

# Saramonic

## Ultimate 2-channel Wireless Microphone System

双通道旗舰无线麦克风系统

Saramonic Ultra

User Manual

用户手册

# Statement

Please read this manual carefully before using, and strictly operate and store it in accordance with the instructions. Please save the manual for future reference. If you need further assistance than the user manual, please consult your retailer for help or email us at: [info@saramonic.com](mailto:info@saramonic.com)

# Cautions

1. Non-professionals are strictly prohibited from disassembling this unit on their own.
2. Please keep it away from heat sources such as radiators or spotlights.
3. Do not remove the battery without professionals' help.
4. Please clean the unit with only a soft, dry cloth.
5. When using and storing, please keep away from dust and moisture.
6. For the best pick-up pattern, do not hold your hand against the microphone capsule cover.

# General Introduction

Saramonic Ultra, a portable ultimate 2-channel wireless microphone system, provides professional-quality sound within 300 meters\* of transmission range. It is ideal for broadcasting, presentations, mobile journalism and more. The system adopts a new self-developed noise cancellation algorithm and low-cut sound mode to effectively eliminate background noise. The transmitter of this system is IPX5-rated for water resistance, performing well in harsh environments.

Saramonic Ultra comes with 32-bit float on-board recording, timecode, and more advanced settings. The 32-bit float on-board recording supports the transmitter recording audio independently, which is available for storing the recording files in real time. Its timecode keeps your video and audio flawlessly synchronized in post-production. The receiver comes with a 1.1-inch touchscreen, displaying information such as wireless signal strength, noise cancellation,

battery, volume, time code, recording status, etc. Users can easily adjust various parameters during the recording process.

Saramonic Ultra boasts extensive compatibility. The transmitter incorporates an in-built microphone, and can be connected to an external lavalier microphone (some packages do not include this lavalier microphone; please refer to the actual package purchased). The receiver has a 3.5 mm multi-functional output, which can output audio from the receiver to a camera or mixer. In addition, the included USB-C or Lightning adapter can be used to output audio from the receiver to a smartphone, tablet, or computer.

\* Measured in an unobstructed environment without interference, and this data can only be achieved while using the external antenna.

# Features

- Timecode sync
- 130 dB SPL
- External antenna, stable signal
- Noise cancellation, AGC
- 32-bit float REC, 8 GB storage
- IPX5 waterproof

# What's in the Box

Saramonic Ultra 01 (Black)	
Transmitter	×2
Receiver	×1
Charging Case	×1
USB-C to USB-C Data Cable	×1
3.5 mm TRS to TRS Audio Cable	×1
Lightning Adapter	×1
USB-C Adapter	×1
Fur Windshield	×2
Magnet	×2
External Antenna	×1
Carrying Bag	×1

Saramonic Ultra 02 (White)		
Transmitter		×2
Receiver		×1
Charging Case		×1
USB-C to USB-C Data Cable		×1
3.5 mm TRS to TRS Audio Cable		×1
Lightning Adapter		×1
USB-C Adapter		×1
Fur Windshield		×2
Magnet		×2
External Antenna		×1
Carrying Bag		×1

Saramonic Ultra 03 (Black)		
Transmitter		×2
Receiver		×1
Charging Case		×1
USB-C to USB-C Data Cable		×1
3.5 mm TRS to TRS Audio Cable		×1
Lightning Adapter		×1
USB-C Adapter		×1
Fur Windshield		×2
Magnet		×2
External Antenna		×1
Lavalier Microphone		× 2
Carrying Bag		× 1

Saramonic Ultra 04 (White)		
Transmitter		×2
Receiver		×1
Charging Case		×1

USB-C to USB-C Data Cable		×1
3.5 mm TRS to TRS Audio Cable		×1
Lightning Adapter		×1
USB-C Adapter		×1
Fur Windshield		×2
Magnet		×2
External Antenna		×1
Lavalier Microphone		× 2
Carrying Bag		× 1

