ALEX – HPSDR RX FILTER SIMULATIONS

VERSION 6.2

July 24, 2007

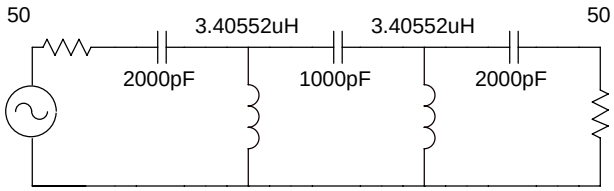
Graham / KE9H

CONTENTS;

NOTES:

1. The 6.5 MHz HPF is an example of a user defined filter.
2. The RX board has an always-in-line Low Pass Filter that could be either 33 MHz or 55 MHz, chosen at time of construction. If you will be operating 6 meters, you must use the 55 MHz LPF. If you are just operating HF, then the 33 MHz filter is recommended, since it will give much more image rejection of VHF FM and TV signals.

5th Order Chebyshev 1.6 MHz HPF

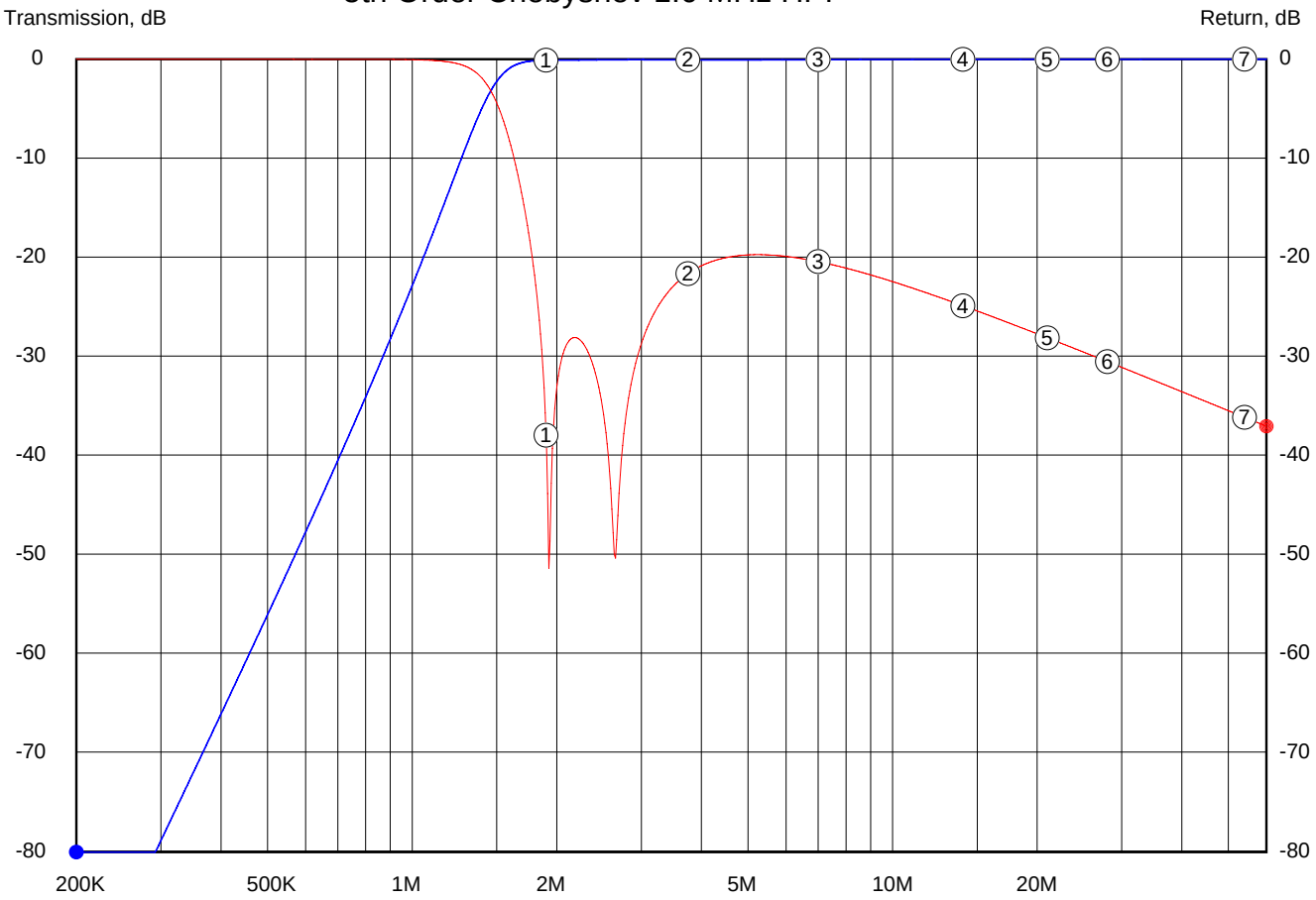


Elsie

7/12/2007 12:22:42 PM

Bandwidth: 1.7M Family: Manual entry
C:\Program Files\Elsie\ALEX-B\1.6 MHz HPF 5Chy Real.LCT
7/12/2007 12:22:42 PM - Elsie 2.12 - www.tonnesoftware.com

