

# BOYA

## UHF Wireless Microphone System

UHF无线麦克风系统

BY-EM5-K1

User Manual  
用户手册



## General Introduction

The BY-EM5 is a lightweight and portable UHF wireless microphone system for teaching. It is ideal for live streaming, vlogging, mobile journalism and much more. It features an easy-to-use flexible UHF system, offering 48 frequencies to choose from to avoid wireless signal interference.

Besides the built-in microphone, the transmitter can be used with the included 3.5mm lavalier microphone . With the included TRS and TRRS cables, it can be compatible with a camera, recorder, mixer, smartphone, tablet, computer and more.

## Features

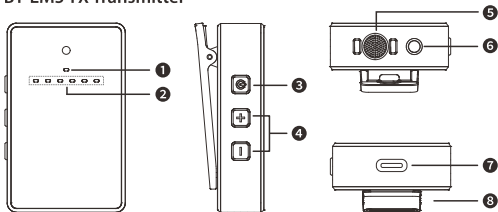
- Features automatic pairing
- Boasts a function of howling suppression
- Up to 50 meters of wireless transmission
- Receiver's 3.5mm headphone output - monitor your audio in real-time
- High-resolution LCD display - see vital information at a glance

## 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 professional's help.
4. Please clean the device 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.

# Product Structure

## BY-EM5 TX Transmitter



### 1 Status Indicator

Status	Indicator
Pairing	Blinking red and white alternately
Paired successfully	Static white
Microphone muted	Blinking red slowly
Low battery	Static red
Ultra low battery	Blinking red slowly
Charging	Static red
Fully charged	Red light off (Static white)

### 2 Microphone Gain Indicator

### 3 Power Button

- Press and hold for 2 seconds to power on or off.
- Press to mute or unmute the microphone.

#### 4 +/- Button

- Press the “+” or “-” button to adjust microphone gain. (The setting is retained even after the power is turned off.)
- Press and hold the “-” button for 3 seconds to enter pairing status.

#### 5 Built-in Microphone

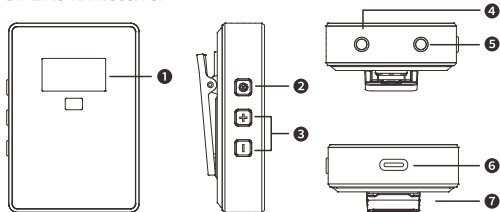
#### 6 3.5mm TRS Mic Input

It can be connected to the included 3.5mm lavalier microphones.

#### 7 USB-C Charging Port

#### 8 Belt Clip

### BY-EM5 RX Receiver



#### 1 LCD Display

#### 2 Power Button

Press and hold for 2 seconds to power on or off.

### 3 +/- Button

- Press the "+" / "-" button to page up or down, or set values and functions.
- Press and hold the "+" button to access options or save settings. Press and hold the "-" button to quickly adjust values.

### 4 3.5mm TRS Line Output

For analog audio output to a camera, recorder, mixer, etc by using the included output cable.

### 5 3.5mm Headphone Port

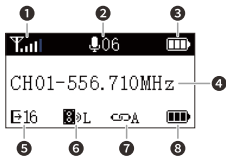
Connect your headphone to monitor the audio output in real-time.

### 6 USB-C Charging Port

### 7 Belt Clip

## LCD Display Operation Guide

### Home Screen



▾ Weak signal (Successfully paired)

▾ Unpaired

**2** TX's Mic Gain (00-06)

**3** TX's Battery Level

**4** Channel and Frequency

Displays the current channel and frequency.

**1** Signal Strength Indicator

▾ Strong signal (Successfully paired)

## 5 Output Volume (00-16)

## 6 Howling Suppression Control and Level

Normal speaker

Ceiling speaker

L: Low M: Middle H: High

## 7 Channel Mode

Auto Manual

## 8 RX's Battery Level

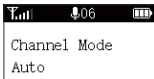
### Menu Screen

- Press the "+" / "-" button to page up or down. → Press and hold the "+" button to access options. → Press the "+" / "-" button to setting values or functions. → Press and hold the "+" button again to save the settings.
- While setting the channel, output volume or RF connection threshold, press and hold the "-" button to quickly adjust values.
- If no operation is performed within 20 seconds on the menu page, the display will automatically return to the Home screen.



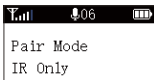
### Channel

There are 48 channels to choose from.



