

The **Magnum** SERIES

HIGH-END SPEAKER INTERFACES AND INTERCONNECTS

The Future of Audio Interfacing is Here –The Magnum System

The new High-End

Technological advances of recent years have increased the resolving potential of High-End audio systems by great lengths. Today's high-end systems are capable of remarkable music reproduction that, until recently, was reserved strictly for super high-dollar reference-level systems. Unfortunately, when a high resolution system is connected with conventional audio cables, a great deal of the performance is lost. Ordinary cables 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 wire. That's why you need "More than Just Cable."

Since 1984, MIT has been researching the distortions that occur (naturally) in cables, and how transported audio signals are affected by wire. Based on this has developed many patented network technologies that the inefficiencies of just wire. By utilizing these technologies, MIT is able to create more efficient interfaces that preserve the integrity of the audio signal, providing superior performance.

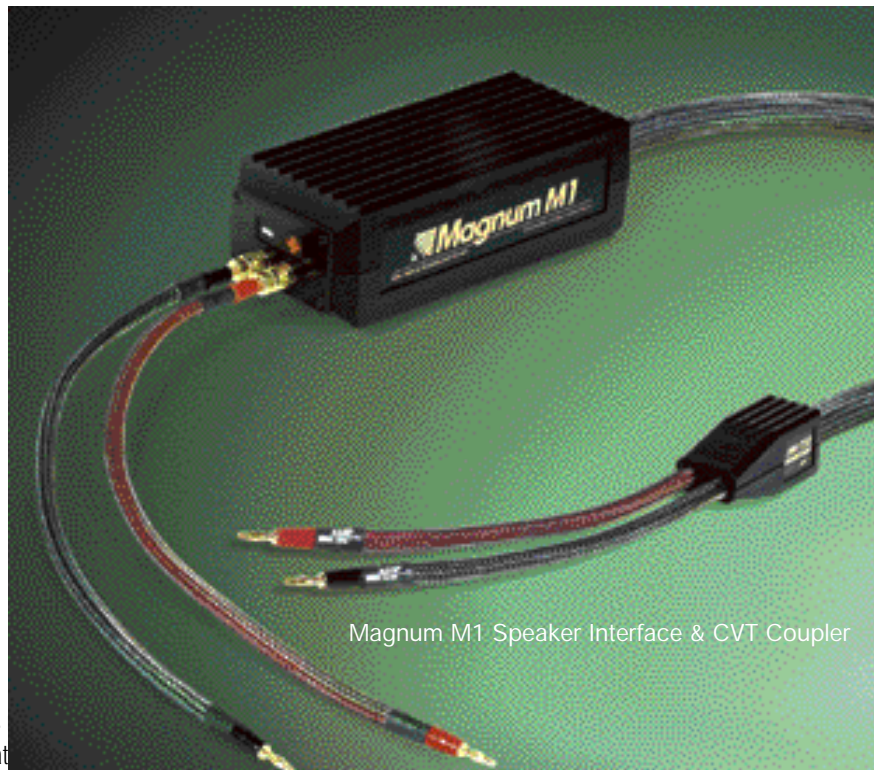
MIT enables your system to perform at its full potential.

MIT Magnum Series Interfaces —

Redefining high-end speaker interfacing – with Oracle technology

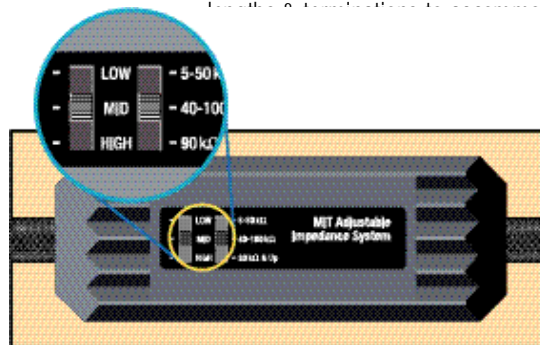
The Magnum Series owes much of its performance and design to MIT's latest reference interfaces, the Oracle Series. The Magnum Series utilizes many Oracle network designs in a scaled-down enclosure that provides a new level of performance and convenience, redefining the concept of high-end speaker interfacing.

Like the Oracle series, the Magnum speaker interfaces feature updated network topology that consolidates all of the networks into one easy-to-



Magnum M1 Speaker Interface & CVT Coupler

from the housing to the speaker is achieved via detachable "tails" that provide a clean and simple installation that allows for future configuration changes. (Tails come in various lengths & terminations to accommodate any speaker design or page 2.)



