INTELLIMIX ROOM SOFTWARE DSP ADDS REAL-TIME REVERBERATION REMOVAL

Even in rooms that are quiet, reflective surfaces can seriously degrade sound quality and intelligibility. IntelliMix Room DSP software now includes the AI Deverb algorithm that removes reverberation in real time.

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One ever-present challenge for AV/IT managers is dealing with room acoustics. Even in rooms that are quiet, reflective surfaces can seriously degrade sound quality and intelligibility. Reflected sound waves make the sound hollow, almost like the talker is in a can or a barrel. That makes it harder for listeners to understand them which can lead to listening fatigue.

IntelliMix Room DSP software now includes AI Deverb, an advanced audio processing module that can remove reverberation in real time. It intelligently detects and preserves speech while eliminating hollow sound. Real-time measurements are used to continually adapt to the room's acoustic characteristics and remove tonal coloration from reverberation and preserve natural speech quality.

Adjustable for Different Rooms

The Deverb algorithm works on the audio output from the automatic mixer processing block. The intensity is adjustable (Low, Medium, High) to suit rooms with different acoustic characteristics and different levels of tolerance for residual reverberation.

AI Deverb is included with IntelliMix Room DSP software beginning with firmware version 6.2. Now you can reduce reverberation without sacrificing speech clarity, so you get clear and natural sound in any setting.

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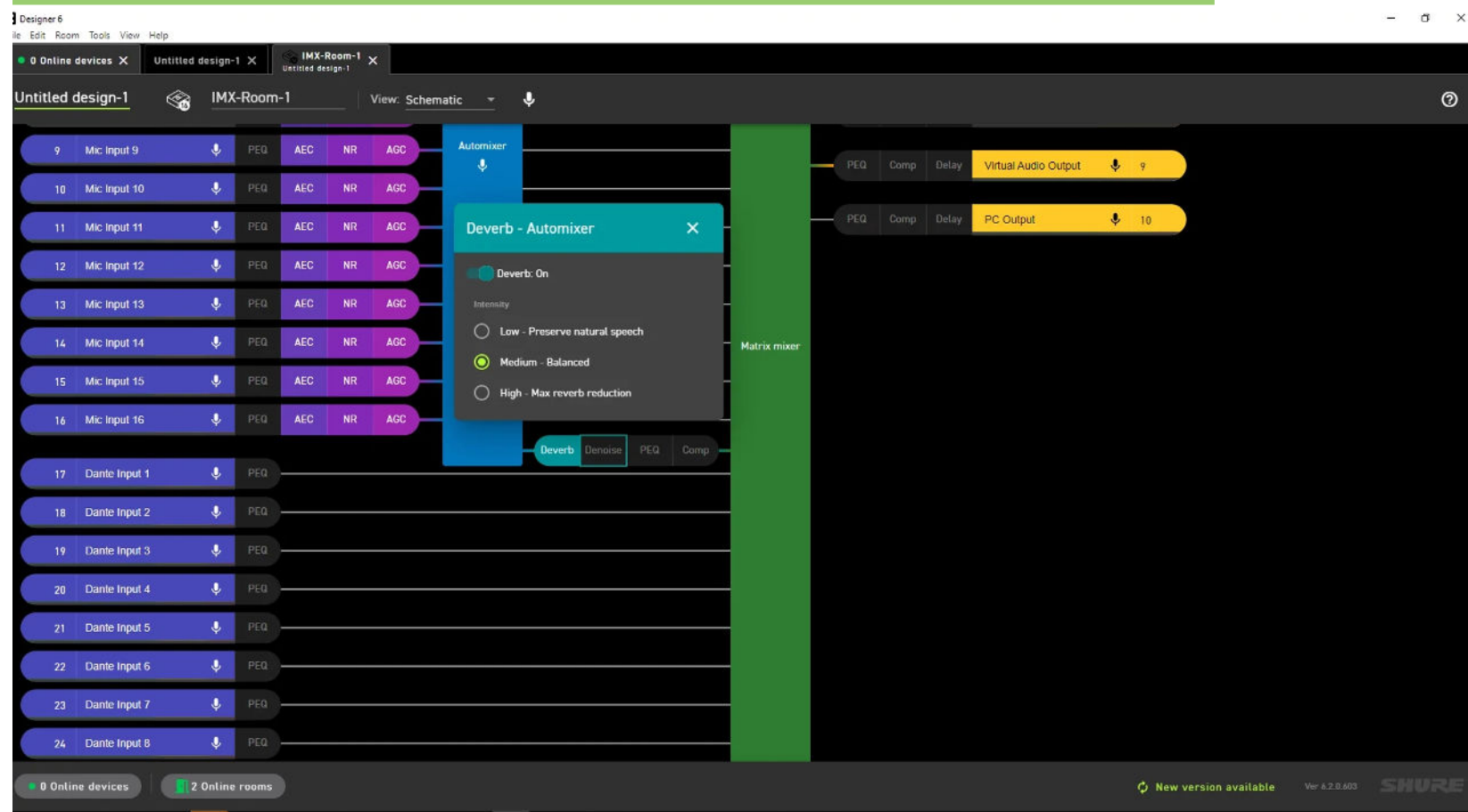
3 NEW FEATURES FOR MICROFLEX ADVANCE ARRAYS