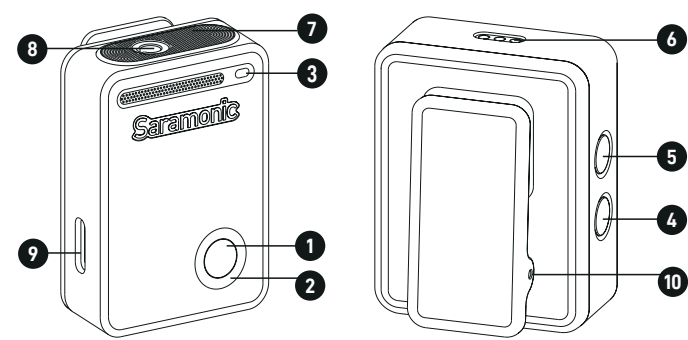
Saramonic Ultra 05 (Black)		
Transmitter		×1
Receiver		×1
Carrying Bag		×1
USB-C to USB-C Data Cable		×1
3.5 mm TRS to TRS Audio Cable		×1
Lightning Adapter		×1
USB-C Adapter		×1
Fur Windshield		×1
Magnet		×1
External Antenna		×1

Saramonic Ultra 06 (White)		
Transmitter		×1
Receiver		×1
Carrying Bag		×1
USB-C to USB-C Data Cable		×1
3.5 mm TRS to TRS Audio Cable		×1
Lightning Adapter		×1
USB-C Adapter		×1
Fur Windshield		×1

Magnet	× 1
External Antenna	× 1

Accessories (Sold Separately)	
Adapter for Connecting SONY Camera	
Lavalier Microphone	

# Product Structure Transmitter (TX)



## 1 Power Button

- Press and hold for 2 seconds to power on or off.
- Press once to mute or unmute the transmitter.
- When the receiver is connected to a smartphone, the user can start or stop recording by pressing the transmitter's power button twice. Note that this feature only supports smartphones where the volume button can be used to take a photo.

## 2 Status Indicator

Status	Indicator
Unpaired	Blinks blue slowly
Paired	Solid blue
Noise cancellation enabled	Solid green
Low battery	Blinks red
Charging	Solid red
Fully charged	Solid blue or green
Pairing	Blinks blue rapidly

- In pairing mode, the status indicator will blink blue rapidly for 2 minutes waiting for pairing with the receiver. After the timeout, the transmitter will exit pairing mode, and its indicator will blink blue slowly.
- Please charge the transmitter when its status indicator blinks red, or it will automatically


shut down after 10 minutes.

- When multiple functions are activated on the transmitter, its indicator will give priority to displaying only one feature. The indicator is prioritized as follows: charging > low battery > unpaired > noise cancellation.

### 3 Recording Indicator

Status	Indicator
Mute on	Blinks red
Onboard recording enabled	Solid red
Failed to enable onboard recording	Blinks red 3 times and then turns off

- When reading the onboard recording files, onboard recording can not be enabled.
- The indicator is prioritized as follows: mute > onboard recording.

 **TIP:** The recording indicator doubles as a charging status indicator when the transmitter is placed into the charging case for charging. See the chart below for more details.

Status	Indicator
Charging	Solid red
Fully charged	Off

### 4 REC Button

Press once to enable or disable onboard recording.

### 5 NC Button

Press once to activate or deactivate noise cancellation

### 6 Charging Contacts

Charging will begin when the charging contacts of the transmitter connect to the charging pins of the charging case.

### 7 In-built Microphone

### 8 3.5 mm TRS Input

For connecting an external lavalier microphone.

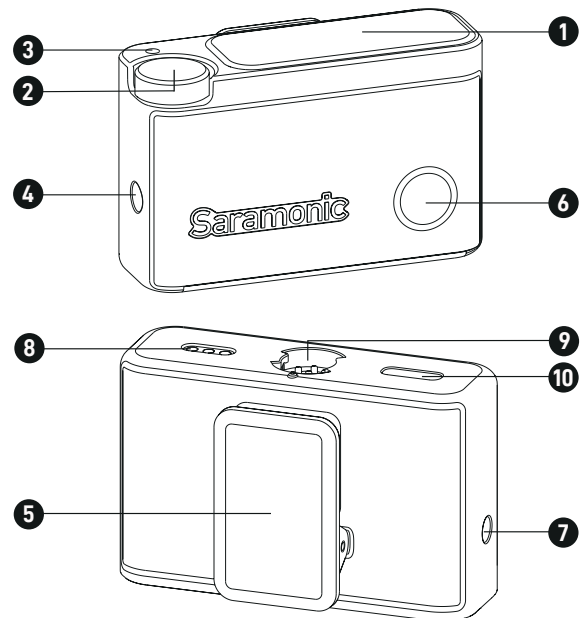
### 9 USB-C Charging port / Data Export

For charging the transmitter via the included USB-C to USB-C data cable. The user can read and download onboard recording files from the in-built storage card of the transmitter through this port.

