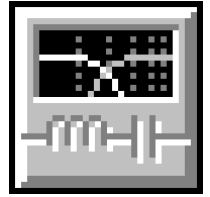


# Custom Two-Way Crossover Network Design

By Dr F. Mark Carter, Walberswick Studios



## 2-Way Crossover Network

Low-Pass (LP) Filter: 1 required

Type: 2nd-Order Linkwitz-Riley

Desired Corner Frequency: 2000 Hz

High-Pass (HP) Filter: 1 required

Type: 2nd-Order Linkwitz-Riley

Desired Corner Frequency: 2000 Hz

C1 = 6  $\mu$ F, Polypropylene, 0.00654 ohms

C2 = 16  $\mu$ F, Polypropylene, 0.00435 ohms

L1 = 0.4 mH, Air Core (#16), 0.279 ohms

L2 = 1.2 mH, Air Core (#16), 0.365 ohms

## Tweeter

4.44 dB L-Pad

Rp1 = 2 ohms

Rp2 = 8 ohms

## Woofers

Impedance EQ

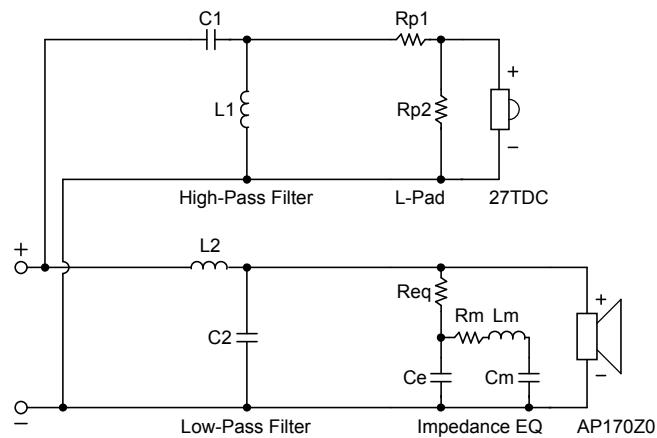
Req = 5 ohms

Ce = 25  $\mu$ F

Rm = 1.5 ohms

Cm = 1 mF

Lm = 9 mH





**Tweeter Properties**

--Driver Description--  
 Name: 27TDC  
 Type: Standard one-way driver  
 Company: Seas Fabrikker A.S.  
 Comment: H 1149  
 Piston: 27 mm precoated fabric dome.  
 Suspension: Wide, soft polymer surround.  
 Voice Coil: 26 mm diameter. Aluminum former.  
 Magnet: 0.25 kg magnet.

--Driver Configuration--

**No. of Drivers = 1**

--Driver Parameters--

Fs = 550 Hz  
 Qms = 0.972  
 Vas = 0.0194 liters  
 Cms = 0.279 mm/N  
 Mms = 0.3 g  
 Rms = 1.067 kg/s  
 Xmax = 0.25 mm  
 Xmech = 0.375 mm  
 P-Dia = 29.85 mm  
 Sd = 7 sq.cm  
 P-Vd = 0.000175 liters  
 Qes = 0.41  
 Re = 4.8 ohms  
 Le = 0.05 mH  
 Z = 6 ohms  
 BL = 3.5 Tm  
 Pe = 55 watts  
 Qts = 0.29  
 no = 0.76 %  
 1-W SPL = 90 dB  
 2.83-V SPL = 93.17 dB

**Woofers Properties**

--Driver Description--  
 Name: AP170Z0  
 Type: Standard one-way driver  
 Company: Audax Industries  
 --Driver Configuration--

**No. of Drivers = 1**

--Driver Parameters--

Fs = 48.5 Hz  
 Qms = 1.61  
 Vas = 24.65 liters  
 Cms = 0.996 mm/N  
 Mms = 10.82 g  
 Rms = 2.05 kg/s  
 Xmax = 3 mm  
 Xmech = 4.5 mm  
 P-Dia = 129.6 mm  
 Sd = 132.7 sq.cm  
 P-Vd = 0.0396 liters  
 Qes = 0.5  
 Re = 5.3 ohms  
 Le = 0.74 mH  
 Z = 6 ohms  
 BL = 5.76 Tm  
 Pe = 60 watts  
 Qts = 0.38  
 no = 0.542 %  
 1-W SPL = 89.3 dB  
 2.83-V SPL = 91.28 dB

Graph Key: — LP — HP — Net

