

PFM PRO and PFM PRO RCH

Personal Wireless FM Listening Systems

USER MANUAL



PFM PRO



PFM PRO RCH

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Safety Information and Recycling Instructions

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. Turn the volume down before putting on the earphone or headphone, and 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 to have access to this product.

BATTERY SAFETY

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.

MEDICAL DEVICE SAFETY

CAUTION!

1. Before using this product with an implantable or other medical device, consult your physician or the manufacturer of your implantable 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 implantable device manufacturer.

RECYCLING INSTRUCTIONS



Battery Safety and Disposal

Help Williams AV protect the environment! Please take time to dispose of your equipment properly. Please do NOT dispose of batteries in the household trash. Please take the batteries to a retail or community collection point for recycling.



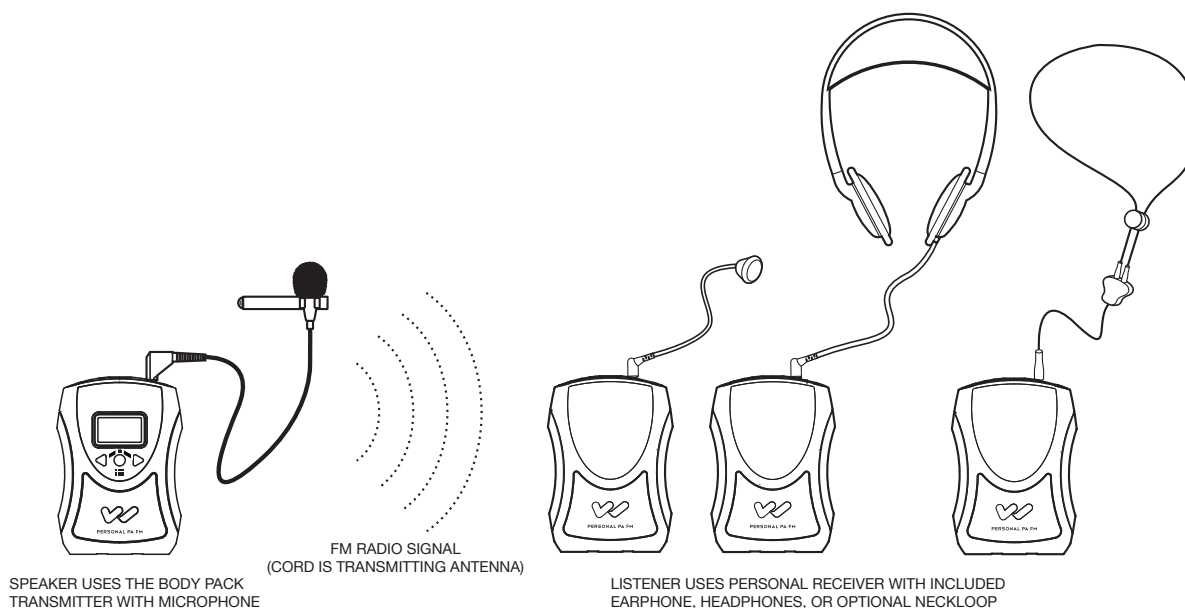
Product Recycling:

Please do NOT dispose of your Williams AV equipment in the household trash. Please take the equipment to an electronics recycling center or return the product to the factory for proper disposal.

System Overview

Thank you for purchasing a Personal FM Wireless Listening System from Williams AV. Anyone needing auditory assistance to overcome background noise, reverberation, or distance from a sound source can benefit from a Personal FM Wireless Listening System.

Your PFM System has two principal parts: the Transmitter and the Receiver. Much like a miniature radio station, the microphone picks up the sounds you want to hear and the Transmitter broadcasts them over an FM radio signal. The receiver and earphone are used to pick up the broadcast up to 150 feet away.



To avoid difficulties, please read through these instructions as you begin using the system. Then save them for questions that arise as you continue to use your Williams AV Personal FM Wireless Listening System.

The speaker wears the belt-clip transmitter and a clip-on microphone. The speaker's voice is broadcast as an FM radio signal over a distance of 150 feet. Listeners use the pocket receiver and earphones or headphones to hear the speaker's voice directly, with reduced background noise. An optional neckloop telecoil coupler allows the system to be used with telecoil (T-switch) equipped hearing aids.

