

# MIT® Shotgun MA

Maximum Articulation Audio Cables with Multipole Technology

The Shotgun MA has redefined “value versus dollars” in terms of pure cable performance. This interface boasts 32 poles (35 poles for Bi-wired) of articulation compared to the Magnum M1's 24 poles! Sharing some of the best features of the Magnum line, including interchangeable output configurations, the patented CVT Coupler and the Magnum's unique winding geometry, it's easy to see why listeners everywhere agree: Shotgun MA delivers the broadest range of features and performance for the least amount of money! (Uses MIT patented iconn® connectors—4 spades and 4 bananas included).



MIT Multipole Technology  
**35X**  
Like 32X the Performance of Just Cable!

Shown: The Shotgun MA Bi-Wire speaker interface boasts 35 Poles of Articulation and modular connections.

## Shotgun Interconnects—the Perfect Complement

With 22 poles of articulation compared to the Magnum M1's 16 poles, the Shotgun MA delivers pinpoint articulation! Available in balanced or single-ended, the MA borrows much of its technology from the very expensive Magnum genre, plus the addition of the selectable impedance (matching) networks from the Oracle Series. Select Low, Mid or High input on the selector switch and optimize your cable for any system configuration. Makes matching components a breeze while guaranteeing a perfect match every time, without compromise. Black in color with chrome accents.



The Shotgun MA Single-ended audio interconnect with selectable impedance and 22 Poles of Articulation.

## MA vs. 2C3D Technology

What are the differences between MIT's MA (Maximum Articulation) cables, sold through our “brick and mortar” dealer network, and our 2C3D (2-Channel 3- Dimensional) cables, sold on the Internet through our Online Dealers?

**2C3D Series:** 2C3D is a technology pioneered by Bruce Brisson of MIT Cables. As the name suggests, 2C3D was engineered to create a believable three dimensional soundstage from a two channel system. The 2C3D technology offers

the optimal balance between detail, imaging and soundstage. 2C3D makes it easy to identify each of the individual instruments and voices within a well defined soundstage, at any volume level. The



Music Interface Technologies™

latest iteration of 2C3D technology can be found in MIT Cables' (just released) Generation 3 series speaker cables and interconnects.

# MA

The 2C3D product line includes all Series one, Series two (Oracle V1.2, for example) and Generation 3 (Shotgun S1.3, for example) speaker cables and interconnects.

**MA Series:** MA technology takes the 2C3D technology to a different performance level. While the MA offers a similar balance between detail, imaging and sound staging, it is designed to focus more on timbre and texture. Timbre simply describes the quality of a sound as defined by its harmonics, inharmonics and overtones. Also, timbre is sometimes defined as tone color, but tone is better defined as pitch. Texture would describe the layering of sounds on top of each other. More harmonics would mean that more layers (texture) can be recognized. The Maximum Articulation networks cre-

the harmonic structure. For more on articulation poles, please see our Reference Library.

The MA product line includes the AVt MA, Shotgun MA, Magnum MA, and Oracle MA product families.

**Comparison:** *2C3D*—Imagine yourself in the back row of an auditorium listening to your favorite piece of live music. 2C3D technology effectively picks you up and places you right in the exact sweet spot of the auditorium. You are then able to perfectly experience the directionality and dimensionality of the performance. This is the 2C3D experience.

**Maximum Articulation**— imagine standing up and walking directly onto the front of the stage, with the band. Along with a three dimensional soundstage that is in front of you, the soundstage now feels much closer to you because every instrument and every voice has full timbre and texture. This is the *MA experience*.

Which is better? Like most things, the answer to that question is entirely subjective. Some audiophiles report that they enjoy the 2C3D image because it more closely resembles listening to music at a live venue. Others, however, report that the MA image is so liquid and enveloping, that they feel more like part of the performance. So, you can be in the audience watching and listening, or part of the performance as it is unfolding!



ate a sense of being in the same “air space” as the live performance, as compared to being able to “see” the images in a high definition format. MIT accomplishes this by placing articulation along the audio bandwidth for the purpose of controlling and preserving more of

## FAQs *about MIT Interfaces*

**What's in the box?** For over 20 years Bruce Brisson has been researching precisely what the function of a cable is. Simply put, an audio cable's job is to deliver the signal with all of its frequency components, amplitudes and phases intact with no distortions between these critical relationships. After years of experimentation and receiving patents on sophisticated cable geometries, he concluded that only after applying network technology would he be able to accomplish that goal.

