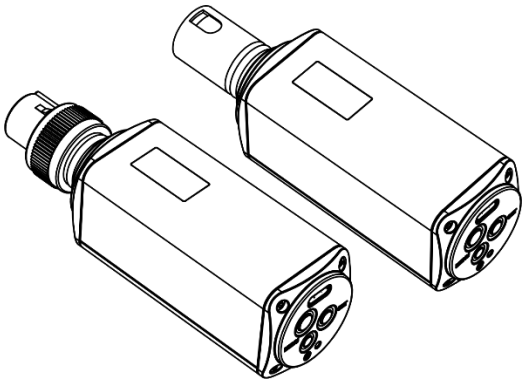
GAODIMIC®



Technical Issues Guide

Digital UHF Wireless System (AT210P Series & DT228 Series)

Version：2026.10.8

Issued by：infoSVC Corporation

Disclaimer:

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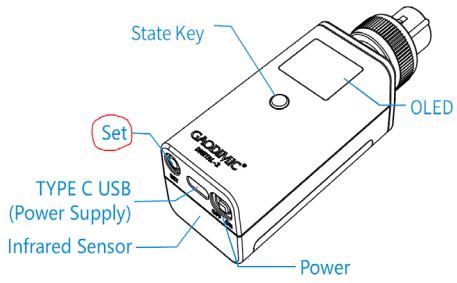
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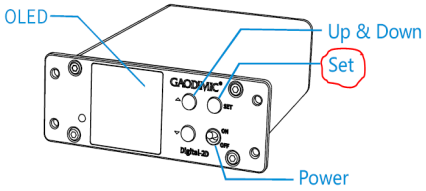
1. How to enter OTA mode

For user convenience and compliance requirements, we have placed some menus in OTA mode. You can enter OTA mode in the following ways.

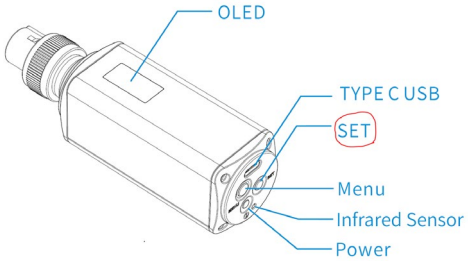
Scenarios 1: Press and hold the "SET" button while turning on the device. The following products are suitable for this method:



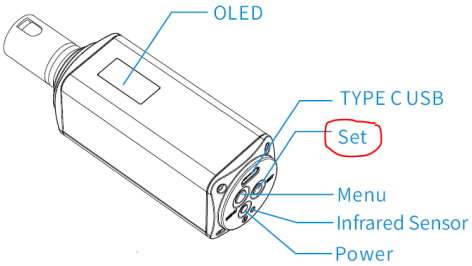
AT210-TP / AT210P-TP：



AT210-RR / AT210P-RR



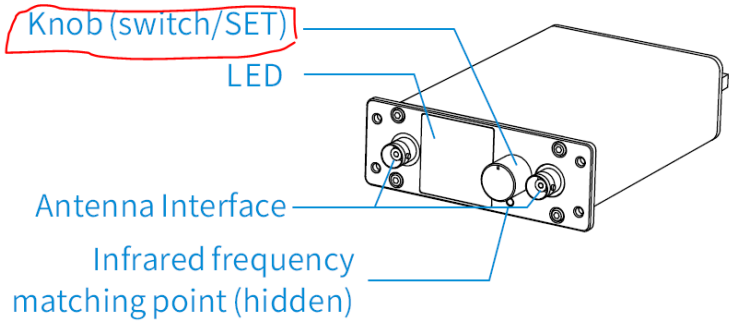
DTT228-P



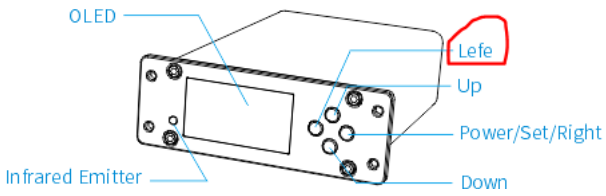
DTR228-P

Scenarios 2: Long press other keys while turning on the device. The following products are suitable for this method:

