IntelliMix Room

Software DSP Quick Start Guide

Quick start guide for Shure IntelliMix Room DSP software. Learn how to install and activate the software to bring crystal-clear audio to all of your rooms.

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IntelliMix Room
Software DSP Quick Start Guide

Get Started with IntelliMix® Room

Introducing IntelliMix Room, software-based audio processing for AV conferencing. With no DSP hardware required, installs are simpler and meeting spaces are cleaner with vastly improved audio. Never wait for DSP again. Activate your free 90-day trial and set up your room—all in under 5 minutes. Enjoy premium, easy conferencing today.

This page focuses on how to deploy IntelliMix Room software to supported systems or other third-party compute devices.

To set up an IntelliMix Room Kit, refer to the user guide.





To set up the IntelliMix Foundation System with your own devices, refer to the user guide.



Required Software and Hardware

IntelliMix Room requires other software and hardware to work in your room. You'll need the following:

Software:

- **Videoconferencing software** (such as Zoom or Microsoft Teams) installed on the same PC as IntelliMix Room
- **Optional:** Shure Designer software installed on a separate computer and connected to the same network as IntelliMix Room.
  - Designer offers routing and control for groups of Shure devices.
  - Do not run IntelliMix Room and Designer on the same computer.

Hardware:

- **Dante-enabled microphone**, such as a Shure MXA920, MXA710, or MXA310
  - IntelliMix Room is optimized for Shure Microflex Ecosystem mics, but you can route any Dante-enabled mic to it
- **PC** or other physical device optimized for running IntelliMix Room (no virtual machines)
  - Refer to the System Requirements for supported hardware systems.
- **Other room components** such as displays, cameras, loudspeakers, switches, Cat5e cables, and meeting control interfaces

Install IntelliMix Room

Before installing, make sure you have admin rights for all devices.

1. Purchase IntelliMix Room at shure.com/imxroom and download the .exe.
2. Launch the installation file and follow the steps.
3. Choose network interface cards (NICs) to use for Shure control, Dante audio, and licensing.
   - The Shure control NIC must match the control NIC used by Designer.
   - **Important:** Choose a permanent, non-removable NIC for licensing. This setting can't be changed after installation.
4. Choose which PC optimizations to make. For the best audio performance, choose all options.
5. After the installation finishes, follow the steps to restart the PC.
6. Right-click the icon in the system tray to activate or deactivate your license, start room setup, or find settings.

Set Up a Room

IntelliMix Room runs on the same computer as your room's videoconferencing software. After installation, use the room setup feature to:

- Activate a license
- Find other Shure devices on the network
- Create audio/mute control routes and optimize audio settings (like Designer's auto route feature)
- Set device passwords

You can also use Designer to route and set up Shure devices. Designer offers full control of all device settings.

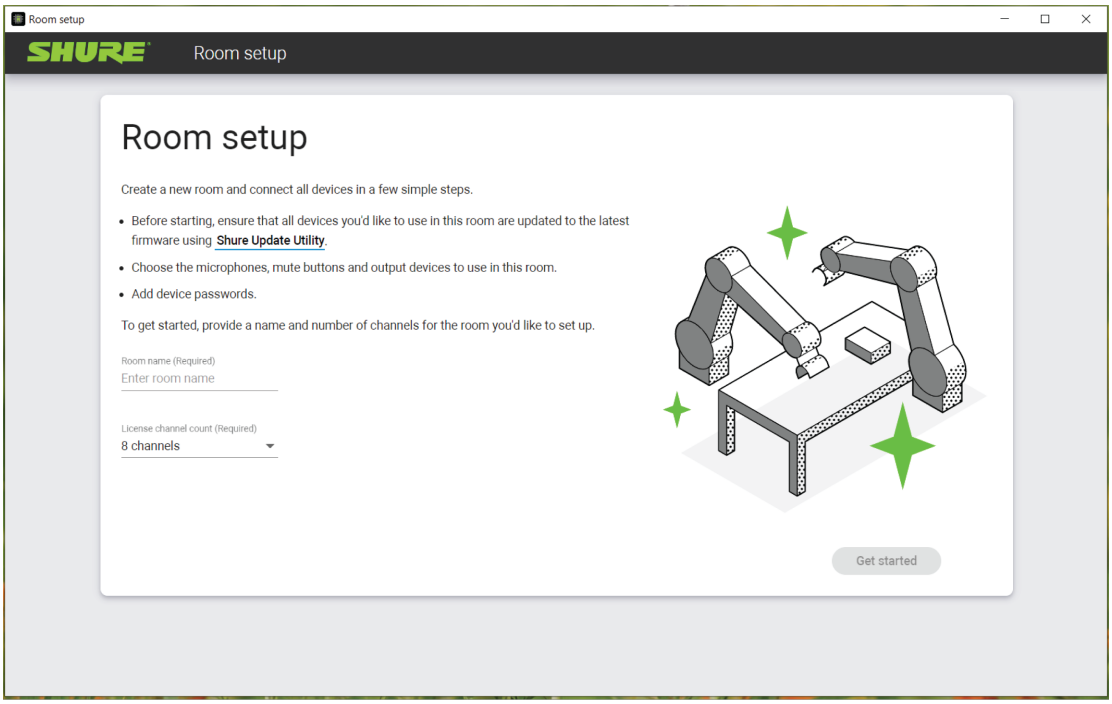
Before You Begin:

