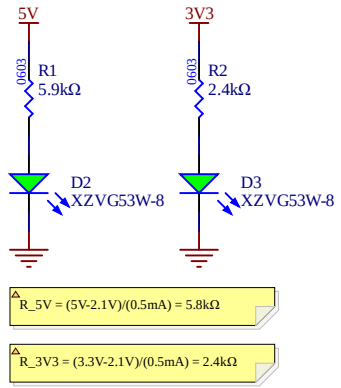
BMS Connector



5V to 3.3V LDO @ 1A Max



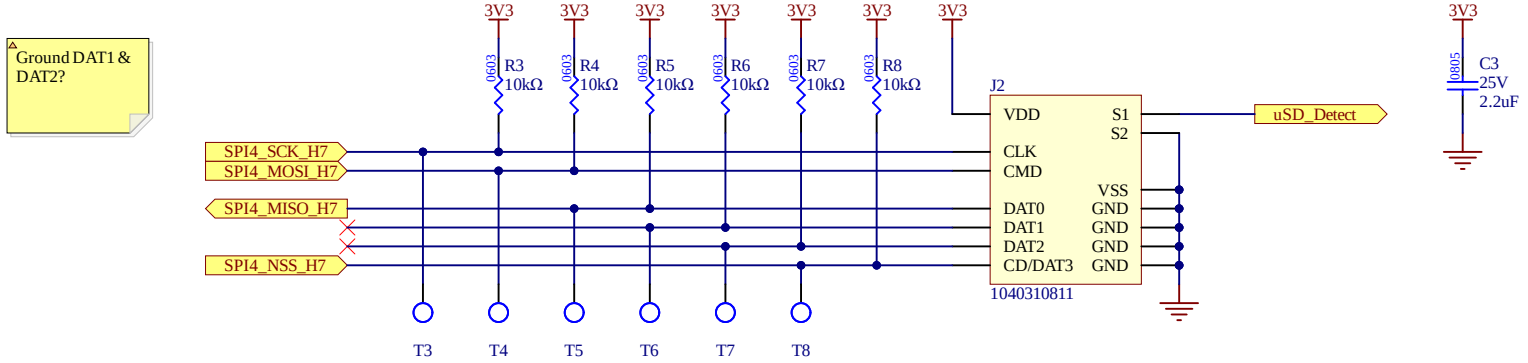
Power LEDs



WARG — Waterloo Aerial Robotics Group 200 University Ave W Waterloo, Ontario, Canada N2L 3G1		
PROJECT Zeropilot 2.0.PrjPcb, [No Variations]		REVISION *
DOCUMENT LDO.SchDoc		MODIFIED 11/20/2021
ENGINEER Daniel Puratich	REVIEWER *	SHEET 1 OF 9

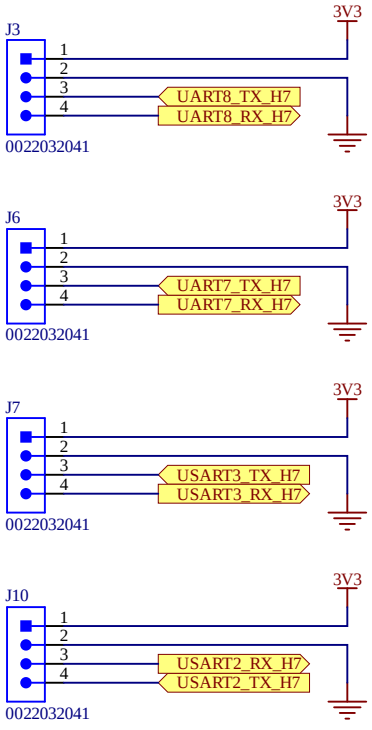
*

microSD Connector

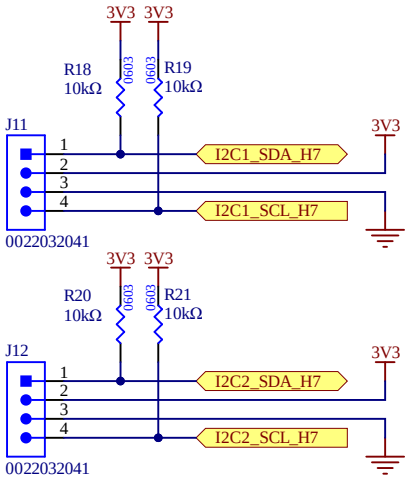


Waterloo Aerial Robotics Group 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	
PROJECT: Zeropilot 2.0.PrjPcb, [No Variations]	REVISION: *
DOCUMENT: microSD_Connector.SchDoc	MODIFIED: 11/20/2021
ENGINEER: Kiran Surendran / REVIEWER: *	SHEET 3 OF 9

