# WAVETOOL

## WAVETOOL 4

The online help system for WAVETOOL, including setup, networking, receivers, and more.
Version: 2.0 (2026-I)

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# WAVETOOL
# WAVETOOL 4

## General Description

Take your audio monitoring to the next level with WAVETOOL 4 by Shure. This robust software tool seamlessly combines mic monitoring and RF quality monitoring for all audio sources into a single, efficient view tailored to meet your needs. With WAVETOOL 4, be confident that you'll receive accurate information precisely when you need it, ensuring a flawless audio performance.

### How It Works

WAVETOOL 4 revolutionizes audio monitoring by offering a centralized solution for remote listening and viewing of every audio source, all while simultaneously monitoring RF and battery levels. The software's custom-built algorithm detects and flags faulty sound sources, allowing you to swiftly identify and resolve audio issues. The integrated chat feature makes communicating with other technicians a breeze.

### Why It's Better

- Centralized monitoring. With compatibility with the most popular RF receivers across a variety of brands, you can effortlessly keep tabs on all your audio sources on a single screen.
- Made for high stakes productions. Audio professionals rely on WAVETOOL for the most demanding productions, including West End and Broadway, top-tier live sound, and major sporting events.
- Ensure optimal monitoring convenience. With the WAVETOOL mobile app, audio technicians can move freely around the stage while streaming audio directly to their iOS devices.

### Quality That's In the Details

- WAVETOOL 4 is compatible with several Shure systems, including Axient Digital, ULX-D, SLX-D, Axient Analog, and UHF-R.
- During a production, you can effortlessly monitor sound and remotely listen to up to 128 channels.
- Thanks to Instant Replay, you can diagnose and investigate any odd sounds.
- Insert pictures and notes on talent, streamlining your production setup process.
- With Mic Check mode, mark checked and unchecked microphones to optimize preshow workflow.

## Wavetool Resources

In addition to this help system, use these resources to learn more about WAVETOOL 4:

- WAVETOOL FAQs
- Shure WAVETOOL tutorial videos

# Licensing and Activating WAVETOOL 4

To set up your WAVETOOL 4 license after purchasing from shure.com:

1. Add a license via claim code in ShureCloud.
2. Activate your WAVETOOL 4 license in WAVETOOL.

When you purchase a WAVETOOL 4 license, you will receive a confirmation email with a claim code. Keep this email and the claim code to activate your license.

## Add WAVETOOL 4 Licenses Via Claim Code

Add WAVETOOL 4 licenses to your ShureCloud account via claim code in the Licenses & Warranties tab.

Steps are different depending on whether your organization has registered licenses or not.

### First Time Adding Licenses

Follow these steps if this is your organization's first license:

1. In ShureCloud, go to Licenses & Warranties.
2. Click Add licenses via claim code.
3. Fill in your organization's information in the form that appears.

   **Important!**: Complete the form when you access it. If you navigate away from the form, you won't be able to return to it.

4. Once the form is submitted, you are redirected to ShureCloud. Click Add licenses via claim code and enter your code.
5. Verify that the Organization owning licenses listed is correct and enter the claim code.
6. Complete the rest of the steps and refresh the page to see your license.

### Add a License with Existing Licenses

Follow these steps if your organization already has licenses in ShureCloud:

1. In ShureCloud, go to Licenses & Warranties.
2. Click Redeem claim code.
3. Enter the claim code and follow the steps to add your license.

The WAVETOOL 4 license will now appear in ShureCloud. Locate your license in the WAVETOOL 4 Licenses table and copy the Activation code to activate your license.

## Activate a WAVETOOL 4 License

Before activating your WAVETOOL 4 license, claim your licenses with your claim code in ShureCloud.

You need an internet connection to activate a WAVETOOL 4 license.

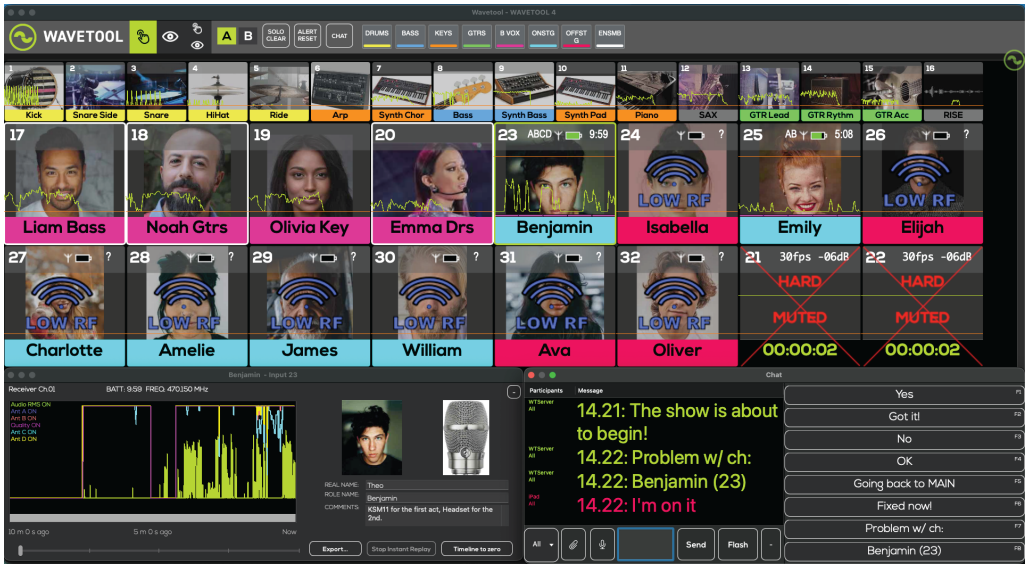
1. In ShureCloud, go to Licenses & Warranties.
2. Select WAVETOOL from the Licenses & Warranties list.
3. Locate your license in the table and copy the Activation Code associated with the license.
4. Download WAVETOOL 4 from shure.com/wavetool.
5. Open WAVETOOL. In the License & Account window, sign in with your ShureCloud credentials.
6. Select the organization that contains the WAVETOOL 4 license.
7. Paste the activation code in the Activation Code field.
8. Name your license in the Identifying Name field. For example, use a production name, venue, or show name.

   *The Identifying Name is displayed on the WAVETOOL Licenses page in ShureCloud to help you organize your licenses.*

9. Select Activate.

# WAVETOOL 4 Home Screen

The main window of WAVETOOL 4 is where you can monitor, arrange, and see details about the channel strips that are in your system.




## Toolbar

**Select**: Choose this icon and then click or tap channels to solo. When a channel is soloed, the audio will be sent to WAVETOOL's audio output device.

Use the arrow keys for faster navigation.

**Zoom**: Select a channel to open a timeline with detailed channel information. For more information, go to the Timeline Window topic.

**Select and zoom**: Select a channel to both solo and see detailed timeline information.

**Panel views** : Move between panels A and B. Select which panel each channel strip appears on in Channel I/O.

**Solo Clear**: Clear all soloed channels, including hard solos, by pressing Solo Clear for 1.5 seconds. Adjust this timing in your preferences.

**Alert Reset**: Clear all alerts.

Hold Shift and left click a channel to reset a single channel alert.

**Chat**: Open the chat window. For more information, see the Chat topic.

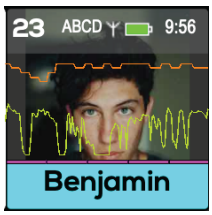
**Group buttons** (1-8): Groups that have channels assigned to them are displayed here. Listen to all the channels in a group by pressing the group button. For more information, go to the Groups and Snapshots topic.

## Channels

On each channel strip, you can see the channel name, channel image, and a green line with the last 10 seconds of incoming audio level. Audio levels below -48 dBFS are not shown.

To resize all channel strips, select `Window` > `Zoom In` (⌘+) or `Window` > `Zoom Out` (⌘-). To make only select channel strips larger, select Large ch size in `Edit` > `Channel I/O` (⌘I).

Adding a channel image can help you and other users identify talent. To learn how to add a picture to a channel, go to the Players topic.




When connected to a wireless receiver, you'll also see active antenna input (A/B) and a battery indicator at the top of the channel strip.

For some receivers (Axient, Axient Digital, ULX-D, EM6000, EM9046, Sony DWX Gen3) you can see the battery status in hours and minutes. This is available when the transmitter is used with the manufacturer's own rechargeable battery and the receiver shows this value.

Click or tap a channel to listen to it.

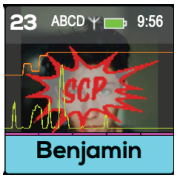
Visual indicators for channels:

- Green line: Last 10 seconds of incoming audio
- Orange line: Last 10 seconds of received antenna signal strength, combined from all antennas, showing the highest value. Individual values for all antennas can be seen in the Timeline window.
- Green frame: Active channel. You can change the solo mode in preferences.
- White frame: Channel is in hard solo mode
- Red overlay with SCP symbol: Problem with channel. To clear the alert, click Reset or hit the space bar. For more information, go to the SCP topic.
- Pink dashes above channel name: Quality level. Only available for some receivers. Quality level can be low even if RF level is high.
- Red dashes above channel name: Specific to Sound Devices A10 RACK with A10-RX. The transmitter has a memory card slot and it allows the user to record directly to the memory card. WAVETOOL is able to show if the recording is on and displays it on each channel strip in red.
- Background of channel name is in color: The channel is part of a group. For more information, go to the Groups and Snapshots topic.

# Channel Alerts

Alerts let you know when there is an issue with one of your channels.

## SCP Alerts




SCP is an algorithm for detecting problems in an audio signal. It is designed for use with live microphones. SCP alerts appear when you might have a broken mic cable or other unwanted signal.

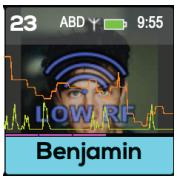
You can adjust the SCP alert level to your liking in the Preferences window (⌘P).

- High sensitivity - More alarms, highly sensitive to issues with audio signal
- Low sensitivity - Fewer alarms, more robust

Turn off SCP for individual channels in Ch I/O (`Edit` > `Channel I/O`).

SCP alerts are rejected when many channels clip simultaneously, such as when a loud sound effect occurs. Rejected SCP alerts still appear in `Edit` > `Event Log`.

## Hardware Alerts




**Low RF**: Appears when the incoming RF signal drops below user-defined threshold. The alert disappears when the RF level is no longer low.