If you have problems with the PFM system, don't hesitate to call us toll-free at 1-800-843-3544.

System Components

The **PFM PRO** System includes:

- (1) FM Body-pack Transmitter (PPA T46)
- (1) FM Body-pack Receiver (PPA R37)
- (1) Single Mini Earphone (EAR 041)
- (1) Folding Headphone (HED 021)
- (1) Audio Input Cable (WCA 087)
- (1) Lavalier Microphone (MIC 090)
- (2) AA Alkaline Batteries (BAT 001-2)
- (1) System Carry Case (CCS 043)
- (1) System User Manual (MAN 199)

The **PFM PRO RCH** System includes the PFM PRO, plus:

- (1) Dual Drop-in Charger (CHG 3502)
- (2) AA Rechargeable NiMH Batteries (BAT 026-2) - (replaces BAT 001-2)

Setting up the PPA T46 Transmitter

IMPORTANT: If Alkaline (non rechargeable) batteries are being installed, slide the battery selection switch in the battery compartment to the “Alkaline” position. See FIG 1 below. If installing NiMH (or rechargeable) batteries, slide the battery selection switch to the “NiMH” position.

1. Install two (2) AA batteries into the battery compartment. If using Alkaline batteries, switch the battery switch to the Alkaline position. Note: If rechargeable batteries will be used, the battery switch must be switched to the NiMH position before inserting the transmitter into the charger (See Figure 1). If using rechargeable batteries without the charger, the batteries must be charged externally before use. To remove the batteries, pull up on the Battery Removal Fabric Strip.

Figure 1: PPA T46 Battery Selection Switch

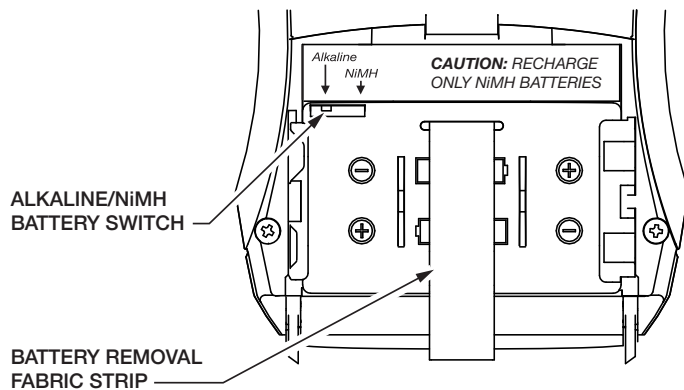
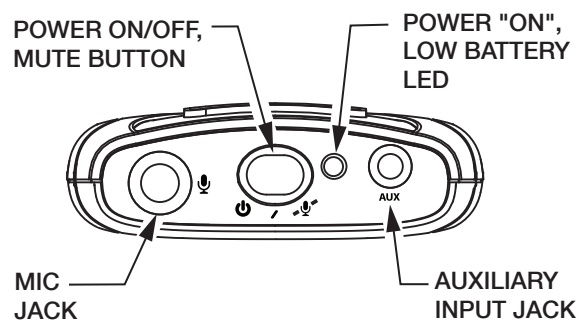


Figure 2: PPA T46 Transmitter Jacks and Power



2. Plug the microphone cord into the “Mic Jack” (🎤) on top of the transmitter. (See Figure 2).

Note: The microphone with 39 inch cord **MUST** be used with the Transmitter (the cord is the transmitting antenna).

3. Turn the unit on: press and hold the “ON/OFF/MUTE” button for three seconds. The “Power On” indicator (💡) should illuminate green. (See Figure 2).
4. Change the transmitter to the desired channel. To access the channel setting, push the menu button until you see the channel displayed. Change the channel by pushing the left or right arrow buttons. Push the menu button to save the channel (Figure 3).
Note: To choose by frequency, see Advanced Settings. Note: Remember the channel chosen in this step as you will need to set the channel on the receiver to match this channel (under “Setting up the PPA R37 Receiver”).

