Studiomaster

User Manual

Professional wireless microphone system

Safety information

1. Read this user manual carefully.
2. Keep this user manual properly.
3. Pay attention to all warnings.
4. Observe all operating specifications.
5. It is strictly prohibited to use this equipment near water.
6. Clean the equipment with dry cloth.
7. It is forbidden to block the heat sink. Install the equipment according to the manufacturer's instructions.
8. It is forbidden to install this equipment near heat sources such as radiators, heat regulators, hot stoves or other heating equipment (including power amplifiers).
9. It is strictly prohibited to violate the safe use specification of polar plug or grounding plug. The polar plug is composed of two metal sheets with different widths. The grounding plug, on the other hand, consists of a two-pole insert and a grounding insert with a safety protection function. If the provided plug is not compatible with the power outlet, please replace the power outlet. For replacement of the power outlet, please consult an electrical engineer.
10. Protect the power cord from trampling or rolling. Pay special attention to protecting the cable at plug end, socket end and equipment end.
11. Must use manufacturer-specified accessories and fittings.
12. Please unplug the power plug in thunderstorm weather or when the equipment is idle for a long time.
13. If maintenance and overhaul is required, please consult a relevant qualified maintenance personnel. The equipment must be overhauled in the following cases:
    The cable or plug is damaged, liquid penetrates, foreign matter falls, gets wet in the rain, cannot operate normally, or the equipment falls.
14. The equipment power coupler is used to completely cut off the connection between the equipment and the mains.Place the coupler in a position that is easy to operate.
15. The mains power supply terminal connected to the equipment must be properly grounded.
16. Without the explicit approval of the responsible party of the equipment, the equipment shall not be changed or modified, or the user's use authority may be invalidated.

Warning: In order to avoid fire or electric shock, this equipment is strictly prohibited from being exposed to rain or moisture.
It is strictly prohibited to spray liquid around the equipment. It is strictly prohibited to place containers containing liquids, such as flower vases, above the equipment.
It is strictly prohibited to place open flame above the equipment, such as lighted candles, cigarettes, etc.

This logo is applicable to electrical and electronic products sold in the People's Republic of China. The number in the center of the identification is the number of years of environmental protection service life.

Warning: To avoid electric shock hazard, it is strictly prohibited to open the equipment cabinet. There are no user serviceable components inside the equipment. If maintenance and overhaul are required, please consult relevant qualified maintenance personnel.

FCC Warnings

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
The device has been evaluated to meet general RF exposure requirement. The device can be used with minimum distance 0mm between the radiator and your body.

User notice

We strongly recommend that you contact the relevant radio regulatory authorities for license grant before selecting and ordering frequencies. This wireless equipment generates, uses and may transmit radio frequency energy. If the equipment is not installed and used according to the requirements, it may cause harmful interference to radio communication. However, there is no guarantee that this wireless device will not produce interference under specific installation conditions. If the wireless device does cause harmful interference to radio or TV reception, you can turn off the wireless device and then turn it on to determine the interference. It is recommended that the user eliminate the interference by one or more of the following methods.

- Adjust the direction or position of the receiving antenna.
- Increase the distance between the device and the receiver.
- Connect the device to a different electrical outlet than the receiver.
- Ask the dealer or an experienced radio/television engineer for help.

Product Introduction

Thank you for purchasing our wireless microphone system!

The wireless microphone system is suitable for sound reinforcement applications in a variety of entertainment places, as well as various professional sound reinforcement applications, such as mobile performances, auditorium sound reinforcement, speeches, conferences, education and training, religious places, government meetings and multi-function halls.

It has clear voice, delicate and transparent, stable performance and other characteristics. It has the following main functions:

- Multi-channel selection (2/4/8 channels)
- Automatic frequency scanning
- Infrared frequency comparison
- Intelligent adaptation
- Strong anti-interference
- Digital transmission
- Video tracking

Each package provides a receiver and a matching number of transmitters.

(It depends on the package purchased by the user; receiver: 2/4/8 channels; transmitter type: conference conference, handheld, bodypack.)

