

# 3-way Crossover fEARful Speaker Cabinets

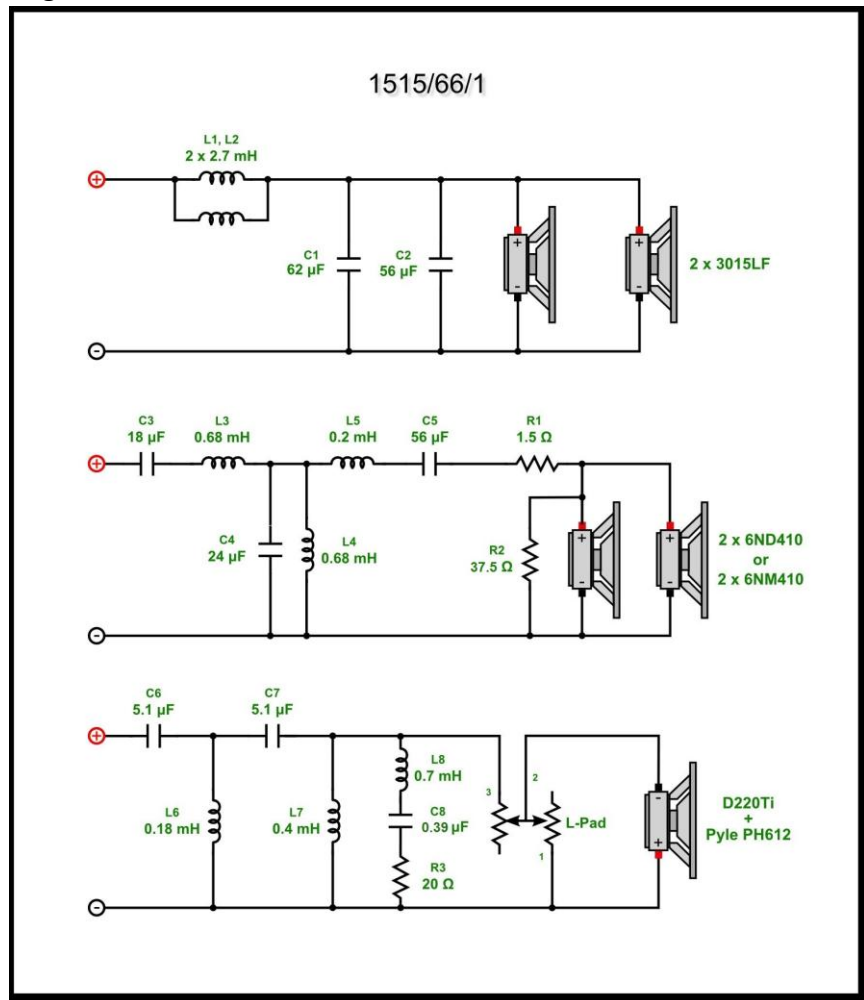
## Supplement A

**Section I)** Three-way Crossover for the fEARful 1515/66+D220ti

**Section II)** Modified 15sub – the 15Subby Sub

**I) Modification of the 1515/66+1** with a three-way crossover requires a powerful high frequency driver and so this design does not reuse the ASD1001S and instead uses the Selenium D220ti compression driver for the “+1” section.

Balanced output matching between the tweeter and the dual mid drivers will occur at about 75% on the tweeter L-pad dial and in most applications, “three-o-clock” or lower would be the appropriate setting. Lesser level settings of the tweeter Lpad knob should be used for tone profiling with lower high frequency emphasis as is often appropriate in smaller rooms or when diminished high frequency expression is desired. Do not hesitate to set the tweeter level to whatever settings match your needs.



**1515/66+D220ti - Xover Part List**

Resistors		Part Number	Note	Spec		Nominal		Tol.	Count	URL
				Ohms	Watts	Watts				
Reused	R1	<b>280-CR25-6.2-RC</b>	1	1.55	64	100		5%	4	<a href="#">Xicon/280-CR25-62-RC</a>
Reused	R2	<b>280-CR25-150-RC</b>	2	37.50	40	50		5%	4	<a href="#">Xicon/280-CR25-20-R</a>
	R3	<b>280-CR25-20-RC</b>		20.00	8	25		5%	1	<a href="#">Xicon/280-CR25-20-RC</a>

Notes: 1) Reuse existing, or Four 6.2 Ohm 25w in Parallel = 1.55 ohms 100w = 4 parts  
 2) Reuse existing, or Two 20 ohm 25w in Series = 40 ohms 50w = 2 parts