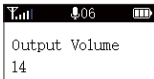
### Channel Mode

The channel mode can be set to either Auto or Manual. Defaults to Auto.



### Pair Mode

Select pair mode from IR+RF, IR Only or RF Only. Defaults to IR+RF.



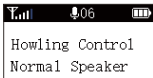
### Output Volume

Set the volume of output audio

within the range of 0 to 16.  
Defaults to 14.



**RF Connection Threshold**  
Set the connection threshold within the range of 0 to 255.  
Defaults to 85.



**Howling Control**  
Select Normal Speaker or Ceiling Speaker according to the type of external speakers. Defaults to Normal Speaker.



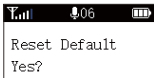
**Suppression Level**  
Set the suppression level to low, middle or high. Or turn off the howling suppression function.  
Defaults to Low.



**Backlight**  
Set the backlight to always on or on for 60/30/10 seconds. The default setting is "On".



**Language**  
English and Chinese are available.  
Defaults to Chinese.



**Restore Default Setting**



**Version**

## How to Use

### Steps:

1. Connect a camera, recorder or mixer to the receiver's line output with the included 3.5mm TRS to TRS cable. Or connect to a smartphone, tablet, or computer to the receiver's line output with the included 3.5mm TRS to TRRS cable.
2. Besides the built-in microphone, the transmitter can be used with the included lavalier microphone.
3. Press and hold the power button for 2 seconds to turn on the receiver and the transmitter.
4. Auto Pairing: Make sure that the receiver and the transmitter are turned on. Press and hold the "-" button of the transmitter for 3 seconds to clear pairing records and enter pairing status. The transmitter will be automatically paired with the receiver.

### Note:

- ① The recommended distance between the receiver and transmitter for automatic pairing is in the range of 3 to 5 meters.
- ② It is recommended to set the receivers to manual channel mode and select different channels when multiple devices working at the same time.
- ③ Select Normal Speaker or Ceiling Speaker according to the type of external speaker. The "Low" suppression level is recommended for howling suppression.
- ④ It is recommended to set RX's output volume to 14 and TX's gain to 4 when using the unit for the first time. Increase the volume on the power amplifier slowly until howling occurs. Then, turn down the volume a little bit to get the optimal power amplifier effect.
- ⑤ If you use the unit without an external speaker, select "Off" on the Suppression Level page and adjust the mic gain and output volume



according to your needs.

### **An example of using multiple devices in classrooms:**

- ① Place a receiver in each of the two classrooms and make sure the receivers are turned on.
- ② When using the transmitter in classroom A, press and hold the "-" button of the transmitter for 3 seconds. Then, the connection between transmitter and receiver A will be established automatically.
- ③ If entering classroom B, press and hold the "-" button of the transmitter again for 3 seconds. Then, the transmitter will be disconnected from receiver A and automatically paired with receiver B.

## **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.

- **If there is no sound from the unit or no sound when connected to an external device**
  - ① Make sure the connector on the receiver is well-connected to your device.
  - ② Make sure the mic gain and output volume are not turned to a minimum.
  - ③ Make sure the transmitter is not muted.
- **If sound of the unit is too low or too loud or even distorted**

Adjust the mic gain and find the most suitable gain level for recording in the current situation to improve the recording effect.

- **Current noise or other abnormal noise appears during monitoring**  
Make sure there is no interference near the unit. If the noise still exists after changing the unit's position, please contact our customer service.
- **The operating range of the unit is limited and the sound is frequently intermittent**  
Make sure there is no interference between the transmitter and the receiver. If the intermittent sound still occurs frequently, please contact our customer service.
- **The external speaker is howling when using the unit**  
The howling suppression can be enabled on the receiver's menu, and the suppression level can be selected according to the situation.
- **Note on charging the receiver**  
The receiver will be turned on automatically when it is charging in shutdown mode, and it will be turned off automatically when the charging cable is unplugged.

