



# Kelly Designs

Radio Explorer HAT  
PN: 1287  
Rev C

As of: 12/6/2019  
Patrick Kelly, Jack Kelly  
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Item	Qty	Location ( <u>bottom</u> )	Mfg Part #	Description	Rating	Footprint	Mfg	Mouser	DigiKey	Notes	\$ each	Total
1	1	<u>A1</u>	1909763-1	Conn UMCC Jack Str 50 Ohm SMD		SMD	TE	571-1909763-1	A118077CT-ND		0.322	0.322
2	2	<u>C6, C7</u>	GRM1555C1H180JA01D	Cap Cer 18pF 50V COG 5% 0402	COG	0402	Murata	81-GRM1555C1H180JA1D	490-5858-1-ND		0.006	0.012
3	8	C1, C2, <u>C5</u> , C9, C21, C22, C24, C30	CC0603KRX7R7BB104	Cap Cer 0.1uF 16V X7R 10% 0603	X7R	0603	Yageo	603-CC603KRX7R7BB104	311-1088-1-ND		0.005	0.040
3	0	C1, C2, C5, C9, C21, C22, C24, C30	C0603C104K4RACTU	Cap Cer 0.1uF 16V X7R 10% 0603	X7R	0603	Kemet	80-C0603C104K4R	399-1096-1-ND		0.011	0.000
3	0	C1, C2, C5, C9, C21, C22, C24, C30	GRM188R71C104KA01D	Cap Cer 0.1uF 16V X7R 10% 0603	X7R	0603	Murata	81-GRM39X104K16	490-1532-1-ND		0.031	0.000
3	0	C1, C2, C5, C9, C21, C22, C24, C30	GCM188R71C104KA37D	Cap Cer 0.1uF 16V X7R 10% 0603	X7R	0603	Murata	81-GCM188R71C104KA7D	490-4774-1-ND		0.034	0.000
4	7	<u>C12, C13, C14, C15, C16, C17, C23</u>	GRM155R71C104KA88J	Cap Cer 0.1uF 16V X7R 10% 0402	X7R	0402	Murata	81-GRM155R71C104KA8J	490-6328-1-ND		0.006	0.042
5	3	C3, C4, C27	CC0603KRX5R7BB475	Cap Cer 4.7uF 16V X5R 10% 0603	X5R	0603	Yageo	603-CC603KRX5R7BB475	311-1785-1-ND		0.072	0.216
6	3	C8, C28, C29	GRT188R61C106KE13D	Cap Cer 10uF 6.3V X5R 10% 0603	X5R	0603	Murata	81-GRT188R61C106KE3D	490-12317-1-ND		0.154	0.462
7	1	C10	CC1206KKX7R6BB225	Cap Cer 2.2uF 10V X7R 10% 1206	X7R	1206	Yageo	603-CC126KKX7R6BB225	311-1953-1-ND		0.037	0.037
7	0	C10	GRM31MR71A225KA01L	Cap Cer 2.2uF 10V X7R 10% 1206	X7R	1206	Murata	81-GRM426X225K010L	490-1803-1-ND		0.118	0.000
7	0	C10	C1206C225K8RACTU	Cap Cer 2.2uF 10V X7R 10% 1206	X7R	1206	Kemet	80-C1206C225K8R	399-8182-1-ND		0.470	0.000
7	0	C10	LMK316B7225KL-T	Cap Cer 2.2uF 10V X7R 10% 1206	X7R	1206	Taiyo Yuden	963-LMK316B7225KL-T	587-2232-1-ND		0.074	0.000
8	1	C11	GRM31CR60J107KE39L	Cap Cer 100uF 6.3V X5R 10% 1206	X5R	1206	Murata	81-GRM31CR60J107KE9L	490-13982-1-ND		0.290	0.290
8	0	C11	CL31A107MQHNNNE	Cap Cer 100uF 6.3V X5R 20% 1206	X5R	1206	Samsung	NA	1276-1782-1-ND		0.261	0.000
8	0	C11	JMK316BJ107ML-T	Cap Cer 100uF 6.3V X5R 20% 1206	X5R	1206	Taiyo Yuden	963-JMK316BJ107ML-T	587-1963-6-ND		0.472	0.000
9	3	<u>C18</u> , C25, C26	CC0603KRX5R5BB475	Cap Cer 4.7uF 6.3V X5R 10% 0603	X5R	0603	Yageo	603-CC603KRX5R5BB475	311-1521-1-ND		0.025	0.075
10	1	<u>C19</u>	LMK105BJ105KV-F	Cap Cer 1uF 10V X5R 10% 0402	X5R	0402	Taiyo Yuden	963-LMK105BJ105KV-F	587-1454-1-ND		0.023	0.023
10	0	<u>C19</u>	EMK105BJ105KV-F	Cap Cer 1uF 16V X5R 10% 0402	X5R	0402	Taiyo Yuden	963-EMK105BJ105KV-F	587-2477-1-ND		0.034	0.000