1. DTR225-1TE: After the device is turned on, continue to press and hold the "Switch" button.



2. DTR228-1R: Press and hold the "Left" button on the DTR228-1R receiver and turn it on at the same time:


OLED
Lefe
Up
Power/Set/Right
Infrared Emitter
Down

2. High-frequency noise problem after installing the microphone.

The standard parameter Floor Noise of AT210P series products is 20uV, and the standard parameter Floor Noise of DT228 series products is 6uV.

If you encounter unacceptable noise during use, it may be caused by the following reasons, and you can perform corresponding operations to improve it.

Reason 1: The internal amplifier of the microphone is subject to radio frequency interference, especially condenser microphones.

Many microphones are not specially designed to resist radio frequency interference. Most of the additional noise we encounter at present is caused by the microphone receiving radio frequency interference. A large part of the microphones on the market are very sensitive to radio frequency interference, and different microphones are susceptible to interference in different frequency bands. Generally speaking, there are more cases of electromagnetic interference in the frequency band below 600MHz.

When using the GAODIMIC M190-S measurement microphone normally, the noise situation is as shown in the video:

https://nas.infosvc.cn:40443/drive/d/s/12lE91u0uE9jdgeTjgCA5p9u5POtcgng/HUo7yrwY8MqTdlwl0Yr0G9QuqT38rbuM-Yb6AM9ScKgw

Recommended solutions

- Method 1: Use an XRL extension tube or XRL extension cable to move the microphone further away from the transmitter. (This method is not very beautiful, but it is very effective)
- Method 2: Try changing the 650~690Mhz frequency (not applicable in some countries).
- Method 3: Reduce the RF transmission power of the transmitter.
- Method 4: We recommend using a microphone that is resistant to RF interference. Manufacturers such as Shure will specially launch microphone products that are resistant to RF interference. Acoustic measurement microphones recommended are Earthworks M23/M30; MELlab MYc-3.

Reason 2: There is a deviation in the impedance matching between the microphone and the transmitter.

The ambient noise picked up by the microphone is just within the DRE (dynamic enhancement) threshold range of the transmitter, which causes noise caused by the repeated switching of the DRE function.

Recommended solution

- Method 1: Adjust the gain of the transmitter.
- Method 2: Turn off the Code DRE function of the transmitter. This function can improve the signal-to-noise ratio of the device. After turning it off, the cost performance of the entire system will be reduced by 3-6dB, but it will not affect the performance of the device in acoustic measurement.

The DRE menu is not a common setting item of the device. You need to enter the OTA mode to see the menu. If you enter the OTA mode, please refer to the relevant technical details.

If you enter the OTA mode and still cannot see the DRE option, please upgrade the device first.

If you perform an OTA upgrade, please refer to: http://www.gaodimic.com/OTA-Upgrade?_l=en.

Reason 3: Possibility of damage to internal components of the equipment.

The vibration and harsh environment of long-distance transportation may cause damage to a small number of products.

Recommended solution

Contact the local dealer for replacement, or directly email: sales@infosvc.biz.

3. Audio bleed sound problem.

Sometimes, improper volume settings on the transmitter and receiver by the operator will cause Audio bleed sound to appear.

Please refer to the following video link for the phenomenon:

https://nas.infosvc.cn:40443/drive/d/s/12lE70qZiFc1qECbIU50gcDDyurCbpx2/PkleCbOvg9p8KdFPLqFKJi5J3GZgT2l8-Tb_gcQWdKgw

Cause: The current digital audio algorithm is limited. This problem will be triggered when the volume of the transmitter and receiver are combined.

Recommended solution:

Set the volume of the receiver to greater than 7. It is recommended to set it to 7 to avoid adjusting the volume on the transmitter or receiver.

