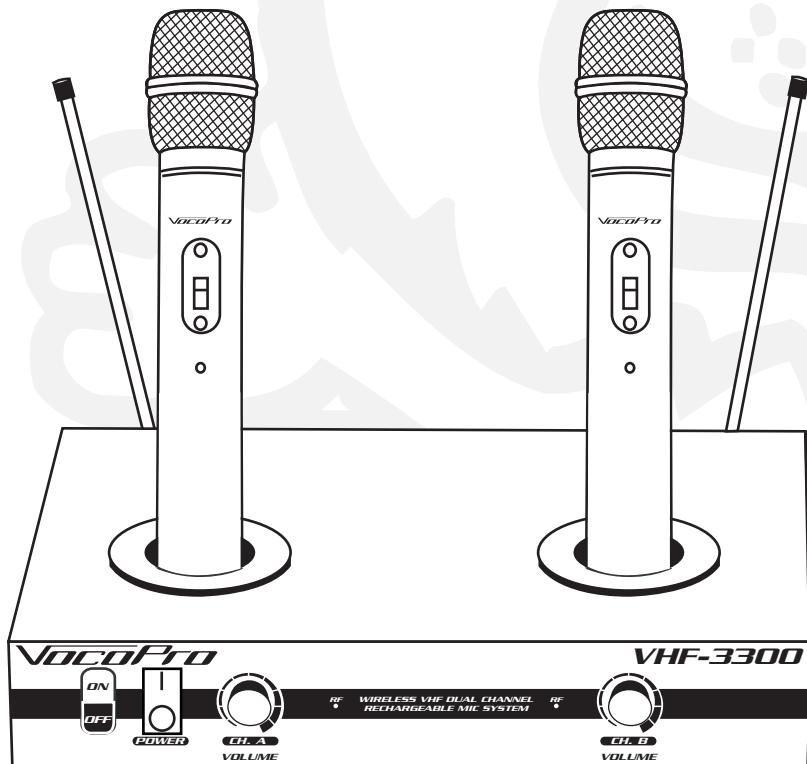


VOCOPRO

ULTIMATE CHOICE OF KARAOKE ENTERTAINMENT

Features:

- Dual-Antenna Receiver design doubles as a Mic Charger/Holder
- Squelch Circuitry Eliminates Background and RF Noise Bursts
- VHF band Quartz Lock for drift-free operation
- Auto-mute circuitry provides noiseless ON/OFF switching
- Individual front panel Volume controls for precise vocal level mixing
- Dual 1/4" unbalanced outputs for separate and mixed signal output
- Excellent operating range up to 150 feet.
- Dual front panel RF LED indicators
- 19" rackmountable to occupy a single rack space with included mounting brackets
- Built-in charger on top of receiver both recharges mic batteries and secures mics when not in use



VHF-3300

Dual Channel Rechargeable Wireless Microphone System

Safety Instructions



CAUTION RISK OF SHOCK



CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Only refer servicing to qualified service personnel.

Explanation of Graphical Symbols



The lightning flash & arrowhead symbol, within an equilateral triangle, is intended to alert you to the presence of danger.



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and servicing instructions.

WARNING

To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.

1. Read Instructions - All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions - The safety and operating instructions should be retained for future reference.

3. Heed Warnings - All warnings on the appliance and in the operating instructions should be adhered to.

4. Follow Instructions - All operating and use instructions should be followed.

5. Attachments - Do not use attachments not recommended by the product manufacturer as they may cause hazards.

6. Water and Moisture - Do not use this unit near water. For example, near a bathtub or in a wet basement and the like.

7. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer.

7 A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause an overturn.



8. Ventilation - The appliance should be situated so its location does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation slots.

9. Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

10. Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

11. Grounding or Polarization - Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

12. Power-Cord Protection - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

13. Cleaning - Unplug this unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

14. Power lines - An outdoor antenna should be located away from power lines.

15. Nonuse Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

16. Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

17. Damage Requiring Service - The appliance should be serviced by qualified service personnel when:

- A. The power supply cord or plug has been damaged; or
- B. Objects have fallen into the appliance; or
- C. The appliance has been exposed to rain; or
- D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
- E. The appliance has been dropped, or the enclosure damaged.

