
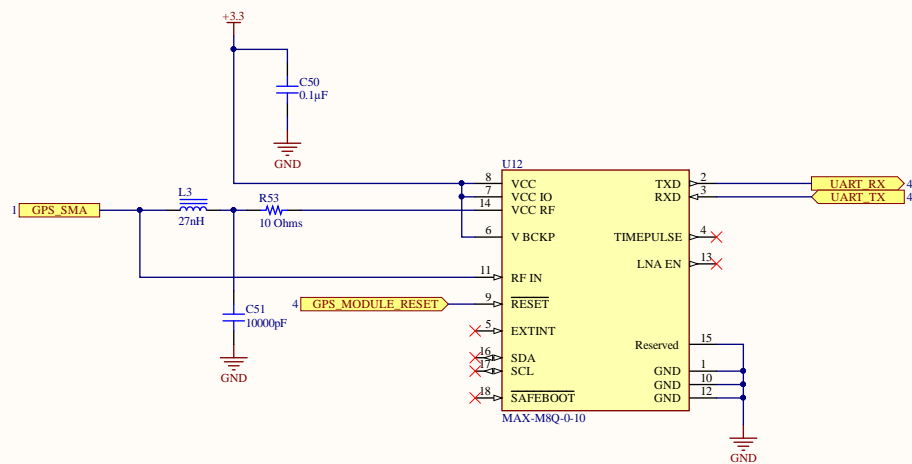


Title <i>Payload Card Transceivers</i>			Brickworks Matthew Glazer Design Engineer * *	
Size: A3	Number: *	Revision: 1A		
Date: 5/8/2021	Time: 12:09:27 AM Sheet 2 of 6			
File: C:\Users\Matthew\Documents\GitHub\HAB-Avionics-Sensor-Card\Transceivers.SchDoc				



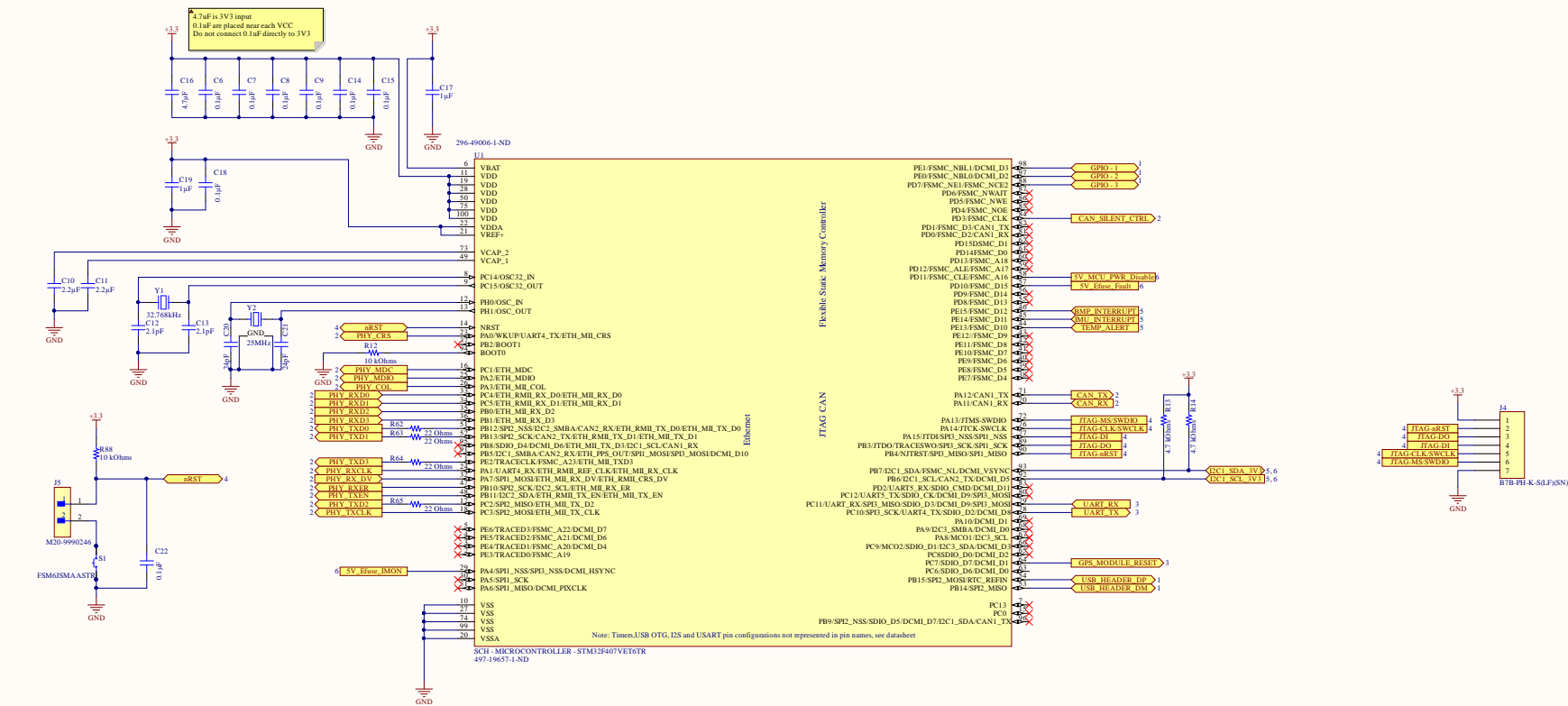
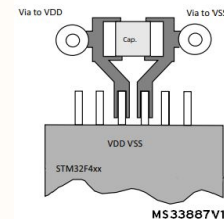


Table 6. Boot modes

BOOT mode selection pins			
BOOT1	BOOT0	Boot mode	Aliasing
x	0	Main Flash memory	Main Flash memory is selected as boot space
0	1	System memory	System memory is selected as boot space
1	1	Embedded SRAM	Embedded SRAM is selected as boot space

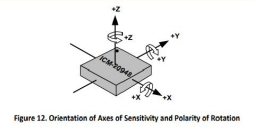
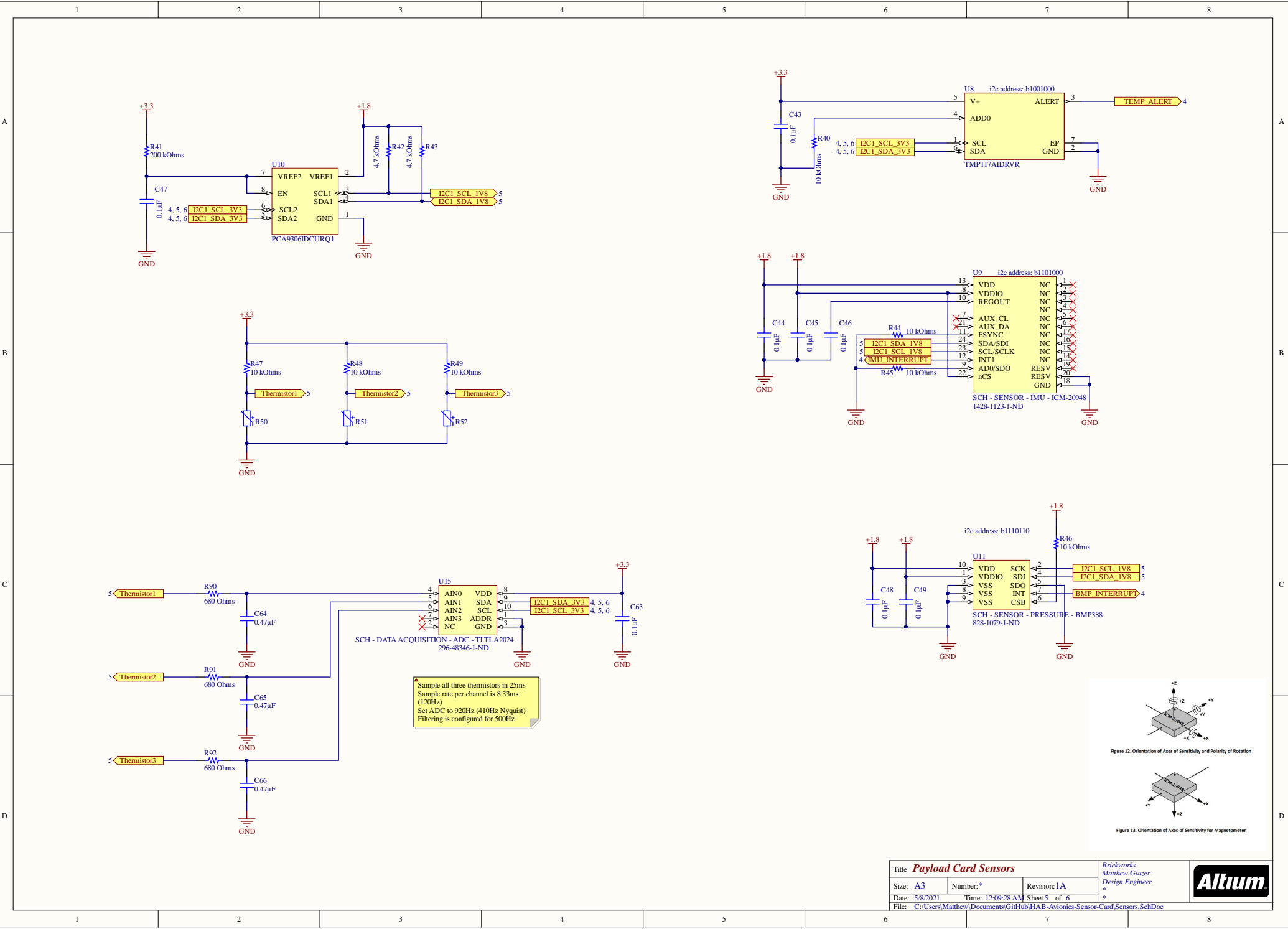


Figure 12. Orientation of Axes of Sensitivity and Polarity of Rotation

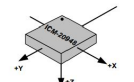
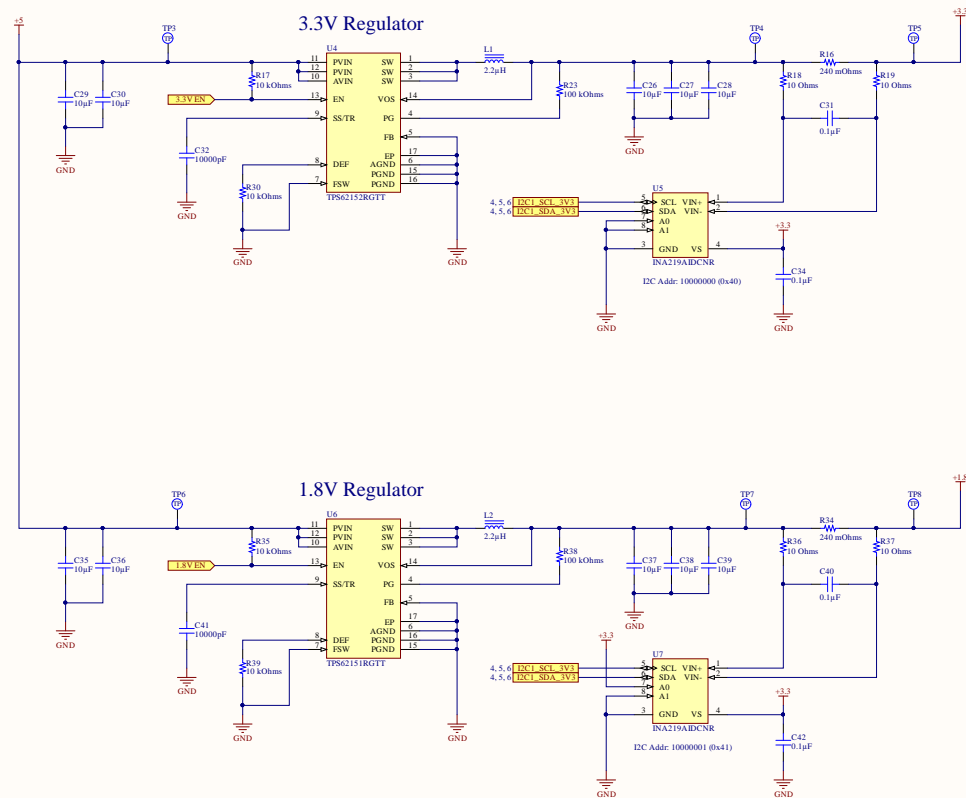
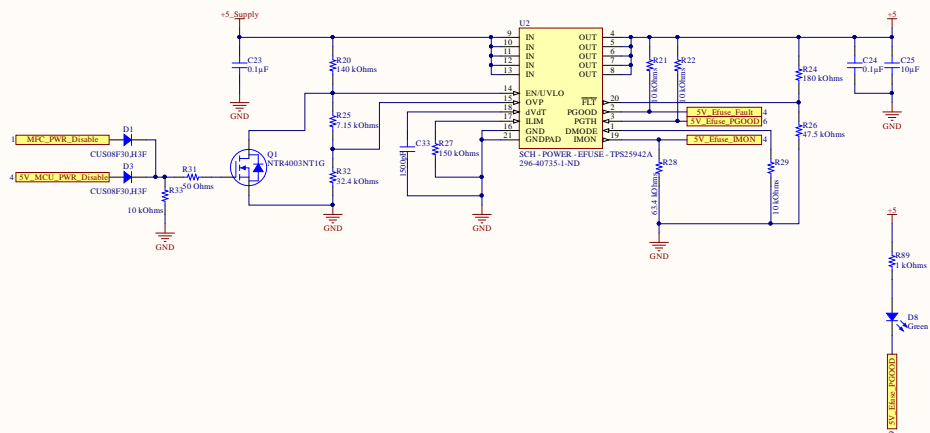


Figure 13. Orientation of Axes of Sensitivity for Magnetometer



Line #	Name	Description	Designator	Quantity	Manufacturer 1	Manufacturer Part Number 1	Manufacturer Lifecycle 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Supplier Subtotal 1
	10uF	CAP CER 10UF 16V XSR 0805	C1, C2, C3, C4, C25, C26, C27, C28, C29, C30, C35, C36, C37	16	Yageo	CC0805KXR7B7B106	Volume Production	Digi-Key	311-1865-1-ND	0.288	4.61
