



Precision VU Metering For MultiMAX, ForMAX, and RecordistMAX

With MultiMAX

MultiMAX EX's 8 meter outputs automatically follow the Monitor Source selection, allowing the engineer to check the mix of the selected Wide Inputs and the results of downmixing, recorder returns, encoder outputs (including Lt Rt) and the mixing console or DAW.

With ForMAX

ForMAX provides 24 meter outputs that follow the PEC/Direct (recorder/mix) switch selection of the 2 groups of 24 inputs to the unit's reassign matrix.

With RecordistMAX

RecordistMAX offers 8 meter feeds, each denoting a summed signal from any combination of the like-numbered inputs from the recorders (for example, meter #1 may be fed by any combination of track #1 outputs from the connected recorders).

VuMAX

Make Surround Level Decisions With Confidence



Free Surround Sound Reports

With the right information you can confidently add surround sound capabilities to your facility. Request your free copies of *Secrets Of Doing Surround Sound On Your Existing Console* and *A VU On Downmixing*. Phone us now at (800) 582-3555 or visit our website at www.martinsound.com.

Precision VU Metering For MultiMAX, ForMAX And RecordistMAX

Industry standard VU metering for surround production

VuMAX provides an off-the-shelf metering solution that, when combined with MultiMAX EX, ForMAX, and RecordistMAX, further enhances any studio to add extensive metering, monitoring, and film-style mixing functionality in the complete range of mono, stereo, and multichannel production formats.

VuMAX houses eight precision VU meters, lights, and buffering circuitry, and requires 4U of rack space. It is an integral part of our monitoring component family and may be easily connected - singly or in multiples - to MultiMAX EX, ForMAX, and RecordistMAX to provide visual indication of the selected monitor source levels, as follows:

VuMAX works with MultiMAX, ForMAX & RecordistMAX

- MultiMAX EX's eight meter outputs automatically follow the Monitor Source selection, allowing the engineer to check the mix of the selected Wide Inputs and the results of downmixing, recorder returns, encoder outputs (including Lt Rt) and the mixing console or DAW.

- ForMAX provides 24 meter outputs that follow the PEC/Direct (recorder/mix) switch selection of the two groups of 24 inputs to the unit's reassign matrix.

- RecordistMAX offers eight meter feeds, each denoting a summed signal from any combination of the like-numbered inputs from the recorders (for example, meter #1 may be fed by any combination of track #1 outputs from the connected recorders).

Visual monitoring of levels

MultiMAX EX, ForMAX, and RecordistMAX add extensive monitoring capabilities to your facility. Whether you are simply looking to augment the stereo monitor section of your mixing console or workstation so that you can do surround sound projects in your studio, or wish to upgrade to sophisticated film-style mixing functionality in the control room and the machine room, Martinsound's MAX family of monitoring components can handle it all.

But visual monitoring can be equally as important as audio monitoring. MultiMAX EX, ForMAX, and RecordistMAX are all designed with user-friendly interfaces, utilizing graphic LCD or LED displays. They are not only intuitive in operation but also provide users with a visual indication of their signal path setups and status at a glance. Adding VuMAX to these systems adds another level of sophistication.

VU meters are essentially voltmeters, with a display scale divided into 'volume units' or VU. VU meters represent an average value of sound signals in decibels and are not designed to measure peaks or to indicate noise, instead measuring the mean average or RMS voltage of the signal. RMS or

root mean square is an accurate method for reading the true power of a signal. In fact, dB and VU scales are identical only when measuring a steady sine wave tone, where a change in 3 dB equals a change of 3 VU, for example.

Zero on a VU meter is set to the level at which the signal displays one percent total harmonic distortion. VU meters respond relatively slowly and the ballistics – the rate of acceleration and deceleration – do not allow it to measure transient signals shorter than 300 milliseconds. But as with any meter, a VU meter can be useful on the very basic level of establishing the presence of a signal, something that may not be apparent due to conditions elsewhere in the signal chain.

The VU meter is useful because it corresponds very closely to the way the human ear senses level changes. It provides a good indication of subjective loudness and is an invaluable tool when matching program levels. Mixing intermittent signals such as dialog using VU meters becomes an acquired skill for many engineers. They prefer VU meters, which have been the metering standard for decades, and they know intuitively how to work with them. The relative slowness of the VU meter can even be a benefit when monitoring transients, since an engineer might tend to be over cautious when using peak metering to measure levels that actually cause very little distortion.

With the boom in surround sound production has come a number of recommendations and standards from professional organizations regarding monitor reference levels in the studio for specific applications. In film mixing, for example, it is recommended that program material should be monitored at the exact same level at which it will be reproduced. Without good meters it can be very difficult to calibrate and align the studio equipment and set an accurate, repeatable reference level for recording and monitoring.

But good VU meter displays can be hard to find. Mechanical meters take up a lot of space. As mixing consoles and recorders have steadily increased in input capacity and shrunk in overall size many manufacturers have chosen to fit bargraph meters instead of VU meters. If VU meters are fitted in addition to bargraphs they can often be tiny or limited to a stereo pair. Some systems, such as digital audio workstations and some computer-controlled mixing consoles, offer only on-screen graphic representations of meters, which may not always be immediately viewable. As a result, some facilities have had to settle for building their own meter displays, a time-consuming and labor-intensive task. VuMAX now offers a convenient off-the-shelf solution.

The topic of listening levels as they relate to multichannel monitoring is also examined in our free Report, "A VU On Downmixing". Phone or visit our website to request your free copy.



VuMAX is tightly integrated with MultiMAX EX, ForMAX and RecordistMAX.