



DESIGN NAME		ESP32 ESC												
REVISION		V0.9												
ISSUE DATE		16th JUNE 2024												
DESIGNED BY		ARKAD94												
Component Group	Description	Part	References	Value	Quantity	Per PCB	Unit Cost H	Unit Cost L	PCB Cost H	PCB Cost L	Remark	PCB Cost		
1	Resistor	R	BLEDR1	30	1				0	0				
2	Unpolarized capacitor	C	C8	5.6nF	1				0	0				
3	Unpolarized capacitor	C	C16	47nF	1				0	0				
4	Unpolarized capacitor	C	C14 C15	0.1uF	2				0	0				
5	Unpolarized capacitor	C	C13	0.33uF	1				0	0				
6	Unpolarized capacitor	C	C17	1uF	1				0	0				
7	Unpolarized capacitor	C	C11 C24	3.3uF	2				0	0				
8	Unpolarized capacitor	C	C7 C9	4.7uF	2				0	0				
9	Unpolarized capacitor	C	C4 C10	10 uF	2				0	0				
10	Unpolarized capacitor	C	C12 C25 C26	15u	3				0	0				
11	Unpolarized capacitor	C	C1	C	1				0	0				
Aluminum Electrolytic Capacitors - SMD 63VDC 100uF 20% 10x10.2mm AEC-Q200														
12	Unpolarized capacitor	EEE-FN1J101L	C5 C6	EE-FN1J10J	2		70.89	46.2	141.78	92.4	/10			
13	Unpolarized capacitor	C	C2 C3	0.1 uF	2				0	0				
14	Unpolarized capacitor	C	C18 C19 C20 C21	TBD	4				0	0				
15	Slide Switches SLIDE SWITCH 1P2T WITH POST	LSSM12-40-P-V-T_R	CAN_R1	112-40-P-V	1		95.08	79.4	95.08	79.4	/50			
USB-C (USB TYPE-C) USB 2.0 Receptacle Connector 24 Position Surface Mount, Through Hole														
16	Analog Comparators LP Quad Comparator 2.0mV 2.0 to 36V 2mV	UIJ20-C-V-SMT-TR-68	CNUSB1	1-C-V-SMT-T	1		226.85	195.16	226.85	195.16	/10			
17	40V 1A Schottky Barrier Rectifier Diode, DO-41	AS339MTR-E1	COMP1	S339MTR-E	1		82.57	70.81	82.57	70.81	/10			
18	+/-6-V, Low IQ ideal diode with input polarity protection	1N5819	D2	1N5819	1		40.03	28.44	40.03	28.44	/10			
19	+/-6-V, Low IQ ideal diode with input polarity protection	LM66100DCKR_1	D3	166100DC	1		34.19	25.35	34.19	25.35	/10			
20	Super Low IR, 60V, 40A, TO-263S (D2PAK), Schottky Barrier Diode	LM66100DCKR	D4	166100DC	1		34.19	25.35	34.19	25.35	/10			
21	ESD Suppressors / TVS Diodes 1.5kW 60V 5% Uni-Directional	RB238NS-60TTL	D5	B238NS-60	1		175.97	146.78	175.97	146.78	/10			
22	Bi-Direct ESD protect diode,PESD1CAN NXP PESD1CAN,215, Bi-Directional TVS Diode Dual, 70V, 200W, 3-Pin TO-236AB	SMCJ60A	D1	SMCJ40A	1		40.87	36.61	40.87	36.61	/10			
23	4-Channel ESD Solution for High-Speed Differential Interface	PESD1CAN,215	ESD3	1SD1CAN,2	1		33.36	21.93	33.36	21.93	/10			
24	60V Three-Phase Smart Gate Driver With Buck Regulator and Three Current Shunt Amplifiers	TPD45009DCKR	ESD1 ESD2	1D45009DC	2		38.35	29.02	76.7	58.04	/10			
25	3.3-V CAN Transceivers with CAN FD (Flexible Data Rate)	DRV8323RSRGZR	IC2	18323RSRC	1		267.71	240.19	267.71	240.19	/10			
26	Generic screw terminal, single row, 01x02, script generated (kicad-library-utils/schlib/autogen/connector/)	TCAN334GD	IC1	1CAN334GC	1		281.06	239.36	281.06	239.36	/10			
27	Generic connector, single row, 01x01, script generated	TPS74801TDRCRQ1	IC3	74801TDRC	1		112.59	100.91	112.59	100.91	/10 (All Cost Speculative)			