	0.1uF	CAP CER 0.1UF 25V X7R 0603	C5, C6, C7, C8, C9, C14, C15, C18, C22, C23, C24, C31, C32	29	Samsung	CL10B104KABWNC	New Product	Digi-Key	1276-6717-1-ND	0.048	2.4
	2.2uF	CAP CER 2.2UF 16V XSR 0603	C10, C11	2	Taiyo Yuden	BMK107BJ225KA-T	Volume Production	Digi-Key	587-1430-1-ND	0.11	0.22
	2.1pF	CAP CER RF 2.1PF 50V +/-0.1 PF C	C12, C13	2	KEMET	CBR06C219B5GAC		Digi-Key	399-16153-1-ND	0.29	0.58
	4.7uF	CAP CER 4.7UF 16V XSR 0603	C16	1	TDK	C160B5R1C475K080AC	Volume Production	Digi-Key	445-7478-1-ND	0.3	0.3
	1uF	CAP CER 1UF 16V X7R 0603	C17, C19	2	Murata	GCM188R71C105KA64J	Volume Production	Digi-Key	490-12657-1-ND	0.22	0.44
	24pF	CAP CER 24PF 50V COG/NPO 0603	C20, C21, C60, C61	4	Sams	CL10C140UB8NNNC		Digi-Key	1276-1761-1-ND	0.1	0.4
	10000pF	CAP CER 10000PF 16V X7R 0603	C32, C41, C51	3	KEMET	C0603S103K4RACU	Volume Production	Digi-Key	399-9135-1-ND	0.36	1.08
	1500pF	CAP CER 1500PF 25V X7R 0603	C33	1	Yageo	CC0603JRX7R8BB152	Volume Production	Digi-Key	311-3996-1-ND	0.12	0.12
	22uF	CAP CER 22UF 10V XSR 0805	C54, C56, C58	3	Samsung	CL21A226KPCLRNC	New Product	Digi-Key	1276-6786-1-ND	0.39	1.17
	0.47uF	CAP CER 0.47UF 16V XSR 0603	C64, C65, C66	3	KEMET	C0603C474KPACTU	Volume Production	Digi-Key	399-7934-1-ND	0.15	0.45
	CUS08F30,H3F	DIODE SCHOTTKY 30V 800MA USC	D1, D3	2	Toshiba	CUS08F30,H3F	Volume Production	Digi-Key	CUS08F30H3FCT-ND	0.35	0.7
