BOYA

2.4 GHz Ultra-Mini Wireless Microphone

BOYA mini

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-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

The BOYA mini, a 2.4 GHz Ultra-Mini Wireless Microphone system, features automatic re-connection and selectable noise reduction that offer remarkable flexibility for recording. It adopts specific AI algorithms for changing your voice in real time to provide a highly pleasurable listening experience. With ease of operation, the microphone system is compatible with smartphones, tablets, computers, and more. The BOYA mini is ideal for content creation, live streaming, vlogging, mobile journalism, and much more.
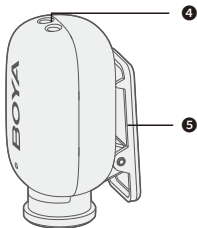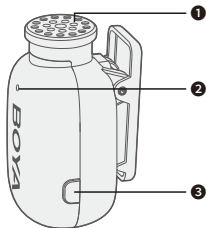
BOYA mini offers multiple configurations with three kinds of receiver options that support USB-C, Lightning, and 3.5 mm TRS outputs,making it widely compatible with smartphones, computers, cameras.

Features

- Transmitter as lightweight as 5 g
- 3-grade AI noise cancellation
- Delivers CD-quality sound
- Wireless connection & plug and play
- Provides a reliable transmission range up to 100 m
- Playback via device speaker without unplugging receiver
- USB-C/Lightning version: equipped with a portable charging case to record 30 hours; Camera version: equipped with a portable charging case to record 24 hours

Product Structure
Transmitter (BOYA mini-TX)

❶ In-built Condenser Microphone

❷ Indicator

Status	Indicator
Unpaired	Blinking blue
Pairing	Blinking blue quickly (5 minutes)
Paired successfully	Static blue
Disconnected (beyond operating range)	Blinking blue
Re-connected (within operating range)	Static blue
Noise reduction enabled	Static green
Low battery	Blinking red (per second)
Charging	Static red
Fully charged	Red light off

Note:
- The transmitter(s) will automatically power off after 10 minutes if unpaired.
- If multiple functions are activated on the transmitter(s), its indicator will only illuminate for one feature. The indicator is prioritized as follows: pairing > low battery > re-connecting > noise reduction.
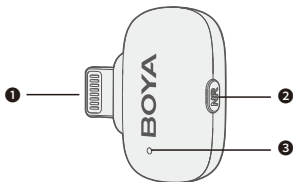
❸ Power Button

Operation	Function
Press and hold for 2 seconds	Power on or off
Press once	Enable or disable noise reduction
Press and hold for 5 seconds (in shutdown mode)	Enter pairing mode

Note:
- The transmitter(s) will automatically power on once removed from the charging case, and automatically power off once placed back.
- Noise reduction is disabled by default. This function can NOT be enabled or disabled when the transmitter(s) is re-connecting to a receiver.

❹ Charging Contacts

❺ Belt Clip

iOS Lightning Receiver (BOYA mini-RXD)

❶ MFi Certified Lightning Connector
It can be connected to an iOS Lightning device.

❷ NR Button

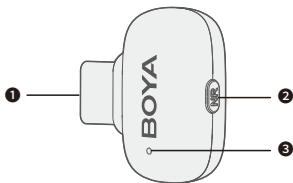| Operation	Function	Indicator
Press to select a noise reduction grade	Grade 1 (weak)	Blinking green once
	Grade 2 (medium)	Blinking green twice
	Grade 3 (strong)	Blinking green 3 times
Double press to select an AI sound mode	Uncle voice	Blinking blue once
	Female voice	Blinking blue twice
	Original voice	Blinking blue 3 times
Press and hold for 5 seconds (when plugged into a device)	Enter pairing mode	Blink blue quickly (5 minutes)

Note：
• When the receiver connected to a phone, you can play back your recordings without the need to unplug the receiver. This function is turned on by default.

- Every time the receiver is turned on, the AI sound mode is turned off by default.
- Noise reduction is disabled by default, and its default grade is 3 when turned on for the first time. The noise reduction grade can only be adjusted after the transmitter's noise reduction is enabled. The setting will be retained even after the power is turned off.
- If the transmitter(s) and receiver are in pairing mode but not paired within 5 minutes, they will switch into re-connecting mode.
- Noise reduction on or off, noise reduction grade, and AI sound mode can NOT be set when the unit is in re-connecting mode.

