IntelliMix Room

Getting Started

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.

Version: 7.8 (2024-C)

Table of Contents

IntelliMix Room
Getting Started

What is IntelliMix® Room?

IntelliMix Room is digital signal processing (DSP) software designed to optimize the performance of Shure networked microphones with videoconferencing software, resulting in better conference room audio all around. It's designed to run on the same computer as any videoconferencing software, which reduces the amount of equipment in the room.

Important: IntelliMix Room not Supported in Designer 6.0

Shure recently announced the release of Designer 6.0 software. However, IntelliMix Room isn't currently supported in the Designer 6.0 release.

We recommend using Designer 4.7.25 to work with installations of IntelliMix Room. Shure plans to add IntelliMix Room support to a future release of Designer at the 6.x level.

What Do I Need to Use IntelliMix Room?

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 full customization and control for all installations of IntelliMix Room in one place.
    - Do not run IntelliMix Room and Designer on the same computer.

Hardware:

- **Dante-enabled microphone**, such as a Shure MXA920, MXA710, or MXA310
- **PC** or other physical device optimized for running IntelliMix Room (no virtual machines)
    - See the System Requirements for recommended specifications.
- **Other room components**, such as displays, cameras, loudspeakers, switches, Cat5e cables, and meeting control interfaces

How to Purchase IntelliMix Room

To purchase, contact your local Shure sales representative (find yours at shure.com). For each installation, you can choose from 8 or 16 channels of IntelliMix DSP.

After purchasing, you'll receive an email with instructions for creating a software.shure.com account, where you can find your license ID. The license ID activates all purchased installations.

Next steps:

- Install IntelliMix Room on all devices.
- Discover and activate all IntelliMix Room installations using Shure Designer software or the room setup feature.
- Apply DSP and route audio for each installation using Designer.

Install IntelliMix Room

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

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

Next Steps:

- Activate IntelliMix Room to pass audio. You can use:
  ◦ Designer software to activate and control many installations of IntelliMix Room (free at shure.com/designer)
  ◦ Room setup to set up devices and activate 1 installation of IntelliMix Room at a time
- Control DSP, routing, and all other settings with Designer.

Shure Control and Dante Audio NICs

This software sends 2 types of data over the network: Shure control data and Dante audio data. You can use the same NIC (network interface card) for both, or use 2 different NICs to separate the traffic.

During installation, you will be asked to choose a network for each one.

Shure control NIC:

- Choose the network that Designer uses.
- Used for device discovery and control

Dante audio NIC:

- Choose the same network as other Dante devices to send audio between devices.
- Cannot use Wi-Fi
- Used to carry Dante digital audio

To change the NICs after installation, click the IntelliMix Room icon in the system tray of the computer running IntelliMix Room.

To change Designer's NIC, go to Settings.

Discovering IntelliMix Room in Designer

Each installation of IntelliMix Room appears as a separate device in Designer. Each installation's name matches the computer's network name.

To find any online installations:

- Go to Online devices.
- Use the checkboxes to select IntelliMix Room installations and add them to rooms.

If you can't find some installations:

1. Go to the computer that won't appear in Designer.
2. Click the IntelliMix Room icon in the system tray.
3. Make sure IntelliMix Room is using the same Shure control NIC (network interface card) as Designer.

Note: IntelliMix Room doesn't show up in Shure Update Utility or Shure Web Device Discovery.

Activate IntelliMix Room

There are 2 ways to activate IntelliMix Room:

- Use Designer to activate many installations
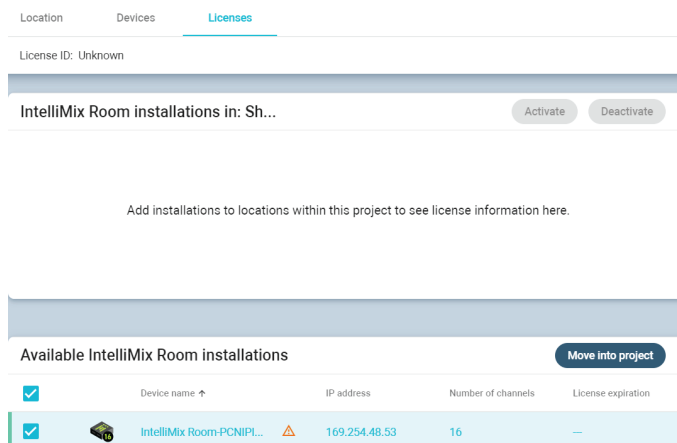- Use the room setup feature to activate 1 installation at a time

IntelliMix Room must be installed on a device before you can activate that license.
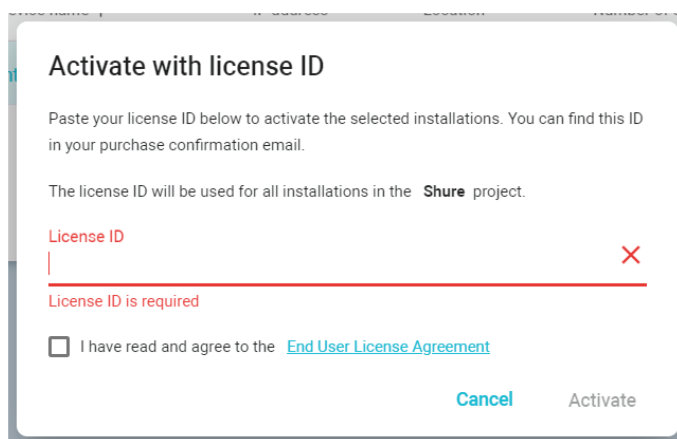
To activate the software, you need:

- A license for each installation
  - Licenses are based on the channel count (8 or 16 channels) for each installation of the software.
- Your license ID
  - A license ID activates all licenses in your account.
  - Find in your purchase confirmation email, or in your account at software.shure.com.
- Internet connection for all devices running IntelliMix Room

Activate Using Designer

1. In Designer, go to Online devices. Check that you can discover all installations.
   - Each installation appears as a separate device. The device name matches the PC's name.
   - If you don't see all installations, check the Shure control NIC settings on the computer running IntelliMix Room. Use the same network as Designer.
2. Create a new project in Designer.
   - If you have many license IDs to manage, create a separate project for each license ID.
3. Go to the project's Licenses page. From the list of available installations, select one to move into the project. Click Move into project.
   - If you add multiple installations to a project at the same time, choose installations that all use the same license type. For example, move all 8-channel licenses into the project first, and then repeat the process for your 16-channel licenses.

4. Click Activate. Choose the license type for the installation and click Next.
5. Add your license ID and click Activate. This license ID is used for all installations in the project. If the device running IntelliMix Room has an internet connection, the installation activates and is ready to use.

Next Steps:

- Create rooms in Designer and add IntelliMix Room installations to them.
- Set up and connect other devices to IntelliMix Room.
- Set IntelliMix Room as the speaker and microphone source in your videoconferencing software.

Configure Devices for IntelliMix Room

With IntelliMix Room software 4.0 and newer, there are 2 ways to set up and connect Shure devices:

- Use Shure Designer software to control all device settings.
    - Activate and control all installations of IntelliMix Room in one place.
    - Access all settings for any connected Shure devices.
    - Pick Designer to fine-tune all IntelliMix Room and Shure device settings.
- Use the room setup feature to set up 1 room at a time with Shure's recommended settings.
    - Activate 1 IntelliMix Room installation at a time and set up connected Shure devices with Shure's recommended settings.

◦ To start room setup, go to each space with a PC running IntelliMix Room and start room setup from the Windows system tray.
◦ Pick room setup to get a room up and running quickly without manually adjusting all device settings.