Special note: please contact our professional technical engineer for installation and use of the same cabinet, and use under the guidance of the technical engineer, so as not to affect the use effect.

No matter in terms of language, speech, meeting, host or live performance, it can be used in any situation, place and time to get rid of complex on-site layout needs and provide the most reliable links, and present the most authentic sound restoration at every moment.

The main applications for business conmunication: conferences, primary and secondary education, hotels, higher education, religious places,enterprises and governments.

Features

Real time noise suppression: real-time elimination of background noise, so that users can fully focus onthe voice in the call.

Automatic frequency coordination: the system automatically scans the available spectrum and selects clear and clean transmission channels to achieve the best performance.

Interference avoidance: the system can detect and avoid unexpected interference, and channel adjustment can prevent interference to audio.

RF efficiency: perfect PLL RS stabilization technology can provide better sound quality and wider dynamic range, to ensure the highest quality sound in any environment.

Encryption: standard AES-128 encryption of audio and data can ensure the privacy of conference content

Data control: provides control functions for central control, audio and speaker equipment, realizing video tracking, voice control. Etc.

User-friendly interface: high-definition TFT color display screen provides a complete overview of system information, and enable users to set up shortcuts.

Power monitoring: real-time power monitoring of each transmitter, ensuring uninterrupted use in the field.

Electronic volume: 30-level electronic volume control, can precisely control the volume of each channel.

Multi-platform systems work together: the receiver provides 2/4/8 channels. The transmitter provides handheld, backpack, and desktop conference microphones. Users can mix and match them freely.

One-key frequency matching: one-key fast data synchronization between the receiver and the transmitter, convenient and fast

Multiple audio interface outputs: each channel has an independent balanced audio output XLR (male), a mixed output TS(6.35mm 2-core), and a cascade output TS (6.35mm 2-core).

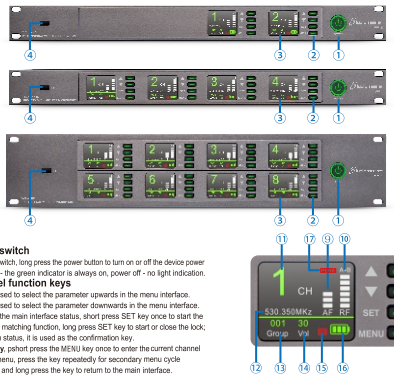
Audio cascade: When multiple receivers are used in stacked, all receivers can achieve unified audio management through the cascade audio interface.

Specifications

1. Number of receiver channels: 2, 4 and 8 channels are optional
2. Cabinet specification: EIA standard, 1U (2 and 4 channels), 2U (8 channels)
3. Receiving mode: superheterodyne secondary frequency conversion
4. Frequency oscillation mode: PLL phase locking frequency synthesis
5. Frequency response: 20Hz-20KHz (± 1dB) (depending on the pickup)
6. Carrier wave frequency band: UHF 520-544.750MHz
7. Band width: 40MHz - 80MHz
8. Number of channels: 400
9. Frequency sync: one button IR frequency sync setting
10. Modulation type: frequency modulation (FM)
11. Pilot frequency: 30.27KHz
12. RF sensitivity: ＜ - 99dBm
13. Image suppression: ＞ 80dB
14. Frequency stability: ≤± 0.005% (- 10~60 ℃)
15. Dynamic range: ＞ 90dB
16. Maximum frequency deviation: ± 45KHz
17. Comprehensive signal-to-noise ratio:>85dB (A-weighted)
18. Comprehensive distortion rate: ＜ 0.5% @ 1KHz
19. Sensitivity: input 6dB μ When V, S/N ＞ 80dB
20. Audio output: balanced XLR:+5dbV/ unbalanced TS6.3mm:+5dbV/
21. Audio output impedance balanced XLR: 6.6K Ω/ unbalanced TS6.3mm: 440 Ω
22. Volume output: 30 level electronic volume control
23. Display mode: 1.77 inch TFT color full view display
24. Display content: channel, frequency, group, antenna A+B automatic selection, RF/AF signal strength, transmitter battery power, RF strength setting, function locking, submenu display
25. Control mode: automatic frequency coordination, frequency adjustment, volume adjustment, interface locking, frequency pairing, power switch
26. Control interface: RS485 code control
27. Audio output interface: unbalanced TS 6.35mm hybrid connector × 1
    Independent balanced XLR audio connector × 2 (2 Channels)
    Independent balanced XLR audio connector × 4 (4 Channels)
    Independent balanced XLR audio connector × 8 (8 Channels)
28. Power supply: 12V DC 2000mA max
29. Power: 2-channel 5W, 4-channel 10W, 8-channel 20W
30. Working temperature: - 10 ℃ - 60 ℃
31. Working distance: about 80m (working distance depends on many environmental factors, including absorption, reflection and interference of RF signal)
32. Package size: 520×405×70mm (one driven two) 520×350×170mm (one driven two conferences, one driven four) 520×405×295mm (one driven eight)
33. Weight: about 4.8kg (conference, one driven two) 5.7kg (conference, one driven four) 12.2kg(conference, one driven eight)

