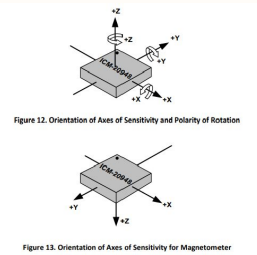
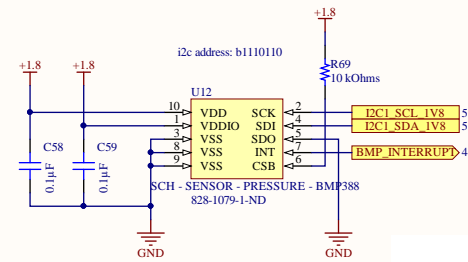
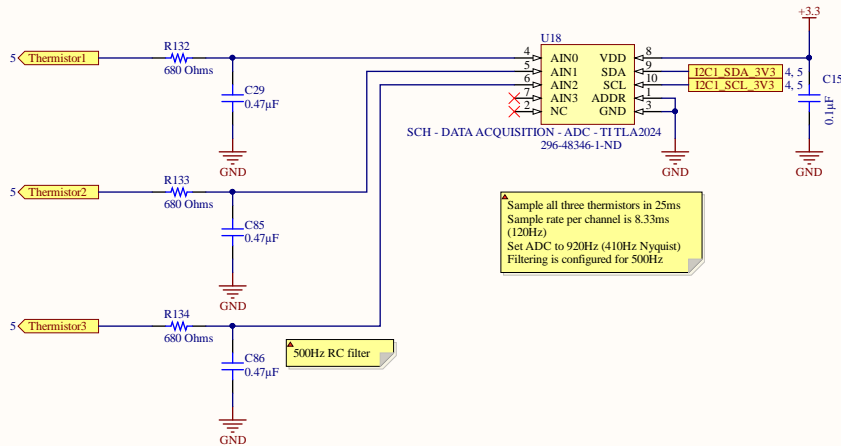
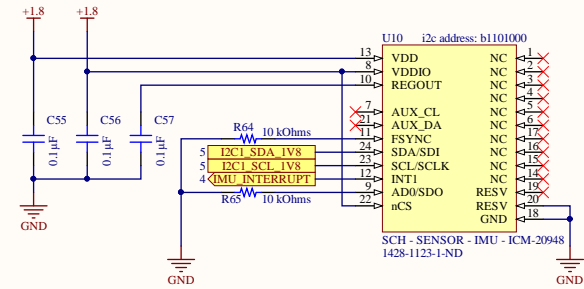
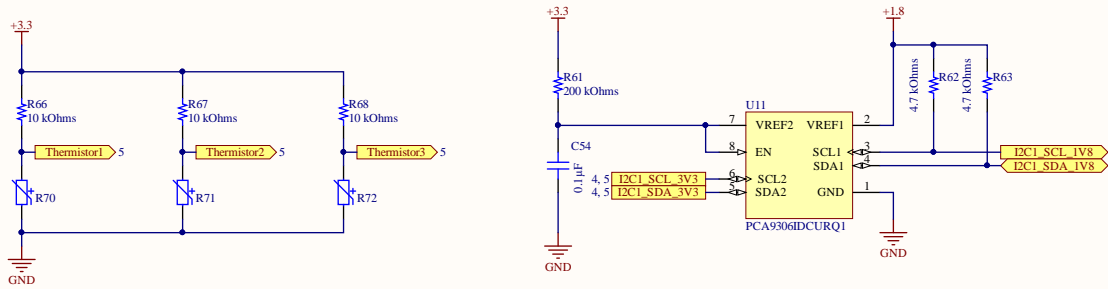
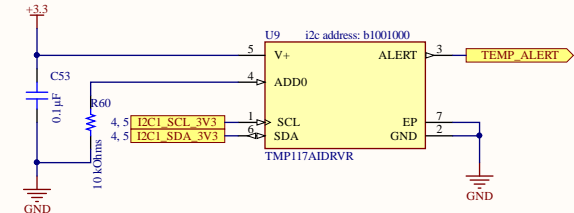
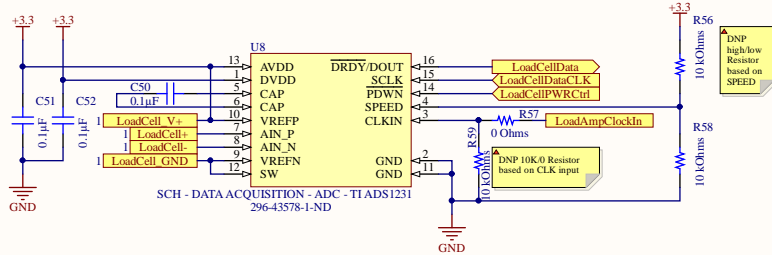
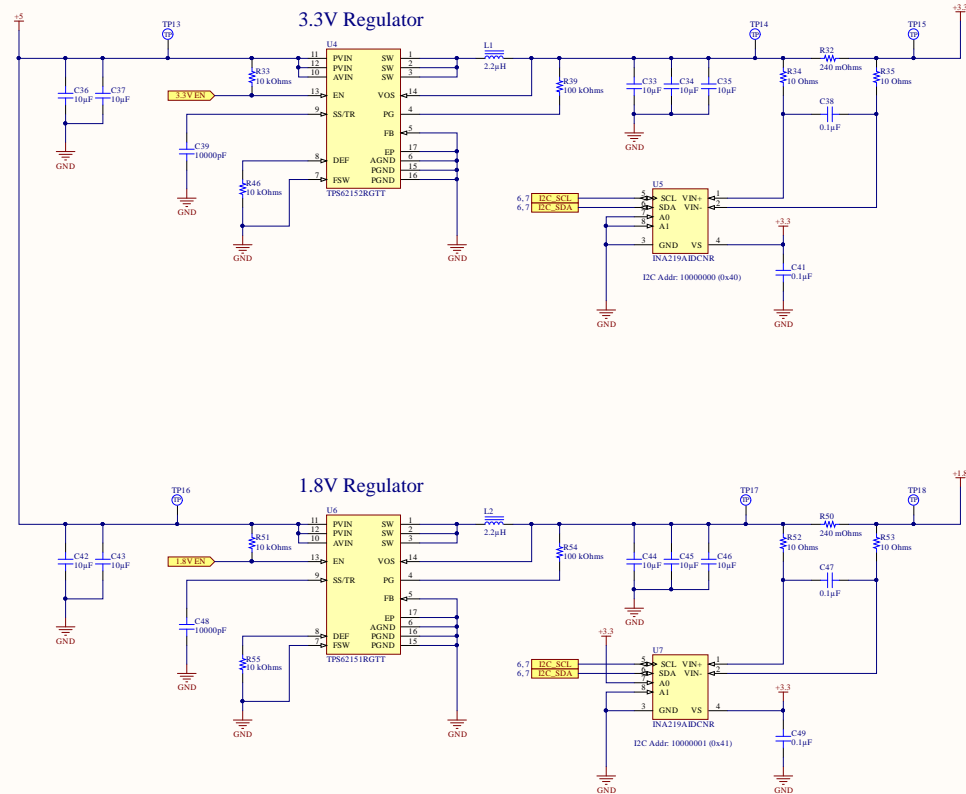
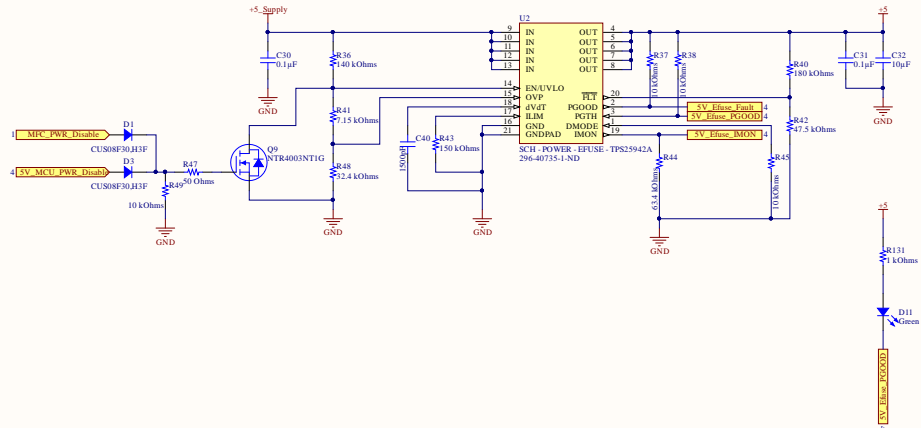


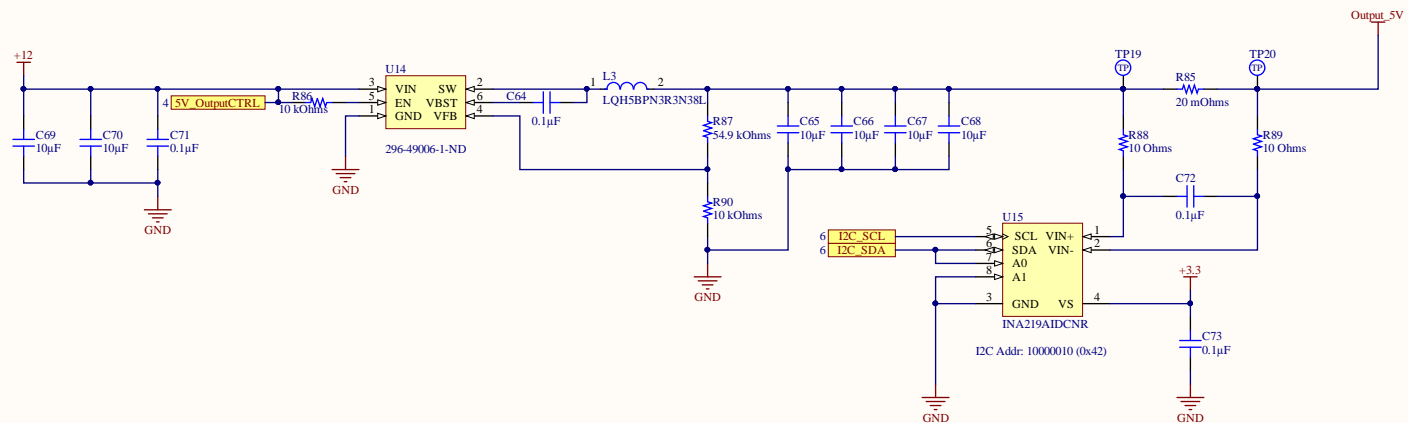
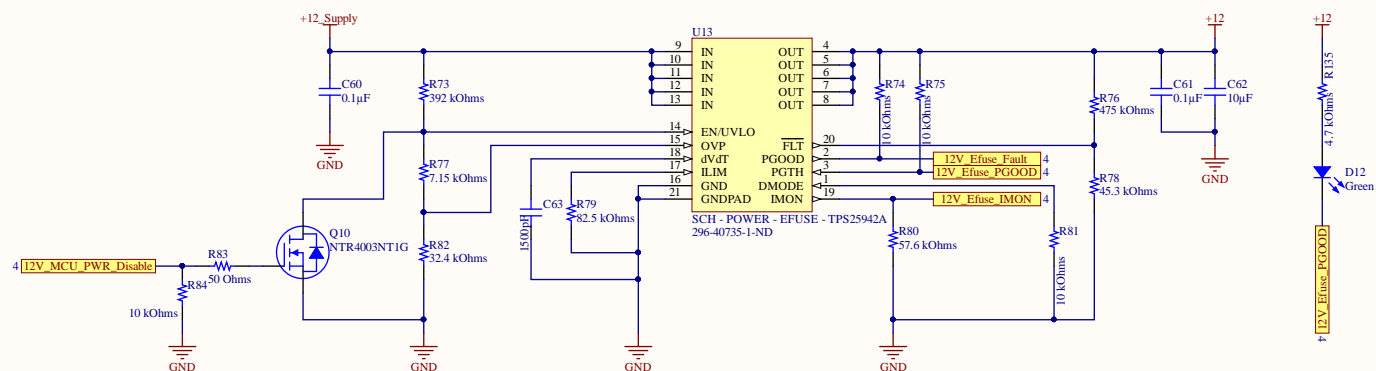
BOOT mode selection pins		Boot mode	Aliasing
BOOT1	BOOT0		
x	0	Main Flash memory	Main Flash memory is selected as boot space
0	1	System memory	System memory is selected as boot space
1	1	Embedded SRAM	Embedded SRAM is selected as boot space

Table 2. Data Rate Settings

SPEED PIN	DATA RATE	
	Internal Oscillator	External Clock
0	10SPS	$f_{CLKIN} / 491,520$
1	80SPS	$f_{CLKIN} / 61,440$







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
2.2uF	CAP CER 2.2UF 16V XSR 0603	C1, C6, C8, C10, C11	C1, C6, C8, C10, C11	5	Taiyo Yuden	EMK107B122KA-T	Volume Production	Digi-Key	587-1430-1-ND	0.11	0.55
10uF	CAP CER 10UF 16V XSR 0805	C2, C3, C4, C5, C32, C33, C34, C35, C36, C37, C42, C43, C44, C45	C2, C3, C4, C5, C32, C33, C34, C35, C36, C37, C42, C43, C44, C45	23	Yageo	CC0805KXSR7BB106	Volume Production	Digi-Key	311-1865-1-ND	0.288	6.62
0.1uF	CAP CER 0.1UF 25V XSR 0603	C7, C9, C14, C15, C16, C17, C18, C19, C20, C21, C22, C25, C30, C31	C7, C9, C14, C15, C16, C17, C18, C19, C20, C21, C22, C25, C30, C31	39	Samsung	CL10B104KA8WPN6	New Product	Digi-Key	1276-6717-1-ND	0.0548	2.74