	Green	LED GREEN CLEAR CHIP SMD	D2, D5, D6, D8	4	Vishay Lite-On	LTST-C193KGKT-5A	Volume Production	Digi-Key	160-1828-1-ND	0.39	1.56
	PESD1CAN-UX	TVS DIODE 24V 50V SC70-3	D4	1	Nexperia	PESD1CAN-UX		Digi-Key	1727-1306-6-ND	0.36	0.36
	1N4148W RHG	DIODE GEN PURP 100V 150MA SOD123	D7	1	Taiwan Semiconductor	1N4148W RHG		Digi-Key	1N4148WRHGCCT-ND	0.17	0.17
	0878332820		J1	1	Molex	0878332820	Volume Production	Digi-Key	WM20552-ND	3.23	3.23
	10118193-0001LF	CONN RCPT USB2.0 MICRO B SMD R/A	J2	1	Amphenol ICC	10118193-0001LF		Digi-Key	609-4616-2-ND	0.22564	270.77
	731000114	SMA Right-Angle PCB Jack Receptacle, Brass Body, G	J3	1	Molex	73100-0114	Volume Production				
	B7B-PH-K-S(LF)(SN)	CONN HEADER VERT 7POS 2MM	J4	1	JST	B7B-PH-K-S(LF)(SN)	Volume Production	Digi-Key	455-1709-ND		
	M20-9990246	CONN HEADER VERT 2POS 2.54MM	J5	1	Hanwh	M20-9990246	Volume Production	Newark	56K0146	0.024	0.024
	2.2uH	FIXED IND 2.2UH 2.9A 44 MOHM SMD	L1, L2	2	Bourns	SRN4018-2R2M	Volume Production	Digi-Key	SRN4018-2R2MCT-ND		
	27H4	FIXED IND 27NH 280MA 520 MOHM	L3	1	Murata	LOW15AN27NG00D	Volume Production	Digi-Key	490-6792-1-ND	0.16	0.16
	NTR4003NT1G	MOSFET N-CH 30V 500MA SOT-23	Q1	1	ON Semiconductor	NTR4003NT1G	Volume Production	Digi-Key	NTR4003NT1GOSCT-ND		
	50 Ohms	RES SMD 50 OHM 1% 1/10W 0603	R1, R6, R10, R11, R31	5	Vishay Dale	CRCW0603S0R0RKEA	Volume Production	Digi-Key	541-3318-1-ND		
