Using the Roland R-05 Sound Recorder

MassArt Studio Foundation

Version 1, January 1, 2016

Table of Contents

Getting Started

Power

Slide, hold and then release slider (on side)

SD (Memory) Card

Insert/remove memory card here (top of recorder)

FINDER and MENU buttons

FINDER button lets you view a list of, rename, delete, and copy files.

MENU button lets you change settings, i.e. recording/playback settings, date/time, etc.

Navigation

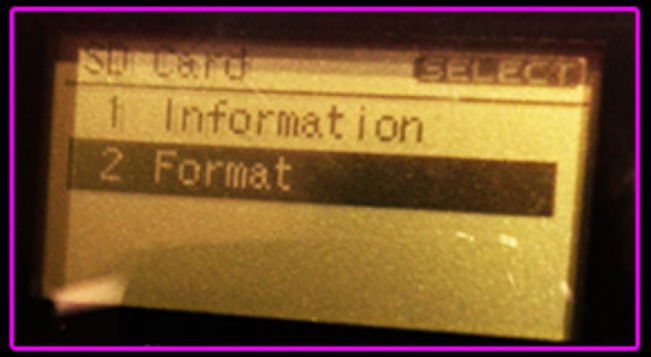
Navigate through FINDER and MENU using play, stop, rewind & fast fwd buttons.

Formatting the Memory Card

Format a memory card to permanently delete all content on card, thus freeing up space.

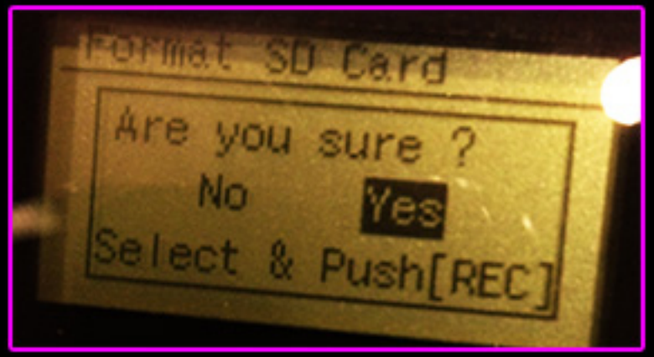
Press MENU button,
Navigate to "9 SD Card"

Press "record" to select



Select "Format"

Press "record" to select



When confirmation screen appears, select "Yes".

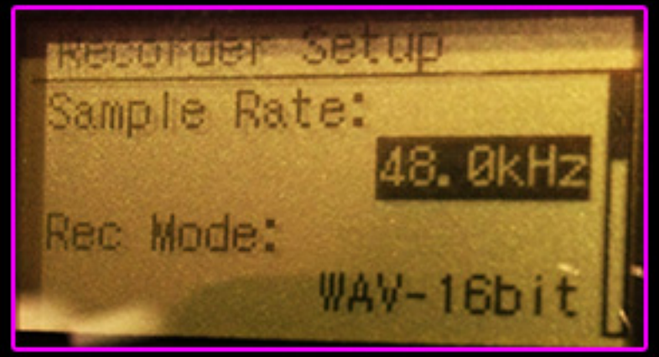
Press "Menu" button to go back and to eventually return to main menu and to exit menu

Choosing Recording Settings

Specify the audio quality of the recording when choosing recording settings.
Audio quality is a combination of Sample Rate and Record Mode.
Audio quality affects file size and file size determines how much information the SD memory card can hold.

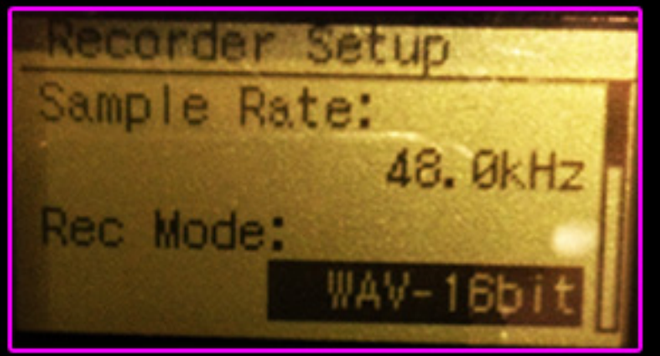
Press "MENU" button
Select "Recorder Setup"

Press "record" to select



Suggested Sample Rate:
48.0 kHz (kilohertz)

Use rewind and fast forward buttons to change rate



Suggested Record Mode:
WAV-16bit

Use rewind and fast forward buttons to change rate

Record-Standby Mode

Record-Standby Mode offers one the chance to adjust levels before recording.

