



# U-800

*UHF 800-Channel Wireless System*

### Consumer Alert

Most users do not need a license to operate this wireless microphone system. Nevertheless, operating this microphone system without a license is subject to certain restrictions: the system may not cause harmful interference; it must operate at a low power level (not in excess of 50mW); and it has no protection from interference received from any other device. Purchasers should also be aware that the FCC is currently evaluating use of wireless microphone systems, and these rules are subject to change. For more information, call the FCC at 1-888-CALL-FCC (TTY: 1-888-TELL-FCC) or visit [www.fcc.gov/cgb/consumerfacts/wirelessmic\\_factsheet.html](http://www.fcc.gov/cgb/consumerfacts/wirelessmic_factsheet.html).



**NADY SYSTEMS, INC.**  
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[www.nady.com](http://www.nady.com)

The U-800 series includes the item of HT800U.

## OWNER'S MANUAL

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## 1. INTRODUCTION

Thank you for choosing the Nady U-800 wireless system, and congratulations on your choice. The U-800 has the best performance and price value in professional UHF wireless, offering clear-channel, frequency-agile operation on the UHF band for interference-free performance in any application or locale. The U-800 delivers 800 user-selectable, frequency synthesized channels in the US frequency band 470MHz-490MHz. The Nady U-800 offers built-in Autoscan for quick and convenient open channel selection and set up of one system, or many wireless systems at the same location for simultaneous multichannel operation. The U-800 features proprietary companding and low-noise circuitry for an industry-best 120dB dynamic range, and the clearest, most natural sound available in wireless today

## 2. USING THIS MANUAL

This booklet provides instructions for the operation of the U-800 and includes a description of features, a quick user controls guide, a step-by-step guide to operations for each unit, system specifications, a troubleshooting guide, miscellaneous tips, and servicing information.

## 14. ONE YEAR LIMITED WARRANTY

Nady Systems, Inc. warrants to the original consumer purchaser that the unit is free from any defects in material or workmanship for a period of one year from the date of original retail purchase. If any such defect is discovered within the warranty period, Nady Systems, Inc. will repair or replace the unit free of charge, subject to verification of the defect or malfunction upon return to Nady Systems. Please do not return your Nady product to the store where it was purchased as Nady Systems handles your warranty service directly. Communication with our Service Department is the most efficient means of servicing your unit and we are dedicated to keeping you a satisfied customer.

To the extent permitted by law, any applicable implied warranties, including warranties of merchantability and fitness are hereby limited to one year from the date of purchase. Consequential or incidental damages resulting from a breach of any applicable express or implied warranties are hereby excluded. This warranty is in lieu of all other agreements and warranties, general or special, express or implied and no representative or person including a Nady dealer, agent, or employee is authorized to assume for us any other liability in connection with the sale or use of this Nady Systems' product.

Whereas some states do not allow limitations on how long implied warranties last, and do not allow exclusion of incidental or consequential damages, the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

### This warranty is subject to the following conditions:

- 1) This system must have been purchased from an authorized Nady dealer and all warranty service must be performed by Nady's service department. Any service not performed by Nady will automatically void this warranty.
- 2) Items not covered: physical damage resulting from improper handling of the unit in transit from the factory by the shipper (Nady Systems is not responsible for such damage and all such claims must be made against the shipping company by the consignee); defects caused by normal wear of the product (expendable parts are typically connectors, cables, potentiometers, switches and similar components); damage or defects caused by abuse, neglect, accident, failure to connect or operate the unit in any way that does not comply with applicable technical or safety regulations, or improper repair, excessive heat or humidity, alteration or unreasonable use of the unit, causing cracks, broken cases/housings or parts; damage caused by leaking batteries; finish or appearance items; items damaged in shipment en route to Nady Systems, Inc. for repair. The warranty is null and void if any Nady serial number has been removed or defaced.

### How To Obtain Service:

- 1) If factory service is required, you must contact our Service Department at (510) 652-2411 for a return authorization (RA) number. Make sure the RA number is clearly marked on the outside of your package. (Please note: if an RA number is not included, our shipping department cannot accept your package.)
- 2) Send the unit back to Nady Systems, 6701 Shellmound Street, Emeryville, CA, 94608, freight pre-paid. You must include proof of date and place of purchase (i.e., photocopy of your bill of sale) or Nady cannot be responsible for repair or replacement. Nady Systems, Inc. will not repair, nor be held responsible, for any units returned without proper identification, return address, and RA number clearly marked on the package.
- 3) Per the above, Nady will perform all warranty service and return the unit to you at no charge. Nady Systems will inform the buyer if product sent in does not meet the terms of this warranty and will provide a quote for fixing the unit and/or shipping it back exclusively at the buyer's expense.

## 12. OPTIONAL ACCESSORIES

ERM-12 Single rack mount kit for one U-800 receiver

ERM-22 Dual rackmount kit for two U-800 receivers, includes EJC-3 joining clip

## 13. SERVICE INFORMATION

**In the U.S.** If you are experiencing operational problems with your system, please refer to the Support page at [www.nady.com](http://www.nady.com) for assistance. Should your wireless system require service, please contact the Nady Service Department at (510) 652-2411 for a Return Authorization (R/A) Number and service quote (if out of warranty). Make sure the R/A Number is clearly marked on the outside of the package that you are returning.

If your unit is out of warranty, please enclose a cashier's check or money order (or pay by credit card) per instructions by the Nady Service Department. Ship your unit prepaid to: Nady Systems, Service Dept, 6701 Shellmound Street, Emeryville, CA 94608. Include a brief description of the problem you are experiencing. For service of a unit under warranty, please follow the instructions in the following section.

**Outside the U.S.** For service or warranty matters please contact the Nady distributor in your country through the dealer/store from which you purchased this product.