UART Connectors

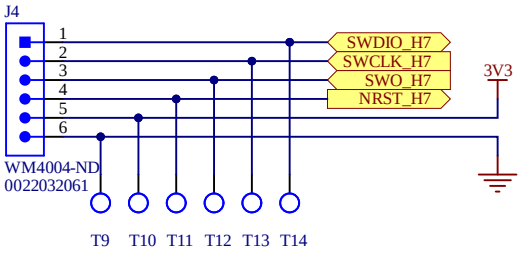


I2C Connectors

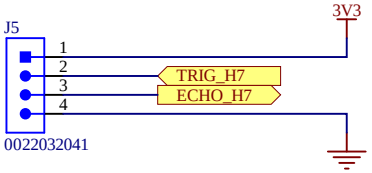


*

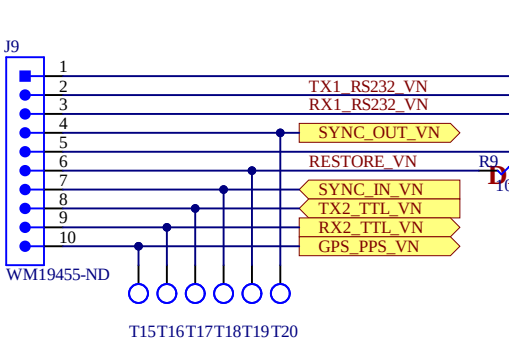
SWD/SWO Connector



Ultrasonic Connector



VN-300 Connector

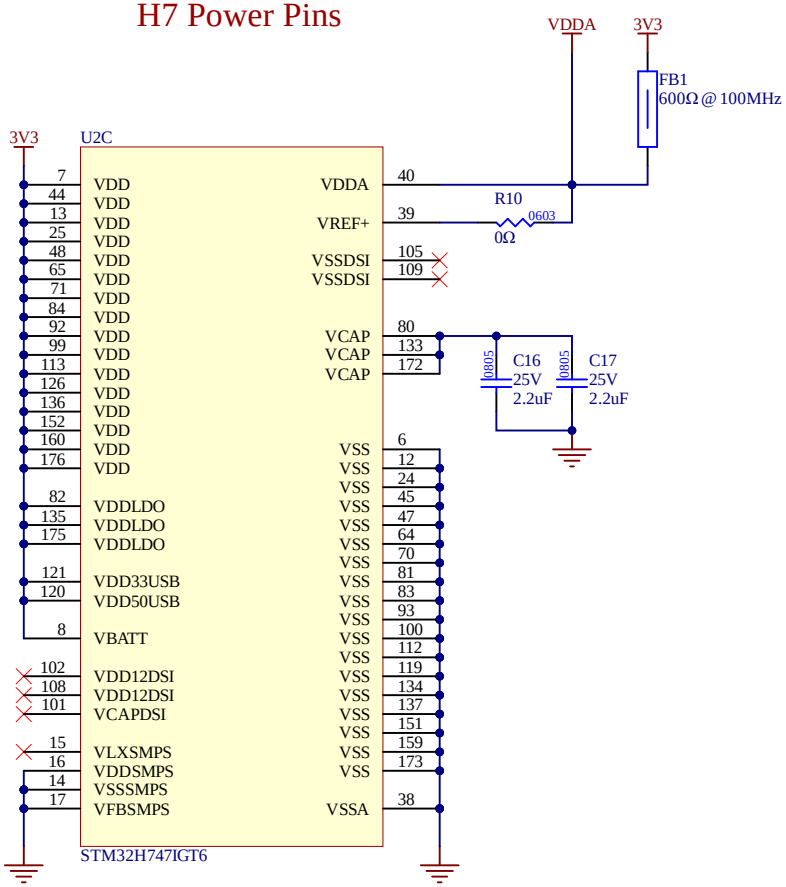


MAX3232 Connector

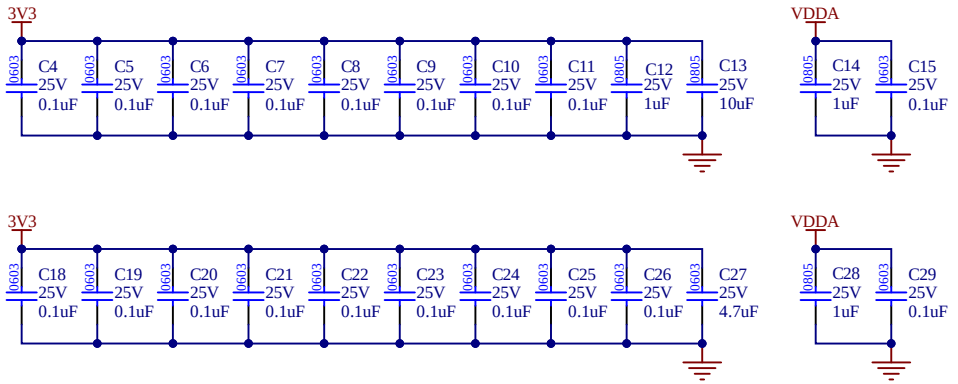
WARG	Waterloo Aerial Robotics Group 200 University Ave W Waterloo, Ontario, Canada N2L 3G1
PROJECT: Zeropilot 2.0.PrjPcb, [No Variations]	REVISION: *
DOCUMENT: H7Connectors.SchDoc	MODIFIED: 11/21/2021
ENGINEER: Kiran Surendran	REVIEWER: *
	SHEET 4 OF 9