10	0	<u>C19</u>	CL05A105K05NNNC	Cap Cer 1uF 16V X5R 10% 0402	X5R	0402	Samsung	NA	1276-1067-1-ND		0.024	0.000
10	0	<u>C19</u>	C1005X5R1E105K050BC	Cap Cer 1uF 25V X5R 10% 0402	X5R	0402	TDK	810-C1005X5R1E105K	445-9066-1-ND		0.068	0.000
11	1	<u>C20</u>	CC0603KRX7R9BB331	Cap Cer 330pF 50V X7R 10% 0603	X7R	0603	Yageo	603-C0603KRX7R9BB331	311-1186-1-ND		0.024	0.024
12	2	<u>C31, C32</u>	C1608X7R1H224K080AE	Cap Cer 0.22uF 50V X7R 0603 10%	X7R	0603	TDK	810-C1608X7R1H224KAE	445-173612-1-ND		0.075	0.150
13	2	<u>D1, D4</u>	LTST-C190KRKT	LED Red Clear 0603		0603	Lite-On	859-LTST-C190KRKT	160-1436-1-ND		0.068	0.136
14	1	<u>D2</u>	LTST-C191KFKT	LED Orange Clear 0603		0603	Lite-On	859-LTST-C191KFKT	160-1445-1-ND		0.068	0.068
15	1	<u>D3</u>	LTST-C190KGKT	LED Green Clear 0603		0603	Lite-On	859-LTST-C190KGKT	160-1435-1-ND		0.068	0.068
16	1	F1	OZCK0100FF2E	Fuse PTC Resttable 1.0A 6V Chip 0805		0805	Bel Fuse	530-OZCK0100FF2E	507-1815-1-ND		0.185	0.185
17	1	J1	CS25582-40G-M36-0A	Conn Socket 2x20 0.100 inch SMD		0.100	Kaweei Tech	(Buy from Adafruit #2187)	NA		1.950	1.950
18	1	J2	S2B-PH-K-S(LF)(SN)	Conn Header PH Side 2 Pos 2mm		2mm	JST	NA	455-1719-ND	6,7	0.099	0.099
19	0	<u>J3</u>	20021121-00010C4LF	Conn Header 10 Pos DL 0.050 in SMD		SMD	Amphenol	649-202112100010C4LF	609-3695-1-ND		0.606	0.000
20	0	<u>J5</u>	M22-2510246	Header 2 Pos 2mm		2mm	Harwin	855-M22-2510246	952-2280-ND	5,6	0.082	0.000
21	0	<u>J5 Shunt</u>	M22-1900005	Shunt Jumper 2mm		2mm	Harwin	855-M22-1900005	952-1305-ND		0.215	0.000
22	1	L1	PA4341.682NLT	Inductor 6.8uH 4.5A 60 Mohm SMD			Pulse	673-PA4341.682NLT	553-3420-1-ND		0.702	0.702
22	0	L1	PA4341.682NLT	Inductor 6.8uH 4.5A 60 Mohm SMD			Pulse	buy from Arrow			0.663	0.000
23	2	<u>Q1, Q4</u>	FDN340P	MOSFET P-Chan 20V 2A SSOT-3		SSOT-3	On Semi	512-FDN340P	FDN340PCT-ND		0.157	0.314
24	1	Q2	MMUN2133LT1G	Trans Prebias PNP 246mW SOT23-3		SOT23-3	On Semi	863-MMUN2133LT1G	MMUN2133LT1GOSCT-ND		0.039	0.039
25	1	Q3	BSS138-7-F	MOSFET N-Chan 50V 200mA SOT-23		SOT-23	Diodes Inc	621-BSS138-7-F	BSS138-FDICT-ND		0.099	0.099
25	0	Q3	BSS138LT1G	MOSFET N-Chan 50V 200mA SOT-23		SOT-23	On Semi	863-BSS138LT1G	BSS138LT1GOSCT-ND		0.070	0.000
26	3	<u>R14, R15</u> , R17	RC0603FR-071KL	Res 1.0K Ohm 1% Thick Film 0603	1%	0603	Yageo	603-RC0603FR-071KL	311-1.00KHRCT-ND		0.006	0.018
27	1	R1	RT0805BRD07732KL	Res 732K Ohm 0.1% Thin Film 0805	0.1%	0805	Yageo	603-RT0805BRD07732KL	YAG4938CT-ND		0.114	0.114
28	1	R22	RC0603FR-07383KL	Res 383K Ohm 1% Thick Film 0603	1%	0603	Yageo	603-RC0603FR-07383KL	311-383KHRCT-ND		0.009	0.009
29	1	<u>R7</u>	RT0603BRD07200KL	Res 200K Ohm 0.1% Thin Film 0603	0.1%	0603	Yageo	603-RT0603BRD07200KL	YAG1578CT-ND		0.127	0.127