2.1uF	CAP CER RF 2.1PF 50V +/-0.1 PF C	C12, C13	C12, C13	2	KEMET	CBR06C219B5GAC	Volume Production	Digi-Key	399-1653-1-ND	0.29	0.58
4.7uF	CAP CER 4.7UF 16V XSR 0603	C23	C23	1	TDK	C16089SR1C475K080AC	Volume Production	Digi-Key	445-7478-1-ND	0.3	0.3
1uF	CAP CER 1UF 16V XSR 0603	C24, C26	C24, C26	2	Murata	GM158871C102KA64J	Volume Production	Digi-Key	498-1263-1-ND	0.22	0.44
24uF	CAP CER 24UF 50V CGP/NP0 0603	C27, C28, C82, C83	C27, C28, C82, C83	4	Samsung	CL10C240B18NNNC	Volume Production	Digi-Key	1276-1761-1-ND	0.1	0.4
0.47uF	CAP CER 0.47UF 16V XSR 0603	C29, C85, C86	C29, C85, C86	3	KEMET	C0603C474K4PACTU	Volume Production	Digi-Key	399-7934-1-ND	0.15	0.45
10000pF	CAP CER 10000PF 16V XSR 0603	C39, C48	C39, C48	2	KEMET	C0603S103K4RAC1U	Volume Production	Digi-Key	399-9135-1-ND	0.36	0.72
1500uF	CAP CER 1500PF 25V XSR 0603	C40, C43	C40, C43	2	Yageo	CC0603JRXR8BB152	Volume Production	Digi-Key	311-3996-1-ND	0.12	0.24
22uF	CAP CER 22UF 10V XSR 0805	C76, C78, C80	C76, C78, C80	3	Samsung	CL21A226KPLRNC	New Product	Digi-Key	1276-6786-1-ND	0.39	1.17
CU508F30.H3F	DIODE SCHOTTKY 30V 500MA USC	D1, D3	D1, D3	2	Toshiba	CU508F30.H3F	Volume Production	Digi-Key	CU508F30H3FCT-ND	0.35	0.7
Green	LED GREEN CLEAR CHIP SMD	D2, D5, D6, D8, D9, D10, D11, D12	D2, D5, D6, D8, D9, D10, D11, D12	8	Vishay Lite-On	LTST-C193GK1T-5A	Volume Production	Digi-Key	1460-1628-1-ND	0.299	2.99
PSD21CAN-UX	TVS DIODE 24V 50V SC70-3	D4	D4	1	Neopixie	PSD21CAN-UX	Future Electron	Digi-Key	1104893	0.355	0.355
1N4148W RHG	DIODE GEN PURV 100V 150MA SOD123	D7	D7	1	Taiwan Semiconductor	1N4148W RHG	Volume Production	Digi-Key	1N4148WRHGC1-ND	0.18	0.18