18. Servicing - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Note:

To CATV system installer's (U.S.A.): This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected as close to the point of cable entry as practical.



Welcome...

And Thank you for purchasing the **VHF-3300** from VocoPro, your ultimate choice in Karaoke entertainment! With years of experience in the music entertainment business,

VocoPro is a leading manufacturer of Karaoke equipment, and has been providing patrons of bars, churches, schools, clubs and individual consumers the opportunity to sound like a star with full-scale club models, in-home systems and mobile units. All our products offer solid performance and sound reliability, and to further strengthen our commitment to customer satisfaction, we have customer service and technical support professionals ready to assist you with your needs. We have provided some contact information for you below.

VocoPro

1728 Curtiss Court
La Verne, CA 91750

Toll Free: 800-678-5348
TEL: 909-593-8893
FAX: 909-593-8890

VocoPro Company Email Directory

Customer Service & General Information
info@vocoprop.com

Tech Support
techsupport@vocoprop.com

Remember Our Website

Be sure to visit the VocoPro website **www.vocoprop.com** for the latest information on new products, packages and promos. And while you're there don't forget to check out our Club VocoPro for Karaoke news and events, chat rooms, club directories and even a KJ Service directory!

We look forward to hearing you sound like a PRO, with VocoPro, your ultimate choice in Karaoke entertainment.

FOR YOUR RECORDS

Please record the model number and serial number below, for easy reference, in case of loss or theft. These numbers are located on the rear panel of the unit. Space is also provided for other relevant information

Model Number _____

Serial Number _____

Date of Purchase _____

Place of Purchase _____



VHF-3300

Dual Channel Wireless Microphone System

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VOCOPRO
ULTIMATE CHOICE OF KARAOKE ENTERTAINMENT

Specifications

ELEMENT:

PRESSURE GRADIENT TRANSDUCER

POLAR PATTERN:

UNI-DIRECTIONAL

FREQUENCY:

20HZ~20KHZ

SENSITIVITY:

-33dB±2dB(0dB=1V/PA AT 1KHZ)

OUTPUT IMPEDANCE:

200Ω±30%(AT 1KHZ)

LOAD IMPEDANCE:

≥1000Ω

SELF NOISE:

16dB A

MAX INPUT S.P.L.:

135dB(AT 1KHZ ≤1% THD)

S/N RATIO:

78dB

OPERATING VOLTAGE:

DC 48V PHANTOM(±5V)



Listening For A Lifetime

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. VocoPro and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion and, most importantly, without affecting your sensitive hearing.

Sound can be deceiving. Over time your hearing 'comfort level' adapts to a higher volume of sound. So what sounds 'normal' can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:

- Set the dial and leave it there.
- Pay attention to the different levels in various recordings.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

Used wisely, your new sound equipment will provide a lifetime of fun and enjoyment. Since hearing damage from loud noise is often undetectable until it is too late, this manufacturer and the Electronic Industries Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive noise. This list of sound levels is included for your protection.

Some common decibel ranges:

Level	Example
30	Quiet library, Soft whispers
40	Living room, Refrigerator, Bedroom away from traffic
50	Light traffic, Normal conversation
60	Air conditioner at 20 ft., Sewing machine
70	Vacuum cleaner, Hair dryer, Noisy restaurant
80	Average city traffic, Garbage disposals, Alarm clock at 2 ft.

The following noises can be dangerous under constant exposure:

Level	Example
90	Subway, Motorcycle, Truck traffic, Lawn mower
100	Garbage truck, Chainsaw, Pneumatics drill
120	Rock band concert in front of speakers
140	Gunshot blast, Jet plane
180	Rocket launching pad

-Information courtesy of the Deafness Research Foundation



Getting Connected

Connecting the VHF-3300

To get your system up and running in just a few minutes, follow the quick start instructions on this page:

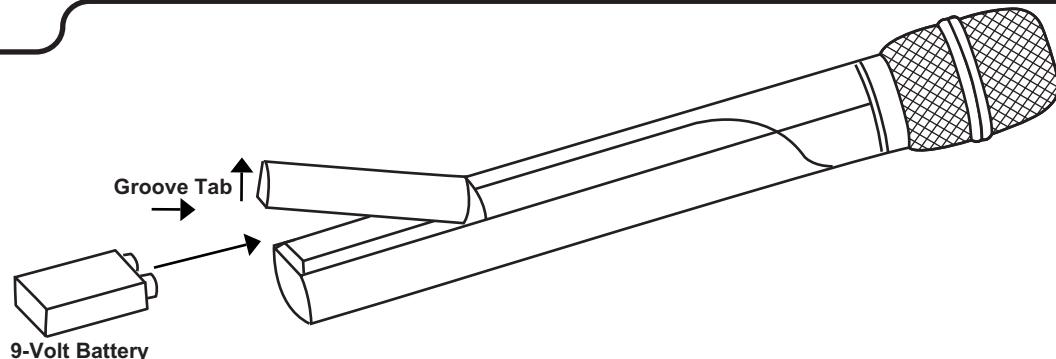
1. Connect the AC power adapter to the receivers power connector, then plug the adaptor into an AC electrical outlet.
2. Connect the receiver to a mixer or sound system with either one of the 1/4" output jacks for mixed output or use both 1/4" output jacks for separate channel output. The advantage of combining both mics to a single output is only occupying one channel of an external mixer/amplifier, but the disadvantage would be that adjustments in mic volume, tone, and external effects cannot be isolated to each mic. When using both outputs provided with separate line cables, you will be able to make adjustments to each mic individually, but you will use 2 channels of your external sound system.

Microphone Battery Installation

Press down on grooved tab at the base of the microphone and push out in the direction of the arrow to open battery compartment. Insert a new rechargeable 9-volt alkaline battery.

Warning! The VHF-3300 can be operated with non-rechargeable batteries, but DO NOT place microphone back in the recharger with regular batteries installed, even if the power is turned off! CHARGING A REGULAR NON-RECHARGEABLE BATTERY MAY CAUSE THE BATTERY TO EXPLODE.

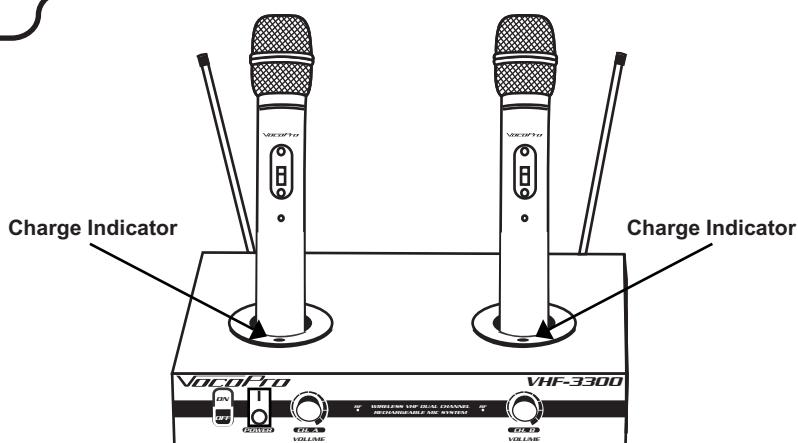
Installation



Charging Batteries

When a microphone needs battery charging, with the ON/OFF switches facing towards the front panel, the chargers are making contact with the metal strips on the base of the microphones. When contact has been made between a charger and a mic, the CHARGE INDICATOR light will be glowing red. An eight-hour charge will provide you with 1 to 2 hours of continuous wireless microphone use. When the microphone is fully charged, the CHARGE INDICATOR light will automatically stop glowing and you can perform. Rechargeable batteries have a life of approximately 500 hours of charging and discharging before they will need to be replaced.