- Update Shure devices to the latest firmware using Shure Update Utility

- Check that devices are connected to the same network as IntelliMix Room
- Have your license ID ready (find in your confirmation email)

Step 1: Run Room Setup

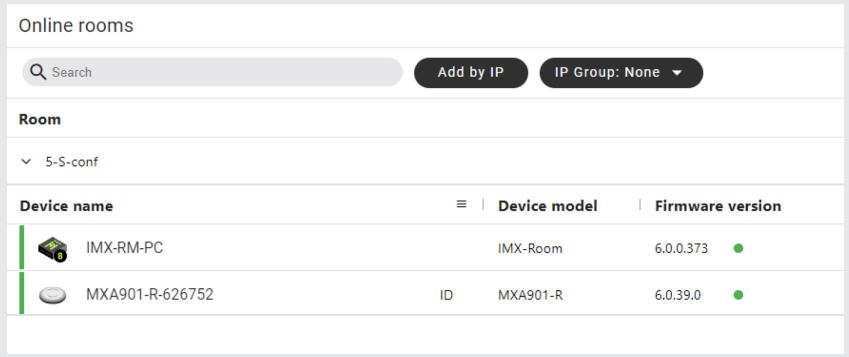
1. Launch room setup after installing IntelliMix Room. Alternatively, start it from the Windows system tray: `IntelliMix Room` > `Room setup`.



2. Enter a room name and license information. You need an internet connection to activate the installation, but not to start a free trial.
3. IntelliMix Room finds other Shure devices on your network. Choose the correct devices for the current room. Devices include:
   - Microphones
   - Mute buttons
   - Networked loudspeakers
4. Add a password for devices. You can set a common password or use existing device passwords.
5. IntelliMix Room activates the license, creates audio/mute control routes, optimizes audio, and sets device passwords.

Step 2: Listen and Adjust

1. Open your videoconferencing software. In the settings, choose **IntelliMix® Room Echo Canceling Speakerphone** as the speaker and microphone.
2. Place a test call with the whole system. Have the far-end caller tell you how your signal sounds.
3. To adjust your signal, use Designer. Open the online rooms list and find the room you created. Open devices to change their settings.



Activate IntelliMix Room

To activate IntelliMix Room on a device, go to `Windows system tray` > `Right-click logo` > `Activate/Deactivate`. If you're running IntelliMix Room on an IntelliMix Foundation Compute, you don't need to activate the license.

The room setup feature also activates the software license on a device.

