BOYA

AI-Powered Mini Wireless Microphone

BOYAMIC 2

User Manual

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: support@boya-mic.com

Cautions

1. Non-professional teardown is strictly prohibited.
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 device with only a soft, dry cloth.
5. When using and storing, please keep away from the dust and moisture.
6. For the best pick-up pattern, do not hold your hand against the microphone capsule cover.

General Introduction

The BOYAMIC 2, a 2.4 GHz Ultra-Mini Wireless Microphone System, features 8 GB of internal storage, allowing it to record independently without receiver, ensuring secure audio data storage. Additionally, the transmitter supports 32-bit float recording, capturing clear and authentic sound details even in sudden loud or quiet environments. Each transmitter can connect to up to four receivers simultaneously, meeting the needs of multi-device collaboration. The BOYAMIC 2 is ideal for content creation, live streaming, vlogging, mobile journalism, and much more.

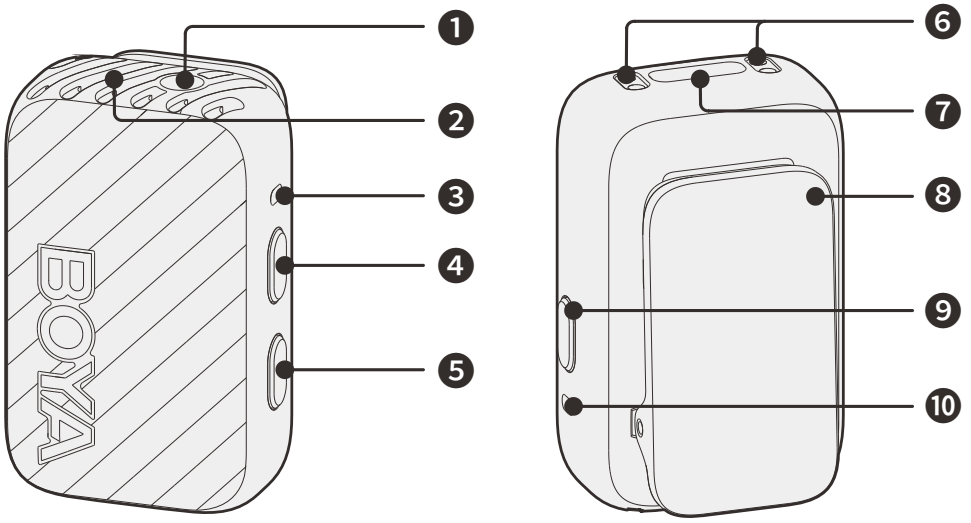
The BOYAMIC 2 includes USB-C adapter and a 3.5 mm TRS to TRS audio cable, offering broad compatibility with smartphones, tablets, computers, cameras, and other devices to meet various recording needs. The receiver features an AMOLED touchscreen and a knob design that displays real-time status of both the transmitter and receiver, making it easy for users to check and adjust settings intuitively. The receiver is also equipped with a USB-C charging port that supports charging the receiver and a phone or other external devices while recording, enhancing battery life. Moreover, the included charging case allows you to recharge the transmitter and receiver anywhere, making the BOYAMIC 2 highly portable and convenient for outdoor shooting.

Features

- True AI noise cancellation, up to 40 dB
- 90 dB SNR for studio-quality sound
- 2TX-4RX connection supports up to 8 devices
- 32-bit float onboard REC with 8 GB storage
- AGC & limiter for distortion-free audio
- Soundwave design, sleek and intuitive

Product Structure

Transmitter (BOYAMIC 2-TX)



❶ 3.5 mm TRS Input

For connecting a fur windshield or an external 3.5 mm microphone (not included). Please note that a microphone with a power supply of 24V or 48V should not be connected.

❷ Built-In Microphone

❸ Status Indicator

Status	Indicator
Unpaired	Blinks blue slowly
Pairing	Blinks blue quickly
Paired successfully	Solid blue
Noise cancellation enabled	Solid green
Low battery	Blinks red quickly
Charging	Solid red
Fully charged	Red light off
Firmware upgrading	Blinks red and green alternately

- In pairing mode, the status indicator on the transmitter will blink blue quickly for 5 minutes while waiting to pair 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 quickly, or it will automatically shut down after 10 minutes.

❹ Power Button

- Press and hold for 2 seconds to power on or off.
- Press once to mute or unmute the microphone.
- Press and hold for 5 seconds to enter pairing status in shutdown mode.