28	Generic screw terminal, single row, 01x03, script generated (kicad-library-utils/schlib/autogen/connector/)	Screw_Terminal_01x02	J3 J5	1R POWER	2		27.52	12.68	55.04	25.36	/10 (All Cost Speculative)			
29	Generic connector, single row, 01x01, script generated	Conn_01x01_Pin	J9	MPWM	1		143.45	125.19	143.45	125.19	/10 (All Cost Speculative) Need Cheaper			
30	Generic screw terminal, single row, 01x03, script generated (kicad-library-utils/schlib/autogen/connector/)	Screw_Terminal_01x03	J4	1tput To Mo	1		50.87	36.28	50.87	36.28	/10 (All Cost Speculative)			
31	Generic screw terminal, single row, 01x06, script generated (kicad-library-utils/schlib/autogen/connector/)	Screw_Terminal_01x06	J1	1_Terminal_	1		47.54	38.53	47.54	38.53	/10 (All Cost Speculative)			
32	Generic connector, single row, 01x03, script generated	Conn_01x03_Pin	J7 J8 J10	Sensor B	3		50.87	36.28	152.61	108.84	/10 (All Cost Speculative)			
33	Power inductor SMD shielded 33uH Bourns SRR1260 Series Shielded Wire-wound SMD Inductor with a Ferrite Core, 33 uH +/-20% Wire-Wound 3A Idc Q:27	SRR1260-330M	L1	1R1260-330	1		57.55	54.63	57.55	54.63	/100			
34	Standard-LEDs - SMD SMD, AlInGaP, 1208, SIDE LOOK, GRN/RED, 470NM/605NM, CLR, T/R	LTST-S326TGKRKT	LED1	1-T-S326TGK	1		40.87	25.35	40.87	25.35	/10			
35	Standard LEDs - SMD Red Blue 645nm 468nm 115mcd Water Clear	SM1204BC-R_B	LED2	11204BC-R	1		89.24	61.72	89.24	61.72	/10			
36	WURTH ELEKTRONIK - 155301BS73100 - LED, Blue, SMD, PLCC-2, 20 mA, 3.2 V, 470 nm	155301BS73100	LEDIND1	5301BS731	1		29.19	23.85	29.19	23.85	/10			
37	Trans MOSFET N-CH 200V 95A Automotive 3-Pin(2+Tab) D2PAK	SQM90142E_GE3	Q1 Q2 Q3 Q4 Q5 Q7	M90142E_C	6		233.52	195.99	1401.12	1175.94	/10			
38	Resistor	R	R18 RLEDG1	10	2				0	0				
39	Resistor	R	R13	120R	1				0	0				
40	Resistor	R	R8 Rfb1a2	270R	2				0	0				
41	Resistor	R	R11 R21 R22 R23 R24 R25	330R	6				0	0				
42	Resistor	R	R6	820R	1				0	0				
43	Resistor	R	R2 R26	1k	2				0	0				
44	Resistor	R	R5	1k2	1				0	0				
45	Resistor	R	R10	3k9	1				0	0				
46	Resistor	R	R3 R4	5.1k	2				0	0				
47	Resistor	R	R1 R7 R15 R16 R19 R20 R28 R31 R34 R37	10k	10				0	0				
48	Resistor	R	R9 Rfb1a1	15k	2				0	0				
49	Resistor	R	R29 R30 R32 R33 R35 R36	47k	6				0	0				
50	Resistor	R	R12	100k TBD	1				0	0				
51	Current Sense Resistors - SMD 5W 1 mOhm 1% 75ppm	TLR3APDTE1L00F75	R14 R17 R27	1APDTE1LO	3		88.4	65.55	265.2	196.65	/10			
52	Resistor	R	RFB1b1	8k2	1				0	0				
53	Resistor	R	Rfb1a4	20R	1				0	0				
54	Resistor	R	Rfb1a3	6k2	1				0	0				
55	Resistor	R	RLEDR1 RLEDR2	68	2				0	0				
56	Tactile Switches Side Push Type 2.9*3.5	TBFF21KQR	S1 S2	TBFF21KQR	2		66.72	55.54	133.44	111.08	/10			
2.4 GHz WIFI (802.11 b/g/n) and Bluetooth 5 (LE) module Built around ESP32S3 series of SoCs, Xtensa 32bit LX7 microprocessor Flash up to 16 MB, PSRAM up to 8 MB 36 GPIOs, rich set of peripherals														
57	Onboard PCB antenna	ESP32-S3-WROOM-1	U1	2-S3-WRO	1		325.26	325.26	325.26	325.26	/10			
58	PCB	PCB FR4 4 Layer	PCB1						0	0				
									PCBost (H)		PCBost (L)			
TOTAL UNIT COST									4434.33		3177.9			