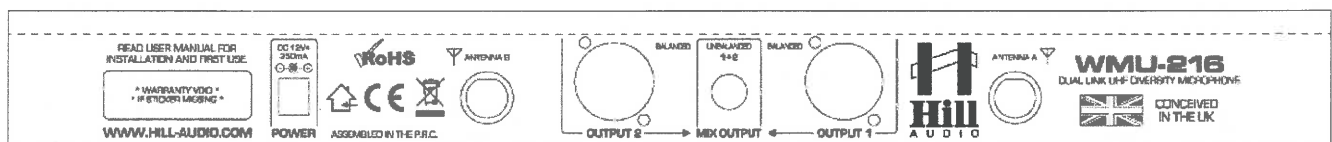
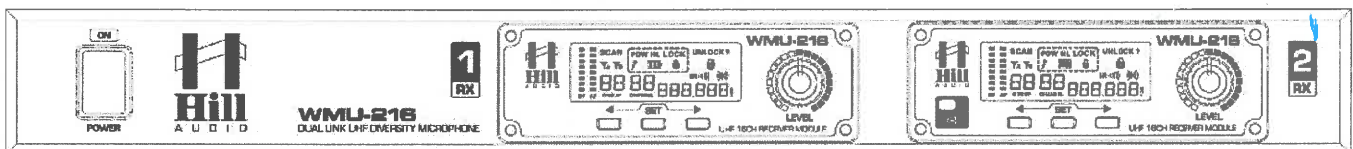
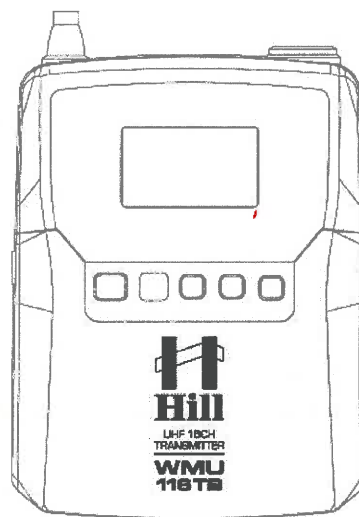
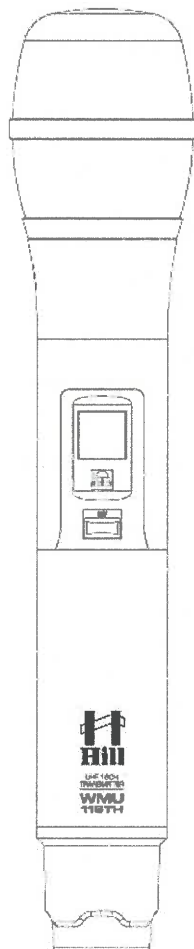




Dual Channel Radio Mic System



USER MANUAL

WMU-216-H (Hand Held)
WMU-216-B (Belt Pack)
Dual Channel Radio Mic System

Welcome

Thank you for choosing Hill Audio for your sound system. To make sure that this product meets your expectations and provides long-term, reliable performance, please read and follow this instruction manual carefully.

Manual Language

This user manual is written in English. For other languages, visit www.hill-audio.com

Important Safety Instructions

- Read these instructions and all markings on the product. Keep these instructions.
- Heed all warnings and instructions, both in this manual and on the product.
- Clean only with a dry cloth. Unplug from AC supply before cleaning.
- Do not use this product near water and avoid any exposure to water.
- Before connecting this product to any AC supply, make sure to check whether the AC mains voltage and Frequency match the indication on the product and its packaging.
- Only connect this product to an AC supply with sufficient power handling, protective earth connection, ground-fault (earth-fault) protection and overload protection.
- Disconnect the product from the AC supply during thunderstorms or when the item is not in use for long periods.
- Make sure any heat sink or, cooling surface, convection slot, is exposed for air to circulate freely and is not blocked.
- Do not operate this product with ambient temperatures exceeding 35 degrees Celsius and/or 85% relative humidity.
- Position the product in a safe and stable place for operation, out of reach of unauthorized persons.
- Make sure any cable connections to and from the product are not subject to potentially destructive mechanical impact or present any risk of tripping or other hazards.
- Audio equipment may generate sound pressure levels sufficient to cause permanent hearing damage. Always start up at low volume settings and avoid prolonged exposure to sound pressure levels exceeding 90 dB.
- Do not open this product for service purposes. There are no user-serviceable parts inside. Warranty will be void in any case of unauthorized service by the user or other not authorized persons.
- Take any precaution required by local law, applicable regulations or good business practice to avoid injury.

