



MANUAL AND USER GUIDE

HEARING HELPER™ Tour Guide System Wireless, Portable FM Listening System

Model TGS PRO 720
Model TGS PRO MULTI

Transmitter Model PFM T32
Optional Receiver Models PPA R35, PPA R35-8

MAN 122E

HEARING HELPER™ FM TOUR GUIDE SYSTEM, MODELS TGS PRO 720, TGS PRO MULTI INSTALLATION GUIDE & USER MANUAL

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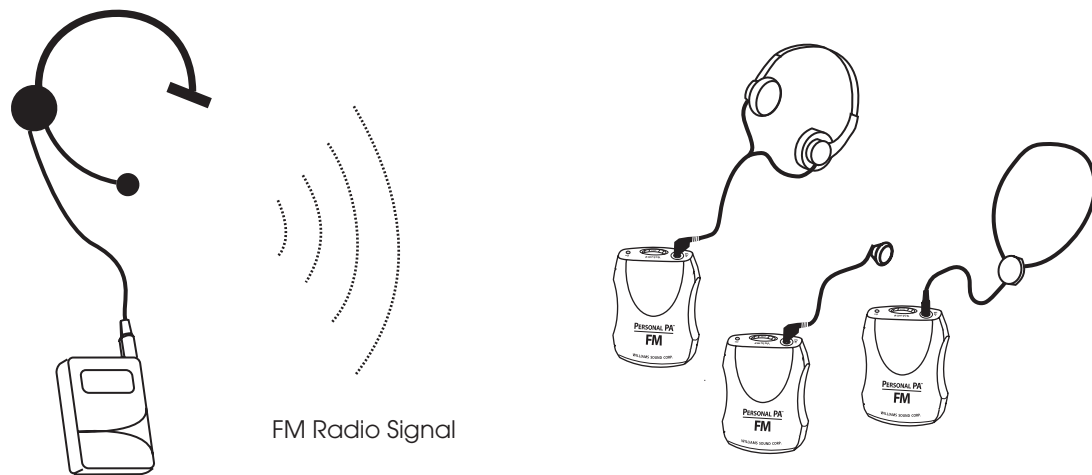
SYSTEM OVERVIEW

The HEARING HELPER™ Tour Guide System is a portable, high-performance, wireless system composed of the PFM T32 Transmitter and PPA R35 or R35-8 Receivers and designed for use in guided tour applications. The system allows one-way transmission of a tour guide's voice to group members using an FM radio signal. Using the system helps group members overcome background noise and distance from the person speaking.

The HEARING HELPER™ System can be used for large or small tour groups and in noisy or quiet environments.

Your HEARING HELPER™ Tour Guide System has two principal parts: the transmitter and the receiver. Much like a miniature radio station, the transmitter and microphone pick up the sounds you want to hear and broadcast them over an FM radio signal. The receivers and headphones are used to pick up the broadcast up to 100 meters away.

FIG 1: HOW THE TOUR GUIDE SYSTEM WORKS



Tour Guide Uses the Body Pack Transmitter With Microphone

Listeners use Personal Receivers with Headphones, Earphones, Or Neckloop

The tour guide wears the body-pack transmitter and headset microphone. The guide's voice is broadcast as an FM radio signal over a distance of up to 100 meters. Listeners use the pocket receiver and headphone to hear the speaker's voice directly, with reduced background noise. A neckloop telecoil coupler allows the system to be used with telecoil (T-Switch) equipped hearing aids, at somewhat reduced range.

To avoid difficulties, please read through these instructions as you begin to use the system. Then save them for questions that arise as you continue to use your system.

If you have problems with the HEARING HELPER™ Tour Guide System, don't hesitate to call Williams Sound at 1-800-843-3544 or +1 952 943 2252.

SYSTEM COMPONENTS

- ▶ Body Pack Transmitter (PFM T32) with (2) AA batteries (BAT 001)
- ▶ Noise-cancelling headband microphone (MIC 086)
- ▶ (10) Receivers (PPA R35 or R35-8) w/batteries (BAT 001)
- ▶ Instruction Manual (MAN 122)
- ▶ System carry case (CCS 030 S)

THE PFM T32 TRANSMITTER

The PFM Transmitter is a battery-powered body-pack model used with a microphone to pick up the tour guide's voice. The transmitter produces an FM radio signal to broadcast the tour guide's voice to the receiver units. A simple slide switch on top of the transmitter turns the unit on or off. The PFM Transmitter operates on two AA non-rechargeable alkaline batteries (BAT 001), or two AA rechargeable NiMH batteries (BAT 026).

MICROPHONES

A noise-cancelling, headband microphone (MIC 086) is the standard microphone. The noise-cancelling microphone helps to reduce background sounds in noisy environments. The microphone plugs into the "MIC" jack on top of the Transmitter. The microphone should be positioned directly in front of the tour guide's mouth to achieve an optimal signal to noise ratio and so that head movement does not affect the loudness of the signal. The microphone cord acts as the transmitting antenna.

Optional Microphones

An optional Hearing Protector Headset Microphone (MIC 036) is also available for extremely high noise environments. It features ear muffs that completely cover both ears and provides 24 dB noise isolation for hearing protection.

An optional Lapel Clip Microphone can be used in quieter environments like museums or galleries. The MIC 090 has an omnidirectional pick-up pattern.

A directional hand-held microphone (MIC 027) is also available for tour guides who prefer to hold the microphone.

THE PPA R35 RECEIVER

The PPA R35 Receiver is a battery-powered body-pack receiver used with a headphone to hear the signal produced by the transmitter. The receiver is pre-tuned to the transmitter and has a user-adjustable volume on/off control, LED power and low battery indicator. The headphone plugs into the "EAR" jack on top of the Receiver. The PPA R35 Receiver operates on two AA non-rechargeable alkaline batteries (BAT 001), or two AA rechargeable NiMH batteries (BAT 026).

OPTIONAL HEADPHONES AND EARPHONES

The optional HED 021 Lightweight Headphone is the standard headset for the Tour Guide System. It offers excellent sound quality and wearing comfort. The foam earpads may be removed and washed in a mild detergent, rinsed thoroughly, and air dried.

The headphone plugs into the “EAR” jack on top of the Receiver. The headphones are wired with a mono plug. If a stereo headphone is substituted, it will only work on one side of the headpiece.