❺ NC Button

- Press once to enable or disable noise cancellation. The noise cancellation levels can be switched between strong and weak on the receiver's touchscreen or the BOYA Central app. By default, the strong noise cancellation level is enabled when first turned on. The specific noise cancellation level can be checked on the receiver's touchscreen.
- Press twice to start or stop recording a video when the receiver is connected to a smartphone, the smartphone is in camera mode, and paired with the transmitter. Note that this feature is only supported on smartphones where the volume button functions as a camera shutter.

❻ Charging Contacts

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

❼ 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.

❽ Magnetic Clip

The transmitter can be securely attached to clothing using either the magnetic clip or the magnet for easy placement.

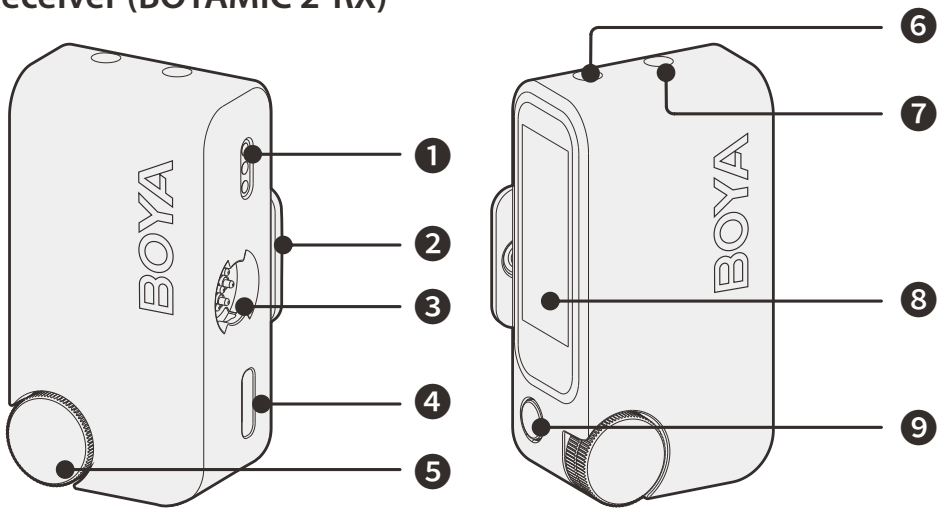
❾ REC Button

Press once to enable or disable onboard recording.

❿ Onboard Recording Indicator

Status	Indicator
Mute on	Blinks red slowly
Onboard recording on	Solid red
Mute / onboard recording off	Red light off

Receiver (BOYAMIC 2-RX)



❶ Charging Contacts

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

❷ **Belt Clip**
Can be mounted on a hot or cold shoe of a camera.

❸ **Connecting Contacts**
Connect the receiver to a smartphone, tablet, computer, or other device using the provided USB-C adapter or Lightning adapter (not included), allowing audio to be transmitted to the corresponding external device.

❹ **USB-C Charging Port**
- Use the included USB-C to USB-C data cable for charging the receiver, upgrading the firmware, and transmitting audio.
- When the receiver with a Lightning / USB-C adapter is connected to a smartphone, tablet, or other external devices, it supports simultaneous charging of both the receiver and the external device through this charging port.

NOTE: When the connecting contacts are connected to an external device, this port only supports charging the receiver and upgrading the firmware.

❺ **Knob**
When the receiver touchscreen is on the home menu, press once or rotate the knob to adjust the gain levels of the transmitter(s) or receiver. When the receiver touchscreen is on the settings menu, rotate the knob to select relevant settings, then press once to access sub menus.

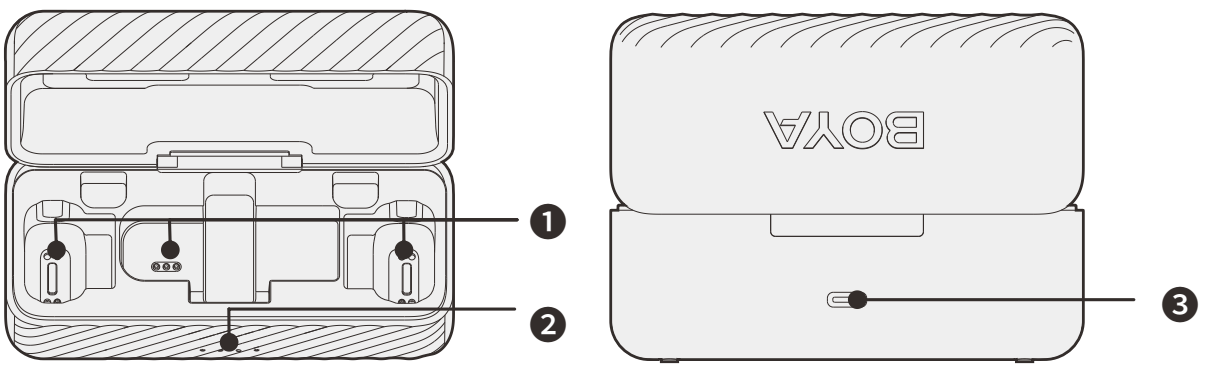
❻ **3.5 mm Monitor Port**
Connect a 3.5 mm TRS headphone to monitor the transmitter's audio capture in real-time.