To enter Record-Standby Mode, press “record” button once, notice flashing red light

While in Record-Standby Mode,

Use INPUT [+] [-] level buttons
to adjust recording levels

While in Record-Standby Mode,

Use VOL [+] [-] level buttons
to adjust headphone levels

They don’t affect recording levels

DEVICE IS NOT RECORDING DURING RECORD-STANDBY MODE

Record Mode

If you're in record-standby mode, pressing record once more puts you in record mode.

If you aren't already in record-standby mode, pressing record twice will take you directly to record mode.

While recording (if necessary),

Use INPUT [+] [-] level buttons
to adjust recording levels

While recording (if necessary),

Use VOL [+] [-] level buttons
to adjust headphone levels

They don't affect recording levels

Playback Your Recordings

With each recording, the recorder creates a new audio file on memory card.

To listen to the most recent recording:

Just press play!

Use VOL [+] [-] level buttons to adjust headphone levels

To listen to previous recordings:

Press “FINDER” button

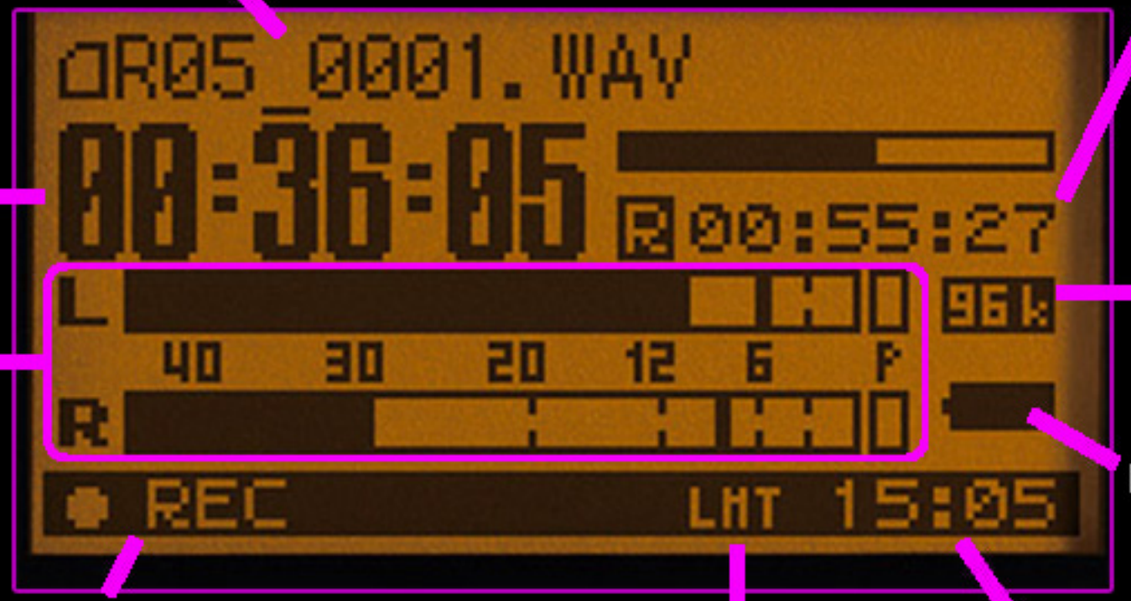
Navigate through list of audio files

To play a specific file, press record button twice

Press record button once for other options (Info, Delete, Rename, etc.)

