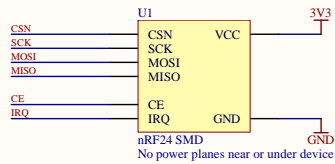
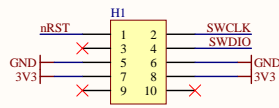


Nordic SMD Radio Module

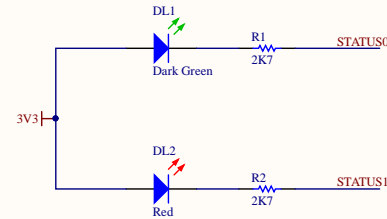


Change CSN on MCU and add CE.

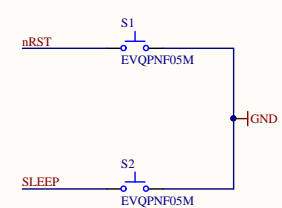
Programming



Status LEDs

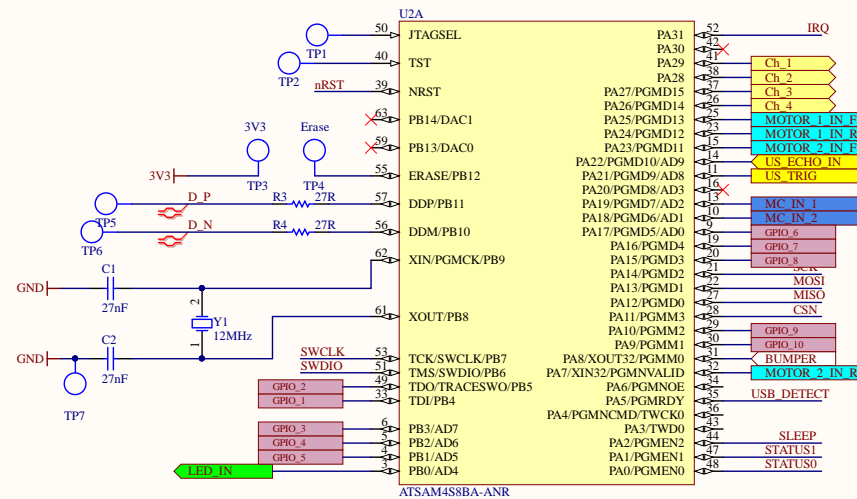


Switches

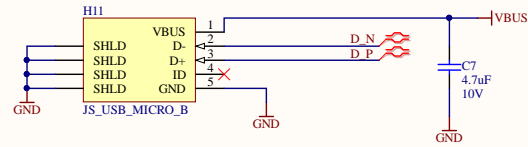


This schematic will contain the MCU connections and any component that is associated with it.