This solution will not reduce the performance of the entire system, because for the communication system, the pre-stage signal should be amplified as much as possible. The volume is adjusted on the mixer or sound card, so that the signal-to-noise ratio of the entire system can reach the optimal state. Comparative test video link:

https://nas.infosvc.cn:40443/drive/d/s/12lE77GXKcligzjjHm58qLVryE59vTp0/jJXQCJ8YmEZ2ByVQ20Oqu0PLdvh4Ge_m-YLAgZSidKgw-Tb_gcQWdKgw

4. When using, touching the transmitter with your hand will produce noise.

Reference video:https://nas.infosvc.cn:40443/drive/d/s/12lE7yuRJh2GcotaGx4R6x723XYpMpd7/HhUMkxax9Sw54JyCrAvCzFqPoCe-V4r8-RrGgAVadKgw

Reason:

Both AT210P and DT228 series products use built-in antenna + compact appearance structure design, and the shell is made of engineering plastic.

Advantages: Portable, very small, already the world's smallest professional UHF wireless system. No need to worry about antenna link damage. (Plug-in antenna, antenna interface is very easy to wear, when used frequently, only 1 year device life cycle.) Disadvantages: The built-in antenna is very close to the PCB circuit board, and the circuit board is easily affected by the electromagnetic wave reflection induction of the antenna.

If you hold the transmitter directly with your hand, it is equivalent to directly wrapping the antenna with a conductor, causing electromagnetic wave reflection, which is then sensed by the PCB circuit board and generates noise.

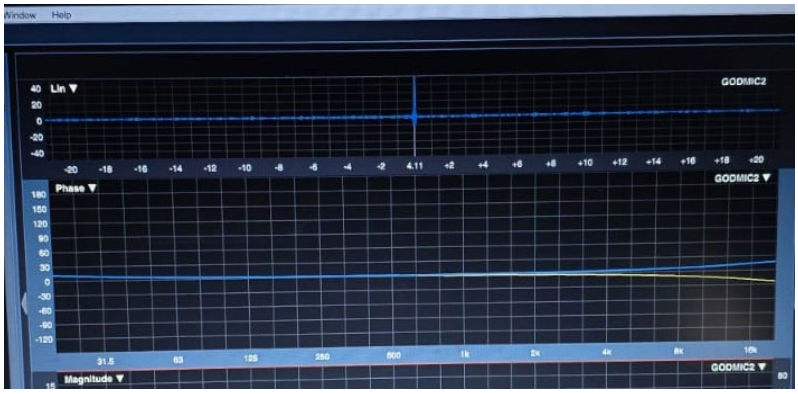
If you touch the transmitter with your hand or a conductor over a large area, it may cause current noise and may reduce the transmission distance.

Solution:

In normal use, try to avoid large-scale contact between your hand or a conductor and the transmitter.

5. Two sets of equipment, connected to the same sound source, the phase curves on the test results are inconsistent.

See the figure below.



Reason:

Phase offset is caused by time difference. The offset is the result of signal phase multiplied by sampling interval multiplied by time difference. The signal source of the sound card output you use is the same, but the sampling time of the two transmitters cannot be the same. Our sampling rate is 48Khz, which means there is 0.02ms between each sampling. The sampling time of the two transmitters cannot be equal. There will be a difference of less than 0.02ms. This time difference will cause the sampling to be at different points in a cycle of the sound wave (corresponding to different phases). This time difference has little effect in the low-frequency area, because the cycle of the low-frequency wave is very long, and the sampling has a slight time difference, which has little effect. However, in the 20Khz area, the difference is very large. If the sampling time difference of the two transmitters is exactly 0.01ms, it can cause a difference of exactly 180 degrees, which causes the phase inconsistency in the high-frequency area.

Solution

It is recommended that users sample different delay time inputs for different channels, and gradually adjust the delay time to make the phase curve consistent. If you input the same value for the two channels, the sampling time difference of the two channels will not change at all. Therefore, this phase difference will occur.

