

708 South Irma Blvd. · Gonzales, LA 70737 · 225-647-8924 · myAPL.org

Recording Studio Badging Guide

The Donaldsonville Studio consists of a sound resistant Audio/Video recording room, designed to record a wide range of media including podcasts, music, vocals, videos, and live streams, while simultaneously allowing the live mixing and mastering of audio and editing of video. The studio has an assortment of professional grade studio microphones, a 32-channel digital mixer, electric guitar, electric bass, electronic drum set, keyboard, and an Akai MPC One+ sequencer, available for patron use. To have the option to reserve Makerspace equipment patrons must take a badging class and pass the practical exam to earn a badge for each equipment or software.

This guide will teach you how to:

- Power on the equipment
- Loading a Scene on the mixer
- Use GarageBand to record your music or podcast
- Export your music and save it to take with you

Need to Know

Before you begin, let's review the badging "need-to-knows" so you can add that Recording Studio Badge to your Makerspace repertoire. Materials you will want to review for the badging practical exam are available on the APL and Makerspace webpages in detail and include:

- This badging manual's equipment and station specific content
- Makerspace equipment and station reservation, check-in, clean-up, close-down, and check-out procedures
- Materials Consumables Fees documents; procedures for acquiring and purchasing materials (not scrap)
- Location of branch-specific clean-up and safety equipment (e.g., broom, fire extinguisher, eye and hearing protection, first-aid kits)
- Makerspace User Agreement and Release of Liability
- APL & Makerspace Policies, Procedures and Safety Rules

Begin by reading through this badging manual and the Makerspace policies and procedures. Next, sign up for a badging class with the equipment you are interested in. Search and register for classes on the [Library Events Calendar](#).

Please note, completing the class DOES NOT result in a badge. To complete the badging process, patrons must pass an in-person lab practical in the Makerspace. It is recommended that patrons review the relevant online material in addition to attending a badging class prior to reserving a date and time to

complete their lab practical to receive their badge. Reservations must be made 48 hours (about 2 days) in advance of the date and time requested, whether patrons are reserving time to take their badging practical or reserving time on equipment or software after becoming badged. This ensures library staff have time to reference and approve requests.

Using The Studio

The Recording Studio is one room that contains everything you will need to record your music or podcast. Audio is recorded using the Behringer X32 Mixer into a Digital Audio Workstation (DAW). The DAW referenced herein is GarageBand. Apple Logic Pro and Adobe Audition are also available for more experienced users. Patrons recording in the Studio can export their raw audio files or their project files to fine tune in the editing bay or offsite with their own software.

Powering On and Off

Power on the relevant instrument, Behringer X32, PreSonus HP60, Behringer DI800 and the Adam Audio speaker system. The speakers must be turned on/off in the order specified below as to avoid damaging them:

- When Powering ON the speakers should be turned on LAST.
- When Powering OFF the speakers should be turned off FIRST.

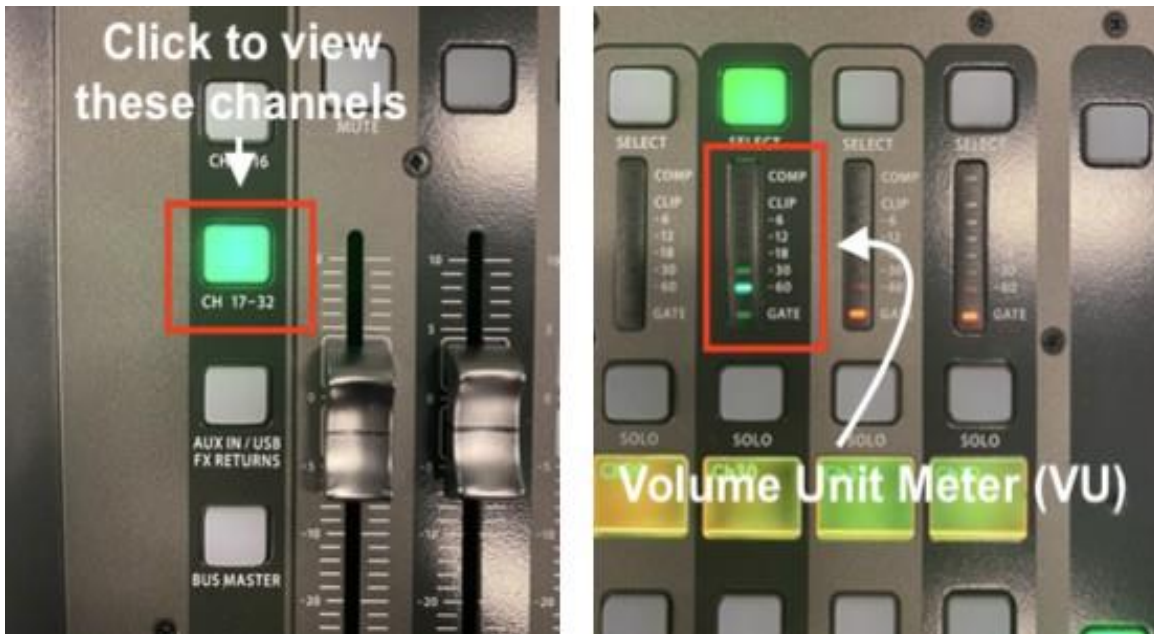
Understanding the Mixing Board

This section contains information about the mixing board, its various controls and settings, and how to adjust individual channels if needed. The mixer configuration template should load as soon as the board powers on. If it does not, you will need to load it manually. To load the template for the board, press the “VIEW” button on the “SCENES” tile. Select “SCENES,” then select “APL Basic Session” template and press the knob under Load.

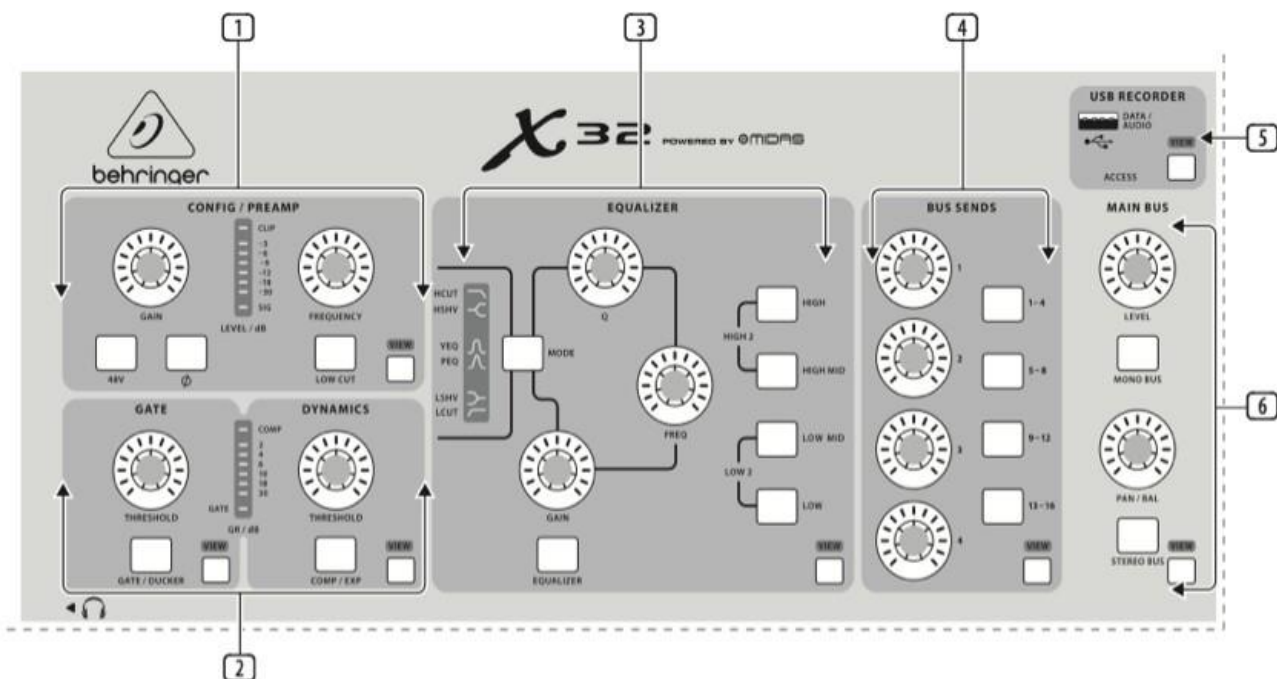


From here, you can check whether the microphone/source signal is passing into the board using the channels 1-16 display on the board (instrument sources are assigned to faders 1-8, microphones are assigned to faders 9-16). Also click the button “AUX IN/USB FX RETURNS” since the first two channels there are reserved for computer audio playback and verify that you are hearing audio from the Mac. To confirm that the sound is being received, the VU meter should partially illuminate. To hear sound from the board, turn up the channel fader and then the Main fader, labelled “MAIN,” on the board. This fader

controls the volume of all tracks simultaneously.