Shown: Magnum Proline Balanced Interconnect with selectable impedance

impedance. Change between low (5-50kΩ), medium (40-100kΩ), or high (over 90kΩ) impedance with a simple flick of a switch.

your system—choose the Magnum M1, 2 or 3

These interconnects feature new switchable impedance networks. The end-user can now tune the cable to maximize performance for each component's specific input



What you can expect from Magnum Series Speaker Cables & Interconnects

Better Bass

Powerful, accurate bass has long been a defining characteristic of high fidelity sound reproduction. However, few audiophiles recognize the importance of the interface in achieving realistic bass. The MIT networks deliver tight, full bass response, with correct rhythm, weight, speed, and tonal accuracy. Magnums deliver bass that is 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. As in the bass range, lifelike, accurately-sized images of instruments and voices are precisely located with respect to each other, all within a wide, tall, deep soundstage.

Smoother Highs

High fidelity reproduction is often marred by the harsh, strident treble overemphasis generated by ordinary cables. MIT's 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 all of the subtle nuance and detail of the recorded event without the image wandering, wavering, blooming or becoming unfocused, even under extreme power demands.

MIT Interfaces, your best choice for better, more natural and life-like sound reproduction

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

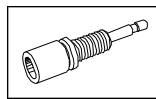
Since 1984, MIT has led the industry in designing and manufacturing high performance Interfaces based on its patented network technologies. MIT Interfaces have proven again and again to be the key to

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.

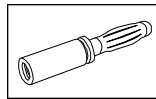
The iconn® Story

The iconn interchangeable connectors MIT included with every Magnum speaker interface provide a quick and easy solution to your connection needs—no matter what your system requires!

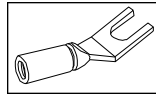
What we provide:



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



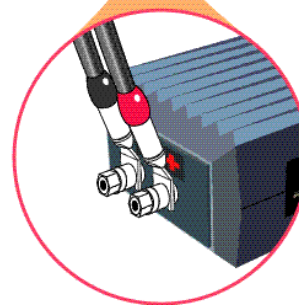
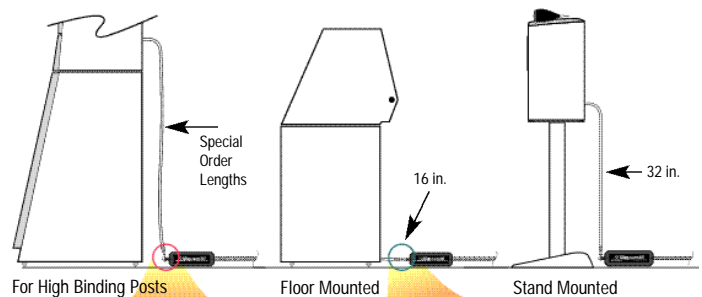
Bananas (4)—The iconn banana screws completely onto the pin-base to fit recessed banana jacks and binding posts.



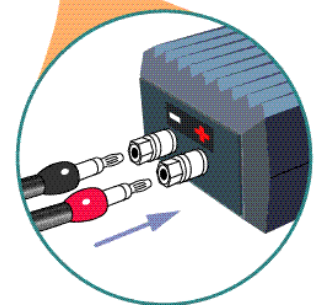
Regular Spades* (8)—The small spade screws onto the pin-base to fit binding posts and terminal strips.

*Spades come with a lock nut for precise rotational positioning.

Custom length output tails and the ICONN Connector System ensure the ability to configure to any system. Standard lengths are 16 in. or 32 in.



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



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

Figure 1.