Note: All data are obtained by our science and technology laboratory. If there is any error, the actual product is the basis!

Front panel



1. Power switch
Soft start switch, long press the power button to turn on or off the device power
Power on - the green indicator is always on, power off - no light indication.

2. Channel function keys
▲key is used to select the parameter upwards in the menu interface.
▼key is used to select the parameter downwards in the menu interface.
SET key, the main interface status, short press SET key once to start the frequency matching function, long press SET key to start or close the lock; In menu status, it is used as the confirmation key.
MENU key, pshort press the MENU key once to enter the current channel function menu, press the key repeatedly for secondary menu cycle switching, and long press the key to return to the main interface.
Note: The button is equipped with a green indicator light, which will be on for a long time after starting.

3. High definition TFT display
Real time display of current channel parameters, settings and status.

4. Infrared (IR) data synchronization window
The receiver sends the setting data of the corresponding channel to the corresponding transmitter through the infrared signal to achieve the synchronization and consistency of the receiver and transmitter data.

5. ▲ Select key
It is used to select the parameter function upward on the menu interface. The key is equipped with a green indicator light, which is permanently on when the machine is turned on.

6. ▼ Select key
It is used to select the parameter function from the menu interface. The key is equipped with a green indicator light, which is permanently lit when the machine is turned on.

7. SET key
In the main interface state, briefly press SET key once to start the frequency matching function, and long press SET key to start or close the lock. In the menu state, it is used as the confirmation key, and the key has a green indicator light, which is on for a long time.

8. MENU key
Briefly press the MENU key once to enter the current channel function menu, briefly press the submenu again to switch circularly, and long press to return to the main interface. The key has a green indicator light, which is on for a long time.

9. AF audio signal
Under normal interference free communication between transmitter and receiver, when real-time audio signal is transmitted from transmitter, AF audio signal will jump with audio level value.

10. RF signal (A+B)
Under normal interference free communication between transmitter and receiver, the RF signal is full. It has dual receiving signal display function, and AF audio signals of A and B are automatically selected. The RF signal without communication has signal jitter, which represents the interference of the same frequency or adjacent frequency, and the used frequency needs to be changed. If the RF signal of communication is unqualified, it indicates that the RF antenna is not installed correctly or the signal is shielded. It is necessary to check the antenna or solve the shielding.

11. Channel display
Display the current receiver channel sequence number; It is an orange number when there is no communication, and a green number when there is communication.

12. Frequency display
Displays the communication frequency currently being used by the receiver channel.

13. Frequency group display
Displays the frequency group of the current channel. The number of channel frequency groups can be selected: 200/100/50 (depending on the model).