Name of audio file

Display Screen



Name of Audio File

Length of audio file (during playback)
Remaining recording time (while recording)

Elapsed playback time (during playback)
Elapsed recording time (while recording)
TIMECODE reads as Hr:Min:Sec

Sample Rate of file
(during playback)
Sample Rate of recording
(while recording)

Output level (during playback)
Input level (while recording)
(L = Left, R = right)

Battery level

Record / Record-Standby Status (during playback)
Play / Stop Status (while recording)

Current time

Limiter status: on/off (not shown on R-09)
Please see page on “Limiter” for details

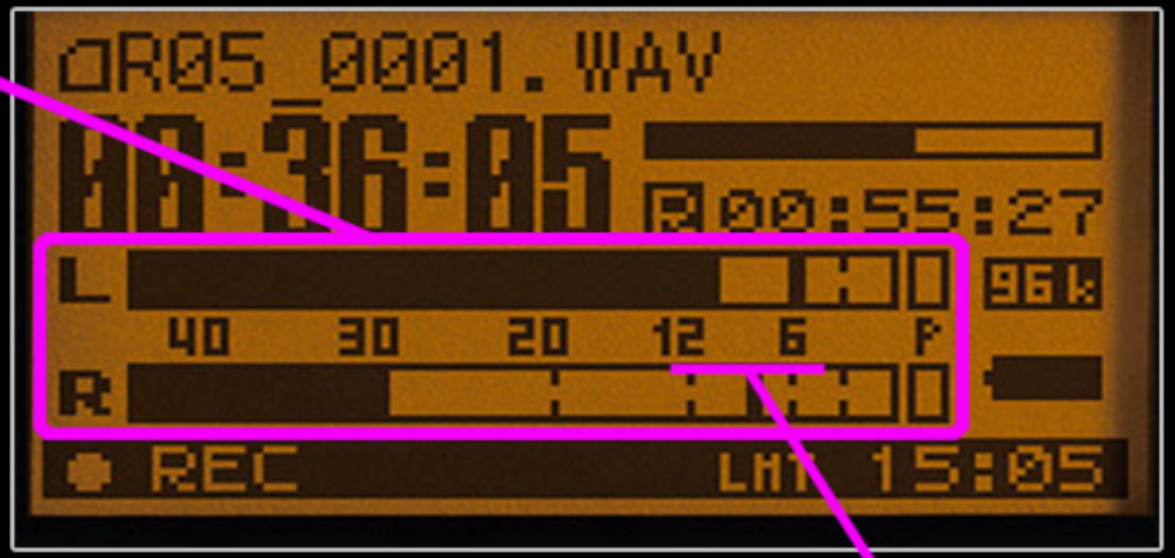
Setting and Monitoring Levels

The audio level meter will move according to the loudness of the incoming signal.

Numbers on the meter (40, 30, 20, 12, 6) refer to decibels

Decibels (dB) are ratios used to measure sound

0dB (0 decibels) is the maximum level that can be recorded



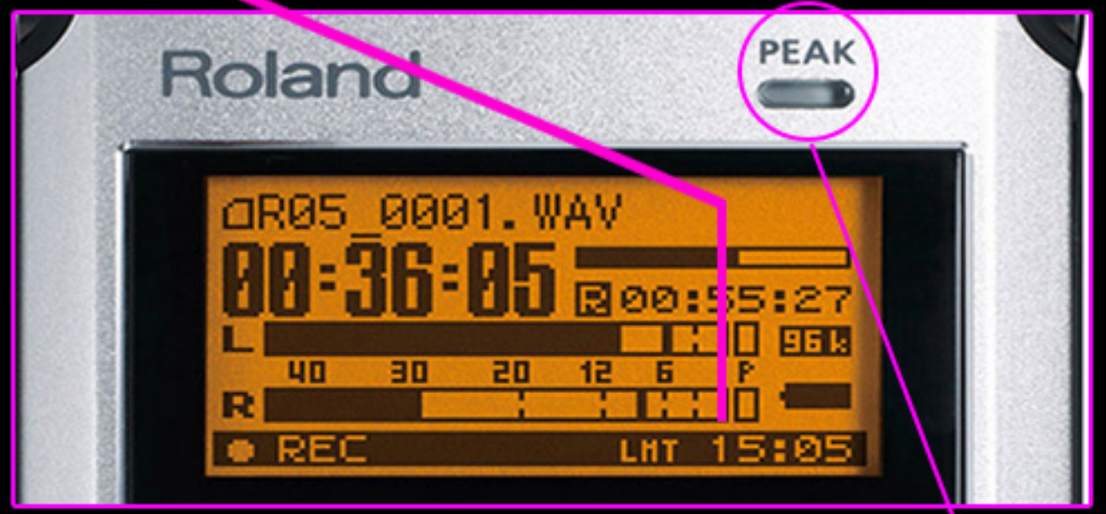
Aim for levels with peaks between "12" (-12dB) and "6" (-6dB)