**Do not attempt to service this unit yourself as it can be dangerous and will also void the warranty.**

## 3. SYSTEM FEATURES

### U-800 RECEIVER

- Unsurpassed state-of-the-art PLL UHF performance with 120dB dynamic range and long-range operation, up to 500 ft. (line-of-sight)
- 800 user-selectable UHF frequencies, with one-touch Autoscan open-channel automatic selection
- ASC™ (Auto-Sync Channels) download feature sends selected channel information to transmitter via IR sender for easy frequency synchronization
- Sophisticated IF filtering for optimal simultaneous operation of up to 14 systems in the same location
- To facilitate multiple, simultaneous systems operation setup, the 800 selectable channels are available from 10 optimized factory pre-set groups of up to 14 compatible channels and 5 additional user-select groups, all offering 800 channels each. All groups retain in memory the previously selected channels for that group for easy setup subsequently in the same location.
- DigiTRU Diversity™ for maximum range and dropout protection
- 120dB Dynamic Range — the quietest and best sounding UHF wireless available at any price
- Tone Squelch™ for locking out potential interference, and special circuitry for noiseless transmitter ON/OFF switching
- Dual front-panel permanently attached swivel antennas
- Front LCD panel displays A/B diversity, Group/Channel with frequency, ASC™ transfer status, RF/AF level, Mute (squelch) level, and push On/Off power switch
- Back panel with Balanced XLR fixed Mic Level and adjustable Unbalanced ¼" jacks, audio Line Level outputs with volume control and DC input jack
- Half-rack receiver design with unique snap-out, side panel locking tabs for single receiver or dual receivers (side-by-side) optional rack mounting
- Externally powered with included DC adapter (120VAC/22VDC/400 mA)
- Choice of transmitters: UH-800 handheld Mic or UB-800 bodypack—lavalier (LT), Headmic™ (HM), or instrument (GT)

### UH-800 HANDHELD MIC TRANSMITTER

- Sleek metal housing with internal antenna for optimum aesthetics and durable long life
- Features the Nady DM -10D unidirectional neodymium dynamic cartridge for optimum true sound, maximum feedback rejection and minimal handling noise
- 800 easily selectable channels via IR Sync download for easy synchronization with receiver's selected channel
- Easy accessible audio level adjustment for optimum sound
- Power On/Off and Audio Mute switch allows convenient audio muting with the transmitter "ON"
- Status LED indicators for unit "ON" (green) and for low-battery alert "ON" (red)
- Convenient, economical operation with two AA alkaline or rechargeable NiMH batteries

### UB-800 BODYPACK INSTRUMENT TRANSMITTER

- Choice of transmitters: UB-800 bodypack—lavalier (LT), Headmic™ (HM), or instrument (GT)
- 800 easily selectable channels via IR Sync download for easy synchronization with receiver's selected channel
- Easy accessible input level adjustment for optimum sound
- Power On/Off and Audio Mute switch allows convenient audio muting with the transmitter "ON"
- Bicolor LED status indicator for unit "ON" and for low battery alert "ON"
- Convenient, economical operation with two AAA Alkaline or rechargeable NiMH batteries
- Ultra-compact housing, removable antenna and unique locking 3.5mm mini plug connector for mic or instrument cable

## UB-800 BODYPACK TRANSMITTER

RF Output Power	Max .12mW
Harmonic/Spurious Emission	-50dBc normal
Input Impedance	4.7k $\Omega$ (Lavalier); 500 k $\Omega$ (Instrument)
Controls	Power and Audio ON/OFF switches, Input Level
Input Connector	Locking 3.5mm mini-jack
LED Display	Bi-Color - Power ON (GREEN) and Low Battery ON (RED)
Antenna Type	External Removable
Battery Type	2 x AAA alkaline or NiMH
Battery Life	6-8 Hours typical, alkaline
Dimensions	3.25"W x 2.18"D x 1"H (8.25cm x 5.53cm x 2.54cm)
Weight (w/o batteries)	3.9 oz (111g)
Housing Construction	ABS Plastic

Specifications subject to change at any time without prior notice for purposes of product improvement

## 10. FREQUENCY PLAN

800 Channels/25 KHz per step

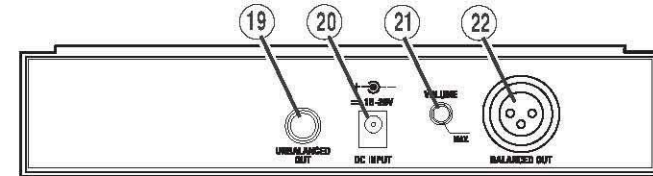
Band 1: 470.000MHz-489.975MHz

Band 2: 490.000MHz-608 MHz

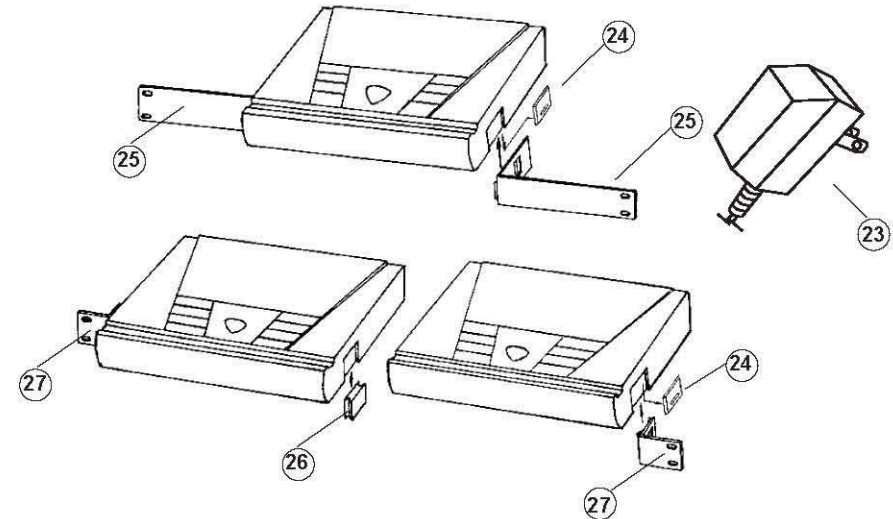
for 2 seconds. If the IR data download is successful, the receiver's **RF (8)** and **A/B INDICATORS (9)** will also be on, indicating channel transfer is complete. See also section **"6. Selecting Group/Channel, IR Programming and Simultaneous Multichannel Operation"**

The **MENU BUTTONS** second function: You can push and hold **MENU BUTTON (18)**, then push **UP BUTTON (16)**, to lock the receiver controls, which prevents accidental adjustment during use. Push and hold MENU button, then push UP button again to unlock, returning the receiver to normal program modes.