### 10 Magnetic Clip

For attaching the transmitter to clothing, or using with the included magnet.

## Receiver (RX)



### 1 Touchscreen

Displays vital information such as wireless signal strength, noise cancellation, battery levels and charging status of the transmitters and receiver, gain, real-time volume, output mode, timecode. Refer to Receiver Touchscreen Operation for details.

### 2 Knob

When the receiver touchscreen is on the Settings Menu, rotate to select relevant settings, then press once to access sub menus.

### 3 Overload Indicator

It will glow solid red when the sound pressure level of the recording exceeds the designed value. And it will turn off if there is no overload volume for 1 second.

### 4 External Antenna Port

For inserting the external antenna provided.

### 5 Clip

Can be mounted on a cold shoe of a camera.

### 6 Power Button

- Press and hold for 2 seconds to power on or off.
- Press once to lock the screen to avoid unexpected operation during recording. Press again to unlock the screen.

### 7 3.5 mm Multi-functional Output

Supports Mono, Stereo, Safety Track, Headset, and Headphone output. The user can select one output mode among them. The default output mode is Mono.

Refer to Receiver Touchscreen Operation for details.

### 8 Charging Contacts

Charging will begin when the charging contacts of the receiver connect to the charging pins of the charging case.

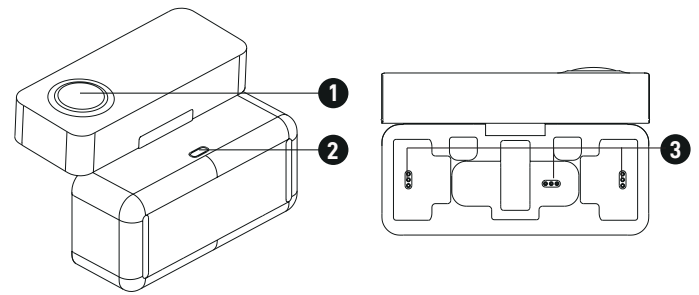
### 9 Connecting Contacts

Connect the receiver to a smartphone, tablet, computer, or other mobile device by using the Lightning / USB-C adapter provided.

### 10 USB-C Charging port

For charging the receiver via the included USB-C to USB-C data cable.

## Charging Case



### 1 Indicator

- When the charging case is connected to power, this indicator will display the case's charging status.

Battery level (case)	Indicator
0 to 33%	Pulses red
34% to 76%	Pulses orange
77% to 100%	Pulses white
Fully charged	Solid white

- When the charging case is not connected to power (not in charging mode), opening the case or placing the transmitters and receiver into it for charging, this indicator will display the case's current battery level.

Battery level (case)	Indicator
0 to 10%	Flashes red (not pulse)
10 to 33%	Solid red
34% to 76%	Solid orange
77% to 100%	Solid white

## ! Note

1. Please charge the charging case as soon as possible when its indicator flashes red (not pulse). In that case, the charging case holds a low battery (<10%) that is unavailable for charging the transmitters and receiver.
2. When the battery level of the charging case is above 10% or when the case is connected to the USB-C to USB-C charging cable for charging, the transmitters and receiver will automatically turn on once removed from the case. The transmitters and receiver will automatically turn off if there is no operation in the case for 1 minute.

