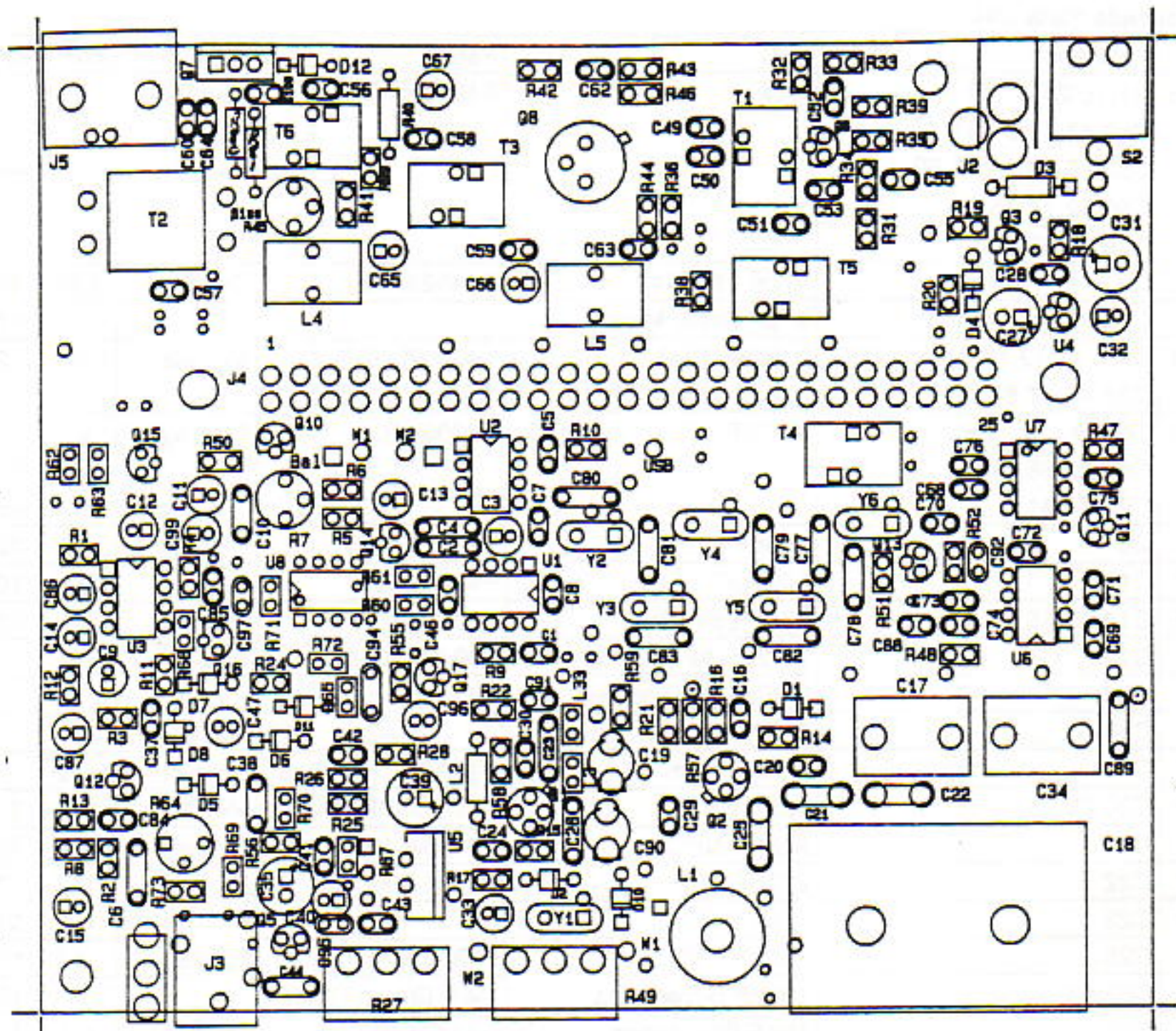


Cascade Main Board Parts Placement Diagram



The main board of the Cascade is pictured above. You will notice that it is quite crowded, yet all of the parts will fit. We have blown up the various sections and you will have them to refer to as you build each section. One thing that you will need to note is that the parts are indicated by their shape on the drawing. All of the resistors are drawn as rectangles. The capacitors are drawn as circles or oblong ellipses. This will help as the going gets tough on the parts placement identification. Due to the density of the board, it was not possible to place the identifier on every part.

Please double check the part before you solder it in. It is much easier to check it twice than to

unsolder it. But, don't worry if you do make a mistake, as you can undo the damage with solder wick.

The first thing that you should do is inventory your parts. There is a column on the parts list for you to check them off. Make sure that you have all of the parts before you start. If we have shorted you some parts, let us know within 30 days of shipping the kit and we will supply them to you. There are some extra parts in the kit due to late, last minute circuit revisions to improve the circuit. Please add these to your junkbox.