Set Up Devices with Designer

Before connecting other Shure devices to IntelliMix Room, check that:

- You can discover all installations of IntelliMix Room and other Shure devices
- All installations of IntelliMix Room are activated

To connect other devices in Designer:

1. In your project, select New > Room (live) to create a new room. Enter a name for the room and select Create.
2. Put all devices that you want to connect in the new room. To add, drag and drop from online devices.
3. Click Optimize. The optimize workflow automatically routes audio signals, applies DSP settings, turns on mute synchronization, and enables LED logic control for connected devices.

    You can also manually route audio and apply DSP settings if you prefer.

Next steps may include:

- Routing audio to IntelliMix Room from your videoconferencing software
- Routing audio to non-Shure devices using Dante Controller
- Making test calls to check the system

Use Designer's Optimize Workflow

Designer's optimize workflow speeds up the process of connecting systems with at least 1 microphone and 1 audio processor. Optimize also creates mute control routes in rooms with MXA network mute buttons. When you select Optimize in a room, Designer does the following:

- Creates audio routes and mute control routes
- Adjusts audio settings
- Turns on mute synchronization
- Enables LED logic control for applicable devices

The settings are optimized for your particular combination of devices. You can customize settings further, but the optimize workflow gives you a good starting point.

Compatible devices:

- MXA920
- MXA910
- MXA710
- MXA310
- P300
- IntelliMix Room
- ANIUSB-MATRIX
- MXN5-C
- MXA Network Mute Button
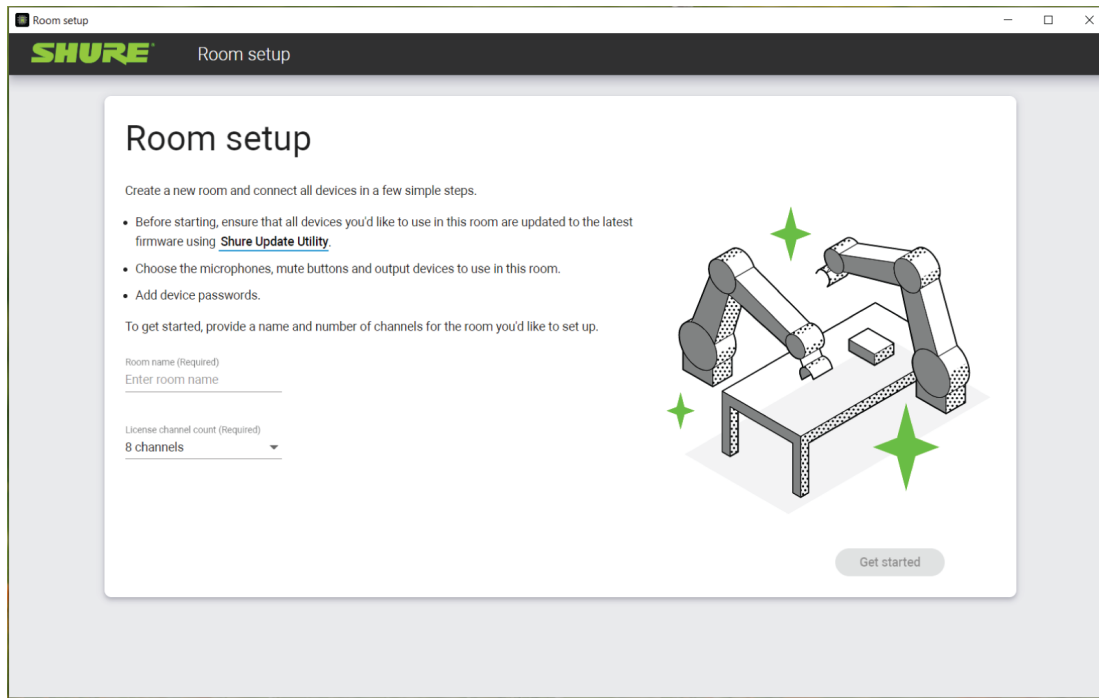
To use the optimize workflow:

1. Place all relevant devices in a room.
2. Select Optimize. Designer optimizes microphone and DSP settings for your equipment combination.

    If you remove or add devices, select Optimize again.