*

H7 Power Pins



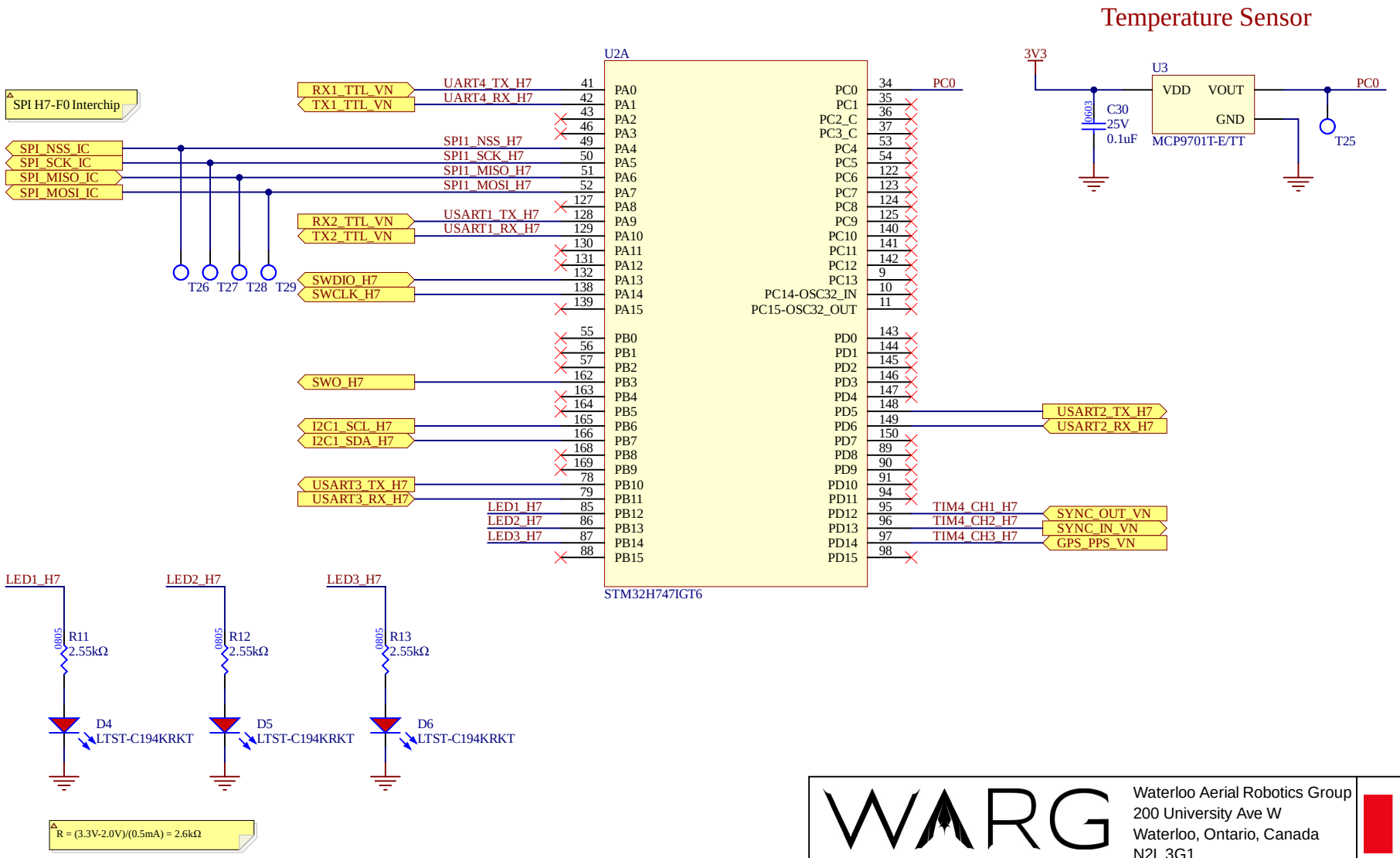
H7 Bypass Capacitors



VDD Bypass: (0.1uF x 16) + (10uF x 1)
VDDLDO Bypass: 4.7uF x 1
VDDUSB Bypass: (0.1uF x 1) + (1uF x 1)
Should be placed as close as possible to each VDD pin.

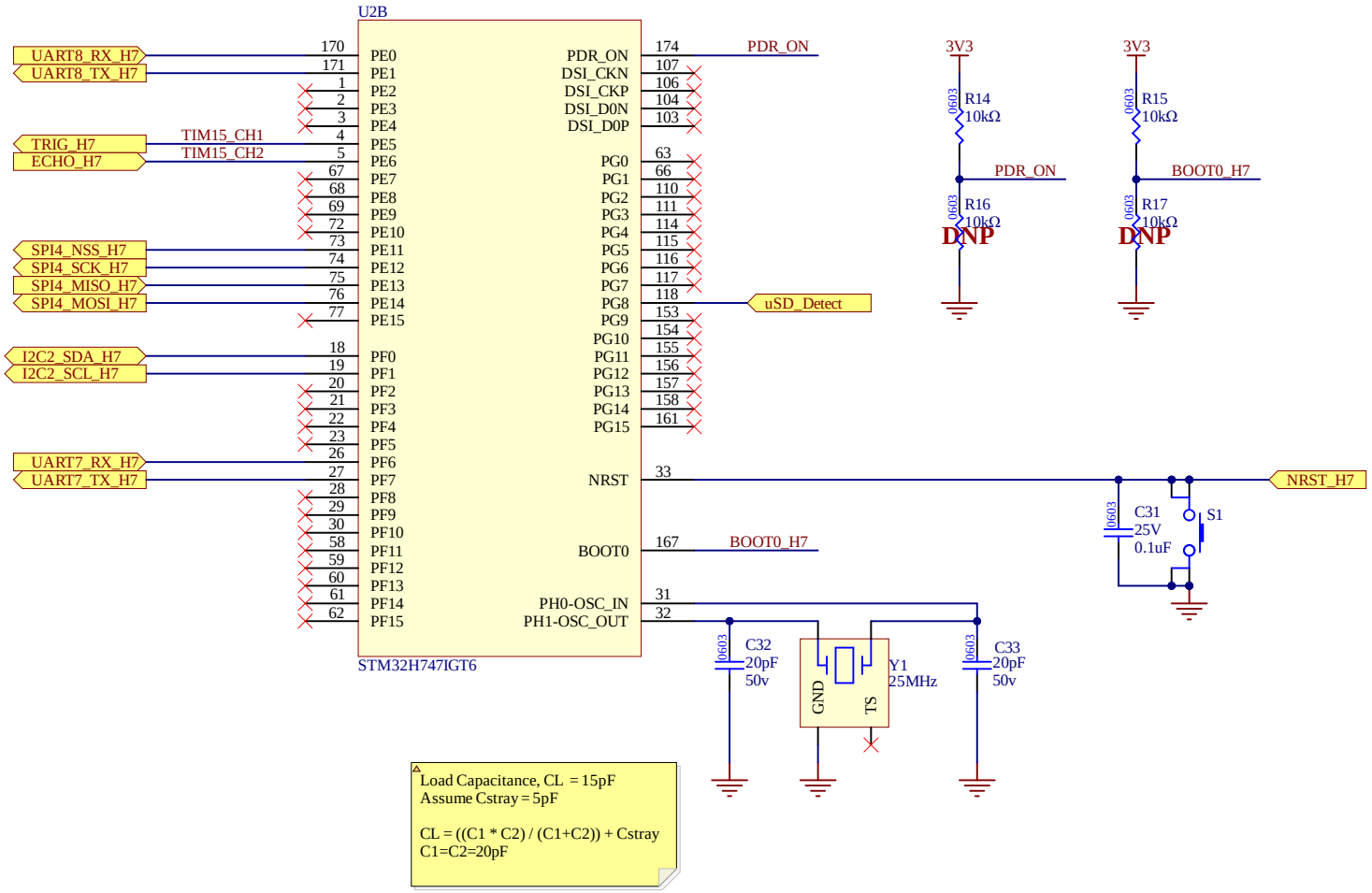
WARG — Waterloo Aerial Robotics Group 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	
PROJECT: Zeropilot 2.0.PrjPcb, [No Variations]	REVISION: *
DOCUMENT: H7Power.SchDoc	MODIFIED: 11/20/2021
ENGINEER: Kiran Surendran / REVIEWER: *	SHEET 5 OF 9