### U-800 RECEIVER: BACK VIEW



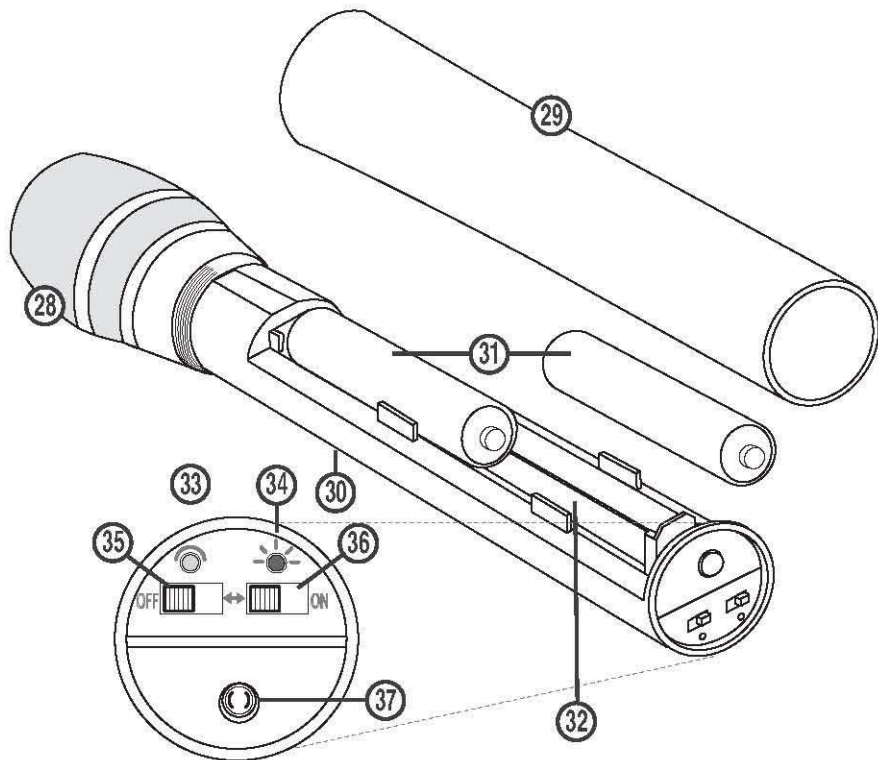
- 19. UNBALANCED LINE OUT 1/4" JACK** line level audio output, adjustable with Volume Control
- 20. DC INPUT JACK** for connecting external AC/DC adapter to power receiver [DC22VDC/400mA]
- 21. VOLUME CONTROL** selects desired output volume level for the Unbalanced Line Out
- 22. BALANCED MIC OUT XLR JACK** audio output at fixed MIC level



- 23. DC POWER SUPPLY ADAPTER** 120VAC/22VDC/400mA
- 24. SIDE MOUNT CLIP** removes to leave space for optional rack ears
- 25. ERM-12 SINGLE RACK KIT** optional rack ears for single receiver rack mounting
- 26. EJC-3 JOINING CLIP** supplied with ERM-22 kit for joining two receivers side-by-side for dual rack mounting
- 27. ERM-22 DUAL RACK KIT** optional rack ears for rack mounting two receivers side-by-side

## UH-800 HANDHELD TRANSMITTER: FRONT AND BOTTOM VIEW

- 28. MIC BALL/ ANTENNA** windscreen also functions as antenna, so for best operating range do not handle this antenna during use
- 29. BATTERY COVER** unscrew CCW to open battery tube to insert batteries
- 30. AUDIO INPUT LEVEL** normally set at middle position, turn knob with small flat head screw driver for optimum sound
- 31. TWO AA BATTERIES** to power transmitter
- 32. BATTERY COMPARTMENT** holds two AA alkaline or NiMH batteries, observe correct polarity
- 33. POWER ON LED** indicates the transmitter ON (green)
- 34. LOW BATTERY LED** indicates the batteries are weak (red)
- 35. RF POWER** slide the switch to power the transmitter ON or OFF
- 36. AUDIO MUTE** slide the switch to ON or OFF to mute audio with transmitter powered on
- 37. IR RECEPTOR SENSOR/WINDOW** infrared LED sensor for linking the transmitter to the receiver during IR selected-frequency downloads



## 9. SPECIFICATIONS

### U-800 OVERALL SYSTEM PERFORMANCE

Operating Frequency Range	470MHz-608MHz, two Bands
Freq. Synthesized	(800 channels switchable) 25kHz/step
PLL system frequency stability	<0.005%
Frequency Response	50Hz-18kHz +/-3dB
Dynamic Range	120dB
Harmonic Distortion	<0.5%
Modulation	FM (F3E) +/-50kHz normal, +/-100kHz max
Operating Range	150-250 feet typical, 500+feet max line-of-sight

### U-800 RECEIVER

Receiver System	Dual conversion Super Heterodyne with Digi-True Diversity (dual antennas with optimum reception selected)
Selectivity	60dB, normal +/-75kHz offset
Image Rejection	-70dB, minimum
Sensitivity	-107dBm, normal
Spurious Rejection	65dB, normal
Mute /Squelch	Adjustable (-65dBm to -95dBm), Tone Squelch 40kHz
Controls	Power ON/OFF push switch, VOLUME line level pot, MENU, UP/DOWN buttons
LCD Display	MUTE, AF/RF bars, A/B diversity, IR, GR/CH, MUTE Level, SCAN, Frequency
LED indicator	Power on
Audio Outputs	LINE OUT UNBALANCED: adjustable line audio output
MIC OUT BALANCED	Fixed Mic level audio output
Output Impedance	Unbalanced: 1k $\Omega$ and Balanced: for 600 $\Omega$ loads
Power Requirement	22VDC/0.4A
Antennas	Dual permanently attached swivel antennas
Dimensions	8.1"W x 7.5"D x 1.75"H (20.7cm x 19cm x 4.4cm)
Weight	1 lbs (454g)
Housing Construction	ABS Plastic

### UH-800 HANDHELD TRANSMITTER

RF Output Power	Max , 1mW
Harmonic/Spurious Emission	-50dBc normal
Impedance	3.0 k $\Omega$
Controls	Power and Audio ON/OFF switches, Input Level
LED Display	Power ON (GREEN), Low Battery ON (RED)
Antenna Type	Integral
Battery Type	2 x AA alkaline batteries operation
Battery Life	8-10 hours typical
Dimensions	9"L x 2"D (22.86cm x 5.08cm)
Weight (w/o batteries)	11.6oz (329g)
Housing Construction	Metal