After optimizing a room, check and adjust settings to fit your needs. You may need to:

- Delete unnecessary routes.
- Check levels and adjust gain.
- Check that AEC reference signals are correctly routed.
- Fine-tune DSP blocks as needed.

Use Room Setup

Room setup is a feature in IntelliMix Room that helps you activate the software and set up other Shure devices in the room. The feature:

- Activates the license for 1 installation of IntelliMix Room
- Finds other Shure devices on the network
- Optimizes audio for selected devices, like Designer's optimize workflow
- Sets device passwords

When you use room setup in a space, the feature gets all Shure devices up and running quickly with Shure's recommended settings. Use Designer if you want full control of all device and IntelliMix Room settings.

Compatibility

- Available in IntelliMix Room version 4.0 and newer
- Compatible devices:
  - MXA920: firmware 1.3.276 and newer
  - MXA910: firmware 4.7.13 and newer
  - MXA710: firmware 1.5.12 and newer
  - MXA310: firmware 4.7.8 and newer
  - MXN5-C: firmware 1.5.12 and newer
  - MXA Network Mute Button: firmware 1.5.15 and newer

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)

How to Start Room Setup

- In the Windows system tray, right-click `IntelliMix Room` > `Room setup`.
- Alternatively, select the checkbox for room setup after installing IntelliMix Room.

How Does Room Setup Work?

After launching room setup, follow the steps to set up devices, activate IntelliMix Room, and optimize audio. The overall process is:

1. Enter a room name and license information to activate the installation. You need an internet connection to activate the installation, but not to start a free trial.
2. IntelliMix Room finds other Shure devices on your network. Choose the devices you want to connect to this installation of IntelliMix Room. Devices include:
   - Microphones
   - Mute buttons
   - Networked loudspeakers

   You can also route audio to the PC's outputs or Shure ANI devices.

3. Add a password for devices. You can set a common password or use existing device passwords.
4. IntelliMix Room activates the installation, creates audio routes, optimizes audio, and sets device passwords.

After room setup finishes, you may need to:

- Adjust device levels and DSP settings with Designer.
- Route audio to IntelliMix Room from your videoconferencing software.
- Route audio to non-Shure devices using Dante Controller.
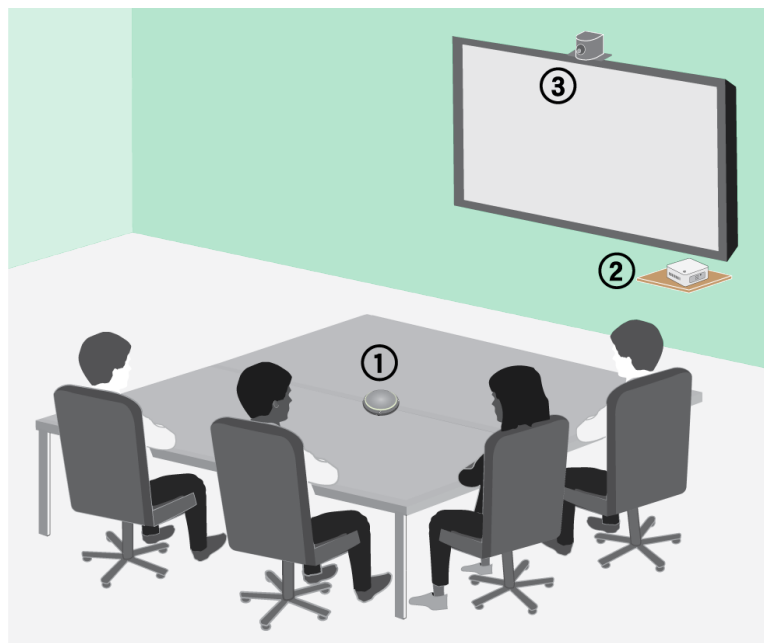- Make test calls to check the system.