The HED 008 is a heavy-duty, hearing-protector headset. The HED 008 earmuffs completely cover the ears and provide 24 dB noise isolation for hearing protection in high noise environments.

The EAR 022 Surround Earphone offers excellent sound quality in a unique style that hangs on the ear. It is easy to keep clean since the earphone does not enter the ear. It is not recommended for high noise environments.

The EAR 013 and EAR 014 are single and dual Mini Earphones. The earbud-style features a foam covering that fits in the outer ear. The foam pads can be removed for cleaning or replacement. Replacement pads (EAR 015-10) are available.

The stylish HED 026 rear-wear headphone offers excellent sound quality; it rests comfortably over the ears and wraps around the back of the head for a less obtrusive, relaxed fit.

For order information, contact Williams Sound at 1-800-843-3544.

FIG. 2: EARPHONE / HEADPHONE OPTIONS



SAFETY INFORMATION

HEARING SAFETY



CAUTION!

This product is designed to amplify sounds to a high volume level which could potentially cause hearing damage if used improperly. **To protect your hearing and the hearing of others:**

1. Make sure the volume is turned down before putting on the earphone or headphone. Then adjust the volume to a comfortable level.
2. Set the volume level at the minimum setting that you need to hear.
3. If you experience feedback (a squealing or howling sound), reduce the volume setting and move the microphone away from the earphone or headphone.
4. Do not allow children **or other unauthorized persons** access to this product.

BATTERY SAFETY AND DISPOSAL



CAUTION!

This product is supplied with disposable Alkaline batteries. Do not attempt to recharge disposable batteries, which may explode, release dangerous chemicals, cause burns or other serious harm to the user or product.

PACEMAKER SAFETY:



CAUTION!

1. **Before** using this product with a pacemaker or other medical device, consult your physician or the manufacturer of your pacemaker or other medical device.
2. If you have a pacemaker or other medical device, make sure that you are using this product in accordance with safety guidelines established by your physician or the pacemaker manufacturer.

RECYCLING INSTRUCTIONS

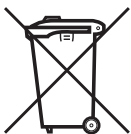
BATTERY SAFETY AND DISPOSAL



Help Williams Sound protect the environment! Please take the time to dispose of your equipment properly.

Product Recycling for Customers in the European Union:

Please do NOT dispose of your Williams Sound equipment in the household trash. Please take the equipment to a electronics recycling center; OR return the product to the factory for proper disposal.



Battery Recycling for Customers in the European Union:

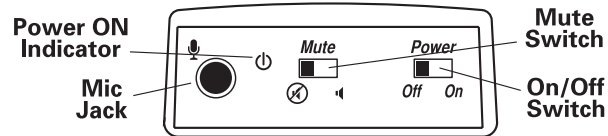
Please do NOT dispose of used batteries in the household trash. Please take the batteries to a retail or community collection point for recycling.

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USING THE PFM T32 TRANSMITTER

1. Install two (2) AA batteries. If you're using rechargeable batteries, they must be charged before using.
2. Plug the microphone cord into the "Mic" jack on top of the transmitter.

FIG. 3: T32 TOP VIEW



3. Place the transmitter in the belt clip case provided.
4. Slide the Power Switch on top of the transmitter to "On." The Power ON LED indicator should illuminate Red.
5. The microphone should be placed as close to the speaker's mouth as is practical. For lapel mics, attach the microphone to a collar, lapel, or tie.
6. When you are ready to speak, turn the Mic Mute Switch (speaker icon) to the "On" position. When you are done speaking, mute the mic by turning the Mute Switch to the "Off" position (speaker icon with a line through it).

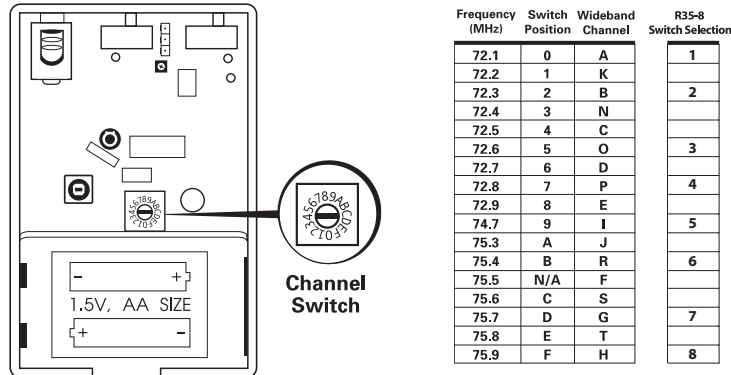
The transmitter can be placed in a pants pocket, or clipped onto a belt or waistband.

NOTE ON THE TRANSMITTER ANTENNA:

The microphone cord is the transmitting antenna. Do not bunch up the cord or wrap it around the transmitter. For maximum range, the cord should hang as straight as possible.

CHANGING THE PFM T32 FREQUENCY

FIG. 4: PFM T32 FREQUENCY CHANGE



By default, the T32's frequency is to set 75.7 MHz (Channel G). If you experience FM interference, or if you need to match a receiver's frequency, it may be necessary to adjust the frequency on the T32.

Instructions:

1. Open the battery compartment using a coin in the slot in the bottom of the transmitter. Remove the batteries.
2. Lift the battery compartment door up and pull to your left to expose the circuit board.
3. Refer to **FIG. 4** to locate the Channel Switch.
4. Use a small screwdriver to rotate the Channel Switch to correspond with the desired operating frequency. Choose between 16 standard channels. Refer to the Channel Selection Chart in **FIG. 4** for available channels.
5. Reinstall the batteries, then close the back of the transmitter.
6. Plug the microphone in and turn the transmitter on to provide a tuning signal for the receivers.

Important: Make sure all receivers being used match the frequency of the transmitter. Refer to the receiver's instruction manual for frequency change instructions.