❸ Indicator

Status	Indicator
Unpaired	Blinking blue
Pairing	Blinking blue quickly (5 minutes)
Paired successfully	Static blue
Noise reduction enabled	Static green
Noise reduction grade 1 (weak)	Blinking green once
Noise reduction grade 2 (medium)	Blinking green twice
Noise reduction grade 3 (strong)	Blinking green 3 times
Uncle voice	Blinking blue once
Female voice	Blinking blue twice
Original voice	Blinking blue 3 times

USB-C Receiver (BOYA mini-RXU)

❶ USB-C Connector

It can be connected to iPhone 15 or newer, Android smartphones, tablets, computers and other USB-C devices.

❷ NR Button

Operation	Function	Indicator
Press to select a noise reduction grade	Grade 1 (weak)	Blinking green once
	Grade 2 (medium)	Blinking green twice
	Grade 3 (strong)	Blinking green 3 times
Double press to select an AI sound mode	Uncle voice	Blinking blue once
	Female voice	Blinking blue twice
	Original voice	Blinking blue 3 times
Press and hold for 5 seconds (when plugged into a device)	Enter pairing mode	Blink blue quickly (5 minutes)

Note:

• When the receiver connected to a phone, you can play back your
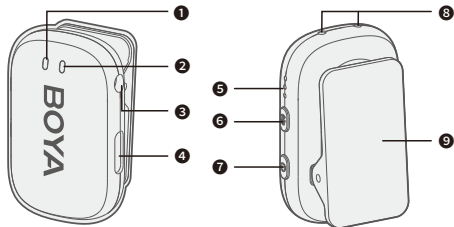
recordings without the need to unplug the receiver. This function is turned on by default.

- Every time the receiver is turned on, the AI sound mode is turned off by default.
- Noise reduction is disabled by default, and its default grade is 3 when turned on for the first time. The noise reduction grade can only be adjusted after the transmitter's noise reduction is enabled. The setting will be retained even after the power is turned off.
- If the transmitter(s) and receiver are in pairing mode but not paired within 5 minutes, they will switch into re-connecting mode.
- Noise reduction on or off, noise reduction grade, and AI sound mode can NOT be set when the unit is in re-connecting mode.

❸ Indicator

Status	Indicator
Unpaired	Blinking blue
Pairing	Blinking blue quickly (5 minutes)
Paired successfully	Static blue
Noise reduction enabled	Static green
Noise reduction grade 1 (weak)	Blinking green once
Noise reduction grade 2 (medium)	Blinking green twice
Noise reduction grade 3 (strong)	Blinking green 3 times
Uncle voice	Blinking blue once
Female voice	Blinking blue twice
Original voice	Blinking blue 3 times

3.5 mm TRS Receiver (BOYA mini-RX)

❶ Indicator 1

❷ Indicator 2

Indicator 1 & Indicator 2 Information:

Function	Indicator 1 & Indicator 2
Unpaired	Blinking blue
Pairing	Blinking blue quickly
Paired with transmitter 1, but not paired with transmitter 2	Indicator 1: static blue Indicator 2: blinking blue
Not paired with transmitter 1, but paired with transmitter 2	Indicator 1: blinking blue Indicator 2: static blue
Press transmitter's power button to enable its noise reduction function	Static green
Press transmitter's power button to disable its noise reduction function	Static blue
Low battery	Blinking red
Charging	Static red

Note:
- The receiver will automatically power off after 10 minutes if unpaired with the transmitter.
- After the receiver is successfully paired with only one transmitter, one of the receiver's indicators 1 and 2 will glow static blue, while another indicator will automatically turn off after 5 minutes if there is no pairing with a second transmitter.

❸ **3.5 mm TRS output**

Connect the receiver to a camera using the included 3.5 mm TRS to TRS audio cable, and the audio recorded by the transmitter will be transmitted to the camera.

❹ **USB-C Data Port**

For charging the receiver. It also supports connecting to a phone to transmit the audio recorded by the transmitter to the phone. When the receiver is connected to the phone via this port, you can play back your recordings without the need to unplug the receiver. This function is turned on by default.

❺ **Volume Indicators**

Operation	Function	Volume Indicators
Press the volume button	Volume level 1	○ ○ ●
	Volume level 2	○ ● ●
	Volume level 3	● ● ●

Note:
The volume indicators will automatically go out after being on for 5 seconds.

❻ Volume Button

Press to adjust the volume in levels 1 to 3, with each level increasing by 6 dB. Each time you press this button, the volume level cycles from level 1 > level 2 > level 3.

