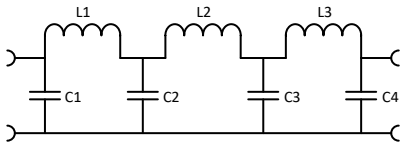
HF Low Pass filter



Design parameters:
7 pole Chebychev, 0.1dB ripple
Corner frequency = 1.4FMax

Band	160M	-3dB point	2.75MHz
L1/L3=	4.79	uH	29 Turns T68-2 22SWG
L2=	5.48	uH	31 Turns T68-2 22SWG
C1, C4=	1200	pF	Silver Mica 250V
C2, C3=	2400	pF	Silver Mica 250V
Passband loss	0.37dB	measured	
2nd Harmonic level	-32dB	@F=3.6MHz	
3rd harmonic level	-55dB	@F=5.4MHz	

Band	80M	-3dB point	5.16MHz
L1/L3=	2.28	uH	20 Turns T68-2 22SWG
L2=	2.51	uH	21 Turns T68-222SWG
C1, C4=	820	pF	Silver Mica 250V
C2, C3=	1500	pF	Silver Mica 250V
Passband loss	0.27dB	measured	
2nd Harmonic level	-36dB	@F=7MHz	
3rd harmonic level	-69dB	@F=10.5MHz	

Band	40M	-3dB point	9.3MHz
L1/L3=	1.25	uH	16 Turns T50-222SWG
L2=	1.42	uH	17 Turns T50-222SWG
C1, C4=	390	pF	Silver Mica 250V
C2, C3=	680	pF	Silver Mica 250V
Passband loss	0.22dB	measured	
2nd Harmonic level	-43dB	@F=14MHz	
3rd harmonic level	-80dB	@F=21MHz	

Band	30, 20M	-3dB point	19.5MHz
L1/L3=	0.576	uH	12 Turns T50-6 22SWG
L2=	0.676	uH	13 Turns T50-6 22SWG
C1, C4=	180	pF	Silver Mica 250V
C2, C3=	330	pF	Silver Mica 250V
Passband loss	0.22dB	measured	
2nd Harmonic level	-39dB	@F=28MHz	
3rd harmonic level	-74dB	@F=42MHz	
3rd harmonic, 30m	-50dB	@31.5MHz	

Band	17, 15M	-3dB point	25.8MHz
L1/L3=	0.38	uH	11 Turns T50-10 22SWG
L2=	0.45	uH	12 Turns T50-10 22SWG
C1, C4=	150	pF	Silver Mica 250V
C2, C3=	270	pF	Silver Mica 250V
Passband loss	0.22dB	measured	
2nd Harmonic level	-54dB	@F=42MHz	
3rd harmonic level	-63dB	@F=63MHz	
3rd harmonic, 17m	-69dB	@F=54MHz	

Band	12, 10M	-3dB point	35.7MHz
L1/L3=	250	nH	9 Turns T50-10 22SWG
L2=	310	nH	10 Turns T50-10 22SWG
C1, C4=	100	pF	Silver Mica 250V
C2, C3=	180	pF	Silver Mica 250V
Passband loss	0.35dB	measured	
2nd Harmonic level	-51dB	@F=56MHz	
3rd harmonic level	-61dB	@F=84MHz	
3rd harmonic, 12m	-63dB	@F=72MHz	

Band	6M	-3dB point	56.7MHz
L1/L3=	166	nH	7 Turns Dia=6.3mm L=9mm 22SWG
L2=	195	nH	8 Turns Dia 6.3mm L=10mm 22SWG
C1, C4=	62	pF	Silver Mica 250V
C2, C3=	110	pF	Silver Mica 250V
Passband loss	0.5dB	measured	
2nd Harmonic level	-56dB	@F=100MHz	
3rd harmonic level	-69dB	@F=150MHz	

Keydown test – nothing warms up after 20s @ 100W CW

Control signals

Each filter activated by applying +12v to its control pin

1	LPF7 (50MHz)	2	GND
3	LPF6 (28 MHz)	4	GND
5	LPF5 (21 MHz)	6	GND
7	LPF4 (14 MHz)	8	GND
9	LPF3 (7MHz)	10	GND
11	LPF2 (3.5MHz)	12	GND
13	LPF1 (1.8MHz)	14	GND
15	+12V	16	+12V