ADVANCED FEATURES ON THE PFM T32

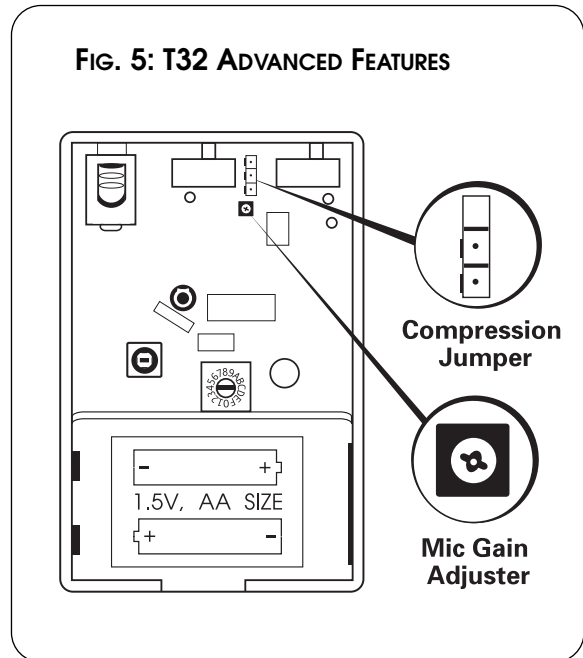
Gain Control Adjustment

If necessary, the microphone gain control on the T32 can be increased or decreased to meet the demands of specific listening applications.

Instructions:

1. Open the battery compartment using a coin in the slot in the bottom of the transmitter. Remove the batteries.
2. Lift the battery compartment door up and pull to your left to expose the circuit board.
3. Refer to **FIG. 5** to locate the microphone gain control.
4. Using a small screwdriver, turn the gain control fully counterclockwise to *reduce* the gain. Turn the gain control fully clockwise to *increase* the gain.
5. Close the back of the case and battery door.

FIG. 5: T32 ADVANCED FEATURES



COMPRESSION ADJUSTMENT

By default, the T32 transmitter compression jumper is set to “Off” for normal operation, or 1:1 compression. For hearing assistance applications, the compression jumper can be set to “On” for 2:1 compression.

Instructions:

1. Open the battery compartment using a coin in the slot in the bottom of the transmitter. Remove the batteries.
2. Lift the battery compartment door up and pull to your left to expose the circuit board.
3. Refer to **FIG. 5** to locate the Compression Selector.
4. Gently remove the jumper from the circuit board by pulling it up and away from the unit. You will see three exposed “pins.”



To turn compression **“On”** (2:1 Compression): Press jumper on to the **top two** pin locations as shown on left.

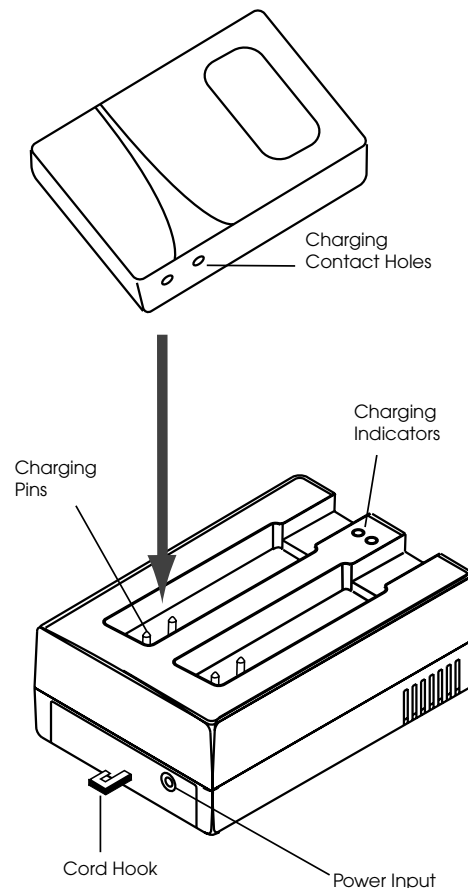


To turn compression **“Off”** (1:1 Compression): Press jumper on to the **bottom two** pin locations as shown on left.

5. Close the back of the case and battery door.

FIG. 6: USING THE OPTIONAL CHG 200A BATTERY CHARGER TO CHARGE THE PFM T32 TRANSMITTER

- Step 1: Plug the CHG 200's power supply into the Power Input on the charger's side and a standard AC wall outlet.
- Step 2: Route the power cord around the Cord Hook (see FIG. at right). This will minimize strain on the cord and jack and insure that the power cord is not detached during charging.
- Step 3: Make sure the transmitters to be charged are turned OFF.
- Step 4: Place the transmitters in the slots so that the CHG 200's Charging Pins and receiver's side panel contacts are coupled. Make sure that the charging contact holes line up with the charging pins. The transmitters should drop easily into the slots. **DO NOT FORCE THEM IN BACKWARDS.**
- Step 5: The Charging Indicators will light, indicating that charging is in process.
- It takes 14–16 hours to fully charge the batteries. Remove the transmitters when charging is completed.



FURTHER SUGGESTIONS

Receivers should always be turned OFF while charging.
It's best to allow the batteries to fully discharge before charging.

If the batteries are near end of life and the LED turns off while the receiver is operating, this is an indication to change or recharge your batteries. Approximately one hour of battery life remains.

Rechargeable batteries will need to be replaced after 1–2 years of use.

!! WARNING !! **DO NOT ATTEMPT TO RECHARGE DISPOSABLE BATTERIES!**

The batteries may heat up and burst, causing possible injury and damage to the equipment.

Avoid shorting the plus and minus battery terminals together with metal objects. Battery damage and burns can result!