Zeropilot 2.0



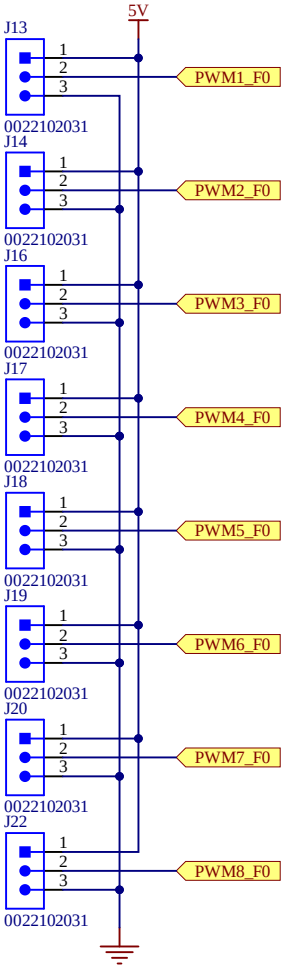
WARG	Waterloo Aerial Robotics Group 200 University Ave W Waterloo, Ontario, Canada N2L 3G1
PROJECT	Zeropilot 2.0.PrjPcb, [No Variations]
REVISION	1
DOCUMENT	H7PartA.SchDoc
MODIFIED	11/20/2021
ENGINEER	Kiran Surendran
REVIEWER	*
SHEET	6 OF 9

*

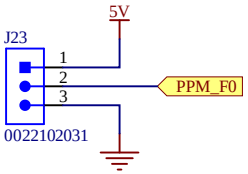


Waterloo Aerial Robotics Group 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	
PROJECT: Zeropilot 2.0.PrjPcb, [No Variations]	REVISION: *
DOCUMENT: H7PartB.SchDoc	MODIFIED: 11/17/2021
ENGINEER: Kiran Surendran	REVIEWER: *
	SHEET 7 OF 9

PWM Connectors

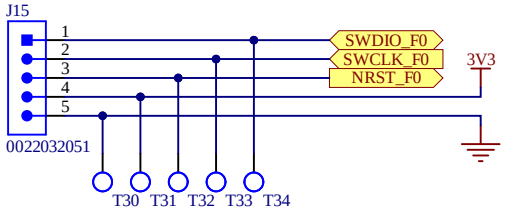


PPM Connector

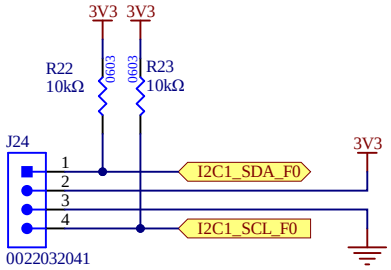


*

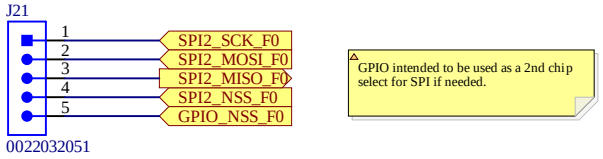
SWD/SWO Connector



I2C Connector



SPI Connector



WARG
Waterloo Aerial Robotics Group
200 University Ave W
Waterloo, Ontario, Canada
N2L 3G1

PROJECT: Zeropilot 2.0.PrjPcb, [No Variations]	REVISION: *
DOCUMENT: F0Connectors.SchDoc	MODIFIED: 11/21/2021
ENGINEER: Daniel Puratich / REVIEWER: *	SHEET 8 OF 9

*

Add notes detailling pinout once finalized.