6. The wireless frequency group and frequency on the devices purchased twice are inconsistent. (Region setting problem)

Some customers have purchased our devices many times and found that the frequency planning on the second delivered device is different from the previous one. For example: the product purchased for the first time has the default frequency of 668.500Mhz, but the product purchased for the second time does not have this frequency to choose from.

Reason: Currently, GAODIMIC has provided products and technical support to users in 40+ countries around the world. We have to optimize our software (including our devices) to meet the needs of different users in different countries.

We enabled the latest firmware in 2025. This firmware version adds the "region" setting in the hidden menu. Our current default is the Europe region. At this time, the device will support 510-698Mhz, including 9 groups, each with 12 frequencies. The last group is a customizable frequency group.

Before this, the device did not have a "Region" menu, and the frequency planning of its device corresponded to the "Old Scheme" region option.

Solution:

- Method 1: For new versions of devices, users only need to change the region settings to get the same parameters as previous devices.

The Region menu is not in the common menu. It will only appear after entering OTA mode and activating "Factory Reset". Specific steps: Power on in OTA mode → Press the Menu key to jump to "Factory Reset" → Press the Select key to activate the reset function→ The device will display "Region" → Select your region →Restart.

The region options and descriptions we currently support are as follows, and will be updated in future:

Region	Band	Groups	Customized Group
CHN	510-698Mhz	9	No.9
Europe	510-698Mhz	9	No.9
CANADA	510-608Mhz	7	No.7
USA	510-608Mhz	7	No.7
Old Scheme	510-590Mhz ; 668-698Mhz	7	No.7

- Method 2: For older versions, you can upgrade the device you first purchased to the latest version

of the firmware via OTA to obtain more wireless frequency band selection items.

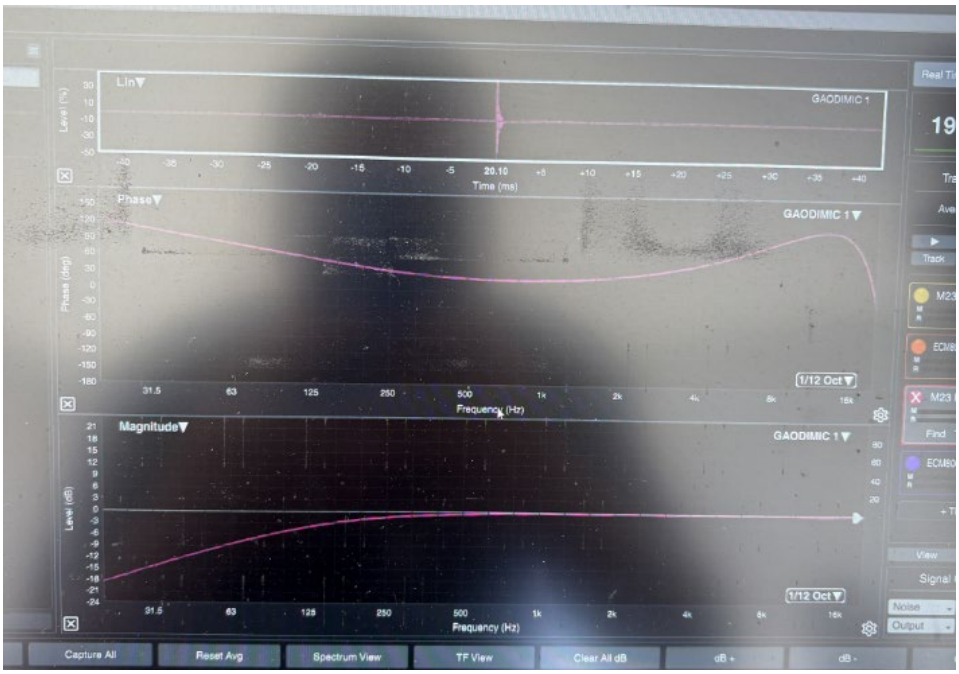
For how to enter OTA mode, please refer to the previous content.

