

# The Shotgun S E R I E S

HIGH-END SPEAKER INTERFACES AND INTERCONNECTS

## Shotgun hits Main Street Audio!

An old and respected name in the MIT family gets an all new look, while our engineers deliver performance that cost ten times as much just a few years ago. Through countless hours of design considerations and revisions, Bruce Brisson finally puts his seal of approval on the new Shotgun lineup. Three versions of the revered Shotgun Speaker Cable are newly available, making it possible to get MIT Magnum technology at Shotgun Prices. By eliminating the modular b (with detachable tails) in favor of a st through conductor path, MIT is able t savings on to you. For the first time ever, the common man can have Reference performance at "Main Street" prices.

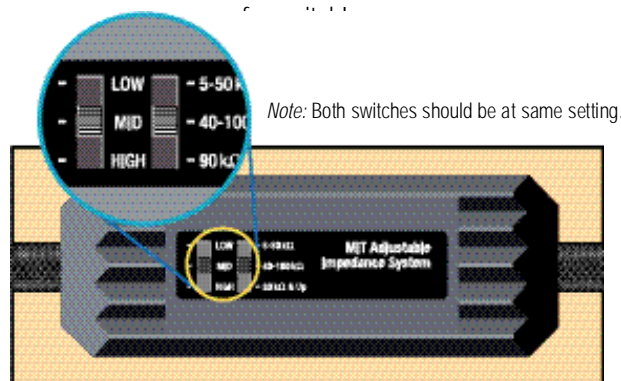
## Shotgun resolving power

Technological advances of recent years have increased the resolving power of High-End audio systems by great lengths. Today's High-End systems are capable of remarkable music reproduction that, until recently, was reserved exclusively for the "Super High Dollar" reference systems. Unfortunately, when a high resolution system is connected with conventional audio cables, a great deal of the performance is lost. Ordinary cable simply can't deliver the full performance potential your system is capable of. Ordinary cable becomes the "weak link" in the chain. The real performance is always there: It just gets lost in the wires. That's why you need Shotgun.



A powerful combination: The Shotgun Speaker Interface and Shotgun Selectable Impedance Interconnect

switchable impedance networks. You can now tune cables to maximize performance for each component's specific input impedance. Change between low (5-50k $\Omega$ ), medium (40-100k $\Omega$ ), or high (over 90k $\Omega$ ) impedance with a simple flick



Shown: Shotgun Proline Balanced Interconnect with selectable impedance.



## What you can expect from Shotgun Series Speaker Cables & Interconnects

### Better Bass

Powerful, accurate bass has long been a defining characteristic of the Shotgun name. However, few audiophiles understand the role of the interface in achieving realistic bass. MIT networks deliver tight, full bass response, with correct rhythm, weight, speed, and tonal accuracy. Bass passages are rich and powerful, without the muddy and slow quality that is so often heard with ordinary cables.

### Clearer Midrange

Midrange is the heart of superior sound quality. This is where loss of clarity and detail, as well as distortion, become most apparent. MIT networks preserve precise articulation across the entire audible range and create a noise-free, velvet-like background. Musical details emerge with astonishing contrast and clarity. Lifelike, accurately-sized images of instruments and voices are precisely located with respect to each other, all within a deep, wide and tall soundstage.

### Smoother Highs

High fidelity reproduction is often marred by harsh, strident treble overemphasis generated by ordinary cables. MIT networks create accurate tonal balance across the spectrum, while eliminating the grainy quality that makes *unnatural* treble sounds *unpleasant*. MIT networks work together to preserve detail, sparkle, and air within a large, deep soundstage, creating palpable images of soloists. Thanks to MIT technologies, massed instruments and voices are correctly arrayed in size, as well as location.

### Presence, Detail & Clarity

Superior resolution is the hallmark of MIT audio interfacing, providing a lifelike image that recreates the subtle nuance and detail of the recorded event without image wandering, wavering, blooming or blurring, even under extreme power.

### MIT Interfaces, your best choice for more natural and lifelike sound reproduction

Audiophiles tend to associate audible improvements with upgrading hardware, or specifically by upgrading loudspeakers — until they replace ordinary cables with MIT Interfaces. Hear for yourself sonic improvements that MIT Shotgun Series Interfaces will make in your system. You will find it hard to believe that MIT cables are so important to the overall performance of your system.