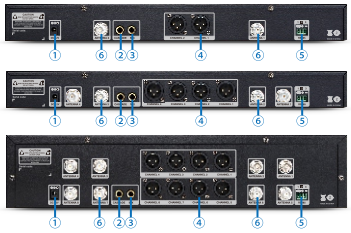
14. Volume display
Displays the level value of the current channel volume output, and the 1-30 levels are adjustable.

15. Lock Display
Displays whether the current channel operation menu is locked.

16. Real time monitoring power display
Real time displays the transmitter power status used of the current channel, and every 25% of the power is one bar of dynamic monit oring.

17. When the level of the transmitter is overloaded, the receiver will detect and display the "PEAK" symbol at the top of the AF audio signal bar.

Rear panel illustration



1. Power input connector
Power supply requirements: 12V DC, maximum current 2A. Connect the supplied power adapter.

2. Mix output connector (6.35mm TS unbalanced)
Uses the enclosed 6.35mm audio cable to connect to the next level of audio equipment

3. Cascade mixer output connector (6.35mm TS unbalanced)
When multiple receivers are stacked for use, the mixing output interfaces of all receivers can be used as a cascade mixing output, and only one mixing output is required.

4. Independent audio output balanced XLR (one per channel)
Audio output to the back stage of audio equipment or line output.

5. RS485 central control connector
Each channel corresponds to a set of hexadecimal codes for turning on and off microphones, which can be externally connected to equipment that can receive code control or connected to high-speed PTZ cameras for video tracking.

6. Removable RF antenna connector
Connects the UHF RF antenna with the BNC interface, 600MKz-690MKz band antenna.

Do not cover this area during use!

User customizeable startup interface

The received signal is normal
Displays green font

No receiving signal
Displays orange font

Voice signal distortion
Displays "PEAK"

Shutdown interface

Operation menu interface

Short press the "Function/FUN" key, the submenu will skip pages, and short press the "SET" key to set the selection parameter function.

Transmitter introduction

W4U-H

Handheld microphone (transmitter)

① Pickup: used to pick up voice or instrument original sound.

Do not cover this area during use!

② LCD display: display the status information of handheld microphone, power, frequency/channel, mute status, etc

③ Power switch: Press and hold the switch to turn on or off the handheld microphone.

④ Handle/battery: hold this area when using. Unscrew the handle to install or replace the battery or perform infrared frequency matching operation.

⑤ Antenna: used to transmit RF signals.

W4U-B

Bodypack microphone (transmitter)

① Antenna: used to transmit RF signals.

Do not cover this area during use!

② LCD display: display status information of bodypack transmitter, power, frequency/channel, mute status, etc

③ IR frequency matching window: used to perform out infrared frequency matching operation with the matched receiver, and synchronize the working data information.

④ Power switch: Press and hold the switch to turn on or off the bodypack transmitter.

⑤ Mini XLR connector: It can connect a headset/lavalier microphone or audio cable with a mini three-pin XLR female.

⑥ Key function area: Users can set various parameters of bodypack transmitter, such as operating frequency, volume, RF power intensity, etc. by pressing the up and down selection keys and setting SET key.

⑦ Battery: open the battery cover to install or replace the battery.

Headset microphone **W4U-BH** (Optional)

Lavalier microphone **W4U-BL** (Optional)

Transmitter introduction

W4U-D

Conference desktop microphone （transmitter）

① Pickup: High sensitivity gold-plated capacitive microphone core, used to pick up voice.

Do not cover this area during use!

② TFT display: 1.77 inch high-definition display screen, showing the status information of the conference seat, power, frequency/channel, mute status, etc.

③ Soft touch button: silent soft touch silicone button with speech luminous icon, which is convenient for speakers to touch to turn on or off the microphone.

④ Work indicator light: red work indicator light, which is convenient for the conference staff to observe the use of speakers' microphones.

⑤ Microphone pole: high-end oval cavity microphone pole, with exquisite structural design and exquisite surface treatment, fully embodies the exquisite technology of modern industry.

⑥ IR infrared frequency matching window: used to perform infrared frequency matching operation with the matched receiver, and synchronize the working data information.

⑦ Type-C charging port: supports maximum 5V 2A charging.