**Inside the box** is a series of complex networks comprised of passive components aimed at improving the cable's linearity.

The result is easily heard as tighter bass, improved imaging and soundstaging, and more focused and articulate highs.

**Is it a crossover?** No. The networks are designed to store and release current and voltage in proper relationships, but do not function as a low pass filter. The cable networks are wired in parallel and do not impair any signal flow; thus, your components are directly connected with high quality materials.

**What kind of materials are involved in construction?** Over the last few years we have noticed a trend toward what we call “engineering by jewelry factor,” with vague claims of higher purities and magical materials capable of performance improvements. We have examined many of the materials

available and use those with maximum impact for the investment and avoid the diminishing returns typical of the “jewelry” factor. MIT considers the cable as a system, and focuses on end results.

**Why is there such a long break-in time?** Break-in is a misunderstood factor in a cable. What is happening in a cable as that changes in the waveform will cause capacitive elements to “form”. This is a well-accepted phenomena, and given the complexity of the cable's construction, it takes a bit of time for the break-in to complete. Low signal levels are sufficient. Most of the unusual break-in characteristics will pass at about the 50 hour mark and will continue to subtly improve past 100 hours.





## Magnum MA Performance and Articulation

*What is articulation and what does the articulation measurement mean?*

### Articulation

Engineering terms such as transfer function, slope of the phase, group delay, time domain frequency domain etc. do not adequately describe what we actually hear. At MIT, we have adopted the term articulation to better describe this phenomenon. The word articulation best describes sound as it is heard naturally or three dimensionally.

Some words that are used when describing articulation in audio systems are: intelligibility; masking; clarity; discrimination; sensitivity; duration; timing; detail; attack and decay; rise and fall time; and loudness. Individually or collectively, these words are used to indicate a system's ability to articulate. When a system articulates properly, one immediately notices speech as being distinct and intelligible. Vowels are clearly articulated, not slurred, and consonants are sharp and distinct. Also, every instrument in the orchestra is heard with pin point location within the complex sound stage.

In the context of this paper, articulation is the ability to retain the highest level of detail and clarity in all amplified speech and sound applications. Along with frequency response and intensity/loudness, all speech and sound must retain proper attack and decay, thereby preserving the natural timing cues required for the listener to accurately locate individual sounds, over distance, within a complex sound field.

*At MIT, we have discovered a measurable response that correlates precisely with what we hear—*

### The Articulation Response

Conventional wisdom views the only meaningful specification regarding interfacing is the frequency response between components; ie. between a pre-amplifier and an amplifier. By default, all audio cables function as a low pass filter, so there is always a high frequency roll-off, hopefully this roll-off is at a frequency much higher than 20kHz. The typical -3dB corner frequency is usually well above 20kHz. This frequency is generally found somewhere between 150kHz and 1.5MHz, well above the audible frequency range.

However, there is a second response that exists well below the -3dB down corner frequency. This is the articulation response of the cable. Measuring the articulation response identifies and explains the problems that we hear. Primarily, these problems will be, a general masking of detail or an overall lack of clarity or intelligibility.