Since 1984, MIT has led the industry in designing and manufacturing high performance Interfaces based on its patented network technologies. MIT Interfaces have proven again and again to be the key to

unlocking superior sound quality, regardless of the brand or design of other audio system components. Once you've experienced the benefits of MIT network technologies, everything else is "just cable." Ask your dealer for a demo today.

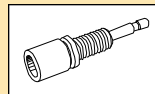
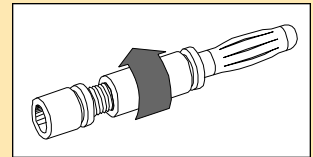
## Interchangeable Connector System?

### The iconn® Story

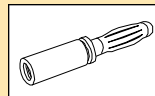
No matter what your connectivity needs are, the solution is just a few seconds away. Whether it is spades, bananas or pins the MIT iconn™ system provides a quick and easy solution.

### How iconn® works—

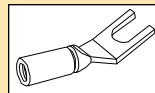
The base is a threaded pin so you can screw on any iconn connector you need and you're ready to listen!



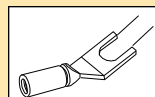
**The Pin-Base\***—The iconn system foundation, comes soldered on all Shotgun speaker interfaces.



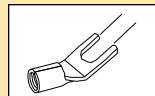
**Bananas\***—The iconn banana screws completely onto the pin-base to fit recessed banana jacks and binding posts.



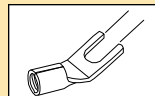
**Regular Spades\***—The small spade screws onto the pin-base to fit binding posts and terminal strips.



**Large Spades\***—The iconn large spade screws onto the Pin-Base and is locked into alignment with the provided lock-nut.



**Economy Spades\***—A less expensive option to the regular spade, for use on standard binding posts and terminal strips.



**Large Economy Spades\***—A less expensive option than the iconn Large Spade, for use on large sized binding posts featured on many speakers.

*\*iconn connectors are sold separately.*



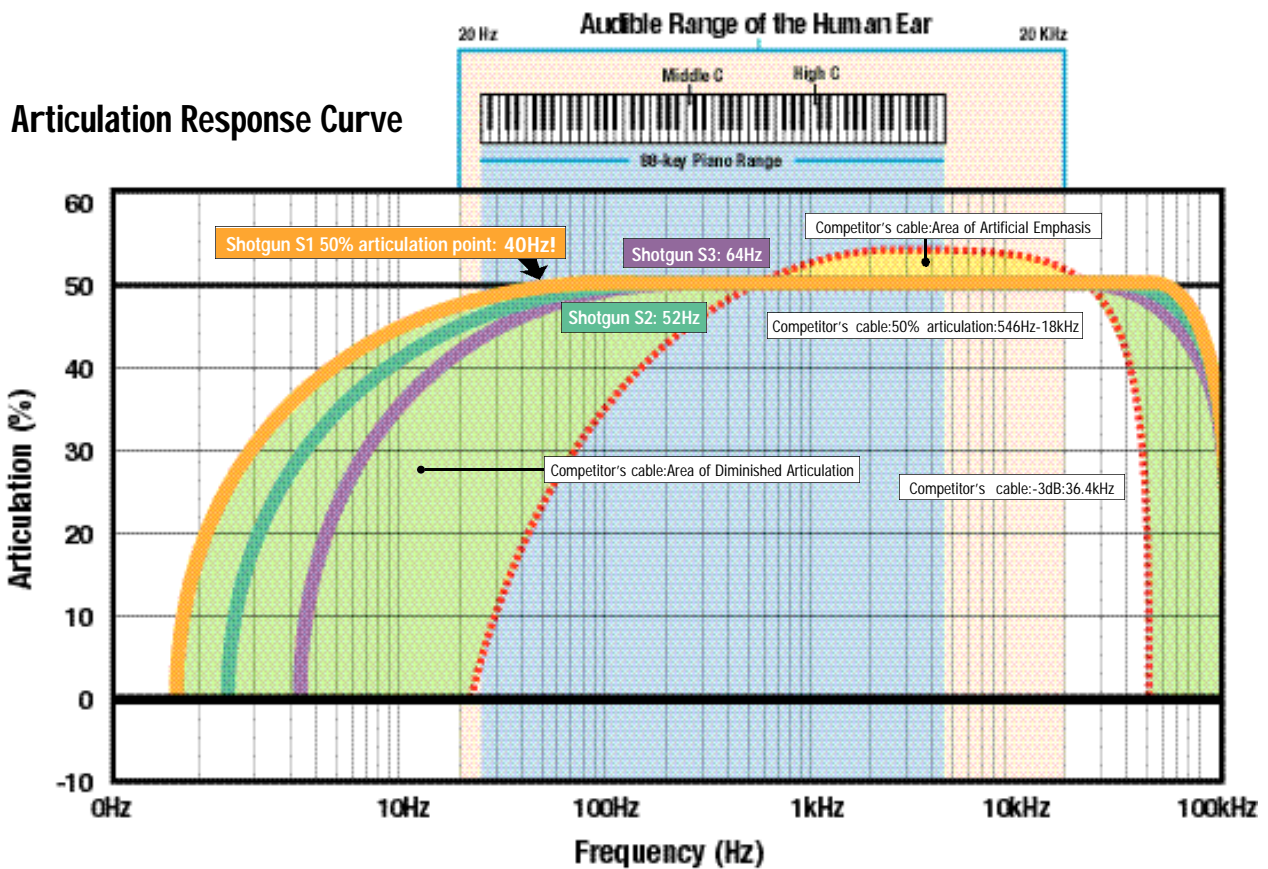
## Three choices: S1, S2 or S3?

