



Installation Guide & User Manual

SoundFocus FM™

Classroom Amplification System

Models CFM 300 & CFM 400

Transmitter Model T31

Receiver Model R800, Speaker Model SPK 800





SOUNDFOCUS™ CLASSROOM AMPLIFICATION SYSTEM

MODEL CFM 300/400

INSTALLATION AND USER MANUAL

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SYSTEM OVERVIEW

Thank you for purchasing the SoundFocus FM™ Classroom Amplification System from Williams Sound Corp. Anyone needing auditory assistance to overcome background noise, reverberation, or distance from the sound source can benefit from the SoundFocus System.

Your SoundFocus 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 receiver picks up the broadcast up to 100 feet away.

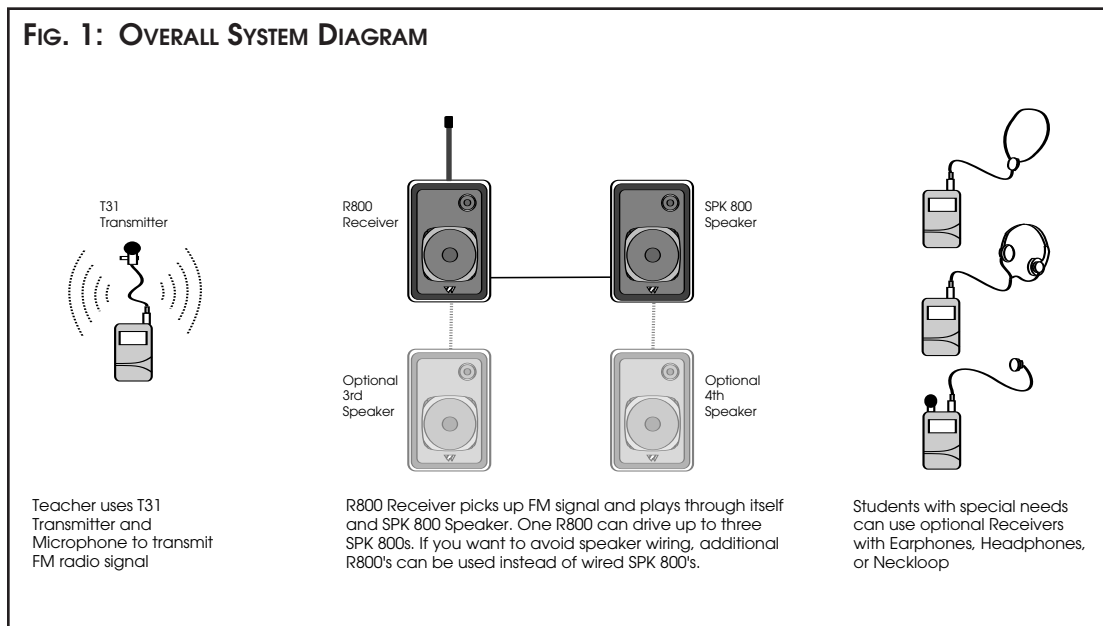
To avoid difficulties, please read through these instructions as you begin to use the system. Then save them for questions that arise as you continue to use your Williams Sound SoundFocus FM™ Classroom Amplification System.

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

SYSTEM COMPONENTS (CFM 300)

- FM Body Pack Transmitter (T31)
- Speaker (SPK 800)
- 3 V Multi Charger (CHG 200)
- Nylon belt (BLT 001)
- Transmitter Belt Clip Carry Case (CCS 021)
- FM Receiver/Amplifier/Speaker (R800)
- (2) Rechargeable AA batteries (BAT 026)
- Omnidirectional Mic (MIC 081)
- Instruction Manual