Route Audio Signals

Routing Microphone Signals to the DSP

To route your microphone's signal to IntelliMix Room for processing, use Designer.
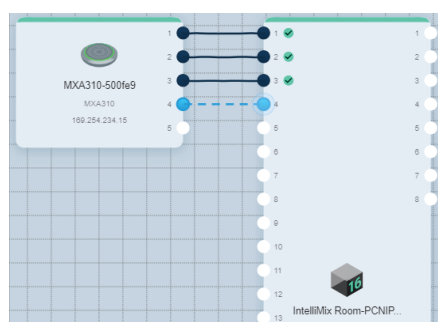
This example reflects a small conference room with:

1. MXA310 using 4 channels
2. Computer with 8-channel IntelliMix Room and videoconferencing software installed
3. Display and camera

To route signals to the DSP:

1. Create a room in Designer. Add the MXA310 and IntelliMix Room installation to the room from the Online devices list.
   ◦ Both devices must be in the same room to route audio between them.
2. Open the room and go to Routing. This page lets you create Dante audio routes and link Shure networked mute buttons to devices.
3. Click Optimize. The Optimize workflow automatically routes audio signals, applies DSP settings, turns on mute synchronization, and enables LED logic control for connected devices.

   You can also manually route audio and apply DSP settings outside of the Optimize workflow if you prefer.

4. Check the audio routes and settings to make sure they fit your needs. You might need to:
   ◦ Delete unnecessary routes.
   ◦ Check levels and adjust gain.
   ◦ Verify that AEC reference signals are correctly routed.
   ◦ Fine-tune DSP blocks as needed.
5. Open IntelliMix Room's device configuration window. From here, you can adjust DSP settings and route the signal to other sources. Check that your mic inputs are using the correct AEC reference.
6. To send your signal to other sources, go to Matrix mixer.
   ◦ To send the automix signal to videoconferencing software, route to the virtual audio output.

◦ To send the automix signal to other Dante sources, route to the appropriate Dante output. Use Dante Controller to route IntelliMix Room Dante outputs to non-Shure devices.
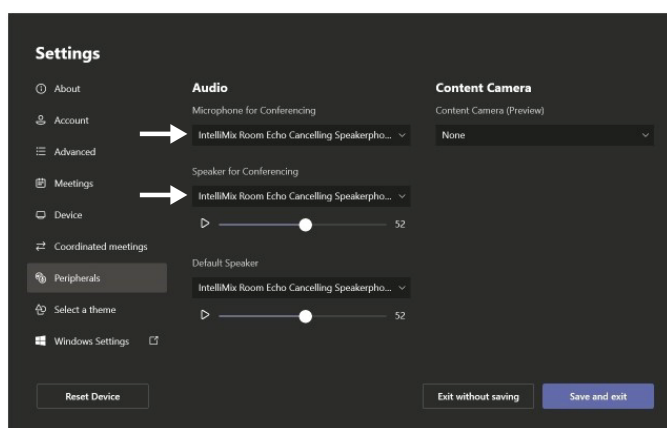
Note: If you're using a non-Shure Dante microphone, use Dante Controller to route the near-end signal to IntelliMix Room.
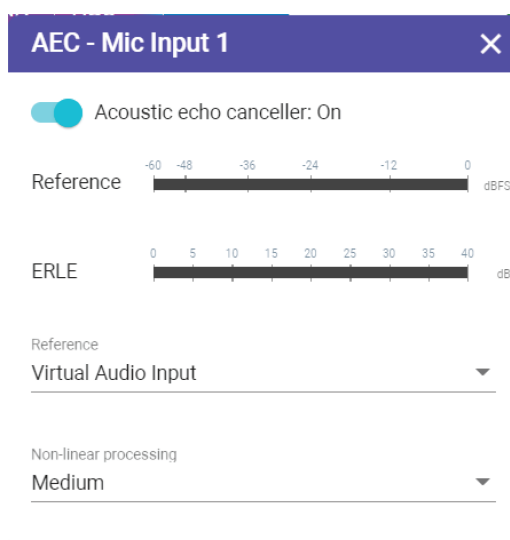
Routing Far-End Audio to IntelliMix Room

To use acoustic echo cancellation (AEC), you need to route a far-end signal to the software. The AEC uses that far-end signal as a reference and blocks it from being sent back to the far end as echo.

