

A0002 Flight Computer BOM

Project:	Avionics General Purpose Flight Computer										
Revision:	2.0										
Date:	12/8/2022										
Author:	Colton Acosta										
Qty	Component	Manufacturer	Part Number	Designator	Footprint	Footprint Type	Price per Unit	Data Sheet	Source	Alternate Parts	Other
1	ARM Cortex-M7 Microcontroller 100-LQFP	STMicroelectronics	STM32H750VBT6	U1	100-LQFP	SMD	\$17.06	STM32H750VBT6	LCSC		
15	0.1 uF 0603 ceramic capacitor	KEMET	C0603C104J4RACTU	C2-C8, C17-C18, C20-C22, C24	0603	SMD	\$0.14	C0603C104J4RACTU	Digikey		
1	Green LED 1206 SMD	Lumex Opto/Components Inc.	SML-LX1206GC-TR	D5	1206	SMD	\$0.38	SML-LX1206GC-TR	Digikey	LD1117AS33TR	
1	3.3V Linear Regulator	Texas Instruments	LMS8117AMP-3.3/NOPB	U2	SOT-223	SMD	\$1.39	LMS8117AMP-3.3/NOPB	Digikey		
1	240 Ohm Resistor 0603 SMD	Vishay	MCT06030C2400FP500	R6	0603	SMD	\$0.13	MCT06030C2400FP500	Digikey	RC0603FR-07240RL	
1	LED current limiting										
2	2.2 uF 0603 Ceramic Capacitor	Samsung Electro-Mechanics	CL10A225KO8NNNC	C11, C15	0603	SMD	\$0.10	CL10A225KO8NNNC	Digikey		
4	1 uF 0603 Ceramic Capacitor	KEMET	C0603X105J4RACAUTO	C9, C23, C25-C26	0603	SMD	\$0.48	C0603X105J4RACAUTO	Digikey		
2	10 uF Tantalum Capacitor	KEMET	T491A106K010AT	C10, C13	1206	SMD	\$0.37	T491A106K010AT	Digikey		
1	Tactile Switch SMD	C&K	PTS 647 SM38 SMTR2 LFS	B1	4LEAD	SMD	\$0.18	PTS 647 SM38 SMTR2 LFS	Digikey		
1	External Flash	Microchip	SST25VF040B-50-4I-S2AE-T	U6	8-SOIC	SMD	\$0.92	SST25VF040B-50-4I-S2AE-T	Digikey	SST25VF040B-50-4I-S2AF-T	
1	IC USB-TO-UART BRIDGE 28VQFN	Silicon Labs	CP2102-GMR	U8	QFN-28	SMD	\$3.24	CP2102-GMR	LCSC		
	POWER MOSFET N-CH 30V 2A										
6	TSMT5	Rohm Semiconductor	QSSU17TR	Q1-Q6	TSOT-23-5	SMD	\$0.63	QSSU17TR	Digikey		
1	CONN HEADER R/A 20POS 1.27MM	CNC Tech	3220-20-0200-00	P3	20POS, 2ROW	Through-hole	\$1.43	3220-20-0200-00	Digikey		
1	SI-Link V2 Programmer	STMicroelectronics	SI-LINK V2				\$25.31	SI-LINK V2	ST		
1	TVS DIODE 5.5VWM 8.5VC SOT23-5	Littelfuse Inc.	SP0504BAHTG	D10	SOT23-5	SMD	\$0.95	SP0504BAHTG	Digikey		
1	TERM BLK 6POS SIDE ENT 3.5MM PCB	Phoenix Contact	1984659	P9	6POS	Through-hole	\$1.76	1984659	Digikey		E-match screw terminals
4	RES 100K OHM 1% 1/10W 0603	Stackpole Electronics Inc	RMCF0603FT100K	R4-R5, R31-R32	0603	SMD	\$0.10	RMCF0603FT100K	Digikey	RC0603FR-07100KL	
1	CAP CER 4.7UF 10V X5R 0603	Samsung Electro-Mechanics	CL10A475KP8NNNC	C1	0603	SMD	\$0.10	CL10A475KP8NNNC	Digikey		
	280 Ohm Resistor 0603 SMD										
1	RGB LED current limiting Red	Stackpole Electronics Inc	RMCF0603FT280R	R3	0603	SMD	\$0.10	RMCF0603FT280R	Digikey		
	82 Ohm Resistor 0603 SMD										
1	RGB LED current limiting Green	Stackpole Electronics Inc	RMCF0603JT82R0	R2	0603	SMD	\$0.10	RMCF0603JT82R0	Digikey	RMCF0603FT82R0	
	68 Ohm Resistor 0603 SMD										
1	RGB LED current limiting Blue	Stackpole Electronics Inc	RMCF0603FT280R	R1	0603	SMD	\$0.10	RMCF0603FT280R	Digikey		
1	LED RGB CLEAR 4PLCC SMD	CreeLED, Inc.	CLMVC-FKA-CL1D1L71BB7C3C	D1		SMD	\$0.19	CLMVC-FKA-CL1D1L71BB7C3C	Digikey		
3	RES 4.7K OHM 1% 1/10W 0603	Stackpole Electronics Inc	RMCF0603FT4K70	R18, R19, R25	0603	SMD	\$0.10	RMCF0603FT4K70	Digikey		
3	IC VOLT COMPARATOR SGL SOT-23-5	STMicroelectronics	TS391IYLT	U9-U11	SOT-23-5	SMD	\$1.58	TS391IYLT	Digikey		
1	CRYSTAL 24.0000MHZ 18PF SMD	ECS Inc.	ECS-240-18-33-JGN-TR	Y1	4-SMD, No Lead	SMD	\$0.56	ECS-240-18-33-JGN-TR	Digikey		