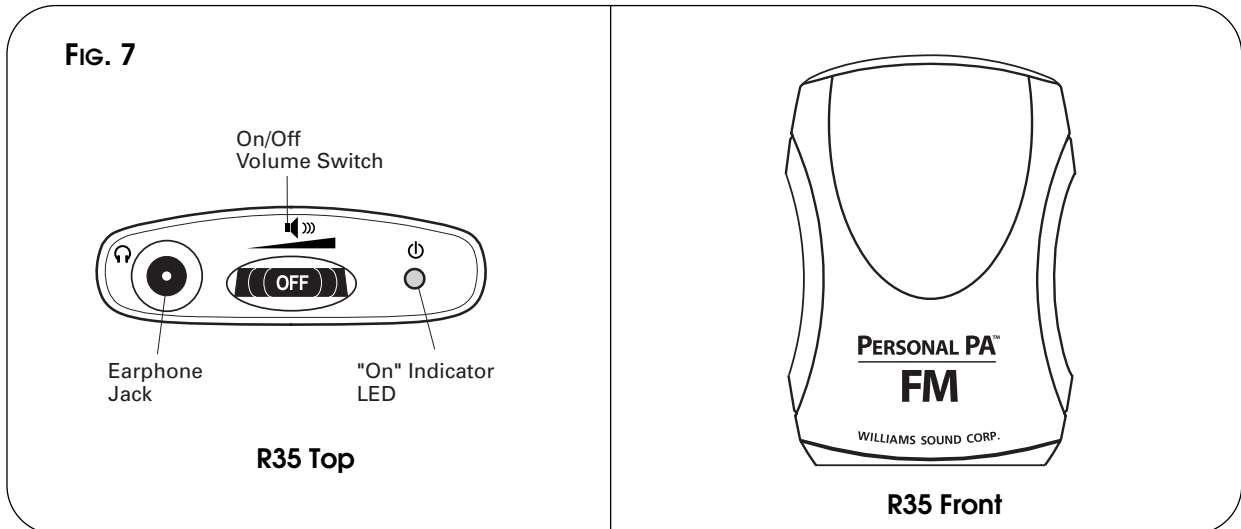
Use only Williams Sound supplied chargers and batteries.

WIDEBAND FM RECEIVERS (OPTIONAL)

RECEIVER MODEL PPA R35

The PPA R35 is a single-channel receiver operating on the 72-76 MHz bandwidth. It features volume on/off control, LED power and low battery indicator, and an earphone jack (see Fig. 7).

Instructions:



BATTERY INSTALLATION

Install two (2) AA alkaline or NiMH rechargeable batteries. Open the battery compartment by lifting the tab on the back of the receiver with a finger. To remove depleted batteries, pull up on the fabric strip. **IMPORTANT:** If Alkaline (non-rechargeable) batteries are being installed, slide the battery selection switch above the battery compartment to the "Alkaline" position. If installing NiMH (or rechargeable) batteries, slide the battery selection switch to the "NiMH" position. Press the batteries into place over the fabric strip. Be sure to observe proper polarity (+/-). Damage due to improper battery installation may void the warranty on the product. Close the battery door. When the sound becomes weak or distorted, replace or recharge the batteries.

NOTE: The ON indicator will illuminate RED to indicate low battery.

CONNECTING EARPHONES

Plug the earphone into the "EAR" jack on the top of the unit. Only monophonic earphones will operate properly. If stereo headphones are used, sound will be heard only in one side. Williams Sound evaluates each earphone and headphone used with the PPA R35 receiver; we can only assure optimum performance when Williams Sound earphones and headphones are used.

OPERATING THE RECEIVER

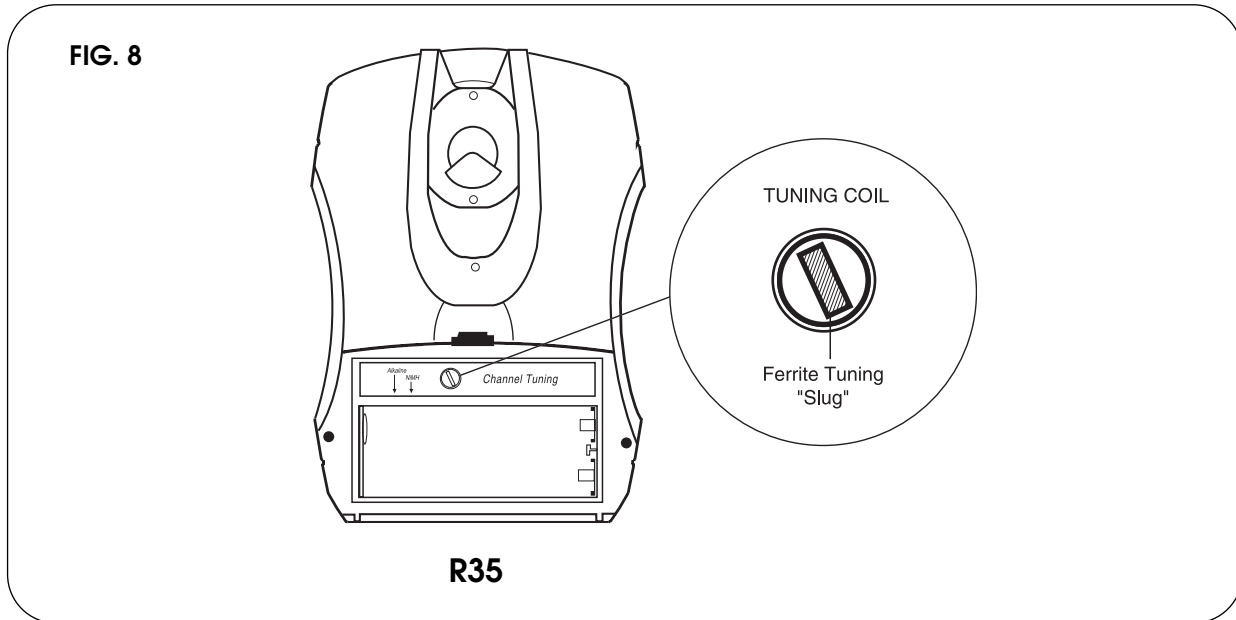
NOTE: Check to make sure the T35 transmitter is on and receiving good audio input. Also, make sure the T35 is operating in Wideband mode, and transmitting on the same frequency as the receiver. If the R35 receiver needs to be re-tuned (most Williams Sound receivers are set at the factory at 72.9 MHz), see page 12 for *frequency change instructions*.

Turn the receiver on by rotating the volume control knob clockwise. The receiver's ON indicator should illuminate green. Adjust the volume control for your comfort. To turn the receiver off, rotate the volume control knob counter-clockwise until it clicks off. The receiver's ON indicator should go dark.

To maximize battery life, remember to turn the receiver off when it's not in use.

PPA R35 RECEIVER FREQUENCY CHANGE INSTRUCTIONS

Selecting a frequency for the R35 receiver requires an adjustment to the internal tuning coil(s). See FIG. 8 to locate the coil to be adjusted. A plastic tuning wrench (PLT 005), will be needed to adjust these receiver tuning coil.



Most R35 single channel Receivers are set at the factory to 72.9 MHz.