5th Order Chebyshev 1.6 MHz HPF

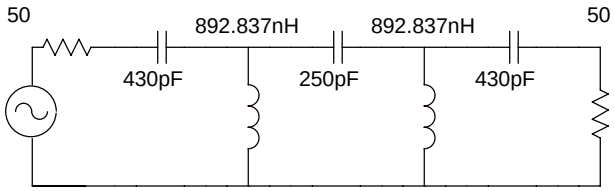


Details of markers:

	Frequency:	Trans.:	Angle:	Return:	Delay:	VSWR:	Zin:	Zangle:	Real:	Imaginary:
1	1.9M	-0.11201	-176.47	-37.927	357.1n	1.0257	49.634	-1.3926	49.62	1.2063
2	3.75M	-0.07086	85.324	-21.635	66.4n	1.1806	58.964	1.1159	58.953	-1.1483
3	7M	-0.05901	45.203	-20.431	18.11n	1.2103	57.072	7.8383	56.539	-7.7834
4	14M	-0.02339	22.587	-24.875	4.507n	1.121	52.155	6.0683	51.863	-5.5135
5	21M	-0.01279	15.059	-28.117	2.003n	1.0818	50.976	4.3606	50.828	-3.8759
6	28M	-0.0084	11.295	-30.518	1.127n	1.0614	50.546	3.3558	50.459	-2.9588
7	54M	-0.00341	5.8567	-36.13	303p	1.0317	50.138	1.7819	50.114	-1.5591
8	125M	-0.00121	2.5301	-43.393	-----	1.0136	50.021	0.77502	50.016	-0.6766

C:\Program Files\Elsie\ALEX-B\1.6 MHz HPF 5Chy Real.LCT
7/12/2007 12:21:49 PM - Elsie 2.12 - www.tonnesoftware.com

