



MATERIAL BUILD RECORD

Department of
Physics & Astronomy

Project: ICARC FOX HUNT

ICARC TDOA, STM32

Board: 102-73174.41

Schematic: 102-73174.41

Idx #	Pg #	Comp S/N as needed	Component MIT	Part Type	Ref Des	Part Value	Flight Part Number	Kit by	Value Ver	Insp by	Lead Form	Insp by	Tinned by	Insp by	Appl by	Insp by
1	1	2.4C Bot	0.985 0.235	BATT HOLDER COIN SMD BATT 3030	BT1	3030	3030									
13	1	5.9B Bot	2.470 0.230	CAP CER X7R 50V SM0603	C1	.01UF	CL10B103KB8NNNC									
13	1	2.5A Bot	1.065 2.290	CAP CER X7R 50V SM0603	C15	.01UF	CL10B103KB8NNNC									
13	1	4.4E Bot	0.140 0.680	CAP CER X7R 50V SM0603	C18	.01UF	CL10B103KB8NNNC									
13	1	2.8A Bot	0.500 1.320	CAP CER X7R 50V SM0603	C20	.01UF	CL10B103KB8NNNC									
13	1	2.8A Bot	0.670 1.215	CAP CER X7R 50V SM0603	C26	.01UF	CL10B103KB8NNNC									
13	1	5.5E Bot	4.275 1.190	CAP CER X7R 50V SM0603	C35	.01UF	CL10B103KB8NNNC									
13	1	5.4A Bot	4.000 1.785	CAP CER X7R 50V SM0603	C36	.01UF	CL10B103KB8NNNC									
13	1	2.5D Bot	2.045 1.330	CAP CER X7R 50V SM0603	C37	.01UF	CL10B103KB8NNNC									
13	1	5.6E Bot	4.275 0.975	CAP CER X7R 50V SM0603	C47	.01UF	CL10B103KB8NNNC									
14	1	3.3C Bot	3.750 0.305	CAP CER X7R 50V SM0603	C10	.1UF	CL10B104KB8NNNC									
14	1	2.3A Bot	0.814 2.510	CAP CER X7R 50V SM0603	C12	.1UF	CL10B104KB8NNNC									
14	1	2.6A Bot	1.265 2.365	CAP CER X7R 50V SM0603	C16	.1UF	CL10B104KB8NNNC									
14	1	2.4A Bot	0.920 2.165	CAP CER X7R 50V SM0603	C17	.1UF	CL10B104KB8NNNC									
14	1	2.5A Bot	1.019 2.625	CAP CER X7R 50V SM0603	C19	.1UF	CL10B104KB8NNNC									
14	1	2.3B Bot	0.600 2.755	CAP CER X7R 50V SM0603	C21	.1UF	CL10B104KB8NNNC									
14	1	2.4B Bot	0.785 1.870	CAP CER X7R 50V SM0603	C22	.1UF	CL10B104KB8NNNC									



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14	2	2.7B Bot	0.855 1.125	CAP CER X7R 50V SM0603	C23	.1UF	CL10B104KB8NNNC									
14	2	2.7A Bot	0.505 1.470	CAP CER X7R 50V SM0603	C25	.1UF	CL10B104KB8NNNC									
14	2	2.9A Bot	0.275 1.185	CAP CER X7R 50V SM0603	C27	.1UF	CL10B104KB8NNNC									
14	2	3.7C Bot	3.995 1.200	CAP CER X7R 50V SM0603	C38	.1UF	CL10B104KB8NNNC									
14	2	3.6C Top	4.010 1.430	CAP CER X7R 50V SM0603	C39	.1UF	CL10B104KB8NNNC									
14	2	2.6A Bot	1.265 2.535	CAP CER X7R 50V SM0603	C46	.1UF	CL10B104KB8NNNC									
14	2	5.1F Bot	4.770 0.925	CAP CER X7R 50V SM0603	C48	.1UF	CL10B104KB8NNNC									
14	2	2.3E Bot	2.070 0.780	CAP CER X7R 50V SM0603	C5	.1UF	CL10B104KB8NNNC									
14	2	3.9C Bot	3.620 1.780	CAP CER X7R 50V SM0603	C50	.1UF	CL10B104KB8NNNC									
14	2	2.3E Bot	2.230 0.600	CAP CER X7R 50V SM0603	C52	.1UF	CL10B104KB8NNNC									
14	2	2.4E Bot	2.205 1.085	CAP CER X7R 50V SM0603	C53	.1UF	CL10B104KB8NNNC									
14	2	2.4E Bot	2.520 0.600	CAP CER X7R 50V SM0603	C54	.1UF	CL10B104KB8NNNC									
14	2	2.4E Bot	2.515 0.930	CAP CER X7R 50V SM0603	C55	.1UF	CL10B104KB8NNNC									
14	2	3.4B Bot	3.500 0.355	CAP CER X7R 50V SM0603	C8	.1UF	CL10B104KB8NNNC									
15	2	4.2D Top	0.500 0.745	CAP X7R/BX SM0603	C33	.47UF	TMK107B7474KA-TR									
16	2	2.4C Bot	2.015 1.165	CAP NPO/BP SM0603	C7	1000PF	GRM1885C1H102JA01J									
17	2	2.1D Bot	1.775 0.830	CAP NPO/BP SM0603	C3	10PF	C0603C100K5GACTU									