## ② USB-C Charging Port

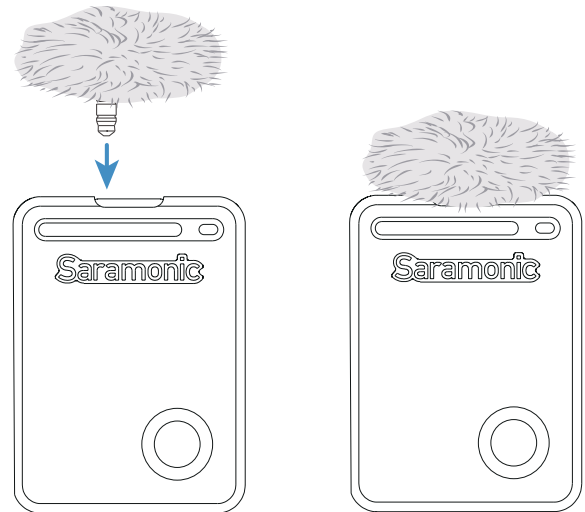
For charging the charging case via the included USB-C to USB-C data cable.

## ③ Charging Pins

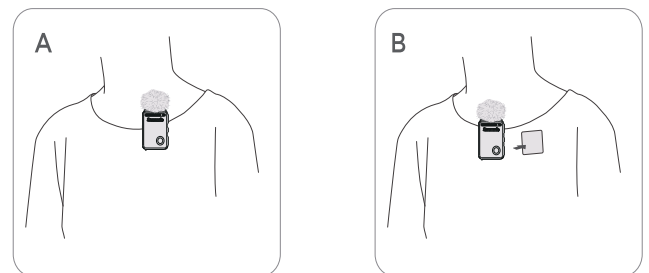
# Operation Guide

## Placing Transmitter

- ① The transmitter with an in-built microphone can be used with a fur windshield for capturing clear audio outdoors or in a windy environment. If the user wants to use an external lavalier microphone, please connect it to the transmitter's 3.5 mm TRS input.

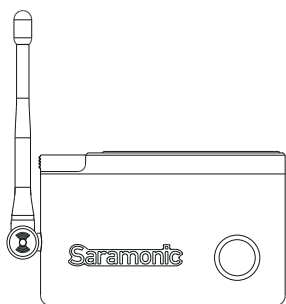


- ② The transmitter can be directly attached to clothing via its magnetic clip, or using with the magnet, offering users greater flexibility when wearing the transmitter.



## Antenna Installation

The receiver comes with an in-built antenna, and it can be inserted into an external antenna for use. The receiver will automatically use the external antenna while the in-built antenna is unavailable when the provided external antenna is inserted into the receiver's external antenna port. If you remove the external antenna, the in-built antenna will be in use.



TIP: Using the included external antenna can effectively improve the anti-interference performance.

## Pairing Transmitters and Receiver

The transmitters and receiver in the Saramonic Ultra system have been paired successfully by default. Therefore, the transmitters and receiver will be paired once they are powered on. Transmitter's status indicators will be solid blue if paired successfully. Follow any of the methods below to pair the transmitters and the receiver if they become unpaired.

### Method 1: Pair Automatically via Charging Case

Place the transmitters and the receiver in the charging case to pair them automatically. They will become paired after being placed into the case for 5 seconds.

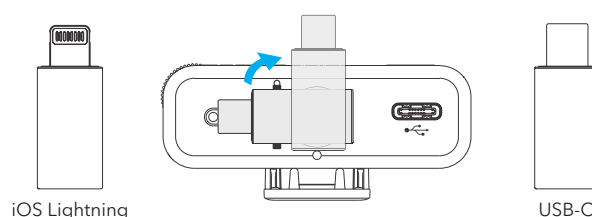
### Method 2: Pair Manually

- 1 Press and hold the transmitter's power button for 5 seconds in shutdown mode to make the transmitter in pairing mode with the receiver. In this mode, the status indicator on the transmitter blinks blue quickly.
- 2 Turn on the receiver by pressing its power button for 2 seconds, slide left on the touchscreen to enter the Settings Menu, then locate the Pairing menu, tap to access the sub menu, then tap Pairing.

- 3 If paired successfully, Transmitter's status indicators will be solid blue.


## Using with a Mobile Device

- Mount the correct adapter on the receiver according to your device's port, and then connect the receiver to your smartphone, tablet, computer, or other mobile device. Launch the recorder or camera on the connected mobile device to start recording, the audio captured by the transmitter will be transferred to the mobile device. Additionally, the adapters support charging the phone when connected to power.




