C-Note Bookshelf Speaker Kit

Thank you for purchasing the C-Note bookshelf speaker kit. This speaker kit was precision cut using CNC machinery for the best possible fit and finish. With a little time and patience, your finished product will provide years of enjoyment. Please follow the following instructions for the best possible results.

The C-note kit is available as a complete kit with knock-down enclosures (part # 300-7140) or a components only kit (part # 300-7141) if you would like to build your own enclosure. If you purchased the components only version of the C-Note you can find detailed drawing of the enclosure at the end of this manual and you can begin these instructions on step # 7.

Suggested tools and consumables:

|	
Drill	Rag or paper towels
5/64" drill bit	Solder
Wood clamps (you can never have too many of these)	Soldering iron
Sanding block and/or electric finishing sander	Hot glue gun
Wood glue	Binding post/terminal cup
Speaker or hook-up wire	Polyurethane glue (Gorilla Glue)
0.11" female disconnect terminal	Cyanoacrylate Adhesive (super glue)
0.205" female disconnect terminal	#6 x 3/4" Pan head wood screws

Package contents:

First, empty the contents of the package and review parts to ensure everything has been included and is in good condition. If any parts are missing or damaged please contact our customer service department at 1-800-338-0531.

Note: Crossover components may be substituted with parts of equal of higher quality depending on stock.

Components:

A   **B**   **C**
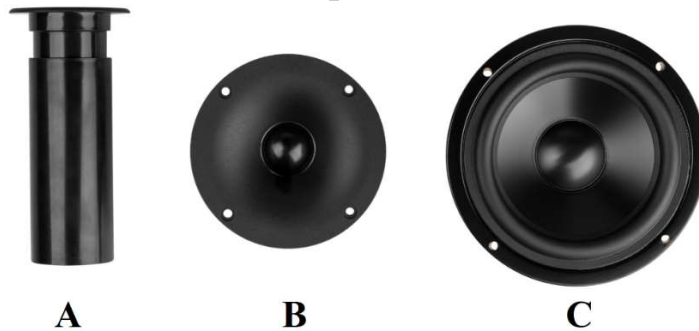
A) 1-3/8" ID Adjustable Port Tube
B) Dayton Audio ND25FW-4 1" Soft Dome Neodymium Tweeter with Waveguide
C) Dayton Audio DSA135-8 5" Designer Series Aluminum Cone Woofer
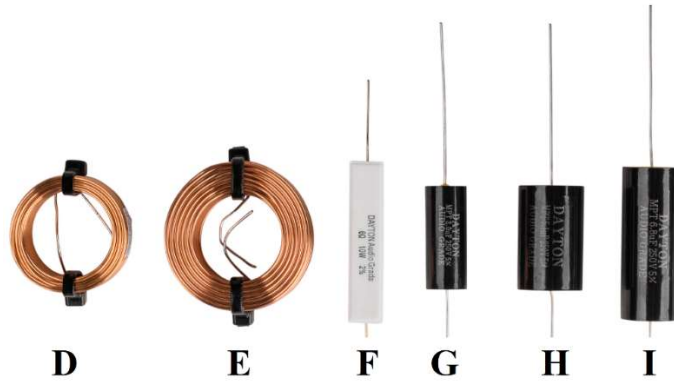
D) 2 x 0.25 mH air core inductor – component **L2**
E) 2 x 1.40 mH air core inductor – component **L1**
F) 2 x 6 ohm resistor – component **R1**
G) 4 x 2.0 µF capacitor – component **C2** and **C3**
H) 2 x 5.1 µF capacitor – component **C1**
I) 2 x 6.8 µF capacitor – component **C4**

Enclosures:

Note: If you purchased the Components Only version of the C-note then the enclosure is not included. You can begin following these instruction on step 7. A detailed drawing of the enclosure is included at the end of this manual.
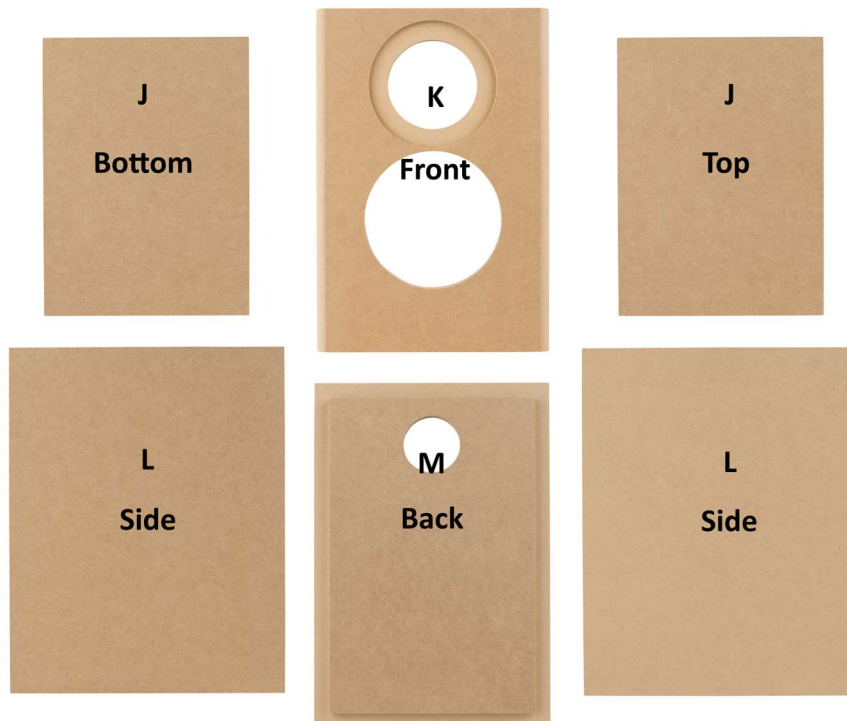
J) **4 x** Top/Bottom
K) **2 x** Front Baffle
L) **4 x** Sides
M) **2 x** Back

Other Parts:

N) **6 feet** 16 AWG 2-conductor Speaker Wire (Red/Black)
O) **25 x** #6 x 3/4" Pan Head Deep Thread Black Screws
P) **2 x** Binding Post Pair (actual binding posts may vary depending on stock)
Q) **2 x** C-Note & C-Sharp Crossover Printed Circuit Board

Enclosure Assembly:

1) First, take the back panel and lay out and drill holes required for the **Binding Posts** (**P**) included in your kit.

2) Next, set the enclosure parts out on a flat level surface and ensure that all pieces are free of dust and debris.

3) With the **Back Panel** (**M**) lying flat, glue all mating surfaces of the **Bottom Panel** (**J**) and one **Side Panel** (**L**) and secure them to the back panel with clamps so that even pressure is applied to all glued surfaces. Using a damp rag or paper towel wipe away any glue squeeze-out on the outside of the enclosure and inside the rabbeted edge (excess glue on the inside is fine). Allow to dry according to the glue manufacturer's recommendations and remove clamps.

Wipe away any excess glue from rabbeted edge

4) Next, glue all mating surfaces of the **Top Panel** (**J**) and the other **Side Panel** (**L**) and secure them in place with clamps so that even pressure is applied to all glued surfaces. Using a damp

rag or paper towel wipe away any glue squeeze-out on the outside of the enclosure (excess glue on the inside is fine). Allow to dry according to the glue manufacturer's recommendations and remove clamps.


5)   Finally, apply a thin layer of glue to the front edge of the enclosure. Set the **Front Baffle** (**K**) in place on the glued edge. While ensuring all edges are even and square, position clamps to apply even pressure to all glued surfaces. Wipe away any glue squeeze-out on the outside of the enclosure. At this time double check that all edges are even and square (this cannot be adjusted once the glue is dry). Allow to dry according to the glue manufacturer's recommendations and remove clamps.

6)   Sand and finish enclosure to your liking. See our web page for examples.