	10 kOhms	RES 10K OHM 5% 1/10W 0603	R2, R3, R4, R5, R7, R8, R12, R17, R21, R22, R29, R30, R32	24	Stackpole Electronics	RMCF0603JT10K0	Volume Production	Digi-Key	RMCF0603JT10K0CT-ND	0.015	0.36
	590 Ohms	RES 590 OHM 1% 1/10W 0603	R9	1	Stackpole Electronics	RMCF0603JT590R	Volume Production	Digi-Key	RMCF0603JT590RCT-ND	0.1	0.1
	4.7 kOhms	RES 4.7K OHM 1% 1/10W 0603	R13, R14, R42, R43	4	Stackpole Electronics	RMCF0603JT4K70	Volume Production	Digi-Key	RMCF0603JT4K70CT-ND	0.017	0.17
	0 Ohms	RES 0 OHM JUMPER 1/10W 0603	R15	1	Stackpole Electronics	RMCF0603ZT0R00	Volume Production	Digi-Key	RMCF0603ZT0R00CT-ND	0.1	0.1
	240 mOhms	RES 0.24 OHM 1% 1/2W 0805	R16, R34	2	Panasonic	ERJ-6DGR24V	Volume Production	Digi-Key	P19293CT-ND	0.33	0.66
	10 Ohms	CRGCO 0603 10R 1%	R18, R19, R36, R37, R53	5	TE Connectivity	CRGCO0603F10R		Digi-Key	A129664CT-ND	0.031	0.31
	140 kOhms	RES SMD 140K OHM 0.1% 1/10W 0603	R20	1	Yageo	RT0603BR07140KL	Volume Production	Digi-Key	YAG4626CT-ND	0.38	0.38
	100 kOhms	RES SMD 100K OHM 5% 1/10W 0603	R23, R38	2	Yageo	RC0603JR-10100KL	Volume Production	Digi-Key	YAG2294CT-ND	0.1	0.2
	180 kOhms	RES 180K OHM 1% 1/10W 0603	R24	1	Stackpole Electronics	RMCF0603FT180K	Volume Production	Digi-Key	RMCF0603FT180KCT-ND	0.1	0.1