- When the receiver is connected to a smartphone or computer, the user can record audios or videos, and update or control both the transmitters and receiver via the Saramonic app.
- 1 Please scan the QR code below with your phone to install the Saramonic app.

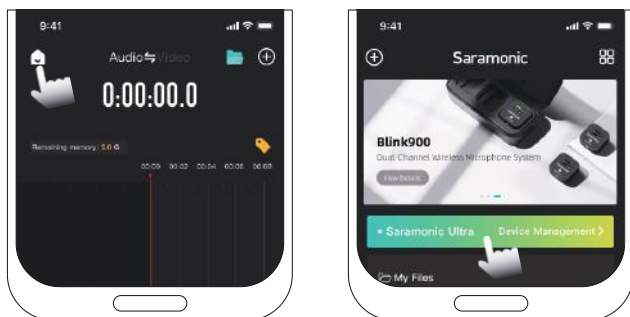


- 2 Launch the Saramonic app, then tap the  icon to start recording.

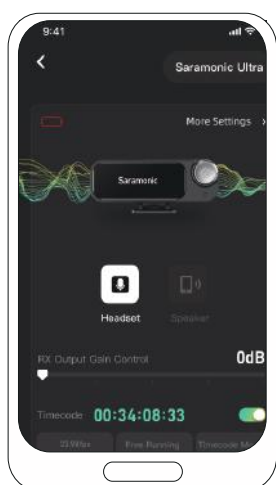




- 3 Tap the  icon in the upper left corner, then tap "Saramonic Ultra Device Management" to enter the receiver (RX) and transmitter (TX) control page.



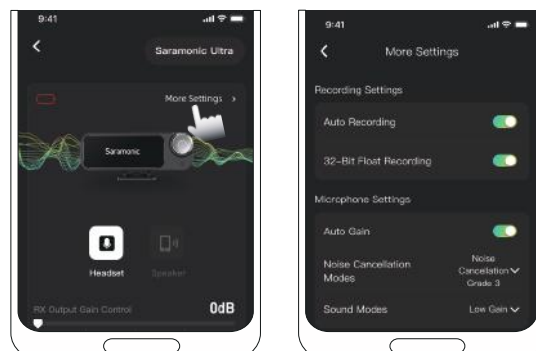
Control RX:



Swipe up on the screen to access TX1 and TX2 control:

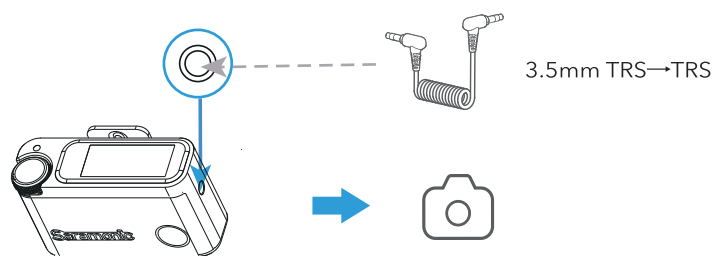


- 4 Go to More Settings > Sound Modes, select Low Gain Mode. In this mode, the maximum sound pressure level can reach 130 dB, effortlessly preventing sound spikes and distortion, while significantly improving recording quality.



## Using with a Camera

Use the included 3.5 mm TRS to TRS audio cable to connect the receiver's 3.5 mm multi-functional output to a camera, mixer. The audio captured by the transmitter will be transferred to the camera or mixer.









## Receiver Touchscreen Operation



### Home Screen Overview

The home screen displays wireless signal strength, noise cancellation, battery levels and charging status of the transmitters and receiver, real-time volume, output mode, auto gain, timecode. The following is an example of the touchscreen when the receiver is paired with two transmitters.







## The top of the Home Screen indicates transmitter status.

 	Indicates the current wireless signal strength between the transmitter 1 (TX1) or the transmitter 2 (TX2) and the receiver. If there is only one transmitter connected, then only the information of one transmitter will be displayed.
	Indicates that onboard recording is enabled.
	Indicates that noise cancellation of the transmitter is enabled.
 	Indicates battery levels and charging status of transmitters.






