

## 主要参数

项目	
通信模式	数字U段音频无线通信
调制方式	Pi 4DQPSK
传输频段 / 频带宽带	510~590, 668~698 MHz, 根据地区不同有所差别 80Mhz + 30MHz
信道数量	36通道
射频输出	<18dBm
传输距离	DTR223-1 \ DTR223-1T : 100m DTR223-2 \ DTR223-4 : 70m DTR223-2ST \ DTR223-4ST : 80m (无干扰环境, 根据不同发射端而异)
接收灵敏度	-96dBm
综合S/N	DTR223-1 (单通道) : > 96dB DTR223-1T (单通道) : > 105dB DTR223-2 (二通道) : > 96dB DTR223-4 (四通道) : > 96dB DTR228-2ST (二通道真分集) : > 105dB DTR228-4ST (四通道真分集) : > 105dB
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	30°~60° (20Hz~20KHz)
延时	<4.17ms
续航	DTR223-1 (单通道) : > 18h DTR223-1T (单通道) : > 18h
供电	DTR223-1 (单通道) : 18650锂电池(3.7V) * 2 DTR223-1T (单通道) : 18650锂电池(3.7V) * 2 DTR223-2 (二通道) : DC 12V / 1A / 8W DTR223-4 (四通道) : DC 12V / 1A / 12W DTR228-2ST (二通道真分集) : DC 12V / 1A / 12W DTR228-4ST (四通道真分集) : DC 12V / 2A / 26W
尺寸 (无天线)	DTR223-1 (单通道) : 35*100*142mm / 334g DTR223-1T (单通道) : 35*100*142mm / 334g DTR223-2 (二通道) : 480*200*45mm / 2080g DTR223-4 (四通道) : 480*200*45mm / 2174g DTR223-2ST (二通道真分集) : 480*200*45mm / 2120g DTR223-4ST (四通道真分集) : 480*200*88mm / 3500g
工作温度范围	5°C ~ 45°C (电池特性可能会限制该范围)

## 数字UHF 无线系统

Digital UHF Wireless System

## 通用接收机 说明书

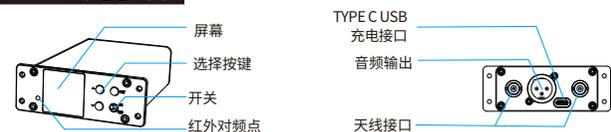
DTR223-1T 单通道 / DTR225-1TE 单通道  
DTR223-2 二通道 / DTR228-2ST 二通道 (真分集)  
DTR223-4 四通道 / DTR228-4ST 四通道 (真分集)

### 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。
- 500Mhz+600Mhz双频段；多通道发言时，并表现优异。
- DTR系列通用接收机平台，可搭配多种发射端。
- 20~20KHz全音频区间，频率响应偏差 < 2dB，音质接近无损。
- 20~20KHz全音频区间，相位偏差为 +30°~60°，可用于声场测试。

### 产品外观

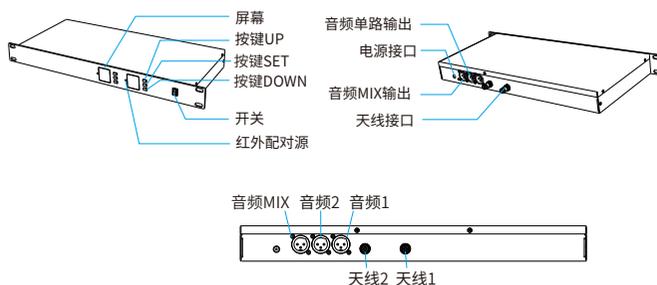
DTR223-1 单通道接收机



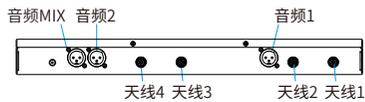
DTR223-1T 单通道接收机(天线前置)



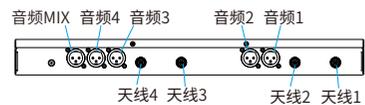
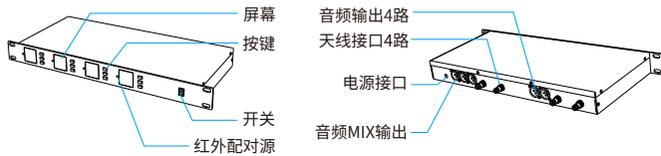
DTR228-2 二通道接收机