	7.15 kOhms	RES SMD 7.15K OHM 0.1% 1/5W 0603	R25	1	Panasonic	ERJ-PB3B7151V	New Product	Digi-Key	P20070CT-ND	0.23	0.23
	47.5 kOhms	RES 47.5K OHM 1% 1/10W 0603	R26	1	Stackpole Electronics	RMCF0603FG47K5	Volume Production	Digi-Key	RMCF0603FG47K5CT-ND	0.1	0.1
	150 kOhms	RES 150K OHM 1% 1/10W 0603	R27	1	Stackpole Electronics	RMCF0603FG150K	Volume Production	Digi-Key	RMCF0603FG150KCT-ND	0.1	0.1
	63.4 kOhms	RES 63.4K OHM 1% 1/10W 0603	R28	1	Stackpole Electronics	RMCF0603FT63K4	Volume Production	Digi-Key	RMCF0603FT63K4CT-ND	0.1	0.1
	32.4 kOhms	RES SMD 32.4K OHM 0.1% 1/5W 0603	R32	1	Panasonic	ERJ-PB3B3242V	New Product	Digi-Key	P20142CT-ND	0.23	0.23
	200 kOhms	RES 200K OHM 1% 1/10W 0603	R41	1	Stackpole Electronics	RMCF0603FT200K	Volume Production	Digi-Key	RMCF0603FT200KCT-ND	0.1	0.1
	10 kOhms	RES 10K OHM 1% 1/10W 0603	R47, R48, R49	3	SEI	RMCF0603FT10K0		Digi-Key	RMCF0603FT10K0CT-ND		
	10 kOhms	SENSOR PTC 10KOHM 1% X1SON	R50, R51, R52	3	Texas Instruments	TMP6131DECR		Digi-Key	296-TMP6131DECRCT-ND	0.23	0.69
	100 Ohms	RES 100 OHM 1% 1/10W 0603	R54	1	Stackpole Electronics	RMCF0603FG100R	Volume Production	Digi-Key	RMCF0603FG100RCT-ND	0.1	0.1
	1 kOhms	RES 1K OHM 1% 1/8W 0603	R57, R58, R73, R79, R80, R81, R82, R84, R85, R86, R87, R88	12	Stackpole Electronics	RNCP0603FTD1K00	Volume Production	Digi-Key	RNCP0603FTD1K00CT-ND	0.058	0.696