❼ **3.5 mm Audio Output**
Used to output audio to a camera or other external devices.

❽ **Touchscreen**
- Displays vital information such as the transmitter(s) gain levels, onboard recording status, wireless signal strength, real-time recording volume, battery and charging status, receiver battery and charging status, wireless signal strength, recording mode, and more.
- Swipe down on the home screen to enter the settings menu, swipe up to return to the home screen. Refer to Receiver Touchscreen Operation for details.

❾ **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.

Charging Case (BOYAMIC 2-CC)



❶ Charging Pins

❷ Indicator

The definition of indicator in the Table:

☼ means blinking ○ means solid ● means off

- 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%	☼ ● ● ●
<25%	○ ● ● ●
25% to 49%	○ ○ ● ●
50% to 74%	○ ○ ○ ●
75% to 100%	○ ○ ○ ○

NOTE:

When the charging case is at low or below 10%, it can not charge the transmitter(s) or receiver.

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

Battery level (case)	Indicator
<25%	☼ ● ● ●
25% to 49%	○ ☼ ● ●
50% to 74%	○ ○ ☼ ●
75% to 99%	○ ○ ○ ☼
Fully charged	○ ○ ○ ○

❸ USB-C Charging Port

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

Operation Guide

Pairing Transmitters and Receiver

1. The transmitter(s) and receiver will power on automatically as soon as they are taken out of the charging case.
2. The transmitter(s) and receiver are pre-paired before leaving the factory. Therefore, they will automatically pair once powered on. The indicator on the transmitter will glow solid blue when the pairing is successful.
   If pairing is unsuccessful or the transmitter disconnects from the receiver, you can pair them using any of the methods below.
   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.
   Methods 2: Pair Manually

①Press and hold the power button on the transmitter(s) for 5 seconds in shutdown mode until its indicator blinks blue quickly to enter pairing mode.

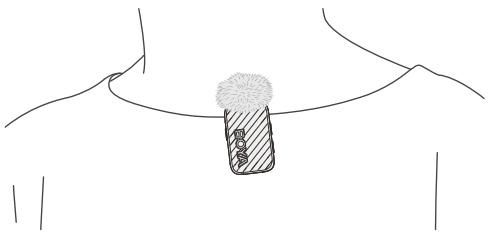
②Turn on the receiver by pressing its power button for 2 seconds. Swipe left on the receiver's touchscreen to enter the Settings Menu, then locate the "Pair Device" menu and tap "pairing".

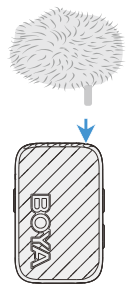
③The transmitter(s) and receiver are successfully paired when the indicator on the transmitter glows solid blue.

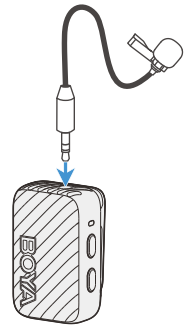
3. If the transmitter needs to be paired with multiple receivers, after successfully pairing with the first receiver, press and hold the power button on the second receiver for 2 seconds to enter pairing mode. Once pairing is successful, the second receiver's touchscreen will display the corresponding transmitter's information. Additional receivers can then be paired using the same method. Each transmitter can connect to a maximum of four receivers simultaneously.
   NOTE: Each transmitter can connect to a maximum of four receivers simultaneously. If the receiver is connected to fewer than two transmitters and does not connect to a second transmitter within five minutes, it will automatically exit pairing mode with the second transmitter.

Placing Transmitter

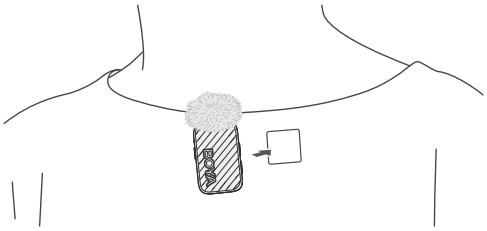
1. Attach the fur windshield to the transmitter(s) when using it outdoors or in a windy environment. If the user wants to use an external 3.5 mm microphone (not included), please connect it to the transmitter's 3.5 mm TRS input.