Each input channel can use a different AEC reference source. If all channels use the same source, select the AEC reference source on each input channel.

1. In your conferencing software's settings, select **IntelliMix Room Echo Cancelling Speakerphone** as the playback device. This sends the far-end signal to IntelliMix Room's virtual audio input.

2. Open IntelliMix Room's configuration window in Designer.
3. On each microphone input channel, select AEC. Choose the far-end reference source from the menu.
   ◦ For best results, use the signal that feeds your local reinforcement system as the reference source.

Sending Far-End Audio to Loudspeakers and Other Sources
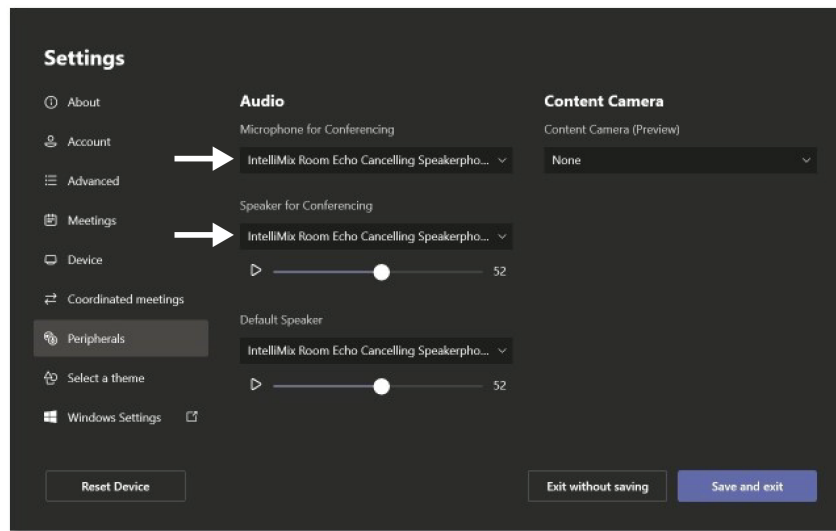
1. Go to Matrix mixer.

2. Find the far-end signal, which comes to the software through the Virtual Audio Input.
3. Check the box where the Virtual Audio Input and the destination intersect. You can also adjust crosspoint gain here. Common destinations include:
    ◦ **PC audio output (3.5 mm or HDMI connector):** Go to Schematic view and click PC Output. Choose an output from the menu. Display speakers connected by HDMI cable or the 3.5 mm connector are common options.
    ◦ **Dante output destinations (loudspeakers or Shure ANI, for example)**

Use Videoconferencing Software with IntelliMix Room

To connect IntelliMix Room to 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 signals to the videoconferencing software from any microphone connected to IntelliMix Room.

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.

If you choose a different source as the speaker, you won't be able to get far-end audio from the videoconferencing software into IntelliMix Room to use as an AEC reference.

Adjusting Input levels

The Inputs tab controls a channel's gain before it reaches the matrix mixer. However, you should also adjust the source's gain before it reaches IntelliMix Room.

To monitor a source's input level before IntelliMix Room processing: Set metering to **Pre-gain** in the Settings menu.

1. Check the source level before it reaches IntelliMix Room. Verify that the networked microphones or other Dante sources are operating at nominal output levels.
2. Adjust gain in the Inputs tab.
    ◦ This gain stage adjusts the signal level before it reaches the matrix mixer.
    ◦ Mix the levels as high as possible so that the loudest channel does not reach the peak level (0 dB) on the meter.

Applying DSP Blocks

To apply DSP blocks:

1. Open a room that contains an IntelliMix Room installation.
2. Select the installation and click Configure.
3. In Schematic view, click a DSP block to open the settings window. You can also access DSP blocks from the Inputs and Outputs tabs.

DSP blocks also get applied during Designer's Optimize workflow.