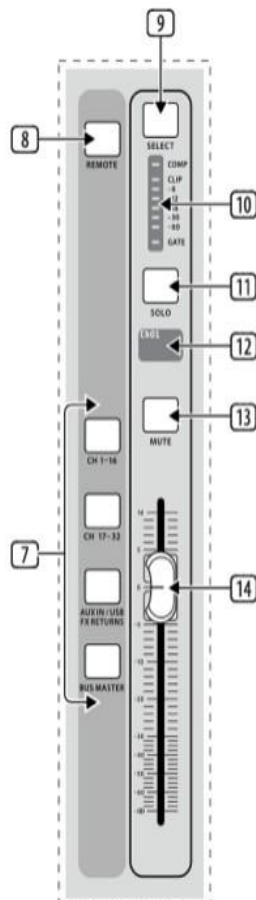
Once the template has been loaded and the microphone/source check successful, recording may now begin. DO NOT adjust any other settings on the board, such as the gain, gate, or equalizer. These controls have been configured for the control room and sound booth and adjusting them can result in a noisy or clipped recording. The other panels on the mixing board and their controls are described below.



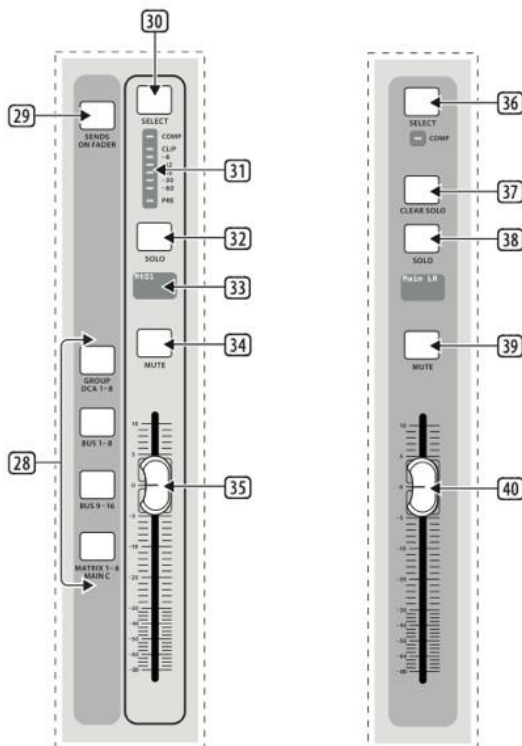
- 1 Preamp** – Adjust the preamp gain for the selected channel with the Gain knob. Press the 48 V button to apply phantom power for use with condenser microphones and press the ϕ button to reverse the channel's phase. The meter displays the selected channel's level. Press the Low Cut button and select the desired high-pass frequency to remove unwanted lows. Press the View button to access more detailed parameters on the Main Display. Note - It is best practice to mute the respective channels prior to switching their phantom power supply on or off. Otherwise, the change of charge may cause an audible popping noise. Gain adjustments might also produce audible click noise when adjust shortly after having switched phantom power on or off.
- 2 Gate/Dynamics** – Press the Gate/Ducker button to engage the noise gate and adjust the threshold accordingly. Press the Comp/Exp button to engage the compressor and adjust the threshold accordingly. When the signal level in the meter drops below the selected Gate threshold, the noise gate will silence the channel. When the signal level reaches the selected Dynamics threshold, the peaks will be compressed. Press the View buttons to access more parameters on the Main Display.
- 3 Equalizer** – Press the Equalizer button to engage this section. Select one of the 4 frequency bands with the High, High Mid, Low Mid, and Low knobs. Press the Mode button to cycle through the types of EQ available. Select the specific frequency to be adjusted with the Freq knob, and adjust the bandwidth of the EQ with the Q knob. Finally, boost or cut the selected frequency with the Gain knob. Press the View button for more editing options.
- 4 Bus Sends** – Quickly adjust the bus sends by selecting one of the 4 banks, followed by one of the 4 knobs. Press the View button for more detailed editing and routing.
- 5 USB Recorder** – Connect a thumb drive to install firmware updates and to record performances. See the Topic Guide section for details.
- 6 Main Bus** – Press the Mono Bus or Stereo Bus to assign the channel to the main mono or stereo bus. When Stereo Bus is selected, the Pan/Bal adjusts the left-to-right positioning. Adjust the overall send level to the Mono Bus with the Level knob. Press the View button for more editing options.

Setting your audio levels is a balance between the GAIN, the CHANNEL input, and the MAIN fader. If the signal of your audio source is low, you may adjust the GAIN knob. For example, our microphones each have gain settings that work better for each type. The SM57 can be set to 60% as a start and does not need phantom power, while the more sensitive AT4040 responds well around 45% with phantom power required. Any GAIN adjustments should be made slowly and carefully so as not to cause feedback.

2.2 Input Channel Banks

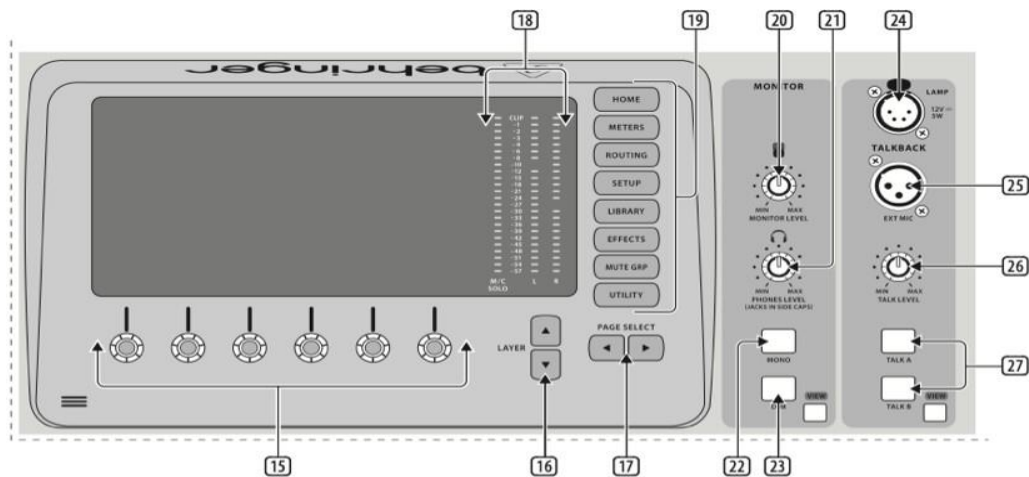


2.4 Group/Bus Banks



- 7 **Layer Select** – Select either the channels 1-16, channels 17-32, Aux In/USB/FX Returns, or Bus Masters layer with these 4 buttons. The currently active layer will light.
- 8 **DAW Remote** – Press this to enable DAW remote control.
- 9 **Select** – Press this button to select an input or bus (depending which layer is active) and allow it to be edited by the Channel Strip and Main Display.
- 10 **Channel Meter** – This displays the signal level of the input or bus (depending which layer is active). The Gate and Comp LEDs light to indicate that noise gate and/or compression are active.
- 11 **Solo** – Press this button to send the channel to the Solo Bus.
- 12 **Mini Display** – Information such as channel number, nickname, input source and graphical icon are displayed on this color LCD screen.
- 13 **Mute** – Press this button to mute the channel.
- 14 **Fader** – Use this to adjust the channel volume or bus send in 'Sends on Faders' mode. The faders will automatically display the current status as layers and functions are changed.