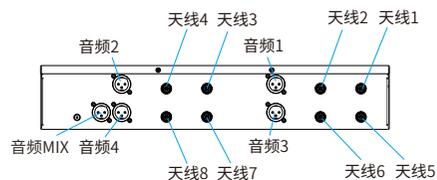
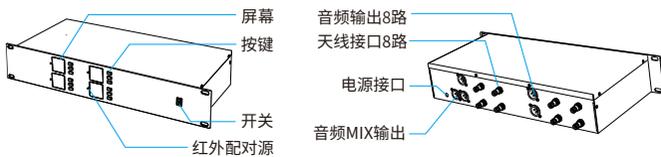
## DTR228-2ST 二通道接收机 (真分集)



## DTR223-4 四通道接收机

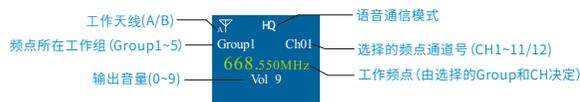


## DTR228-4ST 四通道接收机 (真分集)



## 使用说明

### 1. 无链接主界面



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### 2. 有链接主界面



### 3. 概念说明

- 状态: 无信号接收时, 接收机屏幕显示蓝色背景; 如接收到发射端的信号, 屏幕背景转为黑色。
- 语音通信模式(RF Performance): 特性功能, 需接收和发射同时设置相同的选项。HQ (Hi-quality, 高品质), 语音采用高bit编码, 音质优异; HA (Hi-available, 高性能), 采用低bit编码, 传输距离更远。需要发射机支持该配置, 否则采用默认HQ模式。
- CH 和频点: 通信信道, 对应一个明确的通信频点。

### 4. 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。

### 5. 背部接口说明

- 音频MIX接口为混音接口, 为卡农标准接口。
- 音频1~4分别对应音频通道1~通道4, 为卡农标准接口。
- 背部天线1~8分别对应音频通道1~通道8, 为BNC标准接口。

### 6. 电源说明

- 电源变压器如不稳定将影响接收机性能, 请采用原配电源进行工作。
- 2通道、4通道接收机工作电源: 12V&1A。
- 4通道接收机(真分集)工作电源: 12V&2A, 额定功率不达标将影响设备性能。

### 7. 操作说明

- 配对: 接收机进入“Pairing(对频)”状态, 将发送端红外对频点对向接收机的红外对频点即可。发射端无需按键操作。
- 进入/切出配置状态: 设备运行中, 短按配置键, 即可进入配置状态。继续短按配置键, 可切换配置项; 在各配置中, 参数值通过上下键修改选项。持续短按配置键, 可在轮询各配置项后切出; 无操作5秒后, 自动退出。

### 8. 设置说明

#### 8.1 对频(Pair)

- 本配置提供对频功能, 按下下键进入pairing状态。
- 对频完成后, 发射端如开启语音, 自动退回至发言主界面。

#### 8.2 扫频(Scan)

- 设备将对本组12个频点进行扫频, 输出每个频点的无线参数。
- 数值越小代表该频点无线环境越好, 高于-50dB的通道, 不推荐使用; 低于-70dB的通道说明未有无线信号干扰。



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### 8.3 工作频点分组(Group)



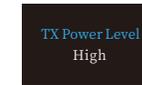
- 本配置项可更改工作频点的分组, 1~5组别ID。

### 8.4 频点(Frequency Channel)



- 本配置项可更改发射端的工作频点(Frequency), 提供12个选项。

### 8.5 发射端发射功率(TX RF Power)



- 更改发射端的发射功率(TX RF Power), 通过对频pairing方式, 自动同步至发射端。需发射机类型支持。
- 可以改善话筒的通信距离, 但是带来干扰风险。

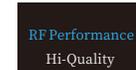
### 8.6 发射端信号增益(TX Volume Offset)



- 更改发射端的语音信号增益(Volume), 通过对频pairing方式, 自动同步至发射端。需发射机类型支持。
- 可改善话筒的拾音距离和拾音大小, 但是带来啸叫风险。

### 8.7 语音通信模式(RF Performance)

- 语音通信模式: HQ (Hi-quality 高品质), 语音采用高bit编码, 音质优异; HA (Hi-available 高性能), 采用低bit编码, 传输距离更远。
- 本设置通过对频pairing方式, 自动同步至发射端。