## 8. MISCELLANEOUS TIPS

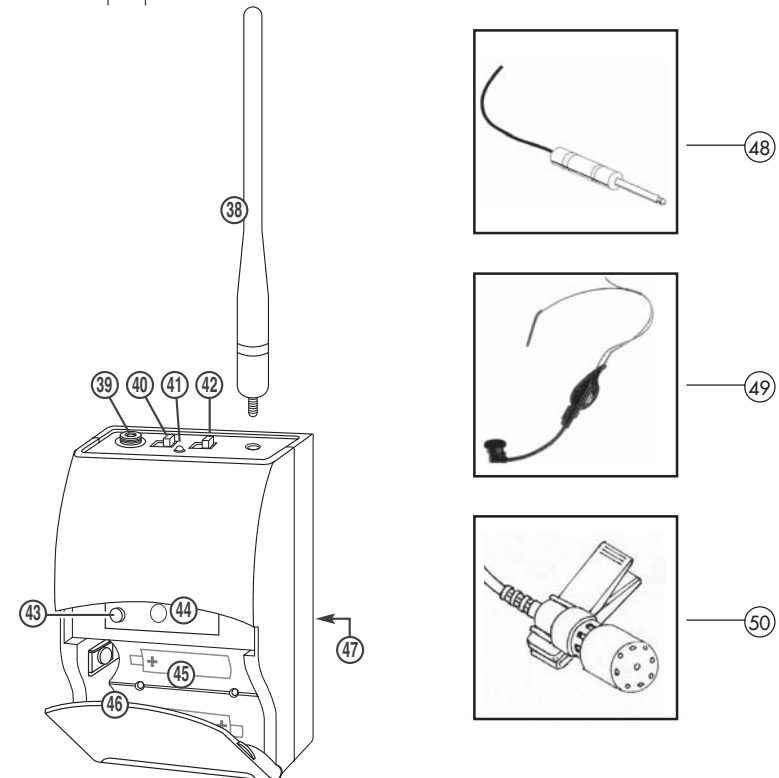
- The receiver antennas should be kept away from any metal surfaces whenever possible as they can reflect away or shield the incoming RF signal.
- If the receiver's volume control is set too high, it may overdrive the input of the attached audio mixer, causing distortion. Conversely, if the output is set too low, the overall signal-to-noise ratio of the system may be reduced, causing noticeable hiss. If such noise occurs, adjust the output level of the receiver so that highest sound pressure level going into the microphone transmitter causes no input overload in the mixer, but permits the mixer level control to operate in the normal range (not too high and not too low). This provides the optimal signal-to-noise for the entire system.
- Before inserting the batteries, ensure that they are inserted with the correct polarity.
- Before operation, confirm that the receiver and associated transmitter are tuned to the same frequency group and channel number.
- After making a receiver channel change, ensure that the corresponding change is also made on the matching transmitter.
- Use only new alkaline or fully recharged NiMH batteries. Do not use "general purpose" carbon batteries. When batteries are weak, replace all the batteries at the same time. Do not mix new and old batteries.
- Position the receiver so that it has the least possible obstructions between it and the transmitter. Line-of-sight is best!
- During operation, the transmitter and the receiver should be as close as possible for optimum results but never closer than 3 ft. (1 m) as that may overload the receiver's input circuitry and cause noises.
- If rack mounting the receiver, keep away from heat sources such as amps by allowing enough space between them for adequate ventilation.
- For the best operation, the receiver should be placed at least 3 ft. (1 m) above the ground and 3 ft. (1 m) away from a wall or metal surface. The transmitter should also be at least 3 ft. (1 m) from the receiver. Keep antennas away from noise sources such as motors, automobiles, neon lights, signal processors, computers, as well as large metal objects.
- A receiver cannot receive signals from two or more transmitters simultaneously.
- Turn the transmitter off when it is not in use. For longest life, remove the batteries if the unit is not to be used for a long period as the transmitters draw a tiny residual current to maintain the programmed settings, even when turned off. Also, since batteries installed for a long time can sometimes corrode and/or leak, causing damage, it is generally recommended that batteries be removed whenever the transmitters are not being used.
- When using the bodypack for instrument use: Scratchy noises can sometimes occur when an electric guitar with dirty pots or connections is used with a wireless system. Therefore, the supplied capacitor provides first-order filtering of the RF signal from the cord into the guitar and eliminates virtually all scratchy noises. Should your equipment still produce scratchy noise, we suggest these steps to eliminate problems:

1) Make sure all guitar volume and tone pots are clean and all contacts are solid. This is very important.

2) Solder a 47pF capacitor across the pot to ground terminal of the guitar's volume and tone pots to provide extra filtering.

## UB-800 BODYPACK TRANSMITTER: FRONT VIEW

- 38. ANTENNA** removable antenna—should be attached during operation
- 39. INPUT JACK** locking 3.5mm mini-jack for connecting audio input cord from lapel mic (LT), Headmic™ (LT/HM), or instrument (GT) cable
- 40. AUDIO MUTE** slide the switch to ON or OFF to mute audio with transmitter powered on
- 41. BI-COLOR BATTERY STATUS LED** indicates green for strong usable battery and red for low battery needing replacement
- 42. POWER ON/OFF** slide switch to power receiver ON or OFF
- 43. INPUT VOLUME LEVEL** adjusts input (LT/HM) audio level for optimal sound
- 44. IR RECEPTOR SENSOR** infrared LED sensor for linking the transmitter to the receiver during IR selected-frequency download
- 45. BATTERY COMPARTMENT** holds two AAA alkaline or NiMH batteries
- 46. LATCHING BATTERY DOOR** open fully to insert batteries
- 47. BELT CLIP** on back of unit, rotates 180° for optimum mounting
- 48. INSTRUMENT CORD GT** cable—connects instrument's audio output to TX input jack
- 49. HEADMIC™** headworn microphone (choice of models)—connects to transmitter input jack
- 50. LAVALIER MIC** lavalier (lapel) microphone (choice of models)—connects to transmitter input jack



## 5. SYSTEM OPERATION

### U-800 RECEIVER

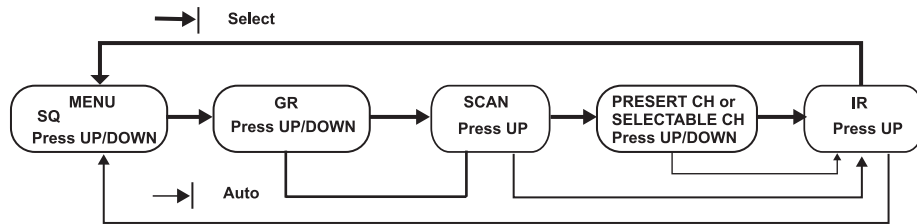
#### Button Function

The **POWER ON Button (1)** is used to power receiver ON or OFF. When the power button is pressed, the **POWER LED (2)** and the white backlight on the **LCD DISPLAY (5)** will light up indicating the receiver is ready. Press the Power button again to turn off the receiver. The power LED and the backlight on the LCD will be off indicating the receiver is off. At power-off the U-800 receiver will store the last settings entered and re-display them at power-on. It can be reprogrammed to any new Group/Channel, or Mute level. The default factory setting is Group 11, Channel 01 and Mute 0 on the first LCD menu screen.