❼ Power Button

Operation	Function	Indicator 1 & Indicator 2
Press and hold receiver's power button for 2 seconds	Power on or off	/
Press receiver's power button to select a noise reduction grade	Grade 1 (weak)	Blinking green once
	Grade 2 (medium)	Blinking green twice
	Grade 3 (strong)	Blinking green 3 times
Double press receiver's power button to select an AI sound mode	Uncle voice	Blinking blue once
	Female voice	Blinking blue twice
	Original voice	Blinking blue 3 times
Press and hold receiver's power button for 5 seconds (in shutdown mode)	Enter pairing mode	Blinking blue quickly (5 minutes)

Note:

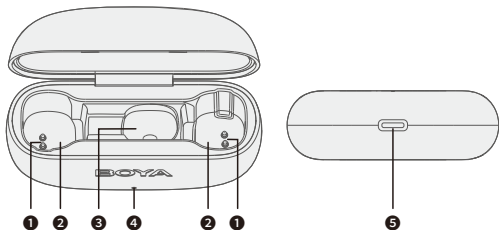- Every time the receiver is turned on, the AI sound mode is turned off by default.
- Noise reduction is disabled by default, and its default grade is 3 when turned on for the first time. The noise reduction grade can only be adjusted after the transmitter's noise reduction is enabled. The setting will be retained even after the power is turned off.

❽ Charging Contacts

❾ Belt Clip

For mounting the receiver on a camera.

CC Charging Case (BOYA mini-CC)

❶ Charging Contacts
For charging transmitters.

❷ Slot for Transmitters

❸ Slot for Receiver

❹ Charging/Remaining Battery Level Indicator
When the charging case is connected to power, this indicator will display the case's charging status.

Status	Battery level (case)	Indicator
Low battery	30% or lower	Blinking red
Charging	31%~99%	Blinking green
Fully charged	100%	Static green

When the charging case is NOT connected to power and the transmitter(s) is placed into it for charging, this indicator will display the case's remaining battery level.

Battery level (case)	Indicator	Charging Cycles (for transmitters)
5% or lower	Blinking red	Unable to charge
6%~30%	Static red	0.3
31%~100%	Static green	0.5~1

Note:
- Please charge the charging case as soon as possible when its indicator flashes red.
- When the charging case is out of power, the transmitter(s) does not turn off automatically once placed in.
- It takes about an hour and a half for the charging case to charge the transmitter from 0% to 100%.

❺ **USB-C Charging Port**
  For charging the charging case.

CCC Charging Case (BOYA mini-CCC)

❶ Slot for Receiver

❷ Charging Contacts
For charging the transmitters and receiver.

❸ Slot for Transmitters

❹ Charging/Remaining Battery Level Indicator
When the charging case is connected to power, this indicator will display the case's charging status.

Status	Battery level (case)	Indicator
Low battery	30% or lower	Blinking red
Charging	31%~99%	Blinking green
Fully charged	100%	Static green

When the charging case is NOT connected to power and the transmitter(s) and receiver placed into it for charging, this indicator will display the case's remaining battery level.

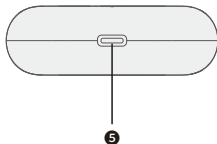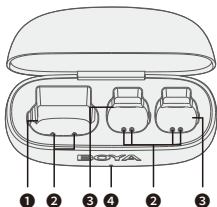| Battery level (case)	Indicator	Charging Cycles (for transmitters and receiver)
5% or lower	Blinking red	Unable to charge
6%~30%	Static red	0.3
31%~100%	Static green	0.5~1

Note:
- Please charge the charging case as soon as possible when its indicator flashes red.
- When the charging case is out of power, the transmitter(s) and receiver do not turn off automatically once placed in.
- It takes about an hour and a half for the charging case to charge the transmitter(s) and receiver from 0% to 100%.

❺ USB-C Charging Port
  For charging the charging case.

Magnetic charger to USB-A cable

Simply hold the charger near the charging contacts of the transmitter,
where magnets cause it to snap into place automatically.

How to Use

For BOYA mini-12 package to BOYA mini-17 package, and BOYA mini-23 package

1. The transmitter(s) will power on automatically as soon as it is taken out of the charging case. The transmitter(s) can be attached to clothes through its belt clips.
2. Plug the iOS Lightning connector into an iOS Lightning device or the USB-C connector into a USB-C device.
3. The transmitter(s) and receiver are pre-paired before leaving the factory. Therefore, they will be paired once they are powered on. Their indicators will glow static blue if paired successfully.
   If they are disconnected, please follow the below steps:
① Press and hold the NR button on the receiver for 5 seconds until its indicator blinks blue rapidly to enter pairing mode.
② Press and hold the power button on the transmitter(s) for 5 seconds in shutdown mode until its indicator blinks blue rapidly to enter pairing mode.
③ The transmitter(s) and receiver are successfully paired when their indicators turn static blue.
4. Launch a video or audio recording app.
5. Some phones may default to using its built-in microphone, so you may need to switch to the external microphone (BOYA mini) on the recording app.
6. You are ready to record.

