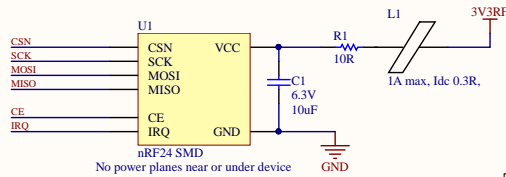
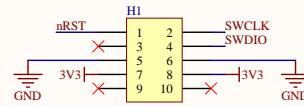


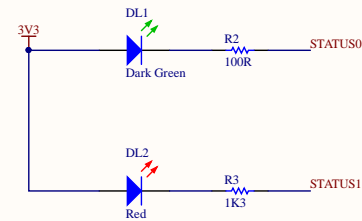
## Nordic SMD Radio Module



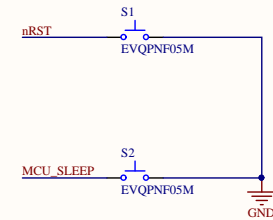
## Programming



## Status LEDs



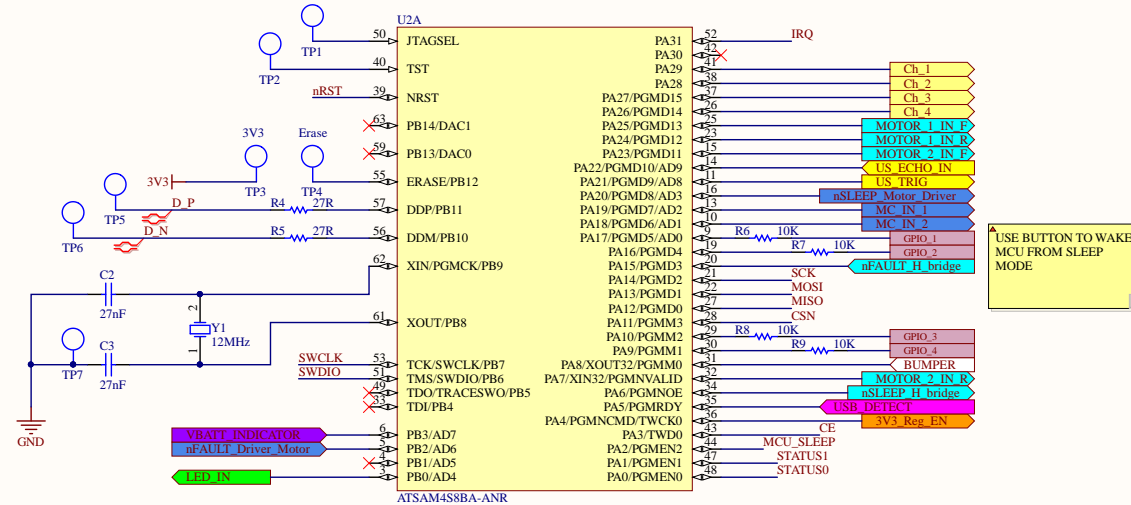
## Switches



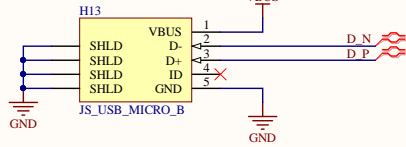
This schematic will contain the MCU connections and any component that is associated with it.

Change CSN on MCU and add CE.