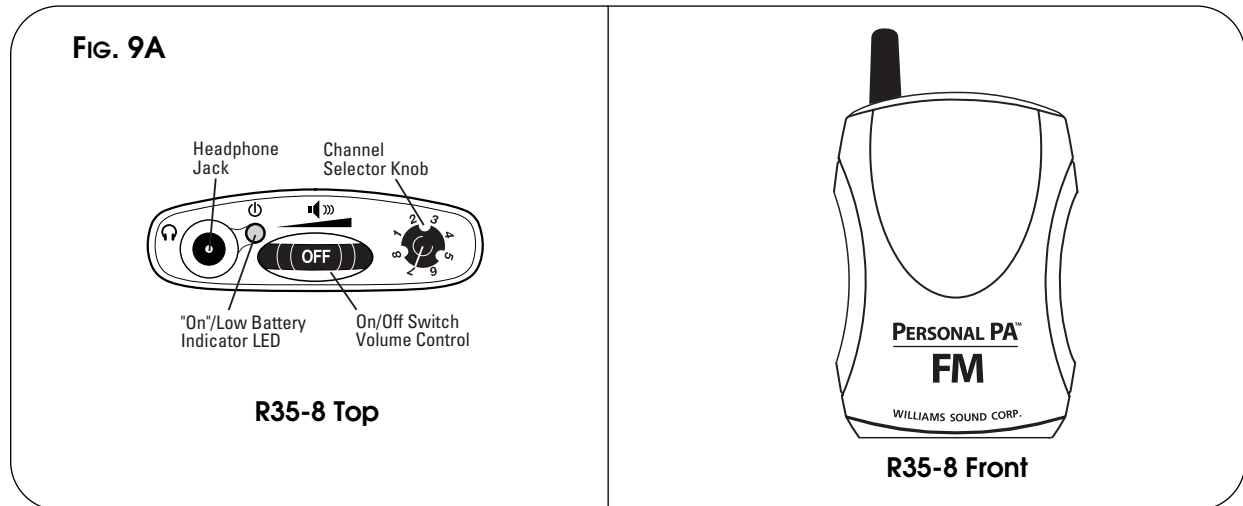
The Receiver must be tuned with a weak and somewhat noisy signal. If tuned too close to the transmitter, with a strong signal, the most accurate tuning of the receiver is not possible.

To Change the Frequency to Another Channel:

- STEP 1:** Set the transmitter to the channel desired and remove the antenna.
- STEP 2:** Connect an audio source to the transmitter such as a CD or cassette player or microphone.
- STEP 3:** Move the receiver about 25 feet away from the transmitter to set the tuning.
- STEP 4:** Open the battery compartment, then pull the battery door to the left like a book to open the back of the receiver.
- STEP 5:** Locate the Tuning Coil (see FIG. 8). Each tuning coil is a small, square, shiny metal can with a screwdriver slot in a tuning slug in the top center. The Tuning Slug is usually black or gray.
- STEP 6:** With an earphone or headphone plugged into the Ear Jack, turn the volume control to a comfortable level, and listen for the transmitted signal.
- STEP 7:** Gently put the tip of the tuning wrench into the slot in the tuning slug. Be careful not to push hard on the slug so as not to damage the threads in the coil, and do not screw it down more than 3 turns into the coil.
- STEP 8:** Turn the tuning slug in a counterclockwise direction about two turns. Then, slowly turn the tuning slug in the clockwise direction until the signal is heard. There may be two signal points heard. The one which is received first is a false response. Be sure to continue tuning slightly further to the correct point, which will be much louder. Tune back and forth to find the center of the point of best response to the program being heard.

RECEIVER MODEL PPA R35-8

The PPA R35-8 is an eight channel receiver, operating on 72-76 MHz bandwidth. It features a channel selection knob, volume on/off control, LED power and low battery indicator, and an earphone jack (See FIG. 9A). Instructions:



BATTERY INSTALLATION

Install two (2) AA alkaline or NiMH rechargeable batteries. Open the battery compartment by lifting the tab on the back of the receiver with a finger. To remove depleted batteries, pull up on the fabric strip. **IMPORTANT:** If Alkaline (non-rechargeable) batteries are being installed, slide the battery selection switch above the battery compartment to the “Alkaline” position. If installing NiMH (or rechargeable) batteries, slide the battery selection switch to the “NiMH” position. Press the batteries into place over the fabric strip. Be sure to observe proper polarity (+/-). Damage due to improper battery installation may void the warranty on the product. Close the battery door. When the sound becomes weak or distorted, replace or recharge the batteries. **NOTE:** The “ON” indicator on top of the unit will flash to indicate low battery.

CONNECTING EARPHONES

Plug the earphone into the “EAR” jack on the top of the unit. Only monophonic earphones will operate properly. If stereo headphones are used, sound will be heard only in one side. Williams Sound evaluates each earphone and headphone used with the PPA R35-8 receiver; we can only assure optimum performance when Williams Sound earphones and headphones are used.

OPERATING THE RECEIVER

Plug the earphone or headphone into the Headphone jack on the receiver’s control panel. Turn the receiver on by rotating the Volume control knob. The ON indicator should illuminate RED. Refer to the channel selection chart in FIG. 9B to choose from 8 standard frequencies. Turn the channel selector knob to the desired channel. **IMPORTANT: Make sure the receiver frequency matches the transmitter frequency!** Adjust the volume to a comfortable listening level. To turn the receiver off, rotate the Volume control knob to the left until it clicks off. The ON indicator should not be lit. To prolong the battery life of the unit, turn the receiver off when it is not in use.

FIG. 9B

Frequency (MHz)	Wideband Channel	R35-8 Switch Selection
72.1	A	1
72.2	K	
72.3	B	2
72.4	N	
72.5	C	
72.6	O	3
72.7	D	
72.8	P	4
72.9	E	
74.7	I	5
75.3	J	
75.4	R	6
75.5	F	
75.6	S	
75.7	G	7
75.8	T	
75.9	H	8

BELT CLIP INSTALLATION FOR PPA R35 AND PPA R35-8

TO INSTALL:

Position the belt clip on the rear of the R-35 and R35-8 receivers as shown in FIG. 10A. Turn the belt clip 180° left or right as shown in FIG. 10B. The belt clip is now installed and ready for use.

TO REMOVE:

Turn the belt clip 180° so the edge points toward the top of the unit as shown in FIG. 10B. Gently pull the belt clip away from the unit to remove.