U4

GPIO_NSS_F0
PWM1_F0
PWM2_F0
SWDIO_F0
SWCLK_F0
SPI_NSS_IC
PPM_F0
SPI_SCK_IC
SPI_MOSI_IC
SPI_MISO_IC
I2C1_SCL_F0
I2C1_SDA_F0
SPI2_SCK_F0
SPI2_NSS_F0
PWM3_F0
PWM4_F0
SPI2_MISO_F0
SPI2_MOSI_F0
PWM5_F0
PWM6_F0
PWM7_F0
PWM8_F0
LED1_F0
LED2_F0

PA0 PA1 PA2 PA3 PA4 PA5 PA6 PA7 PA8 PA9 PA10 PA11 PA12 PA13 PA14 PA15
PB0 PB1 PB2 PB3 PB4 PB5 PB6 PB7 PB8 PB9 PB10 PB11 PB12 PB13 PB14 PB15
PC0 PC1 PC2 PC3 PC4 PC5 PC6 PC7 PC8 PC9 PC10 PC11 PC12 PC13
PD2

VDDA VDD VDD VDD VDD VDD
NRST
BOOT0
PC14-OSC32_IN PC15-OSC32_OUT
PF0-OSC_IN PF1-OSC_OUT
VSS VSS VSS VSS VSSA

STM32F030RCT6

3V3

Not using internal ADC so ignoring the requirement of providing VDDA first on startup.

NRST_F0
C39 0603 25V 0.1uF
S2
Internal pull up resistor (40kohms) is present on F0.

BOOT0_F0

Using LSI instead of LSE.

C40 0603 20pF 50v
Y2 8MHz GND TS
C41 0603 20pF 50v

HSE:
CL=((C1*C2)/(C1+C2))+Cstray
CL=15pF, Assume Cstray=5pF,
Assert C1=C2
15pF=((C1*C1)/(2C1))+5pF
C1=C2=20pF

3V3
R27 0603 10kΩ
BOOT0_F0
R28 0603 10kΩ
DNP

F0 Bypass Capacitors

3V3
C34 0603 25V 0.01uF
C35 0603 25V 0.1uF
C36 0603 25V 0.1uF
C37 0805 25V 1uF
C38 0603 25V 4.7uF

Decoupling capacitor placement guide is found in the datasheet on page 42 of the datasheet.