0878332820		J1	J1	1	Molect	0878332820	Volume Production	Digi-Key	WM20552-ND	3.08	3.08
10118193-0001LF	CONN RCPT USB2.0 MICRO B SMD R/A	J2	J2	1	Amphenol ICC	10118193-0001LF	Volume Production	Digi-Key	609-4616-2-ND	0.22783	273.4
S3B-PH-SM4-TB(L)	CONN HEADER SMD R/A 3POS 2MM	J3, J4	J3, J4	2	JST	S3B-PH-SM4-TB(L)(SN)	Volume Production	Digi-Key	455-1750-1-ND		
S4B-PH-SM4-TB(L)	CONN HEADER SMD R/A 2POS 2MM	J5, J6	J5, J6	2	JST	S4B-PH-SM4-TB(L)(SN)	Volume Production	Digi-Key	455-1749-1-ND		
S4B-PH-SM4-TB(L)	CONN HEADER SMD R/A 4POS 2MM	J7	J7	1	JST	S4B-PH-SM4-TB(L)(SN)	Volume Production	Digi-Key	455-1751-1-ND		
S5B-PH-SM4-TB(L)	CONN HEADER SMD R/A 5POS 2MM	J8, J11	J8, J11	2	JST	S5B-PH-SM4-TB(L)(SN)	Volume Production	Digi-Key	455-1752-1-ND	0.75	1.5
M20-9990246	CONN HEADER VERT 2POS 2.54MM	J9	J9	1	Harwin	M20-9990246	Volume Production	Newark	56K0146	0.024	0.024
B7B-PH-K-S(LF)(SN)	CONN HEADER VERT 7POS 2MM	J12	J12	1	JST	B7B-PH-K-S(LF)(SN)	Volume Production	Digi-Key	455-1709-ND	0.39	0.39
2.4uH	FIXED IND 2.4UH 2.9A 44 MOHM SMD	L1, L2	L1, L2	2	Bourns	SRN4018-2R2M	Volume Production	DigiKey	SRN4018-2R2MCT-ND		
LOH8BPGR3N38L	Wire Wound Ferrite Inductor For Power Lines	L3	L3	1	Murata	LOH8BPGR3N38L	Volume Production	Digi-Key	DMP3054L-7DCT-ND	0.42	1.26
DMP3054L-7	MOSFET P-CH 30V 4.3A SOT-23	O1, O2, O5	O1, O2, O5	3	Diodes	DMP3054L-7	Volume Production	Digi-Key	F0V301NCT-ND		
F0V301N	MOSFET N-CH 25V 220MA SOT-23	O3, O4, O7	O3, O4, O7	3	ON Semiconductor	F0V301N	Volume Production	DigiKey	NTR4171PT1G		
