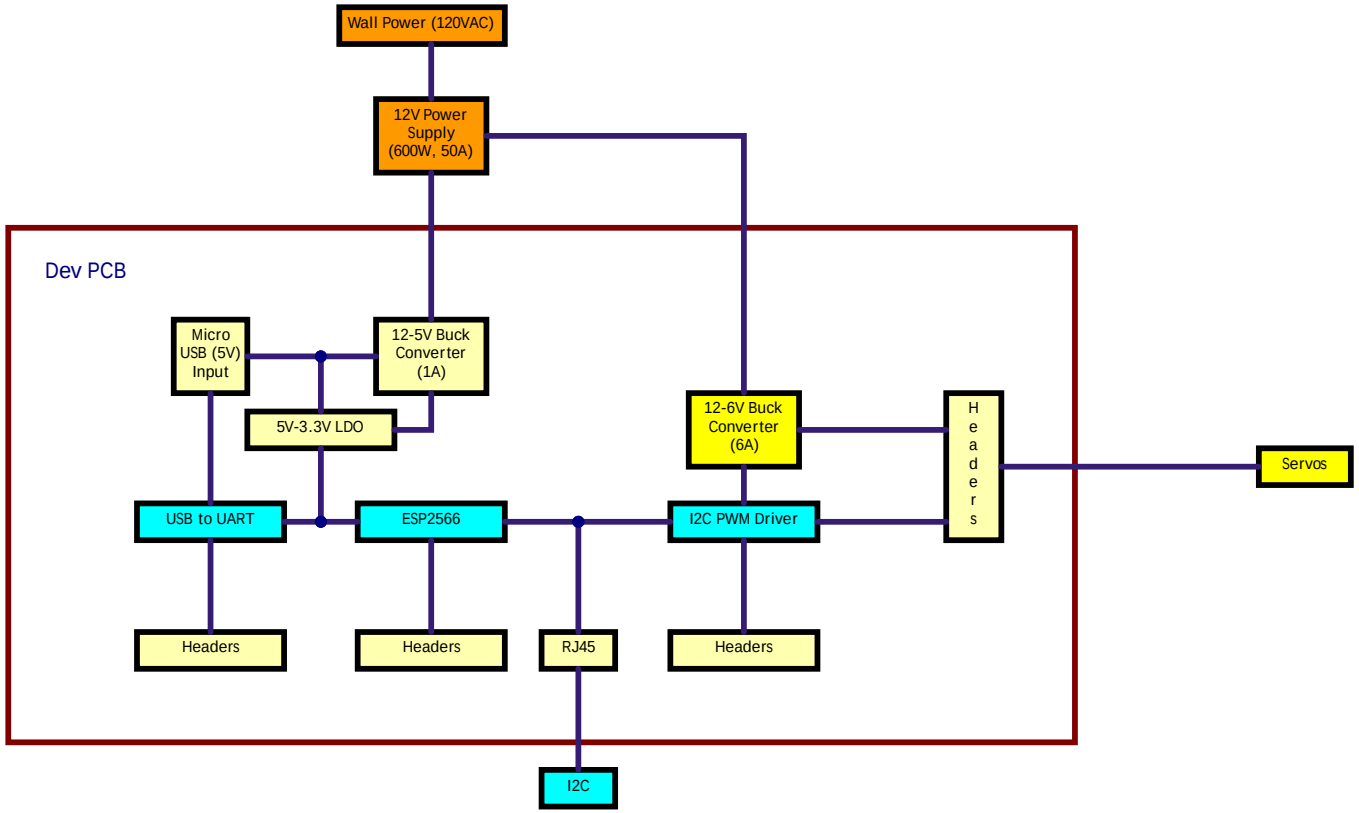
Block Diagram

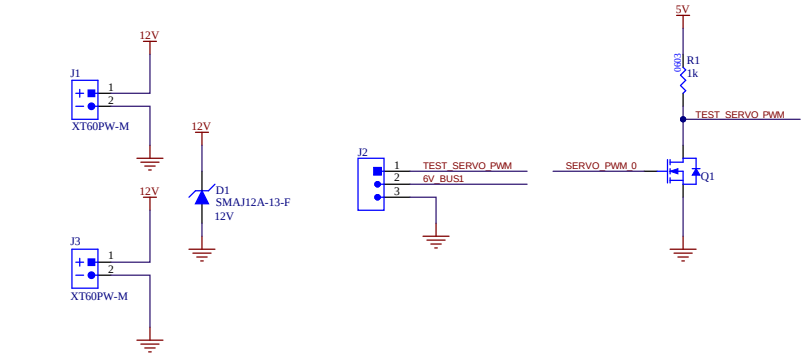


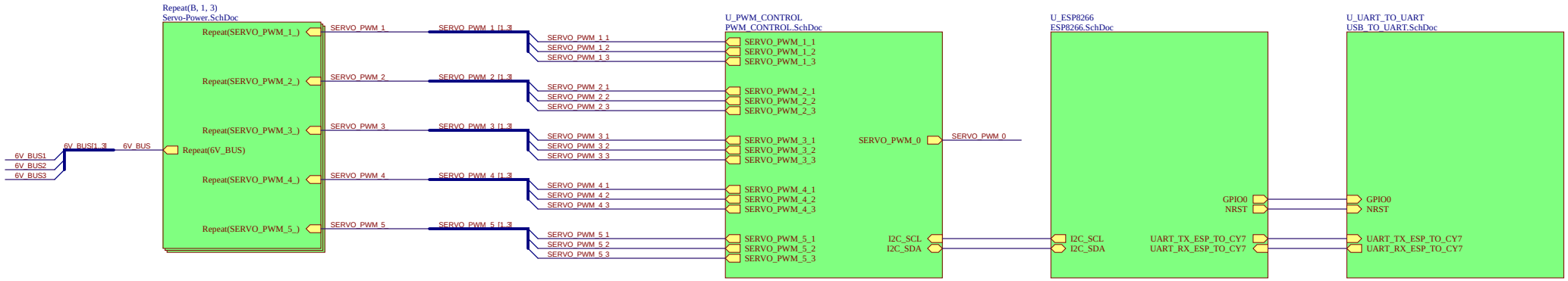
PUTTPILOT

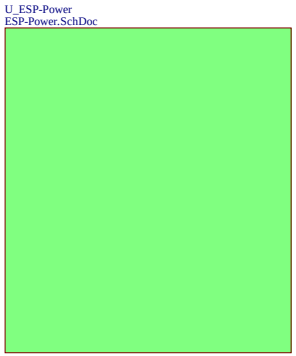
PuttPilot
200 University Ave W
Waterloo, Ontario, Canada
N2L 3G1

PROJECT: PuttPilot-Dev.PrjPcb, [No Variations]		REVISION: 1.0