The chart below is a representation of the articulation responses of the MIT Shotgun Series speaker interfaces and a common “flat” (profile) speaker cable. Like the Magnum, we use the articulation response measurement to illustrate performance characteristics, because the articulation response best reflects the audible differences in cables\*.

When compared to the flat-profile, solid-conductor speaker cable the Shotgun interfaces are obviously superior in their ability to perform efficiently (at 50% articulation\*) over a much wider frequency range. The

most notable difference between the three models of the Shotgun interface are their ability to articulate effectively at lower and lower frequencies as you step up in the product line. The audible benefit of this efficiency is improved bass response, with increased clarity and imaging **over the entire audible range**.

**Articulation Response:** If you examine the chart below, the differences in the three versions of the Shotgun cables become immediately apparent.



- MIT Shotgun S1
- MIT Shotgun S2
- MIT Shotgun S3
- Competitor's wire
- Dimin. Articulation
- Artificial Emphasis
- Audible Range
- Keyboard Range

### The details

This chart was created from recorded measurements made at the MIT lab.

The most notable measurement is the initial 50%\* articulation point for the Shotgun S1, a remarkable 40Hz!

Entering the Shotgun lineup the S3 reaches 50% at 64Hz, the S2 at 52Hz and the S1 at an incredible 40Hz! This performance is quite remarkable when compared to competitor's cables which reach optimum articulation at a disappointing 546Hz—that's just above a "high" C. These measurements should aid you in quantifying the performance of the various MIT Shotgun interfaces.

\*See page 4 for an explanation of the term articulation, the articulation response measurement, and how it is used in the context of this paper.



## Shotgun Performance *(continued from page 3)*

### *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**.

Words that are commonly used when describing articulation in audio systems include: 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 illustrate the 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 cues within a 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 sounds must retain proper attack and decay, thereby preserving the natural timing cues required for the listener to precisely locate individual sounds, over distance, within a 3-D sound field.

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

#### **The Articulation Response**

Conventional wisdom indicates the only meaningful specification regarding interfacing is the frequency response between components; ie. between a pre-amplifier and an amplifier. By default, any audio cable functions 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. With Shotguns, this knee frequency is generally found somewhere between 150kHz and 1.5MHz, well above the audible frequency range, minimizing the opportunity for reflected energy to re-enter the cable.

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 errors that we hear. Primarily, these errors will create a general masking of detail or a noticeable subtraction of clarity or intelligibility.

#### **Interpreting the articulation measurement**

Ideally, the articulation response of any cable should span the bandwidth, uniformly, over the entire frequency range of any sound transmis-

sion. In the case of music this is generally considered to be 20Hz – 20kHz. In the case of high quality speech over air, it is usually 200Hz – 7kHz. For low quality speech over a telephone, the frequency span is usually considered to be 350Hz – 3.5kHz.

In the graph on the previous page, the vertical (y) axis is scaled as a percentage, and the horizontal (x) axis is frequency. The dark line running from left to right across the graph horizontally represents zero (0%) percent articulation. A cable starts to articulate at 10%, while 25% is more desirable, and 50% articulation represents a perfect cable. 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 of 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 any component and particularly, the entire 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)



**Music Interface Technologies**

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