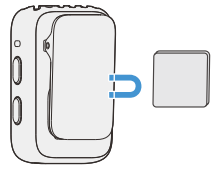






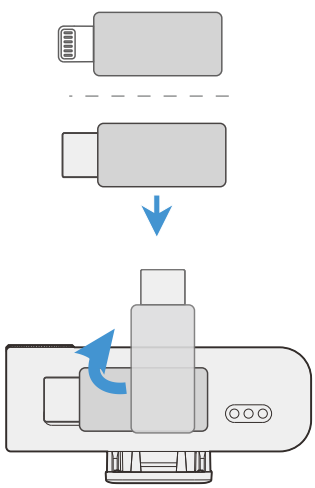
2. The transmitter can be directly attached to clothing via its magnetic clip, or using with the magnet, offering users greater flexibility when wearing the transmitter.

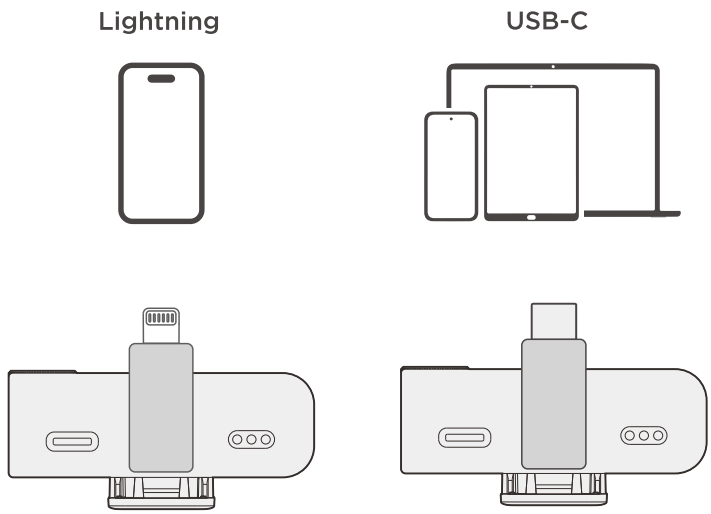




Using with a Mobile Device

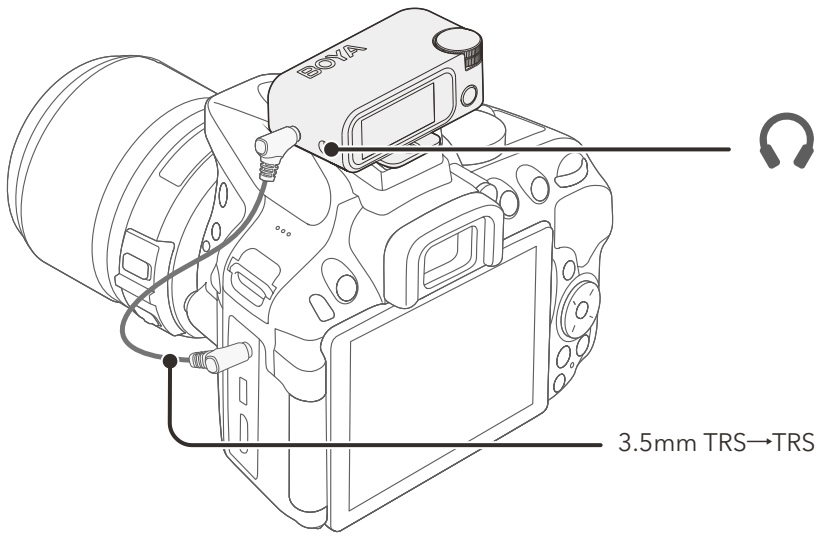
- Mount the correct adapter on the receiver according to your device's port, and then connect the receiver to your smartphone, tablet, computer, or other mobile device.
- Launch the BOYA Central app or another recording app to start recording. If the app is compatible, please select the external microphone(BOYAMIC 2).
- In a noisy environment, it is recommended to press the NC button on the transmitter once to enable noise cancellation. You can switch between strong and weak noise cancellation levels through the receiver or the BOYA Central app to enhance recording quality.





Recommended Scenarios for Using Noise Cancellation Mode:
Strong Noise Cancellation: Ideal for blocking out highly noisy environments such as street markets, stadiums, subway or train stations, and construction sites.
Weak Noise Cancellation: Suitable for reducing mild disturbances like air conditioners, fans, water flow, or printer operation noise.
NOTE:
When connecting the receiver to devices such as smartphones or computers, it is recommended to use the BOYA Central app for audio recording. This app provides the parameter configurations for the transmitter(s) and receiver, as well as firmware upgrades.

