



# Two-way Planar Magnetic Speaker

## The Clear Voice™ MTM-1

The Clear Voice™ MTM-1 two-way planar magnetic speaker represents a technological breakthrough that delivers the stellar sonic qualities of planar technology in an ultra compact form. While the box is small...the sound is not! The three planar transducers generate a huge sound delivered with expressive details and powerful clarity. This combination of compact size and exceptional musical fidelity makes the MTM-1 an excellent choice for a wide range of installed or portable applications.

The MTM-1's performance is expanded when matched with the companion SB-112C or SB-212C cardioid bass speakers. Combining the MTM-1 and SB components together creates a performance package suitable for a wide range of musical styles and genre by creating an equalized frequency response from 60 Hz to 19 KHz.

What makes the MTM-1 so exceptional? The answer resides in the two different planar magnetic transducers, the MAD-1 and the PT-3. Both devices are true push-pull planar drivers that have been positioned next to each other so that their acoustical energy sums together perfectly without any comb filtering, resulting in a very smooth and uniform dispersion in both the horizontal and vertical fields. In addition, these drivers have very low mass which makes their transient response incredible fast and distortion virtually undetectable.

■ Contact your PCSC Representative for more details: [sales@1pcsc.com](mailto:sales@1pcsc.com)

### Virtually No Distortion

These drivers have very low mass which makes their transient response incredibly fast and distortion virtually undetectable.

### Ideal Applications:

- Indoor Venues - Large or Small
- Auditoriums, Conference Halls
- Concert Halls and Music Venues
- Forums, Arenas, Sports Centers
- Churches / Multipurpose Rooms
- Ground Stacking - Easy Setup
- Flown Arrays and Mezzanine Levels
- Limited Spaces - Small Footprint
- Temporary Cinema Setups
- Stereo or Surround Sound Setups
- Portable Applications

### Clear Voice™ MTM-1 Features:

- Huge Sound - Planer Technology
- Two Different Planar Magnetic Transducers, MAD-1 and PT-3
- Powerful Clarity in a Small Footprint
- Exceptional Musical Fidelity Output
- Unpowered, Bi-Amped Speakers
- 90° Horizontal x 10° Vertical Dispersion Patterns
- Integrated Rigging Systems and Adjustment Cams for Multi-Configurations



## The MTM-1 Technology:

The MTM-1 is a unpowered, bi-amped speaker that combines two planar mid-range and one planar high frequency driver into an ultra compact 18 lb. enclosure, measuring only 14" wide x 10" high x 5.5" deep. With a 90° horizontal x 10° vertical dispersion pattern, the MTM-1 is optimized for use with the SB-112C or SB-212C cardioid bass speakers resulting in a system response from 50 Hz to 19 KHz. The MTM-1/SB-112C combination produces exceptional sonic detail and imaging in a stereo or surround sound application or when used as near field monitors, fill speakers, or flown as line arrays.

The rigging system integrated into each cabinet contains all rigging points and adjustment cams allowing each enclosure to be vertically splayed from 0° to 10°. The array's SPL output and coverage patterns are determined by the number of cabinets in the array. Refer to the following chart for performance specifications. Actual output is subject to environmental and atmospheric conditions and may vary from the published specifications.