	240 Ohms	RES 240 OHM 5% 1/10W 0603	R59, R60	2	Stackpole Electronics	RMCF0603JT240R	Volume Production	Digi-Key	RMCF0603JT240RCT-ND	0.015	0.15
	22 Ohms	RES 22 OHM 1% 1/10W 0603	R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72	15	Stackpole Electronics	RMCF0603FT22R0	Volume Production	Digi-Key	RMCF0603FT22R0CT-ND	0.017	0.255
	6.49 kOhms	RES 6.49K OHM 1% 1/8W 0603	R72	1	Stackpole Electronics	RNCP0603FTD6K49	Volume Production	Digi-Key	RNCP0603FTD6K49CT-ND		
	680 Ohms	RES 680 OHM 1% 1/10W 0603	R90, R91, R92	3	Stackpole Electronics	RMCF0603FT680R	Volume Production	Digi-Key	RMCF0603FT680RCT-ND	0.017	0.17
	FSM6J/SMAASTR	SWITCH TACTILE SPST-NO 0.05A 24V	S1	1	TE Connectivity AM	FSM6J/SMAASTR	Volume Production	Digi-Key	450-2138-1-ND	0.55	0.55
	2.5mm_SMD_TestPoint		TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8	8							
	SCH - MICROCONTROLLER - STM32F407VET6TR		U1	1	STMicroelectronics	STM32F407VET6TR	Not Recommended for New	Digi-Key	497-19657-1-ND		
	SCH - POWER - EFUSE - TPS25942A		U2	1	Texas Instruments	TPS25942ARVCR	Volume Production	Digi-Key	296-40735-1-ND		
	TPD45012DRYR	USB ESD Solution with Power Clamp, 4 Channels, 4	U3	1	Texas Instruments	TPD45012DRYR	Volume Production	RSC components	7099076P	0.589	29.45
	TPS62152RGTT	Buck Step Down Regulator with 3 to 17 V Input and 3	U4	1	Texas Instruments	TPS62152RGTT	Volume Production	Arrow Electronics	TPS62152RGTT	1.99	1.99