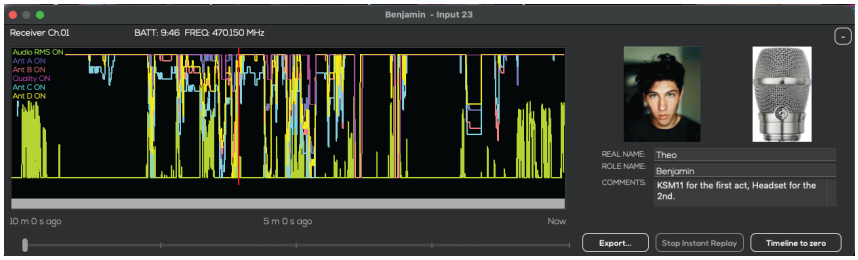
- Turn off this alert for individual channels in Channel I/O.
- Adjust the RF threshold and alert behavior in the Preferences window (⌘P).

**Low Battery**: Appears if the battery status goes below a user-defined threshold. Adjust the battery alert threshold in the Preferences window (⌘P).

WAVETOOL is dependent on receiver data to convey the correct battery information.

# Timeline Window

The Timeline window shows detailed information for a channel. Set the number of timelines you can have at once (up to 8) in `Edit` > `Preferences (⌘P)`. To open the Timeline window, click the zoom tool ( ) on the toolbar and select a channel, or right click the channel.




Parts of the Timeline window:

- Red text in upper left corner: Playback moment ("Playing back X seconds ago")
- + button: Show or hide channel details
- Audio, antenna, and quality settings: Click the text to show or hide RF, quality, and audio levels
- Red vertical line: Indicates SCP
- Blue vertical line: Indicates a marker. Press ⌘M to add a marker to the timeline.
- Slider: Zoom in and out on a particular moment
- Export audio: Export an audio file with the screen capture for later examination. Only appears if Instant Replay is enabled.
- Stop Instant Replay: Stop the audio playback. Only appears if Instant Replay is enabled.
- Timeline to zero: Reset the timeline to zero
- Envelope icon: Indicates time stamp where notes were created in Notebook Mode.

## Instant Replay

Get instant access to your audio history in the Timeline window using Instant Replay. When Instant Replay is enabled, you can listen to up to 30 minutes of audio history to understand and troubleshoot any audio issues. SCP tells you when you might have a broken mic cable or other unwanted signal, and Instant Replay lets you go back in time and listen to it.

To use Instant Replay for a channel, enable it in Channel I/O. Set the Instant Replay history duration in `Edit` > `Preferences (⌘P)` > `General`. The duration can be any time from 1 to 30 minutes.

For any channel that has Instant Replay enabled, use the zoom tool ( ) to see the audio history of the channel. Here, you can go back in time and listen to the channel audio history.

# Instant Replay

Get instant access to your audio history in the Timeline window using Instant Replay. When Instant Replay is enabled, you can listen to up to 30 minutes of audio history to understand and troubleshoot any audio issues. SCP tells you when you might have a broken mic cable or other unwanted signal, and Instant Replay lets you go back in time and listen to it.

To use Instant Replay for a channel, enable it in Channel I/O. Set the Instant Replay history duration in `Edit` > `Preferences (⌘P)` > `General`. The duration can be any time from 1 to 30 minutes.

## Global Instant Replay

Global Instant Replay is a powerful tool that plays back audio from any channel with Instant Replay enabled or multiple channels at once. This can be useful for troubleshooting in the moment.

To use Global Instant Replay:

1. Enable Instant Replay by selecting `Edit` > `Channel I/O (⌘I)` > `Instant Replay` on any channels you want to include in global playback.
2. In the top-right corner of the WAVETOOL home screen, click and drag the WAVETOOL logo to the left to rewind the playback, or use the following hotkeys to rewind or select them from `Functions` > `Global Instant Replay`:
   - 5: Rewind 1 minute
   - 6: Rewind 30 seconds
   - 7: Rewind 20 seconds
   - 8: Rewind 10 seconds
   - 9: Rewind 5 seconds

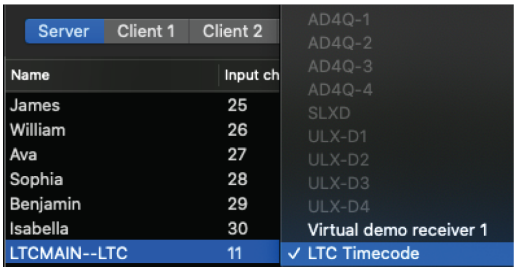
   The time indicator in the top-left corner of the window shows how far back you are.

3. To return to real time, drag the WAVETOOL logo back to the top-right corner, double-click the WAVETOOL logo in the top-right corner, or press 0.

# LTC (Linear Timecode)

If an LTC timecode is being routed to a WAVETOOL 4 audio input device, WAVETOOL can display the LTC timecode in a channel or on a big separate timecode window.

To see the timecode in a channel, go to Channel I/O and choose LTC Timecode from the Wireless dev. dropdown.



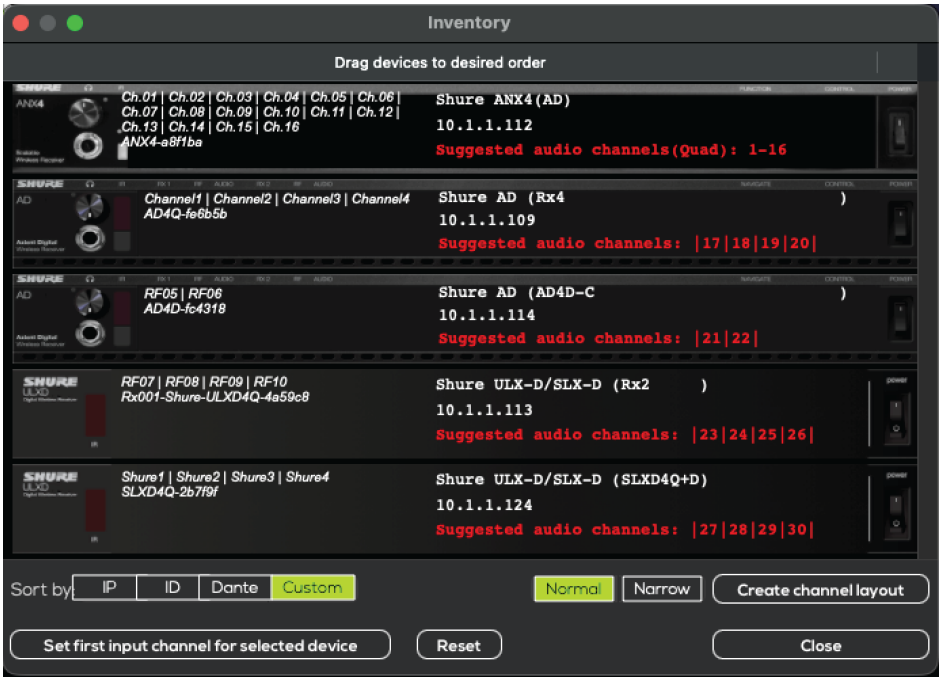

To see the timecode as a separate window, go to `Edit` > `Show Big LTC Display`.

# Managing Devices

Add and manage devices in the WAVETOOL 4 inventory.

To open the inventory, go to `Edit` > `Inventory` or use the shortcut ⌘D.

To arrange devices in the inventory, drag and drop them into the desired order. The devices are automatically assigned to audio channels.




## Adding Devices

You can add devices to WAVETOOL manually or using auto-discovery (Shure Axient Digital, ULX-D, and SLX-D only).

Receiver channel names need to be independent for every channel, so you should name the receiver channels before launching WAVETOOL.

**Auto-discovery:**WAVETOOL can automatically discover Axient Digital, ULX-D, and SLX-D receivers on your network. Check Auto-discover Shure Axient Digital, ULX-D, and SLX-D in the opening window and choose the correct network interface connected to the control port of the receivers. If you are using auto-discovery for Shure Axient Digital, ULX-D, or SLX-D receivers, these devices will be automatically added to the Wireless IP list.

**Manual entry:** To manually add other WAVETOOL-supported receivers to the inventory, first, add them to the wireless IP list:

1. Go to `Edit` > `Wireless IP` or use the shortcut ⌘W.
2. If you are not importing information from Wireless Workbench, click Add.
3. Enter the receiver IP address and select the receiver type. If the receiver is connected correctly, the Ping column reads OK.
4. Click Save as to save your IP setup and open it at a later time.

You can also import the information from Wireless Workbench (in Wireless Workbench, go to `Reports` > `Firmware and Network Summary Report` and choose Export as CSV).

Once the setup is done, the Channel I/O window shows all detected receivers by name in the drop-down menu.

Device-specific setup information:

- For Sony DWX receivers, you'll need to have the transmitters turned on when you pair the receivers with WAVETOOL for the first time.
- For the Sennheiser G3 500 & 2000 series the RX/TX firmware needs to be 1.7 or higher.
- Due to a limitation on the receiver, it's not possible to run the Wisycom Manager simultaneously with WAVETOOL.

# Supported Receivers

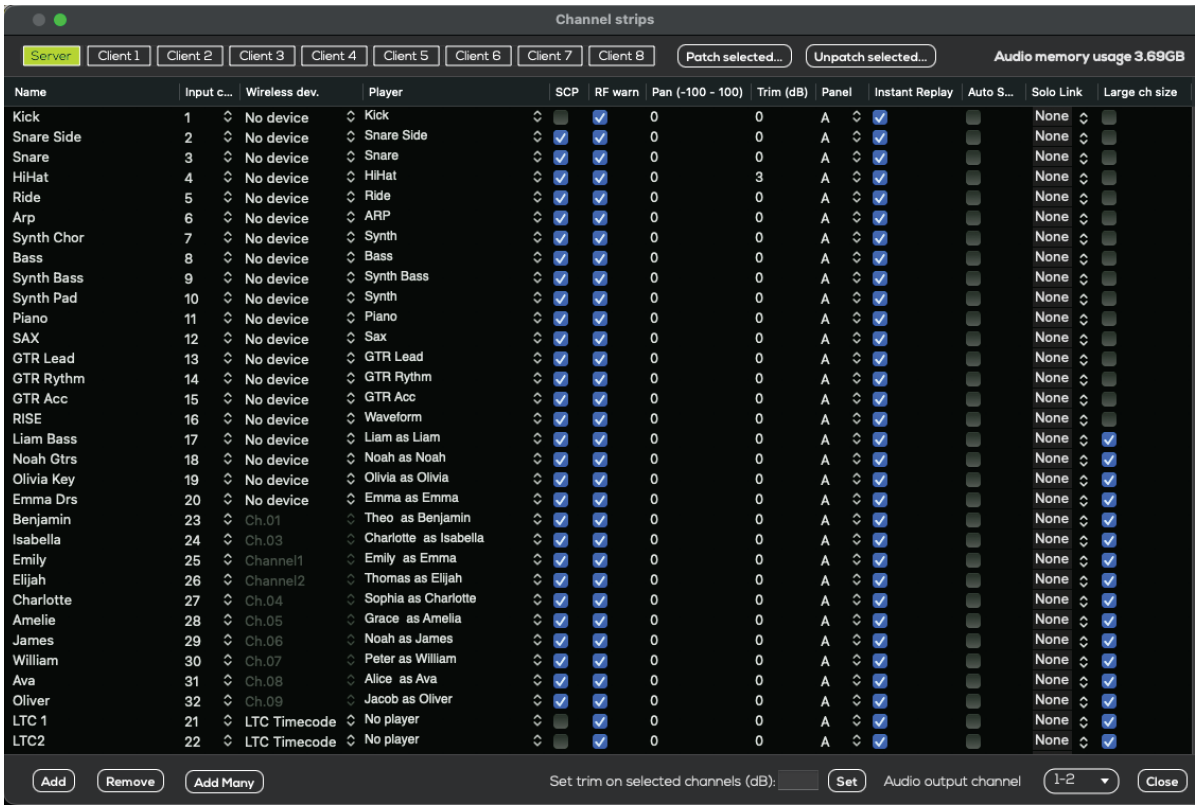
The following receivers are supported in WAVETOOL 4:

- Shure ANX4
- Shure Axient Analog
- Shure Axient Digital (Auto-discovery supported)
- Shure SLX-D (Auto-discovery supported)
- Shure UHF-R
- Shure ULX-D (Auto-discovery supported)
- Beyerdynamic TG1000 (firmware 2.03.18 or newer)
- Lectrosonics Venue2
- Lectrosonics DSQD
- Sennheiser G3 (firmware 1.7 or newer)
- Sennheiser G4 -Series
- Sennheiser EM2050 series (firmware 1.7 or newer)
- Sennheiser EM3732-II
- Sennheiser EM6000
- Sennheiser EM9046 (firmware 4.0.0 or newer)
- Sennheiser EW-DX
- Sony DWR-R02DN
- Sony DWR-R03D
- Sound Devices A10 RACK w/ A10-RX with A10-TX & A20-Mini, Wisycom MCR42 or Lectrosonics SRc More info (PDF 168KB)
- Wisycom MRK16 with MCR54
- Wisycom MRK950 and MRK960
- Wisycom MRK980 (firmware 1.7 or newer)

# Ch I/O (⌘I)

See a list of your WAVETOOL 4 channels and manage channel details in the Channel strips window, also called Channel I/O. WAVETOOL supports up to 192 channels.

To open Channel I/O, go to `Edit` > `Channel I/O` or use the shortcut ⌘I.




General controls:

- To give a channel a large tile on the home screen, tick Large ch size. The channel size will apply when you close the Channel I/O window.
- Add channels at the bottom of the window. To add multiple channels at once, click Add Many.
- To make quick adjustments, press Shift + click and select multiple channels.
- Double click a channel to rename it.
- Press Enter to move between channels.
- Drag and drop channels and columns to edit the order.
- To set trim for multiple channels at once, select multiple channels, enter the trim you want in the Set trim on selected channels field, and click Set to apply the change to all selected channels.

Server and client views:

- Click between server and client views to see and modify settings.
- Rename clients by clicking the client header.
- For more on managing clients, see the Clients topic.

Patch and unpatch selected:

- Patch selected: First choose the channels to patch (for example, from 1-64) and then input the first channel to be patched.
- Unpatch selected: First choose the channels to be unpatched (for example, 1-32) and then click Unpatch selected to set the inputs for the selected channels to be "none".

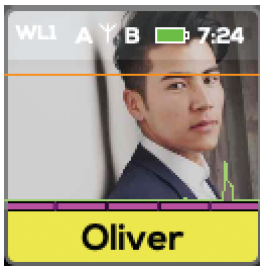
Audio memory usage: Shows how much memory is used by Instant Replay.

## Column Descriptions

Name: Edit names by double clicking on the name. To replace the channel strip number, write “–” plus three characters after the channel name. The channel strip number will be replaced by these three characters.

A channel name in the list:

That channel on the main screen, with WL1 appearing as the channel strip number:




Input ch: Assign hardware inputs to channels.

Wireless dev.: Click a row to show a list of found receivers. Link an RF receiver to the input channel. This will display RF and battery data in the main window.

Player: Assign a player to your channel. See the Players topic for more information.

SCP: Enable or disable SCP. SCP is designed for live microphones, and if you have other input sources you can disable SCP to avoid too many false alerts.

RF warn: Enable or disable RF warnings. If your transmitters often move out of reach, you might not want to be alerted every time.

Pan: Between -100 (left) and 100 (right)

Trim: Edit the input trim (Channel max trim is now +28dB).

Panel: Choose the panel (A or B) where the channel is shown.

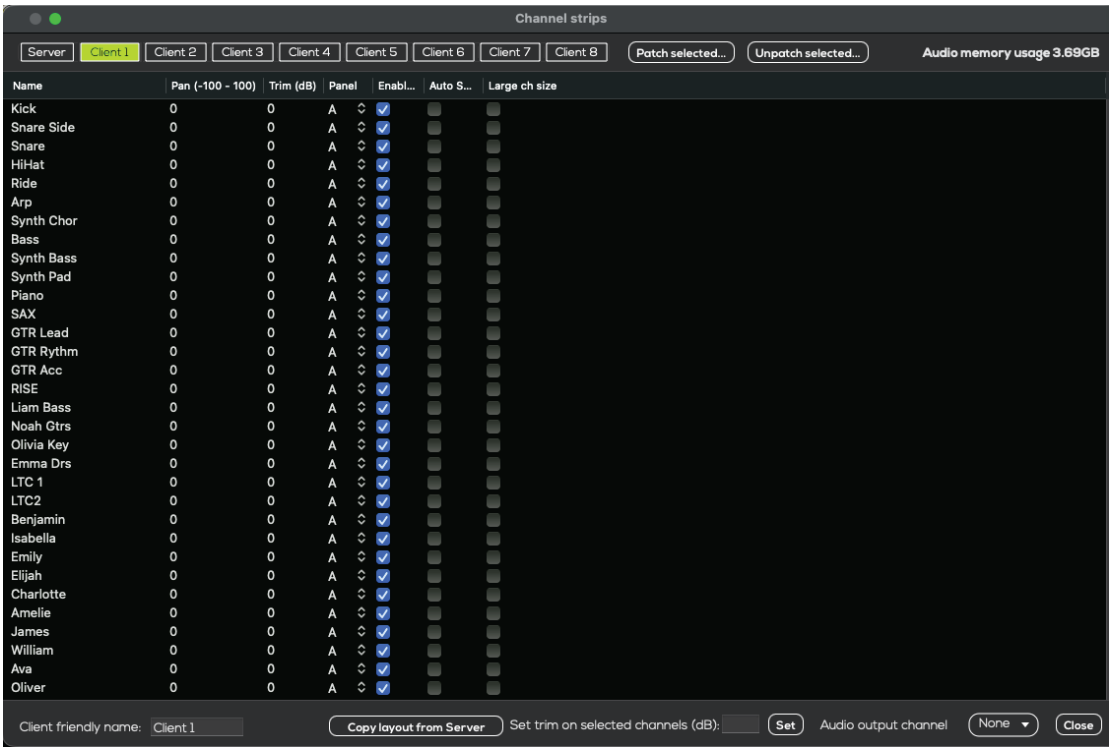
Instant Replay: Enable instant replay on the selected channel.

Auto Solo: Choose channels that will be soloed when there is no active solo selection.

Solo Link: Link channel solos.

# Clients

You can use up to 8 remote clients (iOS/ macOS) with each WAVETOOL server. Each client can have independent audio mixes, audio outputs, and channel layouts.




The WAVETOOL server and all clients have their own independent audio output from the device that is connected to the WAVETOOL server computer.

Manage and configure clients in Channel I/O on the WAVETOOL server. For each client, you can:

- Update the client name by clicking the client header.
- Assign a hardware output to a client by selecting the appropriate client tab and choosing a hardware audio output from the dropdown menu. Note that the client cannot share the same output channel as the server.
- Edit channel layout by dragging and dropping channels in the appropriate client tab.
- Use the checkboxes in Channel I/O to enable and disable channels, assign them to panels, and set pan and trim individually for each client.
- Copy layout from Server: If you have made a layout on the server and want to copy it to the clients, use this function.
- Set trim on selected channels: Trim multiple channels at once.

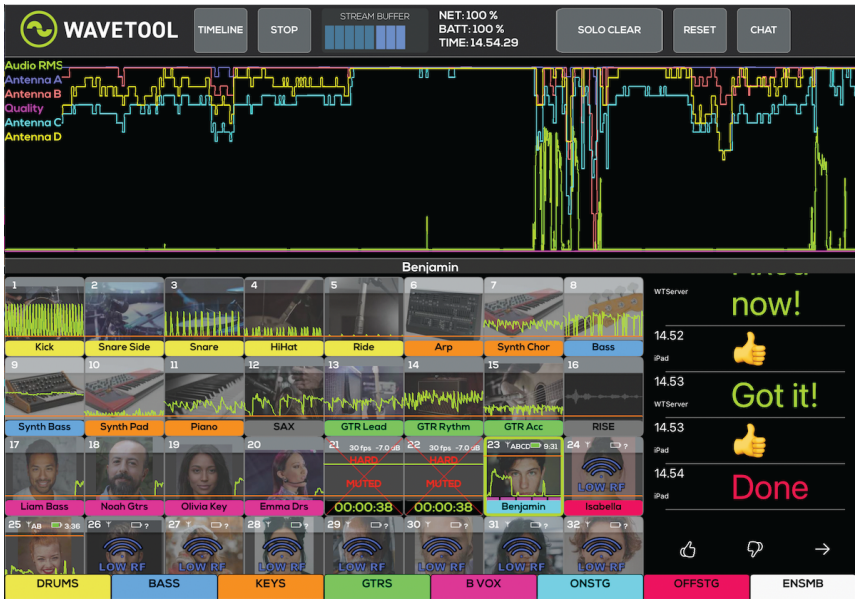
Both desktop and iOS remotes can be set to control the server WAVETOOL computer.