The **UP BUTTON (16)** is pressed one step at a time to SCAN, IR or to increase GROUP, CHANNEL, MUTE by one level each time

The **DOWN BUTTON (17)** is pressed one step at a time to decrease GROUP, CHANNEL, MUTE by one level each time

The **MENU BUTTON (18)** is pressed one step at a time for Auto Scan Frequency or to Automatic GR/CH ASC™ Sync, or if pressed repeatedly the LCD DISPLAY (5) menu will cycle through the following screens. Press the **MENU BUTTON (18)** and the **UP BUTTON (16)** at the same time to lock or unlock the keyboard/buttons.



During manual programming, press the **MENU BUTTON (18)** to confirm the selection and advance to the next menu before the Auto Programming Function takes over after 5 sec.

#### Rack Mounting the Receiver

There are 2 options available for rack mounting the U-800 receiver: singly or side by-side with another U-800 receiver.

- Single mounting: Remove the receiver **SIDE MOUNT CLIP (24)** from each side of the receiver (as shown) and slide in the optional **ERM-12 RACK EARS (25)**.
- Side-by-side double mounting: After removing the **SIDE MOUNT CLIPS (24)** from both U-800 receivers join the two receivers with the **EJC-3 JOINING CLIP (26)** and attach the **ERM-22 RACK EARS (27)** as shown.

*(Note: Do not mount the receiver in a rack directly above an amplifier or other source of high heat — this could degrade the performance of the U-800. Always ensure adequate airflow and heat dissipation in any rack configuration.)*

## 7. CAUTIONS AND TROUBLESHOOTING

### Feedback

Avoid acoustic feedback (howling or screeching) by taking care in selecting PA volume, transmitter location and speaker placement.

Please also note the pickup pattern characteristics of the microphone selected. Unidirectional microphones are more resistant to feedback. However, they pick up sound sources best that are directly in front of the microphone. Also, mics that are farther from the sound source (such as a handheld) require more acoustic gain and thus are also more prone to feedback than close-source mics.

### No or Low Audio

If you are not getting audio through the system, carefully re-check all setups. Especially note that the receiver and transmitter must be set to operate on the same RF channel. Also confirm that the transmitter's **AUDIO MUTE (36, 40)** is not in the OFF position. The receiver's **UNBALANCED LINE OUT (19)** is adjustable so make sure the **VOLUME CONTROL (21)** is set properly.

### RF Interference and Finding Open Channels

The FCC mandates the following information be provided to all end users of this equipment:

### Consumer Alert

Most users do not need a license to operate this wireless microphone system. Nevertheless, operating this microphone system without a license is subject to certain restrictions: the system may not cause harmful interference; it must operate at a low power level (not in excess of 50mW); and it has no protection from interference received from any other device. Purchasers should also be aware that the FCC is currently evaluating use of wireless microphone systems, and these rules are subject to change.

For more information, call the FCC at 1-888-CALL-FCC (TTY: 1-888-TELL-FCC) or visit [www.fcc.gov/cgb/consumerfacts/wirelessmic\\_factsheet.html](http://www.fcc.gov/cgb/consumerfacts/wirelessmic_factsheet.html).

If you encounter slight receiving interference when the transmitter is far from the receiver (from other than an operating TV station on the same frequency), it can often be overcome by adjusting the receiver's **MUTE LEVEL/SQUELCH (13)**—see Adjusting the Mute Level / RFSquelch.

If receiving interference on a selected channel with the transmitter off, or if you encounter interferences in operating multiple U-800 systems simultaneously at the same location see: **"6. Selecting Group/Channel, IR Programming and Simultaneous Multichannel Operation"** for proper procedures for reprogramming system(s) for open channels.

### Receiver/Transmitter ASC™ IR Sync Manual Programming

To manually program the pre-selected Group/Channel (frequency) from the receiver to the transmitter, place the transmitter's **IR RECEPTOR SENSOR WINDOW (37, 44)** 6-12" away from the receiver's **IR WINDOW (4)**. Press the **MENU BUTTON (18)** four times to the IR Screen Display and then press the **UP BUTTON (16)** to start IR programming. The flashing **IR INDICATOR (10)** icon indicates IR transmission is in progress. When the synchronization is completed successfully (usually in less than 2 seconds), the **RF INDICATOR (8)** and the diversity A or B **INDICATOR (9)** on the receiver will display, indicating that the IR linking is completed. The **LCD DISPLAY SCREEN (5)** will show the selected channel. If the UP button is not pressed during the two seconds of active data transfer, the **IR INDICATOR (10)** will not flash, the LCD Display will revert to the main menu, the receiver will not link to the transmitter, and the transmitter's previously programmed channel remains unchanged.

### Instructions for Setup of Simultaneous Multichannel Operation

This U-800 receiver is capable of finding an open channel with its autoscanner capability. This built-in feature is a quick, convenient way to set up many wireless systems at the same location for simultaneous multichannel operation.

If you are using multiple transmitters at the same location, set up the first transmitter and leave it ON and keep 10 feet away from the receivers and 1 foot away from transmitter to transmitter. This avoids possible duplicate selection of the same channel as already selected for the first receiver. Then start the autoscanner function on the second receiver. Repeat this procedure for all receiver/transmitters to be used in your system. Finally with all the transmitters ON, perform a range walk test in the location these systems will be used in to check for potential crosstalk interference in this application.

If you are not satisfied with any of the channels scanned, repeat the autoscanner procedure for that receiver again anytime for finding another free channel.

