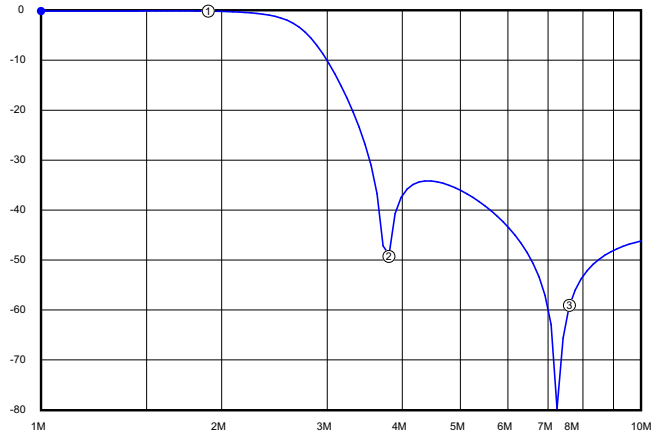
QRPme LPF Chart 160 to 20 Meters

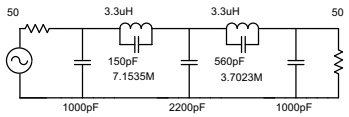
W5USJ drawing 8 Oct 2013

160 Meters

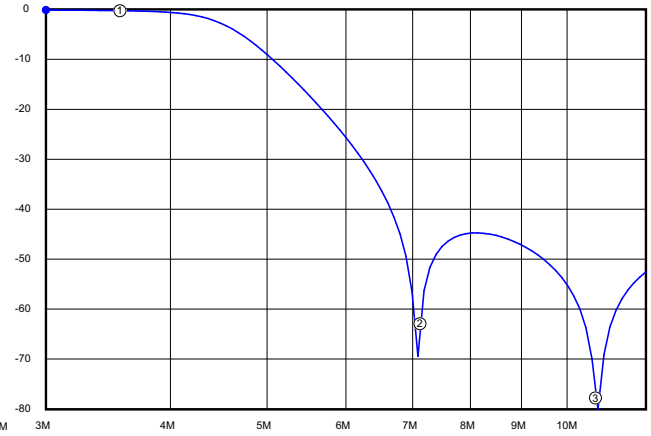


Details of markers:

	Frequency:	Trans.:	Angle:	Return:	Delay:	VSWR:	Zin:	Zangle:	Real:	Imaginary:
1	1.9M	-0.15753	-130.42	-17.161	260.5n	1.322	40.177	9.8082	39.59	-6.8442
2	3.8M	-49.222	174.64	-0.0736	-4.684u	236.02	81.413	89.456	0.77348	-81.409
3	7.6M	-59.004	-53.679	-0.00759	-45.53n	>1000	20.675	89.929	0.02558	-20.675

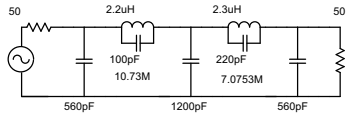


80 Meters

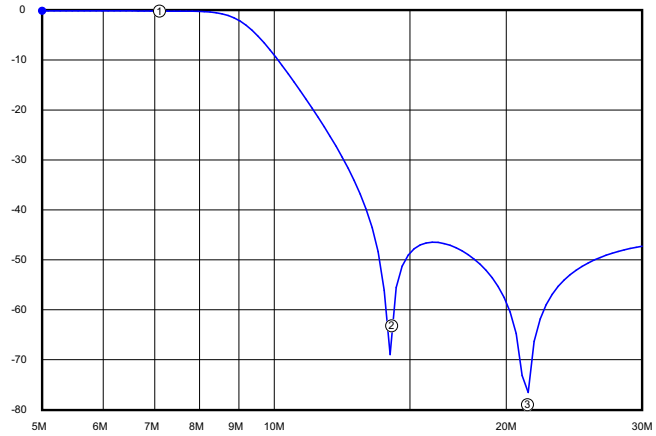


Details of markers:

	Frequency:	Trans.:	Angle:	Return:	Delay:	VSWR:	Zin:	Zangle:	Real:	Imaginary:
1	3.56M	-0.25086	-157.64	-14.743	181.8n	1.4485	37.475	13.04	36.509	-8.4555
2	7.12M	-62.853	152.86	-0.03707	-2.431u	468.63	53.493	89.755	0.22881	-53.493
3	10.68M	-77.701	172.45	-0.01078	-1.111u	>1000	26.656	89.914	0.03984	-26.656

