

	A	B	C	D	I
1	<b>HANDS-ON RADIO (Thanks, John AF4WM)</b>				
2	Parts List				
3	Updated through Experiment 55				
4		<b>MAX QTY</b>	<b>EXPERIMENT</b>	<b>NOTES</b>	Notes
5	<b>1/4 WATT RESISTOR (All values are ohms)</b>				
6					
7	10	2	2,13,15,16,46	10qbk-nd	
8	27, non-inductive	1	21	27qbk-nd	
9	39	2	13	39qbk-nd	
10	47	1	10	47qbk-nd	
11	51	1	13,26	51qbk-nd	
12	68	2	45	68qbk-nd	
13	75	2	13	75qbk-nd	
14	100	1	2,13,15,16,24,29,37,46, 48	100qbk-nd	
15	150, non-inductive	1	21	150qbk-nd	
16	220	1	48	220qbk-nd	
17	270	1	1,28,45	270qbk-nd	
18	330	1	6,28,29,38	330qbk-nd	
19	390	1	48	390qbk-nd	
20	470	7	8,28,29,37	470qbk-nd	
21	510	1	9,55	510qbk-nd	
22	1k	10	2,3,8,12,28,29,31,33,36,37,39,40,55	1.0kqbk-nd	
23	1.2k	1	2	1.2kqbk-nd	
24	1.5k	1	1, 28	1.5kqbk-nd	
25	2.2k	1	4,8,11,14	2.2kqbk-nd	
26	2.7k	1	27	2.7kqbk-nd	
27	3.9k	1	3,6	3.9kqbk-nd	
28	4.7k	2	5,8,9,45,54	4.7kqbk-nd	
29	5.1k	1	6	5.1kqbk-nd	
30	6.8k	1	1,28,55	6.8kqbk-nd	
31	10k	4	2,3,4,7,17,18,30,31,40,41,46,54	10kqbk-nd	
32	15k	1	2	15kqbk-nd	
33	16k	4	42	16kqbk-nd	
34	22k	1	2,4,11,41,45	22kqbk-nd	
35	27k	1	11	27kqbk-nd	
36	39k	1	1,5,28,41	39kqbk-nd	
37	47k	1	4,31	47kqbk-nd	
38	56k	1	41	56kqbk-nd	
39	62k	1	5	62kqbk-nd	
40	75k	1	41	75kqbk-nd	
41	91k	1	5	91kqbk-nd	
42	120k	1	39	120kqbk-nd	
43	220k	1	11	220kqbk-nd	
44	270k	1	38	270kqbk-nd	
45	470k	1	31	470kqbk-nd	
46	680k	1	38	680kqbk-nd	
47	1M	10	43,55	1.0mqbk-nd	
48					
49	<b>POWER RESISTORS (All values are ohms)</b>				
50					
51	5, 5W	1	24	5.1w-5-nd	5.1 ohm supplied
52	50, 10W	2	9(2)	51w-10-nd	51 ohms supplied
53	100, 1W	1	10,32	P100w-1bk-nd	
54					
55	<b>POTENTIOMETER (All values are ohms)</b>				

	A	B	C	D	I
56	100 (100 ohm trimmer)	1	28,42	858-25pr100lf	
57	1k	1	3,4,14	31cn205-f	
58	10k	1	3,8,11,12,14,54,55	31cn401-f	
59	20k	1	9	313-1500f-25k	
60	50k	1	10	31cn405-f	
61	100k	1	1,2,38,41	31cn501-f	
62	1M	1	17,39,40	31cn601-f	
63					
64	<b>CAPACITORS</b>				
65					
66	50 to 200 pF, fixed-value or air-variable (70 pf trimmer supplied)	1	21,43	659-gkg70015	small 70pf trimmer supplied
67	2.7 pF, ceramic (2.2pf supplied)	1	43	140-100n2-2r2d-rc	
68	100 pF, polystyrene or ceramic	1	45,46	sr151a101jar	
69	200 pF, polystyrene or silver mica (2 x 100 pf poly supplied)	1	43,46	23ps110	2 x 100pf poly caps supplied
70	390 pF, polystyrene or silver mica	2	46	sr151a391jar	
71	1 nF, 50V ceramic	3	17,37	p4551	
72	1.5 nF, film or ceramic	1	18	p4553	
73	2.7 nF, film or ceramic	1	4	p4587	
74	5.6 nF, film or ceramic	1	4	p4560	
75	10 nF, film or ceramic	4	5,25,42,45,46	p4513	
76	16 nF, film or ceramic (18nf??)	2	41	p4516	18 nf caps supplied
77	33 nF, film or ceramic	2	4	p4519	
78	56 nF, film or ceramic	1	4	p4590	
79	0.1 uF, 50 V ceramic		4,8,12,17,24,26,27,38,39,40,43	p4525	
80	1 uF, 25 V electrolytic	4	7,40	p824-nd	
81	1 uF, 35 V tantalum		16,8	718-1210-ND	
82	10 uF, 25 V electrolytic	3	1,2,3,4,5,7,17,28,31	p813-nd	
83	47 uF Tant 16v		1,15,16	80-t350j476m016at	47uf supplied instead of 100uf in book
84	100 uF, 35 V electrolytic		3,10,30,31	p12924-nd	
85	4700 uF, 15V electrolytic		2,10,38	565-1539-ND	
86					
87	<b>INDUCTORS &amp; CORES</b>				
88					
89	2 uH handwound, 8 turns, 1-1/2" dia, 1" long	1	43		
90	100 uH, 1 amp		1,15,16	542-5800-101-rc	
91	22 uH should be rated for 50 mA, large chokes OK		1,46	542-78F220-rc	
92	1 mH		1,26	542-77f102-rc	
93	FT37-43 or equivalent		1,45	FT37-43	
94	FT240-61 or equivalent		1,48	or FT240 balun kit from Amidon	
95	T50-6 or equivalent		1,46	T50-6	
96					
97	<b>TRANSFORMERS</b>				
98					
99	115 V Pri, 12.6 V Sec, RadioShack 273-1365 or similar		1,10, 33	7838-TR	
100	1000 ohm - 8 ohm audio transformer, RadioShack 273-1380 or similar		1,33	use xfmr above	
101					
102	<b>TRANSISTORS</b>				
103					
104	2N3904		2,1,2,19,20,25,28,31,40,45,46	512-2n3904tf	
105	2N3906		1,19,25,40	512-2n3906tf	
106	2N4401		1,8	610-2n4401	
107	2N4416		1,43	610-2n4416a	
108	2N7000		1,39,40	512-2n7000d75z	
109	TIP31		1,9	512-tip31	
110	TIP42		1,38	512-tip42c	