For how to perform OTA upgrade, please refer to http://www.gaodimic.com/OTA-Upgrade?_l=en.

7. The frequency response curve is not straight.

Under normal circumstances, the frequency response attenuation of the AT210P series is less than 2dB, and the frequency response attenuation of the DT228G series is about 3dB. Some customers reported that in actual use, they found that its performance was greater than this value, especially in the low-frequency area.

Some reports which is abnormal with the response from users, like the following pictures:



Solution:

- Method 1: Check the phantom power of the sound card or mixer, and turn off the phantom power.
- Method 2: Under 24V phantom power conditions, the performance of the device will be better than that of 48V phantom power. In most acoustic measurement situations, you can consider using 24V phantom power, and the results are also acceptable.

8. Difference in floor noise between AT210P series and DT228 series.

AT210P series Floor Noise is about 20uV, and noise can be heard when listening to headphones or listening at close range indoors. AT210P is suitable for acoustic measurement and audio transmission in outdoor scenes.

DT228 system has a great improvement in this aspect, Floor Noise is only 6uV. and the recommended use scenarios are: acoustic measurement, indoor and outdoor audio wireless transmission, concert instrument audio wireless transmission, studio scene closed headphone music sound wireless transmissio

The comparison between the two is as follows:

https://nas.infosvc.cn:40443/drive/d/s/12IE9RIP3BPMvIAVt8HGvw8czhtB7jrT/QKaTR8pacPfIFdqmoVTC5Y_LX2nEAB_S-jbOg7PWdKgw.

9. How to solve the frequency band scheme problem of different versions of hardware.

Q: Digital UHF Wireless System - Rack Mounted Kit, is on an older firmware version, and I'm afraid that if I try to update the receiver, I won't be able to use it anymore, if I can't update the transmitter.

A:

Way1, Update your old rack mounted kit by OTA way.

Way2. the new Firmware have a region menu in OTA mode. this menu can help u to choose a freq scheme supports old version device.

when u Enter OTA mode, u can find a menu "Factory Restore". Activate this option by Set Key, the device will be restart and will show "Region"

Choose Region of "CHN" & "EUR": 510 Mhz -690 Mhz , 9 groups.

Choose Region of "USA" & "CAN": 510Mhz - 608 Mhz, 7 groups.

Choose Region of "Old Scheme" : 668Mhz - 698Mhz, 5 Groups, it is same with all old version hardware.

10. Audio “Bu-bu-bu” bleed noise sound, with Shure SM58 MIC.

Problem Description

The user is using it for a wireless talkback mic mostly, but he wonders why this noise is there and if it can be fixed. The beginning of the audio is just the Tx with nothing connected and the second part is with a SM-58 connected to it.

The Noise sound recode:

https://nas.infosvc.cn/drive/d/s/16BRj7th2MPyKJhoU2irP6I7DVtq7veR/T4txV-1dZR69CspJ791ujy6fEkpxZB8J-vrwAXsM7zww

Solution

Setting mistake. The function of “Codec DRE” function be enabled, which is a function for testing in some special scenarios.

Way to solve: Enter “OTA” Mode, find the menu of “Codec DRE”, and disable it.

This menu just will be shown on the firmware which released after Jun, 2025.

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11. Rack Mounted Receiver (DTR228-1R) cannot power on with build-in Li battery.

Problem Description

The Rack Mounted Receiver (DTR228-1R) can not power on with build-in Li battery, but it is normal to work with USB-C recharging.

Reason

It is a bug in the firmware.

The old firmware includes a defined operating voltage range for protecting the device, but, in very rare instances, an 18650 lithium battery—if overcharged—can reach a voltage that exceeds our original threshold. Then, the receiver can not be power on by build-in Li battery mode.

Solution

Make a upgrade of the firmware by OTA function.

Please refer to the guide about OTA Upgrade.

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