NTR4171PT1G	MOSFET P-CH 30V 2.2A SOT-23	O6, O8	O6, O8	2	ON Semiconductor	NTR4171PT1G	Volume Production	DigiKey	NTR4003NT1G		
NTR4003NT1G	MOSFET N-CH 30V 500MA SOT-23	O9, O10	O9, O10	2	ON Semiconductor	NTR4003NT1G	Volume Production	DigiKey	R1, R2, R3, R4, R5, R6, R7, R8, R14, R15, R16, R19, R21, R23, R24	0.015	0.6
10 kohms	RES 10K OHM 5% 1/10W 0603	R9	R9	40	Stackpole Electronic	RMC F0603J10K0	Volume Production	Digi-Key	RMC F0603J10K0CT-ND		
590 Ohms	RES 590 OHM 1% 1/10W 0603	R10	R10	1	Stackpole Electronic	RMC F0603F1590R	Volume Production	Digi-Key	545-3318-1-ND	0.017	0.17
50 Ohms	RES SMD 50 OHM 1% 1/10W 0603	R10, R11, R12, R13, R17, R18, R20, R22, R24, R25, R26, R27, R47	R10, R11, R12, R13, R17, R18, R20, R22, R24, R25, R26, R27, R47	14	Vishay Dale	CRCW0603S0R0FKKA	Volume Production	Digi-Key	RNC F0603F14K0CT-ND	0.068	0.87
4.7 kohms	RES 4.7K OHM 1% 1/10W 0603	R29, R30, R62, R63, R129, R130, R135	R29, R30, R62, R63, R129, R130, R135	7	Stackpole Electronic	RMC F0603F14K0	Volume Production	Digi-Key	RNC F0603F14K0CT-ND	0.068	0.87
1 kohms	RES 1K OHM 1% 1/8W 0603	R31, R94, R95, R110, R116, R117, R118, R119, R121, R122, R123	R31, R94, R95, R110, R116, R117, R118, R119, R121, R122, R123	15	Stackpole Electronic	RNC F0603F10K0	Volume Production	Digi-Key	RNC F0603F10K0CT-ND	0.033	0.66
240 mOhms	RES 0.24 OHM 1% 1/2W 0805	R32, R50	R32, R50	2	Paranote	ERJ-40DF24R	Volume Production	Digi-Key	A12966ACT-ND	0.33	0.3
10 Ohms	CRGCO 0603 10R 1%	R34, R35, R52, R53, R88, R89	R34, R35, R52, R53, R88, R89	6	TE Connectivity	CRGCO0603F10R	Volume Production	Digi-Key	YAG4626CT-ND	0.38	0.38