Crossover assembly:
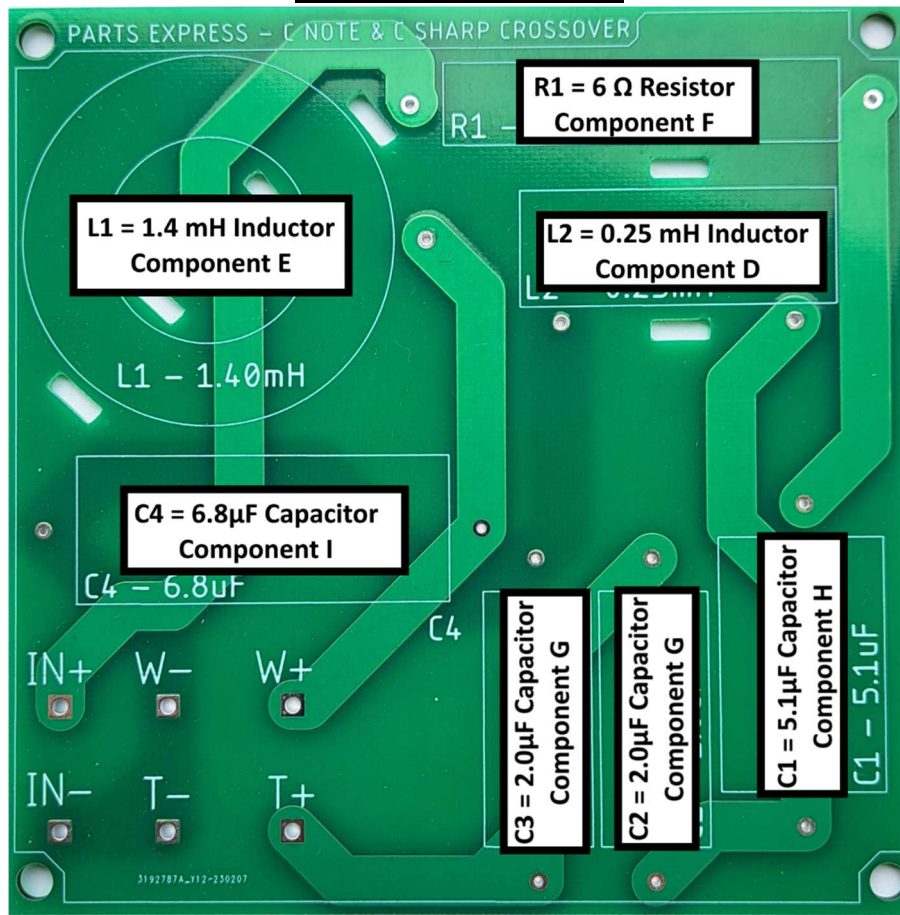
7) Begin by preparing the input, woofer, midrange, and tweeter wires. Cut one 8" piece of **16 AWG 2-conductor Wire Red/Black** (**N**) and label this wire "input". Then cut two more 12" pieces of **16 AWG 2-conductor Wire Red/Black** (**N**) and label these "woofer" and "tweeter".

8) Strip approximately 1/2" of insulation from only one end of each of the wires you cut in **step #12** and make sure the strands are tightly twisted together. Using a soldering iron apply heat to the stripped ends and tin the bare copper as shown below.
Note: When tinning the ends only apply gentle pressure to the wire to prevent flattening the twisted strands. You want the twisted strands to remain round. Also, use just enough solder to flow into the strands holding them together, try to avoid big "blobs" of solder.