DOCUMENT: Block-Diagram.SchDoc		MODIFIED: 2024-11-04
ENGINEER: Ethan Abraham	REVIEWER: *	SHEET 1 OF 7

Hierarchal Power







Mounting Holes

M1 M2 M3 M4

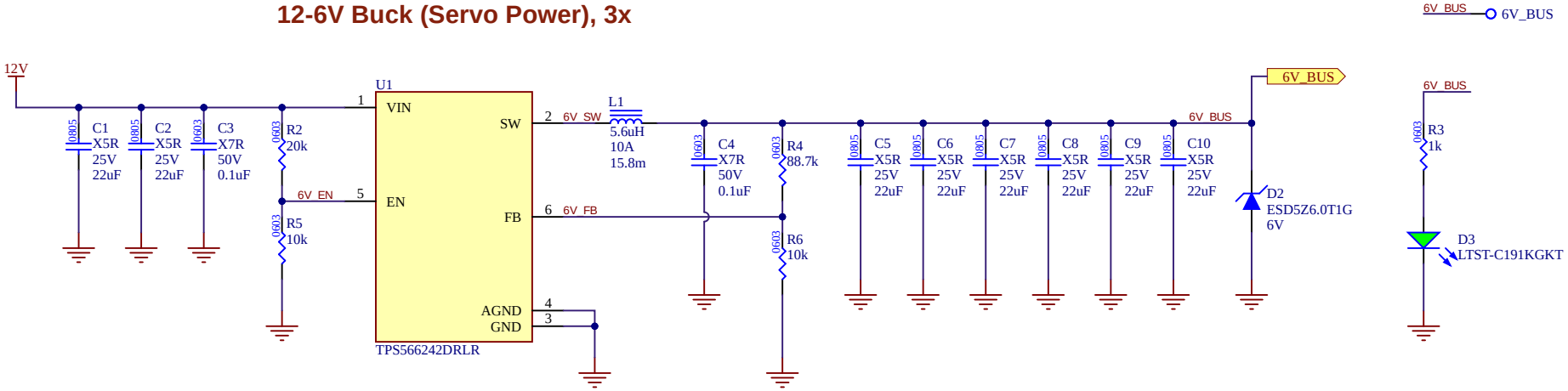
PUTTPILOT

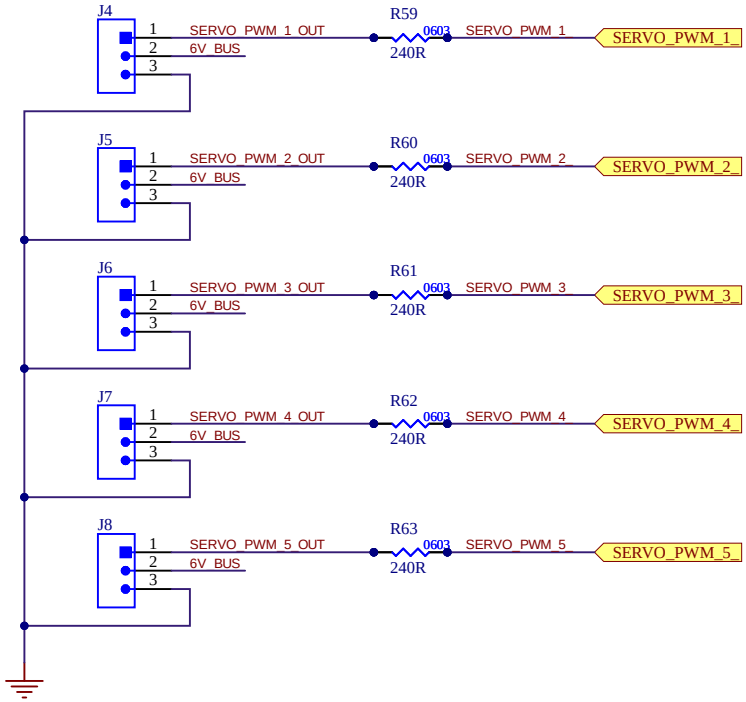
PuttPilot
200 University Ave W
Waterloo, Ontario, Canada
N2L 3G1