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17	3	2.2D Bot	1.750 1.123	CAP NPO/BP SM0603	C30	10PF	C0603C100K5GACTU									
17	3	2.2D Bot	1.815 1.025	CAP NPO/BP SM0603	C31	10PF	C0603C100K5GACTU									
17	3	2.1D Bot	1.915 0.830	CAP NPO/BP SM0603	C4	10PF	C0603C100K5GACTU									
18	3	2.4A Top	0.905 2.195	CAP TANTALUM SMP1210	C73	10UF/25V	TPSB106K025R1800									
19	3	2.6E Bot	1.765 1.230	CAP CERAMIC SM0603	C32	10UF	GRM188R61A106ME69D									
19	3	2.7E Bot	2.360 2.050	CAP CERAMIC SM0603	C6	10UF	GRM188R61A106ME69D									
20	3	3.7D Bot	3.665 2.210	CAP X7R/BX SM0805	C2	10UF	GRM21BR71A106MA73L									
21	3	4.4F Bot	0.670 0.505	CAP X5R/BX SM1206	C34	10UF	GRT31CR61H106KE01L									
22	3	2.7A Top	1.160 2.195	CAP TANTALUM SMP1210	C28	10UF	TPSB106K010T1000									
22	3	2.9A Top	0.220 1.070	CAP TANTALUM SMP1210	C29	10UF	TPSB106K010T1000									
22	3	2.7A Top	0.785 1.605	CAP TANTALUM SMP1210	C44	10UF	TPSB106K010T1000									
23	3	4.2E Bot	0.690 0.680	CAP X7R/BX SM0603	C11	1UF	CL10B105KA8NFNC									
23	3	4.4E Top	0.140 0.680	CAP X7R/BX SM0603	C24	1UF	CL10B105KA8NFNC									
23	3	3.6B Bot	3.990 2.340	CAP X7R/BX SM0603	C45	1UF	CL10B105KA8NFNC									
24	3	2.3D Bot	2.350 0.600	CAP X7R/BX SM0603	C9	4.7UF	CL10B475KQ8NQNC									
25	3	4.3D Bot	0.185 0.480	CAP NPO/BP SM0603	C14	47PF	C0603C470J5GACAUTO									
26	3	4.2E Top	0.665 0.650	N/A Not Applicable SM0603	C13	N/A .47UF	Do NOT Install									



