

数字UHF 无线系统

Digital UHF Wireless System

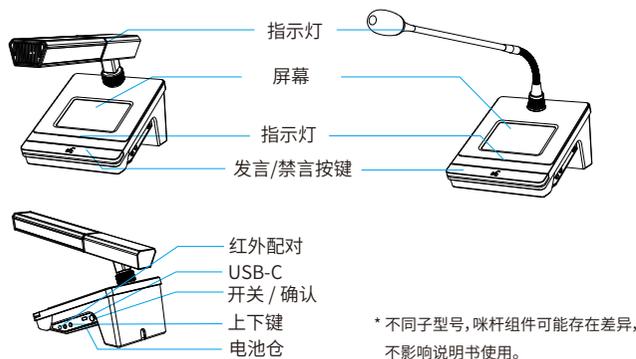
数字UHF无线座麦 说明书

DWM224-TS 直杆式 / DWM224-TG 鹅颈式

系统特性

- 数字音频系统。抗干扰、抗串扰、高保真、高信噪比、无线传输距离优异。
- 内置7组频点，多通道同时发言时，并表现优异。数字U段技术，有效无线传输距离最高可达70米，有效避免互调干扰。
- 超低功耗，续航时间>8小时，待机时间>24小时。
- “混用动力”专利技术，内置3000mAh锂电池，外置AA五号电池x3，系统根据供电算法自动切换使用。
- 可搭配多款接收端，包括单通道接收机、单通道接收机(天线前置)、二通道接收机、四通道接收机、八通道接收机。
- 无线信道，20~20KHz全音频区间，频率响应偏差<2dB，接近无损传输。
- 无线信道，20~20KHz全音频区间，相位偏差为-30°~+60°。
- 支持500Mhz和600Mhz双段频点。

产品外观



使用说明

1. 主界面说明

发言状态



禁言状态



2. 无线信道管理逻辑

本设备遵循“Group(组) - Channel(无线通道) - Frequency(频点)”逻辑。

Group(组):系统内置若干个无线通道组(根据不同国家区域,不同Firmware版本有所区别),每个组包括12个无线通道。

CH(无线通道):每个无线通道绑定一个无线频点,同一Group下的无线频点为系统推荐频点,可以有效规避“互调干扰”。

Frequency(频点):只能通过选择不同CH进行更改(最后一组除外)。

Customized Group(自定义组):最后一组为自定义频点组,本组频点可手工更改,需人工规避“互调干扰”。

- 发射端、接收端需调设在相同Group(组)、相同CH(无线通道)下,才可工作。

3. 概念说明

- 混合动力:设备可使用内置18650电池供电工作,也可以采用外置AA电池*3供电工作,设备会根据电池情况,自动切换。

4. 操作说明

- 开机/关机
长按开关键,即可实现设备开机或关机。
- 对频:
长按“向下键”进入“Pairing(对频中)”状态,将发送端红外对频点对向接收机的红外对频点即可。(见右图)
- 禁言/发言:
话筒在设备运行中,短按开关键,即可实现禁言或发言状态的切换。



5. 设置说明

开机状态,短按“开机/设置键”,进入设置界面。上下键选择设置项目,按“开机/设置键”进入配置界面。菜单选项如下,橙色为选中项目:



5.1 频率组(Group)

- 本配置项可配置信号发射频点的组别。
- 每组下提供12个频点,可避免三阶互调干扰。

5.2 通道(Channel)

- 通信通道对应不同频点。

5.3 音量(Volume)

- 配置发射端的语音信号增益(Volume),提供“0dB~+24dB”9个选项。
- 可以改善话筒的拾音距离和拾音大小,但是带来啸叫风险。

5.4 发射功率(RF Power)

- 本配置项可更改发射端的发射功率(RF Power),提供High, Middle, Low三个选项。
- RF Power的增加可以改善话筒的通信距离,但是带来干扰风险。

5.5 噪音门(Noise Gate)

- 默认为Off状态;可选择打开噪音门限功能。

5.6 信息(Infomation)

- 显示软件版本号,发布日期。

5.7 频率设置(Set Freq.)

- 仅选择最后一组Group时候出现该选项,可以设置自定义频点。

主要参数

声学指标	
类型	电容咪芯
灵敏度	-30±2dB (f=1KHz, S.P.L=1Pa 0dB=1V/Pa)
频响范围	70Hz~16kHz
工作电压范围	1.0V-5.0V
最大S.P.L	105dB (F=1KHz, THD<5%)
信噪比	70dB (S:f=1KHz, S.P.L=1Pa; N:A-Weighted curve)
指向性	

无线指标	
通信模式	数字U段音频无线通信
调制方式	Pi 4DQPSK
传输频段	510~698 MHz, (针对地区不同提供不同频段)
射频输出	<18dBm
传输距离	70m(无干扰环境,根据不同接收机端而异)
接收灵敏度	-96dBm
综合S/N	>96dB
综合T.H.D	<0.03%@1KHz
频率响应特性	20Hz-20KHz, 衰减<2dB
相位响应特性	20Hz-20KHz, 低频偏差>-30°, 高频偏差<60°
延时	4.17ms

物理电气指标	
供电	USB 5V + 内置3000mAh锂电池 + 外置AA电池 *3
续航能力(小时)	>10h; 待机>20h(锂电池)
工作温度范围	5°C ~ 45°C (电池特性可能会限制该范围)
重量 / 尺寸	直杆咪杆: 280g / 鹅颈咪杆: 80g / 底座: 523g 直杆式: L=240mm*64mm*45mm 鹅颈式: L=400mm; R=40mm 底座: 150mm*120mm*8mm
材质	铸铁+工程塑料
存储温度范围	-10°C ~ 74°C (电池特性可能会限制该范围)