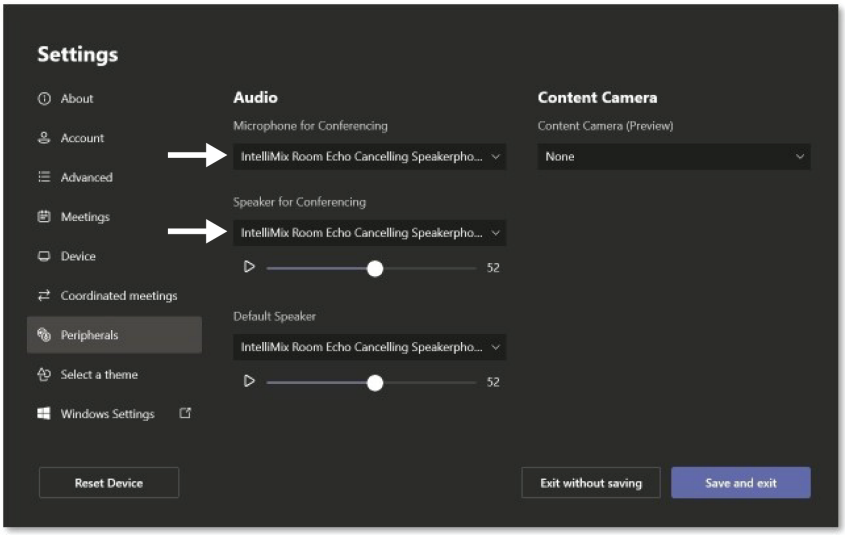
IntelliMix Room must be installed on a device before you can activate that license.

Required for activation:

- Available license
- License ID (find in your purchase confirmation email or in your account at software.shure.com)
- Internet connection for device running IntelliMix Room

Set Audio Devices in Videoconferencing Software

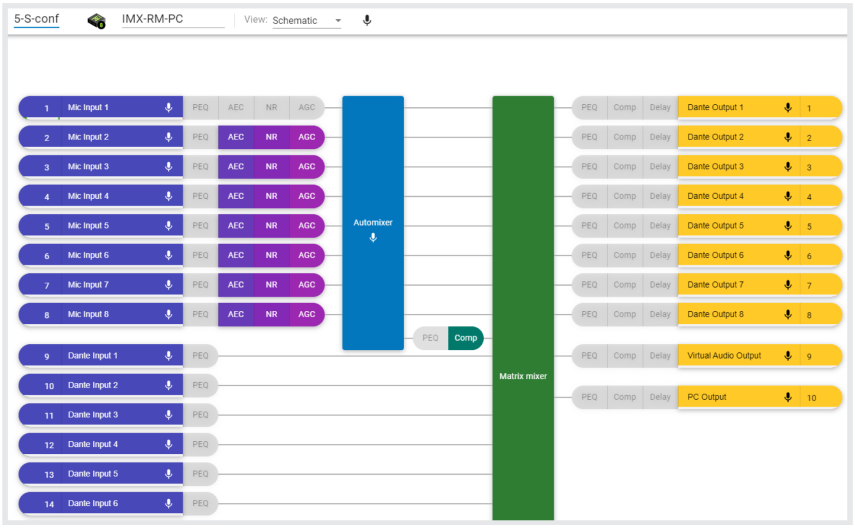
Select **IntelliMix Room Echo Cancelling Speakerphone** as the speaker and the microphone in your videoconferencing software. Do the same thing in the computer's sound settings.



- The microphone setting sends the room's mic signal to the videoconferencing software.
- The speaker setting sends a far-end signal from the videoconferencing software to IntelliMix Room.
  - This is how IntelliMix Room gets an AEC reference and a signal for local sound reinforcement.

Schematic View

When you open IntelliMix Room in Designer, you'll see the schematic view. This view shows the entire audio signal chain. Double-click inputs, outputs, DSP blocks, or the matrix mixer to adjust settings.



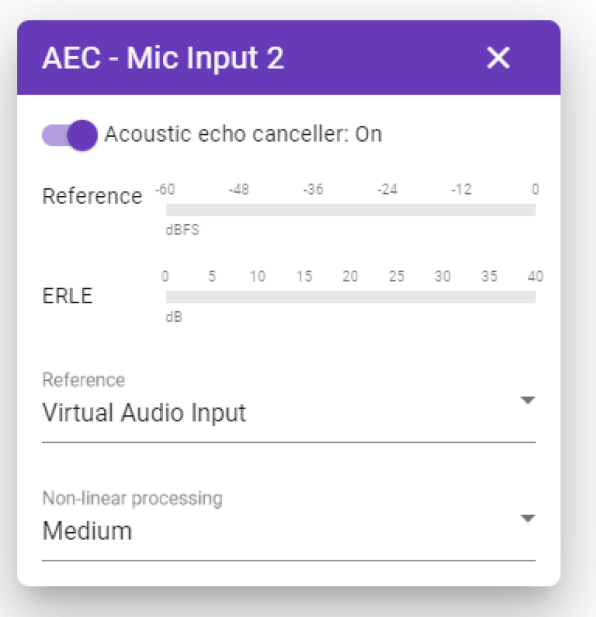
IntelliMix DSP

IntelliMix Room software uses DSP to clean up common meeting room audio problems. Open an IntelliMix Room installation in Designer to see all DSP settings.

