

# REALWORLDGEAR

## Large Line Arrays

12 inches are larger. *By Mark Frink*



THIS MONTH IN REAL WORLD GEAR we look at the big guns, large format line arrays, those with 12-inch and larger woofers. In February we featured compact line arrays – those with 8- or 10-inch woofers – our largest category. “Mini” line arrays, with 6.5-inch and smaller cones, were featured in May, and our newest category, architectural or line source column loudspeakers, was featured in June.

Line arrays are modular, multi-way enclosures arrayed in vertical columns, with cabinet geometry optimized to provide full-frequency transducer coupling from one enclosure to the next along the height of the array. This is achieved at lower frequencies with cone transducers forming a column from one cabinet to the next, at frequencies where the distance between their acoustic centers is less than half the wavelength they’re reproducing. At higher frequencies coupling is accomplished with tall, thin ribbon drivers mounted end-to-end in a column, or with compression drivers on manifold horns that provide equal path lengths to tall, thin openings, often doubling up drivers to provide greater power.

There are several possible enclosure designs. Some employ dual woofers with a center high-frequency section to provide horizontal symmetry. The simplest two-way systems may just have a single cone driver and high-frequency driver. Quasi-three-way solutions use dual woofers, but low-pass one woofer at a lower frequency than the other, eliminating cancellations at higher frequencies where their acoustic centers are farther apart than the wavelengths being reproduced. True three-way designs operate separate low-, mid- and high-frequency drivers, each in their own band. There are several approaches to horn-loading, which can provide higher sensitivity for additional power.

Most systems have companion subwoofers to provide improved low-frequency coverage, pattern control and extension and for musical applications. Though often larger in size, many can integrate into arrays to become the top-most element in vertical columns. Some manufacturers also have com-

### Adamson Pro Audio Y-Axis Y18

[www.adamsonproaudio.com](http://www.adamsonproaudio.com)

**Configuration** Symmetrical, 3-way, dual LF, MF & HF

**Size (H x W x D)** 18.4 x 57.8 x 26.5 inches

**Weight** 270 pounds

**LF** (2x 8 ohms) dual AW18 proprietary 18-inch Kevlar woofers

**MF** (8 ohms) dual XY9 9-inch Kevlar w/ co-linear HF

**HF** (8 ohms) 1.5-inch exit JBL 2451

**Freq response** 40 to 18,000 Hz

**Dispersion** 100 x 5 degrees

**Down fill box** Y10 dual-10, single MH

**Companion sub** T-21 dual-21 subwoofer

plementary array elements with larger angles of coverage that perform better as the lowest near-throw enclosure in a vertical array, improving coverage where wider horizontal angles and sharper vertical transition are needed for the closest listening areas. Some also have long-throw versions with reduced horizontal coverage for higher positions in arrays where narrower dispersion is desirable due to the increased distance to the farthest listening areas.

This month we look at some of the offerings in the category of large format line arrays.



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