### Interpreting the articulation measurement

Ideally, the articulation response of the cable used in any given system should cover the bandwidth, uniformly, over the entire frequency range of the sound being transmitted. In the case of music this is generally

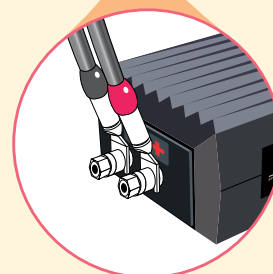
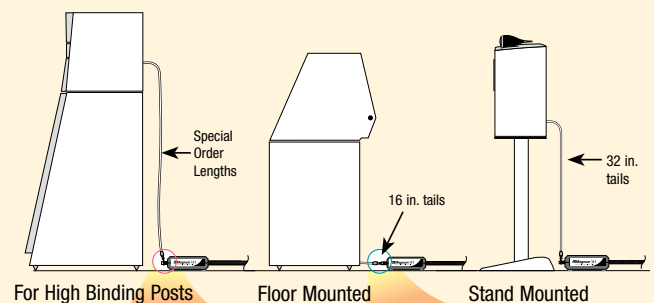
considered to be 20Hz – 20kHz. In the case of high quality speech it is usually 200Hz – 7kHz, and for low quality speech the frequency span is t across the graph horizontally represents zero (0%) percent articulation (please see graphs on next page). A cable starts to become articulate at 10%, while 25% is desirable, and 50% articulation represents a perfect cable (red line). The rate at which a cable rises to its full value is also important. Cables that rise very slowly over a wide band of frequencies are not desirable, while cables that rises to at least 10% produces a minimum level articulation. A cable that rises quickly to 25% or higher is very desirable. Generally speaking, a cable that rises and peaks at a frequency equal to 50% of the desired bandwidth (20kHz/2 or 10kHz) will be accepted by both the recording and the audiophile communities. Below 10% articulation, it can be expected that the cable will greatly degrade the performance of the components and the system it is interfacing.

For more information on articulation, power and MIT technologies visit the Technology section of the MIT website: [www.mitcables.com](http://www.mitcables.com)

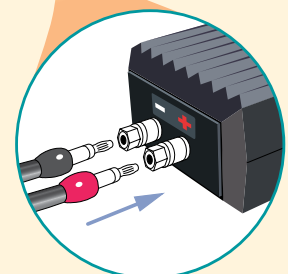
## Shotgun MA Modular Connections

*Setting up the Shotgun MA speaker cable is a snap using it's modular iconn™ connection system. The binding posts accept both spades and bananas (supplied), ensuring the ability to configure your cables to any type of speaker.*

*Standard "tail" length is 16 inches. 32 in., 48 in. and special order lengths also available.\**



Regular spades are perfect for stand-mounted speakers or high-mounted speaker binding posts.



Bananas are perfect for close-to-the floor speaker binding posts.

\*Additional cost





## MIT Multipole™ Technology

**D**iscover what many recordings and film studios have known for the past 20 Years—MIT Audio Interfaces deliver the highest degree of signal integrity!

Ordinary cables, even “high-end” brands, can alter the musical signals they transport. These signal alterations can significantly reduce your systems sound quality. Only cables with MIT’s patented Multipole™ Technology can reveal the full sonic potential of your audio system.

**Graph A:** Represents the bandwidth of an 88-key piano, highlighted in blue, as it compares to the audible range of the human ear. We will use this graph to describe how well a cable articulates across the audible bandwidth.

**Graph B:** Standard (single-pole) cables have a relatively narrow region (yellow arch) where the cable is articulating ideally. Every cable will have one measurable, and definable pole that will define the articulation range for transferring the music. When comparing this articulation pole from manufacturer to manufacturer, it will usually be centered at different frequencies. The placement of this articulation pole is the main reason we hear differences in cables. Note that the blue area remaining is considered less than ideal in terms of articulation.

**Graph C:** MIT Multipole technology is our patented solution for allowing all of the frequencies, and all of the music from your recordings

to be heard without either emphasizing or de-emphasizing any of the music. In graph C, MIT engineers have added additional poles / points (6 shown) of articulation to further extend the articulation bandwidth of the audio system.

When choosing cables, look for the Multipole Technology logo with the performance rating.

There, you will see how many articulation poles are in each MIT design. This simple feature will help you select the correct performance level for any system, with complete confidence and accuracy. Multipole technology will deliver better bass, clearer mid-range and more articulate high frequencies when used in any audio system.

## Multipole™ Technology.

**It’s like having multiple cables in one!™**