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27	4	2.6D Bot	1.755 1.365	DIODE SOT23-3	D3	BAV199	BAV199/ZL215									
29	4	5.3E Bot	4.140 0.555	ZENER DIODE 2.7V SOD123	DZ1	MMSZ5223	MMSZ5223BT1G									
30	4	2.3A Top	0.600 1.940	DIODE 4A DO-201-AD	D10	SF44G	SF44G									
31	4	1.7E Top	6.200 5.400	BOX ABS BLACK 6.69L X 3.37W ENCLOSURE	ENCL1	1599EBKBAT	1599EBKBAT									
32	4	2.2A Bot	0.315 2.525	FUSE 500mA SM0603	F1	500MA	MFU0603FF00500P500									
33	4	4.5E Top	0.495 0.295	CONN-LTCH-MOLEX-VERT 3 HDR_1X3	J2	0705430002	0705430002									
33	4	3.7D Top	3.665 2.075	CONN-LTCH-MOLEX-VERT 3 HDR_1X3	J9	0705430002	0705430002									
34	4	2.1A Top	0.215 2.720	CONN-LTCH-MOLEX-R/A 3 HDR_50-57-9403	J4	0705530002	0705530002									
35	4	5.1E Top	4.550 0.910	D CONN E SHELL R/A CON_D9M	J1	CON_D9M	LD09P33E4GV00LF									
36	4	2.7D Top	2.300 1.750	CONNECTOR STDC14	JP2	FTSH-107-01-F-DV-K	FTSH-107-01-F-DV-K									
37	4	3.3C Top	4.115 2.240	JUMPER HEADER JMP03N	JP1	PBC03SAAN	PBC03SAAN									
38	4	2.5D Top	1.900 0.440	JUMPER HEADER R/A JMP02_R/A	JP3	PRPC002SBAN	PRPC002SBAN-M71RC									
39	4	3.2C Top	4.900 1.775	CONN JACK STEREO SJ-352X	J6	SJ-3524	SJ-3524-SMT-TR									
39	4	5.2B Top	4.900 2.250	CONN JACK STEREO SJ-352X	J8	SJ-3524	SJ-3524-SMT-TR									
42	4	2.3B Bot	0.850 2.695	IC CURRENT MONITOR SOT23F-3	Q1	ZXCT1009	ZXCT1009FTA									
43	4	2.3A Bot	0.810 2.290	SENSE RESISTOR SM1206	R12	.050	ERJ-8BWFR050V									
44	4	2.7D Bot	2.200 2.095	RES THK-FLM SM0603	R1	1.0K	M55342K12B1E00TW									



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44	5	3.2A Top	2.715 0.505	RES THK-FLM SM0603	R15	1.0K	M55342K12B1E00TW									
44	5	2.7D Bot	2.350 1.685	RES THK-FLM SM0603	R2	1.0K	M55342K12B1E00TW									
44	5	2.4D Bot	1.915 1.490	RES THK-FLM SM0603	R4	1.0K	M55342K12B1E00TW									
44	5	2.4D Bot	2.450 0.810	RES THK-FLM SM0603	R5	1.0K	M55342K12B1E00TW									
44	5	2.6D Bot	2.155 1.495	RES THK-FLM SM0603	R6	1.0K	M55342K12B1E00TW									
45	5	2.7B Bot	0.815 1.450	RES THK-FLM SM0603	R60	10.0K	M55342K12B10E0TW									
46	5	4.3D Bot	0.185 0.380	RES THK-FLM SM0603	R16	100K	M55342K12B100ETW									
47	5	3.8B Top	3.620 1.640	RES THK-FLM SM0603	R58	100	M55342K12B100DTW									
48	5	5.2C Top	1.190 1.215	RES THK-FLM SMR0603-41	R36	100	M55342K12B100DTW									
48	5	5.2C Top	1.190 1.215	RES THK-FLM SMR0603-41	R37	100	M55342K12B100DTW									
48	5	5.2B Bot	4.365 2.060	RES THK-FLM SMR0603-41	R41	100	M55342K12B100DTW									
48	5	5.2B Bot	4.365 2.060	RES THK-FLM SMR0603-41	R42	100	M55342K12B100DTW									
49	5	4.2E Top	1.060 0.650	POTENTIOMETER 3266W	R20	10K	3266W-1-103LF									
50	5	3.7B Top	3.940 2.575	POTENTIOMETER R/A 3296Z	R22	10K	3296Z-1-103LF									
51	5	4.2A Top	3.190 1.210	RES THK-FLM SM0603	R10	10K	M55342K12B10E0TW									
51	5	4.3A Top	3.325 1.275	RES THK-FLM SM0603	R11	10K	M55342K12B10E0TW									
51	5	4.3A Top	3.190 1.110	RES THK-FLM SM0603	R14	10K	M55342K12B10E0TW									