For full details about DSP settings, see the IntelliMix Room user guide.

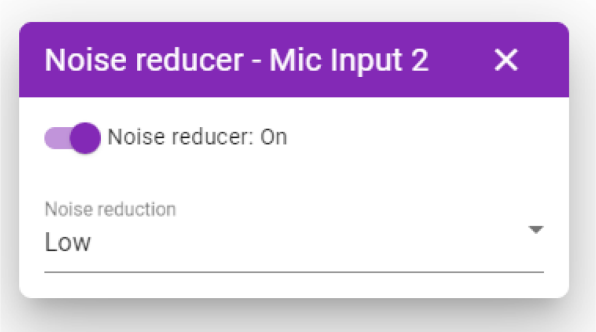
Here's what some of the DSP blocks can do for your signal:

Acoustic Echo Cancellation (AEC)



AEC keeps your mic signal clear and free of distracting echo from the far end. IntelliMix Room uses per-channel AEC, which means that each input channel can have its own reference signal. You can even set up stereo left and right references in rooms with stereo audio.

Noise Reduction

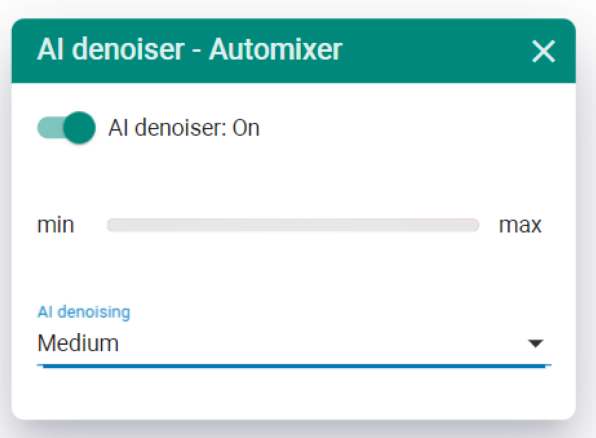


This DSP feature keeps the focus on your voice by reducing the level of background noise. Noise reduction is perfect for constant noise sources like:

- Loud HVAC systems
- Network switch or server fans
- Display projectors

Noise reduction and the AI denoiser work together seamlessly to control constant background noise and fast-occurring noises in your audio signal.

AI Denoiser

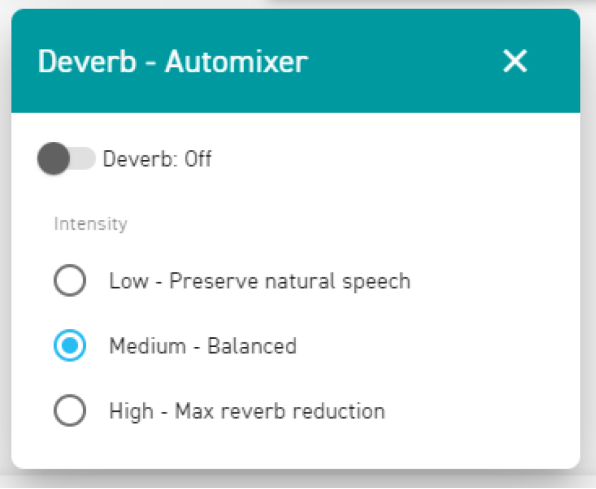


Stop random, fast-occurring noises from cluttering up your audio signal with the AI denoiser. This DSP block minimizes sounds such as:

- Typing
- Shuffling papers
- Slamming doors

Let the AI denoiser take care of random bursts of noise and then use noise reduction to control constant background noise (such as HVAC systems or traffic).