Levels may drop during quiet moments, but try to keep peaks between "12" and "6". Levels below "40" (-40 dB) are too low

The basic principle when adjusting the level is to get the level as high as possible without allowing distortion to occur.

Audio Peak Indicator (levels too high)

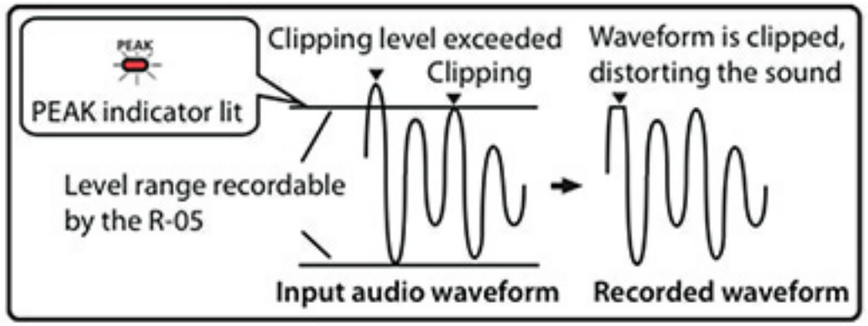
The pink line indicates "0dB" on the meters scale
0dB is the maxiumum level that can be recorded



Levels that peak beyond 0dB trigger the peak light

If PEAK indicator lights up, the input has exceeded the maximum volume that can be recorded (0dB)

In other words, the input is "clipping"



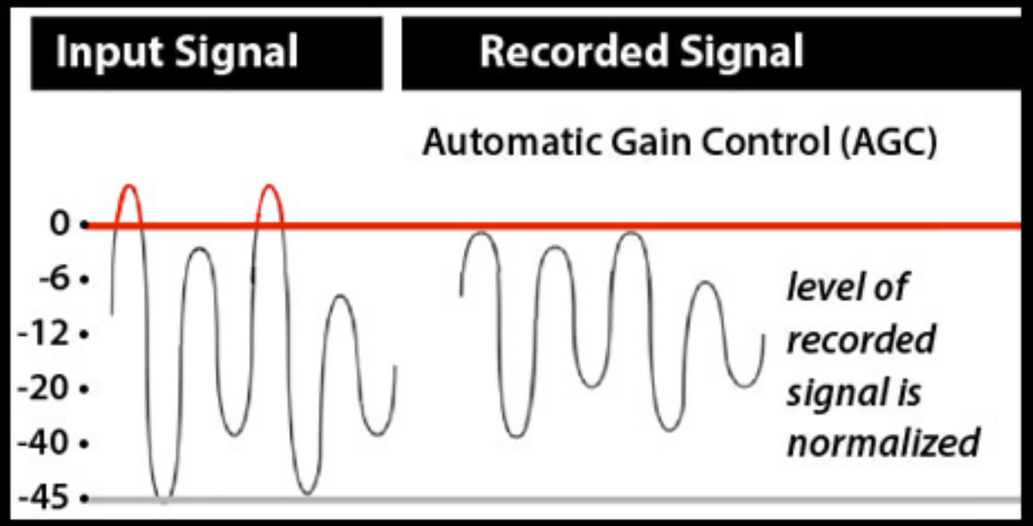
Sound recorded in this condition will be distorted

Use INPUT [+] [–] buttons to adjust the level so that even the loudest passages do not peak

Automatic Gain Control (AGC) & Limiter

Automatic Gain Control (AGC)