9) Remove the solder ring terminals from each of the **Binding Posts** (**P**). Strip approximately 3/4" of insulation from the other end of the 8" "input" wire and make sure the strands are tightly twisted together. Insert the stripped ends through the small hole in two of the solder ring terminals and fold the wire tightly to secure it to the terminal. Using a soldering iron, apply heat to the terminals and solder the tire and terminal together. See images below.
Note: Make sure the solder flows onto both the wire and the terminal to avoid forming a "blob" on the surface (cold joint).
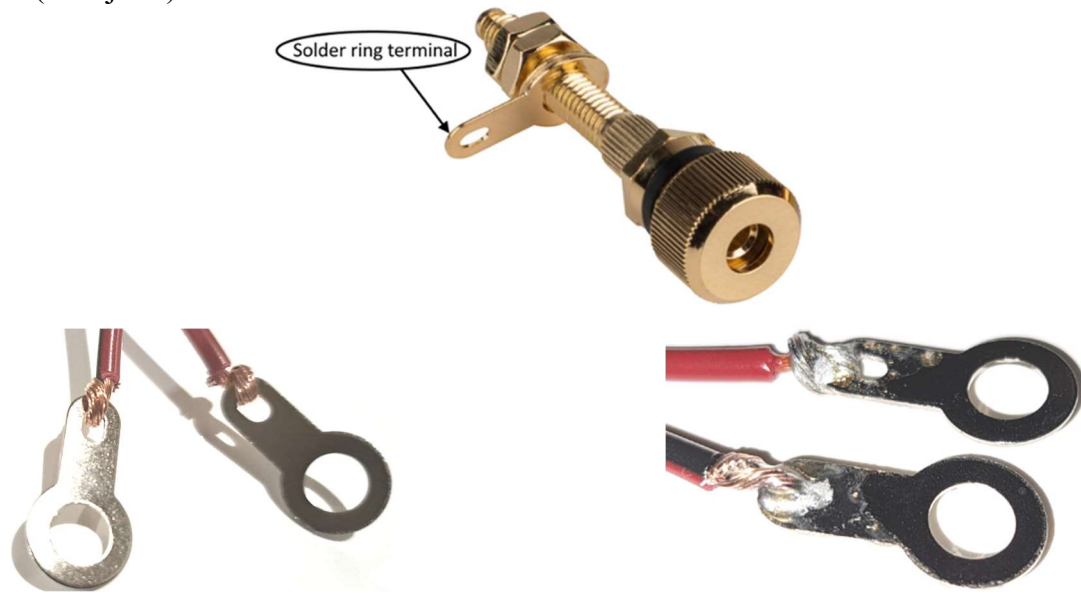
Wire wrapped through terminals   Wires soldered to terminals

10) Prepare the crossover components as follows for easy installation onto the C-Note Crossover Printed Circuit Board:

Capacitors: Straighten out the leads and then bend at a 90° angle about 1/8" from the capacitor.

Inductors: Straighten the leads and be sure that all enamel/insulation is removed where the leads penetrate the crossover board. Enamel can be removed by scraping with a razor or fine grit sandpaper.

Resistors: Straighten leads and then bend at a 90° angle about 1/8" from the resistor.

11) The **C-Note Crossover Printed Circuit Board** (**Q**) is labeled to make it easy to locate and install the corresponding components and cables. Working from one side of the board to the other, insert the leads (or wires) through the corresponding holes in the crossover board and solder into place.

Tips: **1)** Elevate the board a couple inches so you will not have to deal with trimming the leads until the crossover is complete.
2) Apply a bed of glue beneath each component before placing them on the board to eliminate the possibility of rattles or buzzing from the crossover.
3) Notches are cut beside each inductor so you can zip tie them into place to help support their weight and secure them to the crossover board.
4) Tin the tip of your soldering iron with a bit of solder before each connection to prep the joint and optimize heat transfer.

5) When soldering components to the board, use the side of the soldering iron tip to apply heat to both the solder pad and lead/wire at the same time. This will help ensure that the solder adheres properly.
6) If you have difficulty inserting the tinned speaker wires into their corresponding holes, apply heat to the wire while inserting it into the board.
7) Clean the tip of your soldering iron often with a wet sponge or brass sponge to remove oxidation. A clean and shiny tip ensures optimal heat transfer for easy soldering.

12) Carefully inspect each solder point to ensure that the solder has flowed onto the lead/wires and the solder pads. Each solder pad is plated through-hole (PTH) type, so make sure that you inspect the front and back sides of the board. Each connection on the front and back of the board should have solder covering each pad and flowing up the lead/wire. Reheat and correct any bad solder joints.
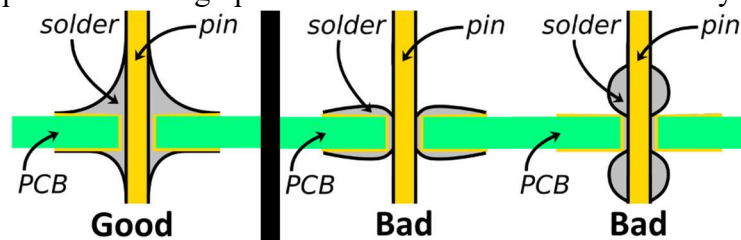
Trim all excess leads and wire from the back side of the crossover board using flush cutters (preferred) or wire cutters.