Three choices: M1, M2 or M3

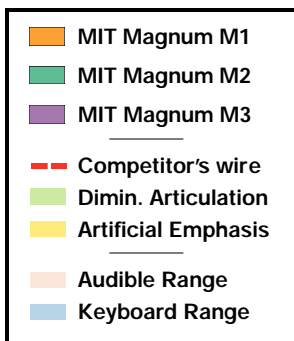
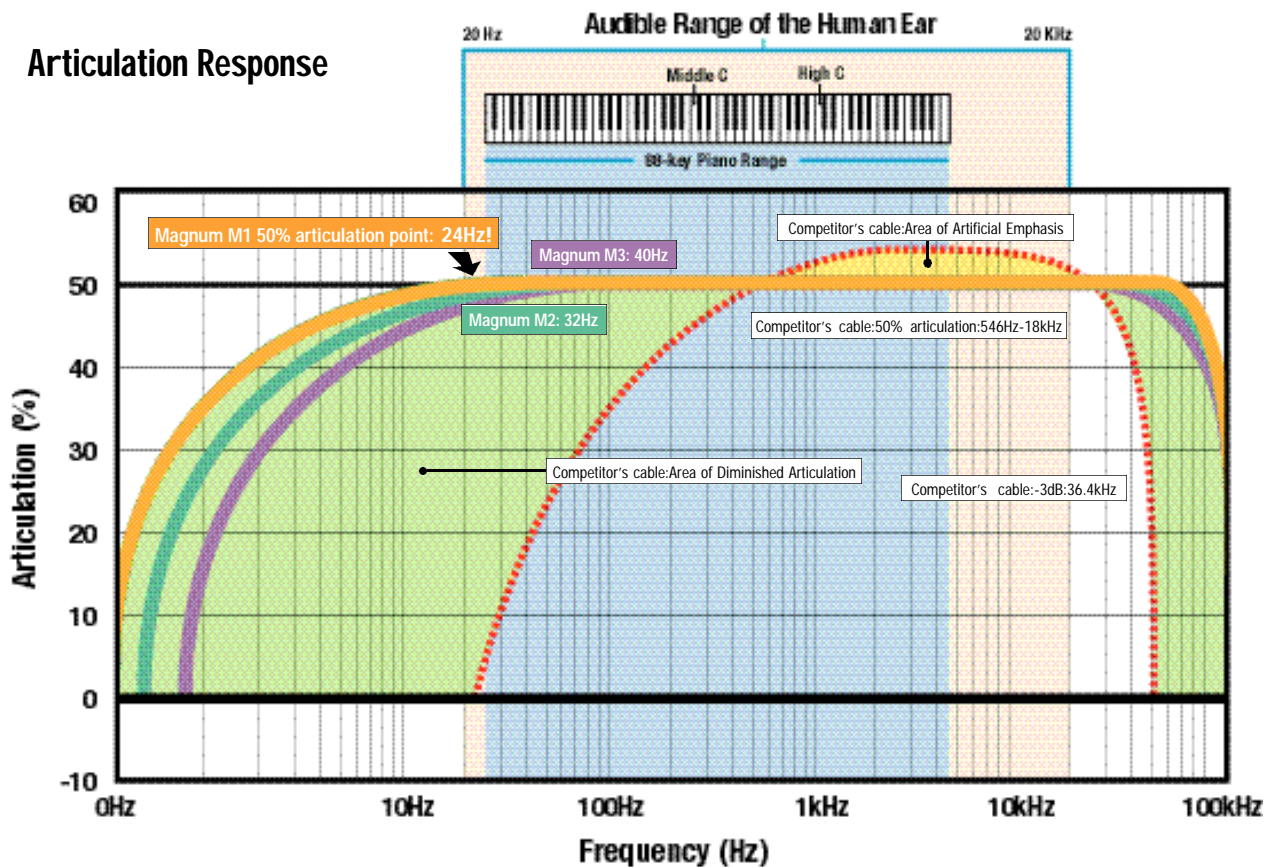
The chart below is a representation of the articulation responses of the MIT Magnum Series speaker interfaces and a common “flat” (profile) speaker cable. Like the Oracle, we use the articulation response measurement to illustrate performance characteristics, because the articulation response best reflects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

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

audible benefit of this improved efficiency is not only improved bass response, but also increased clarity and imaging over the entire audible range. The most notable difference between various models of the Magnum interfaces is their ability to articulate effectively at lower and lower frequencies as you step up in the product line.

If you examine the chart below, the differences in the three versions of the various products become immediately apparent.

Articulation Response



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 Magnum M1, a remarkable 24Hz! Entering the Magnum lineup the M3 reaches 50% at 40Hz, the M2 at 32Hz and the M1 at an incredible 24Hz! This performance is quite remarkable when compared to the “flat” cable which reaches 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 Magnum interfaces. For certain applications, the EX option (available with all wide bandwidth Magnum interfaces) provides additional articulation poles in the upper frequencies for electronics & speakers that may require these characteristics.

*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.



Magnum 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 Magnums, 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



Music Interface Technologies

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