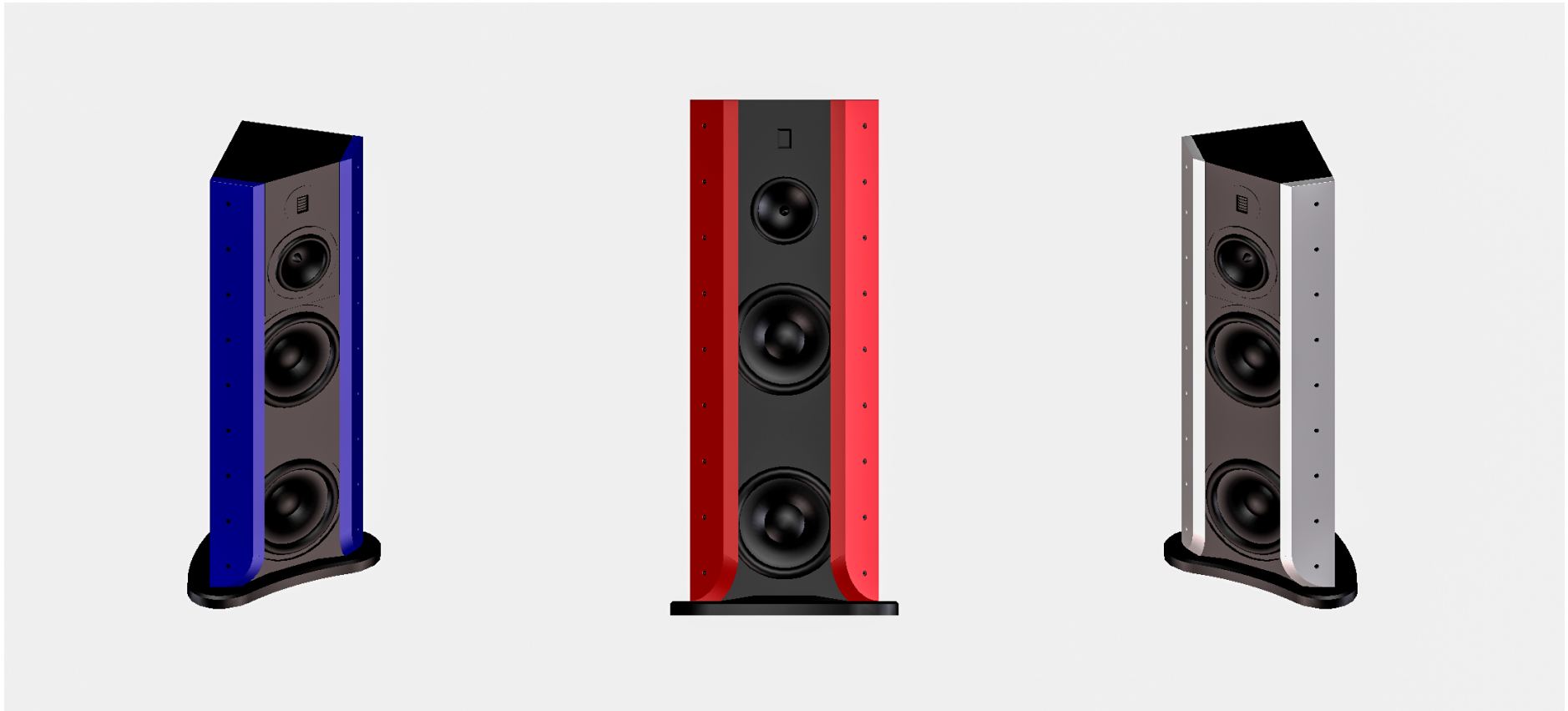


Imperial 2.0 DIY instructions

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Designer: Jussi Hoffrén



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Gratulations for choosing this project, here it is briefly

Imperial 2.0 is designed to solve many acoustic difficulties and by these instructions You can build them. Among the schematics of the passive crossovers and basic settings for miniDSP PWR-ICE125 there are also drawings for each part of the enclosures as attached. The enclosures have been designed with PTC CREO Personal Edition and the 3D models can be checked with this free CAD.