Microflex® Advance™ Array Microphones deliver powerful, versatile audio solutions for large or complex meeting spaces, and their performance and capabilities just keep getting better. With firmware version 6.2, MXA arrays add some exciting new features to eliminate unwanted sounds and improve interactivity.

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VIRTUAL ACOUSTIC BOUNDARY

Virtual Acoustic Boundary technology detects voices or noises coming from outside of microphone coverage areas and removes them from the audio mix. The Virtual Acoustic Boundary prevents sounds outside of the coverage area from being heard. If a talker inside of a coverage area is speaking, the voice of another talker outside of the coverage area will be removed, even if they are talking at the same time

Here's how it works. Normally, if Talker A (inside a coverage area) and Talker B (outside of coverage areas) speak at the same time, you will mostly hear Talker A. But some of Talker B's voice will carry acoustically into Talker A's coverage area and be heard in the Automix output, but slightly muffled. This applies to noise as well.

With Virtual Acoustic Boundary, a "hidden" pickup lobe is deployed on Talker B and the IntelliMix DSP algorithm digitally removes their voice from Talker A's audio. Talker B is not heard in the Automix output.
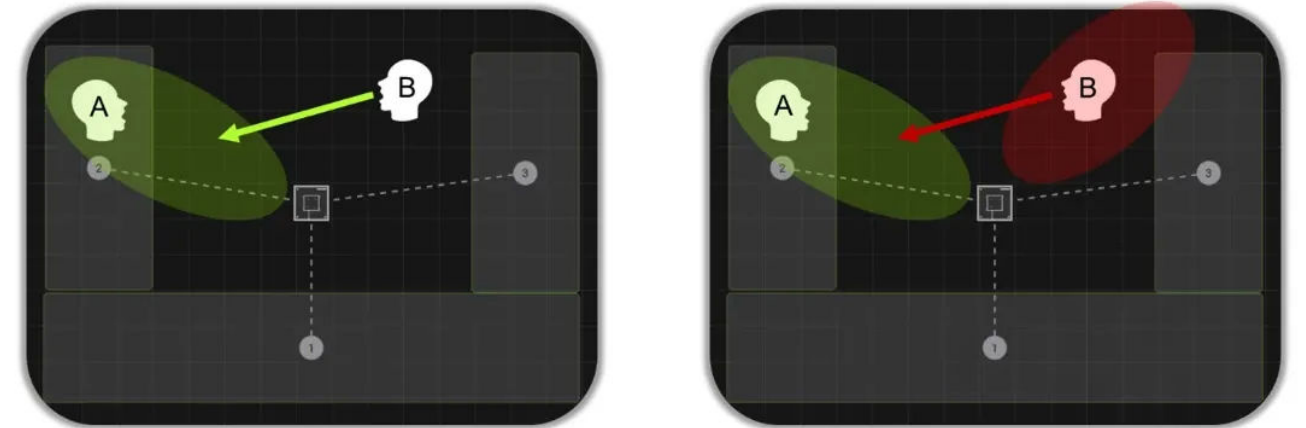
The Virtual Acoustic Boundary relies on DSP, which means it can behave differently under different conditions. It will deliver the most improvement in medium to large rooms where there is some space between pickup lobes and in rooms without many reflective surfaces like glass or concrete that can make it harder for the algorithm to localize sound sources. The feature is adjustable to suit different situations.