5th Order Chebyshev 6.5 MHz HPF

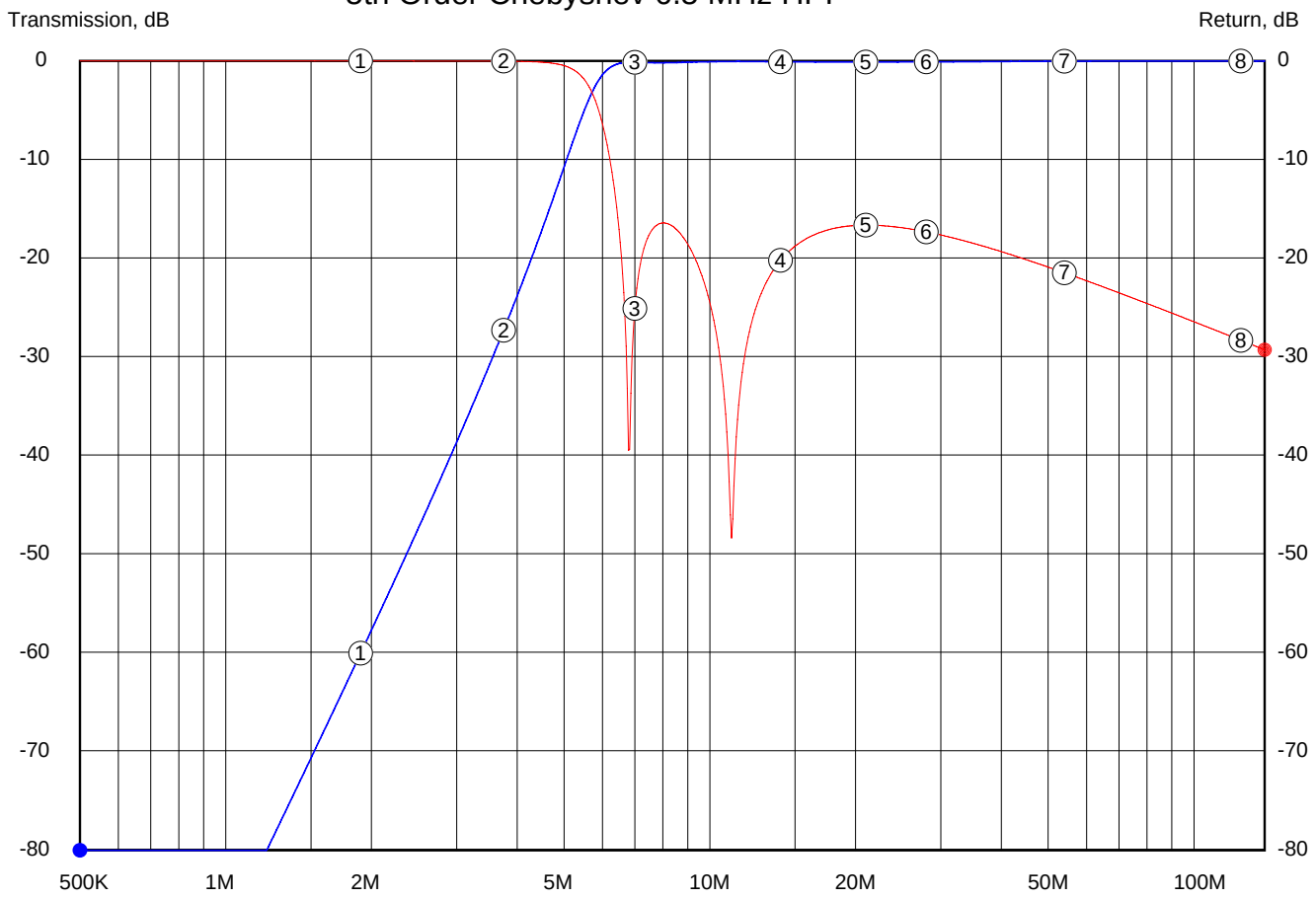


Elsie

7/12/2007 6:51:24 PM

Bandwidth: 6.5M Family: Manual entry
C:\Program Files\Elsie\ALEX-B\6.5 MHz HPF 5Chy Real.LCT
7/12/2007 6:51:24 PM - Elsie 2.12 - www.tonnesoftware.com

5th Order Chebyshev 6.5 MHz HPF



Details of markers:

	Frequency:	Trans.:	Angle:	Return:	Delay:	VSWR:	Zin:	Zangle:	Real:	Imaginary:
1	1.9M	-60.019	58.779	-0.00386	47.86n	>1000	183.78	89.95	0.16118	-183.78
2	3.75M	-27.29	20.964	-0.03169	71.1n	548.11	74.09	89.775	0.29152	-74.089
3	7M	-0.14834	-152.75	-25.094	118.8n	1.1178	52.002	5.9592	51.721	-5.3989
4	14M	-0.08732	93.289	-20.208	19.68n	1.2164	60.816	-0.2555	60.816	0.2712
5	21M	-0.12241	61.55	-16.647	8.228n	1.345	64.627	8.3765	63.938	-9.4148
6	28M	-0.10043	46.176	-17.33	4.586n	1.3148	60.633	10.992	59.52	-11.561
7	54M	-0.04038	24.019	-21.476	1.238n	1.1843	53.456	8.8607	52.818	-8.2341
8	125M	-0.01035	10.393	-28.317	232.1p	1.0798	50.662	4.3314	50.517	-3.8263

C:\Program Files\Elsie\ALEX-B\6.5 MHz HPF 5Chy Real.LCT
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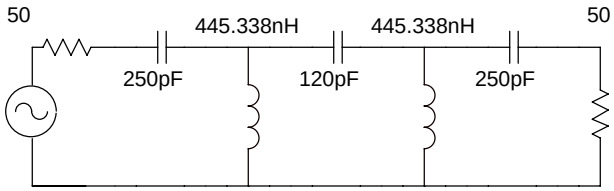
5th Order Chebyshev 13 MHz HPF