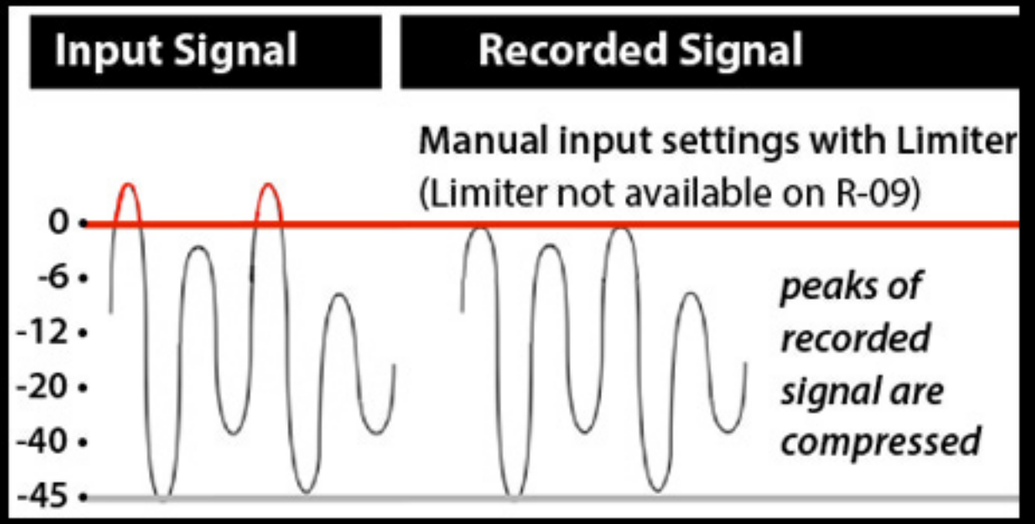
Automatic Gain Control is a function (within the recorder) that increases the recording signal if the input signal is low and decreases the recording signal if the input signal is too high, thus recording at a consistent level ("normalize").



- No need to set levels (except choosing High or Low MIC GAIN depending on the overall intensity of the sounds)
- AGC will affect dynamic range of sound
- Softer sounds will be louder than normal and there will be pumping up and down of background noise as loud passages come and go during recording

Limiter

In contrast to AGC, the Limiter is a function (in recorder) that compresses only the loudest passages of the recorded signal (to avoid distortion) and not the softer passages.



- No pumping of noise floor between loud and soft passages
- Moderate peaks will be compressed without distortion
- Dynamics are somewhat flattened, impairing natural dynamic range of recorded sounds
- You still need to manually set the appropriate MIC GAIN (a.k.a. microphone sensitivity) and input levels

Turning on Automatic Gain Control (AGC) or Limiter

Use switch on back to turn on/off Limiter or AGC

Switch controls either Limiter or AGC (not both)

To determine which processor the switch controls:

Press "Menu"
Go to "6) Input Setup"

Scroll to "Limiter/AGC"
Choose Limter or AGC

Adjusting Microphone Sensitivity (MIC GAIN)