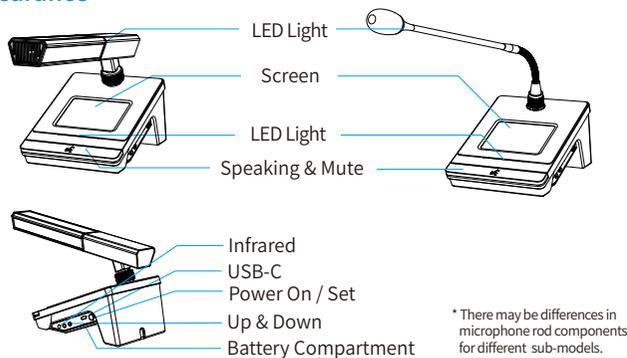
Digital UHF Wireless System Desktop Microphone Manual

DWM224-TS Straight Pole
DWM224-TG Gooseneck Pole

Features

- Digital audio system. Anti-interference, anti-crosstalk, high fidelity, high signal-to-noise ratio, excellent wireless transmission distance.
- Built-in 7 groups of frequency points, excellent concurrent performance when multiple channels are speaking at the same time. Digital U-band technology, effective wireless transmission distance up to 70 meters, effectively avoiding intermodulation interference.
- Ultra-low power consumption, battery life > 8 hours, standby time > 24 hours.
- "Hybrid Power Supply" patented technology, built-in 3000mAh lithium battery, external AA No. 5 battery x3, and automatically switch.
- Can be used with a variety of receivers, including 1CH, 2CH, 4CH receivers.
- Wireless channel, 20~20KHz full audio range, frequency response deviation <2dB, close to lossless transmission.
- Support 500Mhz and 600Mhz dual-band frequencies.

Appearance



Instructions

1. Main

On Speaking



On Mute



2. Wireless Channel Management Logic

This device follows the "Group - Channel - Frequency" logic.

Group: The system has several channel groups (base on different region and firmware), and of 12 channels for each group.

CH (wireless channel): Each channel is bound to a wireless frequency point, and the wireless frequency points under the same group are recommended, which can avoid "intermodulation interference" effectively.

Frequency: can be changed by selecting a different CH (besides last group).

Customized Group: The last group is customized group, and frequency points of this group can be manually changed.

The transmitter and receiver must be set to the same Group and CH for work.

3. Concept Description

- **Hybrid power:** The device can be powered by a built-in 18650 battery or 3 external AA batteries. The device will automatically switch according to the battery status.

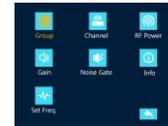
4. Operation Instructions

- Power on/off Long press power key.
- Pair : Long press "down button" to enter the "Pairing" state, and align the infrared point of the transmitter with the infrared point of the receiver. (See the picture on the right)
- Mute/Speak : When the microphone is running, short press the power button to switch between mute and speak.



5. Setting Instructions

Short press the "Power / Settings key" to enter the settings interface. Use the up and down keys to select a item, and press the "Power / Settings button" to enter the configuration interface. The menu options that can be set on this device are as follows, orange is the selected item:



5.1 Group

- Configure the group of signal transmission frequency points.
- Each group provides 12 frequency points to avoid third-order intermodulation interference.

5.2 Channel

- Communication channels correspond to different frequencies.

5.3 Volume

- It can improve the microphone's pickup distance and pickup size, but it brings the risk of howling.

5.4 RF Power

- Increasing RF Power can improve the communication distance of the microphone, but it brings the risk of interference.

5.5 Noise Gate

- The default setting is Off.

5.6 Infomation

- Display software version number and release date.

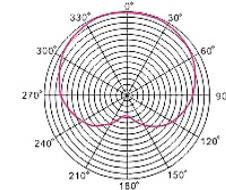
5.7 Set Frequency

- This option appears only when the last group is selected, and you can set a custom frequency.

Parameters

Acoustic Indicators	
Type	Capacitor Microphone Core
Sensitivity	-30±2dB (f=1KHz, S.P.L=1Pa 0dB=1V/Pa)
Freq. Response	70Hz~16kHz
Operating voltage	1.0V-5.0V
MAX S.P.L	105dB (F=1KHz, THD<5%)
S/N	70dB (S:f=1KHz, S.P.L=1Pa; N:A-Weighted curve)

Directivity



Wireless Indicators	
Mode	Digital UHF Wireless Communication
Modulation	Pi 4DQPSK
Freq. Band	510-698 MHz, (Different regions have different)
RF Power	<18dBm
Distance	70m (No interference environment, varies according to different receivers)
Sensitivity	-96dBm
S/N	>96dB
T.H.D	<0.03%@1KHz
Freq. Response Attenuation	20Hz-20KHz, attenuation<2dB
Phase Response Characteristics	+30° ~ +60° (@20Hz-20KHz)
Delay	4.17ms

Physical and Electrical Specifications	
Power Supply	Build-in3000mAh Li-Battery + External AA Battery *3 Automatically switches according to the algorithm.
Endurance	>10h; Standby>20h(Li-Battery)
Working Temperature	5°C ~ 45°C (Battery characteristics may limit this range)
Weight / Size	Straight Pole: 280g / Gooseneck Pole: 80g / Base: 523g Straight Pole: 240mm*64mm*45mm Gooseneck Pole: L=400mm; R=40mm Base: 150mm*120mm*8mm
Material	Aluminum Alloy + Engineering Plastics
Storage	-10°C ~ 74°C (Battery characteristics may limit this range)