30	1	R3	RT0603BRD074K99L	Res 4.99K Ohm 0.1% Thin Film 0603	0.1%	0603	Yageo	603-RT0603BRD074K99L	YAG1678CT-ND		0.127	0.127
31	1	R21	RC0603FR-07732KL	Res 732K Ohm 1% Think Film 0603	1%	0603	Yageo	603-RC0603FR-07732KL	311-732KHRCT-ND		0.009	0.009
32	2	R34, R39	RC0603FR-07100RL	Res 100 Ohms 1% Think Film 0603	1%	0603	Yageo	603-RC0603FR-07100RL	311-100HRCCT-ND		0.009	0.018
33	1	R2	ERA-3AEB2433V	Res 243K Ohm 0.1% Thin Film 0603	0.1%	0603	Panasonic	667-ERA-3AEB2433V	P243KDBCCT-ND		0.117	0.117
34	1	R23	RC0603FR-07100KL	Res 100K Ohm 1% Thick Film 0603	1%	0603	Yageo	603-RC0603FR-07100KL	311-100KHRCT-ND		0.009	0.009
35	1	R6	CPF0603B1M0E1	Res 1M Ohm 0.1% Thin Film 0603	0.1%	0603	TE	279-CPF0603B1M0E1	A102234CT-ND		0.157	0.157
36	1	R38	ERJ-3EKF1004V	Res 1M Ohm 1% Thick Film 0603	1%	0603	Panasonic	667-ERJ-3EKF1004V	P1.00MHCT-ND		0.018	0.018
37	1	R33	CPF0603B750KE1	Res 750K Ohm 0.1% Thin Film 0603	0.1%	0603	TE	279-CPF0603B750KE1	A102315CT-ND		0.199	0.199
38	1	R25	ERA-3AEB8061V	Res 8.06K Ohm 0.1% Thin Film 0603	0.1%	0603	Panasonic	667-ERA-3AEB8061V	P8.06KDBCCT-ND		0.117	0.117
39	1	R9	RN73C1J357KBTD	Res 357K Ohm 0.1% Thin Film 0603	0.1%	0603	TE	279-RN73C1J357KBTD	A124742CT-ND		0.448	0.448
40	0	R12, R13	RC0603FR-071KL	Res 1.0K Ohm 1% Thick Film 0603	1%	0603	Yageo	603-RC0603FR-071KL	311-1.00KHRCT-ND		0.006	0.000
41	3	R5, R10, R20	RC0603FR-072KL	Res 2.0K Ohm 1% Thick Film 0603	1%	0603	Yageo	603-RC0603FR-072KL	311-2.00KHRCT-ND		0.006	0.018
42	2	R4, R24	RC0603FR-07100KL	Res 100K Ohm 1% Thick Film 0603	1%	0603	Yageo	603-RC0603FR-07100KL	311-100KHRCT-ND		0.006	0.012
43	1	R8	CRCW06032M10FKEA	Res 2.1M Ohm 1% Thick Film 0603	1%	0603	Vishay Dale	71-CRCW06032M10FKEA	541-2.10MHCT-ND		0.014	0.014
44	1	R35	RC0603FR-0710RL	Res 10 Ohm 1% Thick Film 0603	1%	0603	Yageo	603-RC0603FR-0710RL	311-10.0HRCCT-ND		0.006	0.006
45	2	R18, R19	RC0603FR-073K9L	Res 3.9K Ohm 1% Thick Film 0603	1%	0603	Yageo	603-RC0603FR-073K9L	311-3.90KHRCT-ND		0.006	0.012
46	1	R26	RT0603BRD07442RL	Res 442 Ohm 0.1% Thin Film 0603	0.1%	0603	Yageo	603-RT0603BRD07442RL	YAG4558CT-ND		0.069	0.069