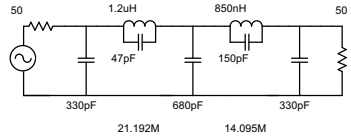


40 Meters

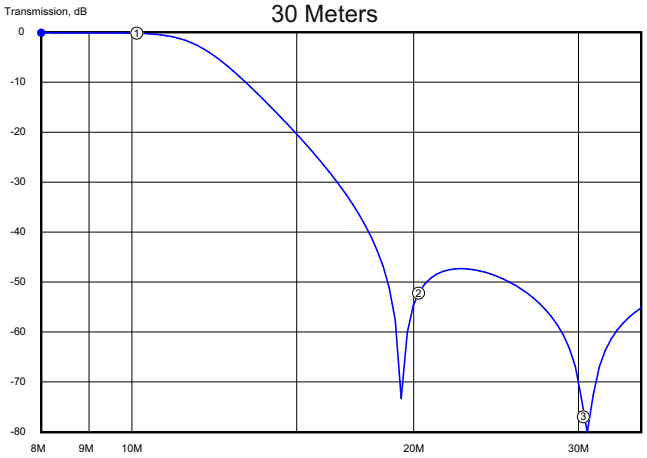


Details of markers:

	Frequency:	Trans.:	Angle:	Return:	Delay:	VSWR:	Zin:	Zangle:	Real:	Imaginary:
1	7.1M	-0.18967	-160.51	-16.901	90.82n	1.3334	66.411	-2.6581	66.339	3.0799
2	14.2M	-63.134	144.76	-0.02651	-1.117u	655.24	41.979	89.822	0.1301	-41.979
3	21.3M	-78.906	-73.84	-0.0083	-938.1n	>1000	22.61	89.927	0.02879	-22.61

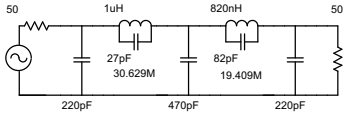


30 Meters

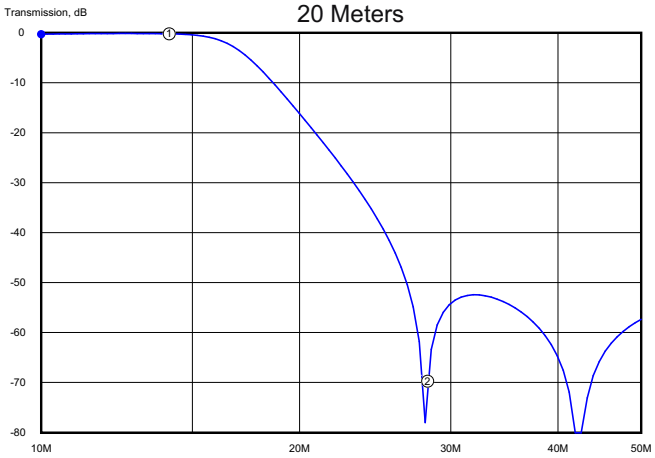


Details of markers:

	Frequency:	Trans.:	Angle:	Return:	Delay:	VSWR:	Zin:	Zangle:	Real:	Imaginary:
1	10.12M	-0.17857	174.46	-20.266	87.18n	1.2148	51.22	-10.994	50.28	9.7677
2	20.24M	-52.174	162.75	-0.02308	-7.949n	752.67	43.105	89.846	0.1158	-43.105
3	30.36M	-76.895	154.55	-0.00804	-220.4n	>1000	23.881	89.932	0.02841	-23.881

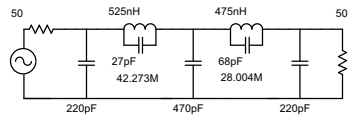


20 Meters



Details of markers:

	Frequency:	Trans.:	Angle:	Return:	Delay:	VSWR:	Zin:	Zangle:	Real:	Imaginary:
1	14.1M	-0.19682	168.74	-18.67	61.68n	1.2638	44.295	-11.377	43.425	8.7379
2	28.2M	-69.664	128.13	-0.02029	-493.6n	856.3	30.716	89.85	0.08043	-30.716
3	42.3M	-91.101	-131.26	-0.00624	-366.1n	>1000	17.1	89.933	0.02007	-17.1



Design Objective

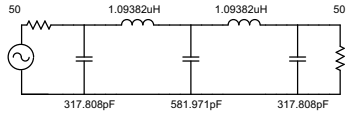
Meet or exceed FCC specification of –43dBc suppression of spurious and harmonics.

Elsie Filter Design Procedure
verified with spectrum analyzer

- Select filter type
- Select parameters
- Create schematic design
- Change to 5% component values
- Adjust trap transmission attenuation
- Ensure design objective

Results in Chebychev -2 equivalent filters
Minor changes for adjustment permissible

Designs also available for 17, 15, 12 and 10m



40 m design example before making
5% and trap transmission adjustments

Note that, except in extreme cases, the spurious and harmonics are usually several dB below the carrier frequency. These filters ensure attenuation in extreme cases