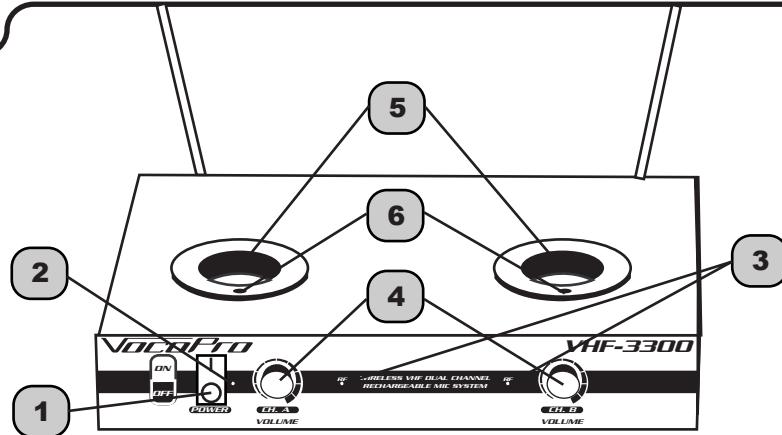
Charging



Front Panel Descriptions and Controls

1. **POWER BUTTON:** Turns the VHF-3300 ON/OFF.
2. **POWER ON LED:** Glows RED when the receiver is powered ON.
3. **RF SIGNAL LED:** Glows GREEN when Radio Frequency signals are received by antenna A and/or B.
4. **VOLUME CONTROLS:** Adjusts the OUTPUT volume of the receiver's mic channels.
5. **CHARGING TERMINAL:** Makes contact with mic base to charge batteries or holds mic in between charges.
6. **CHARGING INDICATOR LIGHT:** Illuminated while microphones are charging.

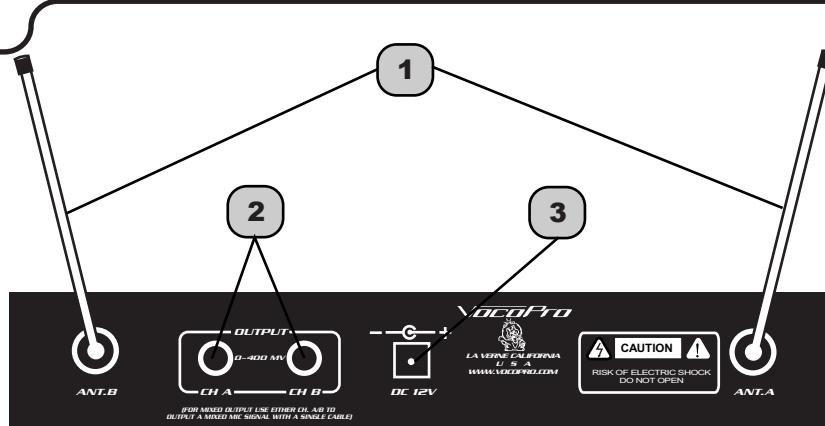
Front Panel



Rear Panel Descriptions and Controls

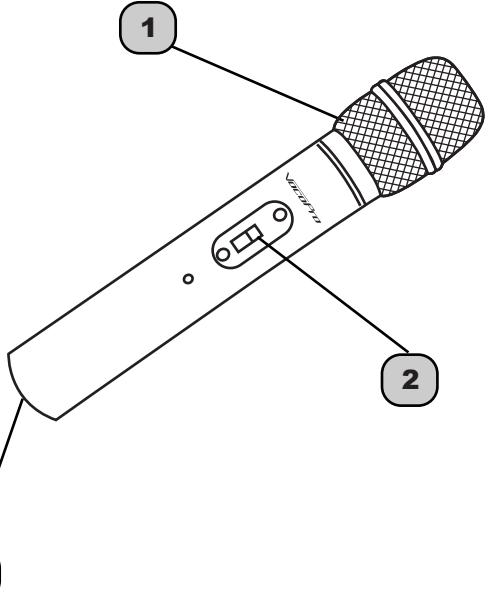
1. **TELESCOPING ANTENNAE:** Receives the SIGNALS sent from the microphones.
2. **OUT A & B:** These 1/4" jacks provide mic output for connection to amplifiers and mixing consoles.
3. **POWER INPUT:** Accepts POWER from supplied AC adaptor.

Rear Panel



Microphone Descriptions and Controls

Microphone



1. **GRILL:** Protects the microphone cartridge and helps reduce breath sounds and wind noise via enclosed foam windscreens.
2. **POWER BUTTON:** Places the microphone in ON/OFF or STANDBY (center position) modes.
3. **BATTERY COVER:** Removable cup holds and protects the rechargeable microphone battery.

Microphone Basics

The VHF-3300's ability to pick-up extremely high and low frequencies makes it an excellent choice. We have provided a few tips to help get the best performance out of your VHF-3300.