Connected iOS remotes can stream audio to the iOS device. For more information, see the iOS Mobile and Remote Streaming topic.

# iOS Mobile Remote and Streaming

The WAVETOOL iOS app with audio streaming lets you move freely around a space while checking microphones.

# iOS App Instant Replay and Timeline

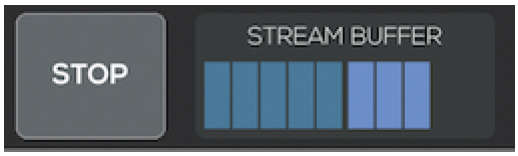



In the timeline of your iOS device, you can see RF and quality levels. When Instant Replay is turned on, you can simultaneously replay and listen to the audio history of the channels on an iOS device.

To use Instant Replay on an iOS device, enable it in Channel I/O on the server.

Global Instant Replay is also available on the iOS app. In the top-right corner of the WAVETOOL home screen, drag the WAVETOOL logo to the left to rewind the playback. Double click the WAVETOOL logo to return to live monitoring.

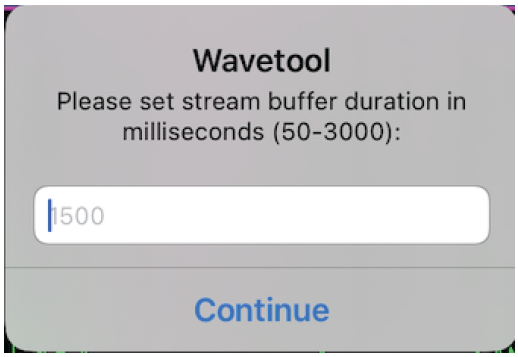
# iOS App Streaming




WAVETOOL streams audio to the iOS device. The buffer size fluctuates widely if the Wi-Fi connection is bad. If the buffer runs out, the connection will be reset and the buffer will need to refill itself before audio playback can resume.

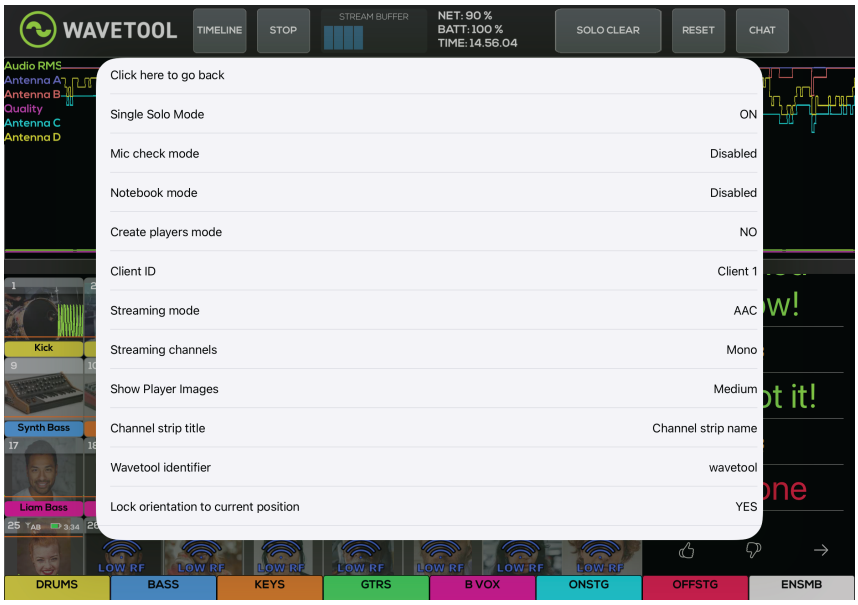
Start the stream by tapping Start stream in iOS.

Tap Stream Buffer to edit the buffer. The buffer size can be adjusted from 50 to 3000 milliseconds. Try with a small buffer size first and increase it if you encounter problems.




## iOS App Settings

To open iOS app settings, swipe right.




In the iOS app settings, you can:

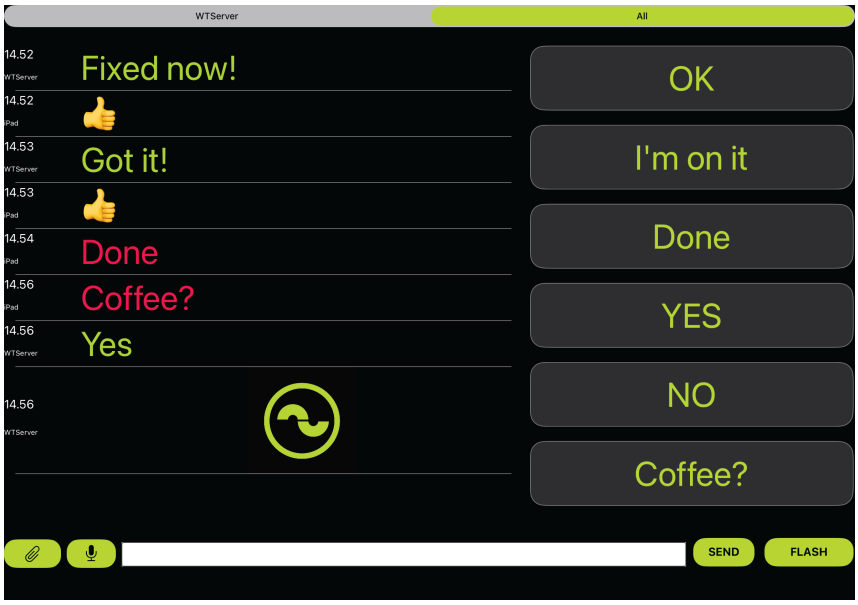
- Turn single solo mode on or off
- Enable mic check mode
- Enable Notebook mode
- Enable "Create players" mode to add player profiles by using iOS device camera or photo library
- Choose Client ID (Clients 1 through 4 or Server)
- Choose between streaming modes (PCM or AAC). Choose AAC & Mono streaming for more challenging Wi-Fi environments on the iOS device.
- Choose between mono or stereo audio stream
- Update player image brightness
- Choose channel strip title
- Choose WAVETOOL identifier in case multiple servers are in use
- Enable hard mute
- Set long click duration in seconds
- Show or hide RF, quality, and audio levels in the timeline
- Choose the number of chat macros and filter chat messages

- Set your chat username and text size
- Choose to send macro messages as flash messages
- Set iOS device to vibrate when chat message arrives
- Set iOS device to play notification when chat message arrives
- Choose chat macro button position to be either left or right side
- Set timeout in seconds for flash messages
- Clear chat history

## iOS App Chat

On an iOS device, tap Chat, swipe left, or tap the arrow on message previews in the bottom right corner to see the chat window.

When a new chat comes in, a preview of it appears on the main WAVETOOL window. Use quick responses to thumbs-up or thumbs-down messages from the preview.




Press and hold a chat macro button to edit the text.

Select the paperclip icon to attach an image. Use the microphone icon to type with speech-to-text.

# Tools

Use these tools to make your life easier before and during a show.

## Hard Solo Tool

Certain channels, like comms or talkback, must be kept on at all times, which you can do by locking the channel in hard solo mode.

To lock a channel in hard solo mode, press or long click the channel until the frame turns white.

When a channel is hard soloed, neither short clicking the channel nor short clicking Solo Clear will affect it. Clear the hard solo by long clicking the channel again. Long click Solo Clear to clear all solos, including hard solos.

- Adjust the time of the long click in the Preferences window (⌘P).

- You can hard solo single channels or groups.
- All hard soloed channels and groups will stay soloed even when you change snapshots.

# Hard Mute Tool

Use the hard mute tool to keep a potentially broken channel out of the mix until it is fixed. Even when you change snapshots, a channel that has been hard muted won't be heard.

To change the long click command from hard solo to hard mute, go to `Functions` > `Use Long Click as Hard Mute`.

When a channel is hard muted, you can use Instant Replay to listen to its audio.

# Chat

Use the chat to communicate during a show. To open the chat, select Chat in the main window.

There are 7 custom macro messages on the right side of the screen. To edit the custom messages, go to `Preferences` > `Chat`. Use the function buttons to quickly add these macro messages to the chat.

Function keys:

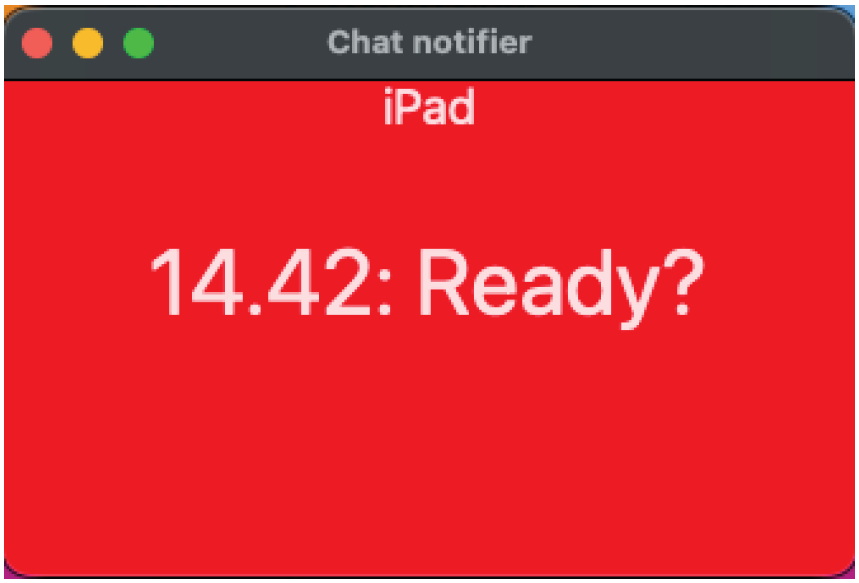
- F1-F7: Custom macro messages
- F8: Previous clicked channel in the main window
- F10: Send a flashing notification to all chat members
- F12: Clear the chat of all messages

To send your own message, enter it in the field at the bottom of the window.

1. Select a particular recipient in the drop down menu or click All to send to all chat members.
2. Attach any images via the paperclip icon.
3. Type your message, or select the microphone icon to use speech-to-text.

   *Enable dictation in the Mac's settings by going to* `System Settings` > `Keyboard` > `Dictation`. *Then, in WAVETOOL, go to* `Preferences` > `Chat` *and select your audio device and language for dictation.*

4. Press Send to send the message to the assigned recipient or Flash to send the message and page the recipient with a blinking chat notifier.



