



The Miles Technology M86 Multisonic® Imager provides stereo sound with accurate, precisely-detailed spatial imaging to a large audience and a large listening area. It uses our patented Optimum Linear Matrix to convert two-channel stereo to a left-center-right (three-channel) format.

This practically solves the problem of off-center listeners hearing mostly one side of the sound system, and the resulting badly-unbalanced sound.

The M86 is highly effective with LCR systems in auditoriums, sanctuaries, nightclubs, corporate A/V applications, schools, multimedia, exhibits, museums, broadcast facilities, and touring systems.

Left, Center, Right, Subwoofer, and two Surround output signals are created from the processed stereo inputs (main and three aux stereo inputs). These signals are properly combined with the discrete center and subwoofer inputs, and the discrete 5.1 input, to provide system drive signals.

Multisonic Imaging works equally well with live mixes, recorded material, stereo instruments, or a combination of those. Since there is no dynamic steering or gain riding (unlike some other surround processors), absolute signal integrity is maintained. Listeners who are way off center can hear proper stereo imaging.

Typically, three-fourths or more of an audience can hear a Multisonic® mix with excellent stereo perspective. In addition,

the clarity of the sound is greatly improved and the overall sound level can be lower for the same impact.

Features

- ▲ Provides True Stereo Sound For An Entire Audience Or Room
- ▲ Works With All Stereo Sources And Mixes
- ▲ Inputs For Stereo, Discrete Center, and Discrete Sub Sources
- ▲ Subwoofer Crossover with Switchable Filters
- ▲ High-Quality Derived Surround with Spreadsound
- ▲ Output Level Controls
- ▲ Balanced XLR Inputs and Outputs
- ▲ Auxiliary Stereo Inputs with Gold RCA's

In smaller rooms, the "sweet spot" is enlarged so much that excellent stereo imaging can be heard from almost anywhere in the room.

The Multisonic® Imaging system presents any center-panned sounds in the mix (lead vocals, drums, etc.) clearly from the center speaker, while sounds panned toward the sides or back are simultaneously correctly localized. Multisonic® Imaging is

based on a precise linear matrix, electroacoustically optimized for maximum spatial separation.

All types of stereo and surround mixes are reproduced with surprising clarity, excellent imaging, and unrivaled dynamics.

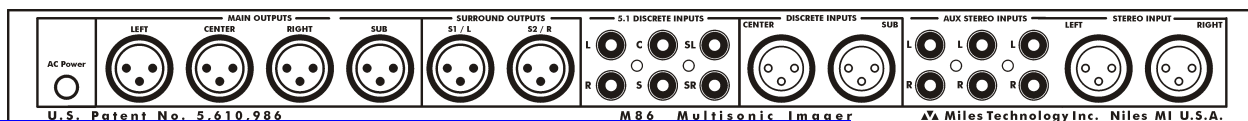
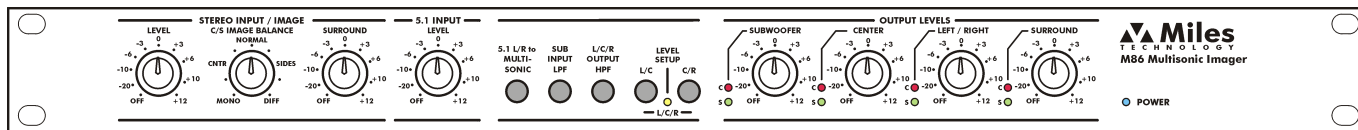
The M86 allows convenient integration of 5.1 and stereo sources in a surround system. Appropriate inputs are mixed together to allow operation with various sources without the need for input switching.

For live mixing applications, the M44 enables a stereo console to pan sounds much like an LCR console. The Discrete Center and Discrete Sub Inputs allow direct signal routing for specific elements in the mix, while simultaneously allowing left-center-right imaging from stereo-panned portions of the mix.

Multisonic® Imaging can be used in discrete LCR systems to handle two-channel sources such as recorded music or effects. Thus the benefit of the left/center/right loudspeaker format can be fully realized.

The M86 derives surround outputs from stereo sources using our Spreadsound™ all-pass filter process which gives super-clean spatialization to the surround signals without causing any echo or reverb effects.

Made with pride in the U.S.A., the Miles Technology M86 is backed with our comp-rehensive three-year warranty.



M86 Technical Description & Specifications

The M86 Multisonic® Imager features multiple left/right stereo inputs, Multisonic® Imaging circuitry, a set of 5.1 inputs, discrete center and sub inputs, and six outputs for left, center, right, sub, left surround, and right surround.