FIG. 10A

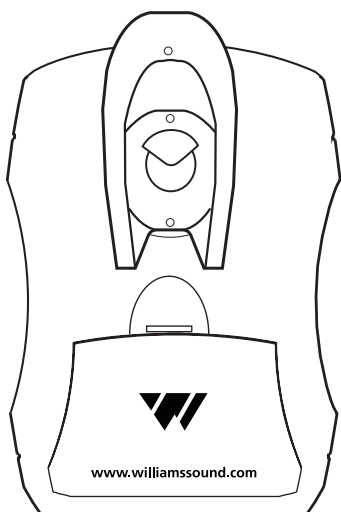
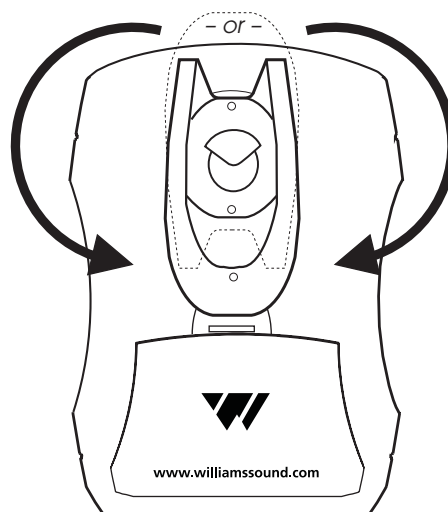


FIG. 10B



EARPAD CLEANING FOR PPA R35 AND PPA R35-8

Do not immerse the earphone in water or other cleaning agent. Foam pads may be removed and washed with a mild laundry soap solution, rinsed thoroughly, and air dried. You may also opt to purchase new foam pads.

Call Customer Service for ordering information:

1-800-843-3544 or +1 952 943 2252

USING THE OPTIONAL CHG 3512 BATTERY CHARGER TO CHARGE THE PPA R35 RECEIVER

Before inserting the PPA R35 receivers into the charger, be sure that each receiver has NiMH batteries installed. Also, check to make sure the switch setting in the PPA R35 battery compartment indicates the “NiMH” setting.

Step 1: Plug the TFP 035 power supply into the AC wall outlet. Plug the power connector into the rear of the CHG 3512 unit (See FIG. 11a).

Step 2: Insert the PPA R35 receivers into the charging slots. The receivers must be placed in the charger facing forward to make contact with charger contacts (See FIG. 11b). A red LED indicator will illuminate when charging has started.

Important: Please refer to the CHG 3512 (MAN 116) instruction sheet for charging time and detailed setup instructions.

FIG. 11A:

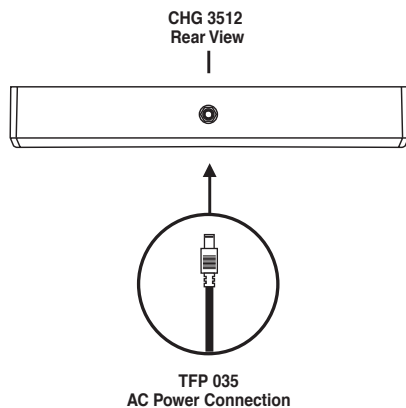
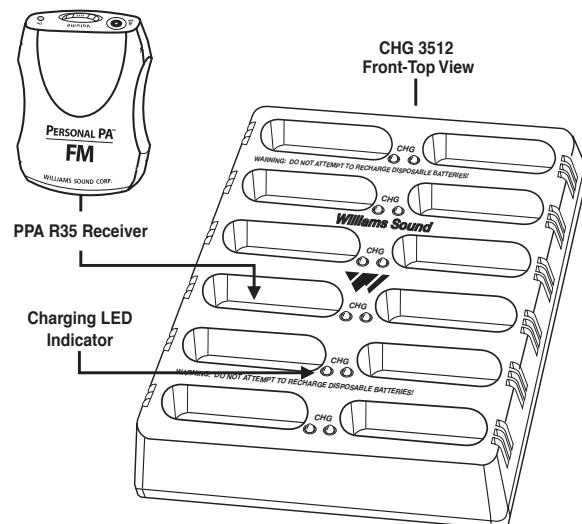


FIG. 11B:



SUGGESTIONS FOR RECEIVER MANAGEMENT

Different types of facilities use varying approaches to receiver management and earphone sanitation. Below are some options that customers have used successfully.

1. Regular users purchase or are given their own receiver and take care of their own batteries and earphones.
2. The facility labels a receiver and earphone for each regular user. The facility maintains the units.
3. Ushers issue receivers to people who request them.
Earphones are sanitized after use. Foam ear cushions can be replaced or washed with a mild detergent, rinsed thoroughly and air-dried. The EAR 022 Surround Earphone can be sanitized with an alcohol pad. The receivers can be stored in a multiple compartment storage case with a credit card or driver's license left as collateral for the receiver.
4. Regular users purchase their own earphone or headphone and bring them to use with receivers at the facility.

RECEIVER BATTERY INFORMATION (ALL RECEIVER MODELS)

If the receiver sound becomes weak or distorted, replace the battery. The indicator light may remain on, even with a battery that is weak. Do not leave dead batteries in the receivers. The chart below shows typical battery life with Williams Sound's 72-76 MHz receivers:

Model	Battery Life	Battery Type
R35	Alkaline AA Batteries (BAT 001)	100 hours
	Rechargeable AA NiMH (BAT 026)	56 hours
R35-8	Alkaline AA Batteries (BAT 001)	50 hours
	Rechargeable AA NiMH (BAT 026)	32 hours

BATTERY CHARGER INFORMATION

IMPORTANT: Batteries installed in the receiver may only be charged if they are NiMH or Ni-Cad Batteries, and only if a Williams Sound charger is used. Make sure the receiver is turned off during charging! Use the chart below to select a charger for your Williams Sound 72-76 MHz receiver.

Model	Charger
R35 and R35-8	Recharge batteries only with the CHG 3512 Multi-Charger unit. For additional charging instructions, refer to the manual included with the charger unit.

!! IMPORTANT WARNINGS !!