	A	B	C	D	I
111	IRF510 MOSFET		1 9,12,15,16	6152-irf510a	
112	SCR, 100 V, 8 A - Digi-Key MCR218-004OS-ND		1 10	mcr218-4gos-nd	
113					
114	<b>DIODES &amp; RECTIFIERS</b>				
115					
116	1N4733A		1 6,38	512-1n4733a	
117	1N4148		4 6,7,14,25,26,30,39,40,42,54,55	1n4148fs-nd	
118	1N5819		1 15,16	821-1n5819	
119					
120	<b>INTEGRATED CIRCUITS</b>				
121					
122	78L-05, -08, -12, or -15 voltage regulator		1 25	863-mc78l05acpg	78L05 supplied
123	4N35 Optocoupler		1 14	878-4n35	
124	741 op amp		2 3,4,8,17,19,42,54,55	512-lm741cn	
125	555 timer		1 5	512-lm555cn	
126	LM317 regulator		1 8	512-lm317t	
127	LM311 Comparator		1 11,38	595-lm311p	
128	LM324 quad op amp		1 17	512-lm324am	
129	CD4028 BCD-to-Decimal Decoder		1 37	595-cd4028be	
130	CD4029 Up/Down Counter		1 36	595-cd4029be	
131	CD4511 BCD-to-7-Segment Decoder		1 37	595-cd4511be	
132					
133	<b>LIGHTS &amp; DISPLAYS</b>				
134					
135	Bulb, 12 V RadioShack 900-2665 or similar		1 10	8983LA	small bulb with leads supplied
136	LED, Red RadioShack 276-026 or similar		5 11,36,39,40	15108op	
137	LED, Green RadioShack 276-022 or similar		1 39	15308op	
138	7-Seg Display, Common-Cathode, Jameco 17187 or equiv.		1 37	15121	
139	lamp basesocket		1 10		not needed – lamp has leads
140	<b>MISCELLANEOUS</b>				
141	solderless breadboard		1	4444te	not supplied
142	40-meter crystal in HC-8 or HC-16 holder		1 46	7030-7045 kHz recommended	HC-49u type supplied
143	14 ga. solid, enameled or insulated wire		14 48		14' supplied
144	20 or 22 ga. Solid wire		10 21		3' supplied
145	24 to 28 ga. Solid wire (enameled)		3 45,46,47		15' supplied
146	SO-239 connector		1 21, 48		not supplied
147	UHF double-male adapter		1 21		not supplied
148	plastic film can or pill bottle		1 22		not supplied
149	SPST or SPDT switch		1 22	5006sw	
150	RG-58 coaxial cable		25 22		not supplied
151	Wooden spring-loaded clothespins		2 3		not supplied
152	Scraps of 2x4 wood		2 3		not supplied
153	Thick cardboard		2 3		not supplied
154	1/4 inch dowel		2 3		not supplied
155	Glue		2 3		not supplied
156	Wood screws		2 3		not supplied
157	#6-32 machine screws		2 3		not supplied
158	#6-32 nuts		2 3		not supplied
159	#6 flat washers		2 3		not supplied
160	DPST switch		2 30	5011sw	
161	TO-220 heat sink		1 24	532-574102b00	
162	Mounting hardware for TO-220 heatsink		1 24		not needed – clip on heat sink supplied
163	1.5 V AAA or 9 V battery		1 32		not supplied
164					
165					