Explanation of symbols used in this manual and on the product:



ATTENTION!
Read manual
before installation
and operation.



DANGER!
Safety hazard.
Risk of injury or death.



WARNING!
Hazardous voltage.
Risk of severe or fatal
electric shock.



WARNING!
Fire hazard.

Introduction

Thank you for choosing the Hill WMU-216 wireless microphone system. This professional set provides two high quality microphone with a PLL tuned UHF radio system for freedom of movement without loss of audio quality. Please read this manual before using this equipment in order to avoid damage through incorrect operation and to get the best performance from your purchase.

Package Contents

- UHF wireless receiver
- 19" rack ears
- UHF antenna
- Two handheld transmitters or bodypack receivers with neckband and lavalier microphones
- Mains power adapter
- 6.3mm mono jack lead
- 4 x 1.5V AA battery

If you find any accessory is missing or the product has arrived damaged, please contact your retailer at once.

There are no user-serviceable parts in this product, so make no attempt to fix or modify this item yourself as this will invalidate the warranty. We recommend you keep the original package and proof of purchase for possible replacement or return of the item for service.

Warning

To prevent the risk of fire or electric shock, do not expose any of the components to rain or moisture.

If liquids are spilled on any component, stop using the set immediately, allow unit to dry out and have it checked by qualified personnel before further use.

Avoid impact or heavy vibration to any of the components. Dropping a microphone can cause capsule failure.

No user serviceable parts inside transmitter or receiver - refer servicing to qualified service personnel.

Safety

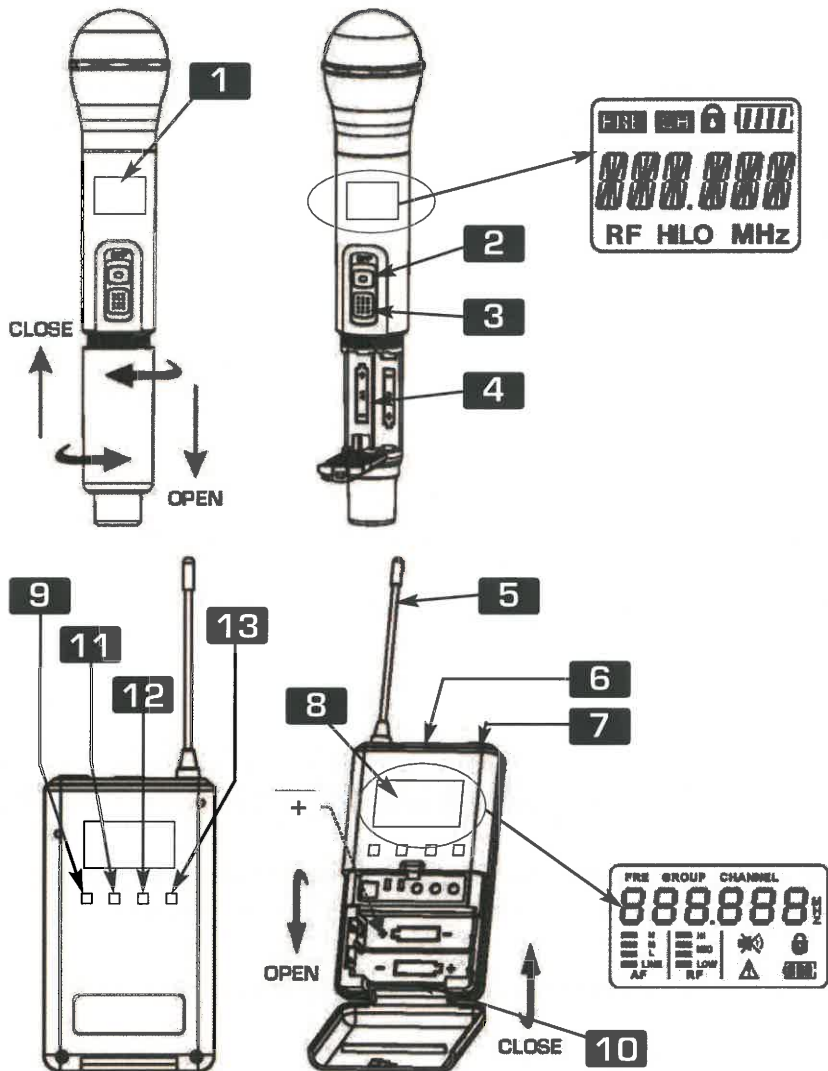
- Ensure that the correct adapter is used with adequate current rating and that the mains voltage is as stated on the adapter.
- Avoid ingress of water or particles into the transmitters or receiver
- Use alkaline or NiMH batteries in the transmitters and remove if they are unused for long periods.
- Observe the correct polarity when replacing batteries