## MTM-1 Specifications

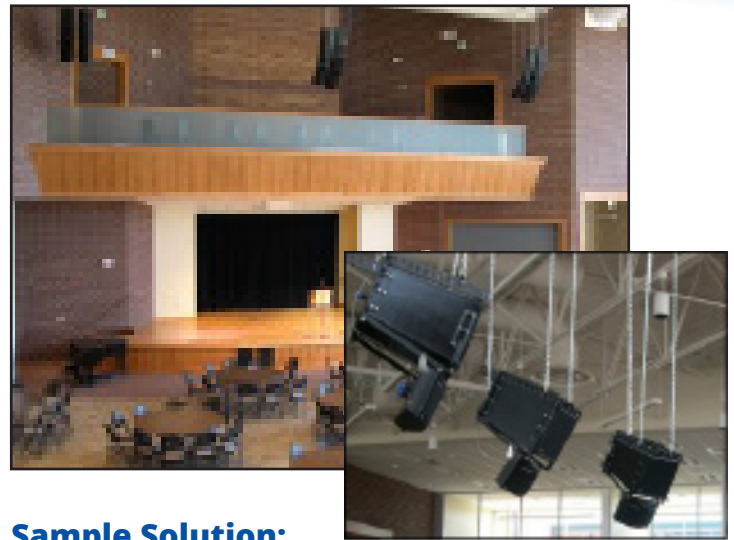
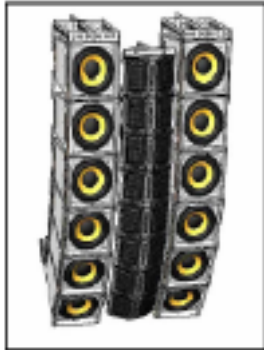
| Speaker   | MTM-1  |
|---|--|
| Number of Transducers                                       | Low=2 MAD-1 Planar Magnetic Transducer<br>High= 1 PT-3 Planar Magnetic Tweeter   |
| Horizontal Dispersion                                       | 90° at 10 KHz  |
| Vertical Dispersion   | 10° Total; ± 5°  |
| Power Handling Capacity per Speaker                         | Low = 200 Watts RMS<br>High = 50 Watts RMS   |
| Speaker Sensitivity   | Low = 100 dB 1w/1m; with 4 boxes<br>High = 103 dB 1w/1m; with 4 boxes  |
| Nominal Impedance   | Low = 8 Ohms<br>High = 4 Ohms  |
| Cam Intervals for Vertical Splay Adjustment                 | 0°, 2.5°, 5°, 7.5°, 10°  |
| High Pass Filter for MTM-1 Array Without SB-Series Speakers | Six boxes = High Pass at 150 Hz; 24 dB-LR slope,<br>Ten boxes = High Pass at 125 Hz; 24 dB-LR slope,   |
| Recommended X'over when combined with SB-series             | X'over high pass filter into SB-112C = 60 Hz; 48 dB-LR slope<br>X'over Freq. between SB-112C & MTM-1 Low = 180-210 Hz; 48 dB-LR slope<br>X-over Freq. between MTM-1 Low & MTM-1 High = 3 KHz; 48 dB - LR slope |
| Input Connection  | Low Input = 1 Speaker on NL4; 1+ & 2+ wired in parallel, 1- & 2- wired in parallel<br>High Inputs = 1 Speaker on NL4; 1+ & 2+ wired in parallel, 1- & 2- wired in parallel                                     |
| Parallel Connection   | Parallel or "Looping" connection made using the 2+ & 2- contacts on the Speakers NL-4 connector  |
| Dimension per Speaker<br>H x W x D in Inches                | 9.5 x 14 x 5.5   |
| Weight per Speaker  | 18 Lbs.  |
| Material & Color  | Aircraft Grade Aluminum Housing; Color = Black, Powder Coated  |
| System Rigging  | All rigging is constructed certified to international rigging standards  |
| Supplied Accessories  | Rigging Pins and Splay Cams  |
| Optional Accessories  | Road Case for 4 MTM-1 assembled; Upper Fly Grid, Lower Pullback Bar, Ground Stack, Support Foot, System DSP (preloaded with processing parameters), Amplification, Speaker Cables                              |

# MTM-1 Configurations

MTM-1 speakers are very adaptable for a wide range of applications. The following images illustrate some of the possible configurations that can be implemented.

## MTM-1 & SB-112C in Flown Array

The MTM-1 is an excellent choice for indoor venues for throw distance of approximately 130 feet (40 meters). The quantity of speakers needed is determined by the vertical coverage requirement and the desired SPL at the farthest listening position. The selection of SB speakers is established by the music style, the low frequency cutoff, and the system SPL.



## Sample Solution:

In a large church multipurpose room, the only location for the FOH mixer was on a mezzanine level that did not receive any direct coverage from the main LCR speaker arrays.

The solution: provide the mix position with monitor speakers calibrated to replicate the SPL and the LCR image for the system engineer. These FOH monitor arrays used one MTM-1 and SB-112C for each channel, the same speakers used in the main arrays.

Careful DSP calibration of the equalization, delay alignment, SPL, and dynamic levels produced excellent results that closely replicated the sound from the main arrays.

The engineers stated, "these MAD arrays are incredibly transparent and provide a very accurate impression of the sound heard by the audience on the main floor. We're very pleased with this creative solution".

The FOH mixer location (as viewed from the main floor) with near field MAD monitors in an LCR array.

## MTM-1 & SB-112C as Ground Stack

Ground stacking the MTM-1 & SB-112C arrays is a quick and easy to setup when flying the speakers is not possible. The MTM-1's can be played vertically to maintain clarity and uniform coverage to listeners located above the ground floor level. When a portable system is needed that can be setup fast, the MTM-1 & SB-112C ground stack array is an excellent application.