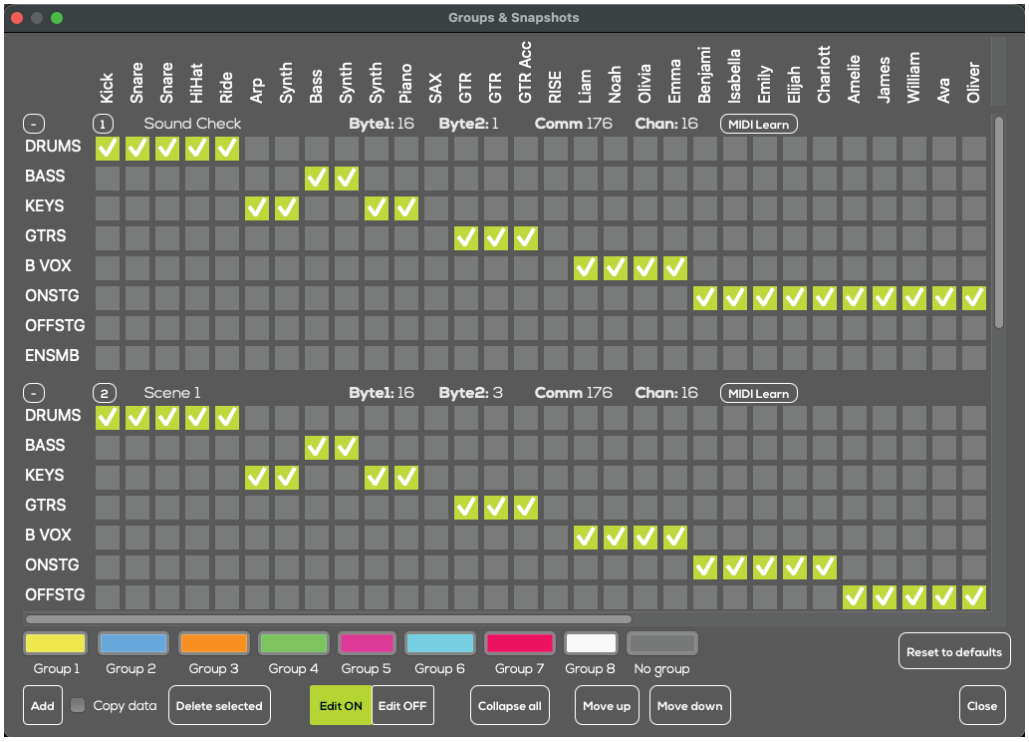

# Groups & Snapshots (⌘G)

Organize channels into groups to see, listen to, and make changes to them all at once in the main screen.

Snapshots, or scenes, let you program different groups and channels for different parts of a performance.

In the Groups & Snapshots window, you can name snapshots, name groups, assign channels to groups, add new snapshots with independent group members, and set MIDI parameters per snapshot for an external snapshot trigger.

Open Groups & Snapshots from the edit menu or use the quick command ⌘G.




To make any changes to groups or snapshots, click Edit ON.

Click Add to create a new snapshot.

Click + to assign channels to groups for each snapshot.

Select a color for each group. Channel names will be highlighted with the group color in the main window.

Copy the setup from a snapshot to a new snapshot by selecting `Copy data` > `Add`.

To move a snapshot, select the snapshot number and then click Move up or Move down.

WAVETOOL snapshot changes can be programmed to follow any MIDI commands. In Groups & Snapshots (with edit on), select MIDI Learn for any snapshot and then send MIDI command from the device you want to control the snapshots with. MIDI command parameters can also be adjusted manually.

Go to `Edit` > `Snapshot List` or press ⌘K to see a list of your snapshots. Click each snapshot name to move between the snapshots.

## Mic Check Mode (⌘Y)

In mic check mode, you can mark the mics that are ready to use and see which mics still need to be checked. To open mic check mode, go to `Edit` > `Mic check` > `Mic check mode` or use the shortcut ⌘Y.

There are individual mic check windows for up to 4 acts. To move between acts, go to `Edit` > `Mic check` and select an act.

Once you are in mic check mode, mark channels as checked or unchecked in the Mic check window (⌘U). Select Always on top to pin the Mic check window to the front of the screen.

There are multiple ways to mark a channel as checked:

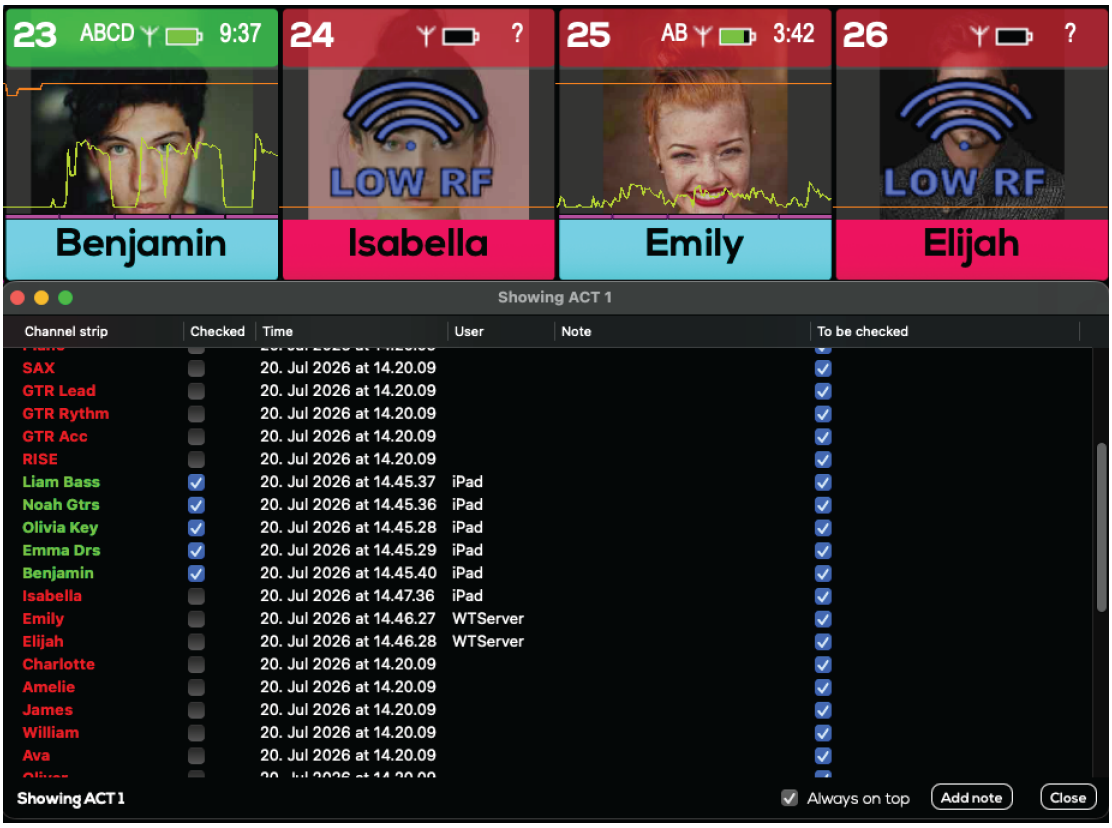
- Long click a channel in the main window
- Select the channel from the Mic check window
- Select a channel and press Y on the keyboard. Pressing N on the keyboard removes the check mark from the channel.

The mic check window shows who checked the mic and when. It also shows the mics that needs to be checked per act. There is a comment line for every channel for additional notes. When mic check is enabled, mic check follows Y/N keyboard commands.

If you have a channel selected, click Add note to populate the Note column.

Color indicators:

- Green - Channel is in the selected act and has been checked
- Red - Channel is in the selected act and has not been checked
- Grey - Channel is not in the selected act




To leave mic check mode, go to `Edit` > `Mic check`.

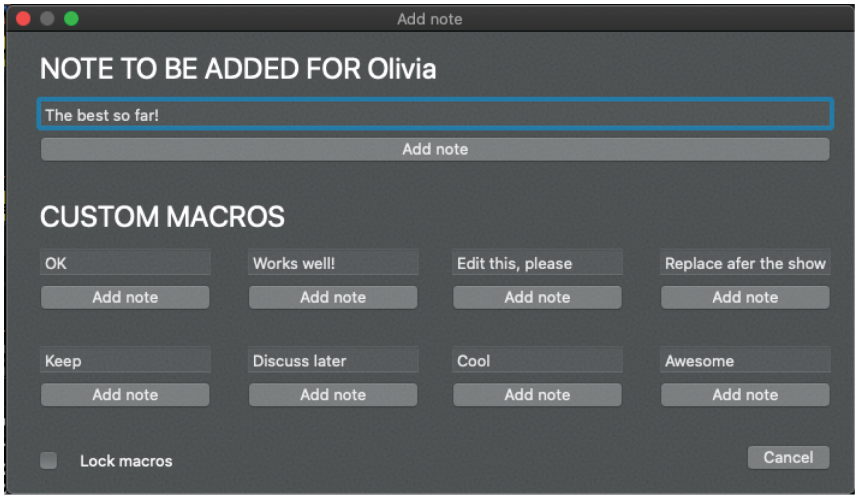
# Notebook Mode

In notebook mode, you can quickly make notes about mics or performers. Notebook mode was designed for reality show productions, but it can be used in any applications that require quick notes about the channels.

Notebook mode does not work with iOS mobile remote on an iPhone due to the small display resolution.

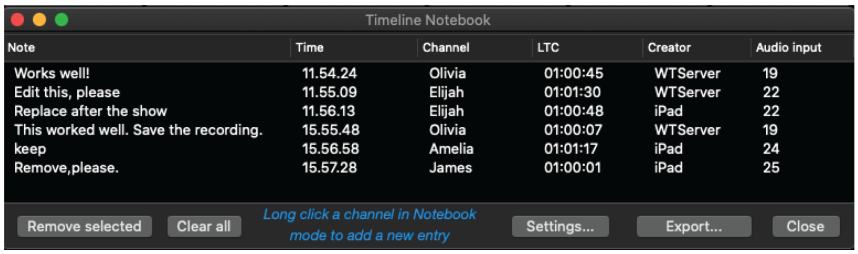
To enter notebook mode, go to `Edit` > `Notebook` > `Notebook mode`.

When you are using notebook mode, long clicking a channel will open a text editor with macro buttons. Adding a note from this window will add a note about this particular channel to the notebook timeline.



To see your notes, go to `Notebook` > `Show Notebook window`.