Figure 3: PPA T46 Transmitter Front Controls

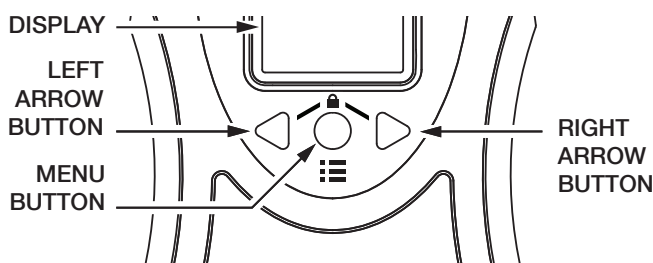
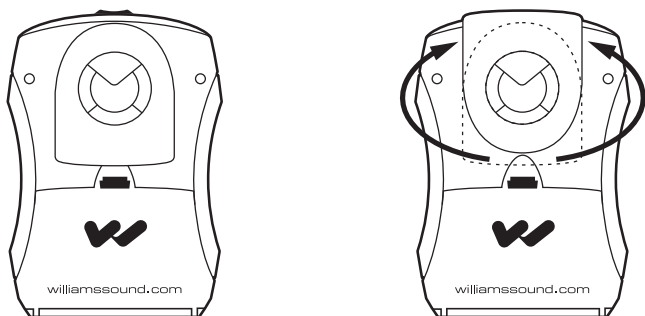


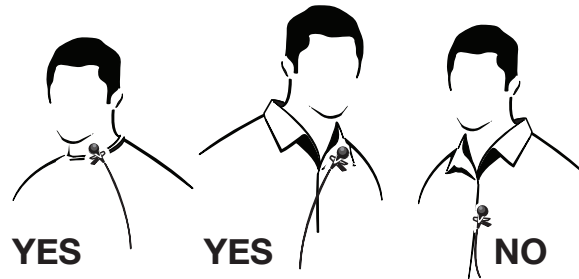
Figure 4: Belt Clip Installation



5. Install the belt clip on the rear of the T46 by positioning the belt clip on the back of transmitter. Turn the belt clip 180° left or right to secure the clip. The transmitter can now be clipped onto a belt. To remove, turn the belt clip 180° so the open end of the clip points up, and gently pull the belt clip off (See Figure 4).
6. Place the transmitter in a pocket, or clip it onto a belt or waistband.

- Attach the lapel clip microphone on a collar or lapel, as close to the speaker's mouth as possible. If using an optional headset microphone, position the mic as close to the side of the mouth as possible without touching the mouth (See Figure 5).

Figure 5: Lapel Microphone Placement



- To mute the microphone, press the "ON/OFF/MUTE" button momentarily. The "ON/OFF/MUTE" button will flash red. To unmute the microphone, press the "ON/OFF/MUTE" button momentarily again (Figure 2).

IMPORTANT: When the PPA T46 transmitter is not being used, remember to turn the unit OFF by pressing and holding the "ON/OFF/MUTE" button for three seconds. The Power On indicator will not be lit.

Setting up the PPA R37 Receiver

IMPORTANT: If Alkaline (non rechargeable) batteries are being installed, slide the battery selection switch in the battery compartment to the "Alkaline" position. If installing NiMH (or rechargeable) batteries, slide the battery selection switch to the "NiMH" position.

- Install two (2) AA batteries into the battery compartment. If using Alkaline batteries, switch the battery switch to the Alkaline position. Note: If rechargeable batteries will be used, the battery switch must be switched to the NiMH position before inserting the transmitter into the charger (See Figure 6). If using rechargeable batteries without the charger, the batteries must be charged externally before use.