This process can be simplified if you select channels within Factory SELECTED Groups 11 to 1A, as the channels within those groups are mutually compatible (unless there is outside interference on any of the selected frequencies). If there is any such interference in your location, select as many channels as you can using these 10 groups and then select additional open channels as needed (depending on number of systems to be operated simultaneously) from Groups 1B to 1F. As noted above all these groups will retain in memory the previously selected channels for that group for easy setup subsequently in that same location.

### Powering the Receiver

Plug the **AC/DC ADAPTER (23)** provided into the **DC INPUT JACK (20)** on the back of the receiver. Then plug the power supply into an AC outlet. (Note: Any 22V DC source with 400mA capability can also be used.) Press the **POWER SWITCH (1)** once to turn on the receiver. The **POWER ON LED (2)** and the **LCD DISPLAY (5)** will now light and the receiver is operational.

### Adjusting Antennas

The U-800 has two permanently attached, flexible-elbow **ANTENNAS (3)** for diversity reception. Unfold and rotate these antennas to operate the receiver. The optimal positions of the antennas are flared 45° out from the receiver sides and 90° from each other. For maximum range, it is always best to maintain a line-of-sight (no obstructions) between the receiver antennas and the transmitter at all times whenever possible.

### Adjusting the Mute Level/ RF Squelch

The **MUTE LEVEL/RF SQUELCH (13)** can be changed anytime during the main screen display to quiet the receiver in high noise environment condition. The control ranges are from level 0 to level 5. The level should be adjusted to a lower number for the minimum RF squelch setting at which the **RF INDICATOR (8)** will remain on while your transmitter is in normal use, up to the maximum operating range anticipated in use for your application. However, in areas of high RF activity, the squelch control may need to be adjusted to a higher number. If the transmitter is off and the receiver's signal **RF INDICATOR (8)** or the diversity **A or B INDICATOR (9)** flickers or stays on continuously, the squelch should be adjusted to a higher number to stop the flickering. Be careful not to select too high a number setting as this may reduce the operating range to below what is needed. A range walk test will help in selecting the proper level. If the range is not critical, note that a higher level (maximum squelch) setting will also yield a quieter mute function, which might be desired in certain applications. The squelch level is factory preset at maximum sensitivity and operating range (i.e. level 0 for minimum squelch level—maximum usable range).

**Note:** For easier intuitive operation, the MIN and MAX indications for this control refer to the minimum and maximum operating range settings, not to the actual mute levels selected, which are the opposite as per above.

### Keyboard/Buttons Lock Function

Use keyboard/Buttons Lock Function to lock or unlock the receiver controls, preventing accidental adjustment during use: You can push and hold **MENU BUTTON (18)**, then push **UP BUTTON (16)** to lock; push and hold **MENU BUTTON (18)**, then push **UP BUTTON (16)** again to unlock. The Keyboard/Buttons must be unlocked before you can make a selection: AUTO SCAN, Group/Channel or MUTE levels.



## Audio Level and Peak LED Indicator

The U-800 receiver has a 5 bar **AF LCD (7)** display that typically shows a few bars indicating normal level audio signal from the transmitter. Occasional flickering of the fifth AF LCD (peak level) on loud inputs to the transmitter is normal. If the AF LCD lights up full bars continuously decrease the input audio level to the transmitter or overload distortion may result.

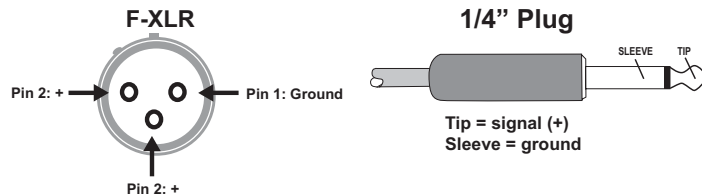
## Connecting the Audio Output

The U-800 receiver has two type of outputs available, an adjustable level 1/4" **UNBALANCED LINE OUT (19)** and a fixed level MIC out **BALANCED MIC OUT XLR JACK (22)**. The 1/4" unbalanced line out is controlled by the **VOLUME CONTROL (21)**.

For unbalanced line output connection, plug an audio cable with a 1/4" mono (Tip/Sleeve) plug into the Unbalanced Line Out jack and plug the other end into your mixing board or amplifier. Adjusting the Volume control will increase or decrease the audio level at the 1/4" Unbalanced Line Out only.

(Note: When using the UB-800 instrument transmitter system, connect the Unbalanced Line Out directly to your instrument amp or preamp. At maximum receiver volume setting, the system output is approximately +4dB higher than a direct cord-to-amp connection.)

For balanced Output connection, plug an audio cable with an XLR connector into the Balanced Mic Out XLR Jack socket and plug the other end into your mixing board or amplifier and control the audio levels from there. Both the 1/4" Unbalanced Line Out and the XLR Balanced Mic Out can be used at the same time to connect to your mixing board, effect, or amplifier. Please follow below drawing for the audio cable/connector wiring.



Your U-800 receiver is now operational and ready to use. Proceed to the following instructions for the UH-800 handheld microphone transmitter or UB-800 bodypack transmitter included with your system.

**Note:** As when making any connection, make sure the amplifier or mixing board volume is at the minimum level before plugging in the receiver to avoid possible sound system damage.

**Note:** Only one transmitter can be used with one receiver. It is not possible to use two transmitters on the same frequency and mix the output of these transmitters into one wireless receiver.

after receiver is powered off. This facilitates easy setup by enabling quick selection of stored channels for any group, i.e., selecting any group will automatically display the last channel selected for that group. See section "11. U-800 Frequency Lists" for available channels in each group. The previous group and channel used is stored in memory automatically when receiver and transmitter are turned off after operation. Selecting a different group on the receiver in subsequent use will display a different channel as previously selected for that group, however, the transmitter will need again to be sync'ed to that new frequency to complete the system setup for operation.