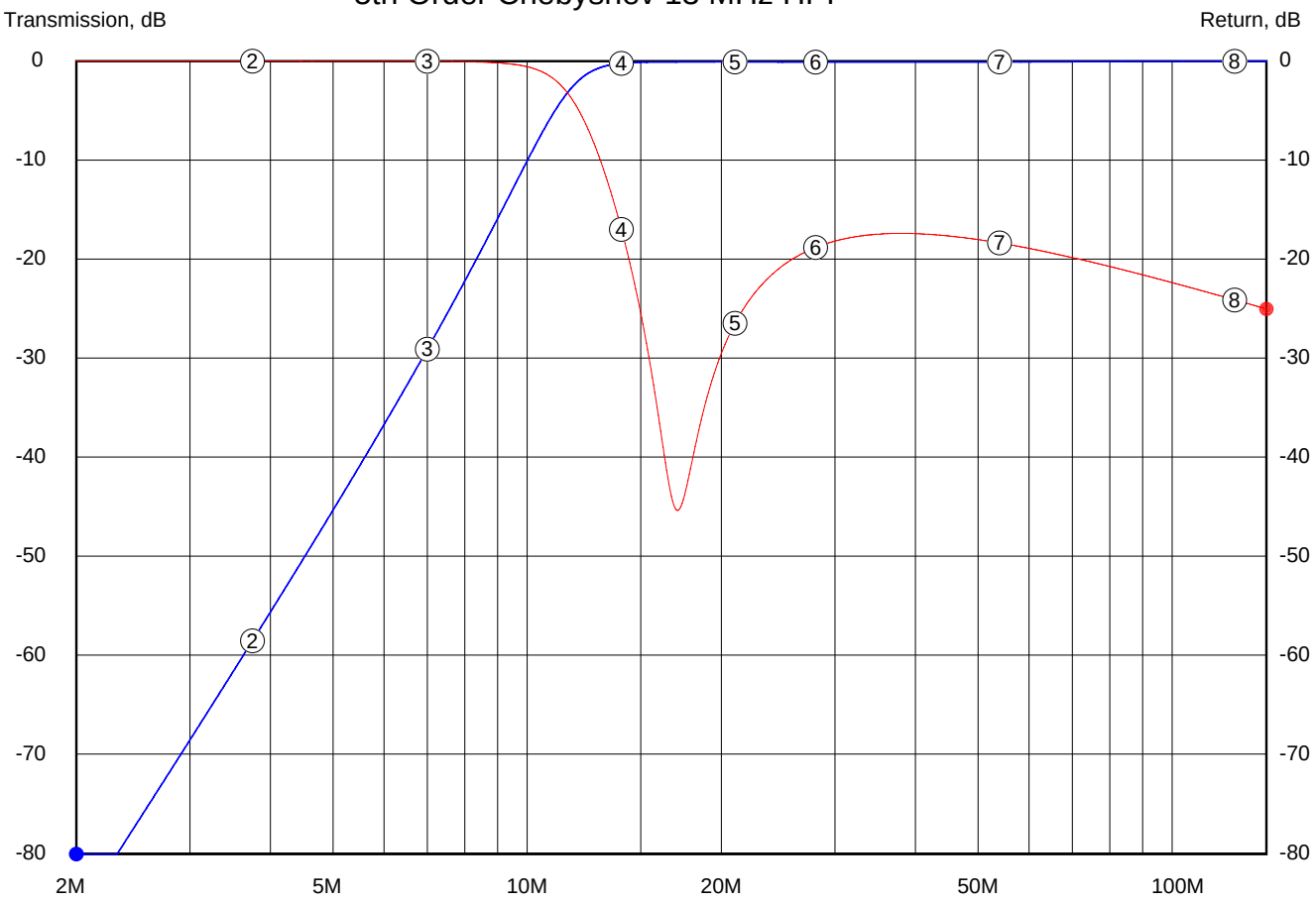


Elsie

7/12/2007 6:47:03 PM

Bandwidth: 13M Family: Manual entry
C:\Program Files\Elsie\ALEX-B\13 MHz HPF 5Chy Real.LCT
7/12/2007 6:47:03 PM - Elsie 2.12 - www.tonnesoftware.com

5th Order Chebyshev 13 MHz HPF



Details of markers:

	Frequency:	Trans.:	Angle:	Return:	Delay:	VSWR:	Zin:	Zangle:	Real:	Imaginary:
1	1.9M	-88.643	72.016	-0.00154	-----	>1000	329.71	89.966	0.19757	-329.71
2	3.75M	-58.478	54.291	-0.00461	27.8n	>1000	158.94	89.947	0.14737	-158.94
3	7M	-29.068	16.98	-0.02821	37.89n	615.87	68.746	89.804	0.23467	-68.746
4	14M	-0.22793	-157.44	-16.987	58.48n	1.3296	44.418	-14.649	42.975	11.233
5	21M	-0.07356	123.48	-26.453	18.26n	1.0999	54.3	-2.7207	54.238	2.5775
6	28M	-0.10178	90.561	-18.798	9.463n	1.2595	62.973	0.21447	62.972	-0.23571
7	54M	-0.08382	46.462	-18.344	2.401n	1.2753	59.406	9.7342	58.55	-10.044
8	125M	-0.02492	20.094	-24.088	447.9p	1.1332	52.117	6.7433	51.757	-6.1197