Figure 6: PPA R37 Battery Compartment

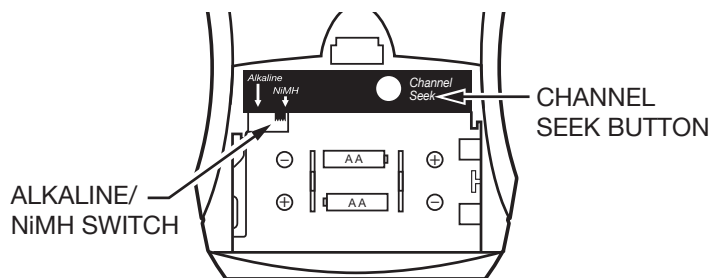
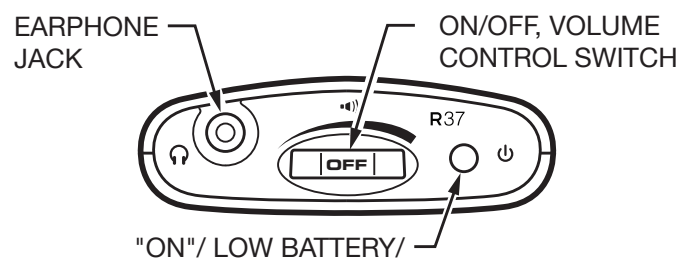


Figure 7: PPA R37 Earphone Jack & Power Controls



- Plug the earphone or headphone into the "Earphone Jack" (🎧) on top of the receiver. See Figure 7. Place the headphones on your head or earphone in your ear.

Note: the earphone cord is also the receiving antenna. Do not bunch up the cord or wrap it around the receiver. For best reception, the cord should hang as straight as possible.

- Turn the power on by rotating the "On/Off/Volume" control switch to the right (as pictured). The "On/Low Battery Indicator" (🔌) should illuminate green (Figure 7).

4. Select the desired channel (this will be the same channel you chose for the transmitter (under “Setting up the T46 Transmitter”). Make sure the transmitter is on, then press the Channel Seek button (Figure 6) once to search for the active transmitter channel. The LED will blink while searching for an active transmitter channel. The receiver will retain the channel setting when the unit is turned off.
5. Install the belt clip on the rear of the R37 by positioning the belt clip on the back of transmitter. Turn the belt clip 180° left or right to secure the clip. The transmitter can now be clipped onto a belt. To remove, turn the belt clip 180° so the open end of the clip points up, and gently pull the belt clip off (See Figure 4).
6. Place the transmitter in a pocket, or clip it onto a belt or waistband.
7. Rotate the “On/Off/ Volume” switch to adjust the volume to a comfortable listening level.

IMPORTANT: Make sure the receiver is turned OFF when not in use. Turn the “ON/OFF Volume” switch completely counter-clockwise. It should “click” and the “Power On” indicator should turn off.

Using the CHG 3502 Charger

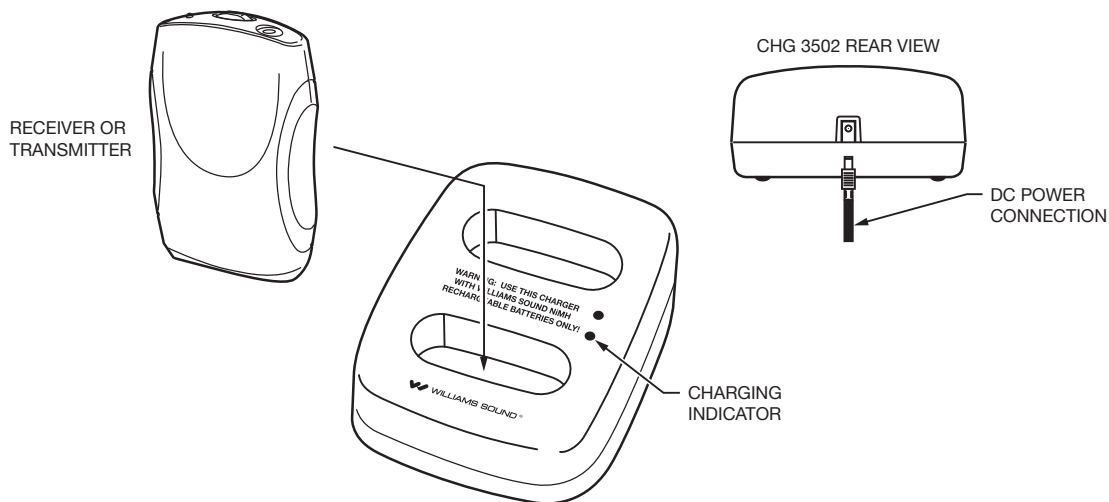
WARNING: Use this charger with Williams AV NiMH rechargeable batteries only. DO NOT use non-rechargeable batteries, such as alkaline and carbon zinc, which may heat up and burst, causing possible injury and damage to the equipment.