140 kohms	RES SMD 140K OHM 0.1% 1/10W 0603	R36	R36	1	Yageo	RT0603B RE07140KL	Volume Production	Digi-Key	YAG4626CT-ND	0.1	0.2
100 kohms	RES SMD 100K OHM 5% 1/10W 0603	R39, R54	R39, R54	2	Yageo	RT0603JR-10100KL	Volume Production	Digi-Key	YAG4626CT-ND	0.1	0.2
180 kohms	RES 180K OHM 1% 1/10W 0603	R40	R40	1	Stackpole Electronic	RMC F0603F180K	Volume Production	Digi-Key	YAG4626CT-ND	0.23	0.46
7.15 kohms	RES SMD 7.15K OHM 0.1% 1/5W 0603	R42, R77	R42, R77	2	Paranote	ERJ-P830715V	New Product	Digi-Key	RMC F0603G157K6CT-ND	0.1	0.1
47.5 kohms	RES 47.5K OHM 1% 1/10W 0603	R43	R43	1	Stackpole Electronic	RMC F0603F47K5	Volume Production	Digi-Key	RMC F0603G157K6CT-ND	0.1	0.1
150 kohms	RES 150K OHM 1% 1/10W 0603	R44	R44	1	Stackpole Electronic	RMC F0603F150K	Volume Production	Digi-Key	RMC F0603G150KCT-ND	0.1	0.1
63.4 kohms	RES 63.4K OHM 1% 1/10W 0603	R46, R82	R46, R82	2	Paranote	ERJ-P83B3242V	New Product	Digi-Key	RMC F0603G163K4CT-ND	0.23	0.46
32.4 kohms	RES SMD 32.4K OHM 0.1% 1/5W 0603	R57, R127	R57, R127	2	SEI	ERM-F83B3242V	Volume Production	Digi-Key	RMC F0603G163K4CT-ND	0.013	0.13
0 Ohms	RES 0 OHM JUMPER 1/10W 0603	R61	R61	1	Stackpole Electronic	RMC F0603F1200K	Volume Production	Digi-Key	RMC F0603G1200KCT-ND	0.45	1.35
200 kohms	RES 200K OHM 1% 1/10W 0603	R66, R67, R68	R66, R67, R68	3	Stackpole Electronic	RNC S0603BKE10K0	Volume Production	Digi-Key	RMC F0603G1200KCT-ND	0.23	0.69
10 kohms	RES 10K OHM 0.1% 1/76W 0603	R70, R71, R72	R70, R71, R72	3	Texas Instruments	TM6P131DEC	Volume Production	Digi-Key	RMC F0603T392KCT-ND	0.1	0.1