### 8.8 外接天线供电(Antenna Power)



- 部分型号支持该功能。
- 可通过BNC接口对外接天线供电: 9V/150mA。

### 8.8 版本信息 (Version Info.)



- 显示产品软件版本。

## 可选接收端说明

本系列产品, 推荐配合本品牌同系列接收端产品一起工作。设备可兼容之前型号, 但采用推荐产品, 能确保各项性能充分展示。

## 逻辑拓扑



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## Parameters

<b>Communication</b>	UHF band radio digital communication
<b>Modulation</b>	Pi/4 DQPSK
<b>Band</b>	510~698 MHz (Varies depending on region)
<b>Bandwidth</b>	up to 180MHz, (Varies depending on region)
<b>Distance</b>	DTR223-1 \ DTR223-1T : 100m DTR223-2 \ DTR223-4 : 70m DTR223-2ST \ DTR223-4ST : 80m (related to signal absorption, reflection, interference, and selection)
<b>Freq. Response Attenuation</b>	<2dB (20Hz~20KHz)
<b>S/N</b>	DTR223-1 (Single CH.) : >96dB DTR223-1T (Single CH.) : >105dB DTR223-2 (Dual CH.) : >96dB DTR223-4 (Four CH.) : >96dB DTR228-2ST (Dual CH. True Diversity) : >105dB DTR228-4ST (Four CH. True Diversity) : >105dB
<b>T.H.D</b>	<0.03% (@1KHz)
<b>Time Delay</b>	4.17ms
<b>Endurance</b>	DTR223-1 (Single CH.) : >18h DTR223-1T (Single CH.) : >18h
<b>Power Supply</b>	DTR223-1 : 18650 Build-in Li Battery (3.7V) *2 DTR223-1T : 18650 Build-in Li Battery (3.7V) *2 DTR223-2 : DC 12V / 1A / 8W DTR223-4 : DC 12V / 1A / 12W DTR228-2ST : DC 12V / 1A / 12W DTR228-4ST : DC 12V / 2A / 26W
<b>Weight/Size</b>	TR223-1 : 35*100*142mm / 334g DTR223-1T : 35*100*142mm / 334g DTR223-2 : 480*200*45mm / 2080g DTR223-4 : 480*200*45mm / 2174g DTR223-2ST : 480*200*45mm / 2120g DTR223-4ST : 480*200*88mm / 3500g

## Optional Receiving End Description

This series of products is recommended to work with the same series of receiver products. The equipment is compatible with previous models, but using recommended products can ensure that all performances.

## Logical Topology



# Digital UHF Wireless System Universal Receiver Manual

DTR223-1T / 1TE (Single Channel / Single Channel)  
DTR223-2 / 2ST (Dual Channel / Dual Channel True Diversity)  
DTR223-4 / 4ST (Four-Channel / Four-Channel True Diversity)

## Features

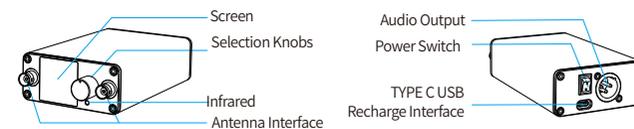
- Digital audio system. Anti-interference, anti-crosstalk, high fidelity, high signal-to-noise ratio, excellent wireless transmission distance.
- 500MHz+600Mhz dual-band; excellent performance when speaking in multiple channels.
- DTR series universal receiver , can be used with a variety of transmitters.
- 20~20KHz full audio range, frequency response deviation <2dB.
- 20~20KHz full audio range, phase deviation is +30°~-60°, can be used for sound field testing.

## Appearance

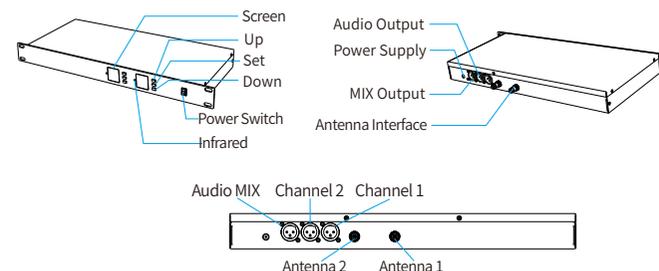
DTR223-1 Single Channel Receiver



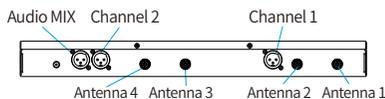
DTR223-1 Single Channel Receiver (Antenna Front)



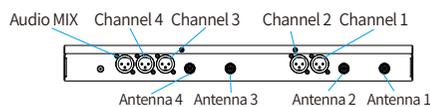
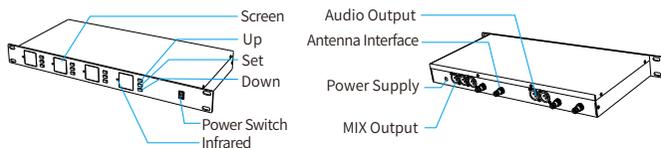
DTR228-2 Dual Channel Receiver