Deverb



Deverb helps improve the signal going to the far end by reducing the amount of reverb. Use deverb in rooms that:

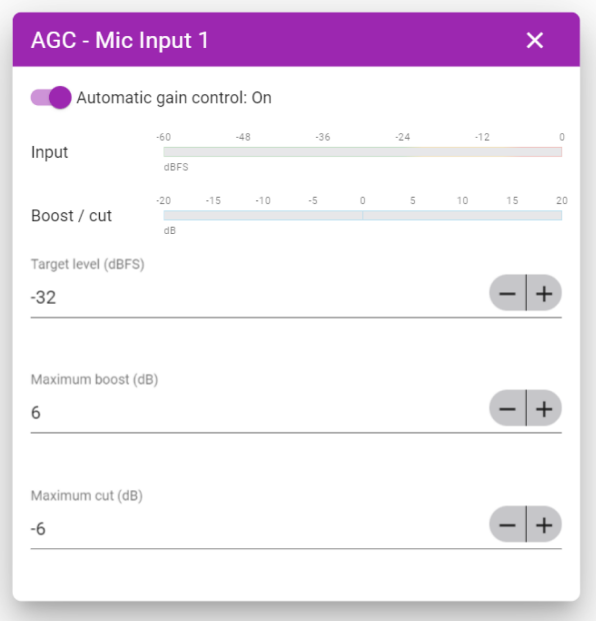
- Have lots of hard, reflective surfaces
- Don't have proper acoustic treatment

To turn on deverb, open IntelliMix Room in Designer and go to `Schematic` > `Deverb`. Deverb is available on the automix output signal.

Choose from 3 intensity options: low, medium, or high.

For best results, make a test call with your videoconferencing software and have someone on the other end tell you how your signal sounds as you test each deverb setting.

Automatic Gain Control (AGC)

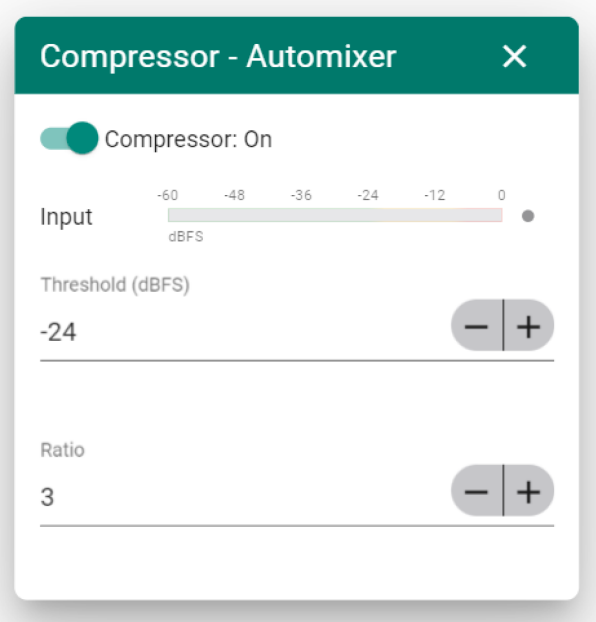


Automatic gain control adjusts channel levels to create a consistent volume for all talkers in all scenarios. For quieter voices, it increases gain. For louder voices, it attenuates the signal.

AGC is post-fader and adjusts the channel level after the input level has been set. Use AGC when:

- The distance between the talkers and the microphone varies
- Many different people will use a room's conferencing system

Compressor

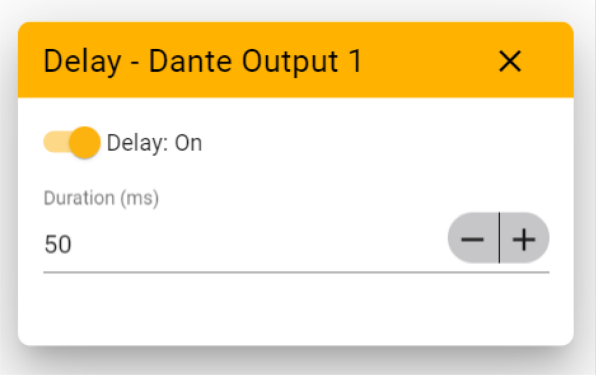


Use the compressor to control the dynamic range of a signal. This means that if there's an unexpected spike in a signal's level, the compressor reduces the signal level to be closer to typical levels.

