Subject: Re: Answers on Array Wiring
Posted by Jim Griffin on Thu, 19 Aug 2004 00:56:03 GMT
View Forum Message <> Reply to Message

Ralph,I'll be the first to admit that horns are not my forte. By the way horns are often used for line arrays but have issues with wavefront curvature and for driver to driver spacing at higher frequencies. Clearly though for higher power (pro sound) they are likely the solution.As to achieving the same pattern it is unlikely that a direct radiator line array can match the dispersion characteriestics of a horn. A direct radiator line array essentially has the horizontal dispersion of the individual source--you have no available degree of freedom in the horizontal plane so you get what the driver can do. This can lead to a spacious wide angle soundfield in the horizontal plance that can be magical. When arrayed direct radiators do have reduced vertical dispersion so they improve their gain via their enhanced radiation in that dimension. Horns have both reduced horizontal and vertical radiation so they will have the advantage of higher efficiency than even a direct radiator line source. If you want the highest sensitivity, then horns are the way to go but they pose some issues when placed into an array.I advocate using a line array so that the listening area is located within the critical distance for near field radiation. In this operation you have less sound falloff per distance (3 dB per doubling of distance from the source for the near field line array (NFLA) versus 6 dB per doubling for a point source). This means that the in-room sound will be very uniform from the front to back of the room. Furthermore, the side to side falloff will be wider with a NFLA (the sound you hear can be thought of as a vector addition of the horizontal and vertical radiation patterns). Bottom line more uniform sound within the room with less falloff and wide imaging to boot with less side to side falloff. A 94 dB SPL sensitivity NFLA will radiate the same acoustical power level at 4 meters distance from the source as would a 100 dB SPL point source.Jim