Before inserting the receiver or transmitter into the charger, be sure each unit has NiMH rechargeable batteries installed. Also, check to make sure the switch setting in the receiver or transmitter battery compartment indicates the “NiMH” setting.

1. Plug the CHG 3502 power supply into the AC wall outlet. Plug the power connector into the rear of the CHG 3502 unit as shown in Figure 8.
2. Insert the receiver or transmitter into the charging slot as illustrated in Figure 8. The unit(s) must be placed in the charger facing forward to make contact with charger contacts. A red LED indicator on the charger will illuminate when the batteries are being charged.
 - You may charge up to 2 receiver / transmitter units per CHG 3502 charger.
 - It will take approximately 16 hours to fully charge the batteries.

NOTE: It is safe to leave the receiver/transmitter units in the charger, even after the batteries are fully charged.

Figure 8: CHG 3502



Troubleshooting

Sound Issues

Static audio in the receiver

- Make sure the Transmitter and Receiver are set to the same channel.
- Make sure you are using fresh or fully recharged batteries.
- Microphone cord and earphone cord serve as transmitting and receiving antennas. Try to keep the antennas in a vertical orientation. The microphone with 39 inch cord MUST be used with the Transmitter.
- Only one Transmitter can be used in the same area at one time. If another Transmitter is in use it must be set to a different channel.
- You may be out of range for the system. Move closer to the Transmitter.

No sound in receiver

- Check batteries are good.
- Check the batteries are installed correctly.
- Make sure earphone is plugged into the earphone jack.

Charger light not coming on

- Make sure the power supply is plugged in.
- Make sure rechargeable batteries are installed into the Transmitter and Receiver and that the ALK/NiMH selector inside the battery compartments is switched to NiMH.
- The Transmitter and Receiver should be turned OFF while charging.

PPA R37 LED Flash Codes

LIGHT CODE	INDICATES	DESCRIPTION
1 Blink	Channel locked	Press "Seek", receiver remains on same channel
2 Blinks	Channel unlocked	Press "Seek", receiver tunes to next available channel
3 Blinks	Channel unlocked-No channel present	Press "Seek", receiver attempts to find an available channel
On-Off-On-Off (continuous)	Low Batteries	Replace or recharge batteries
Fade-on, Fade-off (continuous)	No transmitter on current channel	Sleep/power save mode (extends battery life)

Specifications FM Transmitter PPA T46

Dimensions:	4.1" L x 2.8" W x 1.1" D (104 mm x 71 mm x 28 mm)
Weight:	2.6 oz (74 g), no batteries
Color:	Black/Silver
Enclosure Material:	Shatter-resistant PC/ABS plastic with textured scratch-resistant aluminum faceplate
Battery Type options:	Two (2) AA 1.5 V non-rechargeable Alkaline batteries (BAT 001-2), 75 mA nominal current drain, up to 30 hours battery life
	Two (2) AA 1.5 V NiMH rechargeable batteries (BAT 026-2), 75 mA nominal current drain, up to 20 hours battery life per charge, recharges in 14–16 hours, uses CHG 3502 or CHG 3512 Charger
Operating Frequencies:	Selectable, 17 channels, 72.1 – 75.9 MHz*. Switchable 8 or 17 Channel Mode. (8-channel mode setting corresponds with PPA R35-8 receiver channels)
Stability:	± .005%, frequency synthesized, crystal reference, PLL
Modulation:	Wide-band FM, 75 kHz peak, 75 µS pre-emphasis
RF Output:	80 mV/m at 3 m (max. allowed by FCC rules)
Frequency Response:	180 Hz to 13 kHz, ± 3 dB at 1% max. THD
Signal-to-Noise Ratio:	65 dB (typical) transmitted
Transmit Antenna:	Integral with microphone cord
Microphone:	Electret type, 3.5 mm mono plug
External Display:	OLED for status and menu information. Status: Ch/Freq, Mic Audio Level, Auxiliary Input Audio Level, Battery Status, Mic Mute, Channel Lock, Dual-Preset mode. Menu: Ch/Freq display mode select, Volume, Aux Input, Compression, 17 or 8-channel mode, screen time out, screen brightness, restore default settings
External Controls:	Momentary push button: push and hold 3 seconds for power On/Off, push and release for microphone mute On/Off. "Up", "Down" and "Menu" buttons for accessing and changing transmitter settings. Battery type switch (Alkaline or NiMH) located behind the battery compartment door
External Indicators:	Power LED - Green, flashes when battery is low
Mic Input:	3.5 mm mono jack with electret mic bias, adjustable gain with 25 dB range
Aux Input:	2.5 mm stereo jack, adjustable gain with 60 dB range
Audio Compression:	1:1 (off) or 2:1 (on) selectable in menu
Compatible Receivers:	PFM R31, PFM R32, PFM R33, PFM R36, PPA R35, PPA R37, PPA R35-8, PPA R1600, PPA R38
Approvals/Directives:	FCC, Industry Canada, RoHS, WEEE
Warranty:	Lifetime PLUS Limited Warranty, 90 Days on most accessories.