PROJECT: PuttPilot-Dev.PrjPcb, [No Variations]	REVISION: *
DOCUMENT: Hierarchal.SchDoc	MODIFIED: 2024-10-20
ENGINEER: Ethan Abraham / REVIEWER: *	SHEET 2 OF 7

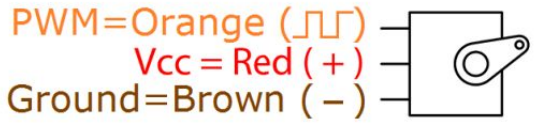
Servo Power

12-6V Buck (Servo Power), 3x





Servo Pinout



Everything on this sheet will be tripled (3 separate servo buses). Refer to hierarchal power page to see how PWM signals come from I2C driver

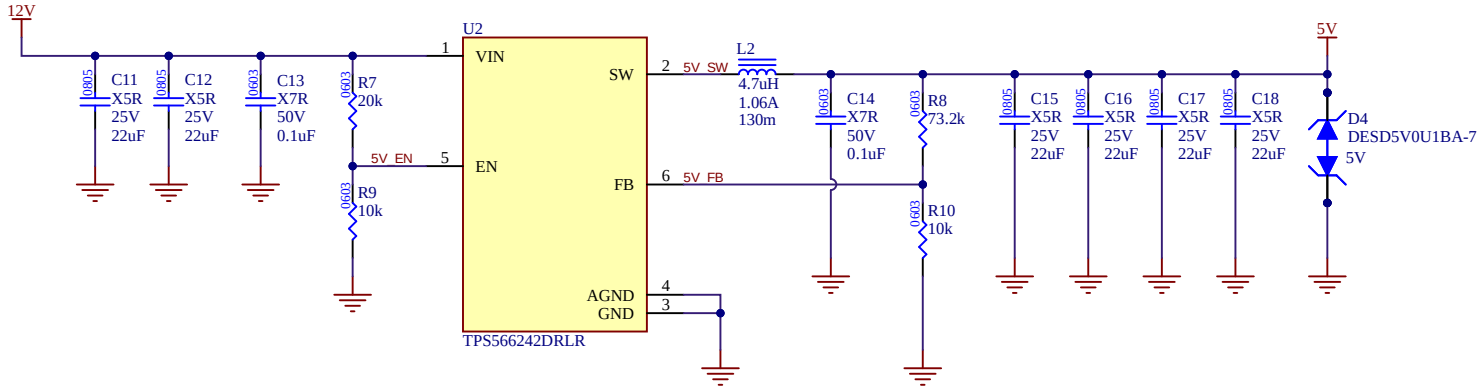
PUTTPILOT

PuttPilot
200 University Ave W
Waterloo, Ontario, Canada
N2L 3G1

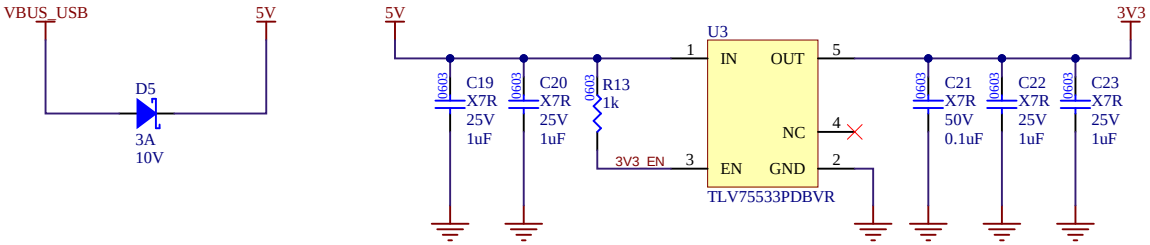
PROJECT: PuttPilot-Dev.PrjPcb, [No Variations]		REVISION: *
DOCUMENT: Servo-Power.SchDoc		MODIFIED: 2024-11-11
ENGINEER: Ethan Abraham	REVIEWER: *	SHEET 3 OF 7

ESP Power

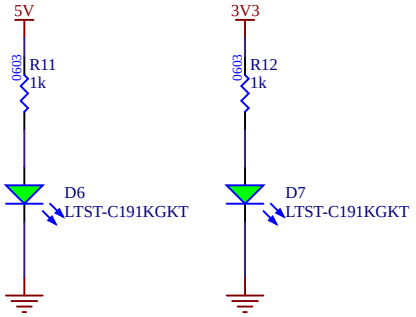
12-5V Buck (ESP Power)