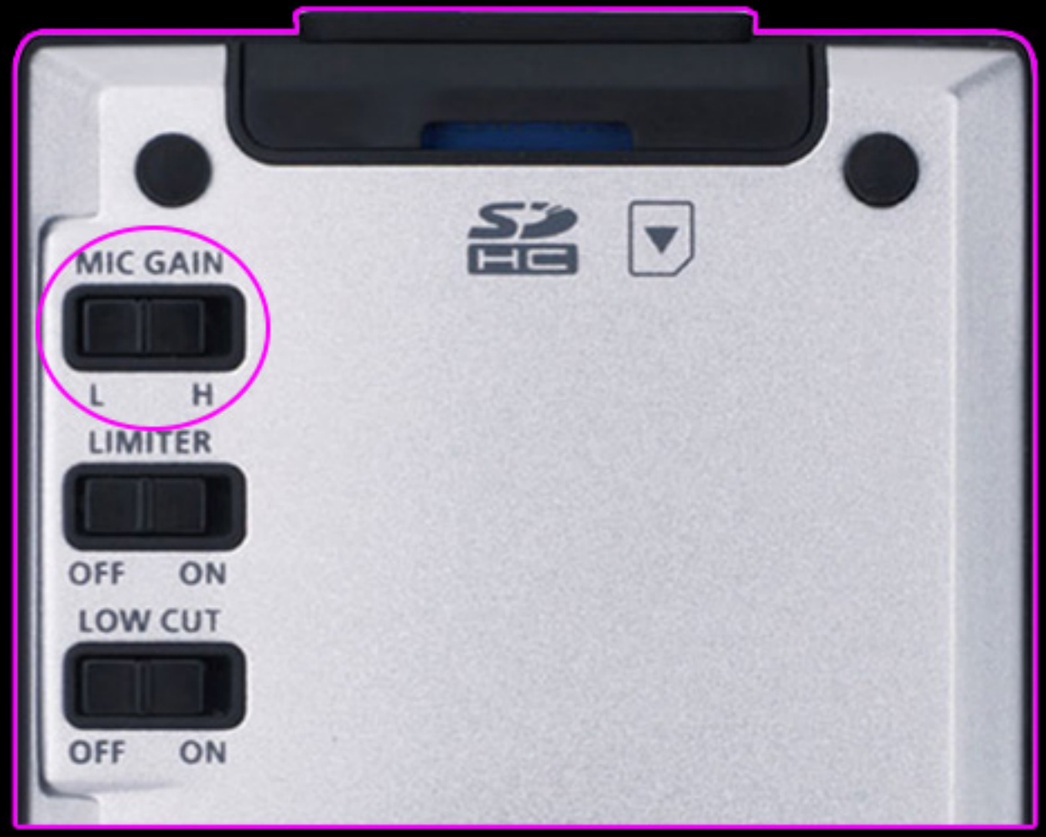
The “MIC GAIN” switch (on back of R-09) determines microphone sensitivity

“L” is low sensitivity and “H” is high sensitivity

Should I choose “L” or “H”?

In general, use the “L” setting when recording loud sounds
Use the “H” setting when recording soft sounds

ALSO, depending on the setting you choose,
adjust the INPUT [+] [-] level buttons to fine tune levels



Cutting the Low-Frequency Range

When turned on, the LOW CUT switch (on back of R-09) cuts out low range sounds below a specified frequency (see “Menu” > “Input Setup” to specify the frequency)

When to use LOW CUT?

Turn on LOW CUT if you hear that low-frequency noise, such as that produced by wind and machines, interferes with what you’re trying to record

If you have problems with the breath noise or muffled tone that can occur when recording a vocal, cutting the low-frequency range will give you a more crisp recording