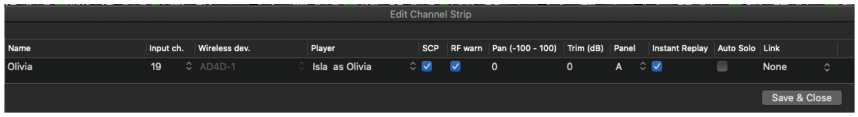
The timeline can be exported as a .csv text file.




# Edit Mode (⌘E)

In edit mode, you can move channels by dragging and dropping them in place. To enable edit mode, go to `Edit` > `Edit mode` or press ⌘E.

To edit a channel's settings, click on the channel and make any necessary changes.



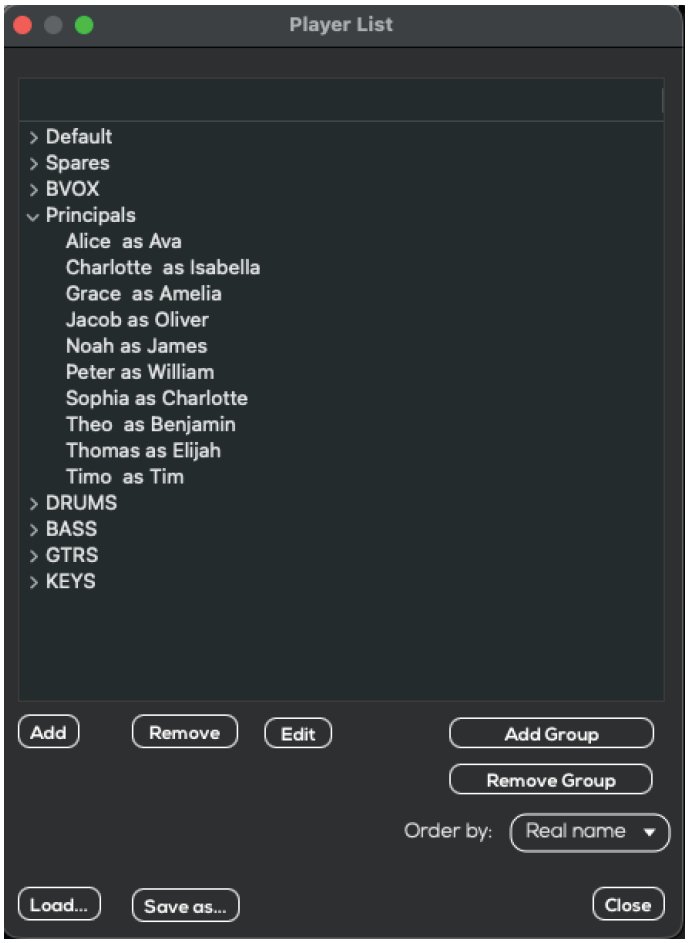

# Players (⌘A)

To add or edit a player, go to `Edit` > `Players` or press ⌘A.

- Assign a real name, role name, and add any additional comments for the player.
- Add an image that will show on the player's channel. Use the arrows and the + and - signs to scale and position the image. Adjust opacity in the Preferences menu.
- Add a secondary image that you can swap in.
- Sort players by their real name or role name.
- Select Compress images... to reduce the size of player images and improve WAVETOOL's performance.
- Save and load your cast of players.

When you create a new player, they are added to the Default group. Select Add Group to create a new player group. Click and drag a players between groups in the list, or double click the player and change the GROUP field.

To link a player to an audio channel, go to Channel I/O and select a player from the dropdown menu.




## Event Log

The Event Log shows all triggered events, alerts, and OSC and MIDI activity. Go to `Edit` > `Event Log` to view recent events.

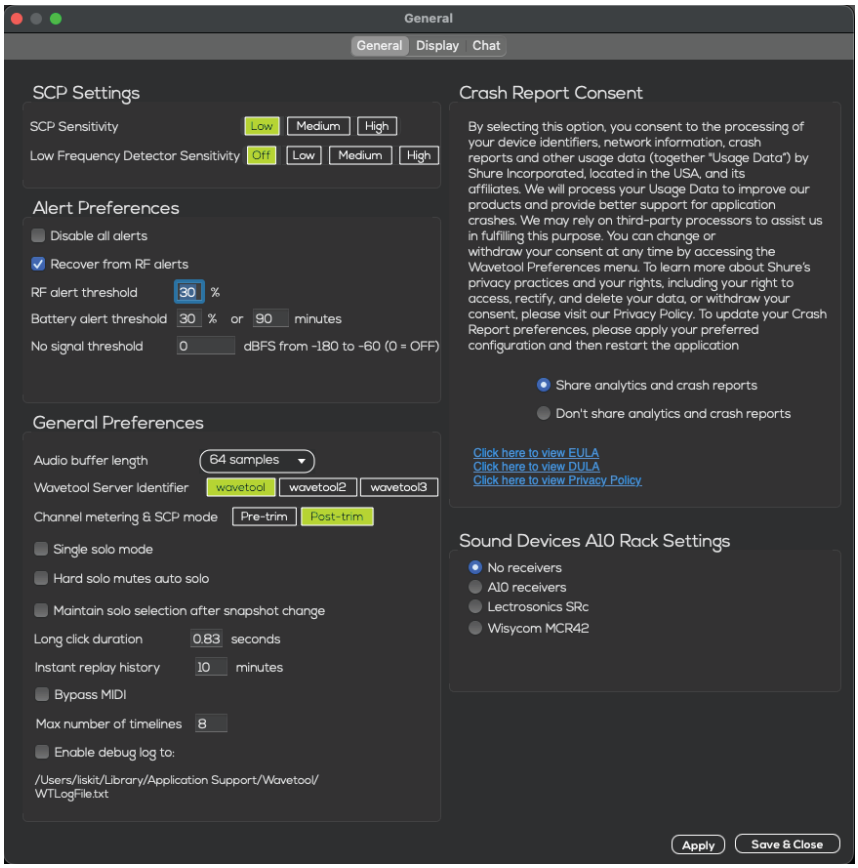
Click an event to listen to the audio from the alert. Export .wav files for all events by selecting Export all events..., or select specific events and select Export selected...

The Event Log will record SCP alerts even if they are rejected. SCP alerts are rejected when many channels clip simultaneously, such as when a loud sound effect occurs.

# Preferences (⌘P)

Customize settings in `Edit` > `Preferences` or via Command (⌘) + P.

# General Preferences




Go to `Preferences` > `General` to adjust the following settings:

- SCP preferences
  - SCP sensitivity: SCP looks for unnatural sounds. Adjust the SCP sensitivity to fit your microphone type and sound source. Low decreases the sensitivity and will trigger fewer alerts, while High increases the SCP detection sensitivity and will trigger more alerts. Turn off SCP on a per-channel basis in Channel I/O.
  - Low frequency detector sensitivity: SCP looks for very low frequencies that are produced when a cable is broken. If you are working on a loud stage or microphones are near bass cabinets, lower the sensitivity.
- Alert preferences
  - Disable all alerts: No alerts will trigger.
  - Recover from RF alerts: RF alerts will automatically clear if the RF quality of the channel improves.
  - RF alert threshold: Set the threshold for when you want to see the Low RF warning.
  - Battery alert threshold: Set the threshold for when you want to see the Low Battery warning.
  - No signal threshold: Set the threshold for when you want to see the No Signal warning. Set the threshold to 0 dBFS to turn signal threshold alerts off.
- General Preferences
  - Audio buffer length: Set your desired buffer length (shorter = less latency)

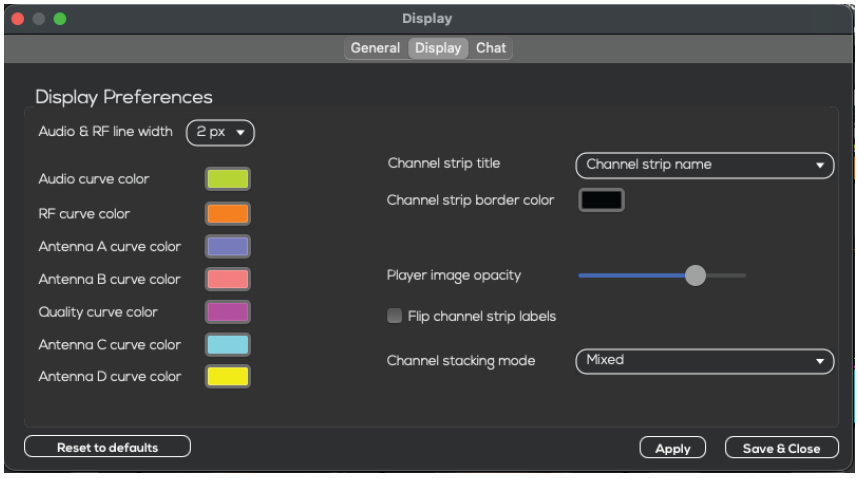
    64 samples might not work with all soundcards.

  - WAVETOOL Server Identifier: If there are multiple WAVETOOL server computers in a single network, set an independent identifier name so that you'll know which computer to connect to with iOS/macOS remote.
  - Channel metering & SCP mode: Pre-trim or post-trim. Use post-trim metering when the levels have been trimmed up or down in Channel I/O.

    - Single solo mode: When selected, only one channel is soloed at a time and the previous solo is cleared when you channel another solo. When not selected, the previous channel stays soloed even if you solo other channels.
    - Hard solo mutes auto solo: When selected, hard soloing a channel will mute any channels, even if they were soloed.
    - Long click duration: Set the length of click or press required to trigger a long click.
    - Instant replay history: set the length of history WAVETOOL keeps in the instant replay history. Duration can be up to 30 minutes.
    - Bypass MIDI: Bypasses all incoming MIDI commands for snapshots.
    - Max number of timelines: adjust the amount of available timelines. You can have up to 8 timelines.
    - Enable debug log: When selected, debug logs will be saved at the file path listed.
- Sound Devices A10 Rack Settings: Search for A10-RX / Wisycom MCR42 or Lectrosonics SRc devices when WAVETOOL is launched.