Multisonic Imaging is a patented linear-matrix system which provides optimum spatial separation and acoustic presentation of two-channel stereo mixes using three front loudspeakers. The Multisonic Balance control adjusts the width of the stereo soundstage.

The discrete 5.1, center, and sub inputs route to their respective outputs, and are mixed with the corresponding Multisonic signals (derived from the left/right stereo inputs) to provide optimum imaging from all sources simultaneously. The 5.1-to-Multisonic switch processes the left and right channels of the 5.1 source to create a center-channel signal.

The surround outputs provide a mix of the 5.1 surround inputs, and a surround signal derived from the stereo inputs using the left-minus-right difference component processed by our unique Spreadsound quadrature-phase-shift system for an improved sound field.

All inputs also route to the crossover to contribute to the subwoofer output. Level balance of the speakers is easily set by ear using the Setup switches and the output level controls.

The M86 features high-quality op amps for low noise and distortion, and +/- 15-volt rails for maximum dynamic range. Precision resistors and other quality components are used throughout.

Inputs

Main Stereo Left and Right, Discrete Center, and Discrete Sub:

- Balanced XLR connectors
- Maximum input level: +20 dBu
- Input impedance: 22K ohms

Aux Stereo Left and Right (x3), and 5.1:

- Gold RCA connectors
- Maximum input level: +11 dBu
- Input impedance: 8.5K ohms

Outputs

Left, Center, Right, Left Surround, and Right

Surround:

- Balanced, XLR connectors
- Maximum output level: +26 dBu/1200 ohms
- Differential output impedance: 100 ohms

Controls

- Input Gain: Stereo Inputs, 5.1 Input
- Multisonic Balance
- Derived Surround Level
- Output Levels: Sub, Center, Left/Right, Surround
- 5.1 to Multisonic switch
- Sub Input LPF switch
- L/C/R Output HPF switch
- L/C and C/R Setup switches

Frequency Response

- To Multisonic outputs: 20 Hz to 20 kHz ± 1 dB
- To Surround outputs: 100 Hz to 20 kHz ± 1 dB

Crossover Filters:

- 4th Order Linkwitz-Riley, 95 Hz
- Switchable high-pass for L/C/R outputs
- Fixed high-pass for Surround outputs
- Switchable low-pass for Discrete Sub input

Total harmonic distortion

20 Hz to 20 kHz, at full output: <0.02%

Output noise

20 Hz to 20 kHz, unweighted:
<-90 dBu; <-84 dBu balanced

Power Requirement

Configurable for 120 or 240 Vac.

Dimensions

- 19 in. x 1.75 in. x 12.0 in.
- (48.26 cm x 4.45 cm x 30.5 cm)
- 1U rack mount
- Weight: lbs. (kg)

Note: 0 dBu = 0.775 V rms

Warranty

Three years from date of purchase. Contact Miles Technology for details.

Multisonic

Features/Advantages

- ▲ Greatly Enlarged "Sweet Spot"
- ▲ Highest-Quality Audio Performance
- ▲ Works with All Program Sources
- ▲ LCR Performance From Stereo
- ▲ Routes/Processes DVD and 5.1 Sources
- ▲ Discrete Inputs for Live Productions
- ▲ Cleaner, More Dynamic Sound
- ▲ Excellent Center Focus
- ▲ Zero Dynamic Distortion
- ▲ Very Forgiving of Imperfect Setups
- ▲ More Even, Balanced Sound Stage
- ▲ Excellent Clarity with Spatial Separation
- ▲ Adjustable Center/Side Mix Ratio
- ▲ Derived Surround w/ Spreadsound
- ▲ Simple, Quick, and Precise Setup
- ▲ Balanced Inputs and Outputs
- ▲ Cost Effective
- ▲ Solid Warranty

Compared to Discrete L/C/R

- ▲ Identical results at left-center and right-center pan positions.
- ▲ Identical results at center when using discrete center input.
- ▲ Works with standard stereo console for much lower system cost and simplified operation.
- ▲ Better audience coverage with imperfect loudspeaker/room setups.
- ▲ Can be effectively used with discrete LCR systems to handle stereo sources (recordings, effects, stereo instruments or mikes).

Compared to Other Decoders

- ▲ Multisonic Imaging does not use steering or gain riding and thus is sonically and dynamically superior.
- ▲ Unlike steered systems, Multisonic can "image" *all directions at once*.
- ▲ The sound field is totally stable.
- ▲ No mode switching is necessary.
- ▲ Works perfectly with all program sources, including music CD's and surround "encoded" videos.



1520 Cedar Point Drive
800-280-8572 • 269-683-4400

• Niles MI 49120 •
• Fax 269-683-4499

www.milestech.com
• Email info@milestech.com