



CKT-FM-FTX1225 System



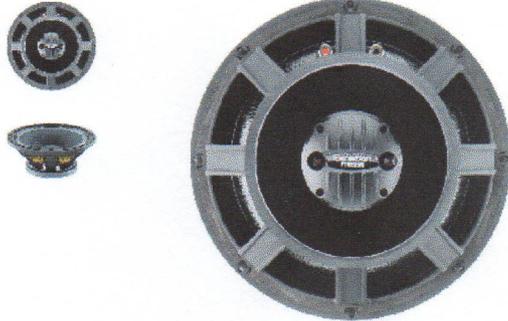
The CKT-FM-FTX1225 system is a medium sized 2-way coaxial floor monitor. This system is based around the 12"(300mm) FTX1225. The coaxial arrangement of the bass and treble drivers provides wide and uniform dispersion in both horizontal and vertical planes ensuring a clear and balanced sound over a wide area. The compact and portable cabinet allows for mounting with the driver axis at 30 or 60 degrees up from the horizontal.

Components		
System	Coaxial Driver	Crossover
CKT-FM-FTX1225	FTX1225	CX-FM-FTX1225

CELESTION

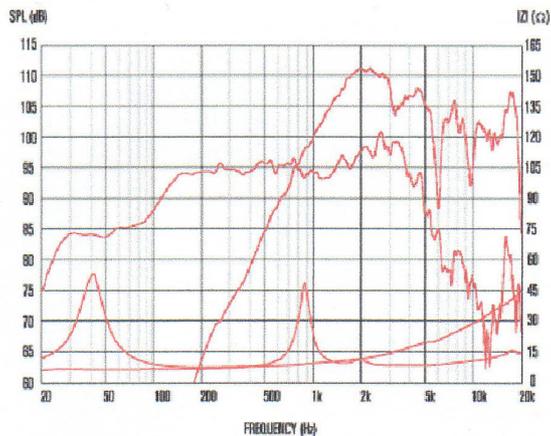
Coaxial/Twin Cone

FTX1225



- 12" coaxial speaker with 300Wrms (AES standard) power handling and 97dB sensitivity
- Full range frequency response: 50 – 20,000Hz
- FEA (Finite Element Analysis) optimized ferrite magnet assembly acts as common motor for both LF and HF drivers resulting in enhanced coherence
- Robust cast aluminium chassis is designed to minimize unwanted reflections, further reducing acoustic distortion
- Demodulation ring reduces flux modulation, minimizing electromagnetic distortion
- 2.5" edgewound copper clad aluminium voice coil wound on high temperature glass fibre former

8 Ω Frequency Response



1. Tested for two hours using a continuous, band-limited pink noise signal as per AES standard.
Power calculated on minimum impedance. Loudspeaker tested in free air.
2. Measured on axis at 1W, 1m in 2^l anechoic environment.
3. Xmax derived from: (voice coil winding width-gap depth)/2.

General Specifications

Size	305mm/12in
Power rating	300Wrms
Nominal impedance	8 Ω
Sensitivity	97dB
Frequency range	50-4000Hz
Voice coil diameter	64mm/2.5in
Chassis type	Cast Aluminium
Magnet type	Ferrite
Magnet weight	2.3kg/81oz
Coil material	Edgewound copper clad aluminium
Former material	Glass fibre
Cone material	Kevlar loaded paper
Surround material	Cloth-sealed
Suspension	Single
Xmax	4mm/0.16in
Gap depth	8mm/0.31in
Voice coil winding width	16mm/0.62in

Small Signal Parameters

D	0.26m/10.24in
Fs	47.8Hz
Mms	49.44g/1.95oz
Qms	5.714
Qes	0.409
Mmd	42.52g/1.5oz
Qts	0.382
Re	5.35Ω
Vas	89.55t/3.16ft ³
Bl	13.94Tm
Cms	0.224mm/N
Rms	2.59kg/s
Le (at 1kHz)	0.78mH