392 kohms	RES 392K OHM 1% 1/10W 0603	R73	R73	1	Stackpole Electronic	RMC F0603T392K	Volume Production	Digi-Key	RMC F0603T475KCT-ND	0.1	0.1
475 kohms	RES 475K OHM 1% 1/10W 0603	R76	R76	1	Stackpole Electronic	RMC F0603T475K	Volume Production	Digi-Key	RMC F0603T45K3CT-ND	0.1	0.1
45.3 kohms	RES 45.3K OHM 1% 1/10W 0603	R78	R78	1	Stackpole Electronic	RMC F0603T45K3	Volume Production	Digi-Key	RMC F0603T62K5CT-ND	0.1	0.1
82.5 kohms	RES 82.5K OHM 1% 1/10W 0603	R79	R79	1	Stackpole Electronic	RMC F0603T62K5	Volume Production	Digi-Key	RMC F0603T57K6CT-ND	0.59	0.59
57.6 kohms	RES 57.6K OHM 1% 1/10W 0603	R80	R80	1	Stackpole Electronic	RMC F0603T57K6	Volume Production	Digi-Key	RMC F0603T54K9CT-ND	0.1	0.1
20 mOhms	0805 CURRENT SENSING RES. 0.5%	R85	R85	1	Paranote	ERJ-46-WDR020V	Volume Production	Digi-Key	RMC F0603T10K0CT-ND	0.015	0.15
54.9 kohms	RES 54.9K OHM 1% 1/10W 0603	R87	R87	1	Stackpole Electronic	RMC F0603T54K9	Volume Production	Digi-Key	RMC F0603G1200KCT-ND	0.017	0.255
10 kohms	RES 10K OHM 1% 1/10W 0603	R90	R90	1	Stackpole Electronic	RMC F0603T10K0	Volume Production	Digi-Key	RNC F0603G120K49CT-ND	0.1	0.1
100 Ohms	RES 100 OHM 1% 1/10W 0603	R96, R97	R96, R97	2	Stackpole Electronic	RMC F0603G100R	Volume Production	Digi-Key	RMC F0603T680RCT-ND	0.017	0.17
240 Ohms	RES 240 OHM 5% 1/10W 0603	R98, R99, R100, R101, R102, R103, R104, R105, R106, R107, R108	R98, R99, R100, R101, R102, R103, R104, R105, R106, R107, R108	2	Stackpole Electronic	RMC F0603T240R	Volume Production	Digi-Key	FCM-20948	10.47	10.47