## Receiver ASC/IR Sync GR/CH (Frequency)

If different frequencies than previously stored in both the receiver and transmitter memories are needed, there are three ways to program the receiver and then sync the selected Group/Channel to the transmitter: One-Touch Automatic ASC™/Auto Sync receiver to transmitter, manual SCAN for Group/Channel, or manual select Group/Channel from the Factory Preset or User Selectable channel. Place the transmitter's

**IR RECEPTOR SENSOR WINDOW (37, 44)** 6-12" away from the receiver's IR WINDOW (4) before starting the following steps.

- For One-Touch channel Autoscan and Automatic ASC™/Auto Sync from the receiver to the transmitter, press the **MENU BUTTON (18)** once, wait for about 5 seconds, the receiver will start process automatically with no further user action required. A running bar in a clockwise direction on the **LCD DISPLAY (5)** shows the scanning process which normally takes about two seconds. When it finds an interference-free channel, the receiver stores the channel for use, and it will begin ASC™ sync IR download of the selected channel to the transmitter automatically.
- To manually scan the selected Group/Channel, press the **MENU BUTTON (18)** twice for AUTOSCAN menu, press **UP BUTTON (16)** once and it will start scanning. A running bar in a clockwise direction shows the scanning process, which normally takes about 2 seconds. When it finds an interference-free channel, it will display and store the frequency/channel for use. It can be rescanned again for a new frequency by pressing the UP button or pressing the MENU BUTTON twice to IR MENU (IR icon will lit up for IR function), then pressing UP BUTTON to start IR programming.
- To manually select Group/Channel press the **MENU BUTTON (18)** once for GROUP (11) selection for Factory PRESET Group 11 to 1A mode or User SELECTABLE Group 1B to 1F mode. Use the UP/DOWN Buttons to change the group. After selecting a group, press the MENU BUTTON twice for channel selection menu. Use the UP/DOWN Buttons to change the channels (frequencies) that are available in each group. [Note: for Group 11 to 1A, the CH (12) display will indicate the channel number chosen, and for Group 1B to 1F only the letter "U" and the frequency chosen will be displayed. See section "11. U-800 Frequency Lists" for available channels in each group]. After finishing channel selection, press the MENU BUTTON once or wait a few seconds for IR MENU, and then press UP BUTTON to start IR programming.

This completes the GP/CH (frequency) programming. The next section outlines the procedure for sync'ing the receiver's programmed channel to the transmitter.

### Connecting Input Audio Source Lapel/Head Mic Uses (UB-800 LT/HM)

The mini 3.5mm locking **INPUT JACK (39)** is for connecting the audio input from a lavalier/lapel Mic (LT), a Head Mic™ (HM), or an instrument (GT) cable, depending on which transmitter version is being used. Secure the connection to the cable by tightening the cable mini plug's outer ring counterclockwise. When ready to play, slide the **AUDIO MUTE ON/OFF SWITCH (40)** to the ON position to un-mute the audio. Adjust the **INPUT VOLUME LEVEL (43)** on the transmitter for suitable level.

### Instrument Use (UB-800 GT)

Secure the connection of the GT (instrument) cable by tightening the mini plug outer ring counterclockwise onto the 3.5mm locking **INPUT JACK (39)**. When ready to play, slide the **AUDIO MUTE ON/OFF SWITCH (40)** to the ON position to un-mute the audio. Adjust the volume on the receiver for one-to-one unity gain with a hardwired cord or select up to an added 4-5dB boost by adjusting the receiver volume to maximum for normal use with guitars and bass guitars.

**Note:** The audio level should be adjusted on the instrument as when using a hardwired cord.

### Programming the UB-800 to the Selected Group/Channel (frequency)

The transmitter must be programmed to the same frequency as selected for the receiver via automatic synchronization using the IR ASC™ Sync function. It cannot be programmed on the transmitter itself. See next section **“6. Selecting Group/Channel, IR Programming and Simultaneous Multichannel Operation”**.

## 6. SELECTING GROUP/CHANNEL, IR PROGRAMMING AND SIMULTANEOUS MULTICHANNEL OPERATION

**Note:** Note: The transmitter should be turned ON and ready for the IR communications with the receiver IR receptor for the following process.

**Note:** If no button is pressed within the five seconds period during a selection, the program is terminated and the process needs to be repeated.

**Note:** For normal operation, the transmitter should have the same channel as displayed on the receiver.

### Choosing Group/Channel for the System

The receiver offers a choice of 15 groups: 10 that are Factory PRESET (Group 11 to 1A) and 5 that are User SELECTABLE (Group 1B to 1F). If the Factory PRESET Group mode is chosen, only a limited numbers of channels are available in these groups. For most convenient setup, each of these groups offers from 3 to 14 channels (depending on group selected) to choose from that are factory preset for simultaneous multichannel operation compatibility and are retained in memory after the receiver is powered off. For the User SELECTABLE Group 1B-1F mode, a letter “U” will lit up on the **LCD DISPLAY (5)** instead of the **CHANNEL (12)** number as in the Factory PRESET Groups. Each User SELECTABLE Group has 800 channels to choose from either by manually selecting a channel or using the Auto-Scan in 1MHz segment increments at a time within the frequency band and they are retained in memory

### Programming the U-800 to the Selected Group/Channel (frequency)

The Receiver must be programmed for a Group/Channel (frequency) first then automatic synchronization using the IR ASC™ Sync function to the transmitter. For system set up procedures, see next section **“6. Selecting Group/Channel, IR Programming and Simultaneous Multichannel Operation”**

### UH-800 Handheld Microphone Transmitter (HT)

#### Setting up the UH-800 Transmitter

The UH-800 requires two AA alkaline or NiMH batteries to operate (do not mix types). Installing batteries by unscrewing counterclockwise the **BATTERY COVER (29)** and slide down, exposing the **BATTERY COMPARTMENT (32)**. Insert two fresh **AA BATTERIES (31)**, observing the correct polarity as marked, and screw the cover back on to the microphone. Make sure the cover is screwed clockwise completely. Fresh alkaline batteries can last up to 10 hours in use, but in order to ensure optimum performance, it is recommended that you replace the batteries after every 6-8 hours of use.

#### Powering the UH-800 Transmitter On/Off

Turn on the UH-800 by sliding the **AUDIO SWITCH (36)** to the OFF position first. Then slide the **POWER SWITCH (35)** to the ON position. The **POWER ON LED (33)** will stay on, indicating that the transmitter is now on. The **BATTERY LED (34)** will stay off, indicating usable battery strength. In the case of a dead or low battery, the low battery LED will light red continuously, indicating that the batteries should be replaced with fresh ones.

To preserve battery life, turn the transmitter off when not in use. To turn the transmitter off, slide the **RF POWER (35)** switch to the OFF position. The **POWER ON LED (33)** is not lit up, indicating the unit is off. The **MUTE ICON (6)** on the receiver should be on, muting the audio out.