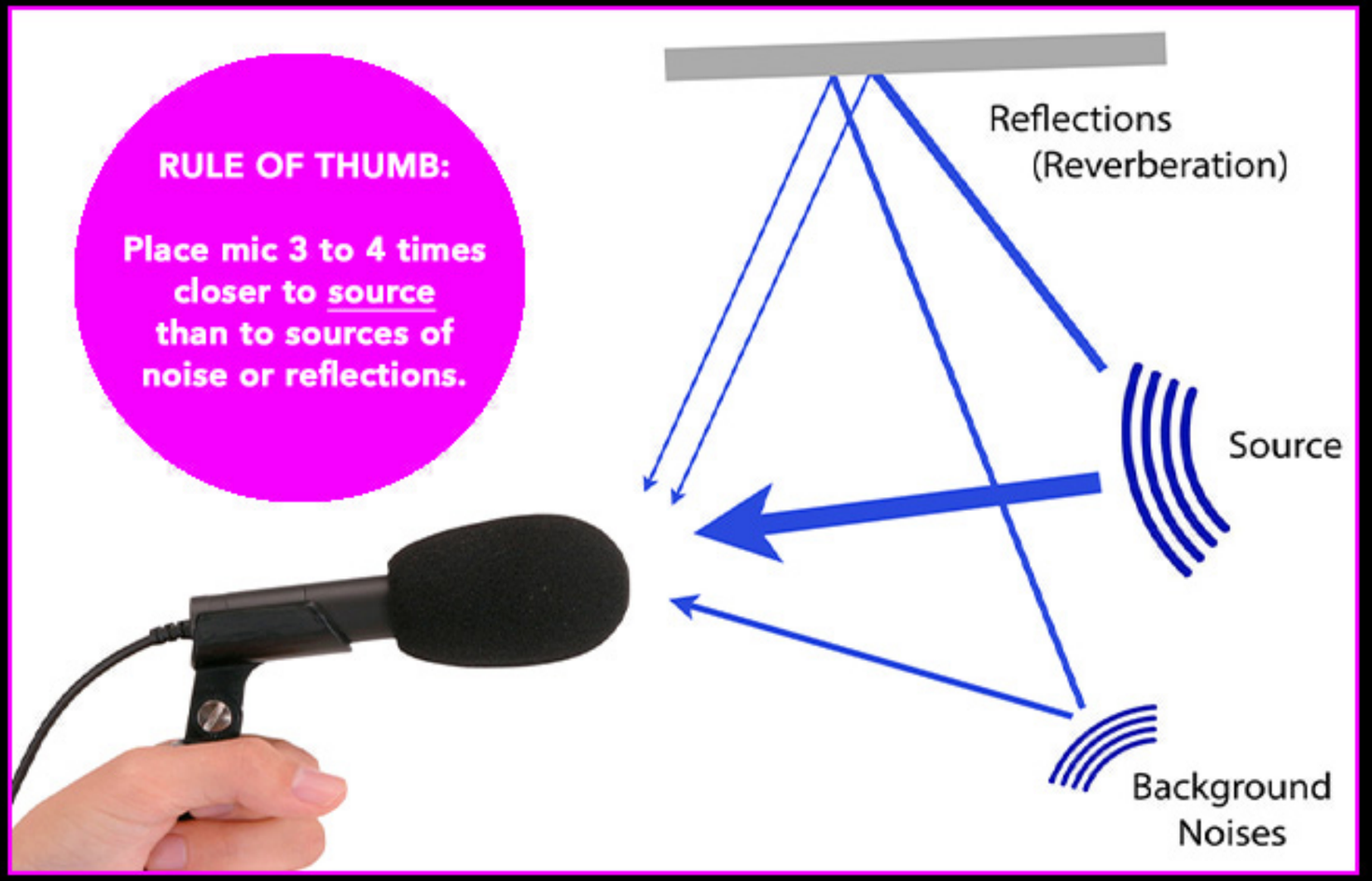
Microphone Placement

Whenever you press record, you capture:

1. Direct sound from the source

2. Reflected sound from surfaces near source (reverberation)

3. Background noises



Try to record close to your source as sound intensity falls off rapidly

Microphone Placement (continued)

For stereo recording with built-in mics, point TOP of device towards Source.

The mic capsules have directional characteristics.

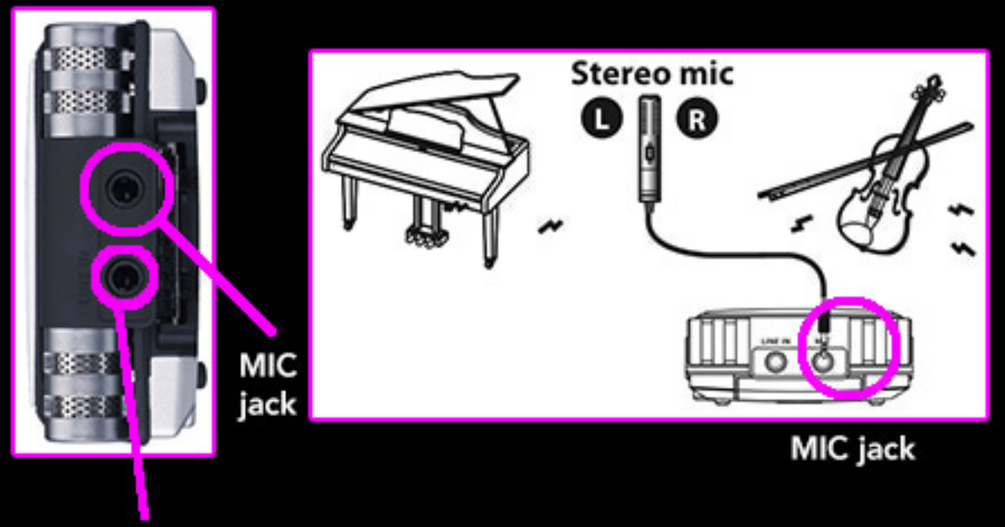
Recording in MONO?