## **In the Box**

### **BY-EM5-K1 Kit**

1× BY-EM5 TX Transmitter

1× BY-EM5 RX Receiver

1× Lavalier Microphone

1× Fur Windshield

2× USB-A to USB-C Cable

1× 3.5mm TRS to TRS Output Cable for Cameras

1× 3.5mm TRS to TRRS Output Cable for Smartphones

## Specifications

### BY-EM5 TX Transmitter

Frequency Band	UHF band
Modulation	FM
Polar Pattern	Omnidirectional
Antenna	Built-in FPC antenna
Operating Range	Up to 50m (without obstacle)
RF Output Power	10mW
Distortion	< 1%@1kHz
Frequency Response	20Hz-8kHz
Frequency Range	556MHz-596MHz
Sensitivity	Lavalier microphone: -42dB±2 (1V/Pa)
	Built-in microphone: -30dB±2 (1V/Pa)
Signal-to-Noise Ratio	> 84dB
Audio Input	Built-in microphone/ Lavalier microphone
Charging Port	USB-C (DC 5V)
Power Requirements	Built-in lithium-ion battery
Battery Capacity	550mAh
Battery Life	Approx. 4 hours
Charging Time	Approx. 3 hours
Weight	33g
Dimensions	37.5mm×14.8mm×60mm
Operating Temperature	0°C to +50°C
Storage Temperature	-10°C to +50°C

## BY-EM5 RX Receiver

Frequency Band	UHF band
Modulation	FM
Antenna	Built-in FPC antenna
Operating Range	Up to 50m (without obstacle)
RF Output Power	10mW
Distortion	< 1%@1kHz
Frequency Response	20Hz-8kHz
Frequency Range	556MHz-596MHz
Signal-to-Noise Ratio	> 84dB
Audio Output	3.5mm TRS analog output
Monitoring Port	3.5mm headphone port
Charging Port	USB-C (DC 5V)
Power Requirements	Built-in lithium-ion battery
Battery Capacity	1000mAh
Battery Life	Approx. 7 hours
Charging Time	Approx. 3 hours
Weight	50g
Dimensions	45.5mm×16.5mm×66mm
Operating Temperature	0°C to +50°C
Storage Temperature	-10°C to +50°C

## Check Your BOYA Warranty Status

1. Your BOYA-branded hardware product is warranted against defects in materials and workmanship for a period of ONE (2) YEAR from the date of original retail purchase ("Warranty Period"). This warranty excludes damage resulting from abuse, accident, modifications or other causes that are not defects in materials and workmanship.
2. The Warranty Start Date shall be the date you purchase the Product with a valid invoice.
3. If the Customer is unable to provide an invoice of the original purchase, the Warranty Start Date shall be ninety (90) days after the Production Date displayed on the unit or its serial number (SN).

Go to <https://www.boyamicro.com/service-policy>. Enter a serial number (SN) to retrieve the warranty status for your Product. The result is for reference only, not as judgment criteria for warranty.

## Warranty Information

For information about warranty, return, and replacement policies or service for repair, please visit <https://www.boyamicro.com/service-policy>. You acknowledge that the warranty for your device is only valid in the country/region where it was purchased.



## BOYA Support

Get more product supports.

<https://www.boyamicro.com/service-policy>

## 概述

BY-EM5是一款轻巧便携、操作简单的UHF无线教学麦克风系统，适用于直播、Vlog拍摄，街头采访等场景。它拥有灵活的UHF系统，可提供48个频段可供选择，以避免无线信号干扰。

使用方式多样，除了内置麦克风外，发射器也可搭配随附的3.5mm领夹麦使用。接收器的3.5 mm TRS模拟输出可搭配随附的任一音频线，可适用于相机、录音笔、混音器、智能手机、平板、电脑等。

## 特点

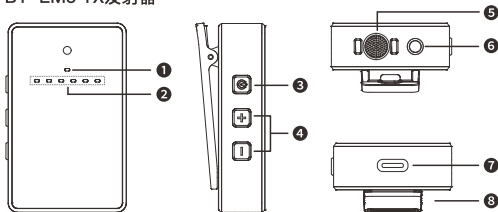
- 支持自动配对
- 内置啸叫抑制算法
- 无线传输距离达50米
- 接收器支持接入3.5mm耳机进行实时监听
- 高分辨率LCD屏幕，重要信息一目了然

## 注意事项

1. 请勿擅自拆开机壳；
2. 请勿将本机靠近热源，如散热器、聚光灯或其他产生热量的设备；
3. 电池不可自行更换；
4. 请使用柔软的干布清洁本设备；
5. 在使用和储存时，请注意防尘和防潮。
6. 为获得最佳拾音效果，请勿将手放在麦克风咪头上。

# 产品结构

## BY-EM5 TX发射器



### ① 状态指示灯

状态	指示灯
配对中	红白灯交替闪烁
配对成功	白灯常亮
静音模式	红灯慢闪
低电量	红灯常亮
超低电量	红灯慢闪
充电中	红灯常亮
充满电	红灯熄灭（白灯常亮）