General Specifications: HF

Power rating ¹	60 Wrms
Nominal impedance	8Ω
Sensitivity ²	104dB
Frequency range	1000-20,000Hz
Recommended min. crossover (12dB/oct)	2000Hz
Voice coil diameter	45mm/1.75in
Diaphragm and surround material	Polyimide

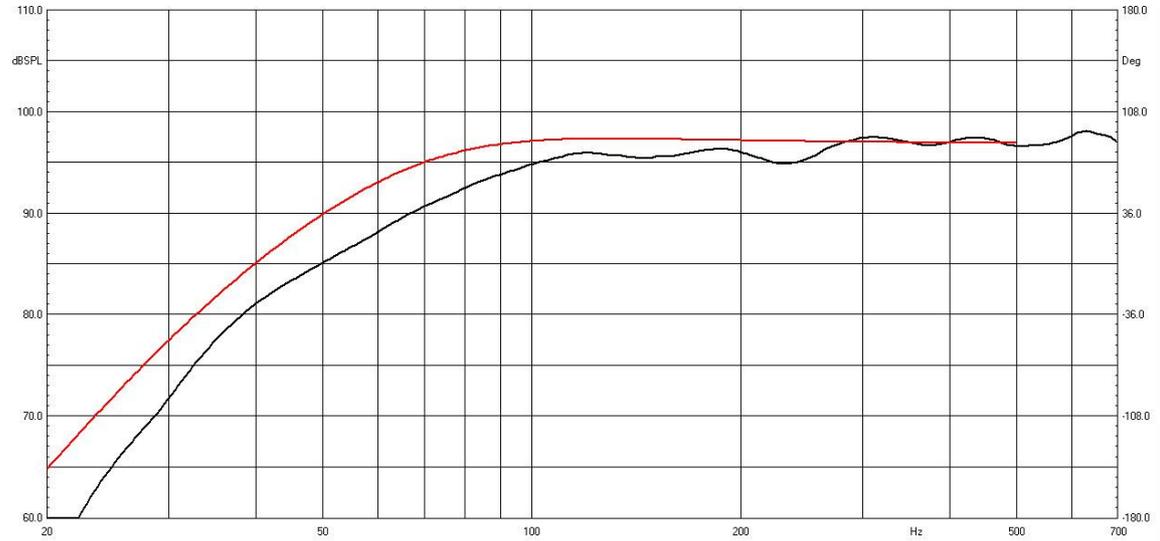
Mounting Information

Diameter	
Overall depth	163mm/6.42in
Cut-out diameter	286mm/11.26in
Mounting slot dimensions	7.5x6.5mm/0.29x0.26in
Number of mounting slots	8
Mounting PCD range	298-304mm/11.70-11.97in
Unit weight	5.9kg/13.0lb