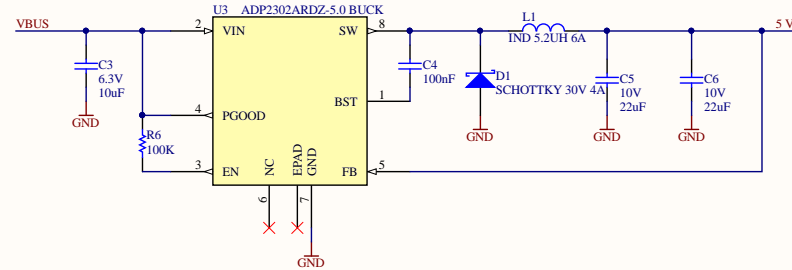
Atmel SAM4S8 MCU



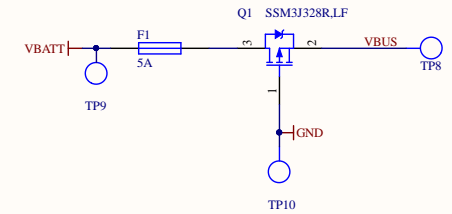
USB



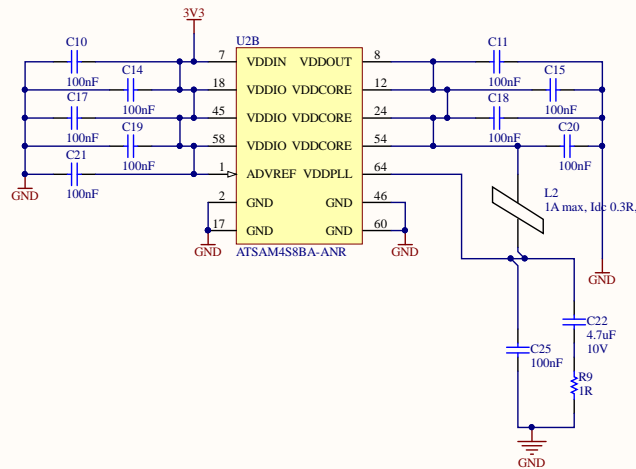
Buck Regulator IC



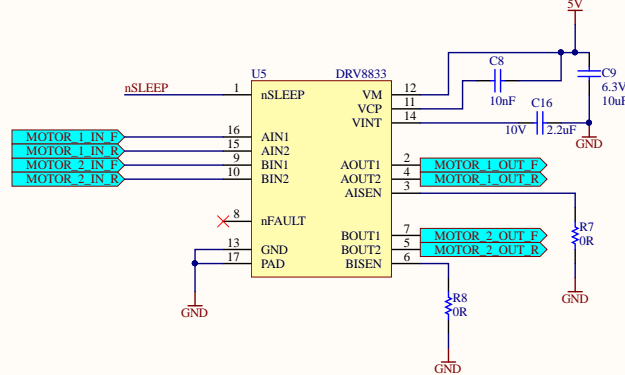
Reverse Polarity Protection Circuit



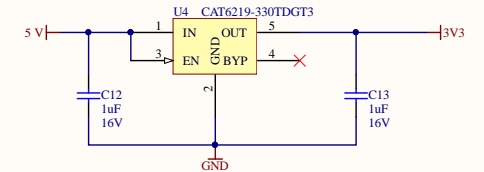
SAM4S Power



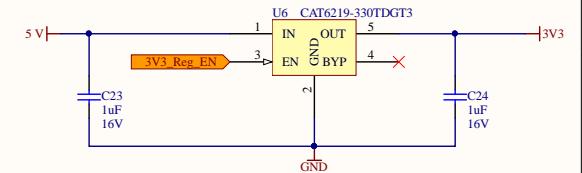
Dual H-bridge Motor Driver



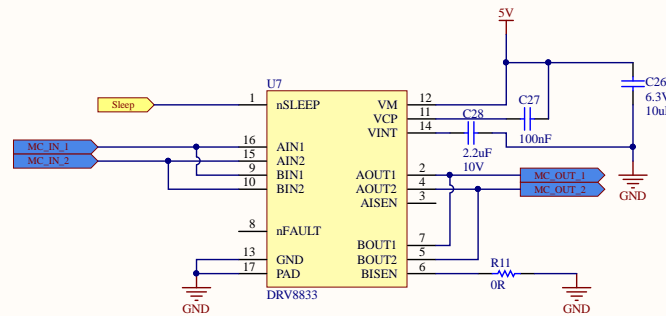
3.3 V Regulation



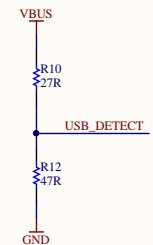
3.3 V Regulation for nRF24



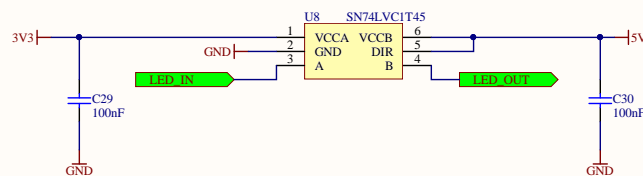
H-BRIDGE ATTACK MOTOR DRIVER



Voltage Divider



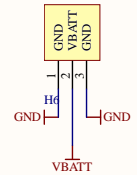
LEVEL CONVERTER



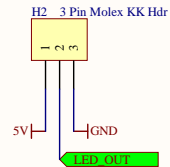
To connect this level regulator correctly meaning to drive the 3v3 signal to a 5v signal, Vcca pin need to be driven by the 3v3 regulator voltage and the Vccb should be driven by the 5v coming from the buck. Since that our intention to get 5v signal from the B pin, we need to drive the DIR pin to high (5V) to indicate that the direction goes from A to B.

This schematic is for all power components. It needs more inspections since all the components were just lead out and thier values might not be accurate. So, to suit this project's needs, a further careful inspection is needed by other group members.

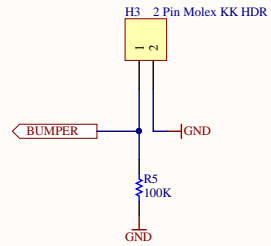
BATT HEADER



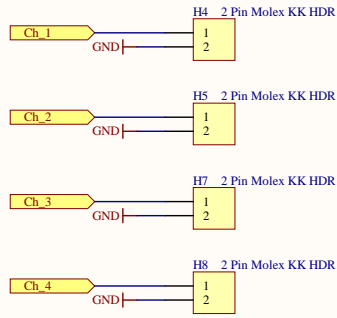
LED TAPE HEADER



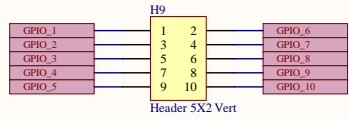
BUMPER HEADER



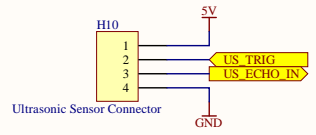
RADIO SELECTION HEADERS



10 PIN GPIO BREAKOUT



ULTRASONIC SENSOR



This schematic will contain all the headers needed for the racer car.