- 28 **Group/Bus Layers** – Select between DCA groups 1-8, Buses 1-8 or 9-16, or Matrices 1-6 and the main center bus with these buttons. The currently active layer will light.
- 29 **Sends on Faders** – Press this button to activate the Sends on Faders function. See the Topic Guide for more details.
- 30 **Select** – Press this button to select a DCA or bus (depending which layer is active) and allow it to be edited by the Channel Strip and Main Display.
- 31 **Group/Bus Meter** – This displays the signal level of the DCA or bus (depending which layer is active). The Pre LED indicates that the bus is sourced pre-fader, while the Comp LED indicates that compression is active.
- 32 **Solo** – Press this button to solo the DCA or bus.
- 33 **Mini Display** – Information such as matrix/bus number, nickname, input source and graphical icon are displayed on this color LCD scribble strip screen.
- 34 **Mute** – Press this button to mute the DCA or bus.
- 35 **Fader** – Use this to adjust the bus level. The faders will automatically display the current status as layers and functions are changed.
- 36 **Main Select** – Press this button to select the main bus for editing.
- 37 **Clear Solo** – Press this button to release all sources assigned to the solo bus.
- 38 **Main Solo** – Press this button to solo the main bus.
- 39 **Main Mute** – Press this button to mute the main bus.
- 40 **Main Fader** – This fader adjusts the output of the main bus.



- 15 **Push Encoders** – These 6 controls adjust the parameters presented at the bottom of the Main Display. The editable function will show a circular icon in the display when continuous control is available. The function will show a broad rectangular icon to indicate that a switch or toggle can be accessed by pushing the encoder.
- 16 **Layer Buttons** – Some screens in the Main Display have more than 6 editable parameters which can be accessed by pressing the Layer Up or Down buttons.
- 17 **Page Select Buttons** – Use these to scroll through the available screens or to confirm/decline certain actions.
- 18 **Main/Solo Meters** – The main stereo output level is displayed here along with the solo level of all channels whose Solo button is active.
- 19 **Category Select Buttons** – Press one of these buttons to jump directly to the subject you wish to edit or configure.
- 20 **Monitor Level** – Adjust the level of the Monitor outputs with this knob.
- 21 **Phones Level** – Adjust the volume of the headphone outputs, located inside the left and right side caps.
- 22 **Monitor Mono** – Press this button to monitor the audio in mono.
- 23 **Dim** – Press this button to reduce the monitor volume. Press the View button to adjust the amount of attenuation along with all other monitoring-related functions.
- 24 **Lamp Input** – Connect a standard 12 V, 5 Watt gooseneck lamp here.
- 25 **Talkback Input** – Connect a talkback mic via standard XLR cable to this input.
- 26 **Talk Level** – Adjust the level of the talkback mic with this knob.
- 27 **Talk A/B** – Select the destination for the talkback mic signal with these buttons. Press the View button to edit the talkback routing for A and B.


Making Your first Recording in GarageBand

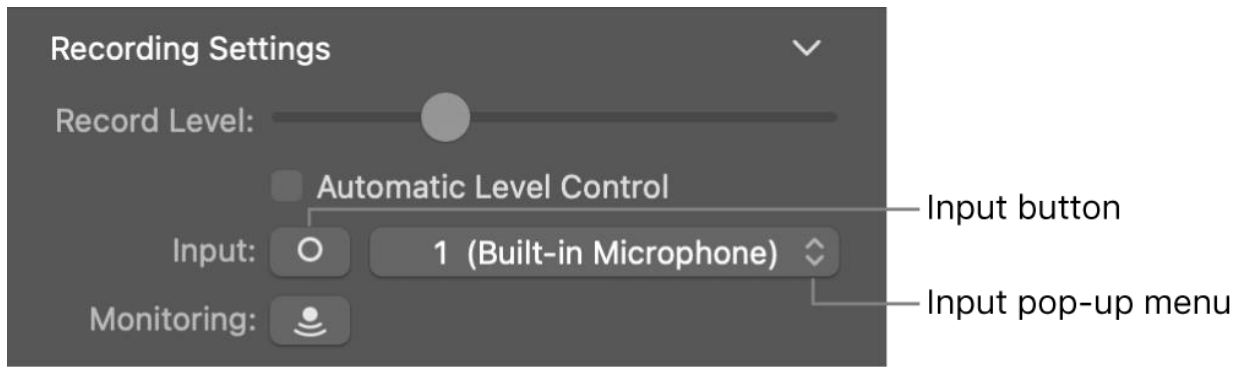
You can record your voice, an acoustic instrument, or any other sound using your computer’s built-in microphone or a microphone connected to your computer. You record sound from a microphone to an audio track.

Before you start recording audio, do the following:


- Connect a microphone, an electric guitar, or another instrument to your computer and make sure the microphone or instrument is working.
- Select the audio track you want to record to or add an audio track. Be sure to set the input source, input volume level, and monitoring for the track.
- Set the recording bit depth, which is the number of digital bits each sample contains. The higher the bit depth, the greater the dynamic range of the audio data.
- Tune any instruments that you are recording to ensure that your audio recordings are in tune with any software instruments, samples, and existing recordings in your project.

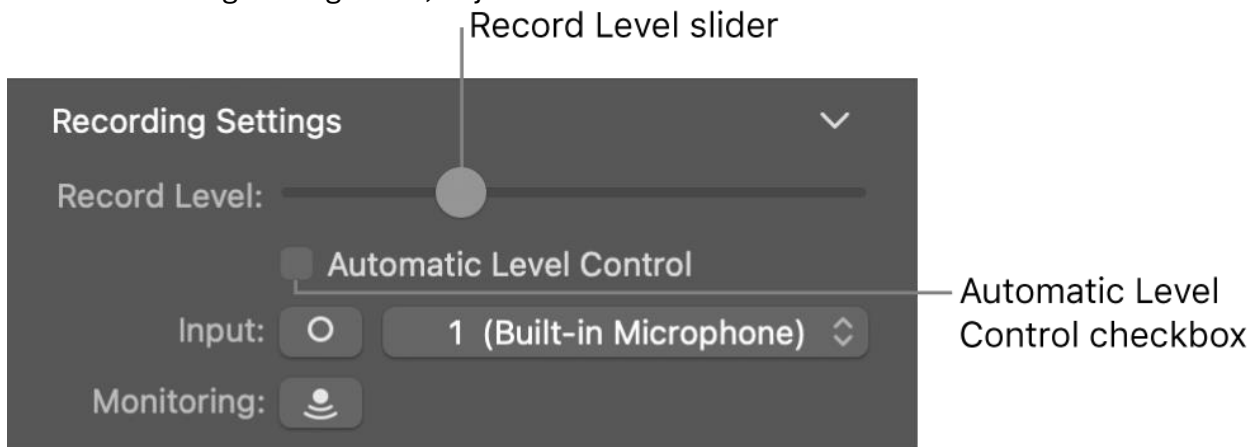
Set the input source for the track

- In GarageBand on Mac, select the track you want to use, then click the Smart Controls button  in the control bar.
- In the Recording Settings area, click the Input button to switch between a stereo input channel pair and a mono input channel, then choose the source from the Input pop-up menu.



Adjust the input volume level for the sound source



- In GarageBand on Mac, select the track you want to use, then click the Smart Controls button  in the control bar.
- In the Recording Settings area, adjust the Record Level slider.