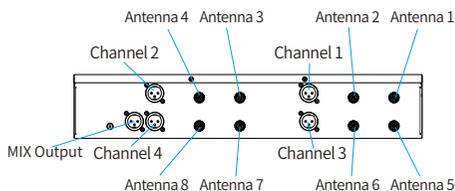
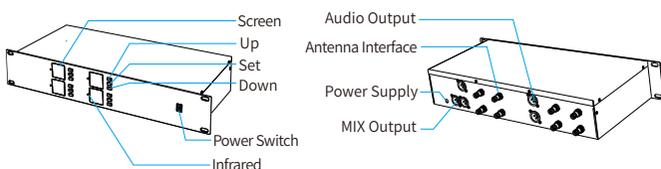
### DTR228-2ST Dual Channel Receiver - True Diversity



### DTR223-4 Four Channel Receiver

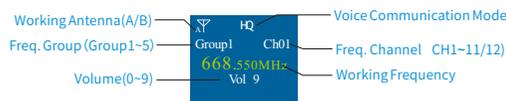


### DTR223-4ST Four Channel Receiver - True Diversity



## Instructions

### 1. Main (Without Linking)



### 2. Main (Without Linking)



### 3. Concept Description

- Status:** When there is no signal reception, the receiver screen displays a blue background; if a signal is received, the screen background turns black.
- Voice communication mode (RF Performance):** Feature function, the same options need to be set for both reception and transmission. HQ (Hi-quality, high quality), voice uses high bit encoding, excellent sound quality; HA (Hi-available, high performance), uses low bit encoding, and the transmission distance is longer. The transmitter needs to support this configuration, otherwise the default is HQ mode.
- CH & Frequency point:** Communication channel, corresponding to a communication frequency point.

### 4. 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 to work.

### 5. Rear Interface Description

- The audio MIX interface is a mixing interface and is a XLR standard interface.
- Audio 1~4 corresponds to audio channels 1~4 respectively and is a XLR standard interface.
- The back antennas 1~8 correspond to audio channels 1~8 respectively and are BNC standard interfaces.

### 6. Power Description

- If the power transformer is unstable, it will affect the performance of the receiver. Please use the original power supply for operation.
- Working power supply for 2-channel and 4-channel receivers: 12V&1A.
- Working power supply for 4-channel receiver (true diversity): 12V&2A. If the rated power does not meet the standard, the performance of the device will be affected.

### 7. Instructions

- Pairing:** The receiver enters the "Pairing" state, and the infrared binding point of the transmitter is aligned with the infrared binding point of the receiver. No button operation is required on the transmitter.
- Enter/exit configuration state.**

When the device is running, short press the "Set" key to enter the configuration state.

Short press the "Set" key to switch configuration items; and press the "Up" & "Down" key to modify the parameters.

Short press the "Set" key to switch out after polling each configuration item; after 5 seconds of no operation, it will automatically exit.

## 8. Setup Instructions

### 8.1 Pair



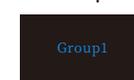
- Press the up and down keys to enter the pairing state.
- After the pairing is completed, if the transmitter turns on the voice, it will automatically return to the main.

### 8.2 Scan

- The device will scan the 12 frequencies in the group.
- The smaller the value, the better the wireless environment at that frequency. Channels above -50dB are not recommended. Channels below -70dB indicate that there is no wireless signal interference.



### 8.3 Group



- This configuration item can change the grouping of the working frequency points.

### 8.4 Frequency Channel



- This item can change the transmitter's Working Frequency, providing 12 options.

### 8.5 TX RF Power



- Change the transmitter's RF Power, and automatically synchronized to the transmitter through pairing. Must be supported by the type of the transmitters.
- Increasing TX RF Power will bring the risk of interference.

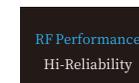
### 8.6 TX Volume Offset



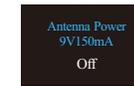
- Change the voice signal gain (Volume) of the transmitter, and automatically synchronized to the transmitter through pairing. Must be supported by the type of the transmitters.
- Increasing TX Volume will bring the risk of howling.

### 8.7 RF Performance

- Voice communication mode: HQ (Hi-quality), voice uses high bit encoding, excellent sound quality; HA (Hi-available), uses low bit encoding, longer transmission distance.
- This setting automatically synchronizes to the transmitter by pairing.



### 8.8 Antenna Power



- Provide power supply for external antenna, with 9V 150mA DC.

### 8.9 Version Info.



- This item displays the product software version.