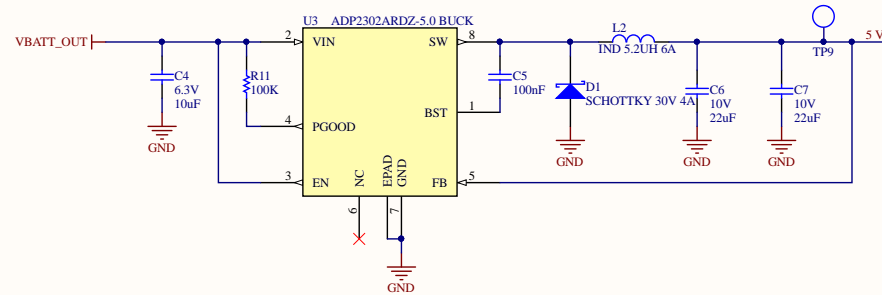
## Atmel SAM4S8 MCU



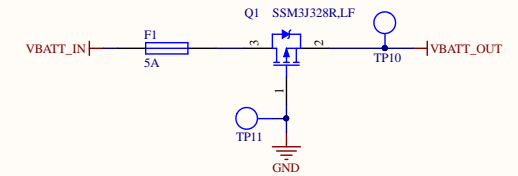
## USB



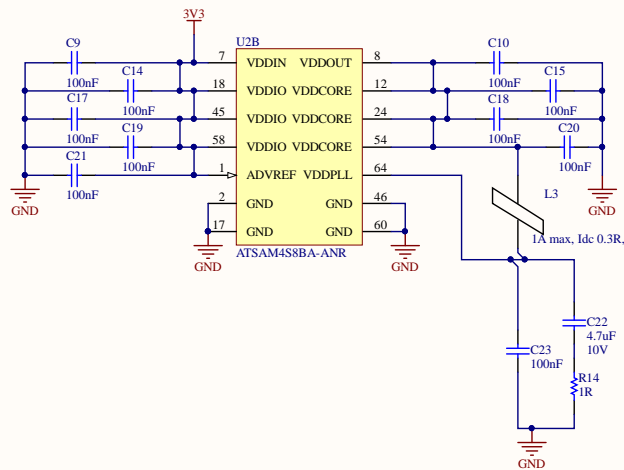
## Buck Regulator IC



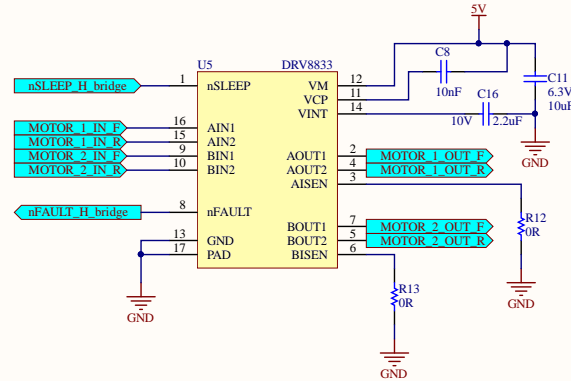
## Reverse Polarity Protection Circuit



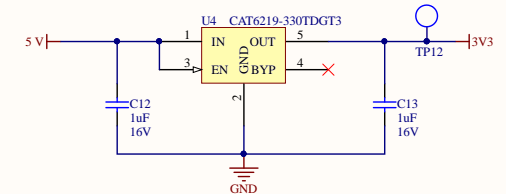
## SAM4S Power



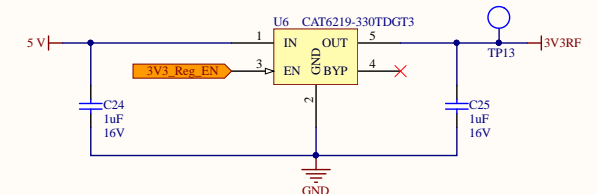
## Dual H-bridge Motor Driver



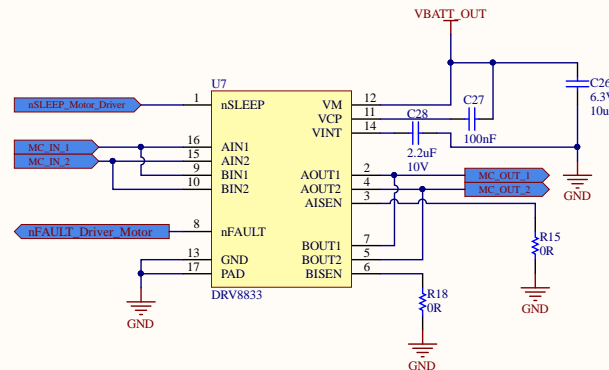
## 3.3 V Regulation



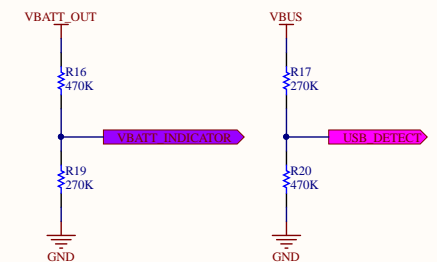
## 3.3 V Regulation for nRF24



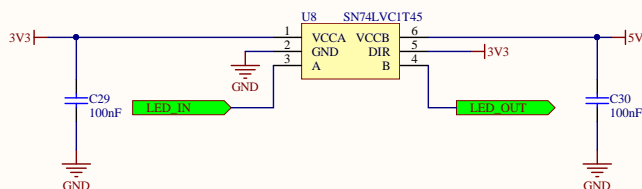
## H-BRIDGE ATTACK MOTOR DRIVER



## Voltage Divider

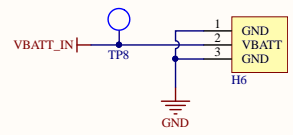


## LEVEL CONVERTER

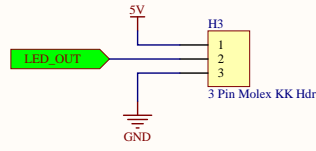


To connect this level regulator correctly meaning to drive the 3v3 signal to a 5v signal, Vcca pin need to be driven by the 3v3 regulator voltage and the Vccb should be driven by the 5v coming from the buck. Since that our intention to get 5v signal from the B pin, we need to drive the DIR pin to high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