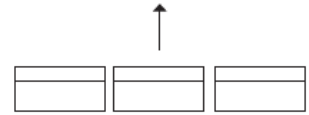
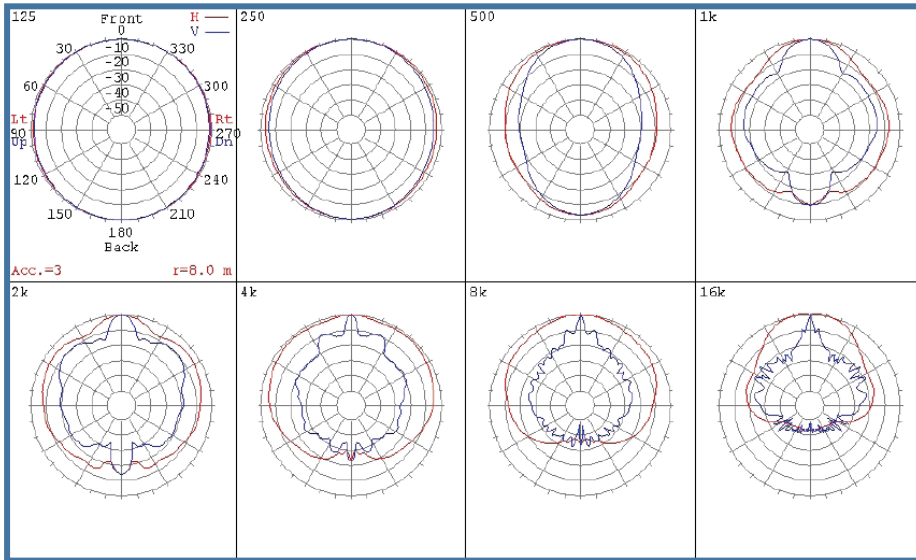


## MTM-1 & SB-112C as a Cinema Ground Stack

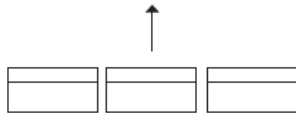
The compact size of the MTM-1 & SB-112C provide great versatility when powerful performance is necessary... but the space for larger speakers is not. Here is an example of one playback channel for a temporary cinema setup. The footprint for this array was less than 45" W x 24" D.



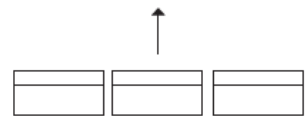
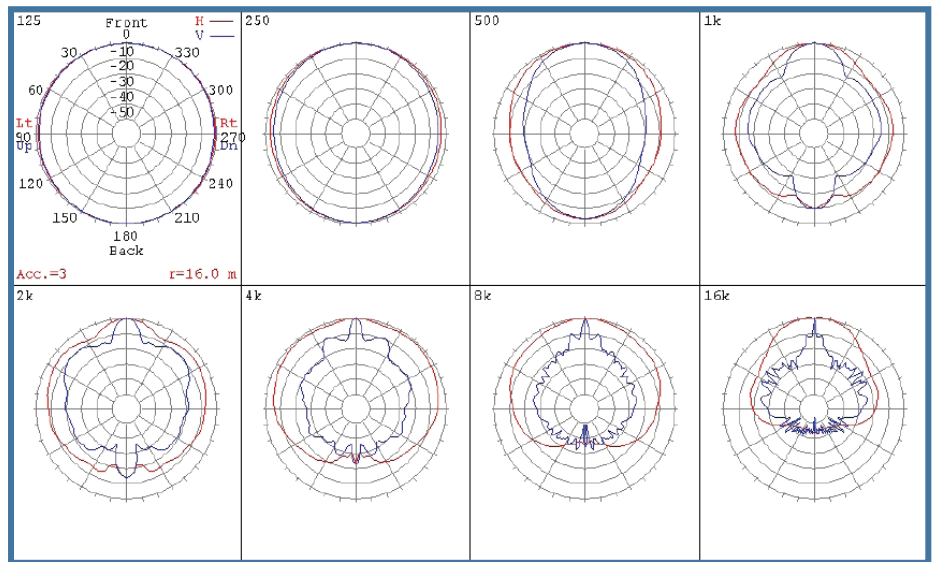
# MTM-1 Polar Plot Examples



**(3) - MTM-1 SPEAKERS**  
**0 DEGREE—8 METERS**



**(3) - MTM-1 SPEAKERS**  
**0 DEGREE—16 METERS**



**(3) - MTM-1 SPEAKERS**  
**0 DEGREE—32 METERS**