### ② 麦克风增益指示灯

### ③ 电源键

长按2秒开/关机；短按开启/关闭静音模式。

**4 +/-键**

- 短按“+”/“-”键调节麦克风增益(参数设定在电源关闭后仍保留);
- 长按“-”键3秒进入配对状态。

**5 内置麦克风**

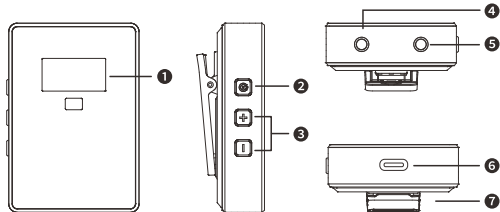
**6 3.5mm TRS麦克风输入孔**

用于连接随附的3.5mm领夹麦。

**7 USB-C充电接口**

**8 背夹**

**BY-EM5 RX接收器**



**1 LCD显示屏**

**2 电源键**

长按2秒开/关机。



### ③ +/-键

- 短按“+”/“-”键可上翻/下翻菜单页或调整各参数值；
- 长按“+”键可进入选项或保存设定；长按“-”键可以快速切换数值。

### ④ 3.5mm TRS线性输出孔

搭配随附的音频输出线，可模拟输出音频至相机、手机、混音器等。

### ⑤ 3.5mm耳机插孔

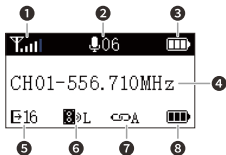
接入耳机可实时监听音频。

### ⑥ USB-C充电接口

### ⑦ 背夹

## 接收器屏幕操作指南

### 主界面预览



▽ 信号最弱 (配对成功)

▽ 未配对

② 发射器增益值 (00-06)

③ 发射器电量

④ 频道和频段

显示当前频道和频段。

① 信号强度指示

▮ 信号最强 (配对成功)

## 5 输出音量 (00-16)

## 6 啸叫抑制模式与等级

普通音响

吸顶音响

L: 低 M: 中 H: 高

## 7 频道模式

自动频道 手动频道

## 8 接收器电量

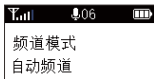
### 菜单界面介绍

- 短按“+”/“-”键上翻/下翻菜单页→长按“+”键进入选项→短按“+”/“-”键调整各参数值→再次长按“+”键保存设定。
- 在设置频道，输出音量以及无线连接阈值时，长按“-”键可以快速切换数值。
- 如果超过20秒不操作，显示屏将自动跳转回主界面。



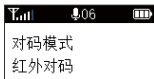
### 频道设置

共有48个频道可供选择。



### 频道模式设置

频道模式分为自动频道和手动频道，默认设置为“自动频道”。



### 对码模式

对码模式分为红外+无线对码、红外对码、无线对码三种模式，默认设置为“红外+无线对码”。



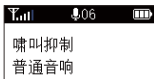
### 输出音量设置

输出音量调节范围为0~16，默认值为14。



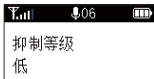
## 无线连接阈值设置

无线连接阈值设置范围为0~255，默认值为85。



## 啸叫抑制

根据外接扬声器的类型选择普通音响或吸顶音响，默认设置为“普通音响”。



## 抑制等级设置

将抑制等级设置为低、中或高，或者关闭啸叫抑制功能，默认设置为“低”。



## 背光时间设置

背光灯时间可设置为常亮、10秒、30秒、或60秒，默认设置为“常亮”。

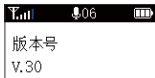


## 语言设置

English和中文两种语言可供选择，默认设置为“中文”。



## 恢复默认设置



## 版本号

## 使用方法

### 步骤：

1. 使用随附的3.5mm TRS转TRS转接线将相机、录音笔或混音器连接至接收器的线性输出孔。或使用随附的3.5mm TRS转TRRS转接线将手机、平板或电脑连接至接收器的线性输出孔。
2. 除内置麦克风以外，发射器还可以接入配套的领夹麦克风使用。
3. 长按电源键2秒，将发射器、接收器开机。
4. 自动配对：确保接收器和发射器已开机。长按发射器“-”键3秒清除配对记录，重新进入配对状态。发射器将自动与接收器配对。