Using with a Camera
Use the included 3.5 mm TRS to TRS audio cable to connect the receiver's 3.5 mm audio output to a camera, mixer, and other device. The audio captured by the transmitter will be transmitted to the connected device.



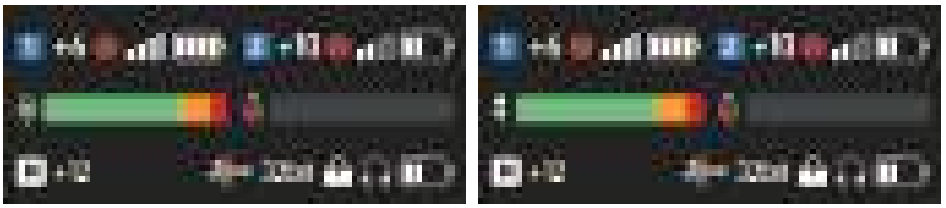
NOTE:
When connecting to a camera, it is recommended to select the corresponding camera brand and model on the receiver first. Once selected, the receiver touchscreen will display the recommended gain level for that camera model. Please follow the displayed instructions to adjust the camera's gain settings before starting recording to improve audio performance. For more details, refer to the Instructions on Recommended Gain for Camera Setup on the official website.

Tips:
1. It is recommended to record a sample and play it back to check if the audio level is acceptable before recording.
2. In order to improve the recording effect in a noisy environment, it is recommended to press the NC button on the transmitter to enable noise cancellation (this function will be enabled or disabled simultaneously on both transmitters). You can also select an optimal noise cancellation level through the receiver or the BOYA Central app to improve recording quality.
3. After recording, put the transmitter(s) and receiver back into the case for charging.

Receiver Touchscreen Operation

Home Screen Overview

From top and bottom, the touchscreen displays transmitter's gain levels,onboard recording status, wireless signal strength, the battery levels and charging status of transmitter. It also shows the real-time recording volume of the in-built microphone or lavalier microphone. Additionally, it displays the receiver's recording mode, output gain levels, monitor status, battery levels and charging status, and more. Below is an example with two transmitters connected.



The top of the Home Screen indicates transmitter status

1 +6	Indicates the input gain levels of transmitter 1(TX1) or transmitter 2(TX2)
	Indicates that onboard recording on the transmitter is enabled
	Indicates the current wireless signal strength between the transmitter 1(TX1) or the transmitter 2(TX2) and the receiver
	Indicates battery levels and charging status of transmitters

The middle of the Home Screen indicates transmitter microphone status

	Indicates that the in-built microphone is picking up sound
	Indicates that the external microphone is picking up sound
	Indicates that the transmitter is muted
	Indicates the volume of the real-time audio input

The bottom of the Home Screen indicates the status of the transmitter and receiver

M S M	Indicates the mode of the receiver. Refer to Settings Menu for details
+12	Indicates the output gain levels of the receiver
	Indicates the noise cancellation level of transmitter, and the current level set to weak noise cancellation
	Indicates the noise cancellation level of transmitter, and the current level set to strong noise cancellation
32bit	Indicates that the 32-bit onboard recording on the transmitter is enabled
	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 receiver is connected to a monitoring headphone
	Indicates the battery level and charging status of receiver

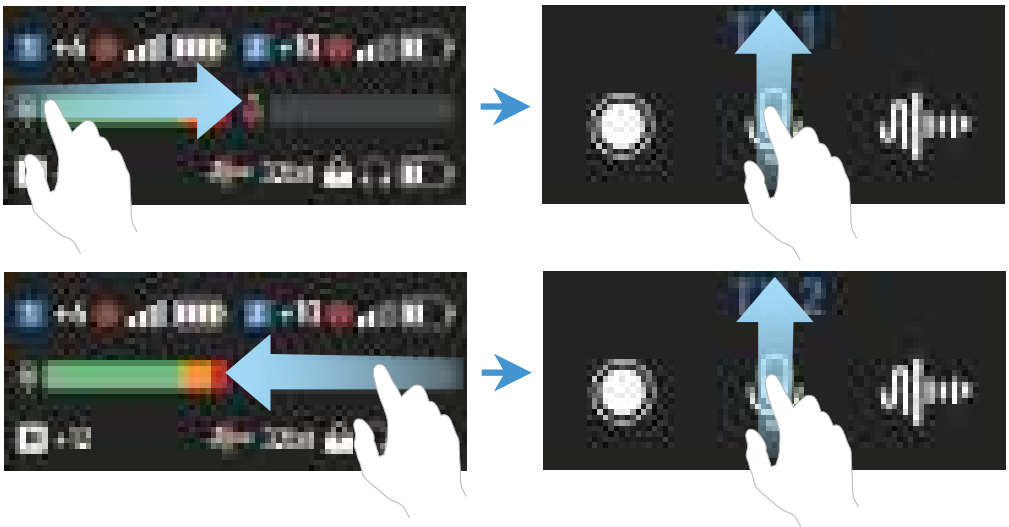
Quick Settings: When the receiver's touchscreen is on the home screen, you can press once or rotate the knob to adjust the gain of Transmitter 1 (TX1), Transmitter 2 (TX2), or the receiver (RX).