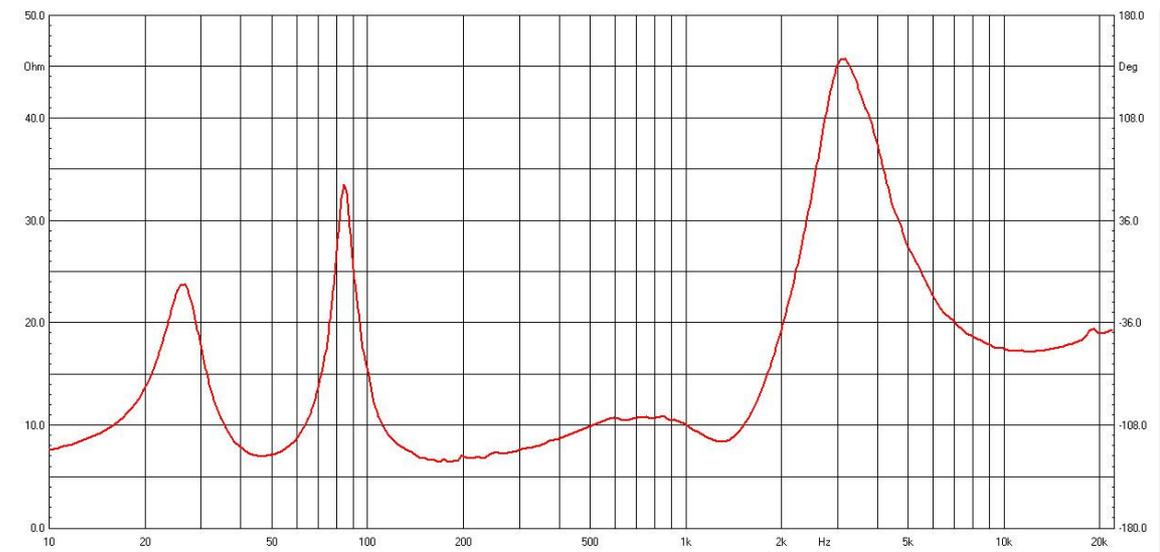
CELESTION

Celestion, Claydon Business Park, Great Blakenham, Ipswich, IP6 0NL United Kingdom