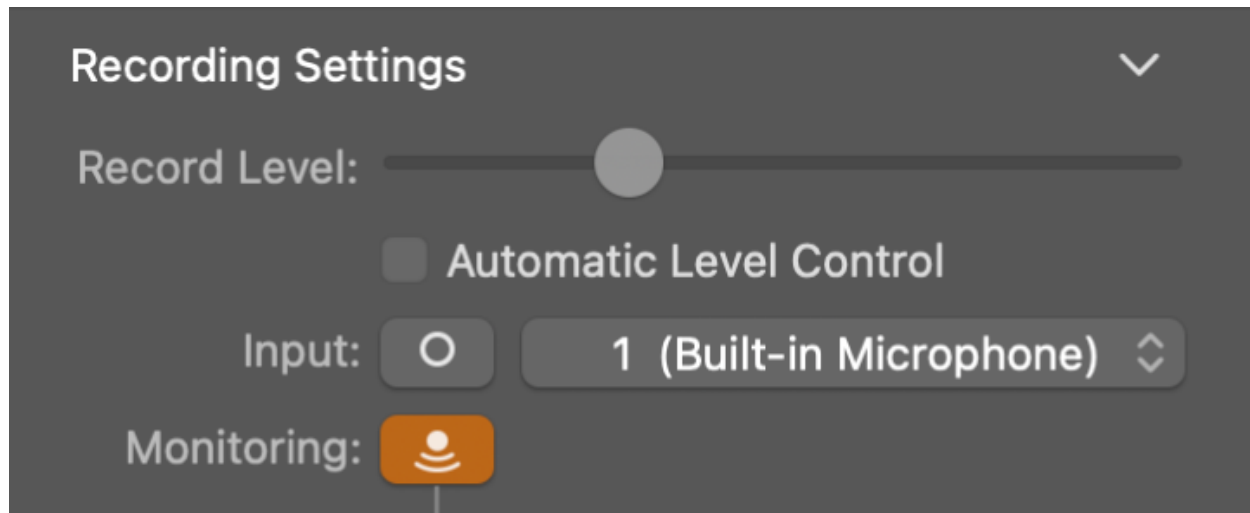


You can also select the Automatic Level Control checkbox to have the recording level adjusted automatically. It lowers the level to prevent feedback and raises the level if it is too low.

Hear your microphone or instrument as you play and record (monitoring)

In GarageBand on Mac, do one of the following:

- Click the Monitoring button  in the track header of the track you want to use.
- Select the track you want to use, then click the Monitoring button  in the Recording Settings area.

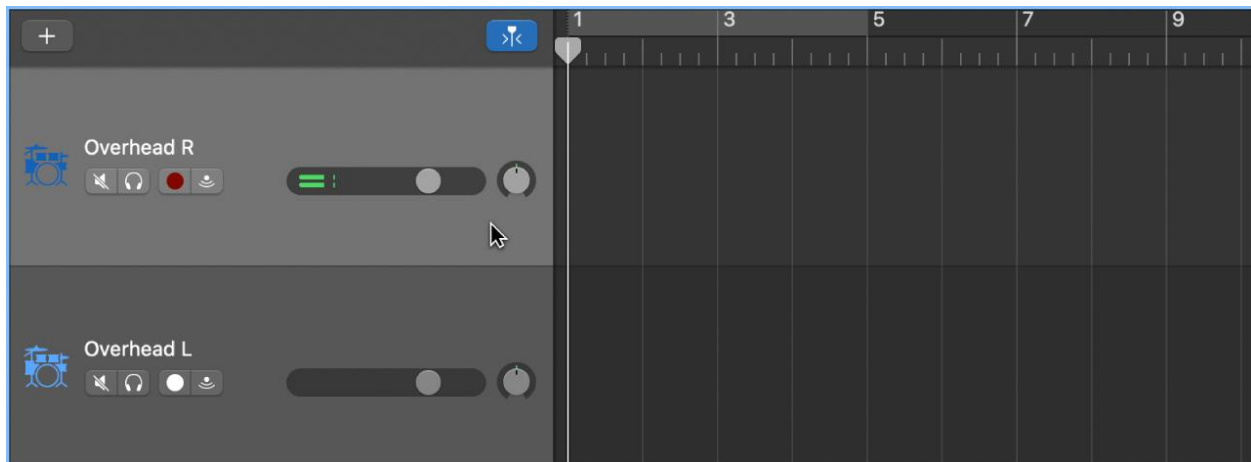



Monitoring button

Record to an audio track in GarageBand on Mac


You record sound from a microphone (voice or acoustic instrument, for example) or an electric instrument (such as an electric guitar) connected to your computer, to an audio track.

Record sound to an audio track



- In GarageBand on Mac, select the header of the audio or guitar/bass track you want to record to.
- Move the playhead to the point in the ruler where you want to start recording.
- Set the metronome and count-in to hear a steady beat while recording.
- Click the Record button  in the control bar (or press R) to start recording.
- Start singing or playing your instrument. The recording appears as a new audio region on the track as you record.




- Click the Stop button  in the control bar (or press the Space bar) to stop recording.


Record multiple audio takes in GarageBand on Mac

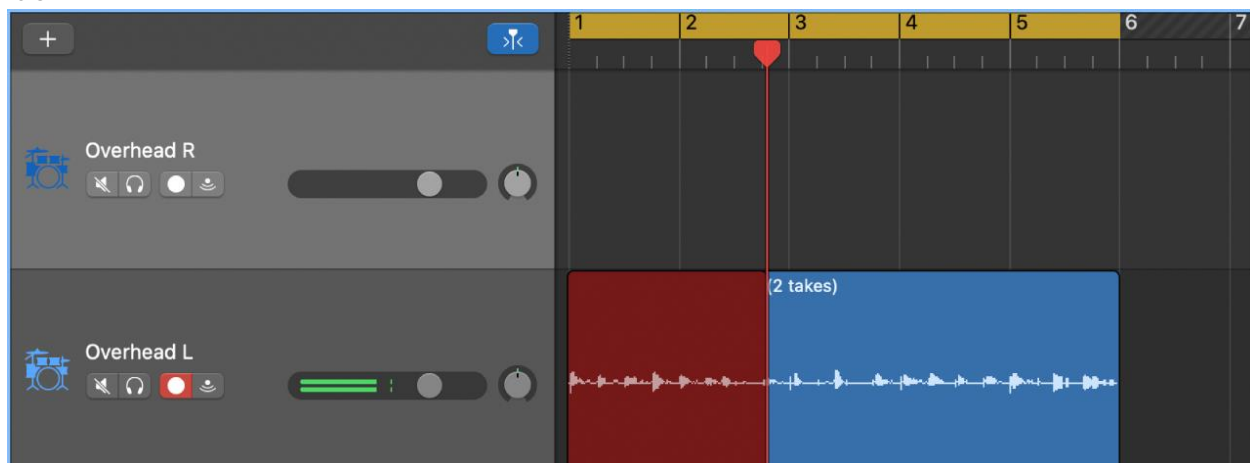
When you're recording, you can record multiple versions, or takes, in quick succession. This can be a useful technique, especially when you're improvising a lead or solo part, or when you're recording a difficult passage. Later, you can preview the take recordings and choose the one you want to use in the project.


Record multiple takes to an audio track

In GarageBand on Mac, drag left or right in the top part of the ruler.  The cycle area appears as a yellow strip in the ruler, and Cycle mode is automatically turned on.

Set the metronome and count-in to hear a steady beat while recording.


Click the Record button  in the control bar (or press R) to start recording. Recording starts automatically at the beginning of the defined cycle area. Record as many cycle passes as you wish. After the second cycle pass, a take folder is created on the track. Each subsequent cycle pass is added to the take folder.



Click the Stop button  in the control bar (or press the Space bar) after you finish capturing cycle

passes.