Menus Overview

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

Transmitter Settings Menu

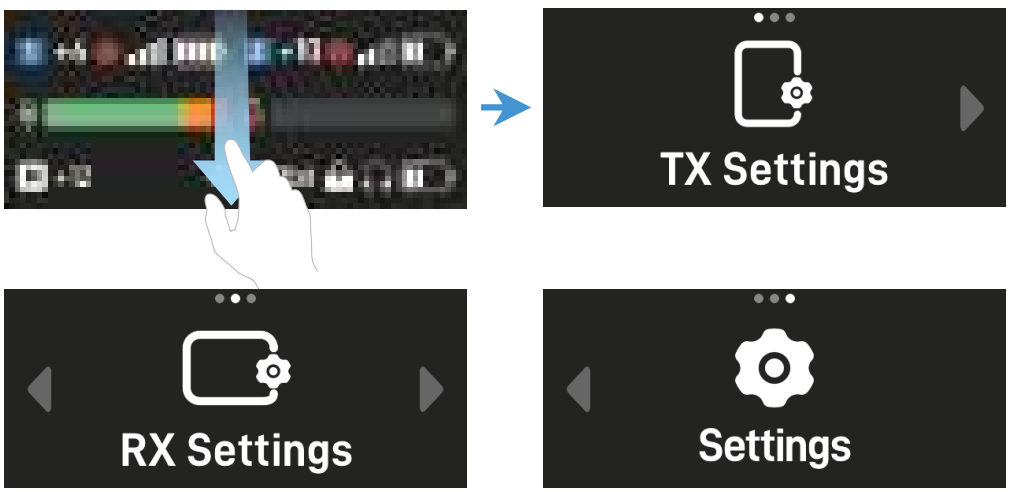
- Swipe right on the home screen to enter the settings menu for Transmitter 1 (TX1), and swipe left to enter the settings menu for Transmitter 2 (TX2). Tap the corresponding icon to set recording, mute, and noise cancellation levels.



- Swipe up to exit the transmitter settings menu and return to the home screen.

Setting Menu

- Swipe down on the home screen to enter the settings menu.
- Once in the settings menu, swipe left or right to navigate through the main menu, or quickly select by rotating the knob.
- In the settings menu, tap the main menu icon or short press the knob to enter the sub-menu, then select or tap the setting item to confirm the setting.
- Swipe up to return to the previous menu.



TX Settings

LED Indicator
When the LED Indicator is on, the transmitter's onboard recording and status indicator will normally display the working status. When the LED Indicator is off, the transmitter's onboard recording and status indicator will automatically turn off after displaying the working status for 5 seconds

Input Gain
Tap "Input Gain" to adjust the input gain of Transmitter 1 (TX1). Swipe left to adjust the input gain of Transmitter 2 (TX2). The gain range for the transmitters is -12 dB to +12 dB, with a default value of 0 dB. If the real-time input volume turns red, it is recommended to turn down the corresponding transmitter's input gain to prevent audio overload. Note that adjusting the input gain affects the recording volume, and the minimum gain level of the transmitter is not mute

EQ
Tap the icon or swipe left in the "EQ" main menu to switch between five modes: Original, Low Cut 75 Hz, Low Cut 150 Hz, Vocal Boost, and Custom 1

Original
Captures sound in its natural form, preserving clarity while minimizing noise and distortion. Ideal for high-quality audio scenarios such as recording, live streaming, or video calls, ensuring a natural and authentic sound transmission

Low Cut 75Hz

Low Cut 75 Hz
Filters out low-frequency noise below 75 Hz, such as wind noise, device operation noise. Suitable for outdoor environments to enhance audio clarity and reduce low-frequency interference

Low Cut 150Hz

Low Cut 150 Hz
Filters out low-frequency noise below 150 Hz, such as air conditioning hum or traffic noise. Suitable for environments with noticeable background noise, ensuring cleaner and purer audio capture