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51	6	2.3B Bot	1.085 2.735	RES THK-FLM SM0603	R17	10K	M55342K12B10E0TW									
51	6	3.6C Top	4.110 1.430	RES THK-FLM SM0603	R19	10K	M55342K12B10E0TW									
51	6	2.7D Top	1.870 1.810	RES THK-FLM SM0603	R26	10K	M55342K12B10E0TW									
51	6	5.3B Top	1.160 1.425	RES THK-FLM SM0603	R27	10K	M55342K12B10E0TW									
51	6	5.9A Top	2.690 0.280	RES THK-FLM SM0603	R29	10K	M55342K12B10E0TW									
51	6	3.6C Top	4.210 1.430	RES THK-FLM SM0603	R3	10K	M55342K12B10E0TW									
51	6	5.3E Bot	4.370 0.555	RES THK-FLM SM0603	R31	10K	M55342K12B10E0TW									
51	6	2.6D Bot	1.765 1.520	RES THK-FLM SM0603	R40	10K	M55342K12B10E0TW									
51	6	2.5C Bot	2.115 1.645	RES THK-FLM SM0603	R44	10K	M55342K12B10E0TW									
51	6	2.6C Top	2.050 1.515	RES THK-FLM SM0603	R45	10K	M55342K12B10E0TW									
51	6	5.3A Bot	4.550 2.100	RES THK-FLM SM0603	R57	10K	M55342K12B10E0TW									
51	6	5.3B Bot	1.300 0.950	RES THK-FLM SM0603	R66	10K	M55342K12B10E0TW									
51	6	5.3B Bot	1.365 1.375	RES THK-FLM SM0603	R67	10K	M55342K12B10E0TW									
51	6	5.3A Top	3.810 0.760	RES THK-FLM SM0603	R7	10K	M55342K12B10E0TW									
51	6	3.4C Bot	2.770 0.175	RES THK-FLM SM0603	R9	10K	M55342K12B10E0TW									
52	6	5.3E Bot	4.370 0.455	RES THK-FLM SM0603	R30	15.0K	M55342K12B15E0TW									
53	6	3.4B Bot	2.770 0.395	RES THK-FLM SM0603	R8	3.3K	M55342K12B3E32TW									



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54	7	2.4B Bot	0.840 2.060	RES THK-FLM SM0603	R56	30.1K	M55342K12B30E1TW									
55	7	4.2F Bot	0.605 0.835	RES THK-FLM SM0603	R21	4.7K	M55342K12B4E75TW									
56	7	2.4B Bot	0.665 2.060	RES THK-FLM SM0603	R18	4.99K	M55342K12B4E99TW									
56	7	2.7B Bot	0.815 1.555	RES THK-FLM SM0603	R59	4.99K	M55342K12B4E99TW									
57	7	4.2D Top	0.500 0.915	RES THK-FLM SM0603	R23	47K	M55342K12B47E5TW									
57	7	4.2E Top	0.850 0.650	RES THK-FLM SM0603	R24	47K	M55342K12B47E5TW									
58	7	3.7C Top	3.620 1.450	N/A Not Applicable SM0603	R13	N/A 1.0K	Do NOT Install									
58	7	3.8C Top	3.620 1.545	N/A Not Applicable SM0603	R62	N/A 1.0K	Do NOT Install									
59	7	4.2D Bot	0.430 0.960	N/A Not Applicable SM0603	R25	N/A	Do NOT Install									
60	7	3.8D Top	3.445 2.515	SPEAKER 8 Ohm CVS-1508	SP1	CVS-1508	CVS-1508									
60	7	4.5E Top	0.320 0.310	SPEAKER 8 Ohm CVS-1508	SP2	CVS-1508	CVS-1508									
61	7	2.2A Top	0.600 2.469	PCB SWITCH SPDT R/A ON-ON SW ET A	SW2	ET01MD1ABE	ET01MD1ABE									
62	7	2.6C Top	1.870 1.535	SWITCH PUSH BUTTON SW KMR2	SW1	KMR221	KMR221NG-LFS									
63	7	4.3B Bot	3.500 1.125	ROTARY ENCODER SW-ENC-RIC11	SW3	RIC11-31S10K3-GSMT	RIC11-31S10K3-GSMT									
64	7	4.2A Top	6.530 3.990	KNOB FOR ROTARY ENCODER HARDWARE HOUSING	SW3-KNOB	SPK-017A	SPK-017A									
65	7	3.3B Top	3.425 0.455	LOGIC COUNTER SO16	U4	74HC590	74HC590D-118									
66	7	2.5D Top	2.060 1.335	LOGIC GATE AND SOT23-6	U10	74LVC1G11	SN74LVC1G11DBVR									