Record to multiple audio tracks in GarageBand on Mac

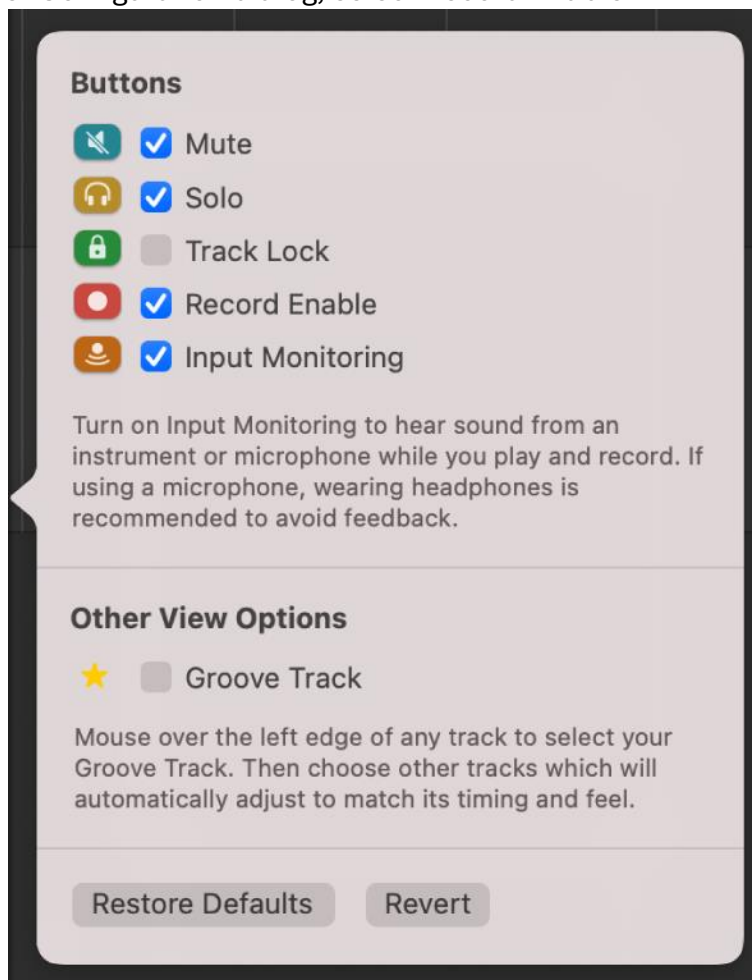
You can record to more than one audio track at a time, which allows you to record several instruments at once—placing each instrument on a separate track, for example. To record multiple audio tracks, the Record Enable button  must be visible on each track. The Record Enable button prepares multiple audio tracks to receive audio simultaneously.


Note: Record enabling a track also lets you monitor the input.


Record to multiple audio tracks simultaneously

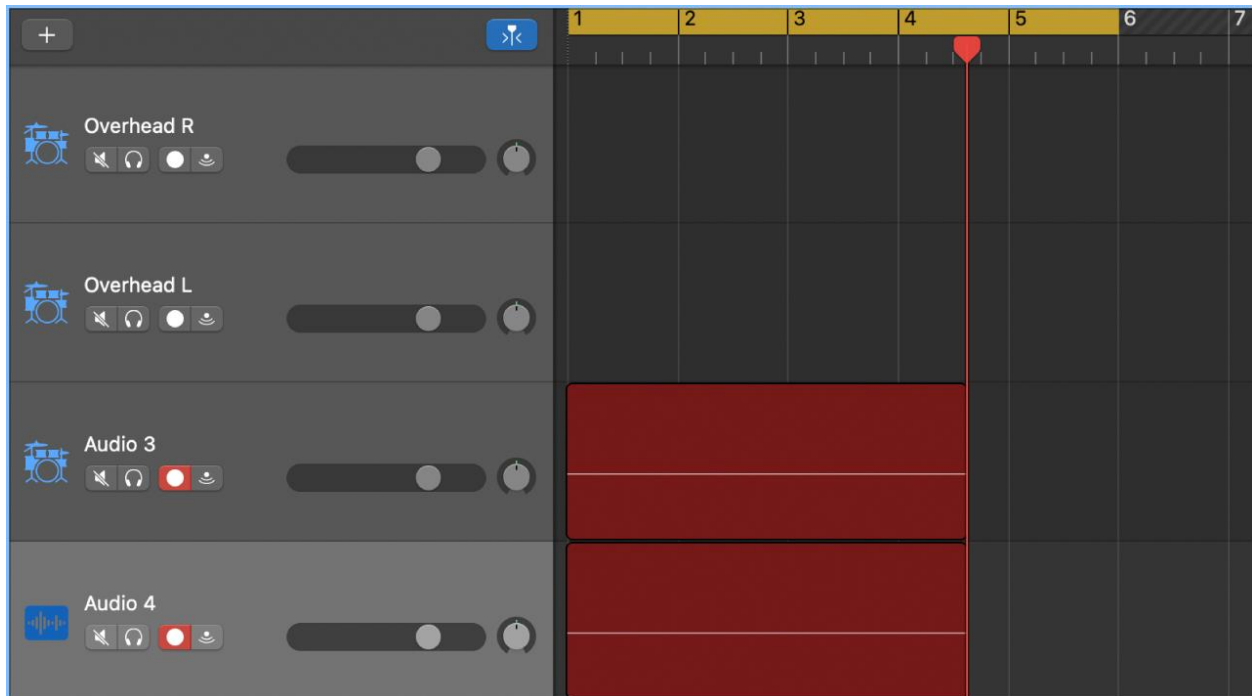
In GarageBand on Mac, set the instrument or microphone input source for each track you want to record to.


- Choose Track
- Configure Track Header
- You can also right-click on any track header or press Option-T
- In the Track Header Configuration dialog, select Record Enable.



- If Record Enable is already selected, you can skip this step.
- Click the Record Enable button  in the track header of each track you want to record to.

- Move the playhead to the point in the ruler where you want to start recording.
- Set the metronome and count-in to hear a steady beat while recording.
- Click the Record button  in the control bar (or press R) to start recording.
- Start singing or playing your instrument. A new audio region appears on each of the record-enabled tracks.



- Click the Stop button  in the control bar (or press the Space bar) to stop recording.



Record software instruments in GarageBand on Mac

Before you start recording, make sure you connect a music keyboard to your computer and create a software instrument track to record too. You should also familiarize yourself with how to use musical typing and the onscreen keyboard.

During recording, any adjustments to knobs or other controls in the Smart Controls area are recorded as region automation. You can use automation in the Piano Roll Editor to edit the Smart Controls Recording later.

Record a software instrument



In GarageBand on Mac, select the software instrument track you want to record to. Move the playhead to the point in the ruler where you want to start recording. Set the metronome and count-in to hear a steady beat while recording. Click the Record button  in the control bar (or press R) to start recording. Use your MIDI keyboard, Musical Typing window, or onscreen keyboard to play some notes. The recording appears as a new MIDI region on the track as you record. Click the Stop button  in the control bar (or press the Space bar) to stop recording.

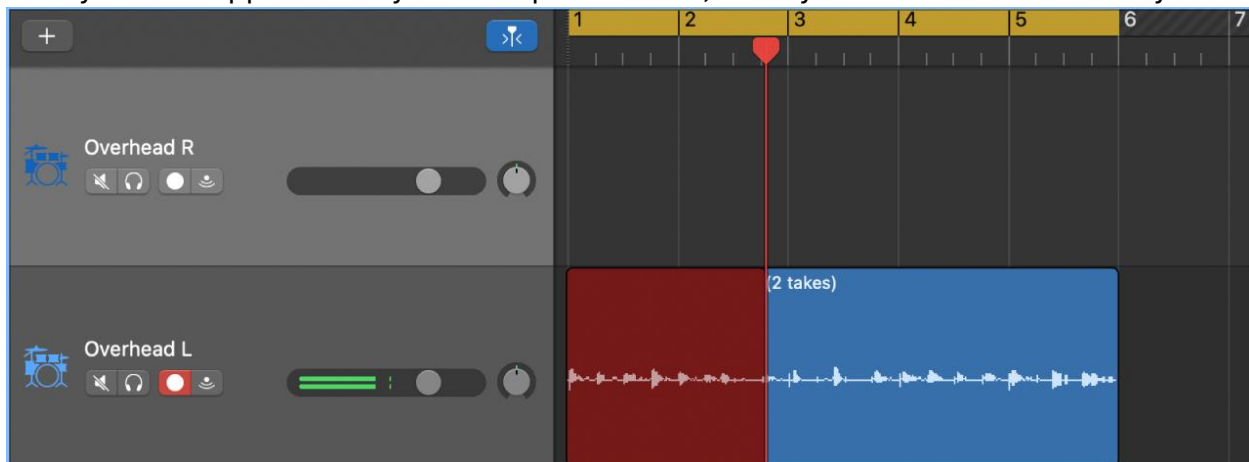
Record multiple software instrument takes in GarageBand on Mac


When you're recording, you can record multiple versions, or takes, in quick succession. Later, you can preview the take recordings and choose the one you want to use in the project. During recording, any adjustments to knobs or other controls in the Smart Controls area are recorded as region automation. You can use automation in the Piano Roll Editor to edit the Smart Controls Recording later.