Virtual Acoustic Boundary is included in MXA920 ceiling array microphones with firmware version 6.2 and later, and is only available in Automatic Coverage Mode.

In previous iterations, audio pickup could be triggered by either voices or random noises in the room. So if Person A is talking and Person B across the table opens a bag of chips, people on the far end of the call will hear it.

Speech Gating Threshold and Enhanced Noise Filtering work together to help the microphone discern between voices and noises. This can prevent noises such as chip bags and keyboard typing from activating microphone pickup, so when Person B opens their chips, the people on the far end won't hear it. It also removes any residual trace of that noise from Person A's audio.

Note: The Speech Gating Threshold and Enhanced Noise Filtering adjustments can't do anything to remove the noise if Person A is talking and opening a bag of chips at the same time. Only the Denoiser feature in the IntelliMix Room DSP software can do that.

The Speech Gating Threshold adjustment provides increased control over the automixer gating decision, focusing on speech sources over noise sources. A higher setting is more aggressive at gating off for noise sources, while a lower setting is more tolerant of noise to preserve speech.
The Enhanced Noise Filtering adjustment removes noise from the automix output signal. It is designed for noises that are inside a microphone's coverage area but that are not located next to a person talking.

Examples of noises include:

+ Shuffling papers across the table from a person talking
+ Keyboard typing across the table from a person talking
+ Loud food container across the table from a person talking

Note: For constant background noise sources such as HVAC, use the noise reduction feature.

In the example below, Enhanced Noise Filtering removes loud typing sounds happening at one end of coverage area 2 and focuses on the person speaking.
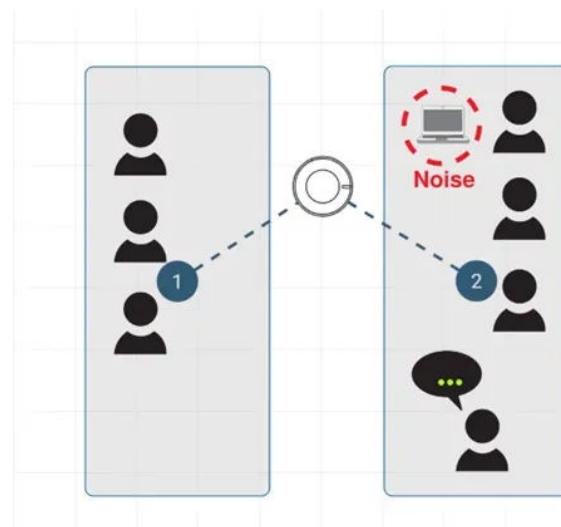
Speech Gating Threshold and Enhanced Noise Filtering are included with the MXA920, MXA902, MXA901, and MXA710 array microphones with firmware version 6.2.x and higher.

The IntelliMix DSP includes Noise Reduction to reduce background noise in the room and Non-Linear Processing to prevent residual echo that is not eliminated by the Acoustic Echo Cancellation algorithm. These features are adjustable with static settings (Low, Medium, or High). If acoustic conditions in the room change, noise reduction or echo cancellation performance may not be optimal because these settings are higher or lower than they need to be.

Now, there's a new "Auto" setting (which will be the default) that allows the Noise Reduction and Non-Linear Processing algorithms to dynamically adapt to the acoustic environment. If room conditions get worse, settings are increased; if conditions improve, they decrease. When people on the near end and the far end are both speaking (called "doubletalk"), the Non-Linear Processing setting will be reduced to prevent suppression or "ducking". When just one person is talking, the Non-Linear Processing will be increased to prevent echoes. You always have just the right amount of processing to get the best possible sound quality and interactivity.

Automatic Noise Reduction and Non-Linear Processing is included with the MXA920, MXA902, MXA901, and MXA710 array microphones with firmware version 6.2.x and higher.

**INTELLIMIX®
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