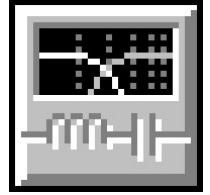


Custom Three-Way Crossover Network Design

By Mark Carter, Walberswick Studios



3-Way Crossover Network

Low-Pass (LP) Filter: 1 required

Type: 2nd-Order All-Pass (APC)

Desired Corner Frequency: 325 Hz

Band-Pass (BP) Filter: 1 required

Type: 2nd-Order All-Pass (APC)

Desired Lower Corner Freq: 325 Hz

Desired Upper Corner Freq: 4000 Hz

High-Pass (HP) Filter: 1 required

Type: 2nd-Order All-Pass (APC)

Desired Corner Frequency: 4000 Hz

C1 = 3.3 μ F, Polypropylene, 0.00755 ohms

C2 = 47 μ F, Polypropylene, 0.0024 ohms

C3 = 2.7 μ F, Polypropylene, 0.00774 ohms

C4 = 80 μ F, Polypropylene, 0.00165 ohms

L1 = 0.47 mH, Air Core (#16), 0.304 ohms

L2 = 6.5 mH, Air Core (#16), 0.943 ohms

L3 = 0.45 mH, Air Core (#16), 0.302 ohms

L4 = 3 mH, Air Core (#16), 0.595 ohms

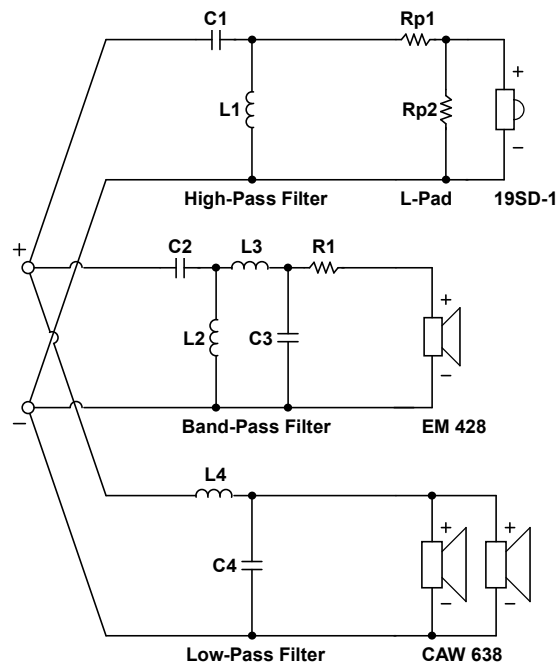
R1 = 1.2 ohms

Tweeter

1.57 dB L-Pad

Rp1 = 1 ohms

Rp2 = 25 ohms





Tweeter Properties

--Driver Description--

Name: 19SD-1

Type: Standard one-way driver

Company: Eton

Comment: Coaxial

--Driver Configuration--

No. of Drivers = 1

--Driver Parameters--

Fs = 1100 Hz

Re = 6.3 ohms

Le = 0.018 mH

Z = 8 ohms

2.83-V SPL = 89 dB

Midrange Properties

--Driver Description--

Name: EM 428

Type: One-way open back driver

Company: Morel (USA and Israel)

--Driver Configuration--

No. of Drivers = 1

--Driver Parameters--

Fs = 68 Hz

Qms = 3.03

Vas = 3.5 liters

Sd = 57 sq.cm

Qes = 0.48

Re = 5.4 ohms

Le = 0.36 mH

Z = 8 ohms

2.83-V SPL = 86 dB

Woofer Properties

--Driver Description--

Name: CAW 638

Type: Standard one-way driver

Company: Morel Acoustics USA, Inc.

--Driver Configuration--

No. of Drivers = 2

Mounting = Standard

Wiring = Parallel

--Driver Parameters--

Fs = 43 Hz

Qms = 2.2

Vas = 15.7 liters [31.4]

Sd = 119 sq.cm [238]

Qes = 0.58

Re = 6.4 ohms [3.2]

Le = 0.63 mH [0.315]

Z = 8 ohms [4]

2.83-V SPL = 86 dB [92.02]

Graph Key: — LP — BP — HP — Net