Comment	Description	Designator	Footprint	LibRef	Quantity
27nF	CAP CER 27nF X7R +	C1, C2	CAPC1608L	CC_27nF_0603	2
10uF	CAP CER 10UF X5R +	C3, C9, C26	CAPC1608L	CC_10uF_0603	3
100nF	CAP CER 100nF X7R +	C4, C10, C11, C14, C	CAPC1608L	CC_100nF_0603	14
22uF	CAP CER 22uF Y5V -2	C5, C6	CAPC3216L	CC_22uF_1206	2
4.7uF	CAP CER 4.7uF X5R +	C7, C22	CAPC1608N	CC_4.7uF_0603	2
10nF	CAP CER 10nF X7R +	C8	CAPC1608L	CC_10nF_0603	1
1uF	CAP CER 1uF Y5V -20	C12, C13, C23, C24	CAPC1608L	CC_1uF_0603	4
2.2uF	CAP CER 2.2uF X5R +	C16, C28	CAPC1608L	CC_2.2uF_0603	2
SCHOTTKY 30V 4A	DIODE SCHOTTKY 30V	D1	SMC	MBRS330T3G	1
Dark Green	LED Dk Green 430mcd	DL1	WL-SMCW0603	DL_150060GS75000	1
Red	LED Red 250mcd 0603	DL2	WL-SMCW0603	DL_150060RS75000	1
5A	Fuse 5.0A Fast Acting	F1	RESC3216N	FS_Fuse_5.0A	1
Header 5X2 Vert	IDC Header, 2.54mm	H1, H9	IDC2.54-V10D	JA_HDR_IDC_5X2_VE	2
3 Pin Molex KK Hdr	CONN HEADER 3POS	H2	MOLEX_KK_3_HDR	JA_MOLEX_KK_3POS	1
2 Pin Molex KK HDR	CONN HEADER 2POS	H3, H4, H5, H7, H8	MOLEX_KK_2_HDR	JA_MOLEX_KK_2POS	5
Battery_HEADER_3pin	3Pin Header 2.54mm	H6	BATT_HEADER_3POS	Battery_HEADER_3pin	1
Ultrasonic Sensor Conn	CONN HEADER 4POS	H10	MOLEX_KK_4_HDR	JA_MOLEX_KK_4POS	1
JS_USB_MICRO_B	CONN USB MICRO B	H11	FCI_USB_10118194-0	JS_USB_MICRO_B_SM	1
IND 5.2UH 6A	FIXED IND 5.2UH 6A	L1	INDUCTOR5u2	CDRH104RNP-5R2NC	1
1A max, Idc 0.3R,	Ferrite Bead, Rdc 0.3	L2	INDC3216L	IN_Ferrite-Bead	1
SSM3J328R,LF	MOSFET P-CH 20V 6A	Q1	SOT23_L	TM_SSM3J328R	1
2K7	RES 2.7K OHM 1/10W	R1, R2	RESC1608L	RS_2K7	2
27R	RES 27 OHM 1/10W	R3, R4, R10	RESC1608L	RS_27R	3
100K	RES 100K OHM 1/10W	R5, R6	RESC1608L	RS_100K	2
0R	RES 0.0 OHM 1/10W	R7, R8	RESC1608L	RS_0R0	2
1R	RES 1R OHM 1/4W 5%	R9	RESC3216L	RT_1R	1
0R	RES 0R OHM 1/8W 5%	R11	RESC3216L	RT_0R	1
47R	RES 47 OHM 1/10W	R12	RESC1608L	RS_47R	1
EVQPNF05M	Panasonic 6 x 3.5mm	S1, S2	EVQPNF05M	WS_EVQPNF05M	2
TP_0603	Test Point 1.65X0.9X	TP9	TP_0603	TP_0603	1
nRF24 SMD	nRF24 SMD Module	U1	NRF24	NRF24	1
ATSAM4S8BA-ANR	IC MCU 32BIT 512KB	U2	LQFP64_L	SE_ATSAM4S16BA-M	1
ADP2302ARDZ-5.0 BU	IC REG BUCK 5V 2A 8	U3	RD_8_1	ADP2302ARDZ-5.0-R7	1
CAT6219-330TDGT3	IC REG LIN 3.3V 500	U4, U6	SOT95P280X145-5N	SV_CAT6219-330TDG	2
DRV8833	Dual H-Bridge Motor D	U5, U7	HTSOP16	DRV8833	2
SN74LVC1T45	1.8V - 5V level conver	U8	SOT23-6_N	SN74LVC1T45	1
12MHz	Crystal Oscillator	Y1	R38	XTAL	1