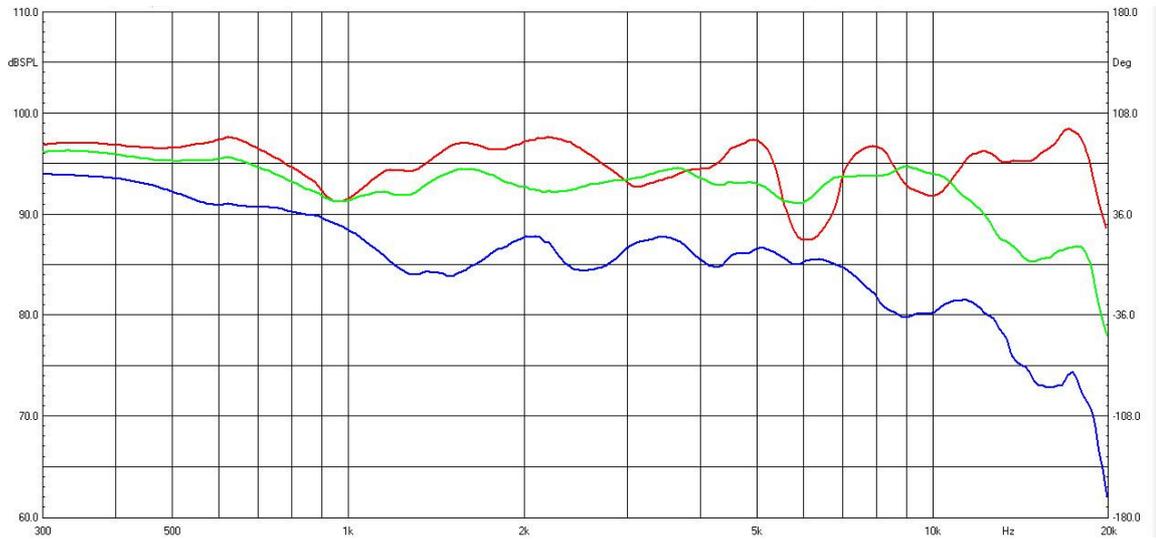
Measured Data



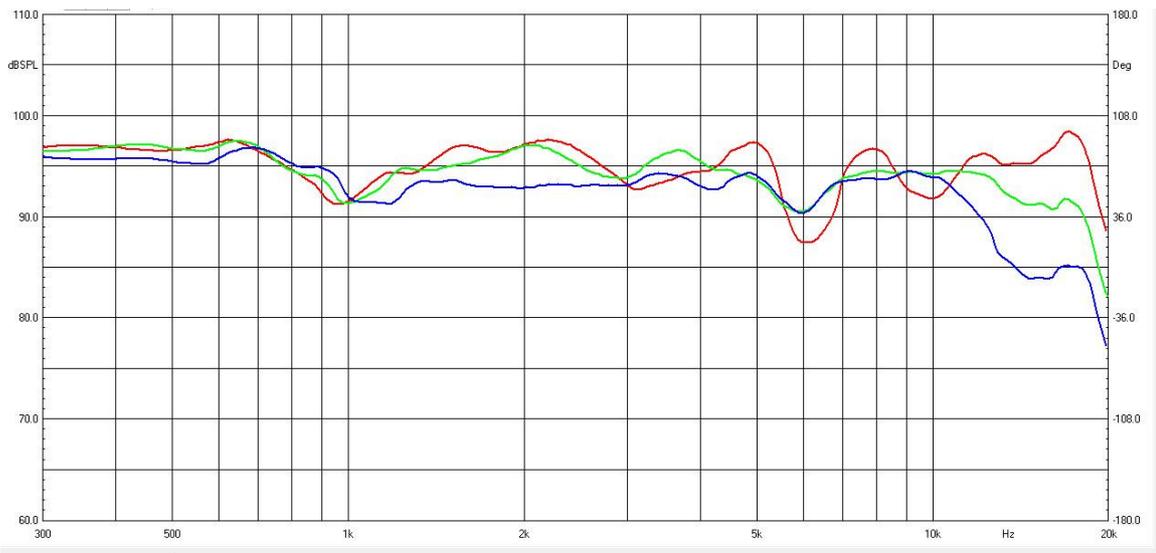
LF Response (normalized to 2.83V/1m): floor-mounted response (red),
1.5m free-space (black)



Input Impedance



Horizontal Dispersion: on-axis(red), 30deg(green), 60deg(blue)
 (2m free-space measurements normalized to 2.83V/1m)



Vertical Dispersion: on-axis(red), 15deg(green), 30deg(blue)
 (2m free-space measurements normalized to 2.83V)

Directivity: -6dB beamwidth

Frequency/Hz	500	800	1k	2k	5k	8k	10k	15k
Beamwidth (deg)	120+	120+	120+	90	80	80	80	40

Specifications:

Format: 2-way coaxial floor monitor

Drivers: FTX1225

Sensitivity: 97dB (2.83V/1m)

Input Impedance: 8ohms (nominal), 6.5 ohms (minimum)

Rated System Power: 450W (EIA), 1800W (peak)

LF Extension (floor-mounted): 65Hz (-3dB), 44Hz(-10dB)

Crossover Frequency: 1.7kHz

Maximum Output Level: 123.5dB (Continuous), 129.5dB (Peak)

LF Unit Power Rating: 300W (AES)

High Pass Filter: 55-75Hz

Internal Volume: 48L

Port Tuning Frequency: 48Hz

Port Dimensions: 2 x (Diameter 75mm x Length 160mm)

Port Options: smaller port: 2 x (70Dx135L) / larger port: 2 x (80Dx183L)

Dimensions: 430 x 426 x 610mm (H x W x D)