### 注意：

- ① 自动配对时，推荐发射器和接收器之间的距离为3-5m。
- ② 多台设备同时工作时，建议将接收器设置为手动频道模式，选择不同的频段使用。
- ③ 外接音响时，请根据其类型在接收器菜单里设置为“普通音响”或“吸顶音响”。使用啸叫抑制功能时，推荐设置为“低”抑制等级。
- ④ 初次使用本产品时，建议将接收器的输出音量设置为14档，将发射器的输入增益设置为4档；功放端将音量由小到大缓慢调节，待出现啸叫时，将功放音量再适当回调一点，即为最佳功放效果。
- ⑤ 若无需外接音响使用本产品，请在“抑制等级”页面上选择“关闭”，并根据您的需要调整麦克风增益和输出音量。

### 在教室使用多套设备示例：

- ① 在两个教室各放置一个接收器，并确保接收器处于开机状态。
- ② 在A教室使用发射器时，按住发射器的“-”键3秒，发射器和接收器A之间将自动完成配对。
- ③ 进入B教室时，再次长按发射器“-”键3秒，发射器将与接收器A断开连接并与接收器B自动完成配对。

## 故障排除

在使用本机的过程中出现任何问题，请参照以下内容加以解决。如果此手册仍然无法解决您遇到的问题，请与我们当地的经销商售后服务部联系。

### • 本机无声音

- ① 检查本机是否连接正常以及接头是否有松动。
- ② 检查发射器增益、接收器音量是否被调至最低。
- ③ 请验证发射器是否开启了静音模式。

### • 本机声音过小或过大甚至破音

通过调节增益，找到最适合当前环境录制的档位，提高录制效果。

### • 监听时有不干净的电流声或异常噪音等

请检查本机附近是否有干扰源；若本机更换使用位置后还是有噪音，请联系客服咨询。

### • 本机的使用距离受限且声音频繁断续

查看发射器、接收器之间是否有干扰源，将本机更换使用位置再次确认，若声音还是频繁断续，请联系客服咨询。

### • 外接音响使用本机时，音响出现啸叫现象

可在接收器菜单中开启啸叫抑制功能，根据使用场景选择抑制等级。

### • 接收器充电说明

接收器在关机状态下充电将自动开机，拔掉充电线时将自动关机。

## 包装清单

### BY-EM5-K1套装

BY-EM5 TX发射器 ×1

BY-EM5 RX接收器 ×1

领夹麦克风 ×1

防风毛套 ×1

USB-A转USB-C数据线 ×2

3.5mm TRS转TRS相机输出线 ×1

3.5mm TRS转TRRS手机输出线 ×1

## 参数

### BY-EM5 TX发射器

传输方式	UHF频段
信号调制	频率调制 (FM)
极性模式	全向型
天线类型	内置FPC天线
操作距离	50米 (无障碍)
射频输出功率	10mW
失真	< 1% @ 1kHz
频率范围	20Hz-8kHz
频段范围	556MHz-596MHz
灵敏度	领夹麦克风: -42dB±2 (1V/Pa)
	内置麦克风: -30dB±2 (1V/Pa)
信噪比	> 84dB
音频输入	内置麦克风/ 领夹麦克风
充电接口	USB-C (DC 5V)
供电方式	内置锂电池供电
电池容量	550mAh
续航时长	约4小时
充电时长	约3小时
重量	33g
尺寸	37.5mm×14.8mm×60mm
工作温度	0°C ~ +50°C
贮存温度	-10°C ~ + 50°C

## BY-EM5 RX接收器

传输方式	UHF频段
信号调制	频率调制 (FM)
天线类型	内置FPC天线
操作距离	50米 (无障碍)
射频输出功率	10mW
失真	<1%@1kHz
频率范围	20Hz-8KHz
频段范围	556MHz-596MHz
信噪比	>84dB
音频输出	3.5mm TRS模拟输出
监听接口	3.5mm耳机插孔
充电接口	USB-C (DC 5V)
供电方式	内置锂电池供电
电池容量	1000mAh
续航时长	约7小时
充电时长	约3小时
重量	50g
尺寸	45.5mm×16.5mm×66mm
工作温度	0°C ~ +50°C
贮存温度	-10°C ~+ 50°C



## 确认保修状态

1. BOYA保证所附硬件产品，从购入的日期起两年内，材质和工艺均无瑕疵。BOYA对非正常磨损不作担保，对事故或滥用造成的损坏也不作担保。
2. 产品保修起始日期以购机发票开具日为准。
3. 若无发票证明，则保修起始日期以SN号显示的出厂日期向后顺延90日为准。

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## 售后保修信息

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