Specifications FM Receiver PPA R37

Dimensions:	4.1" x 2.85" x 1.38" (104 x 72 x 35mm)
Weight:	4.6oz (130g) with batteries. 2.6oz (73g) without batteries
Color:	Black
Battery Type:	(2) AA Alkaline or 2 x AA NiMH
Battery Life:	Two (2) AA non-rechargeable alkaline batteries (BAT 001), approx. 50 hrs (2) AA rechargeable NiMH batteries (BAT 026), 1500 mAh, approx. 32 hrs
Current Consumption:	52mA nominal
Temperature Range:	– 0 to 50C
Channels	17, accessed via seek button in battery compartment
Operating Freq.:	72.1, 72.2, 72.3, 72.4, 72.5, 72.6, 72.7, 72.8, 72.9, 74.7, 75.3, 75.4, 75.5, 75.6, 75.7, 75.8, 75.9 MHz*
Intermediate Freq.:	75 kHz
FM Deviation:	75 kHz
De-Emphasis:	75 μ S
LED Indicator:	Power: Green; Low Battery: Flashes Green
AFC Range:	\pm 120 kHz
Sensitivity:	2 μ V at 12 dB Sinad with squelch defeated
Input Overload:	100 mV
Frequency Response:	200 – 15 kHz
Modulation:	FM, +/- 75 kHz peak deviation
Signal-to-Noise Ratio:	65 dB min @ 100 μ V
Receive Antenna:	Integral with earphone/headphone cord
Audio Output:	35 mW max, peak into 16 ohms
Output Connector:	3.5 mm stereo/mono phone jack
Earphone:	Earbud-type with foam cushion, 3.5 mm plug, 32 Ω
Auto Shut-off	Enters sleep mode after approx 6 mins of no RF signal
Approvals:	FCC, Industry Canada, RoHS, WEEE
Warranty:	Lifetime PLUS Limited Warranty, 90 Days on most accessories.

Lifetime PLUS Limited Warranty

Williams AV products are engineered, designed, and manufactured under carefully controlled conditions to provide you with many years of reliable service.

Effective January 1, 2014, Williams AV warrants the FM Listening transmitter and receiver models PPA T46 and PPA R37 against defects in materials and workmanship under normal use and conditions for the useful lifetime of the product from date of purchase.

This warranty is available to the original end purchaser of the product and CAN BE transferred to subsequent purchasers of the product. Williams AV HAS NO CONTROL OVER THE CONDITIONS UNDER WHICH THIS PRODUCT IS USED. Williams AV, THEREFORE, DISCLAIMS ALL WARRANTIES NOT SET FORTH ABOVE, BOTH EXPRESS AND IMPLIED, WITH RESPECT TO THE DEVICES, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Williams AV 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 MALFUNCTION 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 PRODUCT IS REPLACEMENT OF THE PRODUCT. NO PERSON HAS ANY AUTHORITY TO BIND Williams AV TO ANY REPRESENTATION OR WARRANTY WITH RESPECT TO THE DEVICES. 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 Lifetime PLUS 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 AV
Attn: Repair Dept.
10300 Valley View Rd.
Eden Prairie, MN 55344**

Notes