Record multiple MIDI takes

In GarageBand on Mac choose:

- GarageBand > Settings
- In General settings, choose Create Takes from the “Cycle on” pop-up menu.
- Drag left or right in the top part of the ruler.
- The cycle area appears as a yellow strip in the ruler, and Cycle mode is automatically turned on.



- Click the Record button  in the control bar (or press R) to start recording. Recording starts automatically at the beginning of the defined cycle area.

- Use your MIDI keyboard, Musical Typing window, or onscreen keyboard to play some notes. Record as many cycle passes as you wish. *Note: Each previously recorded take is automatically muted during recording.*
- Click the Stop button  in the control bar (or press the Space bar) to stop recording. The selected track contains a closed take folder with multiple take regions inside.

Overdub software instrument takes in GarageBand on Mac

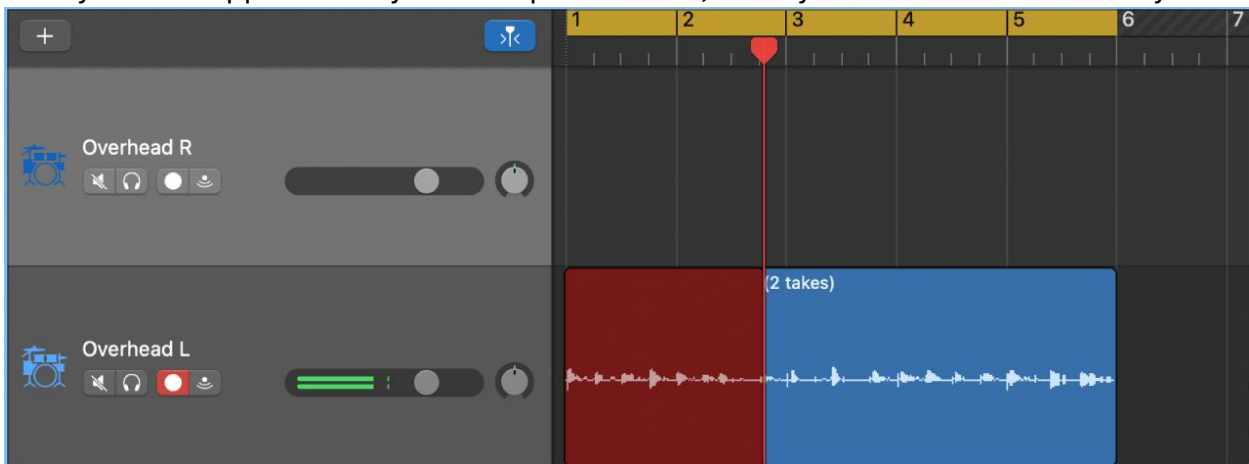
Overdubbing is the process of recording a performance on top of an existing performance, merging them into a single region. You can use this process to add a supplementary recorded sound to a previously recorded performance, for example.



During recording, any adjustments to knobs or other controls in the Smart Controls area are recorded as region automation. You can use automation in the Piano Roll Editor to edit the Smart Controls Recording later.

Overdub a software instrument recording

In GarageBand on Mac, choose


- GarageBand > Settings.
- In General settings, choose Merge from the “Cycle on” pop-up menu
- Drag left or right in the top part of the ruler.
- The cycle area appears as a yellow strip in the ruler, and Cycle mode is automatically turned on.



- Click the Record button  in the control bar (or press R) to start recording. Recording begins after the predefined count-in.
- Use your MIDI keyboard, Musical Typing window, or onscreen music keyboard to play some notes. Record as many cycle passes as you wish.
- Click the Stop button  in the control bar (or press the Space bar) to stop recording.

The result is a single MIDI region that contains the merged performances from each cycle pass.

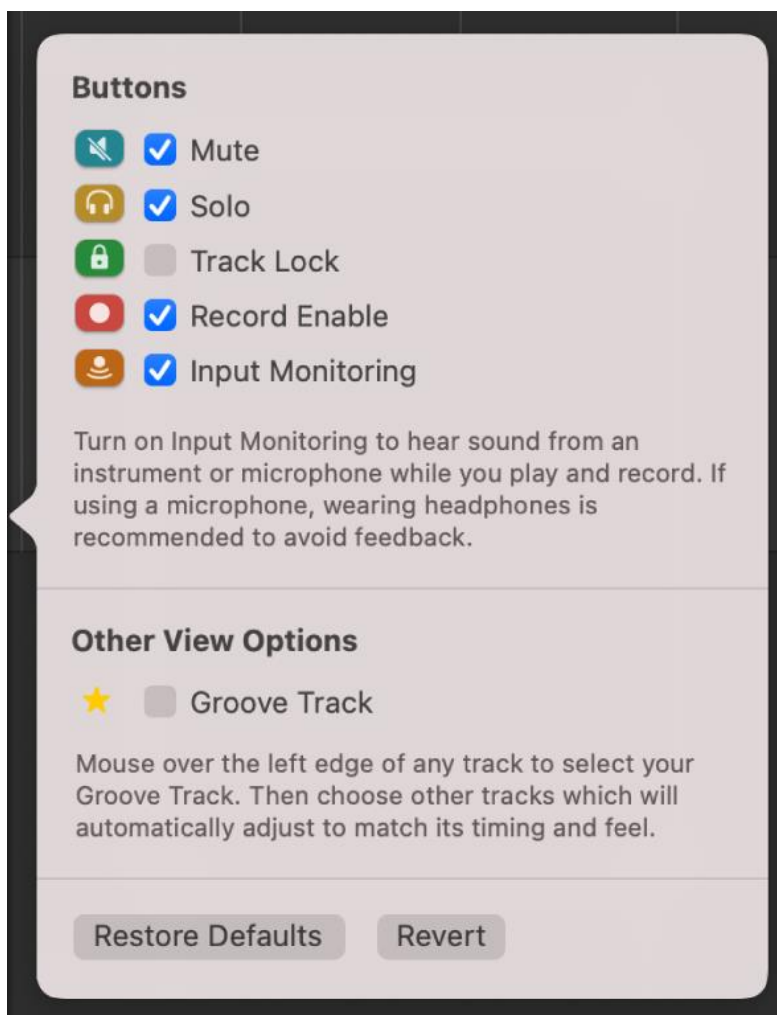
Record to multiple software instrument tracks in GarageBand on Mac



You can record to multiple software instrument tracks simultaneously. To record multiple tracks, you must have the Record Enable button  visible on each track. The Record Enable button prepares multiple software instrument tracks to receive MIDI simultaneously.

During recording, any adjustments to knobs or other controls in the Smart Controls area are recorded as region automation. You can use automation in the Piano Roll Editor to edit the Smart Controls Recording later.


Note: Record enabling a track also lets you monitor the input.

Record to multiple software instrument tracks simultaneously



- In GarageBand on Mac, choose Track > Configure Track Header. You can also right-click on any track header or press Option-T. In the Track Header Configuration dialog, select Record Enable.
- If Record Enable is already selected, you can skip this step.
- Click the Record Enable button  in the track header of each track you want to record to.
- Move the playhead to the point in the ruler where you want to start recording.
- Set the metronome and count-in to hear a steady beat while recording.
- Click the Record button  in the control bar (or press R) to start recording.
- Use your MIDI keyboard, Musical Typing window, or onscreen music keyboard to play some notes.

Record as many cycle passes as you wish. A new MIDI region appears on each of the record-enabled tracks.