22 Ohms	RES 22 OHM 1% 1/70W 0603	R109	R109	1	Stackpole Electronic	RMC F0603F22R0	Volume Production	Digi-Key	PCAR5004DCURQ1	0.8861	0.8861
6.49 kohms	RES 6.49K OHM 1% 1/8W 0603	R132, R133, R134	R132, R133, R134	3	Stackpole Electronic	RMC F0603T680R	Volume Production	Digi-Key	BMP388	3.99	3.99
680 Ohms	RES 680 OHM 1% 1/10W 0603	S1	S1	1	TE Connectivity AM	F5M61A5MAASTR	Volume Production	Digi-Key	296-49006-1-ND	0.017	0.17
F5M61A5MAASTR	SWITCH TACTILE SPST-NO 0.05A 24V	TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12	TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12	20				Digi-Key	296-44228-1-ND		
2.5mm, SMD, TestPoint		U1	U1	1	STMicroelectronics	STM32F407VET6TR	Not Recommended for New Design	Digi-Key	497-19657-1-ND		
SCH - MICROCONTROLLER - STM32F407VET6TR		U2, U13	U2, U13	2	Texas Instruments	TPS29A2ARVCR	Volume Production	Digi-Key	296-40735-1-ND		
SCH - POWER - EFUSE - TPS29A2A		U4	U4	1	Texas Instruments	TPS29A2ARVCR	Volume Production	Digi-Key	296-40735-1-ND	0.583	29.15
TPS29A2ARVCR	USB ESD Solution with Power Clamp, 4 Channels	U5, U15	U5, U15	2	Texas Instruments	TPS29A2ARVCR	Volume Production	Digi-Key	296-40735-1-ND	1.99	1.99
TPS62152RGTT	Buck Step Down Regulator with 3 to 17 V In	U6	U6	1	Texas Instruments	TPS62152RGTT	Volume Production	Digi-Key	296-30088-1-ND	2.49	12.44
INA219AIDCNR	Zero-Drift, Bi-Directional Current / Power Monitor	U7, U15	U7, U15	3	Texas Instruments	INA219AIDCNR	Volume Production	Digi-Key	296-43578-1-ND	6.18	18.48