IntelliMix Room has compressors for:

- Your microphone signal from the automixer
- All far-end signals going to Dante outputs, PC outputs, or the virtual audio output

Delay



Delay is useful for synchronizing audio and video signals or time-aligning loudspeakers in different locations for even coverage.

This block is available on any of the Dante output signals. Adjust the delay in milliseconds and test accordingly.

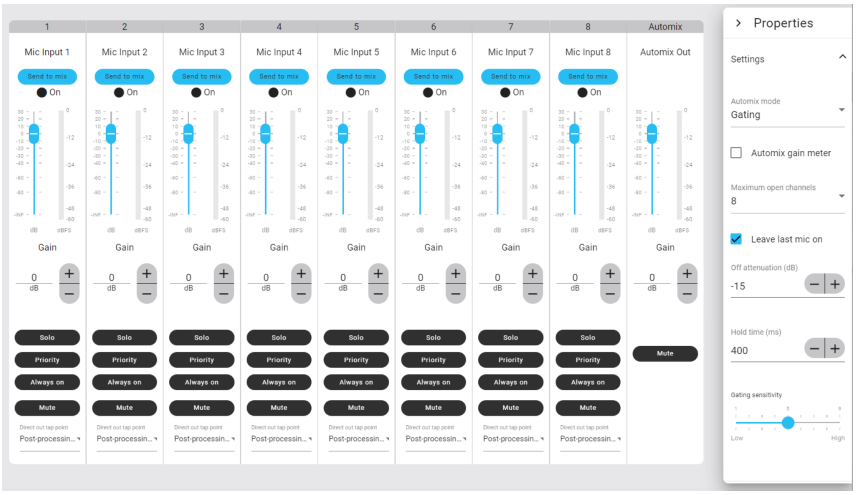
Parametric Equalizer

Improve audio quality by adjusting a signal's frequency response with the parametric equalizer. PEQ is available on inputs and outputs.

Uses for EQ

EQ Application	Suggested Settings
Treble boost for improved speech intelligibility	Add a high shelf filter to boost frequencies greater than 1 kHz by 3-6 dB
HVAC noise reduction	Add a low-cut filter to attenuate frequencies below 200 Hz
Reduce flutter echoes and sibilance	Identify the specific frequency range that "excites" the room: 1. Set a narrow Q value. 2. Increase the gain to between +10 and +15 dB, and then experiment with frequencies between 1 kHz and 6 kHz to pinpoint the range of flutter echoes or sibilance. 3. Reduce the gain at the identified frequency (start between −3 and −6 dB) to minimize the unwanted room sound.
Reduce hollow, resonant room sound	Identify the specific frequency range that "excites" the room: 1. Set a narrow Q value. 2. Increase the gain to between +10 and +15 dB, and then experiment with frequencies between 300 Hz and 900 Hz to pinpoint the resonant frequency. 3. Reduce the gain at the identified frequency (start between −3 and −6 dB) to minimize the unwanted room sound.

Automixer



The automixer mixes all mic input channels into a convenient single output for your videoconferencing software. Shure's automixer algorithms are known for fast-acting, seamless channel gating. This means everyone's voice is picked up clearly without having too many channels open at the same time.

For best results, pair IntelliMix Room with Shure microphones in the room for easy deployment.

Matrix Mixer

The matrix mixer routes audio signals between inputs and outputs for simple and flexible routing:

- Send a single input channel to multiple outputs
- Send multiple input channels to a single output

Crosspoint Gain

Crosspoint gain adjusts the gain between a specific input and output, to create separate submixes without changing input or output fader settings. Select the dB value at any crosspoint to open the gain adjustment panel.

Gain staging: Input fader > crosspoint gain > output fader

Routing Channels

Connect inputs and outputs by selecting the box where they intersect.

Additional Resources

- IntelliMix Room User Guide
- IntelliMix Room System Requirements
- IntelliMix Room Command Strings
- Shure Knowledge Base FAQs
- IP Ports and Protocols for Shure Devices
- Firewall Rules for Shure Software Applications
- Shure Enterprise Networking Troubleshooting Checklist
- Training from the Shure Audio Institute
- Shure Systems YouTube channel

Download Shure Software

- Shure Designer
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