13) Secure the inductors in place by looping the included black 11" cable ties through the holes provided near each inductor. Tighten cable ties securely and trim off excess.
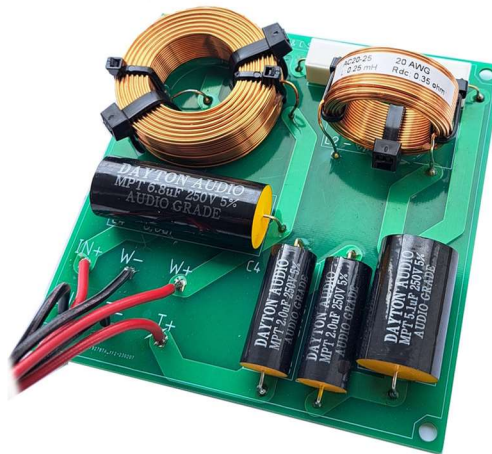
Final Assembly:

14) Insert crossover through woofer hole and glue crossover to the bottom of the enclosure (polyurethane glue, high temperature hot glue gun, or epoxy is recommended). Ensure all crossover components are securely held in place to prevent rattles.


15) Port installation is simple. Slide the adjustable end of the **1-3/8" ID Adjustable Port Tube** (**A**) onto the flanged end and glue in place at the desired length using any glue that is acceptable for use on plastic (super glue, plastic cement, hot glue, etc…). Insert the assembled port into the enclosure and screw into place using 4 x **#6 x 3/4" Pan Head Screws** (**O**). The recommended port length is 7". The length can be adjusted to your taste, a shorter port will result in slightly less bottom end with a tighter punch.

16) Install the **Binding Posts** (**P**), and connect the input wires from the crossover while observing polarity (positive = red, negative = black)

17) Connect tweeter wires to the terminals on the **ND25FW-4 1" Soft Dome Neodymium Tweeter** (**B**) while observing polarity (positive = wide terminal, negative = narrow terminal) and set tweeter in place. Using a screwdriver, secure tweeter with 4 x **#6 x 3/4" Pan Head Screws** (**O**) just until tight being careful not to strip out the holes (a power drill is not recommended).