F0 Debugging LEDs

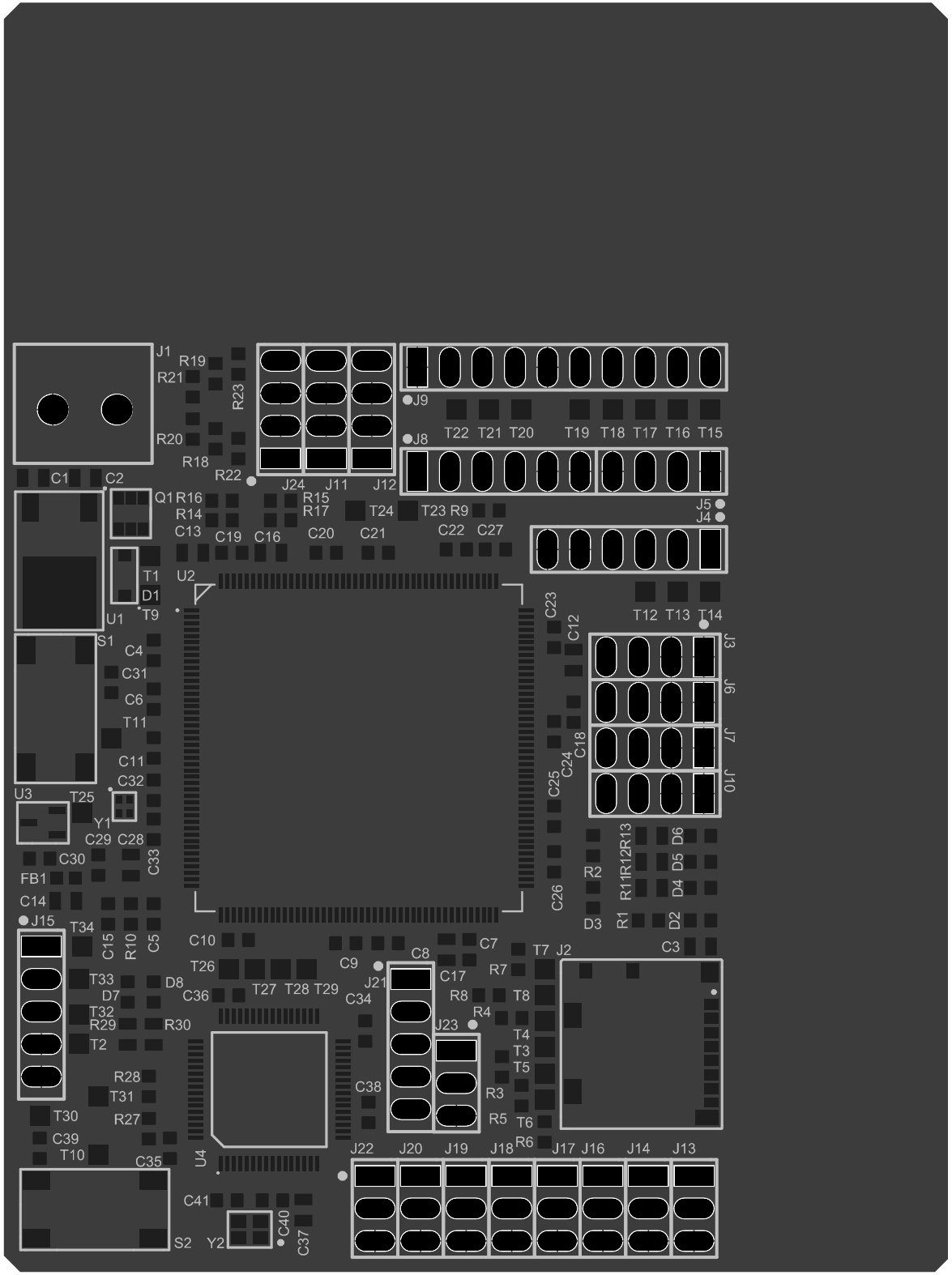
LED2_F0
R29 0603 1kΩ
D7 LTST-C191TBKT-5A

LED1_F0
R30 0603 1kΩ
D8 LTST-C191TBKT-5A

R = (3.3V-2.8V)/(0.5mA) = 1kΩ

WARG
Waterloo Aerial Robotics Group
200 University Ave W
Waterloo, Ontario, Canada
N2L 3G1

PROJECT: Zeropilot 2.0.PrjPcb, [No Variations]	REVISION: *
DOCUMENT: F0Chip.SchDoc	MODIFIED: 11/19/2021
ENGINEER: Daniel Puratich	REVIEWER: *
	SHEET 9 OF 9


J1
R19
R21
R20
R18
R23
R22
J24
J11
J12
J9
J8
T22 T21 T20 T19 T18 T17 T16 T15
C1
C2
Q1
R16
R14
R15
R17
T24
T23
R9
C13
C19
C16
C20
C21
C22
C27
J5
J4
T1
D1
T9
U1
U2
T12 T13 T14
S1
C4
C31
C6
T11
C11
C32
U3
T25
Y1
C29
C28
C30
C33
FB1
C14
J15
T34
C15
R10
C5
C10
T26
C9
C8
C7
T7
J2
C3
C17
R7
T33
D8
D7
C36
T27
T28
T29
J21
C34
R8
T8
T32
R29
R30
R4
J23
T4
T3
T5
T2
R28
T31
T30
R27
C38
R3
R5
T6
C39
T10
C35
U4
R6
J22
J20
J19
J18
J17
J16
J14
J13
C41
C40
C37
S2
Y2
C12
C23
C18
C24
C25
C26
J3
J6
J7
J10
R2
R11
R12
R13
D6
D5
D4
D3
R1
D2