

Custom Two-Way Crossover Network Design

By Matt Phillips, Parts Express



2-Way Crossover Network

Low-Pass (LP) Filter: 1 required

Type: 2nd-Order Linkwitz-Riley

Desired Corner Frequency: 1800 Hz

High-Pass (HP) Filter: 1 required

Type: 2nd-Order Linkwitz-Riley

Desired Corner Frequency: 2200 Hz

C1 = 6.8 μ F, Polypropylene, 0.0062 ohms

C2 = 9.1 μ F, Polypropylene, 0.00535 ohms

L1 = 0.8 mH, Air Core (#16), 0.342 ohms

L2 = 0.9 mH, Air Core (#16), 0.354 ohms

Tweeter

4.00 dB L-Pad

Rp1 = 2 ohms

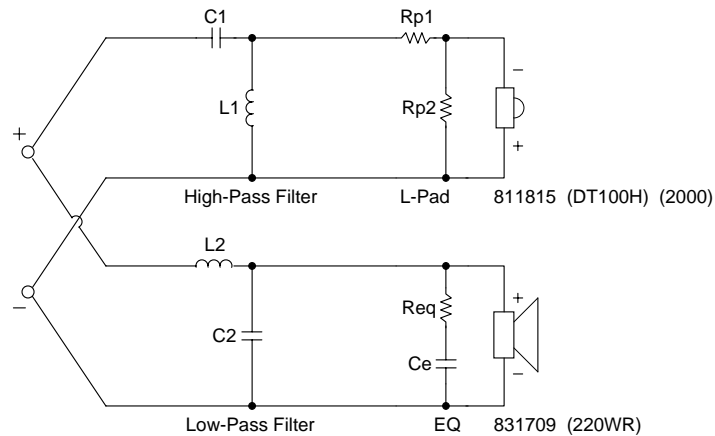
Rp2 = 9.1 ohms

Woofers

Impedance EQ

Req = 5 ohms

Ce = 47 μ F





Tweeter Properties

--Driver Description--

Name: 811815 (DT100H) (2000)

Type: Standard one-way driver

Company: Peerless (Denmark)

Comment: 100 DT 26 72 SF WA

--Driver Configuration--

No. of Drivers = 1

--Driver Parameters--

Fs = 860 Hz
 Qms = 4.31
 Vas = 0.00491 liters
 Cms = 0.09 mm/N
 Mms = 0.38 g
 Rms = 0.48 kg/s
 Xmax = 0.35 mm
 Xmech = 0.525 mm
 P-Dia = 28 mm
 Sd = 6.2 sq.cm
 P-Vd = 0.000217 liters
 Qes = 0.94
 Re = 5.5 ohms
 Le = 0.1 mH
 Z = 8 ohms
 BL = 3.5 Tm
 Pe = 100 watts
 Qts = 0.77
 no = 0.321 %
 1-W SPL = 87.21 dB
 2.83-V SPL = 92 dB

Woofers Properties

--Driver Description--

Name: 831709 (220WR)

Type: Standard one-way driver

Company: Peerless (Denmark)

Comment: 220 WR 33 102 PPX AL

--Driver Configuration--

No. of Drivers = 1

--Driver Parameters--

Fs = 25 Hz
 Qms = 2.65
 Vas = 86.9 liters
 Cms = 1.21 mm/N
 Mms = 33.4 g
 Rms = 1.98 kg/s
 Xmax = 5.5 mm
 Xmech = 8.25 mm
 P-Dia = 169 mm
 Sd = 225 sq.cm
 P-Vd = 0.124 liters
 Qes = 0.54
 Re = 5 ohms
 Le = 1.2 mH
 Z = 8 ohms
 BL = 6.9 Tm
 Pe = 150 watts
 Qts = 0.45
 no = 0.242 %
 1-W SPL = 85.99 dB
 2.83-V SPL = 86.9 dB

Graph Key: — LP — HP — Net