Vocal Boost
Optimizes the audio for clearer and brighter vocal performance. Ideal for speeches, live streaming, and other scenarios where voice clarity is crucial

Custom 1
Users can adjust the audio settings freely in the BOYA Central app according to their personal needs before enabling this mode on the receiver. This mode is suitable for scenarios that require personalized configurations based on different environments or applications, such as meetings, recordings, or live streaming

REC

Auto Recording
When auto recording is on, the transmitter will automatically start onboard recording as soon as it is removed from the charging case or powered on

	Storage Tap to check the remaining onboard recording time for Transmitter 1 (TX1) and Transmitter 2 (TX2). Tap the remaining time display of the corresponding transmitter to format its memory
32bit	**32-Bit Float Recording** By default, the transmitter records onboard in 48 kHz 24-bit format, but users can switch to recording in 48 kHz 32-bit format. For details, refer to the "32-bit Float Recording Feature" section below
	TX Lock When TX Lock is on, only the power button on the transmitter can be used to turn the transmitter on or off. All other buttons will be disabled, effectively preventing unintended setting changes or shutdowns
	Auto Off When enabled, if the transmitter is not connected to a receiver and onboard recording is not started within 10 minutes of powering on, it will automatically turn off

RX Settings

LR	**Recording Mode** The user can toggle among three modes: Mono, Stereo, and Safety Track
M	**Mono** Signals from the left and right channels are identical
S	**Stereo** The left and right channel outputs correspond to the two sound sources of transmitter 1 and transmitter 2 respectively
M	**Safety Track** The output gain of the right channel is 12 dB lower than that of the left channel to prevent audio level overload in your recordings
	Output Gain Tap "Output Gain" to adjust the receiver's output gain level. Swipe left to turn the auto gain on or off. The receiver's output gain adjustment is synchronized with the monitoring volume • **Receiver Output Gain**: Adjustable from -12 dB to +12 dB, with a default of 0 dB. If the audio is overloaded, turn down the receiver gain first • **Auto Gain:** When Auto Gain is on, microphone gain will adjust dynamically based on real-time input volume—turning down gain for loud sounds and turning up gain for quiet sounds
	Camera Presets Select your camera brand and model, and the receiver touchscreen will display the recommended gain level for the camera. Please adjust the camera's gain according to the recommendation before starting the recording to better audio recording

	Speaker When Speaker is on, audio can be played directly from the device when the receiver is connected to a phone, tablet, or other devices without unplugging the receiver inserted into an adapter
	Auto Off When Auto Off is enabled, the receiver will automatically power off if it doesn't connect to a transmitter within 30 minutes
	Pair Device Tap "Pair" to connect the transmitter and receiver. Note that Pairing will ignore any currently paired devices

Settings

	Display Tap "Display" to adjust the screen brightness. Swipe left to adjust the display time • **Brightness:** Select the desired setting for screen brightness among standard, bright, and dim • **Display Time:** Select the desired setting for timeout of the display time among 15s, 30s, 60s, always on
	Language Tap "Language" and swipe left to set the receiver's display language to Simplified Chinese or English
	Date / Time The date and time of the onboard recording files can be set
	Factory Reset Tap to access its sub menu to cancel or confirm the reset to default. After selecting Confirm, the receiver's relevant parameters will be restored to the default factory settings (Please use with caution)
	Version Tap "Version" and swipe left to display the version information of the transmitters and receiver sequentially

32-bit Float Recording Feature

The transmitter of the BOYAMIC 2 supports audio recording 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 is close to 0 dB, it will not cause distortion or overload. Note that 32-bit float recording is only applicable to the onboard recording of the BOYAMIC 2 transmitter and will not affect the recording format of the camera.

Transmitter Onboard Recording

① Press the transmitter's REC button to enable its onboard recording. Or enable the "Auto Recording" so that the transmitter can start recording audio as soon as it is powering on. To enable the "Auto Recording" mode, please refer to Receiver Touchscreen Operation.

② The transmitter can record up to 15 hours of 48 kHz 24-bit float audio, and up to 10 hours when recorded at the 48 kHz 32-bit float sampling rate.

③ Files are automatically split every 30 minutes, making it quickly to find the desired recording segment.

④ By default, the recording folder is "BOYAMIC 2 Audio" and the recording files are named in the format of "DATE-TIME. WAV", Up to 999 recording files can be created.

⑤ The transmitter can be connected to a computer via the included USB-C to USB-C data cable to export the onboard recording files. The transmitter's storage can be formatted through the receiver's TX settings.

⑥ The transmitter comes 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.