The CFM 400 includes (2) R800 Receivers and no SPK 800 Speakers

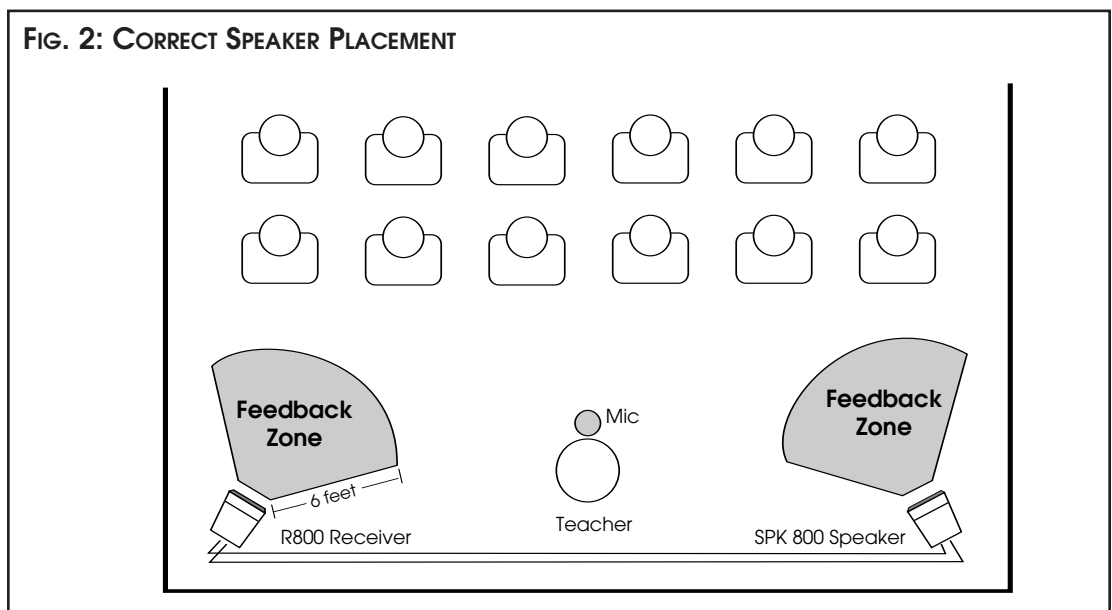


QUICK START INSTRUCTIONS

1. Charge the transmitter batteries first! See pages 10 and 11 for directions.
2. Plug the microphone into the transmitter mic jack. Clip the microphone onto a collar, lapel, or tie, as close to the speaker's mouth as is practical.
3. Turn the T31's FM switch to ON. The transmitter can be placed in a pants pocket, or clipped onto a belt or waistband with the belt clip carry case.

The microphone cord is the transmitting antenna. Do not bunch up the cord, wrap it around the transmitter, or place the transmitter in a shirt pocket. It should hang as straight as possible.

4. Install the antenna on the R800 Receiver. Thread the "rubber duckie" antenna onto the mounting stud on top of the receiver.
5. Locate the R800 and SPK 800 near the front corners of the room, pointing at the class.
6. Connect the R800 Receiver to the SPK 800 Speaker with the cable included.
7. Plug the R800 Receiver into an AC wall outlet.
8. Set the volume control to minimum on the R800 Receiver.
9. Turn the R800 Power switch ON and make sure the R800's FM switch is ON.
10. Have someone else slowly turn the R800's volume control up. Turning the volume up too loud will cause a whistling or squealing feedback sound. The volume should be set below the point at which feedback occurs. Avoid getting too close to the receiver or speaker when you're wearing the microphone or feedback can occur.
11. Charge the transmitter every night. Turn the transmitter FM switch OFF while charging.

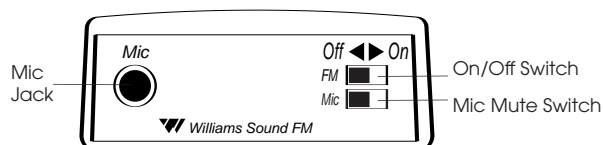


USING THE T31 TRANSMITTER

The T31 Transmitter's 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. The transmitter can be placed in a pants pocket, or clipped onto a belt or waistband. Make sure the transmitter is turned OFF when not in use.

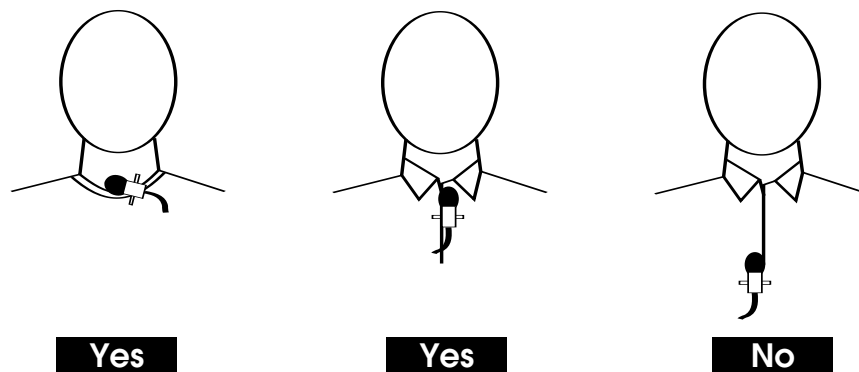
1. Make sure there are two charged AA batteries in the transmitter. If batteries are not installed, see the section *Battery Information* on page 10.