Cascade Parts List

#	Reference	Part	Part #	Source	LS	ID	INV.
25	C1,16,24,37,40, C42,43,49,50,51, C52,55,56,57,58,59, C60,62,74,75,84, C88,92,95,100	.1uF	P4917A-ND 104	Digikey	0.1	104 Tan Mono	
2	C2,4	47pF - NPO	P4452A-ND	Digikey	0.25	47	
2	C78, C80	47pF Silver Mica				47J	
11	C3,9,11,12,13,32, C33,40,47,67,87	2.2/25V Elec	140-XRL25V2.2	Mouser	0.08	2.2\25	
10	C5,7,8, C53,63,68,69 C70,71,91	.047uF	P4908-ND	Digikey	0.1	473 Blue Mono	
1	C6	220pF	P4460A-ND	Digikey	0.2	221J	
1	C10	1000pF	P4036A-ND	Digikey	0.2	102	
5	C14,15,65,66,86	22uF/25V Elec	140-XRL25V22	Mouser	0.08	22/25	
1	C17	2-12pF Air Trimmer	530-189-0509-5	Mouser	0.45		
1	C34	2-20pF Air Trimmer	530-189-509-5				
1	C18	5-40pF/8-1 Air Variable		OHR			
1	C19	2-12pF Trim	24AA021 No color	Mouser	0.2		
2	C20,76	5pF - NPO	140-100N2-005J	Mouser	0.1	5	
1	C21	82pF - NPO	P4455A-ND	Digikey	0.2	82J	
1	C22	270pF - NPO	P4460A-ND	Digikey	0.2	271J	
1	C23	51pF			0.2	51J	
1	C25	100pF - NPO	P4456A-ND	Digikey	0.2	101J	
2	C82,83	100pF Silver Mica	Dark Brown Color			100	
1	C26	10pF Blue Mono	P4444A-ND	Digikey	0.1	100	
4	C27,31,35,39	100uF/25V Elec	140-XRL25V100	Mouser	0.1	100/25	
4	C29,30,72,73	470pF	P4808-ND	Digikey	0.2	471	
3	C38,44,94	.47uF	P4919-ND	Digikey	0.2	474	
1	C99	10uF/25V	140-XRL25V10	Mouser	0.1	10/25	
1	C41	.22uF	PN4918-ND	Digikey	0.1	224	
1	C46	.01uF	P4904	Digikey	0.1	103	
1	C47	2.2uF Non Polarized				2.2NP	
1	C64	.001uF	PN4898-ND	Digikey	0.1	102	
2	C77,81	150pF Silver Mica	Dark Brown Color	Digikey	0.2	151J	
1	C79	56pF Silver Mica	Dark Brown Color	Digikey	0.2	56J	
1	C85	.02uF	P4906	Digikey	0.1	223	
1	C89	Short-Wire Jumper					

1	C90	4-20pF Trim	24AA022 Blue	Mouser	0.2		
1	C96	1uF Non Polarized				1NP	
1	C97	.002uF				222	
8	D1,2,5,6,7,8,10,11	1N914	1N914BPH	Digikey		1N914	
1	D3	1N5819	1N5819GI	Digikey		1N5819	
1	D4	100 ohm resistor					
1	D12	1N4001	1N4001GICT-ND	Digikey		1N4001	
1	J1	2.5mm Stereo Jack	161-2502	Mouser			✓
1	J2	2.1mm DC Jack	16PJ031	Mouser			✓
1	J3	3.5mm Stereo Jack	161-3500	Mouser			✓
1	J4	50 pin Edge Con.	EDC 305502-ND	Digikey			✓
1	J5	BNC Jack	177-3138	Mouser			✓
1	L1	5.13uH T50-7 33T/8T	T50-7	Amidon			
1	L2	33uH RFC	43HH335	Mouser			
2	L3-L33	2 - 15uH RFC in series	43LS155	Mouser			
2	L4,5	56uH RFC FT37-43 15T	FT37-43	Amidon			
2	Q1,2,	2N4416A	2N4416A	Newark			✓
1	Q3	2N3906	333-2N3906	Mouser			✓
2	Q12,13	J310	J310	Anchor			
4	Q5,11,15,16	2N7000	2N7000DICT-ND	Digikey			✓
1	Q6	2N2222A	2N2222A	Mouser			
1	Q7	2SC2312C	2SC2312C	RFPARTS			
1	Q8	2N3866	2N3866	Anchor			
1	Q10	2N4124	570-2N4124	Mouser			
1	Q14	J176	J176	Ace			
1	Q17	2N5484	2N5484	Debco			
6	R2,11,59,63,97,98 22	10K	10KE	Digikey			
5	R4,13,36,39,72 63	1K	1KE	Digikey			
7	R5,6,20,56,65,68,69	47K	47KE	Digikey			
1	R7	1K Trimpot	36C13	Digikey			
1	R52	1.5K	1.5KE	Digikey			
5	R3,9,10,47,48	470	470KE	Digikey			
4	R22,26,57,62	2.2K	2.2KE	Digikey			
3	R1,14,15	1M	1ME	Digikey			
2	R16,97	100	100E	Digikey			
4	R12,17,31,38	47	47E	Digikey			
8	R18,19,21,35,54,60,61,70	4.7K	4.7KE	Digikey			
2	R24,55	4.7M	4.7ME	Digikey			
1	R71	22K	22KE	Digikey			
1	R25	2.2	2.2E	Digikey			