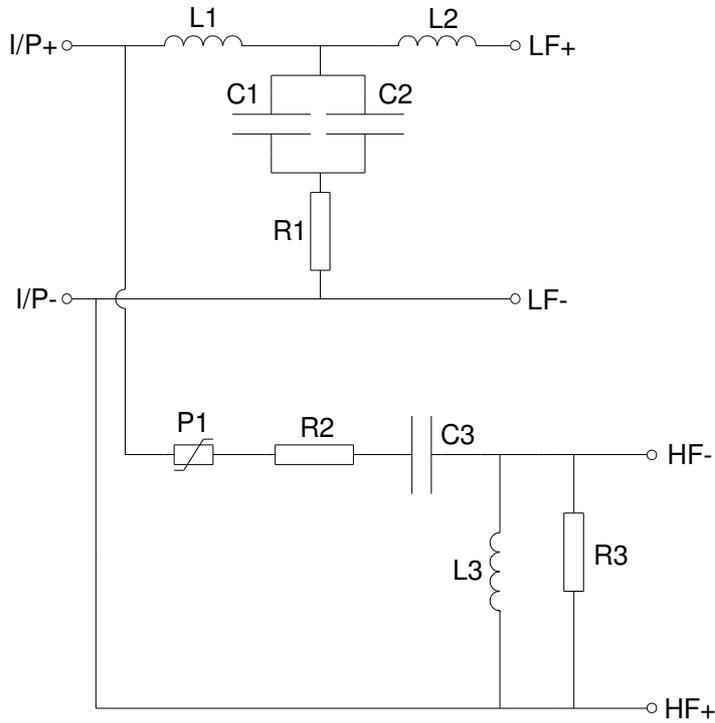
Crossover Network

The crossover schematic and component listing is shown below, along with a suggested component layout. The network provides a third order roll off for the bass unit and second order for the compression driver. This results in a fourth order acoustic crossover between the units.

L1 can be either an air core or iron (solid) cored inductor. For an iron core the saturation current needs to be at least 8A and/or it should have a power rating of at least 300W. The capacitors should be polypropylene types for best performance. If the poly-switch is included it should be situated at least 30mm or so away from R2 and L1 to avoid its local ambient temperature being raised by those components if and when they get warm.

Inductors should, in general, be positioned with their core axes at right angles and with at least 20mm of physical space between them to avoid magnetic interactions. However, they can be positioned with their axes parallel provided they are at the same height and there is sufficient separation between them. This separation will depend on the inductor size, core type and winding geometry, but an axis separation of 125mm should prevent any significant interactions between typical inductors.

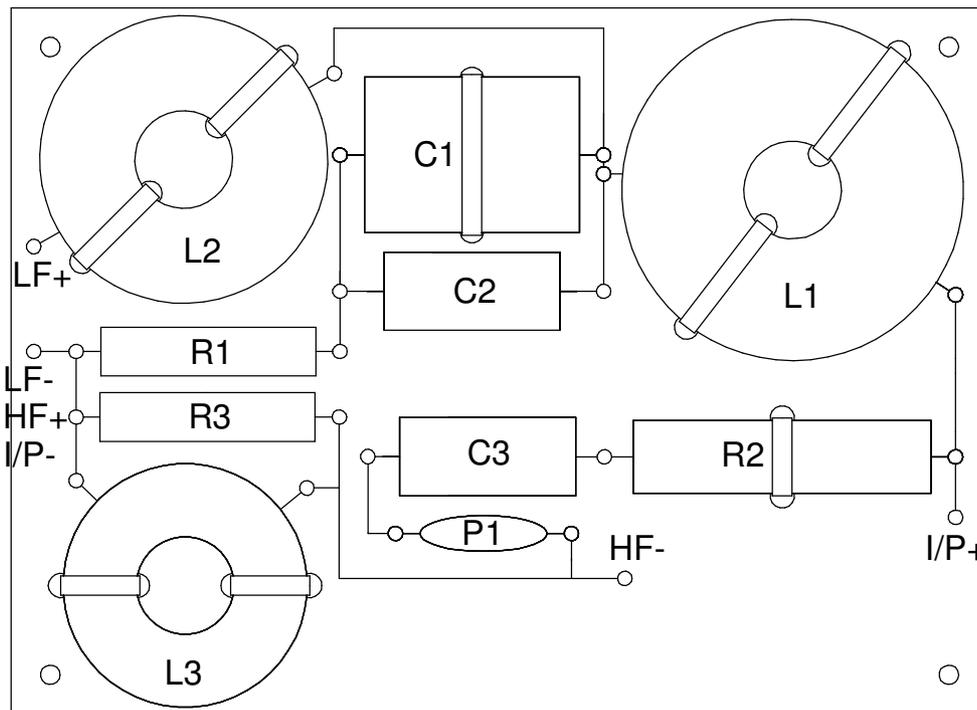
The crossover components can be mounted onto a 6mm wooden board, hard-wired and secured with hot-melt and then with cable ties fitted through holes drilled through the board. The board can be screwed onto the inner surface of the cabinet, ideally with 6mm spacers to prevent rattling. Cables should be connected in a way that does not stress the component lead-out wires, tag panels or terminal strips can be used to connect the lead-wires to the circuit. The cable conductor cross-sectional areas should be at least 1.5 square mm.