    *A10-RACK and EM3532 cannot be used at the same time.*

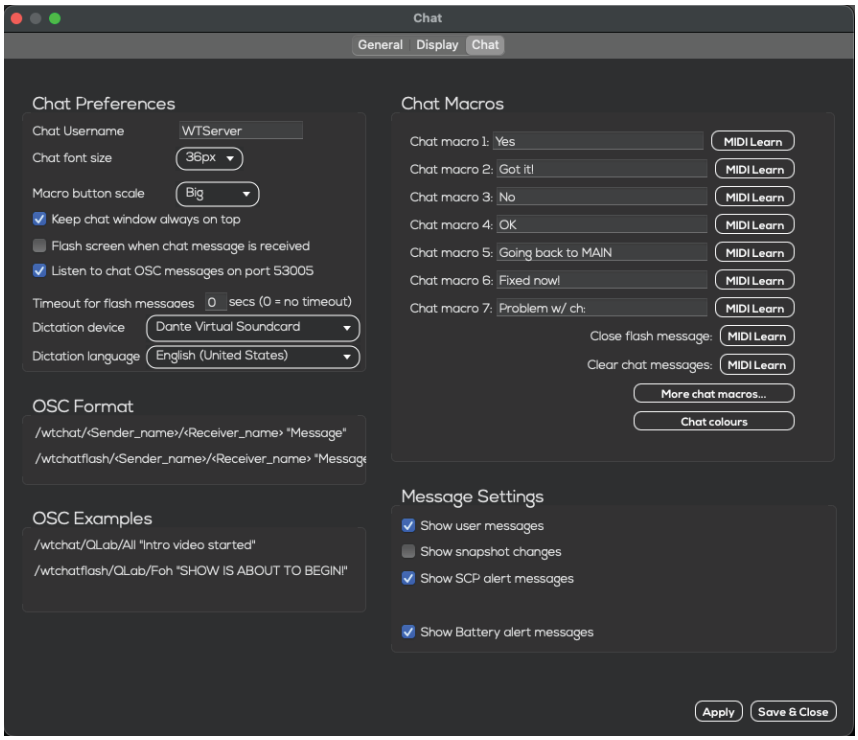
## Display Preferences




Go to `Preferences` > `Display` to adjust the following settings:

- Audio & RF line width: Adjust line thickness
- Colors for curves: audio, RF, antenna, and quality
- Channel strip title. Choose between:
    - Channel strip name
    - Player role name if available
    - Player real name if available
    - Wireless channel name if available
- Channel strip border color
- Player image opacity: Set the opacity of channel pictures
- Flip channel strip labels: Adjust where name label appears on channels
- Channel stacking mode: Arrange channels based on the size of the channel strip. Set a channel strip size in `Channel I/O (⌘I)` > `Large ch size`.
    - Mixed: Shows large and small channels in any order
    - Large channels first: Shows all large channels first, and then small channels
    - Large channels first separated: Shows all large channels first, with small channels beginning on the next line of the home screen.
- Reset to default: Resets to default WAVETOOL settings

## Chat Preferences




Go to `Preferences` > `Chat` to adjust the following settings:

- Chat Username: Set a username for the server in the chat window.
- Chat font size: Adjust the size of the font in the chat window (36px, 24px, or 12px).
- Macro button scale: Adjust the size of the macro buttons (big, medium, or small).
- Keep chat window always on top: Keeps the chat window on top of all programs.
- Flash screen when chat message is received: If selected, a red frame around the main window will blink when there is an incoming chat message.
- Listen to chat OSC message on port 53005: If selected, chat accepts OSC messages. For example, in QLab, it's possible to do a network cue, which sends a message to WAVETOOL chat member(s). OSC Format shows examples of OSC messages.
- Chat Macros: Edit the messages for macros 1-7 and assign a MIDI message as a trigger.
- Close flash message: Assign the ability to close a flashing WAVETOOL chat to a MIDI control.
- Clear chat message: Assign the ability to close a flashing WAVETOOL chat to a MIDI control.
- More chat macros...: Open a window for assigning more chat macros with MIDI controls.
- Chat colors: Change the chat colors.

## Clear User Preferences and Quit

To close WAVETOOL and clear your user preferences, go to `WAVETOOL` > `Clear user preferences and quit`. IP addresses and players will be deleted if you don't save them separately.

# Networking and Installation

For audio professionals, WAVETOOL 4 supports simple network setup with options for advanced network setup.

WAVETOOL supports:

### Easy setup

- WAVETOOL automatically discovers devices within a local network with no network or port setup necessary.

### Advanced setup

- For use in larger managed network environments, use static IP addresses to connect your devices.
- WAVETOOL traffic can be routed between VLANs.
- To connect a WAVETOOL iOS Remote device, enter your computer's IP address into your WAVETOOL iOS device.
- WAVETOOL uses TCP and UDP traffic. You may need to open the TCP port 57576 and the UDP port 5353 (Bonjour) if they are blocked. Sennheiser receivers operate on UDP port 53212.

### Ethernet or Wi-Fi?

For best results, connect your computer to the network with an ethernet cable. iOS devices using WAVETOOL Remote should operate on Wi-Fi.

Recommended network settings for show computers using ethernet:

- Turn Wi-Fi off.
- Turn off the “Show Wi-Fi status in menu bar” option.

### DHCP or Static addresses?

For the best results with WAVETOOL, use static IP addresses on your computer and all components of your system. Devices in your system should share the same subnet. Using DHCP automatic IP addressing may cause networking issues.

### Default Gateway

If you need to connect your WAVETOOL computer to the internet or other networks, keep the Default Gateway set to 0.0.0.0 to ensure it remains connected with your sound system.

### Multiple network cards?

If you are running separate networks for audio and control data, keep your cables marked and color coded. Use static addresses for all networks and leave the Default Gateway empty.

## Aggregate Devices

WAVETOOL 4 supports Aggregate Devices, which can combine multiple physical devices to appear as one input in WAVETOOL.

You can create and modify Aggregate Devices in the Audio MIDI Setup application on your Mac. For more information on creating an Aggregate Device, see the guide from Apple.

## Audio Devices and Sample Rates

WAVETOOL 4 can connect to any interface or device that a Mac can discover in its Audio/MIDI setup page. The input and output devices should have the same sample rate. WAVETOOL is compatible with 48 kHz and 96 kHz sample rates.

At startup, WAVETOOL prompts you to select your input and output devices. If the sample rates of your devices aren't set to the same value, select Launch Audio MIDI Setup and adjust the sample rates of your devices to match.

# Network Troubleshooting

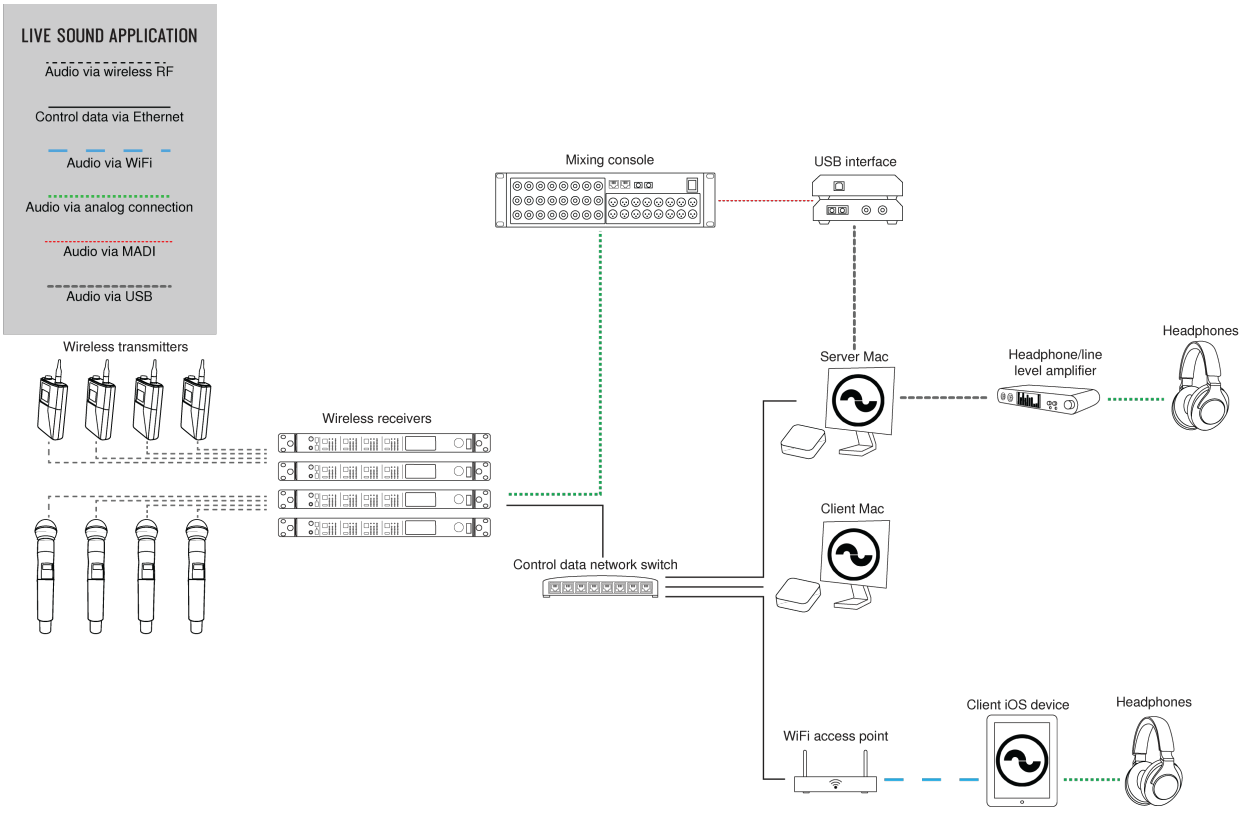
| Issue | Solution |
|---|---|
| **WAVETOOL remote connection is dropping or intermittent on an iOS device** | iOS devices may drop their connection to search for a network that has internet access. To ensure your iOS device stays on a network without internet, try these device settings:<br><br>Turn cellular data off.<br>Turn Ask to Join Networks off.<br>Forget Wi-Fi networks that aren't your WAVETOOL system network.<br>Turn on Airplane Mode and manually connect to your WAVETOOL system network. |
| **iOS mobile remote won't connect** | With iOS version 14 or later, you'll need to change the Privacy settings to enable the connection.<br><br>1. On your iOS device, go to `Settings` > `Privacy` > `Local Network` and make sure WAVETOOL has a permission to use the local network.<br>2. If that does not help, make sure in both macOS and iOS app the WAVETOOL (server) Identifier (in Preferences) is set for the same name. As a default it should be: wavetool |
| **Manually added receivers aren't being discovered** | Check that your computer's ethernet connection and receivers are set to the same IP subnet. For receivers added via IP address, WAVETOOL searches for new connections every 10 seconds. |
| **Can't connect to wireless receiver** | Use unique channel names on wireless devices.<br>Make sure your computer network port and wireless receivers are in the same control subnet.<br>Turn off WiFi during setup.<br>Start by using static IPs on both computer and wireless receivers to make troubleshooting easier.<br>Remember to add your wireless receiver control (not Dante) IP addresses to WAVETOOL`s Wireless IP List and choose the correct receiver model. |
| **Unable to ping receiver** | For connected devices, the Ping column in the Wireless IP List will say "OK". If a receiver does not ping OK, check that your computer and receiver share the same subnet. |
| **Networking issues with multiple network interfaces** | Turn Wi-Fi off and disconnect all other networks for troubleshooting. |
| **Networking issues with DHCP addressing** | Instead of using DHCP addressing, set all your devices to static IP addresses with the same subnet. |
| **Networking issues with Wisycom** | WAVETOOL and Wisycom Manager can't run at the same time. To network with Wisycom products, close Wisycom Manager before running WAVETOOL. |

# Networking Examples

WAVETOOL 4 supports MADI USB interfaces and networked audio interfaces such as Dante.