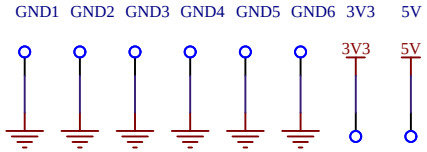
5V-3V3 LDO



Power Rail LEDs

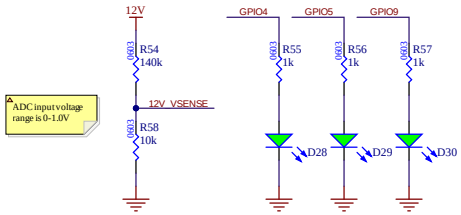


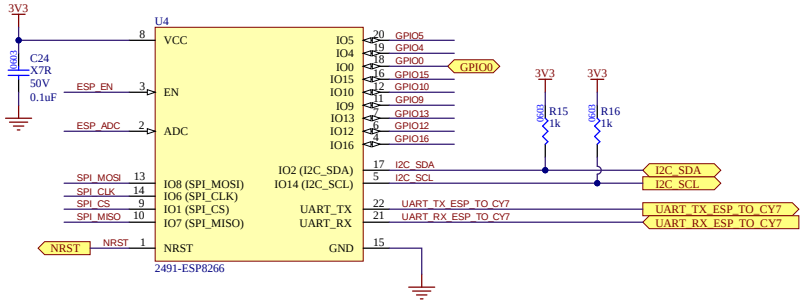
Testpoints



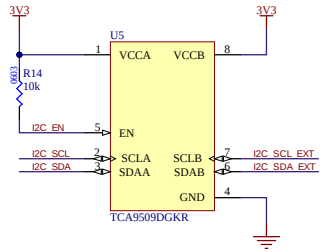
PuttPilot 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	
PROJECT: PuttPilot-Dev.PrjPcb, [No Variations]	REVISION: 1.0
DOCUMENT: ESP-Power.SchDoc	MODIFIED: 2024-11-10
ENGINEER: Ethan Abraham / REVIEWER: *	SHEET 4 OF 7

ESP8266

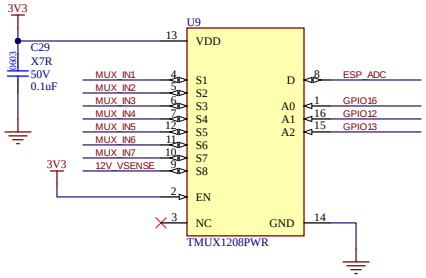




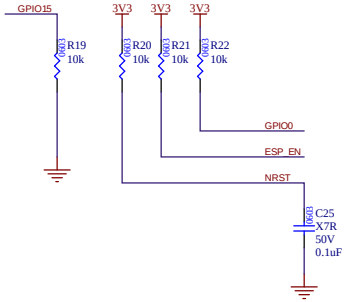
I2C Buffer



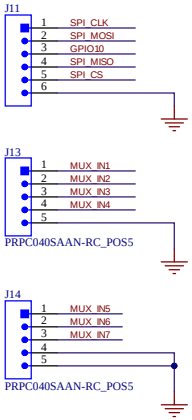
ADC MUX



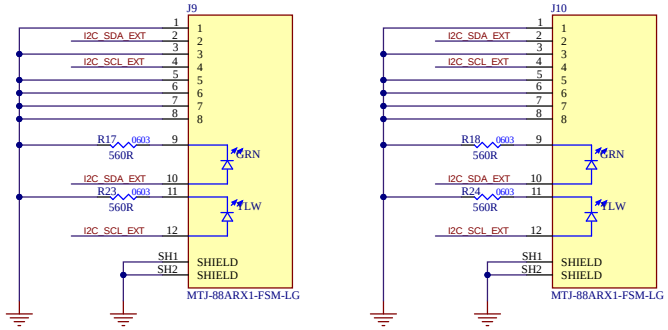
Passive Pull Resistors



Headers



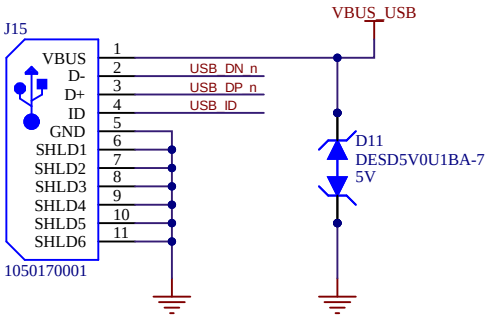
I2C Connectors



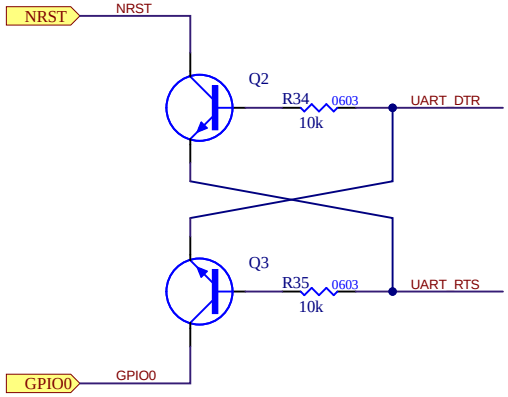
PuttPilot 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	
PROJECT: PuttPilot-Dev.PrjPcb, [No Variations]	REVISION: 1.0
DOCUMENT: ESP8266.SchDoc	MODIFIED: 2024-11-10
ENGINEER: Ethan Abraham / REVIEWER: *	SHEET 5 OF 7