Component Listing - CX-FM-FTX1225

- R1 - 0.22 Ohms / 10W
- L1 - 1.5 mH / dcr < 0.5 Ohms (Air Core)
- dcr < 0.3 Ohms (Iron Core)
- L2 - 0.47 mH / dcr < 0.35 Ohms (Air Core)
- C1 - 15 uF / 250V / DF < 0.1%
- C2 - 3.9 uF / 250V / DF < 0.1%
- R2 - 10 Ohms / 20W
- C3 - 1.8 uF / 250V / DF < 0.1%
- L3 - 0.68 mH / dcr < 0.5 Ohms (Air Core)
- R3 - 100 Ohms / 10W
- P1 - Polyswitch (optional) / 1.35A(H) / 2.7A(T)

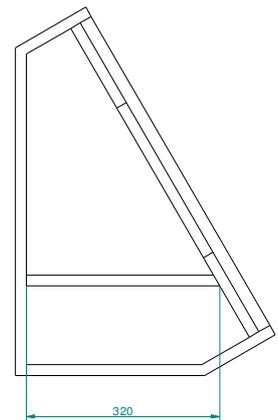
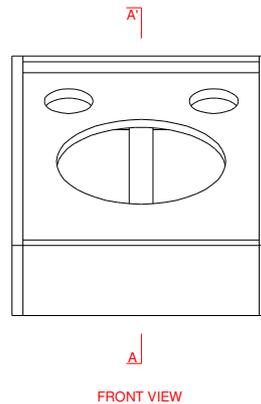
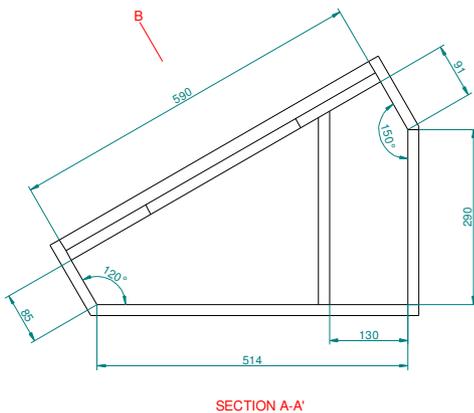
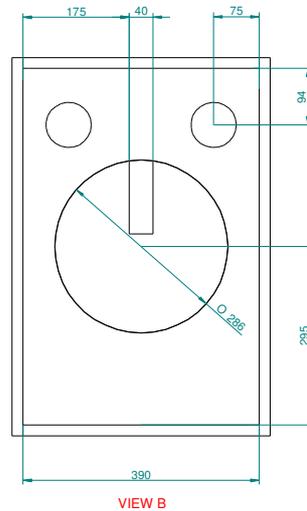
Crossover Schematic: CX-TF1225



Suggested crossover component layout

Cabinet Design

CKT-FM-FTX1225
18mm Birch Ply
All Dims in mm



Construction Notes:

All joints should be glued and screwed.

T-Nuts and fixing bolts are recommended as a means of fixing the units.

Ensure that there are no air leaks in the cabinet apart from the ports – foam gasket strip to be used in the mounting of drivers and terminal panel.

Internal cables should be carefully positioned to avoid any rattling.

18mm MDF or 15mm Birch plywood can be used instead of 18mm Birch plywood (provided the internal volume is maintained), but bear in mind that the cabinet will not be quite as stiff or hard-wearing.

Arrangement of acoustic damping material within the cabinet

The damping material should be 1.0 x 0.4m of medium density acoustic wadding (approximately 475g/m²) or equivalent. The piece should be folded double and placed as shown below. Care should be taken so that the material is not allowed to touch the cone of the bass unit or obstruct the ports.