	INA219AIDCNR	Zero-Drift, Bi-Directional Current / Power Monitor, 3	U5, U7	2	Texas Instruments	INA219AIDCNR	Volume Production				
	TPS62151RGTT	Buck Step Down Regulator with 3 to 17 V Input and 1	U6	1	Texas Instruments	TPS62151RGTT	Volume Production	Mouseer	595-TPS62151RGTT	1.97	1.97
	TMP117AIDRV	TEMPERATURE SENSOR	U8	1	Texas Instruments	TMP117AIDRV		Arrow Electronics	TMP117AIDRV	6.79	6.79
	SCH - SENSOR - IMU - ICM-20948		U9	1	TDK InvenSense	ICM-20948		Digi-Key	1428-1123-1-ND		
	PCA9306IDCURQ1	Automotive Catalog Dual Bidirectional I2C Bus and S	U10	1	Texas Instruments	PCA9306IDCURQ1	Volume Production	Arrow Electronics	PCA9306IDCURQ1	0.8861	0.8861
	SCH - SENSOR - PRESSURE - BMP388		U11	1	Bosch Sensortec	BMP388		Digi-Key	828-1079-1-ND		
	MAX-MBQ-0-10	RF RCVR GNSS/GPS 1.575GHZ 18LC	U12	1	u-blox	MAX-MBQ-0					
	SCH - INTERFACE - CAN - TI TCAN1051V		U13	1	Texas Instruments	TCAN1051VDRQ1		Digi-Key	296-44228-1-ND		
	KS28081MNXIA-TR	IC TRANSCEIVER FULL 1/1 320FN	U14	1	Microchip	KS28081MNXIA-TR	Volume Production				
	SCH - DATA ACQUISITION - ADC - TI TLA2024		U15	1	Texas Instruments	TLA20241RUGT		Digi-Key	296-48346-1-ND	2.16	2.16
	32.768kHz	IOT 32.768KHZ XTAL	Y1	1	Abracon	ABS07-166-32.768KHZ-T		Digi-Key	535-14514-1-ND		
	25MHz	CRYSTAL 25.0000MHZ 18PF SMD	Y2, Y3	2	Epson	TSX-3225 25.0000MF20P-C0		Digi-Key	SER4212CT-ND		