Placement

- Keep all components out of direct sunlight and away from heat sources.
- Do not place heavy objects on top of the receiver or transmitters
- If rack-mounting, use the rack ears provided and do not place heavy equipment above the receiver.
- Keep the transmitters and receiver away from damp or dusty environments.

Cleaning

- Use a soft cloth with a neutral detergent to clean the body of the handheld transmitter and receiver.
- Lightly damp sterile wipes may be used on the microphone grille for hygiene purposes.
- To avoid damage, do not use solvents to clean the components.



Hand Mic Transmitter

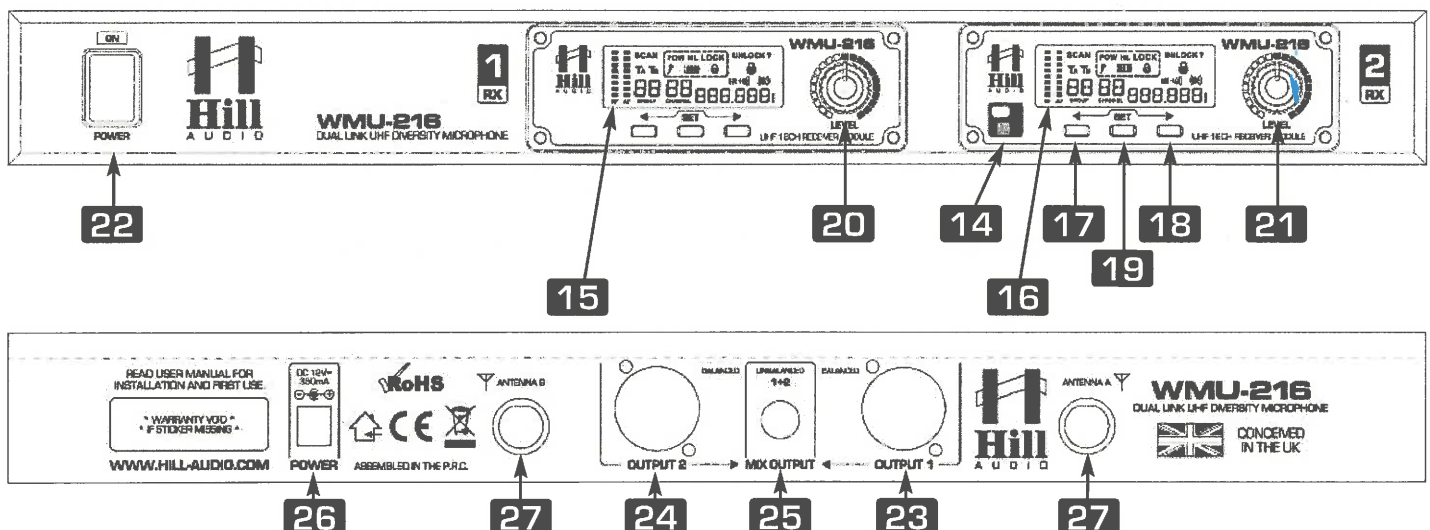
1. LCD display
2. IR sync detector
3. On/off switch
4. Battery compartment

Belt Pack Transmitter

5. Antenna
6. Mute switch
7. Mini XLR socket
8. LCD display and on
9. On/off button
10. Battery compartment
11. IR sync detector
12. Mode
13. Set