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67	8	3.2A Top	3.755 0.305	LOGIC GATE INVERT ST SOT23-5	U3	74LVC1G14	SN74LVC1G14DBVR									
68	8	5.4F Top	4.260 1.190	LOGIC GATE INVERT ST SOT23-6	U14	74LVC2G14	SN74LVC2G14DBVR									
68	8	5.2D Top	4.260 0.975	LOGIC GATE INVERT ST SOT23-6	U15	74LVC2G14	SN74LVC2G14DBVR									
69	8	5.3A Top	3.970 1.785	LOGIC GATE ST SOT23-6	U11	74LVC2G17	SN74LVC2G17DBVR									
70	8	5.8B Top	2.390 0.275	SERIAL FRAM SO8 209	U2	FM25L16B	FM25L16B-GTR									
71	8	4.3E Bot	0.435 0.680	AUDIO AMPLIFIER SO8	U5	LM4871	LM4871MX/NOPB									
72	8	3.8B Top	3.620 1.785	OP AMP SOT23-5	U17	LMV321	LMV321IDBVR									
72	8	3.7C Top	3.915 1.210	OP AMP SOT23-5	U6	LMV321	LMV321IDBVR									
73	8	2.9D Top	2.290 0.850	STM32 PROCESSOR LQFP64	U1	STM32U575RIT6	STM32U575RIT6									
74	8	2.5A Top	1.060 2.490	SWITCHMODE REG(5V) TO220-3/VX78_REV	VR3	TSR1.5-2450	TSR_1.5-2450E									
75	8	2.8A Top	0.510 1.290	VOLTAGE REGULATOR 3.3V SOT223	VR2	ZLDO1117-3.3	ZLDO1117QG33TA									
76	8	2.1D Top	1.845 0.940	XTAL 20.0MHZ 18PF TH X-CFS206	X2	ECS-200-18-9X	ECS-200-18-9X									
77	8	2.2D Top	1.780 1.075	XTAL 20MHZ X-CFS206 HC49U	X1	VT200F	VT200F-12.5PF20PPM									

NON-POPULATED and NON-PARTS (do not fill in this sheet)

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2	133	9	1.7E Top	3.350 1.405	Documentation Artifact	BRD15	DRAWING FRAME	VP: Documentation Artifact									
3	134	9	1.6F Top	-3.950 -1.950	Documentation Artifact	BRD4	DRAWING FRAME	VP: Documentation Artifact									
4	135	9	1.6F Top	7.000 -1.950	Documentation Artifact	BRD3	DRAWING FRAME	VP: Documentation Artifact									
5	136	9	1.6F Bot	0.270 2.170	Documentation Artifact	BRD7	DRAWING FRAME	VP: Documentation Artifact									
6	137	9	1.6F Bot	3.155 2.775	Documentation Artifact	BRD6	DRAWING FRAME	VP: Documentation Artifact									
7	138	9	1.10F Top	-3.955 6.005	Documentation Artifact	BRD17	DRAWING FRAME	VP: Documentation Artifact									
8	139	9	1.10E Top	-3.955 6.005	Documentation Artifact	BRD16	DRAWING FRAME	VP: Documentation Artifact									
9	140	9	Top	-0.610 5.455	Documentation Artifact	BRD14	DRAWING FRAME	VP: Documentation Artifact									
10	141	9	Top	-0.725 0.000	Documentation Artifact	BRD11	DRAWING FRAME	VP: Documentation Artifact									
11	142	9	Top	0.000 -0.425	Documentation Artifact	BRD12	DRAWING FRAME	VP: Documentation Artifact									
12	143	9	1.7F Top	0.000 0.000	Documentation Artifact	BRD5	DRAWING FRAME	VP: Documentation Artifact									
28	144	9	5.3D Top	0.750 0.000	Invalid Flight Part(1)	DB1	DB_SA818	Invalid Flight Part (see schematic)									
40	145	9	4.9B Top	2.300 1.750	Invalid Flight Part(1)	LED	LTL-42xx	Invalid Flight Part (see schematic)									
41	146	9	3.8E Top	0.000 0.000	Invalid Flight Part(1)	PCB1	CIRCUIT BOARD	Invalid Flight Part (see schematic)									