At power off the transmitter will store the last settings entered and re-display them at the next power on. The default factory setting is Group 11, Channel 01.

For optimum performance, an **AUDIO INPUT LEVEL (30)** is provided. Adjust the gain by turning the control with a small screwdriver. It is recommended that the level be set at about 1/2 maximum. Experiment and set for maximum possible gain without audible distortion on the high level peaks. (Note: Turning down the gain too much can compromise the signal-to-noise and it is not recommended.)

The microphone is now ready to use. The diversity **A/B INDICATORS (9)** on the U-800 receiver should now be on, indicating a received signal from the transmitter. When ready to speak, slide the **AUDIO MUTE (36)** to the ON position. The **MUTE ICON (6)** on receiver should be off. Adjust the volume of the receiver as per the Audio Output Microphone Connection section of the above U-800 receiver instructions.

**Note:** The windscreen of the UH-800 functions as a built-in antenna. For proper operation, never remove the windscreen during use, or exchange with another type. For optimum range maintain line-of-sight between the transmitter and the receiver whenever possible. Holding the microphone tightly, bridging across the windscreen and Mic tube, will also lessen range. Hold by the Mic tube housing only for optimum operation.

**Note:** Observe care in selecting P.A. volume, transmitter location and speaker placement so that acoustic feedback (howling or screeching) will be avoided.

### Operating the UH-800 Handheld Transmitter

The **RF POWER (35)** and the **AUDIO MUTE (36)** switches have two positions for power ON/OFF and audio mute ON/OFF respectively. During normal operation with the unit powered on standby, slide the **RF POWER (35)** switch to the ON position. You will feel a slight click indicating the ON position is selected. The receiver's **RF Indicator (8)** and diversity **A/B INDICATOR (9)** should now be on, indicating a received RF signal from the transmitter. When ready to transmit audio, slide the **AUDIO MUTE (36)** to ON to un-mute. To mute, slide the switch to OFF again. Adjust the volume of the receiver per the previous section, Connecting the Audio Output.

**Note:** Avoid acoustic feedback (howling or screeching) by taking care in selecting PA volume, transmitter location and speaker placement.

### Programming the UB-800 to the Selected Group/Channel (frequency)

The transmitter must be programmed to the same frequency as selected for the receiver via automatic synchronization using the IR ASC™ Sync function. It can not be programmed on the transmitter itself. See in next section **“6. Selecting Group/Channel, IR Programming and Simultaneous Multichannel Operation”**.

### UB-800 Bodypack Microphone Transmitter (LT, HM or GT)

#### Setting up the UB-800 Transmitter

The UH-800 requires two AAA alkaline or NiMH batteries to operate (do not mix types). To install the batteries, lift the **LATCHING BATTERY DOOR (46)** and open up, exposing the **BATTERY COMPARTMENT (45)**. Insert two fresh AAA batteries according to the polarity indicated on the transmitter body. Close the battery cover back onto the microphone, making sure it is secure. Fresh alkaline batteries can provide up to 8 hours of operation, but in order to ensure optimal performance it is recommended that the batteries be replaced after 4-6 hours of use or as indicated necessary by the **BATTERY STATUS LED (41)** lit RED.

#### Powering the UB-800 Transmitter On/Off

Turn on the UB-800 by sliding the **AUDIO MUTE (40)** to the OFF position first. Then slide the **POWER ON/OFF (42)** to the ON position. The **BATTERY STATUS LED (41)** will stay on GREEN and the transmitter is now on, indicating usable battery strength. In the case of a dead or low battery, the LEDs will not go on at all or the **BATTERY STATUS LED (41)** will stay on RED continuously, indicating that the batteries should be replaced with fresh ones.

To preserve battery life, turn the transmitter off when not in use. To turn the transmitter off, slide the **POWER ON/OFF (42)** switch to the OFF position. The **BATTERY STATUS LED (41)** is not lit up, indicating the unit is off. The **MUTE ICON (6)** on receiver should be on, muting the audio out.

At power off the transmitter will store the last settings entered and re-display them at the next power on. The default factory setting is Group 11, Channel 01.

For optimum performance, an INPUT VOLUME LEVEL (43) is provided (for LT/HM input mode operation only). Adjust the gain by turning the control with a small screwdriver. It is recommended that the level be set at about 1/2 maximum. Experiment and set for maximum possible gain without audible distortion on the high level peaks. (Note: Turning down the gain too much can compromise the signal-to-noise and it is not recommended.)

The microphone is now ready to use. The diversity **A or B INDICATORS (9)** on the U-800 receiver should now be lit, indicating a received signal from the transmitter. When ready to speak, slide the **AUDIO MUTE ON/OFF SWITCH (40)** to the ON position. The **MUTE ICON (6)** on receiver should be off. Adjust the volume of the receiver as per the Audio Output Microphone Connection section of the above U-800 receiver instructions.

**Note:** The transmitter has a removable ANTENNA (38). For best operating range, it should be attached (screwed on tightly counterclockwise, or exchange with another type.). For best transmitting power during use, make sure it is not blocked. For optimum range maintain line-of-sight (no obstructions) between the transmitter and the receiver whenever possible. A walk test before use will determine the operating range in your application.

**Note:** Observe care in selecting P.A. volume, transmitter location and speaker placement so that acoustic feedback (howling or screeching) will be avoided.

### Operating the UB-800 Transmitter

The **POWER ON/OFF SWITCH (42)** and the **AUDIO MUTE ON/OFF SWITCH (41)** switches have two positions for power ON/OFF and audio mute ON/Standby respectively. During normal operation with the unit powered on standby, slide the **RF POWER (35)** switch to the ON position. You will feel a slight click indicating the ON position is selected. The receiver's **RF INDICATOR (8)** and diversity **A/B INDICATOR (9)** should now be on, indicating a received RF signal from the transmitter. When ready to transmit audio, slide the **AUDIO MUTE (36)** to ON to un-mute. To mute, slide the switch to OFF again. Adjust the volume of the receiver per the previous section, Connecting the Audio Output.

**Note:** Avoid acoustic feedback (howling or screeching) by taking care in selecting PA volume, transmitter location and speaker placement.

#### FCC STATEMENT

1. 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.
  - (2) This device must accept any interference received, including interference that may cause undesired operation.
2. 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.

#### RF warning statement:

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.