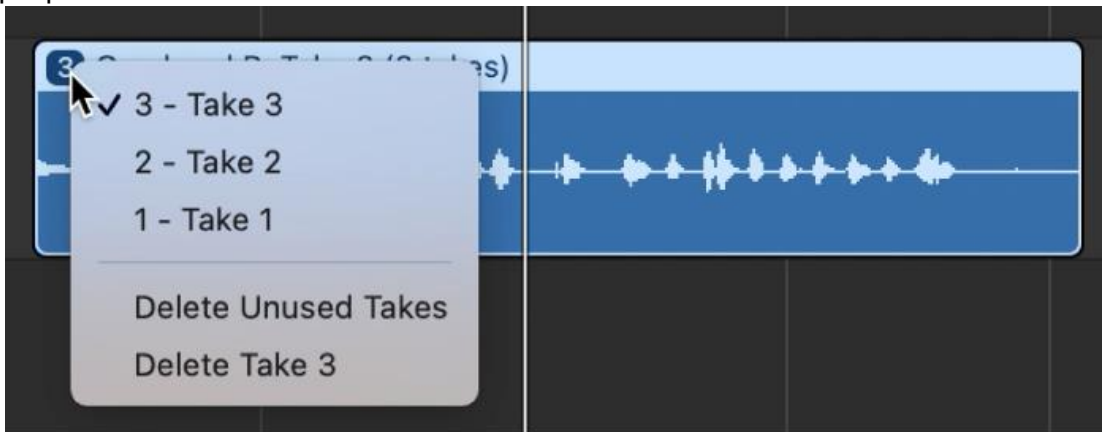
- Click the Stop button  in the control bar (or press the Space bar) to stop recording.

Choose and delete takes in GarageBand on Mac

When you're recording, you can record multiple versions, or takes, in quick succession—both for audio and MIDI. Later, you can choose the take you want to use in the project.

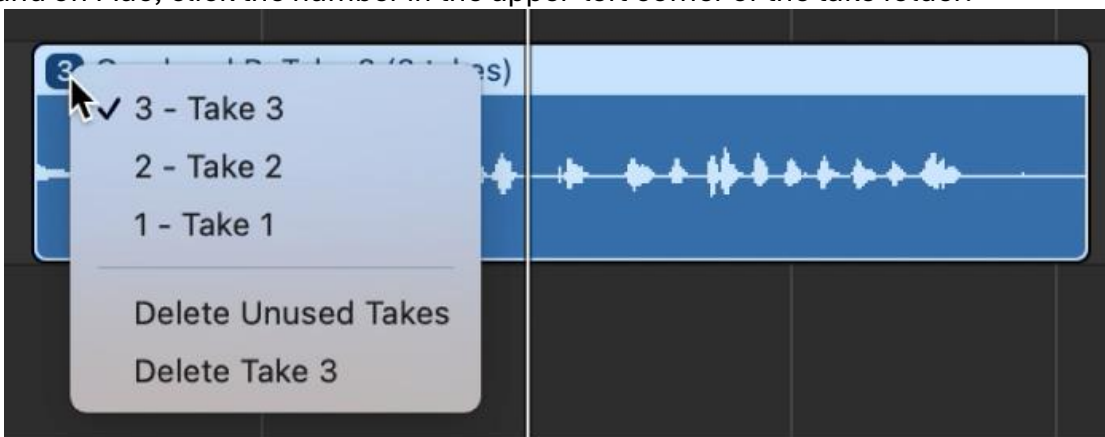
Choose a take

In GarageBand on Mac, click the number in the upper-left corner of the take folder, then choose a take from the pop-up menu.



Delete a take

In GarageBand on Mac, click the number in the upper-left corner of the take folder.



Do one of the following:

- Choose “Delete Take <number>” to delete the current take.
- Choose Delete Unused Takes to delete all takes except the current take.

Use the metronome in GarageBand on Mac

GarageBand includes a metronome, which plays a steady beat (like a “click track”) to help you play and record in time. You can turn the metronome on or off when you are recording or any time your project is playing. The metronome always plays at the project tempo.

Important: When you record audio using a microphone and the metronome is playing, the sound of the metronome is included as part of the recording. To avoid this, the metronome should be turned off, or the metronome volume reduced to zero. You can also set the metronome to play a one-measure “count-in” before recording starts.

Turn the metronome on or off

- In GarageBand on Mac, click the Metronome button  in the control bar.


Turn the count-in on or off

- In GarageBand on Mac, click the Count-in button **1234** in the control bar to have the metronome play a one- or two-bar count-in before recording starts.



Set the number of bars for the count-in

- In GarageBand on Mac, choose Record > Count-in, then choose the number of bars from the submenu.

Adjust the volume of the metronome click

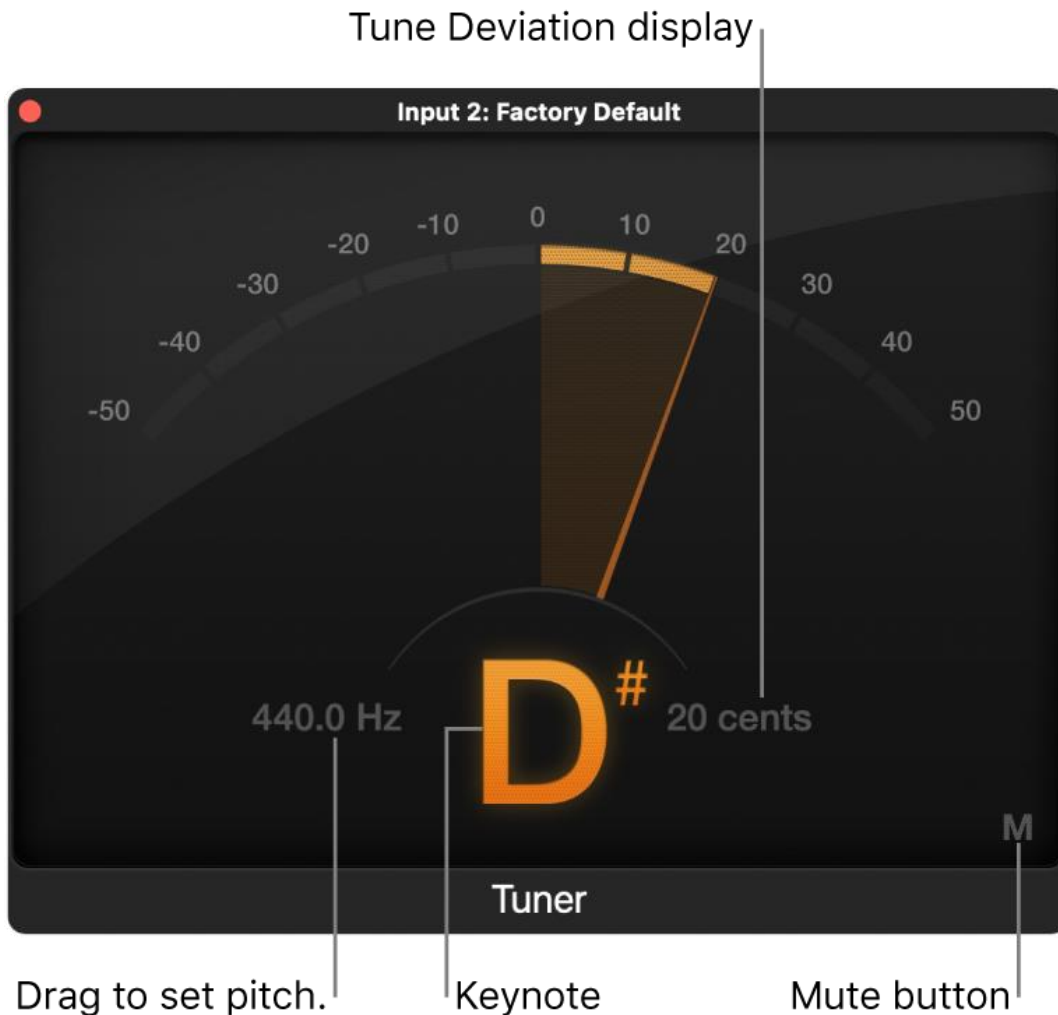
- In GarageBand on Mac, choose GarageBand > Settings.
- Click the Metronome button .
- Drag the Volume slider left or right to raise or lower the volume level of the click.

Adjust the tone of the metronome click

- In GarageBand on Mac, choose GarageBand > Setting.
- Click the Metronome button .
- Drag the Tone slider left or right to change the tone of the click.  With the Tone slider in the middle, the click sounds like a sharp, digital click. As you drag the Tone slider left, the click tone sounds softer and duller. As you drag the Tone slider to the right of the middle, the click tone sounds more like a wood block.