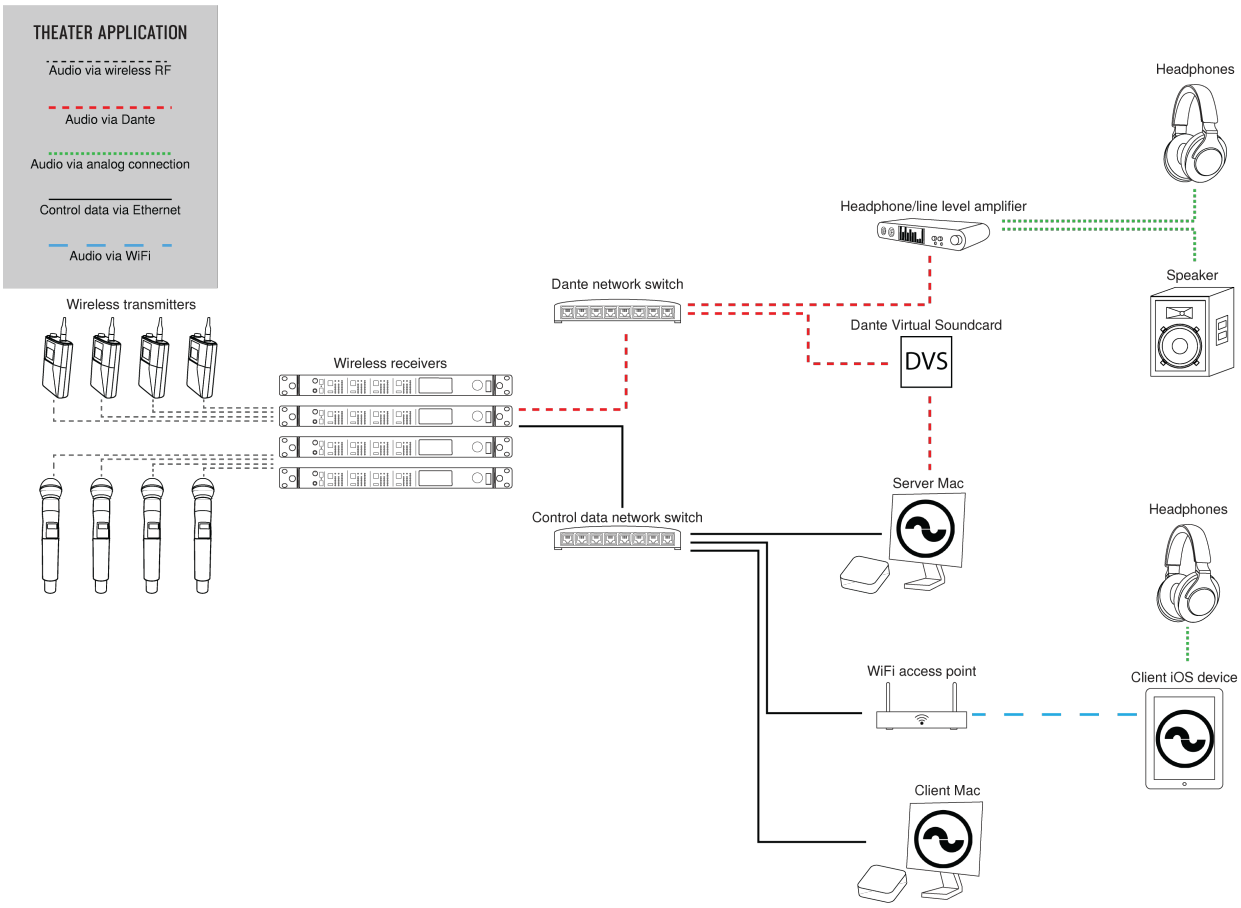
## Using WAVETOOL 4 with MADI

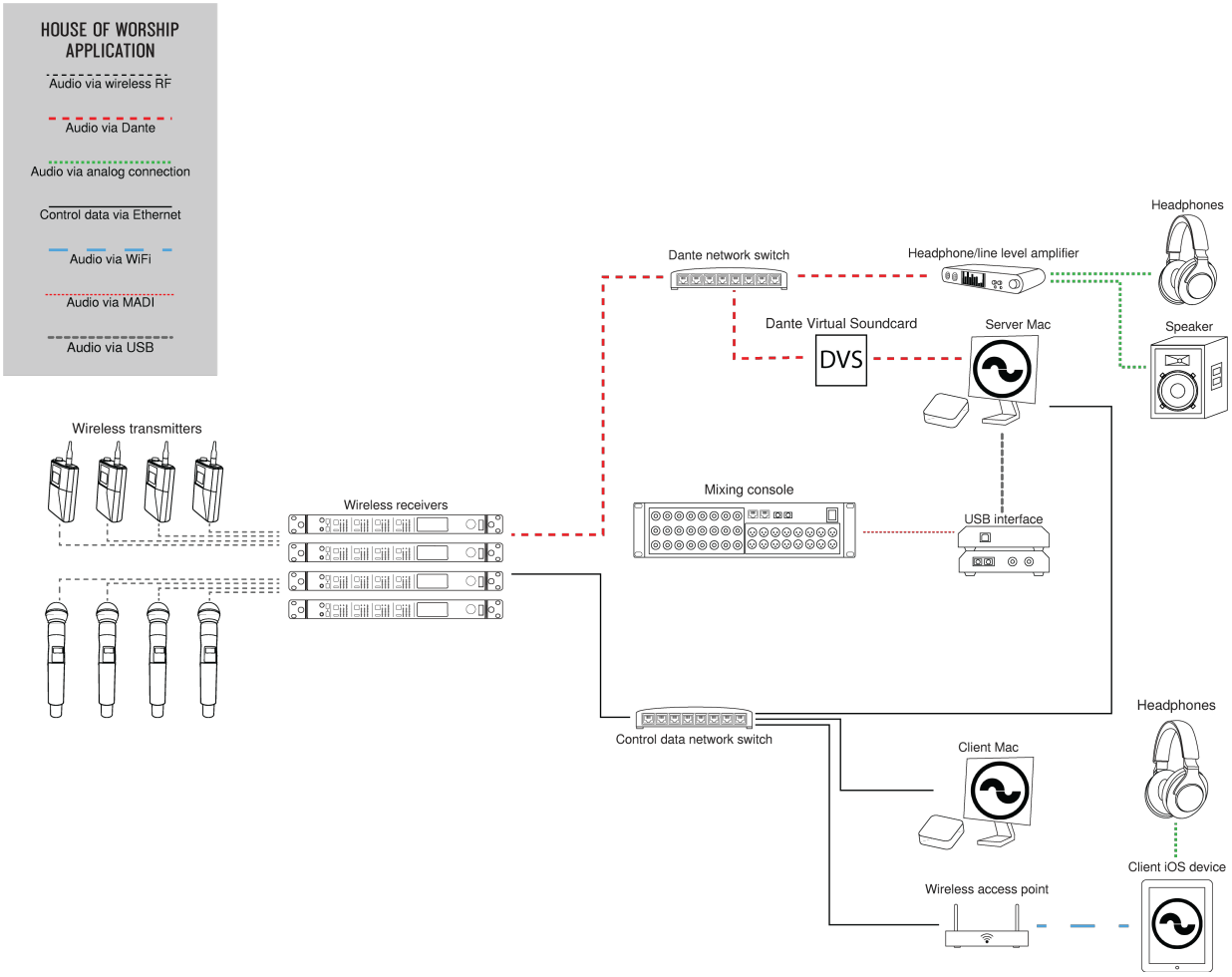
WAVETOOL is compatible with audio via MADI. Split the MADI signal from your stage rack and plug it in to a MADI interface in your computer. You can then listen to the MADI feed with headphones, through an external sound card, or over Wi-Fi on iOS devices. For an example of a WAVETOOL system using MADI for live sound, see the diagram below.




## Using WAVETOOL 4 with Dante networks

WAVETOOL 4 is compatible with channels from a Dante audio network via Dante Virtual Soundcard from Audinate. You can then stream your monitor feed output back to Dante Virtual Soundcard, or via headphones from the computer. For an example of a WAVETOOL system using Dante for theater and houses of worship, see the diagrams below.


THEATER APPLICATION
Audio via wireless RF
Audio via Dante
Audio via analog connection
Control data via Ethernet
Audio via WiFi
Headphones
Headphone/line level amplifier
Speaker
Dante network switch
Dante Virtual Soundcard
DVS
Wireless transmitters
Wireless receivers
Server Mac
Control data network switch
Headphones
WiFi access point
Client iOS device
Client Mac




# System Requirements

The latest version of WAVETOOL 4 supports macOS 14 or newer and works with both Intel and Apple M1 chips.

Total System RAM 8GB minimum is recommended. Screen resolution 1024×768 minimum. Intel Core i5 processor or newer is recommended.

WAVETOOL on iOS supports iOS 14 or newer.

WAVETOOL works best when used with a touch screen. Viewsonic makes a range of touch screens that works well also with the latest operating systems (both with Intel and M1 chips) with Viewsonic's own, free of charge, touch driver. Learn more about Viewsonic TD Series here: https://www.viewsonic.com/touch/touchscreen-monitor

Touch-Base drivers may add touch functionality if your touch screen is not compatible by default. Please contact them directly if you have compatibility questions. Touch-Base offers a 7-day trial of their driver.

# Command Key (⌘) Glossary

⌘A: Opens Players window

⌘K: Opens snapshot list

⌘D: Opens WAVETOOL inventory

⌘L: Locks WAVETOOL – use when you leave a listening station

⌘P: Opens Preferences window

⌘W: Opens wireless IP list

⌘Y: Initiates Mic Check mode