Understanding the Proximity Effect

The *Proximity Effect* is a resulting boost to the low-frequency range of sounds that occur with the close-up use of microphones designed with a unidirectional polar pattern, such as the VHF-3300. When the sound source is less than a ¼" from the microphone capsule, the boost is generated mostly in the 100Hz range by 6dB to 10dB. In other words, when a sound source is less than a ¼" from the microphone, the sound will be output with a stronger and richer bass tone than if the sound source was farther away from the microphone.

While the proximity effect can intentionally be used as an advantage to enhance some voices, it may have an undesired effect on certain vocal ranges. It is really a matter of preference and depends on the singer. To avoid a lessened sound quality when using the proximity effect, keep these tips in mind:

- Always try to use available EQ or tone controls on external equipment to enhance a sound before trying to make use of Proximity Effect.
- When experimenting with Proximity Effect for the first time, try it in a small room with moderately low volume and no tone or effects adjustments to get a sense for whether it can be of use to you.
- Do not try to enhance a sound source without performing a sound check at the location prior.
- Do not rely on the proximity effect to "change" a person's voice. Rather use it to enhance one's voice.
- Avoid the proximity effect in environments with excessive reverb, (cathedrals, school gymnasiums, large dancehalls etc).
- Try to avoid the proximity effect when connected to high-output amplifiers and loudspeakers.
- Remember that when speaking into a microphone, "plosive" words can generate loud pops which will also be boosted by the proximity effect leading to a possible threat to external sound equipment.



Microphone Basics cont...

Feedback

Feedback is the phenomenon that occurs when an amplified sound from any loudspeaker reenters the sound system through any open microphone and is amplified over and over again. The resulting sound is an annoying howl that (when loud enough) poses a serious threat to not only your speakers, but to your ears as well. Most commonly, feedback is caused by the following conditions:

- Placing loudspeakers too close to the microphones.
- Having too many open active microphones.
- Overemphasis/boosting high-frequency tone controls.
- Performing in environments with high ratios of hard and reflective room surfaces.
- Overemphasis of effects that generate multiple harmonic repetitions (reverb, echo, delay)

What can you do if feedback occurs before the sound system is loud enough?

- Request that the singer/speaker project their voice louder into the microphone allowing for a lower master volume.
- Reduce the distance from the talker to the microphone. Each time this distance is halved, the sound system output will increase by 6dB, mainly in the low-frequency range.
- Reduce the number of open microphones.
- Move the loudspeaker farther away from the microphone.
- Move the loudspeaker closer to the listener.
- Use an equalizer/feedback reducer to cut the frequency bands in which the feedback occurs.

Microphone Placement and Tone Quality

The VHF-3300 is ideal for close-up vocals and the mic can be handheld or mounted in a mic stand. Keep in mind that microphone technique is largely a matter of personal taste--there is no one "correct" microphone position.

Lead and Backup Vocals

The performer's mouth should be less than 3" from or even touching the windscreen on an axis to the microphone. Doing this creates a robust sound, emphasizes bass and provides maximum isolation from other sources

Speech

For spoken segments in between songs or public speaking types of applications of the VHF-3300, place the mic 4" to 10" away from your mouth, just above nose height for a natural sound with reduced bass. You can also place the microphone 8" to 16" away from the mouth, slightly off to one side, for a more "ambient" sound with greatly reduced bass and minimal "S" or sibilance sounds.

The VHF-3300 & Stage Monitor/P.A.. Loudspeakers

If you will be using the VHF-3300 with stage monitors and/or a P.A.. system, try the following:

- Place the stage monitor(s) directly behind the microphones.
- Locate the loudspeakers so that they point away from the rear of the microphone. (With the speakers located in these positions, the possibility of feedback is greatly reduced).
- Always check the stage setup before a performance to ensure optimum placement of microphone and monitors.

IMPORTANT: Every wireless microphone installation is a unique situation, and can present a variety of problems. Never attempt a live performance without first conducting a test of the system in the performing area. If major changes (additional wireless systems or intercoms, relocation of set up, etc.) have been made since the last test, check the wireless system again--as close to performance time as possible.