USB to UART

Micro USB B

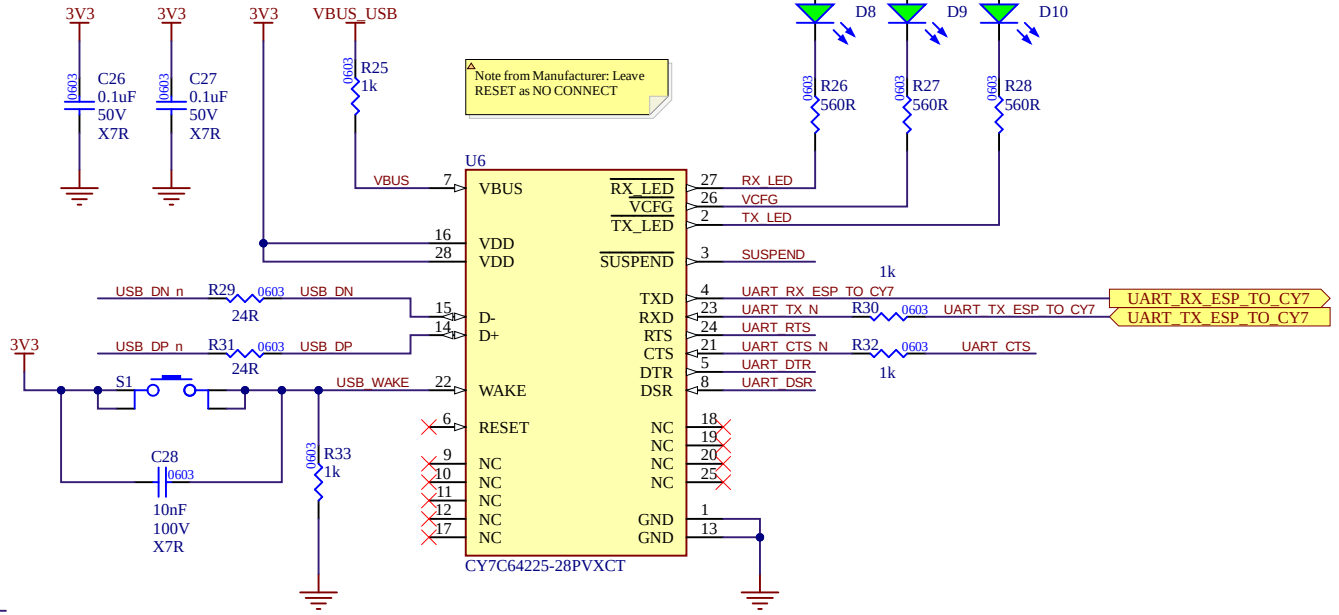


Auto Program Circuit

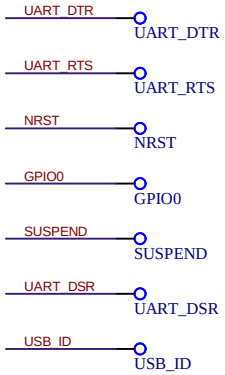


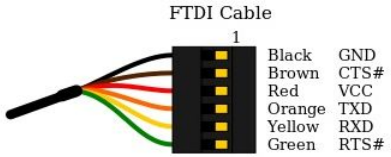
AUTO PROGRAM CIRCUIT

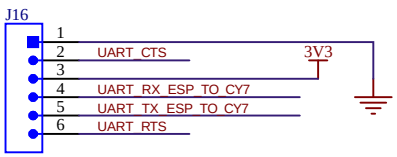
DTR	RTS	RST	GPIO0
1	1	1	1
0	0	1	1
1	0	0	1
0	1	1	0