For BOYA mini-18 package

1. The transmitter(s) and 3.5 mm TRS receiver will automatically power on once removed from the charging case.
2. Pair the transmitter (s) with the receiver.
① With the receiver powered off, press and hold its power button for 5 seconds until its indicator 1 and indicator 2 blink blue rapidly to enter pairing mode.
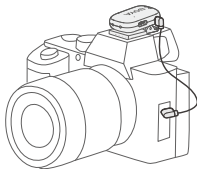
② With the transmitter(s) powered off, press and hold its power button for 5 seconds until its indicator blinks blue rapidly to enter pairing mode.

③ The transmitter 1 and receiver are successfully paired when the receiver's indicator 1 and transmitter 1's indicator both turn static blue. Similarly, the transmitter 2 and receiver are successfully paired when the receiver's indicator 2 and transmitter 2's indicator both turn static blue.

3. Place the transmitter(s) on clothes through its belt clip.

4. Using the receiver

• Using with a camera

Connect the 3.5 mm TRS output on the receiver to the microphone port of a camera using the 3.5 mm TRS to TRS audio cable provided. Refer to the camera's accompanying user manual to start recording, then the audio captured by the transmitter(s) will be transferred to the camera.

• Using with a phone

The receiver can also be connected to a phone via its USB-C data port using a correct data cable (not included), then the transmitter's audio to be transmitted to the phone. Start a video or audio recording application on your phone to begin recording. Some phones may default to using its built-in microphone, so you may need to switch to the external microphone (BOYA mini).

For BOYA mini-19 package
This package comes with 3 kinds of receivers, namely the Lightning, USB-C and 3.5 mm TRS receiver, allowing you have more choices whether you want to output audio to a phone or a camera. If you are going to use the Lightning or USB-C receiver to output audio to a phone, please refer to the above instructions from "For BOYA mini-12 package to BOYA mini-17 package, and BOYA mini-23 package". If you are going to use the 3.5 mm TRS receiver to output audio to a camera, please refer to the above instructions from "For BOYA mini-18 package".

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 power button on the transmitter(s) to enable noise reduction(this function on both transmitters will be enabled or disabled at the same time). You can also operate the receiver to select an optimal noise reduction grade.
3. Put the unit back into the charging case for charging after recording.

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

Troubleshooting

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

- **If there is no sound from the unit or no sound when connected to an
  external device**
  Make sure the connector on the receiver is well connected to your
  device.

- **The operating range of the unit is limited and the sound is
  frequently intermittent**
  Make sure there is no interference between the transmitter(s) and
  receiver. If the intermittent sound still occurs frequently, please contact
  our customer service.

- **The charging case fails to charge the unit**
  ① Make sure charging contacts are in full contact. Wipe charging contacts
  with a clean cloth and try again.
  ② If you want to check whether the magnetic force is aging or whether
  charging contacts are not in sufficient contact, push down the unit
  placed in the charging case until charging contacts are in full contact to
  see if it is charged. If the unit still fails to be charged, please contact our
  customer service.

Specifications
Transmitter

Transmission Type	2.4 GHz digital frequency
Modulation	GFSK
Polar Pattern	Omnidirectional
Antenna	FPC
Operating Range	Up to 100 m (without obstacles)
RF Output Power	< 10 dBm
Distortion	≤0.1%
Frequency Response	20 Hz-20 kHz
Sensitivity	-36 dB
Sampling Rate	48 kHz
Bit Rate	16 bit
Signal-to-Noise Ratio	> 80 dB
Audio Input	In-built condenser microphone capsule
Battery Capacity	65 mAh
Power Requirements	In-built lithium-ion battery / Charging contacts (5 V/1 A)
In-built Battery Life	Approx. 6 hours
Charging Time	Approx. 1.5 hours
Weight	5 g
Dimensions	31 x 15 x 16.4 mm
Operating Temperature	0℃ to +50℃
Storage Temperature	-20℃ to +50℃

iOS Lightning Receiver/USB-C Receiver

Transmission Type	2.4 GHz digital frequency
Modulation	GFSK
Polar Pattern	Omnidirectional
Antenna	Ceramic Antenna
Operating Range	Up to 100 m (without obstacle)
RF Output Power	< 10 dBm
Distortion	≤0.1%
Frequency Response	20 Hz-20 kHz
Sensitivity	-36 dB
Sampling Rate	48 kHz
Bit Rate	16 bit
Signal-to-Noise Ratio	> 80 dB
Audio Output	iOS Lightning or USB-C digital output
Power Requirements	Powered by an external device
Weight	USB-C receiver: 2.5 g iOS lightning receiver: 3 g
Dimensions	USB-C receiver: 23.2 x 22.4 x 10.1 mm iOS lightning receiver: 23.2 x 22.6 x 10.1 mm
Operating Temperature	0℃ to +50℃
Storage Temperature	-20℃ to +50℃