For best results, point left mic (channel 1) towards source.

Experiment -- record, listen, reflect, repeat under various circumstances.
You'll begin to understand the nuances of microphone placement.

Using an External Microphone

A dynamic mic or a condenser mic of the type designed for connection to a computer's mic jack can be used with the recorder



If using an external mic, don't connect anything to the LINE IN jack
Otherwise, input from MIC jack will be ignored

What kind of external mic are you using?

Dynamic mics are suitable for recording vocals & instruments.
Dynamic mics don't require a power supply.

Condenser mics have high sensitivity and are suitable for recording lower-level sounds like acoustic instruments & conferences.
Condenser mics require power from a battery or via plug-in power.

External Mic Type (Stereo Mic or Mono Mic?)

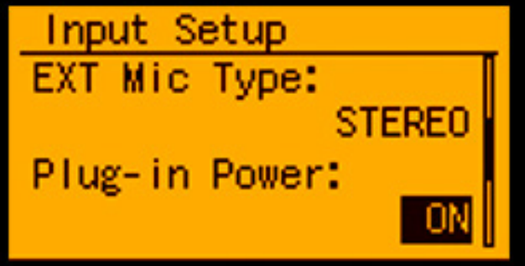
To switch the stereo/mono setting appropriate for the external mic you're using:

"Menu" > "6) Input Setup"

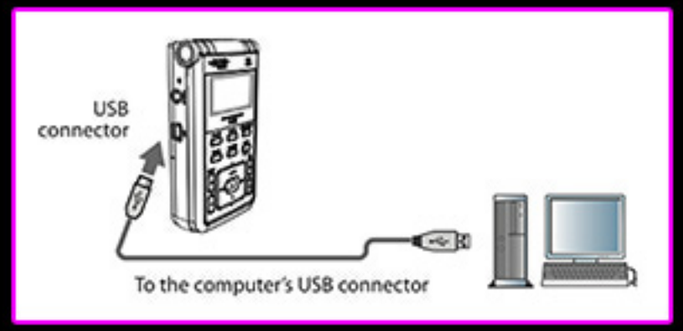
"EXT Mic Type"

Using a Plug-in Powered Mic?

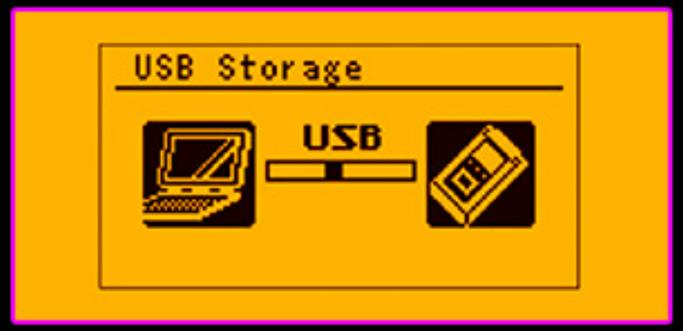
Turn "Plug-in Power" ON if using a plug-in powered mic
Turn "OFF" if using a battery-powered mic or a mic that requires no plug-in power supply



Copying Audio Files from Card to Computer



With recorder turned off, connect recorder to computer via USB cable



Once connected, turn on recorder

Screen displays "USB Storage"

A volume appears on Mac desktop named "NO NAME" or "Untitled"

Select desired files and drag them to a folder located in your project folder on your external hard drive

When done, eject recorder from computer by choosing "Eject" (right click) or dragging disk icon to trash

Disconnect the USB cable

Resources for Further Study

Lynda.com Tutorials
(sign in with your MassArt username/password)

Roland R-05 Audio Recorder Manual
http://www.roland.com/support/by_product/r-05/owners_manuals/8290

Freesound - a collaborative database of Creative Commons Licensed sounds
http://freesound.org/

FilmSound - learning space dedicated to the art of film sound design
http://www.filmsound.org/