Testpoints





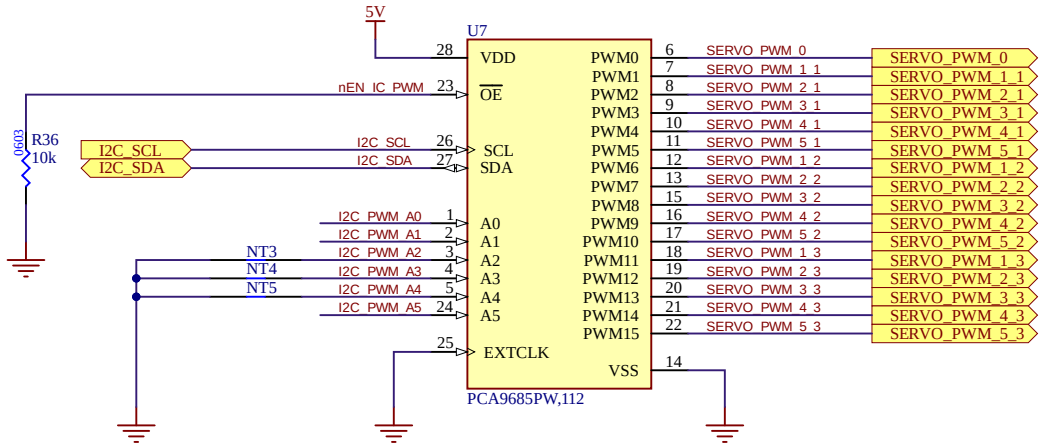


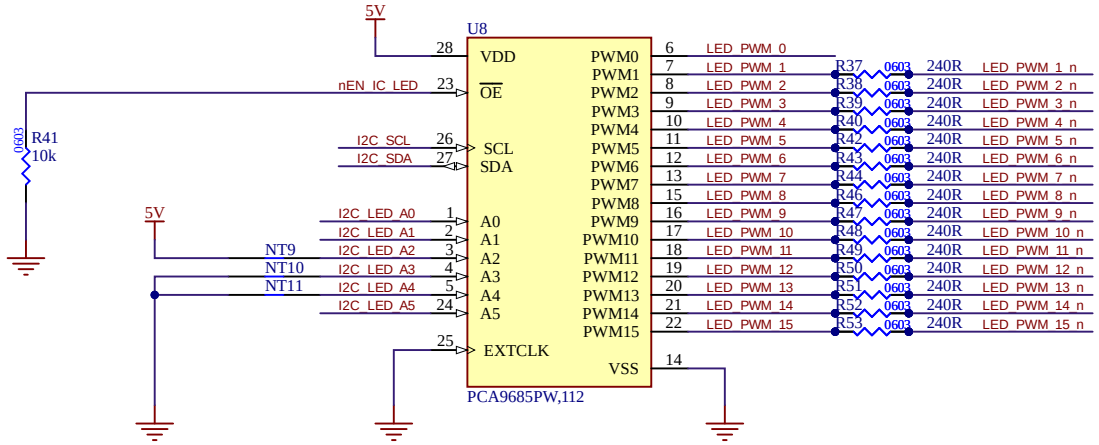
PUTTPILOT

PuttPilot
200 University Ave W
Waterloo, Ontario, Canada
N2L 3G1

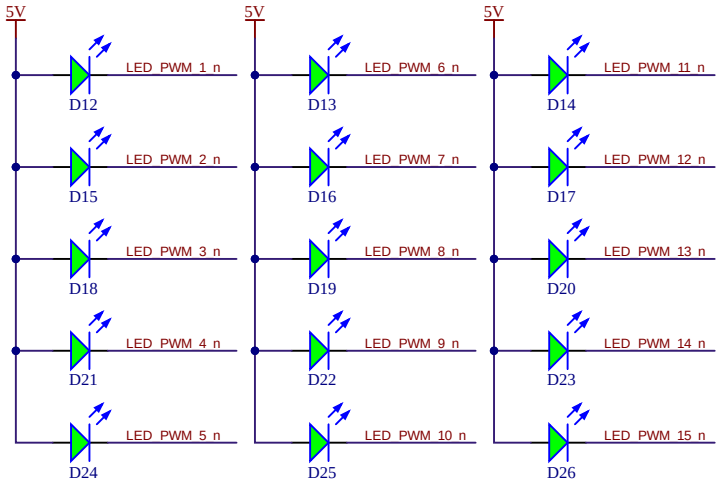
PROJECT: PuttPilot-Dev.PrjPcb, [No Variations]	REVISION: 1.0
DOCUMENT: USB_TO_UART.SchDoc	MODIFIED: 2024-11-11
ENGINEER: Ethan Abraham / REVIEWER: *	SHEET 6 OF 7