C:\Program Files\Elsie\ALEX-B\13 MHz HPF 5Chy Real.LCT
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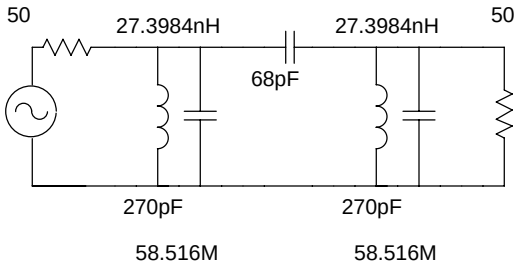
52 MHZ BPF C Cpld 2Chy



Elsie

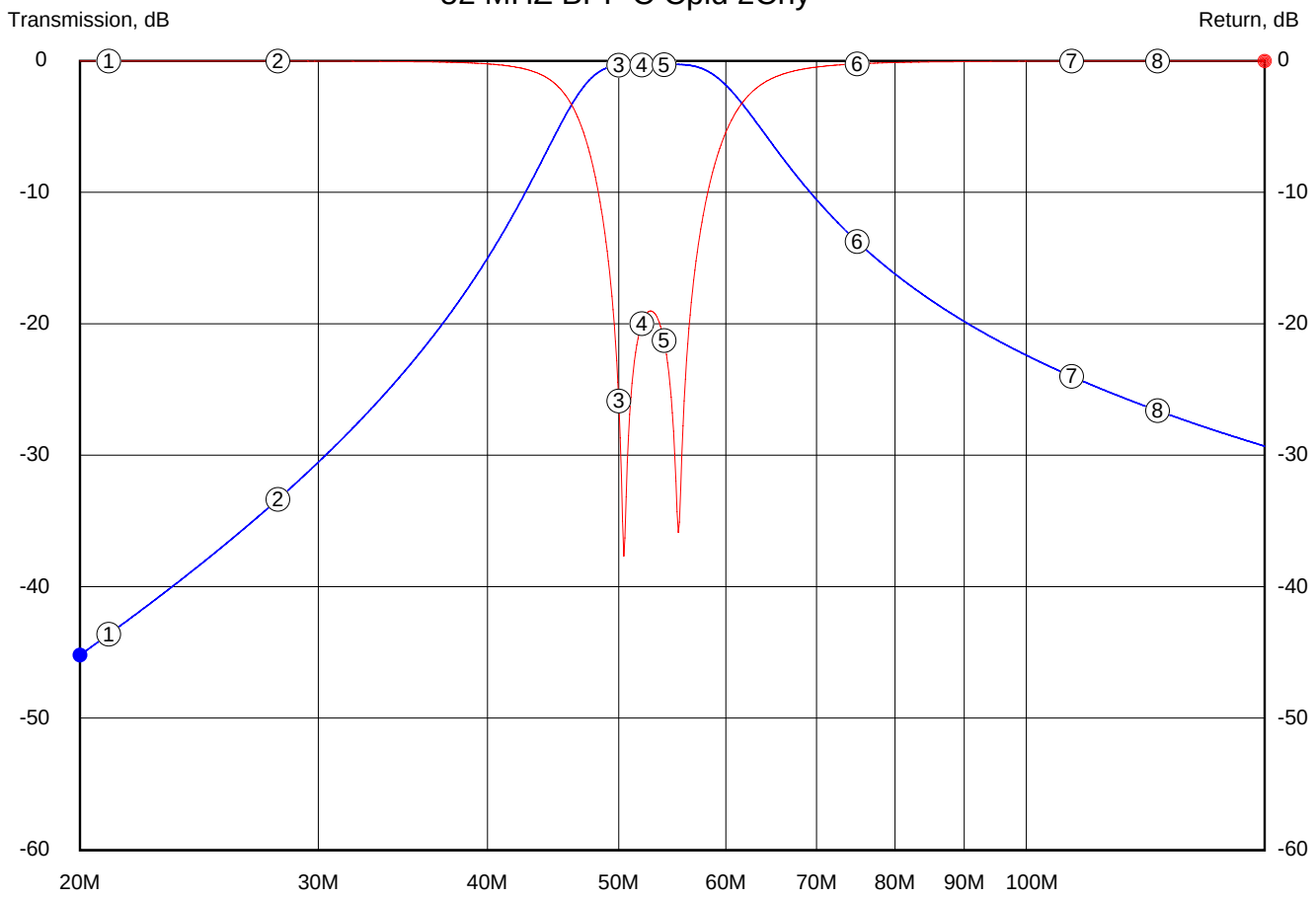
7/12/2007 7:25:41 PM

Bandwidth: 4M Center: 52M Family: Chebycheff Passband ripple: 0.00846

C:\Program Files\Elsie\ALEX-B\50-54 MHz BPF C cpld 2Chy Real.LCT

7/12/2007 7:25:41 PM - Elsie 2.12 - www.tonnesoftware.com

52 MHZ BPF C Cpld 2Chy



Details of markers:

Frequency:		Trans.:	Angle:	Return:	Delay:	VSWR:	Zin:	Zangle:	Real:	Imaginary:
1	21M	-43.583	-100.66	-0.01023	1.846n	>1000	4.3165	-89.606	0.02965	4.3164
2	28M	-33.334	-106.42	-0.02081	2.86n	834.95	6.8004	-89.486	0.06099	6.8002
3	50M	-0.32882	117.78	-25.846	38.4n	1.1075	53.644	-4.2342	53.497	3.9607
4	52M	-0.31027	93.279	-19.965	30.89n	1.2232	40.881	0.39255	40.88	-0.28008
5	54M	-0.29289	72.08	-21.253	28.95n	1.1896	42.19	-2.0414	42.163	1.5029
6	75M	-13.733	-57.436	-0.22607	3.994n	76.846	14.264	87.173	0.70349	-14.247
7	108M	-23.977	-75.81	-0.02292	620.6p	757.84	6.1117	89.372	0.06696	-6.1114
8	125M	-26.581	-78.731	-0.01281	370.9p	>1000	4.8523	89.561	0.03721	-4.8522

C:\Program Files\Elsie\ALEX-B\50-54 MHz BPF C cpld 2Chy Real.LCT
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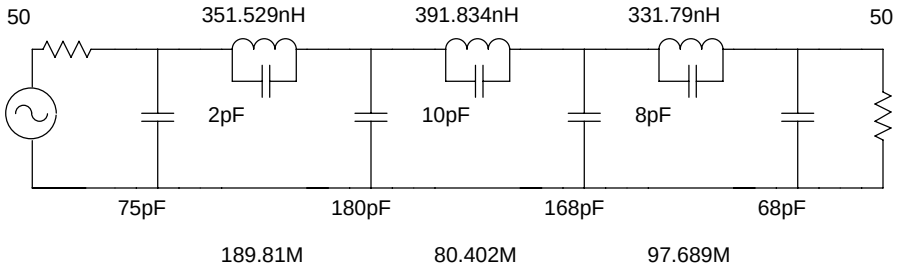
7th Order Cauer 33 MHz LPF