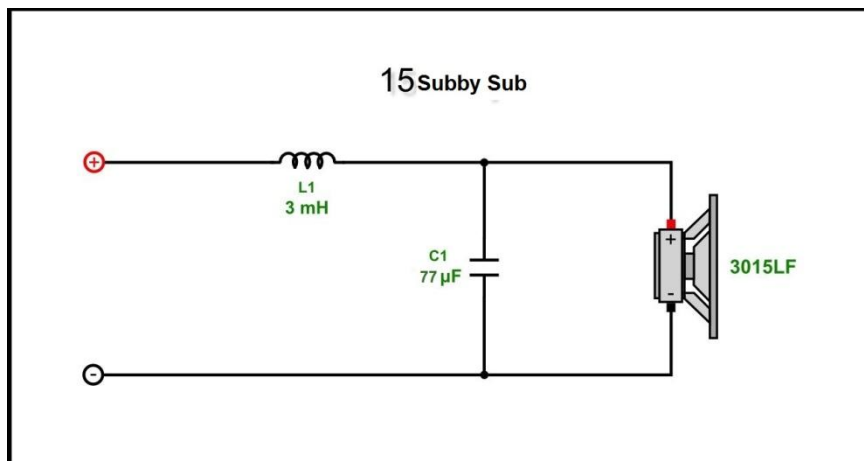
Coils		Part Number	Note	mH	Ohms	Ga.	Tol.	Count	URL
Reused	L1 & L2	<b>ESQ55-16-2700</b>	3	2.70	0.163	16	5%	2	<a href="#">SuperQCoils16Gauge/ESQ55-16-2700</a>
	L3 & L4	<b>EAC34-16-680</b>		0.68	0.246	16	3%	2	<a href="#">EQCoils16Gauge/EAC34-16-680</a>
	L5	<b>EAC32-16-200</b>		0.20	0.124	16	3%	1	<a href="#">EQCoils16Gauge/EAC32-16-200</a>
	L6	<b>EAC32-16-180</b>		0.18	0.109	16	3%	1	<a href="#">EQCoils16Gauge/EAC32-16-180</a>
	L7	<b>EAC32-18-400</b>		0.40	0.238	18	3%	1	<a href="#">EQCoilsAll/EAC32-18-400</a>
	L8	<b>EAC33-18-700</b>		0.70	0.385	18	3%	1	<a href="#">EQCoilsAll/EAC33-18-700</a>

Notes: 3) If you have a 3.00mH coil per old CBG spec's it is OK to use it for one of these parts

Caps		Part Number	Note	uF	Volts	Tol.	Count	URL
Reused	C1	<b>MPX40-03-62.0</b>		62.00	400	3%	1	<a href="#">PulseX400v/MPX40-03-62-0</a>
	C2	<b>MPX40-03-56.0</b>		56.00	250	3%	1	<a href="#">PulseX400v/MPX40-03-56-0</a>
	C3	<b>MPX25-03-18.0</b>		18.00	250	3%	1	<a href="#">PulseX250v/MPX25-03-18-00</a>
	C4	<b>MPX25-03-12.0</b>	4	12.00	250	3%	2	<a href="#">PulseX250v/MPX25-03-12-00</a>
Reused	C5	<b>MET25-05-56.0/PB</b>		56.00	250	5%	1	<a href="#">PEx250v/56uF-250v-Mylar-Film-Cap</a>
	C6 & C7	<b>MPX25-03-5.10</b>		5.10	250	3%	2	<a href="#">PulseX250v/MPX25-03-5-10</a>
	C8	<b>MPX63-03-0.39</b>		0.39	630	3%	1	<a href="#">PulseX630v/MPX63-03-0-39</a>

Notes: 4) Parallel two 12 uf = 24 uf

**II) The 15Subby Sub** is a modification of the existing 15sub fEARful cabinets. This modification lowers the sub's crossover frequency smoothing the transition between lower frequencies where the 15/6 and 15sub are working together and higher frequencies where the 15/6 is working alone



#### 15/Subby Sub Xover Part List

Coil		Part Number	Note	mH	Ohms	Ga	Tol.	Count	URL
Reused	L1	ESQ55-16-3000	1	3.00	0.178	16	5%	1	<a href="http://SuperQCoils16Gauge/ESQ55-16-3000">SuperQCoils16Gauge/ESQ55-16-3000</a>

Caps		Part Number	Note	uF	Volts		Tol.	Count	URL
Reused	C1	MPX25-03-30.0	2	30.00	250		3%	1	<a href="http://PulseX250v/MPX25-03-30-00">PulseX250v/MPX25-03-30-00</a>
		MPX25-03-47.0		47.00	250		3%	1	<a href="http://PulseX250v/MPX25-03-47-00">PulseX250v/MPX25-03-47-00</a>

Notes: 1) "Cheap But Good" spec'd 2.7 mH ESQ55-16-2700 is OK for L1  
 2) Install these caps in parallel to make the 77 uF C1

#### Additional Notes:

- The designs herein are exclusively reserved for use by greenboy fEARful Authorized Builders or other private non-commercial use. No warranty is expressed or implied – use of these designs is allowed only at your sole and exclusive risk.
- The part lists reference and link the Erse and Mouser web stores, but this should not be considered an endorsement of these parts or sources. The parts list takes note where reuse of parts from the “Cheap But Good” designs is appropriate.
- Substitute inductors should have similar resistance to the specified parts and equal or better watt ratings - caps should have equal or better voltage ratings. Resistor network components were chosen for availability – alternate networks yielding similar ohm, watt and heat ratings are OK. Multiple capacitors connected in parallel result in the sum of the individual uF values.