Receiver

14. IR sync sender
15. Receiver 1
16. Receiver 2
17. Previous [Group/Channel setting]
18. Next [Group/Channel setting]
19. Set [Group/Channel]
20. Output volume control 1
21. Output volume control 2
22. Power on/off switch
23. Balanced XLRM output 1
24. Balanced XLRM output 2
25. Mixed 6.3mm jack output
26. DC power in jack (5.5 x 2.1mm)
27. Antenna connectors (BNC)



Setting Up

Insert the supplied AA batteries into the transmitters by carefully unscrewing the base of the handheld or opening the flap of the bodypack to reveal the battery compartment. Insert the batteries (ensuring that + and - are the correct way round for each cell) and carefully replace the cover.

For neckband or lavalier microphones, connect the microphone lead into the bodypack, ensuring it is securely pushed into the socket.

The receiver antenna may be connected directly to the BNC connector on the rear panel or alternatively front-mounted onto rack ears.

If the receiver is to be rack-mounted, place the supplied rack ears against each side of the receiver and fix securely with 2 screws in each. These rack ears have a hole for front-mounting the antenna and a BNC extension lead for fixing into the hole. This should be connected to the BNC on the rear panel, creating a front socket for the antenna to connect onto.

A choice of unbalanced 6.3mm jack or balanced XLR output is available on the rear panel of the receiver. Connect the jack or XLR (optional) lead to the relevant output connector, turn down the volume of any equipment (mixer, amplifier etc.) that the signal will be fed into and then connect the jack or XLR to the equipment.

Position the receiver within the best available line of sight to the transmitters and connect the DC jack of the supplied power adaptor to the receiver and the plug top to the mains outlet.

Operation

Turn microphone levels down on the receiver and switch on power on the front panel of the receiver. Each microphone needs setting up separately, see below for tuning information.

Take care not to point microphones towards speakers – this can cause damaging feedback (loud whistle or howling noise) – try to point microphones away from the speaker cabinets.

For the handheld version, move the switch on the handheld transmitter upward to switch it on and the LCD display should light for a few seconds, showing the carrier frequency and battery status.

For the bodypack transmitter, press and hold the front on/off button until the display lights up for a few seconds, ensuring that the Mute switch is off. The displays will show the current carrier frequency and battery status. The transmitter frequency should match the frequency on the receiver and each microphone should be set to a different frequency. If not, see “Tuning” below.

Gradually increase the microphone level on the receiver, then increase the volume on the mixer or amplifier until the sound from each microphone can be heard through the equipment.

By Pressing the Mode button twice on the belt pack, you can set the input sensitivity of the transmitter. This means you can connect devices with a different output level to the supplied microphone, or turn the level down if the device is overloading.

After pressing the button twice you will see the left hand bars flash on the screen. Using the set button you can select Line, Low, Medium, or High sensitivity. Line being the least sensitive.

Tuning

Each microphone needs setting up separately, so switch one on at a time and follow the set up procedure, set out below. You can use the same group for both microphones, but a different channel frequency must be selected for the individual microphones. You can set or reset the receivers and microphone transmitters in any order, just work on one at a time. There is only one IR sensor on the receiver, hold the microphone transmitters close to this for both channels.

The carrier frequency may be selected on the receiver unit by pressing the SET button, which

causes the GROUP label to flash in the display. Buttons 16 & 17 can be used to select the Group from 1 to 7. Pressing the SET button again causes the CHANNEL label to flash. The channel can be selected within a group using buttons 16 & 17.

Groups 1 to 6 have between 3 and 5 preset channels, whilst Group 7 allows access to all 81 possible frequencies. Depending upon any other radio signals in the vicinity of the operating environment, one particular Group may offer a better channel spacing than another and this should be determined by experimentation. If a particular group of frequencies results in poor reception or interference, try another or use Group 7 to manually select carrier frequencies in 25kHz steps. The groups have preset channel spacing that work on the licence free band.

Once a channel is selected, press SET to accept the channel and press SET again to transmit the IR sync signal (animated lines will show next to IR in the display). Hold the IR detector on the handheld microphone or bodypack transmitter up to the IR sender on the main unit to sync the carrier frequency to the transmitter. The transmitter must be switched on for this to work and will flash briefly when the frequency is synchronised and a padlock sign will appear on the receiver display. The microphone and receiver displays will show the same frequency at this point.