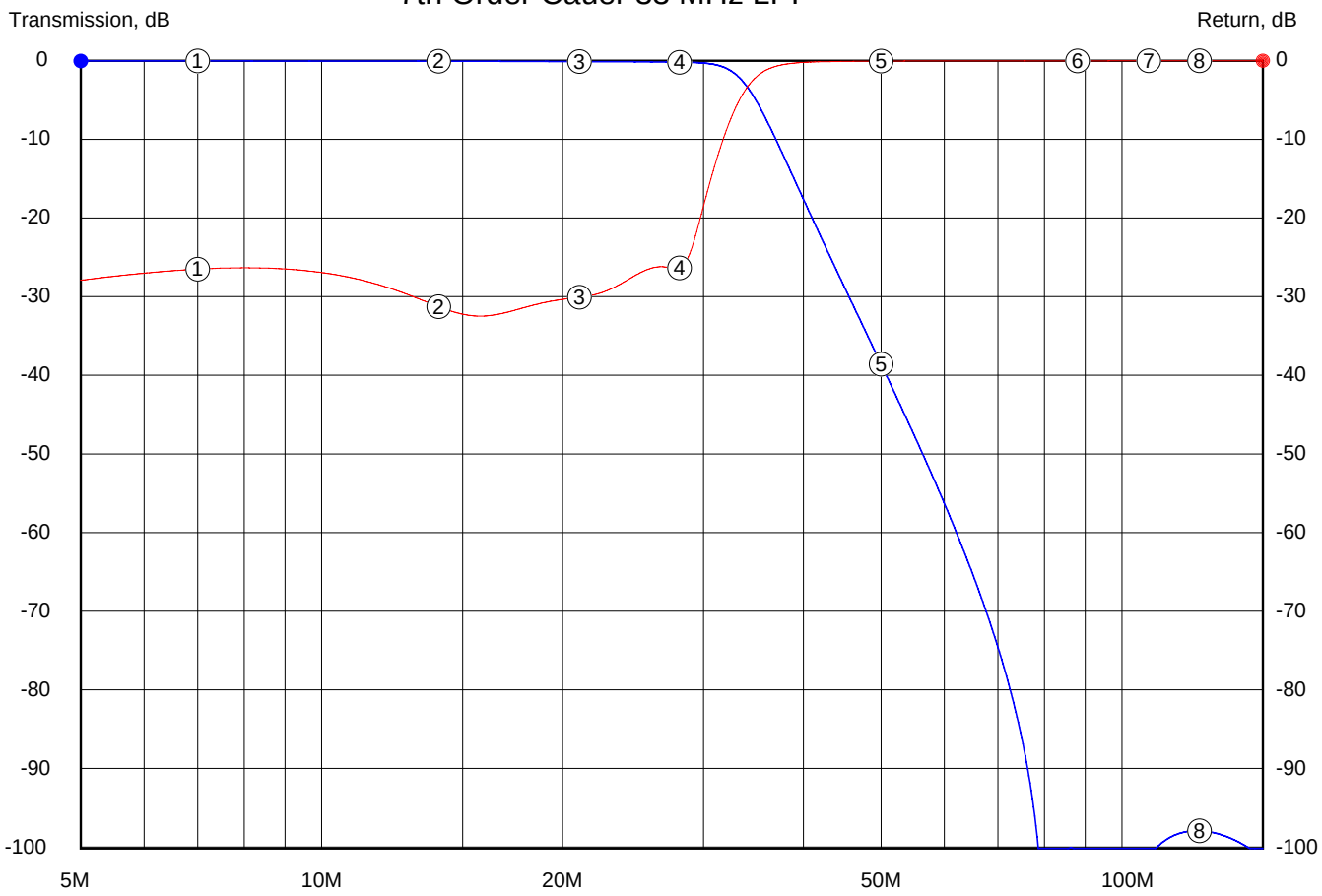


Elsie

7/12/2007 12:09:25 PM

Bandwidth: 30M Family: Manual entry
C:\Program Files\Elsie\ALEX-B\33 MHz LPF 7Cau Real.LCT
7/12/2007 12:09:25 PM - Elsie 2.12 - www.tonnesoftware.com

7th Order Cauer 33 MHz LPF



Details of markers:

Frequency:		Trans.:	Angle:	Return:	Delay:	VSWR:	Zin:	Zangle:	Real:	Imaginary:
1	7M	-0.03634	-58.372	-26.46	23.46n	1.0998	46.498	3.5168	46.41	-2.8522
2	14M	-0.06142	-119.39	-31.23	25.21n	1.0564	47.441	0.91565	47.435	-0.75813
3	21M	-0.10511	172.92	-30.032	28.96n	1.0651	46.946	-0.08218	46.946	0.06734
4	28M	-0.19169	89.799	-26.295	38.98n	1.1018	50.302	-5.5366	50.068	4.8533
5	50M	-38.522	-155.12	-0.05318	8.96n	326.66	74.262	89.621	0.49071	-74.26
6	88M	-100.34	-32.395	-0.0102	801.1p	>1000	26.838	89.919	0.03781	-26.838
7	108M	-101.09	134.26	-0.0065	735.9p	>1000	20.836	89.94	0.02196	-20.836
8	125M	-97.761	129.03	-0.00488	812.9p	>1000	17.598	89.949	0.01579	-17.598

C:\Program Files\Elsie\ALEX-B\33 MHz LPF 7Cau Real.LCT
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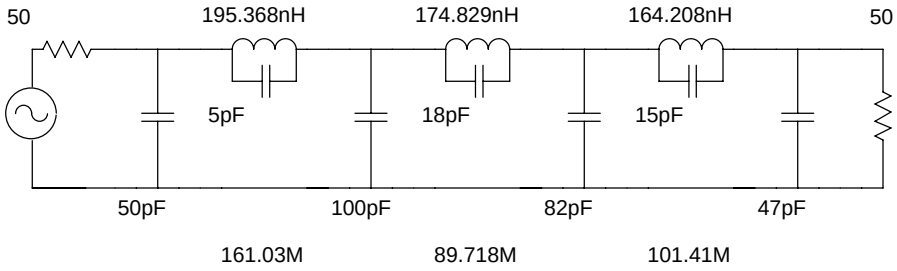
7th Order Cauer 55 MHz LPF