**DO NOT ATTEMPT TO RECHARGE ZINC CARBON ("HEAVY DUTY"), ALKALINE, OR LITHIUM BATTERIES!
DO NOT ATTEMPT TO RECHARGE DISPOSABLE BATTERIES!**

These batteries may heat up and explode, causing possible injury and damage to the equipment. Avoid shorting the plus and minus battery terminals together with metal objects. Battery damage and burns can result! Use only Williams Sound supplied chargers and rechargeable batteries!

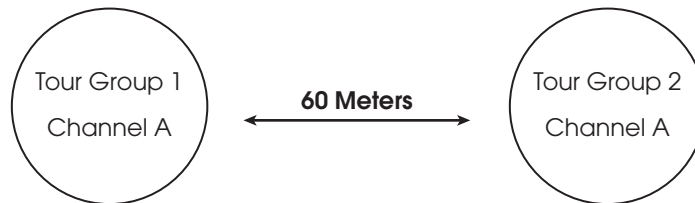
HINTS FOR USING THE SYSTEM

Normal operating distance between the transmitter and receiver is about 30 meters. The operating range will vary in different buildings and surroundings. In some locations, the signal may momentarily disappear. This is called a “drop-out” and is due to reflection and cancellation of the radio signal. Moving a few feet will restore the signal.

Keep the transmitter and receiver units at least a meter apart. If the transmitter gets too close to a receiver, it can overload the receiver, causing noisy reception or blocking of the signal.

Do not use more than one transmitter on the same channel (frequency) at the same time unless they are physically separated by more than 60 meters. Operating more than one transmitter on the same channel at the same time in the same place will result in interference.

FIG. 12: TOUR GUIDE GROUP SEPARATION



USING MULTIPLE SYSTEMS FOR MULTIPLE GROUPS:

For multiple tour groups within the same facility, multiple Tour Guide Systems may be operated on the same channel at the same time by maintaining physical separation of 60 meters between groups. The physical separation of groups takes advantage of the FM capture effect which causes receivers to lock onto the closest transmitter.

IN CASE OF DIFFICULTY

If your Tour Guide System is not working, check the following:

1. Read through the manual and user guide carefully to verify proper setup and installation of your system.
2. Make sure the batteries are fresh or completely charged and that the “plus” and “minus” terminals are installed correctly.
3. If the rechargeable batteries will only work for a short period of time (less than 1 hour) even after they are fully charged, they must be regenerated. Leave them in the receiver or transmitter with the unit turned on for 5 - 6 hours. Then turn receiver or transmitter off, place it in the charger, and fully charge the receiver and transmitter (refer to charger instruction manual). This should restore normal battery life. Rechargeable batteries will gradually lose their capacity over time and should be replaced every year.
4. Make sure the *microphone* is plugged into the PFM T32 Transmitter and the *headphone* is plugged into the PPA R35 or R35-8 Receiver.
5. Move the transmitter and receiver closer together. You may be out of range. When using the system indoors, it's normal for the signal to momentarily disappear in certain locations. This is called a “drop-out.” Moving a few feet will restore the signal.
6. Do not try to use more than one transmitter on the same channel in close proximity to each other. **MORE THAN ONE TRANSMITTER ON THE SAME CHANNEL WILL RESULT IN INTERFERENCE IF THEY ARE CLOSE TOGETHER.** Keep the transmitters at least 60 meters apart or use separate channels for each system used.
7. If you are still hearing interference on the receivers, turn the transmitter off and listen with a receiver. If you hear the interference with the transmitter off, you need to change to a clear channel. Call your Williams Sound representative at 1-800-843-3544 or +1 952 943 2252 for details.

NOTICE

Williams Sound Corp. assumes no liability for improper use or operation of this equipment. The user is cautioned to operate the volume controls at the lowest acceptable level, and in a manner that will not cause damage to hearing. Ear pieces and accessories should be worn using good judgement and for their intended purpose.

Users are cautioned that changes or modifications not expressly approved by Williams Sound Corp. could void the user's authority to operate the equipment.

LIMITED WARRANTY

Williams Sound products are engineered, designed, and manufactured under carefully controlled conditions to provide you with many years of reliable service. Williams Sound warrants the HEARING HELPER™ Tour Guide System against defects in materials and workmanship for FIVE (5) years. During the first five years from the purchase date, we will promptly repair or replace the HEARING HELPER™ Tour Guide System.

Microphones, earphones, headphones, batteries, cables, carry cases, and all other accessory products carry a 90-day warranty.

WILLIAMS SOUND HAS NO CONTROL OVER THE CONDITIONS UNDER WHICH THIS PRODUCT IS USED. WILLIAMS SOUND, THEREFORE, DISCLAIMS ALL WARRANTIES NOT SET FORTH ABOVE, BOTH EXPRESS AND IMPLIED, WITH RESPECT TO THE HEARING HELPER™ TOUR GUIDE SYSTEM, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WILLIAMS SOUND SHALL NOT BE LIABLE TO ANY PERSON OR ENTITY FOR ANY MEDICAL EXPENSES OR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY ANY USE, DEFECT, FAILURE OR MALFUNCTIONING OF THE PRODUCT, WHETHER A CLAIM FOR SUCH DAMAGES IS BASED UPON WARRANTY, CONTRACT, TORT OR OTHERWISE, THE SOLE REMEDY FOR ANY DEFECT, FAILURE OR MALFUNCTION OF THE PRODUCTS REPLACEMENT OF THE PRODUCT. NO PERSON HAS ANY AUTHORITY TO BIND WILLIAMS SOUND TO ANY REPRESENTATION OR WARRANTY WITH RESPECT TO THE HEARING HELPER™ TOUR GUIDE SYSTEM. UNAUTHORIZED REPAIRS OR MODIFICATIONS WILL VOID THE WARRANTY.

The exclusions and limitations set out above are not intended to, and should not be construed so as to contravene mandatory provisions of applicable law. If any part or term of this Disclaimer of Warranty is held to be illegal, unenforceable, or in conflict with applicable law by a court of competent jurisdiction, the validity of the remaining portions of this Disclaimer of Warranty shall not be affected, and all rights and obligations shall be construed and enforced as if this Limited Warranty did not contain the particular part or term held to be invalid.

If you experience difficulty with your system, call Toll-Free for customer assistance:

1-800-843-3544 (U.S.A.) or +1 952 943 2252 (Outside the U.S.A.)

If it is necessary to return the system for service, your Customer Service Representative will give you a Return Authorization Number (RA) and shipping instructions.