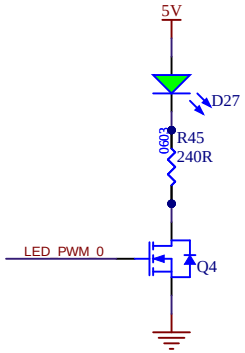
PWM Control



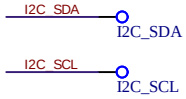


Test LED Array



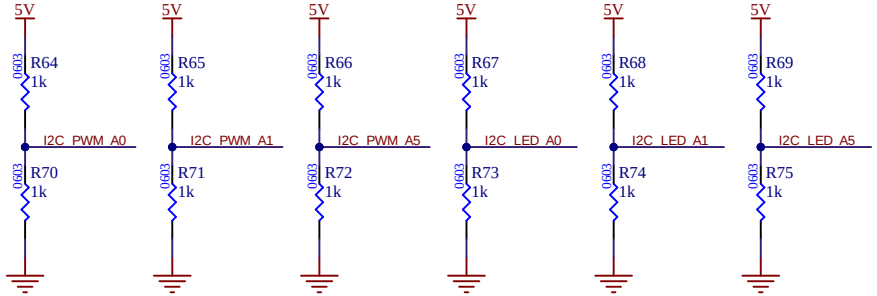


Testpoints



I2C Config

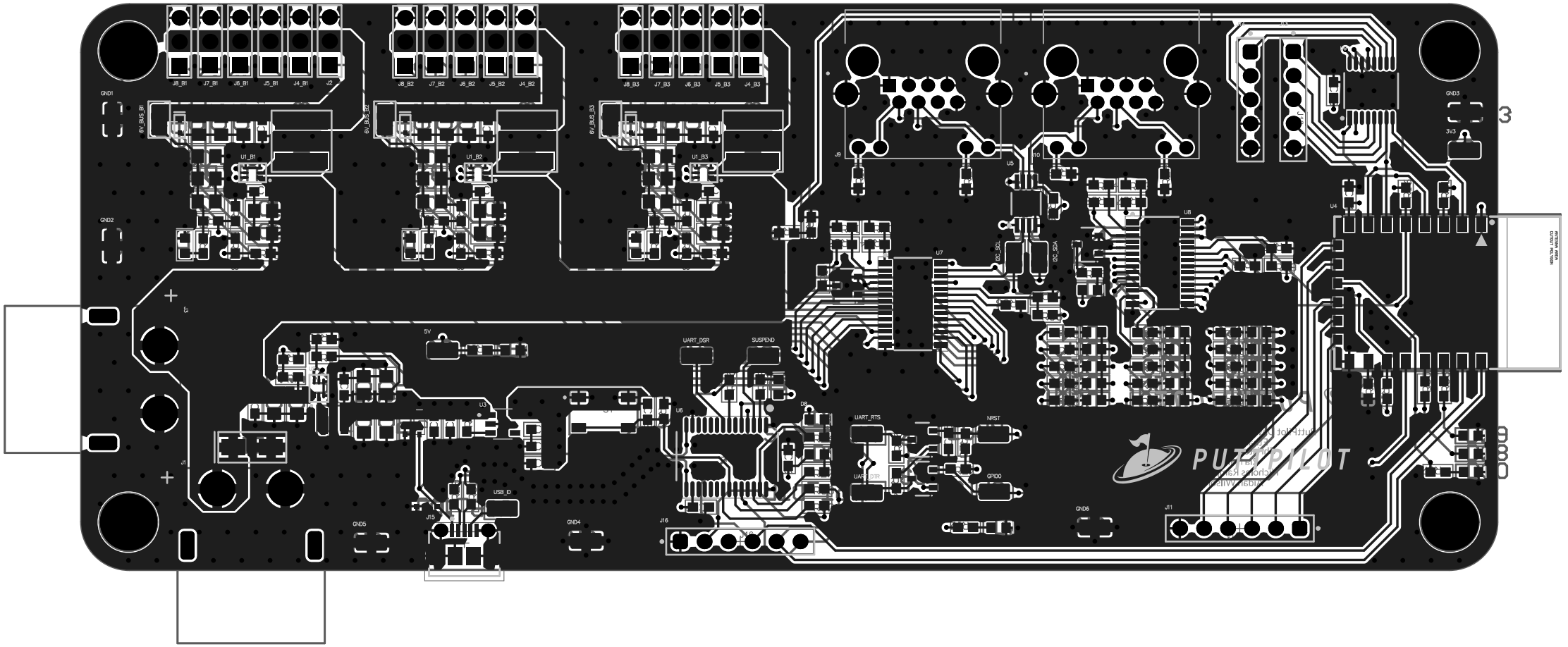
For each address pick either top or bottom resistor to be DNP



PUTTPILOT

PuttPilot
200 University Ave W
Waterloo, Ontario, Canada
N2L 3G1

PROJECT: PuttPilot-Dev.PrjPcb, [No Variations]	REVISION: 1.0
DOCUMENT: PWM_CONTROL.SchDoc	MODIFIED: 2024-11-11
ENGINEER: Ethan Abraham	REVIEWER: *
	SHEET 7 OF 7


J8_B1
J7_B1
J6_B1
J5_B1
J4_B1
J2
J8_B2
J7_B2
J6_B2
J5_B2
J4_B2
J8_B3
J7_B3
J6_B3
J5_B3
J4_B3
GND1
GND2
GND3
3V3
6V_BUS_B1
6V_BUS_B2
6V_BUS_B3
U1_B1
U1_B2
U1_B3
J9
J10
U5
U8
U7
I2C_SCL
I2C_SDA
J4
J3
5V
UART_DSR
SUSPEND
U3
U6
D8
UART_RTS
NRST
GPIO0
USB_ID
J15
GND5
GND4
J16
GND6
J11
J1
PUTTPILOT