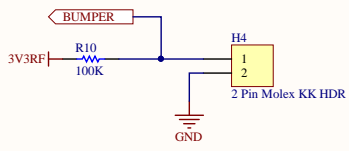
### BATT HEADER



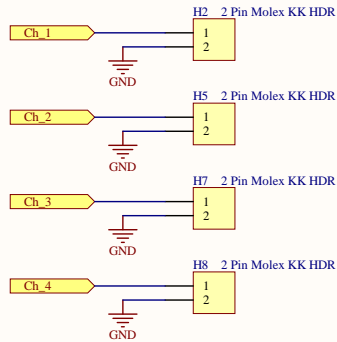
### LED TAPE HEADER



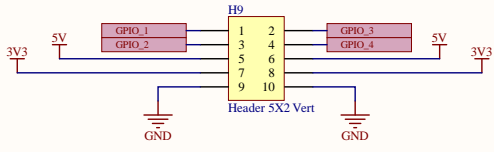
### BUMPER HEADER



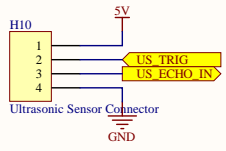
### RADIO SELECTION HEADERS



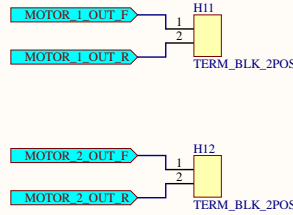
### 10 PIN GPIO BREAKOUT



### ULTRASONIC SENSOR



### MOTOR HEADERS



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

Comment	Description	Designator	Footprint	LibRef	Quantity
10uF	CAP CER 10UF X5R +	C1, C4, C11, C26	CAPC1608L	CC_10uF_0603	4
27nF	CAP CER 27nF X7R +	C2, C3	CAPC1608L	CC_27nF_0603	2
100nF	CAP CER 100nF X7R +	C5, C9, C10, C14, C15	CAPC1608L	CC_100nF_0603	14
22uF	CAP CER 22uF Y5V -2	C6, C7	CAPC3216L	CC_22uF_1206	2
10nF	CAP CER 10nF X7R +	C8	CAPC1608L	CC_10nF_0603	1
1uF	CAP CER 1uF Y5V -20	C12, C13, C24, C25	CAPC1608L	CC_1uF_0603	4
2.2uF	CAP CER 2.2uF X5R -	C16, C28	CAPC1608L	CC_2.2uF_0603	2
4.7uF	CAP CER 4.7uF X5R -	C22	CAPC1608N	CC_4.7uF_0603	1
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_VERT	2
2 Pin Molex KK HDR	CONN HEADER 2POS	H2, H4, H5, H7, H8	MOLEX_KK_2_HDR	JA_MOLEX_KK_2POS	5
3 Pin Molex KK Hdr	CONN HEADER 3POS	H3	MOLEX_KK_3_HDR	JA_MOLEX_KK_3POS	1
Battery_HEADER_3pin	3Pin Header 2.54mm	H6	BATT_HEADER_3POS	Battery_HEADER_3pin	1
Ultrasonic Sensor Connector	CONN HEADER 4POS	H10	MOLEX_KK_4_HDR	JA_MOLEX_KK_4POS	1
TERM_BLK_2POS	2 Position Terminal Block	H11, H12	TERM_BLK_2POS	TERM_BLK_2POS	2
JS_USB_MICRO_B	CONN USB MICRO B	H13	FCI_USB_10118194-01	JS_USB_MICRO_B_SMD	1
1A max, Idc 0.3R,	Ferrite Bead, Rdc 0.3	L1, L3	INDC3216L	IN_Ferrite-Bead	2
IND 5.2UH 6A	FIXED IND 5.2UH 6A	L2	INDUCTOR5u2	CDRH104RNP-5R2NC	1
SSM3J328R,LF	MOSFET P-CH 20V 6A	Q1	SOT23_L	TM_SSM3J328R	1
10R	RES 10 OHM 1/10W 5%	R1	RESC1608L	RS_10R	1
100R	RES 100 OHM 1/10W 5%	R2	RESC1608L	RS_100R	1
1K3	RES 1.3K OHM 1/10W 5%	R3	RESC1608L	RS_1K3	1
27R	RES 27 OHM 1/10W 5%	R4, R5	RESC1608L	RS_27R	2
10K	RES 10.0K OHM 1/10W 5%	R6, R7, R8, R9	RESC1608L	RS_10K	4
100K	RES 100K OHM 1/10W 5%	R10, R11	RESC1608L	RS_100K	2
0R	RES 0.0 OHM 1/10W 5%	R12, R13, R15	RESC1608L	RS_0R0	3
1R	RES 1R OHM 1/4W 5%	R14	RESC3216L	RT_1R	1
470K	RES 27 OHM 1/10W 5%	R16, R20	RESC1608L	RS_27R, RS_47R	2
270K	RES 27 OHM 1/10W 5%	R17, R19	RESC1608L	RS_27R, RS_47R	2
0R	RES 0R OHM 1/8W 5%	R18	RESC3216L	RT_0R	1
EVQPNF05M	Panasonic 6 x 3.5mm	S1, S2	EVQPNF05M	WS_EVQPNF05M	2
TP_0603	Test Point 1.65X0.9X	TP8, TP9, TP12, TP13	TP_0603	TP_0603	4
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 BL	IC REG BUCK 5V 2A 8	U3	RD_8_1	ADP2302ARDZ-5.0-R7	1
CAT6219-330TDGT3	IC REG LIN 3.3V 500M	U4, U6	SOT95P280X145-5N	SV_CAT6219-330TDC	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