18) Connect woofer wires to the terminals on the **DSA135-8 5" Designer Series Aluminum Cone Woofer** (**C**) while observing polarity and set woofer in place. Using a screwdriver, secure woofer with **#6 x 3/4" Pan Head Screws** (**O**) just until tight being careful not to strip out the holes (a power drill is not recommended).
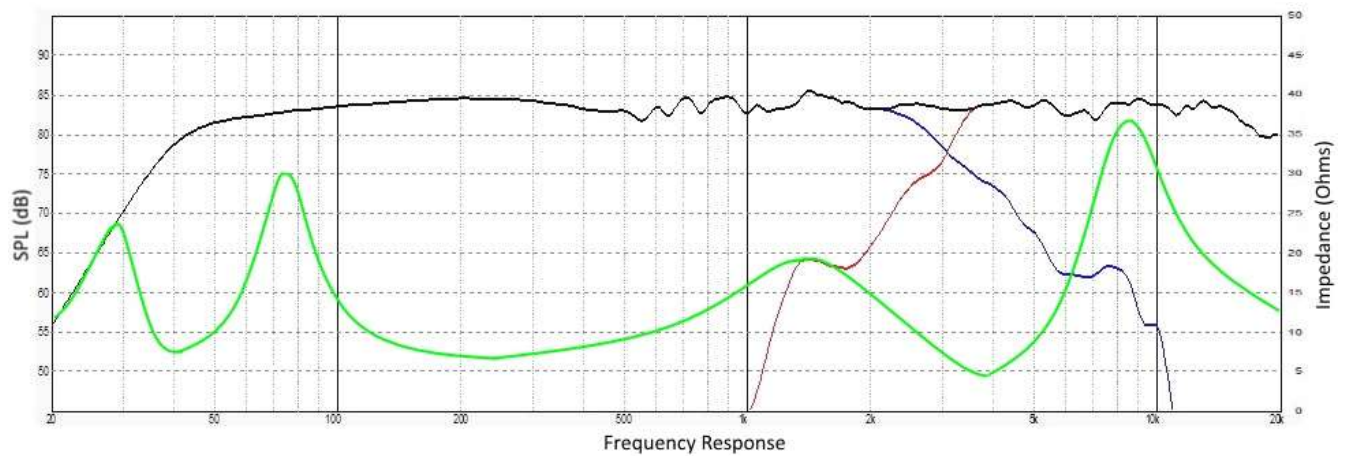
19) You are now ready to enjoy your finished C-Note speakers.
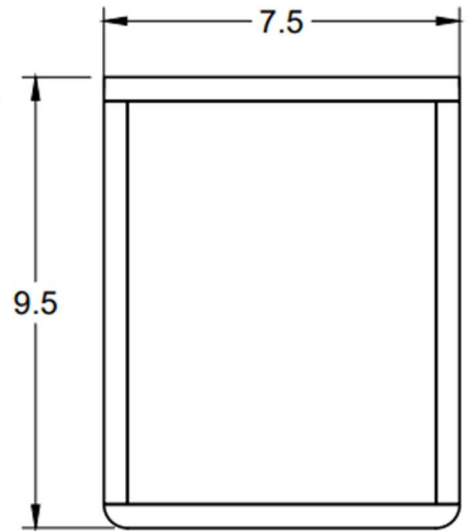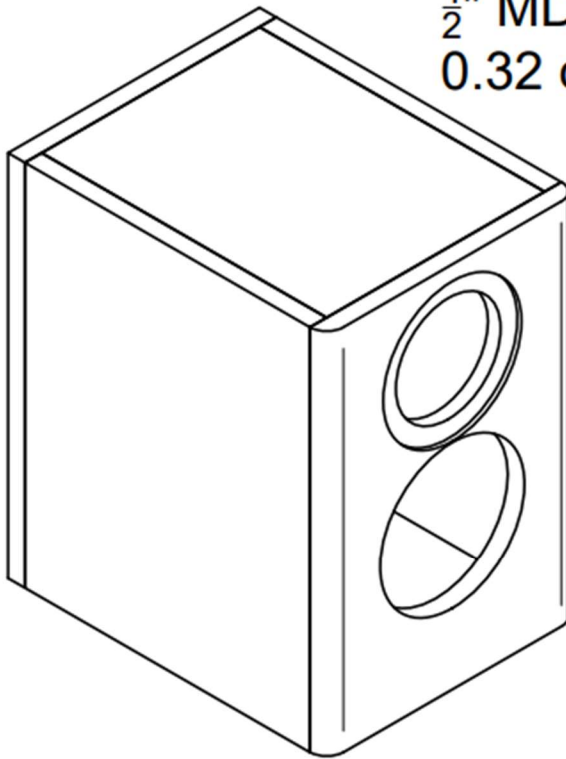
C-Note Crossover Schematic:
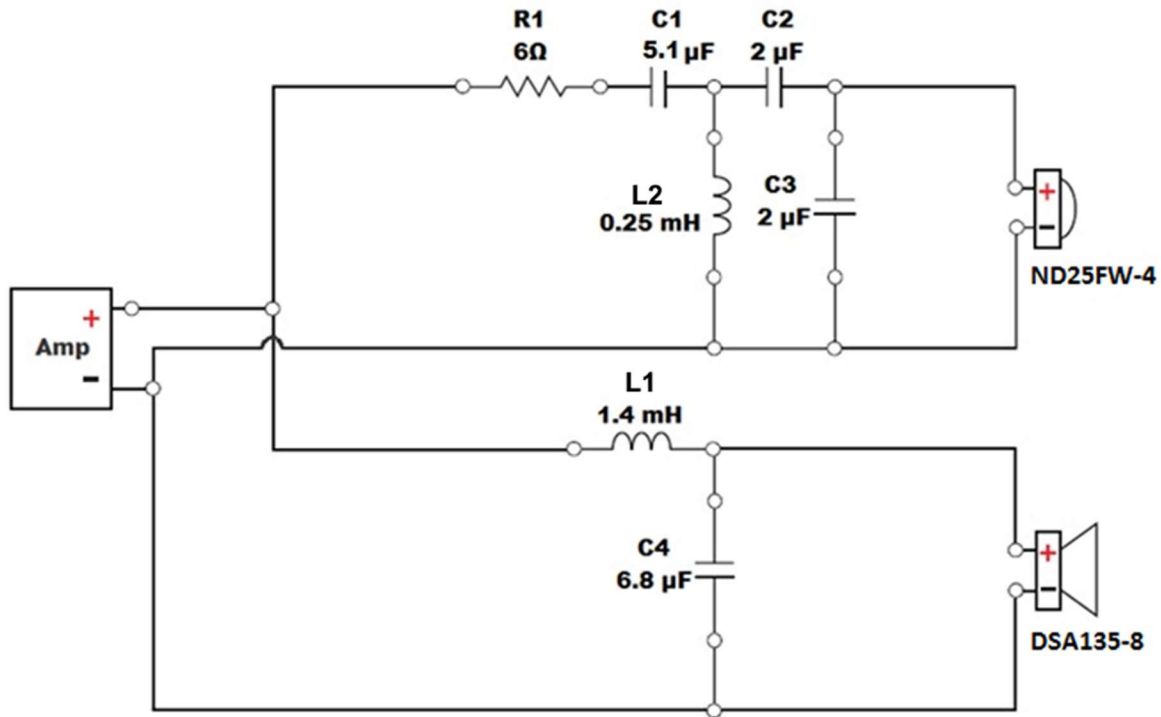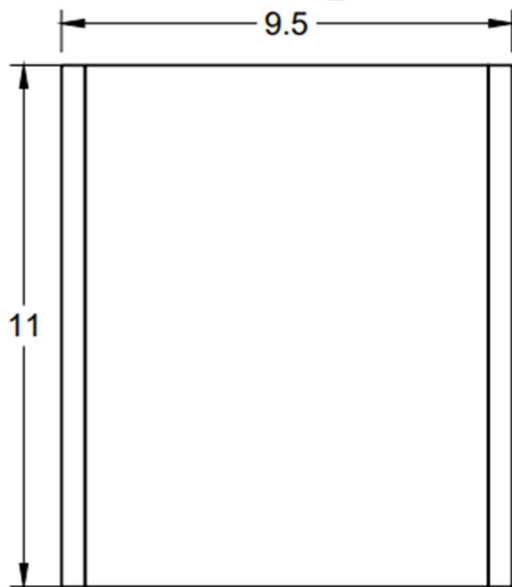