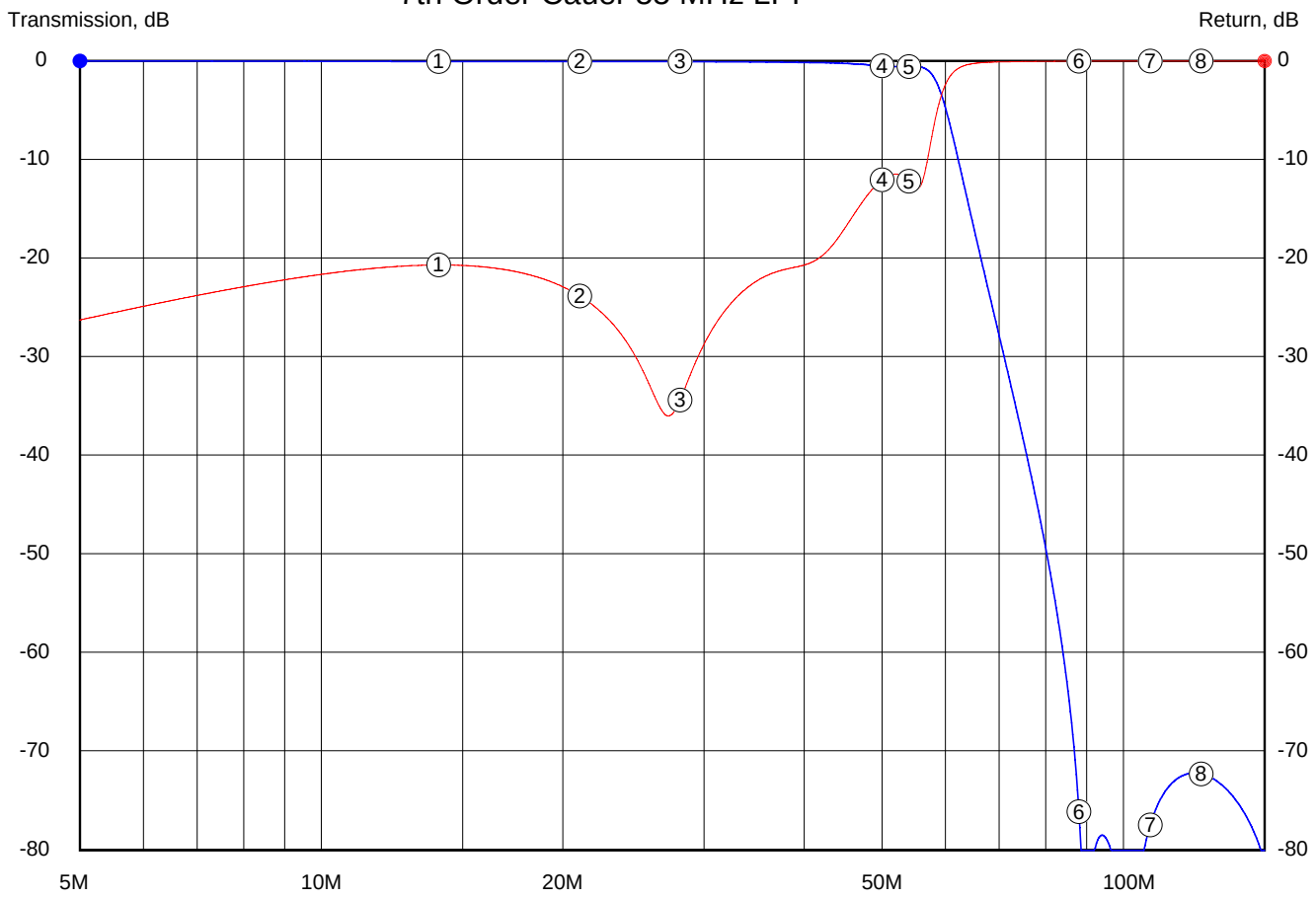


Elsie

7/12/2007 7:08:16 PM

Bandwidth: 55M Family: Manual entry
C:\Program Files\Elsie\ALEX-B\55 MHz LPF 7Cau Real.LCT
7/12/2007 7:08:16 PM - Elsie 2.12 - www.tonnesoftware.com

7th Order Cauer 55 MHz LPF



Details of markers:

	Frequency:	Trans.:	Angle:	Return:	Delay:	VSWR:	Zin:	Zangle:	Real:	Imaginary:
1	14M	-0.06587	-62.552	-20.683	12.67n	1.2037	42.453	4.9675	42.294	-3.6761
2	21M	-0.06484	-95.347	-23.831	13.44n	1.1375	43.957	-0.18484	43.957	0.14181
3	28M	-0.06885	-130.66	-34.372	14.63n	1.039	49.31	2.0407	49.279	-1.7559
4	50M	-0.50634	82.374	-12.057	25.09n	1.6651	73.47	-18.388	69.719	23.177
5	54M	-0.57158	41.29	-12.199	33.36n	1.6508	81.247	-6.872	80.663	9.7213
6	88M	-76.08	-173	-0.03571	-8.765n	486.5	49.302	89.764	0.2027	-49.302
7	108M	-77.421	152.88	-0.01815	753.9p	957.28	33.871	89.871	0.0762	-33.871
8	125M	-72.251	144.89	-0.01205	1.251n	>1000	27.324	89.906	0.04504	-27.324

C:\Program Files\Elsie\ALEX-B\55 MHz LPF 7Cau Real.LCT
7/12/2007 7:07:34 PM - Elsie 2.12 - www.tonnesoftware.com