Repeat the process for each hand microphone or belt pack, setting the group and channel on the other display. Select a different channel frequency for the second microphone.

There is only one IR sensor on the receiver, turn on and set each microphone one at a time placing the transmitters close to the IR sensor. When the process is finished the display frequencies should correspond, one on each microphone transmitter matching the receiver panel display.

In Use

Switching on the transmitters will send a radio carrier frequency to the receivers and also send a pilot tone frequency, which is not audible but is used by the receiver to open the audio channel. This system helps to avoid any spurious radio frequencies interfering with the wireless microphone signal. When the transmitter's RF signal is recognized by the receiver, an RF meter will show the carrier signal strength in the LCD display, this is to the left of the display. If the transmitter is out of range the display bars will disappear. Likewise, speaking into the microphone will send audio over this carrier and an volume meter will show the audio level in the LCD display.

For the neckband or lavalier microphone, there is also a mute switch on the top of the bodypack, which can be used to temporarily cut the microphone output whilst maintaining the carrier frequency. This may be useful to silence the mic whilst moving across the front of speakers or as a standby setting.

Outputs can be connected directly to an amplifier or audio mixer via the balanced output. There is also the option to use the pre mixed unbalanced output, where both microphone channels are precombined. This option may be suitable when the receiver is connected directly to an amplifier or powered speaker.

If the wireless system is to be out of use for longer than a few minutes, it is preferable to switch the transmitter off, which deactivates the radio carrier signal and powers down the transmitter.

Be sure to turn down the volume of the mixer or amplifier and then switch off the receiver.

Unplug signal leads from the receiver and mixer or amplifier when moving or packing away.

If the system is not to be used for long periods of time, remove the batteries from the transmitters and unplug the power adapter from the receiver and the mains outlet.

Folding away or removing the antennas can also help avoid damage when the system is not in use.

Specifications

Power supply 12-18Vdc 350mA adaptor (supplied)

Batteries 2 x AA (included)

Carrier frequency 863.00 to 865.00MHz

Channels 81 tuneable UHF frequencies

Tuning method Phase-locked loop

S/N ratio >105dB

THD <0.5% @ 1KHz

Frequency response 50Hz - 18kHz (± 1 dB)

Image rejection 85dB typical

Range 60m (max)

Output impedance 2.2k ohms

Output level 2 x Balanced: 0-400mv,

Unbalanced: 0-200mv, Both channels mixed

Connectors DC in, XLRM, 6.3mm jack, BNC antenna

Dimensions - handheld transmitter 265 x 49mmØ

Dimensions - bodypack transmitter 110 x 67 x 24mm

Dimensions - receiver 410 x 190 x 44mm

Weight - handheld transmitter 330g (no battery)

Weight - bodypack transmitter 75g (no battery)

Weight - receiver 1.62kg

Troubleshooting

LCD display does not light on receiver

Ensure power adapter is connected to mains and working properly

Ensure receiver is switched on

Receiver LCD is on but now RF or AF signals showing

Ensure that the transmitter is switched on

Check that the transmitter is not out of reception range

Check that the transmitter batteries are good / charged

Ensure transmitter and receiver frequencies are synced (see "Tuning")

RF carrier is showing on display but no AF showing and no sound

Check that transmitter switch is not in "MUTE" position

Ensure transmitter has good / charged batteries

Ensure there is no other nearby transmitter with the same frequency

RF and AF are OK but no sound from microphone

Make sure receiver is properly connected to amplifier/mixer

Ensure that receiver and amplifier/mixer channel volumes are turned up

Microphone output is very loud or distorted

Turn down VOLUME on the receiver

Reduce gain on mixer / amplifier

Reduce gain on the bodypack, by following the operation Instructions

Ensure that the XLR output is not fed to a line input

Microphone output is very low

Turn up VOLUME on receiver

Increase gain on the mixer or amplifier

Increase the gain on the bodypack, by following the operation Instructions

Ensure that the jack output is not fed to a low Z input

Check transmitter batteries