2	CAP CER 8PF 250V C0G/NP0 0603	KEMET	CBR06C809BAGAC	C12, C14	0603	SMD	\$0.68	CBR06C809BAGAC	Digikey		
1	TERM BLK 2POS SIDE ENT 3.5MM PCB	TE Connectivity AMP Connectors	1546551-2	P2	2POS	Through-hole	\$1.34	1546551-2	Digikey		Main Power Connector
1	CONN HEADER R/A 2POS 3.96MM	TE Connectivity AMP Connectors	647676-2	P1	2POS, Right-Angle	Through-hole	\$0.27	647676-2	Digikey		Main Power Connector
1	CONN HOUSING 2POS .156" SNGL	TE Connectivity AMP Connectors	2132813-2				\$0.27	2132813-2	Digikey		
2	CONN SOCKET 18-22AWG CRIMP TIN	TE Connectivity AMP Connectors	1744144-1				\$0.18	1744144-1	Digikey		
3	Schottky Diode 40V 1A	Micro Commercial Co	SM5819PL-TP	D2-D4	SOD-123F	SMD	\$0.35	SM5819PL-TP	Digikey		
1	CONN RCPT USB2.0 MICRO B SMD R/A	Amphenol ICC (FCI)	10118194-0001LF	P8	SMD/Through-hole	SMD/Through-hole	\$0.48	10118194-0001LF	Digikey		
14	10 kOhm 1/10W Resistor 0603 SMD	Yageo	RC0603FR-0710KL	R7, R9, R20-R21, R23-R24, R26, R28-R30, R33-R36	0603	SMD	\$0.10	RC0603FR-0710KL	Digikey		
1	RES 1K OHM 1% 1/10W 0603	Stackpole Electronics Inc	RMCF0603FT1K00	R27	0603	SMD	\$0.10	RMCF0603FT1K00	Digikey		
1	IMU ACCEL/GYRO I2C/SPI 14LGA	Bosch Sensortec	BMI323	U3	14-VFLGA	SMD	\$6.23	BMI323	Bosch Sensortec		
1	BUZZER PIEZO 5V 13.8MM TH	PUI Audio, Inc.	AT-1438-TWT-R	BZ1	2POS	Through-hole	\$1.69	AT-1438-TWT-R	Digikey		
1	10 nF 0603 Ceramic Capacitor	KEMET	C0603X103F5JAC7867	C16	0603	SMD	\$0.94	C0603X103F5JAC7867	Digikey		
1	RF RX GLONASS/GNSS/GPS 1.575GHZ	U-Blox	MAX-8C-0	U4	18-SMD Module	SMD	\$21	MAX-8C-0	Digikey		GPS
1	CONN UMC RCPT STR 50 OHM SMD	Molex	734120110	AE1	SMD U.FL	SMD	\$0.77	734120110	Digikey		GPS antenna connector
1	BATT LITH 3V 3.4MAH COIN 6.8MM	Seiko Instruments	MS614SE-FL28E	BT1	SMD (SMT) Tab	SMD	\$1.99	MS614SE-FL28E	Digikey		GPS Battery
1	RX TXRX MODULE ISM < 1GHZ SMD	Seeed Technology Co., Ltd	109990166/RFM95	U7	16-SMD Module	SMD	\$8.12	RFM95	Digikey		LoRa
1	CONN SMA JACK STR 50OHM EDGE MNT	Cinch Connectivity Solutions Johnson	142-0701-851	AE2			\$4.23	142-0701-851	Digikey		LoRa antenna connector
1	SENSOR PRESSURE ABS	Bosch Sensortec	BMP390	U5	10-WFLGA	SMD	\$5.36	BMP390	Bosch Sensortec		
8	RES 33 OHM 1% 1/10W 0603	YAGEO	RC0603FR-0733RL	R10-R17	0603	SMD	\$0.20	RC0603FR-0733RL	Digikey		
4	CONN HEADER VERT 3POS 2MM	TE Connectivity AMP Connectors	440054-3	P4-P7	3POS	Through-hole	\$0.27	440054-3	Digikey		Motor Connector
4	CONN RCPT HOUSING 3POS 2.0MM	TE Connectivity AMP Connectors	440129-3				\$0.19	440129-3	Digikey		Motor Connector housing
12	CONN SOCKET 24-30AWG CRIMP TIN	TE Connectivity AMP Connectors	1735801-1				\$0.01	1735801-1	Digikey		Motor connector contacts

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4	DIODE ZENER 3.3V 200MW SOD323F	onsemi	MM3Z3V3B	D6-D9	SOD-323F	SMD	\$0.25	MM3Z3V3B	Digikey		PWM pin protection diodes
1	RES 10 OHM 1% 1/10W 0603	YAGEO	RC0603FR-0710RL	R8	0603	SMD	\$0.10	RC0603FR-0710RL	Digikey		
1	FIXED IND 27NH 200MA 900MOHM SMD	Johanson Technology Inc.	L-07C27NJV6T	L1	0402	SMD	\$0.10	L-07C27NJV6T	Digikey		
1	Micro-SD Card Jack	GCT	MEM2075-00-140-01-A	P10	SDcard	SMD	\$1.98	MEM2075-00-140-01-A	Digikey		Drawing
1	RES 20K OHM 1% 1/10W 0603	YAGEO	RC0603FR-0720KL	R22	0603	SMD	\$0.10	RC0603FR-0720KL	Digikey		
1	SENSOR FLIPCORE/HALL SPI 12WLCSP	Bosch Sensortec	BMM150	U12	12-WLCSP	SMD	\$2.34	BMM150	Digikey		