 	Indicates battery levels and charging status of the receiver.
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**Quick Settings:** On the Home Screen, press the receiver's knob once to select the top, the bottom part of the Home Screen or exit. The microphone gain can be adjusted quickly by rotating the knob when the top part is selected. The output volume can be adjusted quickly by rotating the knob when the bottom part is selected.

## The middle of the Home Screen indicates transmitter volume.

 	Indicates the microphone gain.
	Indicates the volume of the real-time audio input.
	Indicates that the transmitter is muted.

## The bottom of the Home Screen indicates receiver status.

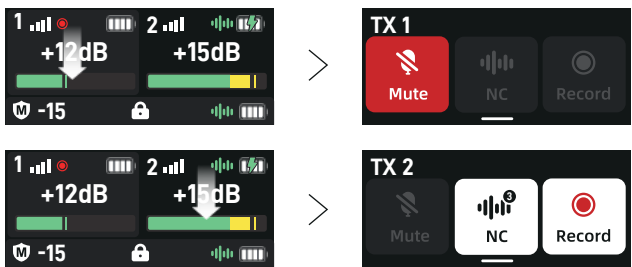
	Indicates the output mode of the receiver. Refer to Settings Menu for details.
	Indicates the output volume.
	Indicates that the screen of the receiver is locked. Press the receiver's power button once to unlock or lock the screen.
	Indicates that the timecode is turned on.
	Indicates that the receiver has enabled headset noise cancellation.

# Menus Overview

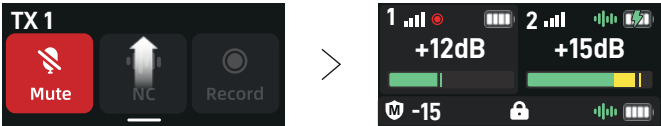
If there is no operation within 20 seconds on menus, the touchscreen will automatically return to the Home Screen.

## Transmitter Settings Menu

Slide down from the top of the left side of the Home Screen to adjust settings for the transmitter 1, and slide down from the top of the right side of the Home Screen to adjust settings for the transmitter 2. Tap the corresponding icons to control mute, noise cancellation, recording status.









To return to the Home Screen from the Transmitter Settings Menu, slide up from the bottom of the screen.










## Settings Menu

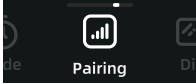
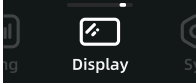

- Slide left from the Home Screen to access the Settings Menu.
- On the Settings Menu, slide right or left to select main menus. Or turn the knob on the receiver to select relevant menus.
- Tap relevant icons on main menus or press the knob once to access sub menus. Tap or select relevant settings to confirm selections.
- To return to the previous page from any other page, slide up from the bottom of the screen.


Main Menu	Sub Menu	Description
	Mono	Signal from the left and right channel are identical.
	Stereo	The left and right channel outputs correspond to the two sound sources of transmitter 1 and transmitter 2 respectively.
	Safety Track	The output gain of the right channel is 6 dB lower than that of the left channel to avoid audio level spikes in your recordings.
	Headset	The receiver's 3.5 mm multi-functional output can be plugged into a headset.
	Headphone	Namely, Monitoring mode, left and right channels are the same, and 10 dB higher than mono channel.
	—	Decrease the output volume.
	+	Increase the output volume.

	RX	Adjust the receiver gain between -15 to +15 dB. The default value is 0 dB. Then receiver gain can be adjusted in headset mode only.
	TX1	Adjust the transmitter 1 gain between -15 to +15 dB. The default value is 0 dB.
	TX2	Adjust the transmitter 2 gain between -15 to +15 dB. The default value is 0 dB.
	Auto Gain Off	Tap  to enable the auto gain.
	Auto Gain On	When enabled, the microphone gain will automatically change according to the realtime volume. The gain will be lower accordingly when the real-time volume is higher, and vice versa. Tap to  to disable the auto gain.