Pack the system carefully and send it to:

Williams Sound Corp.
Attn: Repair Dept.
10321 West 70th Street
Eden Prairie, MN 55344 USA

Your warranty becomes effective the date you purchase your system. Your returned warranty card is our way of knowing when your warranty begins. It also gives us important information about your system including the serial number. This information will help us serve you better in the future. Please take a moment to complete and mail the attached card. Thank you.

SYSTEM SPECIFICATIONS

FM TRANSMITTER, MODEL PFM T32

Dimensions:	3-5/8" L x 2-3/8" W x 7/8" H (92.1 mm x 60.3 mm x 22.2 mm)
Weight:	4.4 oz (125 g) with battery
Color:	Royal blue, shatter-resistant polypropylene
Battery Type:	Two (2) AA 1.5 V non-rechargeable Alkaline batteries (BAT 001), 70 mA nominal current drain, 30 hours approx. life (OR) Two (2) AA 1.5 V NiMH rechargeable batteries (BAT 026), 70 mA nominal current drain, 20 hours per charge approx., recharges in 14–16 hours, uses CHG 200 or CHG 1600 Charger
Operating Freq's:	Selectable, 16 channels, 72.1 – 75.9 MHz*, internal rotary switch
Stability:	± .005%, frequency synthesized, crystal reference, PLL
Modulation:	Wide-band FM, 75 kHz pk, 75 µS pre-emphasis
RF Output:	8000 µV/m at 30 m, max., 40 mW typical
Freq Response:	200 to 10 kHz, + 3 dB at 1% max. THD
Signal-to-Noise Ratio:	55 - 60 dB, with R31 or R32 Receiver
Microphone Gain Control:	45 dB maximum, 18 dB minimum range
Transmit Antenna:	Integral with 39" microphone cord
Microphone:	Electret type, 39" cord, 3.5 mm mono phone plug
Controls:	On/Off switch, slide-type; Microphone Mute Switch, slide-type; Compression Selector 1:1 or 2:1 with internal selectable jumper
Mic Connector:	3.5 mm mono phone jack
Compatible Receivers:	PPA R35, PPA R35-8, PFM R31, PFM R32
Approvals:	FCC, Industry Canada, RoHS, WEEE
Warranty:	5 years, parts and labor (90 days on accessories)
Note:	FCC regulations, section 15.21, requires the user to comply with the rules of transmitter operation. Any changes or modifications made by the user not expressly approved for compliance may result in the loss of all privileges and authority to operate the equipment.

RECEIVER, MODEL PPA R35

Dimensions:	4.1" L x 2.85" W x 1.2" H (104.1 mm x 72.4 mm x 30.4 mm)
Weight:	4.5 oz (127 g)
Color:	Black
Battery Type:	Two (2) AA non-rechargeable alkaline batteries (BAT 001), approx. 100 hours battery life or Two (2) AA rechargeable NiMH batteries (BAT 026), 1400 mAh, approx 56 hours battery life
Current Consumption:	Nominal 40 mA
Operating Freq.:	Pre-tuned, adjustable, 72 MHz-76 MHz *
Intermediate Freq.:	75 kHz
FM Deviation:	75 kHz
De-Emphasis:	75 µS
LED Indicator	Power: Green; Low Battery: Red
AFC Range:	± 120 kHz
Sensitivity:	2 µV at 12 dB Sinad with squelch defeated
Input Overload:	20 mV
Frequency Response:	100 – 15 kHz, ± 3 dB
Signal-to-Noise Ratio:	65 dB at 10 µV
Receive Antenna:	Integral with earphone/headphone cord
Audio Output:	35 mW, max. at 16 Ω
Output Connector:	3.5 mm mono phone jack
Earphone:	Earbud-type with foam cushion, 3.5 mm plug, 32 Ω
Notes:	The R35 Receiver can be field tuned to any of 10 wideband channels using the PLT 005 Tuning Tool.
Approvals:	FCC, Industry Canada, RoHS, WEEE
Warranty:	Five years, parts and labor. 90 days on cords, earphones, headphones, batteries and other accessories

*DISCLAIMER: FCC RULES LIMIT USE OF THIS EQUIPMENT TO AUDITORY ASSISTANCE.

NOTE: SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

RECEIVER, MODEL PPA R35-8

Dimensions:	4.5" H x 2.85 W x 1.2" D (115 mm x 72 mm x 30 mm)
Weight:	4.6 oz (130 g)
Color:	Black
Battery Type:	Two (2) AA non-rechargeable alkaline batteries (BAT 001), approx. 50 hrs. battery life; or Two (2) AA rechargeable NiMH batteries (BAT 026), 1600 mAh, approx. 32 hrs. battery life
Current Consumption:	Nominal 40 mA
Operating Freq:	8 channels: 72.1, 72.3, 72.6, 72.8, 74.7, 75.4, 75.7, or 75.9 MHz*.
Intermediate Freq:	10.7 MHz
FM Deviation:	+/- 75 kHz
De-emphasis:	75 uS
LED Indicator:	Power: Red. Low Battery: Flashes
Sensitivity:	2 µV at 12 dB SINAD with squelch defeated
Input Overload:	20 mV
Frequency Response:	40 Hz to 15 kHz +/- 3 dB
Signal to Noise ratio:	60 dB at 100 µV
Receive Antenna:	Integral with earphone/headphone cord
Audio Output:	35 mW, max 16 ohm load
Output Connector:	3.5 mm mono phone jack
Squelch:	Located inside battery door. Factory set for 25 dB S/N. Squelch may be set with JFD-7104-5 from Sprague Goodman or any flat tipped tuning tool with tip size .095 X .016
Notes:	The R35-8 is NOT field tunable. The eight channels have been carefully selected to inhibit inter-modulation interference. Channel frequencies are 72.1, 72.3, 72.6, 72.8, 74.7, 75.4, 75.7, and 75.9 MHz.
Approvals:	FCC, Industry Canada, RoHS, WEEE
Warranty:	Five Years, Parts and Labor. 90 days on cords, earphones, headphones, batteries, and other accessories

*DISCLAIMER: FCC RULES LIMIT USE OF THIS EQUIPMENT TO AUDITORY ASSISTANCE.

NOTE: SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.



WILLIAMS SOUND®

Helping People Hear

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