3.5 mm TRS Receiver

Transmission Type	2.4GHz digital frequency
Modulation	GFSK
Polar Pattern	Omnidirectional
Antenna	Ceramic Antenna
Operating Range	Up to 100m (without obstacles)
RF Output Power	< 10 dBm
Distortion	≤0.1%
Frequency Response	20 Hz-20 kHz
Sensitivity	-36 dB
Sampling Rate	48 kHz
Bit Rate	16 bit
Signal-to-Noise Ratio	> 80 dB
Audio Output	3.5 mm TRS/USB-C data port
Power Requirements	In-built lithium-ion battery/ Charging contacts/USB-C data port
Battery Capacity	130 mAh
In-built Battery Life	Approx. 6 hours
Charging Time	Approx. 1.5 hours
Weight	11 g
Dimensions	40 x 25 x 12.5 mm
Operating Temperature	0°C to +50°C
Storage Temperature	-20°C to +50°C

CC/CCC Charging Case

Battery Capacity	CC: 260 mAh
	CCC: 550 mAh
Charging Time	Approx. 2 hours (5V 2A)
Charging Port	USB-C port
Charging Cycles	CC: More than once (2*transmitters)
	CCC: More than once (2*transmitters and 1*3.5 mm TRS receiver)
Weight	CC: 29 g
	CCC: 60 g
Dimensions	CC: 67.4 x 48.4 x 22.5 mm
	CCC: 78.9 x 61.5 x 29.5 mm
Operating Temperature	0°C to +50°C
Storage Temperature	-20°C to +50°C

Packing List

BOYA mini-12 (2TX+2RX+Charging Case) (Black)
2 × Transmitter
1 × Lightning Receiver
1 × USB-C Receiver
1 × CC Charging Case
1 × USB-C to USB-A Charging Cable
1 × Carrying Pouch

BOYA mini-13 (2TX+2RX+Charging Case) (White)

2 × Transmitter
1 × Lightning Receiver
1 × USB-C Receiver
1 × CC Charging Case
1 × USB-C to USB-A Charging Cable
1 × Carrying Pouch

BOYA mini-14 (2TX+1RX+Charging Case) for USB-C Device

2 × Transmitter
1 × USB-C Receiver
1 × CC Charging Case
1 × USB-C to USB-A Charging Cable

BOYA mini-15 (2TX+1RX+Charging Case) for Lightning Device

2 × Transmitter
1 × Lightning Receiver
1 × CC Charging Case
1 × USB-C to USB-A Charging Cable

BOYA mini-16 (1TX+1RX) for Lightning Device

1 × Transmitter
1 × Lightning Receiver
1 × Magnetic Charging Cable
1 × Carrying Pouch

BOYA mini-17 (1TX+1RX) for USB-C Device

1 × Transmitter
1 × USB-C Receiver
1 × Magnetic Charging Cable
1 × Carrying Pouch

BOYA mini-18(2TX+1RX+Charging Case) for Camera

2 × Transmitter
1 × 3.5 mm TRS Receiver
1 × CCC Charging Case
1 × USB-C to USB-A Charging Cable
1 × 3.5 mm TRS to TRS Audio Cable
1 × Carrying Pouch

BOYA mini-19 (2TX+3RX+Charging Case) for Camera, USB-C and Lightning Device

2 × Transmitter
1 × USB-C Receiver
1 × Lightning Receiver
1 × 3.5 mm TRS Receiver
1 × CCC Charging Case
1 × USB-C to USB-A Charging Cable
1 × 3.5 mm TRS to TRS Audio Cable
1 × Carrying Pouch

BOYA mini-23 (2TX+RX) for USB-C Device

2 x Transmitter
1 x USB-C Receiver
2 x Magnetic Charging Cable
1 x Carry Pouch

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地址:广东省深圳市龙华区观澜街道大富社区硅谷动力智能终端产业园A16栋

TEL: 400 6131096

Email: support@boya-mic.com

www.boyamic.com / www.jiayz.com