	Original	Captures high-fidelity audio.
	Vocal Boost	Reduces ambient noise and improves voice intelligibility.
	Low Cut	The receiver removes low frequencies of audio signals, eliminating low-end noise.
	Low Gain	When recording loud sounds, switching to low gain mode reduces the volume by 20 dB for minimizing distortion. In this mode, the maximum sound pressure level can reach 130 dB.
	Auto Recording	When the function is activated, onboard recording will be automatically enabled every time the transmitter is switched on.
	32bit Recording	The transmitter defaults to recording files at 48 kHz 24-bit, but the user can set it to record at 48 kHz 32-bit float. For more details, please refer to the "32-bit Float Recording Feature" below.

	Speaker Disabled	Tap  to enable the speaker.
	Speaker Enabled	Tap  to disable the speaker.
		Tap to turn on or off the timecode. When the timecode is enabled, the transmitter onboard recording will be turned on automatically. The onboard recording files are attached to a sequence of numbers in order to precisely label their timing.
	Framerate	Select 23.98fps, 24fps, 25fps, 29.97DF, 29.97fps, or 30fps.
	Running	Select free running or real-time running mode.
	Timecode Mode	Five timecode modes are available for choosing. Refer to Timecode Mode below for details.

	TX1	Tap Pairing to connect the receiver with the transmitters. If TX1's status indicator glows solid blue, TX1 is successfully paired with the receiver. The same applies to TX2.
	TX2	
	Brightness	Adjust the screen brightness.
	Display Time	Select the desired setting for timeout of the display time among 10s, 30s, 60s, always on.
	Time	The date and time of the recording files can be set.
	Headset NC	Tap to enable or disable the headset noise cancellation.
	Storage	Indicates the remaining recordable hours of the transmitter. On this page, tap TX1 or TX2 to confirm or cancel to format TX1 or TX2 storage.
	Version	Indicates the serial number and version of the transmitters and receiver.

	Language	Tap to set the receiver displaying language as English or Simple Chinese.
	Reset	Tap to access its sub menu to cancel or confirm resetting. After selecting Confirm, the receiver's relevant parameters will be restored to the default factory values. (Please use it with caution.)



## 32-bit Float Recording Feature



The Saramonic Ultra transmitter supports recording audio in a 32-bit float file format. This format allows for capturing an extremely wide range of volume levels, ensuring that even if the sound exceeds 0 dB, it will not cause distortion or audio level spikes. Note that 32-bit float recording is only applicable to the onboard recording of the Saramonic Ultra transmitter and will not affect the recording format of the camera.

## Timecode Mode

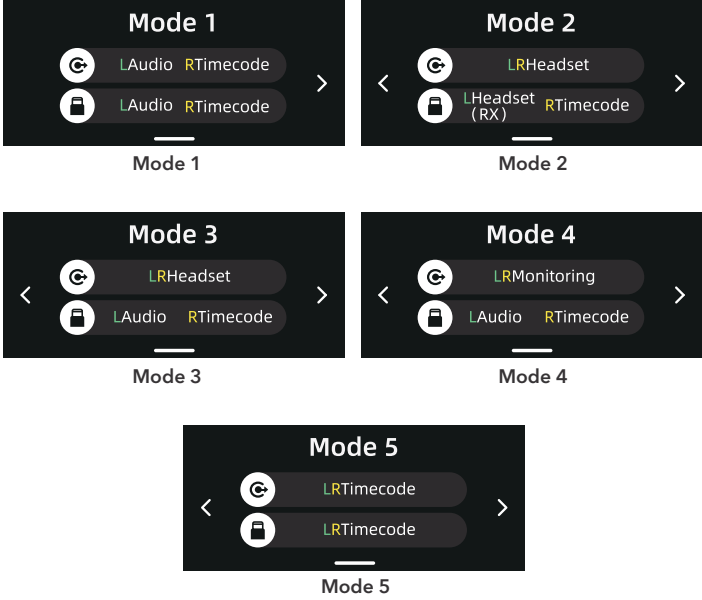
Timecode is a specific code for each frame in audio or video, which perfectly synchronizes your audio or video. It labels every clip with the exact time so that users can quickly find a specific frame, saving time in the editing process. Under the Timecode Mode menu, the user can set the timecode mode.

- Icon Description

	Indicates that audio is output from the 3.5 mm multi-functional output.
	Indicates that audio is output from the Lightning or USB-C adapter.