Use the Tuner in GarageBand on Mac

- You can tune guitars and other instruments with the Tuner, so that your audio recordings are in tune with the software instruments and existing recordings in your projects.



The Tuner contains the following parameters:

Graphic Tuning display: Shows the pitch of the note in cents. When the needle is centered in the display, the note is in tune. When the needle is left of center, the note is flat; when the needle is right of center, the note is sharp. Also, the needle and note name appear green when the note is in tune and appear orange when it is flat or sharp.

Reference Tuning field: Drag vertically to set the reference pitch used as the basis for tuning. The default is for note A at 440 Hz and can be set in 0.1 Hz steps in the range from 410 to 470.


Keynote display: Shows the target pitch of the note being played (the closest tuned pitch).

Tune Deviation display: Shows the tuning deviation in cents.

Mute button: Click to mute.

Use the Tuner

In GarageBand on Mac, make sure the audio track for your guitar or bass is selected in the Tracks area.

- Click the Tuner button  in the control bar.
- Play a single note on the instrument and watch the Graphic Tuning and Keynote displays. If the note is flat or sharp of the keynote, orange segments are shown in the Graphic Tuning display. The

Keynote is shown in orange, and the Tune Deviation display indicates how far (in cents) the note is off pitch.

- Adjust the tuning of your instrument until the indicator is centered in the Graphic Tuning display and the Tune Deviation field shows zero (0 cents). The Graphic Tuning display and Keynote are shown in green when the instruments are correctly tuned.

Choosing a File Type

The Share tab in GarageBand offers many options to save your files outside of the standard GarageBand format. Selecting “Export Song to Disk” gives you the following choices:

- AAC - Advanced Audio Coding (AAC) is an audio coding standard for lossy digital audio compression. It was designed to be the successor of the MP3 format and generally achieves higher sound quality than MP3 at the same bit rate.
- MP3 - The most common compression format that is widely supported. Use this format if you do not need to do any further editing or are planning to upload to a streaming platform such as Spotify or Apple Music.
- AIFF – An Apple lossless audio format similar to WAV. If you will be doing further editing on a Mac, this is a good choice.
- Wave - A lossless audio format that does not compress the original analog audio recording from which it is derived. The file size is typically larger than compression formats since all audio information is encoded. Use this format for best quality or for editing offsite.

Choosing a Microphone and Microphone Types

There are two types of microphones available in our studio: dynamic and condenser.

Dynamic Microphone (SM57, SM7B)

Dynamic microphones are an all-purpose microphone. They are relatively cheap compared to other types and are preferable for use in live music where high sound pressure levels may be present. If singing along with a band live in the studio, we recommend the SM57. For podcasting, the SM7B is a popular choice.

Condenser Microphones (AT4040)

Condenser microphones are generally much clearer and crisp than dynamic microphones and have a flatter response than dynamic microphones. They are extremely sensitive to high sound pressure levels, so they are not preferable to use in a live setting. All condenser microphones require an additional ‘+48 volts’ to power active electronics inside the microphone. This additional charge is known as Phantom Power. Phantom Power can be added or removed using the button labeled ‘48v’ on the mixing board. We recommend using the AT4040 when recording vocals to playback of existing music tracks.

Most microphones have what is known as a Pop Filter, which is a foam shield or screen that surrounds the diaphragm of the microphone. The purpose of a pop filter is to Attenuate sounds that are generally

associated with the letters p, t, k, b, d, g in English words. These sounds, called 'plosives, are generally louder and harsher than other sounds because of their frequencies and need to be reduced. We provide one for use with the AT4040.

Glossary of Recording Terms

Amplitude - The relative strength of sound waves, which we perceive as loudness

Arm - To enable a track for recording

Attenuate - To lower the amplitude of a sound

Bit Depth - The number of bits available for each sample for encoding, which determines the dynamic range of the audio file

Boost - To raise the amplitude of a sound

Bounce - The term for rendering a digital audio signal into a new digital audio file

Channel - A pathway for an audio signal

Channel Strip - The series of controls on a mixer that are specific to a channel

Clipping - The result when the amplitude of a signal or sound is too high to be reproduced completely by loudspeakers or microphones

Codec - A way to encode and decode audio into files which can be played back on various platforms

Control Room - The room where audio equipment is stored, and audio is processed and edited

Crossfade - A simultaneous fade in and fade out between audio files on the same track

Decibel - The unit of measurement that describes the loudness of a signal

Digital Audio Workstation (DAW) - The common name for a program where audio is recorded, edited, and processed

Envelope - A way of changing the value of a parameter over time

Environment - The area in which audio is recorded, edited, and processed in a DAW

Event - The name for a region of audio on a track in Studio One

Fader - A way to control the playback volume of a track

Gain - The initial volume setting of a sound source

Gate - A way to control signal input to the board based on a loudness threshold

Mixer - The hardware or software hub through which audio inputs and outputs are connected, routed, and edited

Monitor (speakers) - The speakers used for playback in the control room

Monitor (in DAW) - The setting that allows for recording and listening to a sound simultaneously

Normalization - A way of changing the overall volume of a region by a fixed amount to reach a target level

Phantom Power - An additional 48 volts used to power the electronics and amplify the sound of a condenser microphone

Phase - The polarity of a signal and how it relates to the polarity of another signal

Plugin - A small application that runs inside a DAW and processes audio in some way, either as an effect or some kind of utility

Polar Pattern - Refers to how sensitive the microphone is to incoming sound waves that are delivered from different directions

Pop Filter - The foam shield or screen that surrounds the diaphragm of the microphone

Response - The sensitivity of a microphone to different frequencies

Sampling Rate - The number of samples per second, which affects the resolution at which the sound is recorded

Send - A type of output by which a copy of an audio signal is sent from one location to another

Sound Booth - The sound-proofed room where audio is recorded

Sound Card - A computer component which translates digital signals into analog signals, and analog signals into digital signals

Track - The editable area in the environment where audio and MIDI events are placed and arranged

Transport - The area in the environment where playback and recording controls are stored

Transpose - To adjust the pitch of an audio signal using semi-tones or cents without affecting the playback speed

Zipper Noise - The noise that results from an instantaneous change in amplitude

Addendum

Please review the materials provided at the links below. Content covered in these materials may appear on badging quizzes, especially as it pertains to policies, procedures, and safety guidelines.

- [Patron Behavior Policy](#)
- Internet and Computer Access
- Privacy Policy
- Booking the Studio
- Recording Studio Badging Quiz

Additional Materials

The following webpages provide detailed user guides for the digital audio software provided by the Donaldsonville Recording Studio.

- GarageBand - <https://support.apple.com/en-amr/guide/garageband/welcome/mac>
- Logic Pro - <https://support.apple.com/guide/logicpro/welcome/mac>
- Adobe Audition - <https://helpx.adobe.com/audition/user-guide.html>

Makerspace Workstation Closing Procedures

When your reservation time has ended, follow the closing procedures for ALL workstations. Maker culture and community rely on a shared value of leaving the Makerspace like you found it, or better.

Closing Checklist:

- Turn off the equipment.
- Place all salvageable materials in their appropriate bin (paper, cardboard, 3D filament (plastic), fabric, metal, wood, etc.)
- Recycle or throw away all the remaining non-salvageable scraps and materials. Be sure to place recyclable materials in their appropriate bin.
- Return all accessory tools used to their appropriate locations.
- Inspect all station equipment at the reserved workstation and ensure its functionality.
- Report any concerns to Makerspace staff immediately.
- If you used a Makerspace computer, log off your personal account only. DO NOT log off the workstation computers or shut them down.
- Clean the workstation. This may include: (1) using alcohol spray and a paper towel to wipe down the workstation table and chair(s), as well as equipment handles and buttons; and (2) sweeping the workstation area of visible debris.

- Push Makerspace chairs and stools back under the workstation tables and ensure all electrical cords are tucked away so others will not trip over them.

Once the checklist is completed, check out with the Makerspace staff on duty so they can review/inventory the workstation and charge the total of consumables used to your LS2 account. If you are leaving earlier than your reserved time, and reserved time during Open Hours of Innovation, please let the staff member know so they can allow others to use the workstation.