47	1	R11	RC0603FR-0710KL	Res 10K Ohm 1% Thick Film 0603	1%	0603	Yageo	603-RC0603FR-0710KL	311-10.0KHRCT-ND		0.003	0.003
48	1	R16	RC0402FR-0756KL	Res 56K Ohm 1% Thick Film 0402	1%	0402	Yageo	603-RC0402FR-0756KL	311-56.0KLRCCT-ND		0.005	0.005
49	2	R27, R32	RT0603BRD071KL	Res 1K Ohm 0.1% Thin Film 0603	0.1%	0603	Yageo	603-RT0603BRD071KL	YAG1237CT-ND		0.069	0.138
50	3	R28, R31, R36	RC0402JR-070RL	Res 0 Ohm Jumper Thick Film 0402		0402	Yageo	603-RC0402JR-070RL	311-0.0JRCT-ND		0.003	0.009
51	0	R29, R30, R37	RC0402JR-070RL	Res 0 Ohm Jumper Thick Film 0402		0402	Yageo	603-RC0402JR-070RL	311-0.0JRCT-ND		0.003	0.000
52	1	SW1	JS102011JAQN	Switch Slide SPDT 300mA 6V SMD			C&K	611-JS102011JAQN	CKN10720CT-ND		0.350	0.350
53	2	SW2, SW3	PTS645SK43SMTR92 LFS	Switch Tactile SPST-NO 0.05A 12V SMT			C&K	611-PTS645SK43SMTR92	CKN9084CT-ND		0.176	0.352
54	1	U1	MCP73831-2ATI/MC	IC Controller Li-Ion 4.2V 8DFN		8DFN	Microchip	579-MCP73831T-2ATIMC	MCP73831-2ATI/MC-ND		0.450	0.450
55	2	U2, U8	MIC842HYC5-TR	IC Comparator w/Ref Open Drain		SC-70-5	Microchip	998-MIC842HYC5TR	576-2926-1-ND		0.420	0.840
56	1	U3	ADS1014BQDGSRQ1	IC ADC 12-Bit 12C SMD			TI	595-ADS1014BQDGSRQ1	296-45252-1-ND		2.170	2.170
57	1	U4	TPS61090RSAR	IC Reg Boost Adj 2A Sync 16VQFN		16VQFN	TI	595-TPS61090RSAR	296-15259-1-ND		1.720	1.720

8	1	<u>A1</u>	66089-0930	Antenna U.FL 915MHz 30MM			Anaren	RichardsonRFPD			2.180	2.180
9	1	<u>Under Display</u>	Cat 111-24	3M Scotch 111 Heavy Duty 1 inch Mounting Squares			Scotch	Amazon		4	0.100	0.100
							<b>Sub total:</b>		<b>\$5.95</b>			

Notes:

1	These components should be stocked due to concerns over lead time and/or limited substitutions available.
2	Cut pins flush to this board (0.030 inch or less)
3	Do not wash
4	Stack 2 squares on top of each other, then cut to about 0.5 x 0.33 inch, then place under Display to support it
5	Leave holes open (do not fill with solder)
6	Thru-hole component
7	J2 pins too long, cut 0.050 inch off pins