



## Product Technical Notes

### CADP2 Design Applications 219x Coaxial Series Device and System Files

The JBL 2192, 2193, and 2194 Coaxial Bi-Radial horns are systems that each include a mid-frequency horn and driver, a high-frequency horn and driver, and an audio controller. The following are important considerations to remember when modelling, specifying and installing coaxial horn products.

When modelling with these products it is important to remember that the two devices which make up the coaxial horn have separate origins along a common axial line. Calculations which use multiple coaxial horns and include phase must use the correct origin for each device over the appropriate frequency bandwidth. In order for calculations using complex summations to yield the correct results, two independent device files have been created and clustered as a CADP2 ARY file. There are five provided files for each coaxial horn. For example the JBL2192 coaxial horn will include:

JBL2192.ARY	The CADP2 cluster file with correct spatial, power, and delay information
JBL2332A.DEV	The 90x50 HF Horn directional file, with 2 - 8 kHz limited bandwidth
JBL2332A.DVD	The 90x50 HF Horn mechanical drawing file
JBL2392A.DEV	The 90x50 MF Horn directional file, with 0.5 - 1 kHz limited bandwidth
JBL2392A.DVD	The 90x50 MF Horn mechanical drawing file

The JBL 2192, 2193, and 2194 Coaxial Bi-Radial horns family are assumed to be a system that will require a controller to provide the proper level, delay and equalization settings to perform properly. Measurements of each coaxial horn were performed with a JBL DSC 280 Controller included in the system chain.

#### DSC 280 Controller Settings

System	2192				2193		2194	
	bass	low	mid	high	mid	high	mid	high
DSC Output	A	B	C	D	C	D	C	D
Polarity (+/-)			(+)	(+)	(+)	(+)	(+)	(+)
delay (ms)			0.000	2.093	0.000	2.697	0.000	3.000
gain (dB)			0.0	0.0	-5.0	0.0	0.0	-1.0
limiter (dB)			n/a	n/a	n/a	n/a	n/a	n/a
HPF (Fo)			196Hz	1.62K	287	1.62K		1.62K
HPF (slope)			24 L-R	24 L-R	24 L-R	24 L-R		24 L-R
LPF (Fo)			1.23K	n/a	1.62	n/a	1.62	n/a
LPF (slope)			24 L-R	n/a	24 L-R	n/a	24 L-R	n/a
EQ1 (Fo)			637	3.48K	378	2.54K	1.36K	n/a
EQ1 (width)			0.3	0.2	0.3	0.5	0.7	n/a
EQ1 (gain)			-3.0	-3.0	4.0	2.0	-1.5	n/a
EQ2 (Fo)			n/a	Bell 12.5K	n/a	Bell 13.4K	n/a	8.0K
EQ2 (width)			n/a	0.5	n/a	0.5	n/a	12dB/oct
EQ2 (gain)			n/a	9.0	n/a	6.0	n/a	1.0