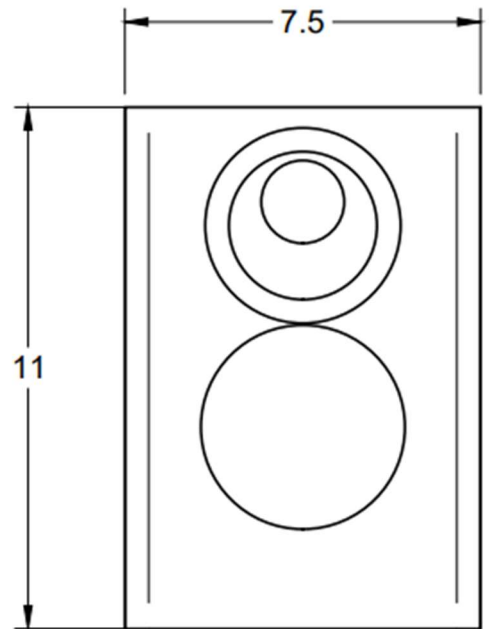# Measured Frequency Response with Impedance:

Detailed Enclosure Drawing:

$\frac{1}{2}$" MDF
0.32 cubic feet

7.5

9.5

Top/Bottom

9.5

11

Left/Right

7.5

11

Front

$\frac{1}{8}$" Recess for tweeter

Ø4.13

Ø3.13

2.5

4.25

Ø4.3

11

7.5

1 x Baffle

8.5

11

2 x Side

6.5

8.5

2 x Top/Bottom

2

Ø1.75

11

7.5

1 x Back