TPS62151RGTT	Buck Step Down Regulator with 3 to 17 V In	U8	U8	1	Texas Instruments	TPS62151RGTT	Volume Production	Digi-Key	296-43578-1-ND	6.18	18.48
SCH - DATA ACQUISITION - ADC - TI ADS1231		U9	U9	1	Texas Instruments	ADS1231DR	Volume Production	Digi-Key	296-43578-1-ND	6.18	18.48
TMPT17AIDRV8	TEMPERATURE SENSOR	U10	U10	1	Texas Instruments	TMPT17AIDRV8	Volume Production	Digi-Key	296-43578-1-ND	6.18	18.48
SCH - SENSOR - IMU - ICM-20948		U11	U11	1	TDK InvenSense	ICM-20948	Volume Production	Digi-Key	296-43578-1-ND	6.18	18.48
PCAR5004DCURQ1	Automotive Catalog Dual Bidirectional 12C Bus	U12	U12	1	Texas Instruments	PCAR5004DCURQ1	Volume Production	Digi-Key	296-43578-1-ND	6.18	18.48
SCH - SENSOR - PRESSURE - BMP388		U14	U14	1	Bosch Sensortec	BMP388	Volume Production	Digi-Key	296-43578-1-ND	6.18	18.48
SCH - REGULATOR - BUCK - TI TPS66201DDCR		U16	U16	1	Texas Instruments	TPS66201DDCR	Volume Production	Digi-Key	296-43578-1-ND	6.18	18.48
SCH - INTERFACE - CAN - TI TCAN1051V		U17	U17	1	Texas Instruments	TCAN1051VDRQ1	Volume Production	Digi-Key	296-43578-1-ND	6.18	18.48
KS28081MNXIA-TR	IC TRANSCEIVER FULL 1/1 320FN	U18	U18	1	Microchip	KS28081MNXIA-TR	Volume Production	Digi-Key	296-43578-1-ND	6.18	18.48
SCH - DATA ACQUISITION - ADC - TI TLA2024		U19	U19	1	Texas Instruments	TLA2024HRUGT	Volume Production	Digi-Key	296-43578-1-ND	6.18	18.48
32.768kHz	CRYSTAL 32.768KHZ X'AL	Y1	Y1	1	Abracon	ABR307156-32.768KHZ-T	Volume Production	Digi-Key	296-43578-1-ND	2.16	2.16
25MHz	CRYSTAL 25.000MHZ 18PF SMD	Y2, Y3	Y2, Y3	2	Epson	1SX-3225-25.000MF20P-C0	Volume Production	Digi-Key	296-43578-1-ND	2.16	2.16