Comment	Description	Designator	Footprint	LibRef	Quantity
RCWCTE	SMT Test Point	3V3, 5V, 6V_BUS_B1, 6V_BUS_B2, 6V_BUS_B3, GND1, GND2, GND3, GND4, GND5, GND6, GPIO0, I2C_SCL, I2C_SDA, NRST, SUSPEND, UART_DSR, UART_DTR, UART_RTS, USB_ID	RCWCTE	RCWCTE	20
GRM21BR61E226ME44K	CAP CER 22uF 25V X5R 0805	C1_B1, C1_B2, C1_B3, C2_B1, C2_B2, C2_B3, C5_B1, C5_B2, C5_B3, C6_B1, C6_B2, C6_B3, C7_B1, C7_B2, C7_B3, C8_B1, C8_B2, C8_B3, C9_B1, C9_B2, C9_B3, C10_B1, C10_B2, C10_B3, C11, C12, C15, C16, C17, C18	.CAP_0805	GRM21BR61E226ME44K	30
GCJ188R71H104KA12D	CAP CER 0.1uF 50V X7R 0603	C3_B1, C3_B2, C3_B3, C4_B1, C4_B2, C4_B3, C13, C14, C21, C24, C25, C26, C27, C29	.CAP_0603	GCJ188R71H104KA12D	14
GRT188R71E105KE13D	CAP CER 1uF 25V X7R 0603	C19, C20, C22, C23	.CAP_0603	GRT188R71E105KE13D	4
GCM188R72A103KA37D	CAP CER 0.01uF 100V X7R	C28	.CAP_0603	GCM188R72A103KA37D	1
SMAJ12A-13-F	TVS DIODE 12VWM	D1	SMAJ12A-13-F	SMAJ12A-13-F	1
ESD526.0T1G	TVS DIODE 6VWM	D2_B1, D2_B2, D2_B3	ESD526.0T1G	ESD526.0T1G	3
LTST-C191KGKT	LED GREEN 2V 0603	D3_B1, D3_B2, D3_B3, D6, D7, D8, D9, D10, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D26, D27, D28, D29, D30	.LED_0603	LTST-C191KGKT	27
DESD5V0U1BA-7	TVS DIODE 5VWM	D4, D11	DESD5V0U1BA-7	DESD5V0U1BA-7	2
BAT60JFILM	DIODE SCHOTTKY 10V 3A SOD323	D5	BAT60JFILM	BAT60JFILM	1
XT60PW-M	XT60PW Male	J1, J3	XT60PW-M	XT60PW-M	2
TSW-101-08-G-T-RA	CONN HEADER R/A 3POS 2.54MM	J2, J4_B1, J4_B2, J4_B3, J5_B1, J5_B2, J5_B3, J6_B1, J6_B2, J6_B3, J7_B1, J7_B2, J7_B3, J8_B1, J8_B2, J8_B3	HEADER_3POS_R/A_2.54MM	TSW-101-08-G-T-RA	16
MTJ-88ARX1-FSM-LG	RJ45 JACK R/A SHIELDED	J9, J10	MTJ-88ARX1-FSM-LG	MTJ-88ARX1-FSM-LG	2
PRPC040SAAN-RC_POS6	CONN HEADER VERT 6POS 2.54MM	J11, J16	HEADER_6POS_2.54MM	PRPC040SAAN-RC_POS6	2
PRPC040SAAN-RC_POS5	CONN HEADER VERT 5POS 2.54MM	J13, J14	HEADER_5POS_2.54MM	PRPC040SAAN-RC_POS5	2
1050170001	CONN USB MICRO B R/A	J15	USB_MICRO_B	1050170001	1
SRP6060FA-5R6M	FIXED IND 5.6uH 10A 15.8mOhm	L1_B1, L1_B2, L1_B3	SRP6060FA-5R6M	SRP6060FA-5R6M	3
NRH3012T4R7MN	FIXED IND 4.7uH 1.06A	L2	NRH3012T4R7MN	NRH3012T4R7MN	1
.HOLE_M3	.HOLE M3	M1, M2, M3, M4	.HOLE_M3	.HOLE_M3	4
.NET_TIE	.GENERIC NET TIE	NT3, NT4, NT5, NT9, NT10, NT11	.NET_TIE	.NET_TIE	6
DMN6140L-7	MOSFET N-CH 60V 1.6A SOT-23	Q1, Q4	.SOT-23-3	DMN6140L-7	2
MMBT2222A-7-F	NPN BJT 40V 600mA SOT-23	Q2, Q3	.SOT-23-3	MMBT2222A-7-F	2
RC0603FR-071KL	RES 1K OHM 0603	R1, R3_B1, R3_B2, R3_B3, R11, R12, R13, R15, R16, R25, R30, R32, R33, R55, R56, R57, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75	.RES_0603	RC0603FR-071KL	28
ERJ-3EKF2002V	RES 20K OHM 0603	R2_B1, R2_B2, R2_B3, R7	.RES_0603	ERJ-3EKF2002V	4
RC0603FR-0788K7L	RES 88.7K OHM 0603	R4_B1, R4_B2, R4_B3	.RES_0603	RC0603FR-0788K7L	3
RC0603FR-0710KL	RES 10K OHM 0603	R5_B1, R5_B2, R5_B3, R6_B1, R6_B2, R6_B3, R9, R10, R14, R19, R20, R21, R22, R34, R35, R36, R41, R58	.RES_0603	RC0603FR-0710KL	18
RC0603FR-0773K2L	RES 73.2K OHM 0603	R8	.RES_0603	RC0603FR-0773K2L	1
RC0603FR-07560RL	RES 560 OHM 0603	R17, R18, R23, R24, R26, R27, R28	.RES_0603	RC0603FR-07560RL	7
RC0603FR-0724RL	RES 24 OHM 0603	R29, R31	.RES_0603	RC0603FR-0724RL	2
RC0603FR-07240RL	RES 240 OHM 0603	R37, R38, R39, R40, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R59_B1, R59_B2, R59_B3, R60_B1, R60_B2, R60_B3, R61_B1, R61_B2, R61_B3, R62_B1, R62_B2, R62_B3, R63_B1, R63_B2, R63_B3	.RES_0603	RC0603FR-07240RL	31
RC0603FR-07140KL	RES 140K OHM 0603	R54	.RES_0603	RC0603FR-07140KL	1
PTS647SN38SMTR2LFS	SWITCH TACTILE SPST-NO 0.05A 12V	S1	PTS647SN38SMTR2LFS	PTS647SN38SMTR2LFS	1
TPS56624DRLR	BUCK 3V-16V 6A SOT-563	U1_B1, U1_B2, U1_B3, U2	TPS56624DRLR	TPS56624DRLR	4
TLV75533PDBVR	3V3 (Fixed) LDO 500mA SOT25	U3	.SOT-23-5	TLV75533PDBVR	1
2491-ESP8266	ESP8266 + Trace Antenna, 4MB Flash	U4	2491-ESP8266	2491-ESP8266	1
TCA9509DGKR	I2C BUFFER IC	U5	TCA9509DGKR	TCA9509DGKR	1
CY7C64225-28PVXCT	USB to UART SOP 28 Pin	U6	CY7C64225-28PVXCT	CY7C64225-28PVXCT	1
PCA9685PW,112	I2C LED Driver	U7, U8	PCA9685PW,112	PCA9685PW,112	2
TMUX1208PWR	Single-Ended Multiplexer, 1 Func, 8 Channel, CMOS, PDSO16	U9	TMUX1208	TMUX1208PWR	1