NOTE:

- When the transmitter is set to onboard recording only, files cannot be read; however, they can be accessed in all other modes. When accessing onboard recording files, the transmitter enters USB mode and cannot start onboard recording, and the receiver cannot format the transmitter's storage.
- When mute is enabled, onboard recording will continue, but the recording files will have no sound.
- The onboard recording function can still be enabled and used even if the transmitter is not connected to the receiver or is in a low battery.

Troubleshooting

If you encounter problems when using the unit, please refer to the following checklist before contacting technical support. If the problem cannot be solved, please contact the dealer's after-sales service department.

- **The transmitter(s) can not pair with the receiver**
  Turn off the transmitter(s) and the receiver. Press and hold the power button on the transmitter for more than 5 seconds until the indicator blinks blue quickly. Then select "Pairing" on the menu page of the receiver to pair again.

- **Operating range is limited, sound changes, or noise appears**

①Make sure there is no interference from high-power wireless routers or devices in your recording environment. If the recording environment can't be changed, you need to find the optimal distance and angle for recording.

②Due to 2.4 GHz wireless frequency, signal can be easily attenuated. Please try to avoid obstacles, such as walls and buildings, and avoid close proximity to devices with 2.4 GHz signal, such as high-power Wi-Fi antennas, radios, etc.

③Make sure the receiver is well connected to your device properly.

- **The transmitter(s) or the receiver doesn't power on**
  If the battery is completely depleted due to the transmitter(s) or the receiver has not been used for a long time, charge it.
- **Charging case can't charge the transmitter(s) or receiver**

①If the remaining charge of the charging case is too low, please recharge the case and try again.
②Wipe the charging contacts on the transmitter(s), receiver, and charging pins in the case with a clean cloth. Make sure there is no dirt covering them.
③If the charging contacts and pins are not firmly connected due to insufficient magnetic force, please contact BOYA after-sales support.

- **Howling noise occurs when using the receiver with an adapter**
  Make sure your phone's speaker is off in the receiver's touchscreen.

Specifications

Transmitter (BOYAMIC 2-TX)

Operating Frequency	2.4 GHz digital frequency
Modulation	GFSK
Maximum Transmission Range	Up to 300 m (without obstacles); 60 m (with obstacles)
Microphone Directions	Omnidirectional
Antenna	PIFA
RF Output Power	<10 dBm
Distortion	≤0.1%
Frequency Response	20 Hz to 20 kHz
Sensitivity	≥-32 dB
Reference Audio Input Level	-20 to -42 dBu (MIC input, 0 dB Gain)
Sampling Rate	48 kHz
Bit Rate	24/32-bit
Signal-to-noise Ratio	≥90 dB
Audio Input	Built-in condenser microphone capsule
Max SPL	115 dBSPL
Storage	8 GB
Port for Reading Audio Files	USB-C Port
Power Supply	Built-in Li-ion battery
Battery Capacity	220 mAh
Battery Life	9 hours (with Noise Cancellation and Onboard Recording off); 6 hours (with Noise Cancellation and Onboard Recording on)

Charging Time	1.75 hours
Weight	20.5 g
Dimensions	40 × 25.4 × 19.76 mm (L × W × H), including magnetic clip
Operating Temperature	-20°C to 50°C
Storage Temperature	-20°C to 55°C

Receiver (BOYAMIC 2-RX)

Transmission Type	2.4 GHz digital frequency
Modulation	GFSK
Antenna	PIFA
RF Output Power	<10 dBm
Monitoring Port	3.5 mm TRS
Maximum Transmission Range	Up to 300 m (without obstacles); 60 m (with obstacles)
Frequency Response	20 Hz to 20 kHz
Signal-to-noise Ratio	≥90 dB
Audio Output	USB-C / Lightning digital output, 3.5 mm analog output
Battery Capacity	430 mAh
Battery Life	15 hours（ 2*TX+1*RX ）
Charging Time	Approx. 2 hours
Weight	29.5 g (excluding the adapter 2 g)
Dimensions	53.6 × 28.2 × 24.1 mm (L × W × H)
Operating Temperature	-20°C to 50°C
Storage Temperature	-20°C to 55°C

Charging Case (BOYAMIC 2-CC)

Battery Type	Built-in Li-ion battery
Battery Capacity	2900 mAh
Power Supply	USB-C port
Charging Time	Approx. 2.5 hours (5 V 2.5A)
Charging Cycles	More than 2 times (2*TX)
Weight	176 g
Dimensions	112 × 45.5 × 57.6 mm (L × W × H)
Operating Temperature	-20°C to 50°C
Storage Temperature	-20°C to 50°C