	Indicates the left channel.
	Indicates the right channel.

- There are 5 kinds of timecode modes for the user to choose.



## Transmitter Onboard Recording

- Press the transmitter's REC button to enable its onboard recording. Or activate the "Auto Recording" mode so that the transmitter can start recording audio as soon as it is switched on. To activate the "Auto Recording" mode, please refer to Receiver Touchscreen Operation.
- The transmitter can record up to 15 hours of 48 kHz 24-bit audio, and up to 10 hours if it records at the 48 kHz 32-bit sampling rate.
- Files are automatically split every 30 minutes, making it quickly to find the desired recording segment.
- By default, the recording files are named in the format of "DATE-TIME.WAV". Up to 999 recording files can be created.
- The transmitter comes with an EMMC chip with 8 GB of storage. If the 8 GB memory is full, the original file will be automatically overwritten with the latest file from the beginning.
- When the transmitter's USB-C charging port / data export is connected to a computer

using the included USB-C to USB-C data cable, the onboard recording files can be exported.

- The transmitter's storage can be formatted through the receiver's menu settings.



### Note

1. Onboard recording will remain on even the mute function is activated, but there is no sound in the onboard recording file.
2. Onboard recording cannot be turned on when reading files.

## Specifications

### Transmitter (TX)

Transmission Type	2.4 GHz
Modulation	GFSK
Operating Range (without obstacles)	1 RX with 2 TX: 300 m (with external antenna); 250 m (without external antenna)
Distortion	≤0.1%
Frequency Response	20 Hz to 20 kHz
Sampling Rate	Wireless recording: 48 kHz 24-bit
	Onboard recording: 48 kHz 24-bit or 48 kHz 32-bit float
Signal-to-noise Ratio	> 90 dB
Audio Input	In-built microphone, 3.5 mm TRS
Reference Audio Input Level	-30 to -42 dBV (MIC input, 0 dB attenuation)
Max SPL	130 dB SPL(In low gain mode, the Max SPL can reach 130 dB. Please connect to the Saramonic App and set the low gain mode on this app)
Storage	8 GB
Port for Reading Audio Files	USB-C Port
Power Supply	In-built lithium-ion battery
In-built Battery Capacity	495 mAh
Battery Life	Approx. 6 hours
Charging Time	Approx. 1.5 hours (via charging case or USB-C charging port)(5 V / 1 A)

Weight	35g
Frequency Range	2402-2480MHz
Operating Temperature	0°C to 50°C
Storage Temperature	-20°C to 50°C

## Receiver (RX)

Transmission Type	2.4 GHz
Modulation	GFSK
Operating Range (without obstacles)	1 RX with 2 TX: 300 m ( with external antenna); 250 m ( without external antenna)
Distortion	≤0.1%
Frequency Response	20 Hz to 20 kHz
Sampling Rate	Wireless recording: 48 kHz 24-bit
	Onboard recording: 48 kHz 24-bit or 48 kHz 32-bit float
Signal-to-noise Ratio	>90 dB
Audio Input	3.5 mm multi-functional output
Audio Output	3.5 mm multi-functional output
Monitoring Port	3.5 mm multi-functional output(supports real-time monitoring or playback monitoring, and 3.5 mm TRS headphones)

External Antenna Port	TS9 port
Power Supply	In-built lithium-ion battery
In-built Battery Capacity	465 mAh
Battery Life	Approx. 6 hours
Charging Time	Approx. 1.5 hours ( via charging case or USB-C charging port) (5 V / 1 A)
Frequency Range	2402-2480MHz
Weight	36g
Operating Temperature	0°C to 50°C
Storage Temperature	-20°C to 50°C

## Charging Case

Battery Capacity	2900 mAh
Charging Time	Approx. 2 hours (5 V 2 A)
Charging Connector	USB-C port
Times for Charging TX and RX	>1 time (for 2 TX and 1 RX)
Weight	210.5g
Dimensions	117 × 48.5 × 62.4 mm (L × W × H)
Operating Temperature	0°C to 50°C
Storage Temperature	-20°C to 50°C



#### FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.