R2, 22, 59, 63, 97, 98 = 10K

1	R27	1K Pot	31CW301	Mouser			
1	R28	200	200KE	Digikey			
2	R46,51	390	390E	Digikey			
1	R32	39	39E	Digikey			
1	R33	4.7	4.7E	Digikey			
2	R34,44	560	560E	Digikey			
1	R40	150 1 Watt					
1	R41	180	180E	Digikey			
2	R42,99	20	20E	Digikey			
1	R45	500 Trim pot Blue	3386F-500-ND	Digikey		501	
1	R49	1K Pot	31CW301	Mouser			
1	R50	1.8K	1.8KE	Digikey			
2	R64	10K Trim Pot	36C14	Digikey			
1	R67	1.1	1.1KE	Digikey			
2	R80,81	1.0	1.0KE	Digikey			
1	S2	SPST PCM Toggle					
5	T1,3,4,5,6	27uH 8T T37-43	T37-43 Orange Dot	Amidon			
1	T2	B43-201 Pri 2T Sec 5T	BN-43-202	Amidon			
4	U1,2,6,7	NE602AN	NE602-AN-ND	Digikey			
1	U3	SL6270	SL6270	Plessey			
1	U4	UA78L08C	333-78L08AP	Mouser			✓
1	U5	LM883 2022	LM883T	Digikey			
1	U8	NE5532					
1	TO5 Heatsink						
1	TO220 Mounting Kit						
6	Y1,2,3,4,5,6	9.000 MHz Crystal	23-102	Hosfelt			
1	Case	Custom Case	Custom Case	NorCal			
2	Latches	Plastic Latches	Southco	NorCal			
2	Standoffs	.375" x 4-40	J174-ND	Digikey			
4	Screws	.25 x 6/32	Panhead	NorCal			
2	Screws	.5 x 4-40	Panhead				
4	Screws	5/16 x 4-40	Flathead				
1	Screw	3/8 x 4-40	Panhead				
10	Screws	1/4 x 4-40	Panhead				
3	Screws	3/16 x 4-40	Flathead				
2	Screws	1/4 x 4-40	Flathead				
7	Nuts	4-40					
4	Nuts	6/32		NorCal			
4	Feet	3/8" x 3/8"		Ace			
1	Dial			NorCal			
1	Brass Hub for Dial			NorCal			
2	Angle Brackets	6-32 Holes		NorCal			
1	Wire (Brown)	#26 Magnet		NorCal			
1	Wire (Brown)	#28 Magnet		NorCal			

1	Wire (Green)	#26 Magnet					
1	PCBoard			NorCal			
1	Knobs	1.38"		Mouser			
2	Knobs	.5"		Mouser			
1	Nylon Screw	6-32x1/2	561-P632.5	Mouser			
1	Nylon "Spacer Washer"	1/2" x 6-32 Black					
1	Nylon Shoulder Washer	#6	534-3233	Mouser			
1	Nylon Nut	6-32	561-G632	Mouser			

20 Meter Band Module

4	C1,2,6,8	9-50pf Trimmer	24AA084	Mouser		Green	
3	C3,11,15	470pF		Digikey		471	
2	C10,4	47pF		Mouser		47	
2	C5,9	82pF	P4457	Digikey		820	
1	C7	5pF NPO	P4460	Digikey		5	
2	C12,16	220pF CK05	539CK0471K	Digikey		221	
2	L4,5	.78uH T37-2 14T	T37-2	Amidon		Red	
2	L2,3	.58uH T37-2 12T	T37-2	Amidon		Red	
1	L1	2.9uH T37-6 31T	T37-6	Amidon		Yellow	
1	T1	2.9uH T37-6 31T/3T	T37-6	Amidon		Yellow	
1	PCB	Band Module PCB		NorCal			

75 Meter Band Module

4	C1,2,8,6	9-50pf Trimmer	24AA084	Mouser		Green	
3	C3,11,15	1800pF		Digikey		182	
2	C5,9	220pF		Digikey		221	
2	C7	2700pF		Digikey		272	
2	C12,16	820pF CK05		Mouser		821	
1	C13	150pF		Mouser		151	
1	C14	82pF				820	
1	L1	50uH FT37-61 30T	FT37-61	Amidon		Black	
1	L2	2.0uH - T37-2 23T	T37-2	Amidon		Red	
1	L3	2.4uH - T37-2 23T	T37-2	Amidon		Red	
2	L4,5	7.96uH - FT37-61 12T	FT37-61	Amidon		Black	
1	T1	50uH FT37-61 30T/2T	FT37-61	Amidon		Black	
1	PCB	Band Module PCB		NorCal			

The coil for L2, the 33uH is not in the paper envelope. It is loose in the bag of parts.

It can be identified by the following: It is dark brown in color and has the following stripes; silver, orange, orange, black, silver. It is a little larger than a 1/2 watt resistor.

Trimpot R45 is blue and has a 501 marking. There is an extra blue trimpot marked 500, do not use, it is only 50 ohms and was placed in the kit by mistake.