Operations

Operating the System

1. Press the receiver POWER switch with the VOLUME CONTROLS turned down. The LED next to the POWER button on the receiver will glow RED.
2. Switch the microphone's power button to ON. During normal operation, the RF signal LED for each mic will light GREEN.
3. Talk or sing into the microphones while gradually adjusting the receiver VOLUME controls until you reach the desired output level.

Tips for Achieving Optimum Performance

- It can be difficult to adjust VOLUME on the VHF-3300 and your sound system without creating feedback while standing so close to the receiver. It is recommended to have one person test the mics from a distance while another increases the VOLUME levels for a better monitoring of your sound.
- Place the receiver at least 3 feet (or 1 meter) above the ground and away from concrete walls or metal surfaces to prevent any reflections. The microphone should also be at least 3 feet away from the receiver's antenna.
- If using multiple wireless systems, maintain a distance of at least 10 feet (3 meters) between each.
- Maintain a line-of-sight between the microphone and receiver antennas, if possible.
- Avoid placing the receiver near computers or other RF generating equipment.
- Avoid placing the receiver at the bottom of an equipment rack.
- Extend telescopic antennas completely and as far apart from each other as possible. They can rotate in opposing directions to facilitate this.
- Position the microphone 1" to 1.5" from the mouth or as close as practical to the desired sound source.
- Move the mic closer to your mouth for extra bass response.
- Use only one microphone per person or sound source.
- Place microphones far from sound-reflecting surfaces.
- Add a windscreens when using the microphone outdoors, for close-up speech, or vocals.
- Avoid excessive handling to minimize mechanical noise.

Auto-Noise Squelch Feature

Squelch circuits analyze Radio Frequency (RF) signal strength. When a wireless system is used in a noisy RF environment, conventional circuits may "open" unexpectedly, sending loud bursts of noise through the receiver when the transmitter's signal is weak or turned off. The VHF-3300 uses a noise squelch circuit that analyzes signal quality with the signal strength. When the transmitter signal is strong, the system's noise level is low and the receiver sends audio through. When the transmitter signal is weak or absent, the system's noise level is high and squelch circuit will mute the receiver. This virtually eliminates the possibility of annoying bursts of noise coming through your receiver.

Receiver Volume Adjustment

The volume controls on the front panel of the VHF-3300 receiver can be adjusted to set the wireless system output levels as you desire. After making any musical balancing adjustments, adjust the receiver volume control until the output reaches the desired level. Rotate the volume control clockwise to increase output. Rotate it counterclockwise to decrease output.



Troubleshooting

PROBLEMS	SOLUTIONS
No sound; receiver RF light(s) and mic(s) not lit.	<p>Make sure POWER switches on transmitters and receiver are set to ON positions.</p> <p>Check microphone batteries to ensure they are providing power.</p> <p>Replace or charge batteries if necessary.</p> <p>Check receiver's AC power connection.</p> <p>Make sure antennas are in the microphones' line of sight.</p> <p>If necessary, reduce the distance between the microphones and receiver.</p>
No receiver sound but the RF and Audio Level meter lights are glowing.	<p>Turn up the receiver's VOLUME level controls.</p> <p>Check for proper connection between receiver and external amplifier/mixer.</p> <p>Talk into the mic and observe the receiver's RF signal LEDs. If they glow, the problem is elsewhere in the sound system.</p>
Received signal is noisy or contains interference with transmitter on.	<p>Check microphone batteries and charge or replace if power is low.</p> <p>Remove local sources of RF interference, such as lighting equipment. Two transmitters may be operating at the same frequencies or frequencies which are too close in proximity. Turn one off or exchange for one with a different frequency. Signal may be too weak. If so, reposition antenna (if possible, move them close to the transmitter).</p>
Noise coming from the receiver with the mics turned OFF.	<p>Remove local sources of RF interference, such as lighting equipment.</p> <p>Reposition the receiver or antennae.</p>
Momentary loss of sound as transmitter is moved around performing area.	Reposition receiver and perform a "walkthrough" test and observe the signal strengths. If audio dropouts persist, mark these "dead spots" in the performing areas and avoid them during the performance.
Battery running low even after recharging.	Replace rechargeable batteries (rechargeable batteries have a life of 500 hours of charging and recharging).