All parts used are Dayton Audio products and they can be acquired easily world wide. The plate amp on the substands can be bought from miniDSP.com or from their dealer near You. The enclosures You can have made by local carpenter or do them yourself. It requires some skills and patience. Hope You will have great moments listening music after Your project is done.

J.H.

Parts and accessories

Substand is powered with miniDSP PWR-ICE125 and the stand speaker on top can be driven with the same plate amp. There are two 10 inch subwoofer drivers on the stand and its radiation pattern is bipolar.

Drivers:

Dayton Audio RSS265HF-8 (295-442) 2 pcs connected as parallel on each substand

Amplifier:

miniDSP PWR-ICE125 (www.minidsp.com) 1 pcs on each substand

Connectors:

There is a need for binding posts on the substands to amplify the stand speaker on top. Dayton Audio connectors can be used and You can make some changes for them on the enclosures. There are no passive crossovers in the substands. Also bolts are required to attach the front side panels to the enclosures. Some damping wool can be put inside.

Stand speaker is quite directive by its radiation pattern. It can also be set up with decent subwoofer with out the substand. It can also be amplified with the substand and so the combination is a fully active floor standing speaker with the benefits of DSP.

Drivers:

Dayton Audio RSS180-8	(295-355)	3 pcs on each stand speaker
Dayton Audio AMT2-4	(275-092)	1 pcs on each stand speaker

Connectors:

Similar binding posts and their assembling can be used as on the substands.

Crossovers:

Dayton Audio products and they are listed later on these instructions.

Accessories:

Some damping wool can be put inside and bolts are needed to attach the front side panels.

Connectivity and specifications of the full assembly

When activated with the substand and miniDSP plate amp the full combination of Imperial 2.0 can be driven with a simple pre amplifier. Balanced XLR- or linestage RCA-connectors can be used. There is also a possibility for fully digital connection and for example a miniDSP SHD series product can be used as a digital pre amplifier. Check more about this on the plate amps [user manual](#).

An integrated amplifier can be used to drive the stand speakers and the substands can be connected to the amps preouts. In case You want the sound of Your tube amp on the setup for example. If You are building only the stand speakers, there is also LiteSub coming on to work with them.

The miniDSP plate amp has quite nice features that can be done with its DSP. Room correction is possible and many other adjustments also.

Frequency range of the substands goes low as 20 hertzes and it is advised to use subsonic to limit the excursion of the drivers. For optimal setup in room, You should get to know about how bipolar loudspeakers work.

Crossovers of the stand speaker

Passive crossovers are used on the standspeaker. It is 2.5-way speaker and the cut off frequencies are 3500 hertz and 400 hertz. High pass for the tweeter is 3rd order, mid and rear drivers low pass is 2nd order and there is also a wide lowpass for the rear drivers. That is on the baffle step frequencies.

The boards to assemble the crossovers are designed to ease the construction work. This is why You need to print these instructions in actual size. There is also wiring diagrams for simple connecting of the crossover components. Main schematics of the connections can be used for troubleshooting.

It is advised to use different colour wires to ease connecting the components. Also mechanical connectors are designed on the boards. There are two different boards, one for the tweeter and another one for the midranges.

List of the crossover components for one stand speaker

Capacitors:

C1	027-432	Dayton Audio DMPC-15 15uF 250V Polypropylene Capacitor	1 pcs
C2, C4	027-427	Dayton Audio DMPC-6.2 6.2uF 250V Polypropylene Capacitor	2 pcs
C6	027-448	Dayton Audio DMPC-47 47uF 250V Polypropylene Capacitor	1 pcs

Inductors:

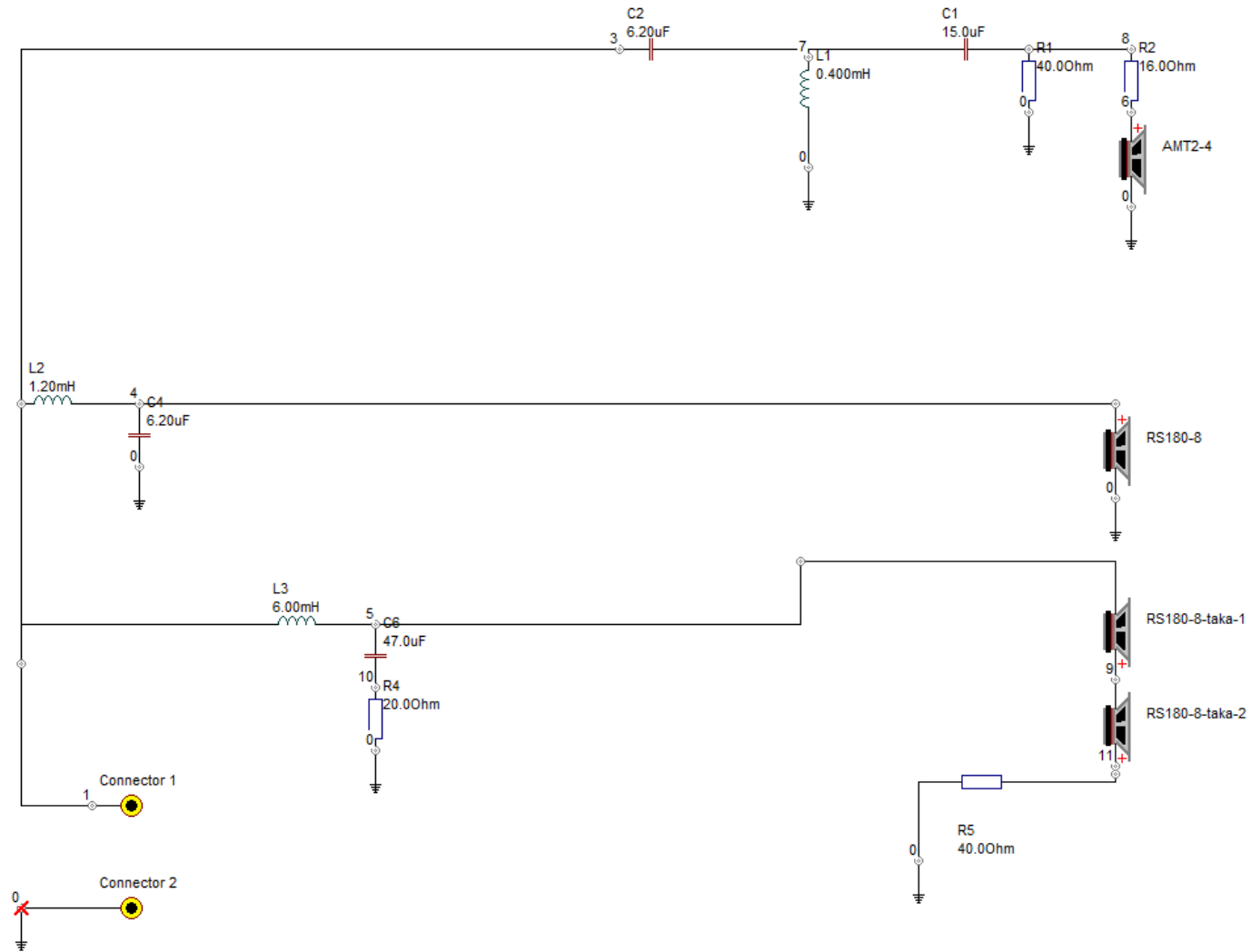
L1	257-308	Dayton Audio LW14-40 0.40mH 14 AWG Perfect Layer Inductor	1 pcs
L2	257-322	Dayton Audio LW141-2 1.2mH 14 AWG Perfect Layer Inductor	1 pcs
L3	257-572	Dayton Audio IC186 6.0mH 18 AWG I Core Inductor	1 pcs

Resistors:

R1	004-40	Dayton Audio DNR-40 40 Ohm 10W Precision Audio Grade Resistor	1 pcs
R2	004-16	Dayton Audio DNR-16 16 Ohm 10W Precision Audio Grade Resistor	1 pcs
R4	004-20	Dayton Audio DNR-20 20 Ohm 10W Precision Audio Grade Resistor	1 pcs

Notice: Remember to order twice of the components for a pair.

Schematics of the stand speaker



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