FIG. 3: T31 TRANSMITTER TOP VIEW



2. Plug the microphone cord into the "Mic" jack on top of the Transmitter.
3. Place the transmitter in the belt clip case provided.
4. Turn the power switch on top of the transmitter to "On."
5. Clip the microphone onto a collar, lapel, or tie. It should be as close to the speaker's mouth as is practical. (See Figure 4.)

FIGURE 4: CORRECT MICROPHONE PLACEMENT



The SoundFocus System 300/400 comes with an omnidirectional, lapel-clip style microphone. It should be clipped to a collar, lapel, tie, or neckline as close to the mouth as possible and centered on the body as shown.

6. Turn the Mic Mute Switch to "On" when you are ready to speak. This switch allows you to mute your microphone without turning off the transmitter. Listeners cannot hear you through the system, and also do not hear the noise present when only the receiver is on.

USING THE R800 RECEIVERS & SPK 800 SPEAKERS

The R800 is a combination FM receiver/amplifier/speaker. The SPK 800 is driven by the amplifier within the R800. Both are compact, self-contained, and portable. Most rooms will require just the two speakers, placed in either front corner of the room. For larger rooms, additional speakers may be added to the rear corners.

MAIN FEATURES OF THE R800 RECEIVER/SPEAKER

FM/Auxiliary Switch

For normal use with the T31 Transmitter, the FM switch should be ON. When using an auxiliary input from a VCR, tape player, preamp, or other source, turn the FM switch OFF.

FM Channel Switch

The selected receiver channel must match the transmitter channel. The SoundFocus™ System is pre-set to channel 3 (72.9 MHz). Change the receiver channel only if the transmitter channel has been changed. See page 12 for instructions on changing the transmitter channel.

Line Output

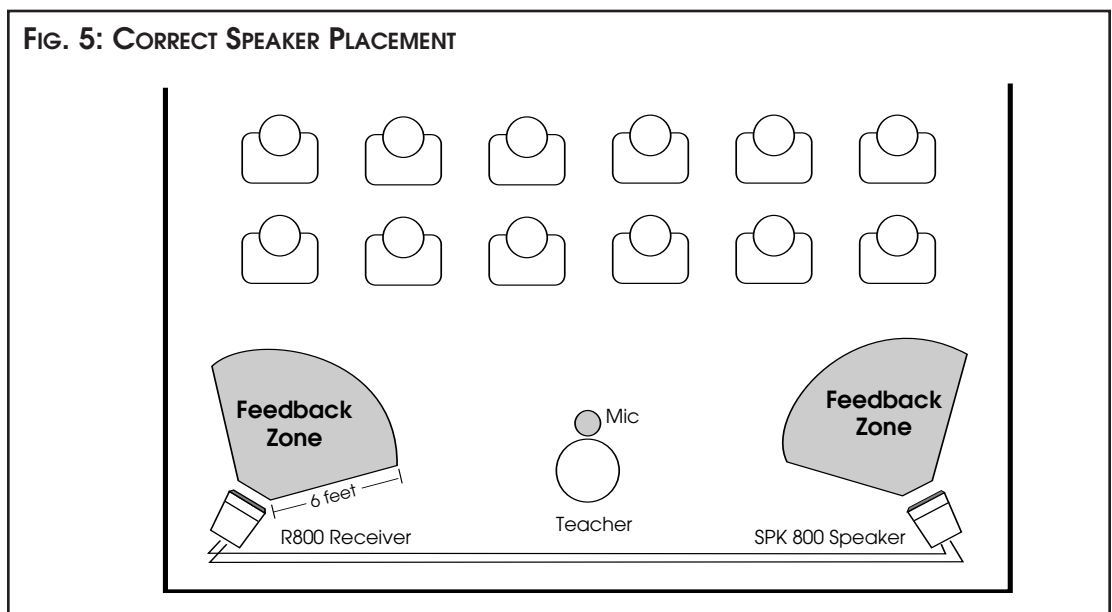
This is an unbalanced, RCA jack that sends line-level signals to tape recorders, VCRs, or other R800s. This feature allows you to make recordings of your presentations.

Line Input

This is an unbalanced, RCA jack that will accept line-level signals from tape players, VCRs, movie projectors, etc. This feature allows the entire class to hear audio and video presentations through the system.

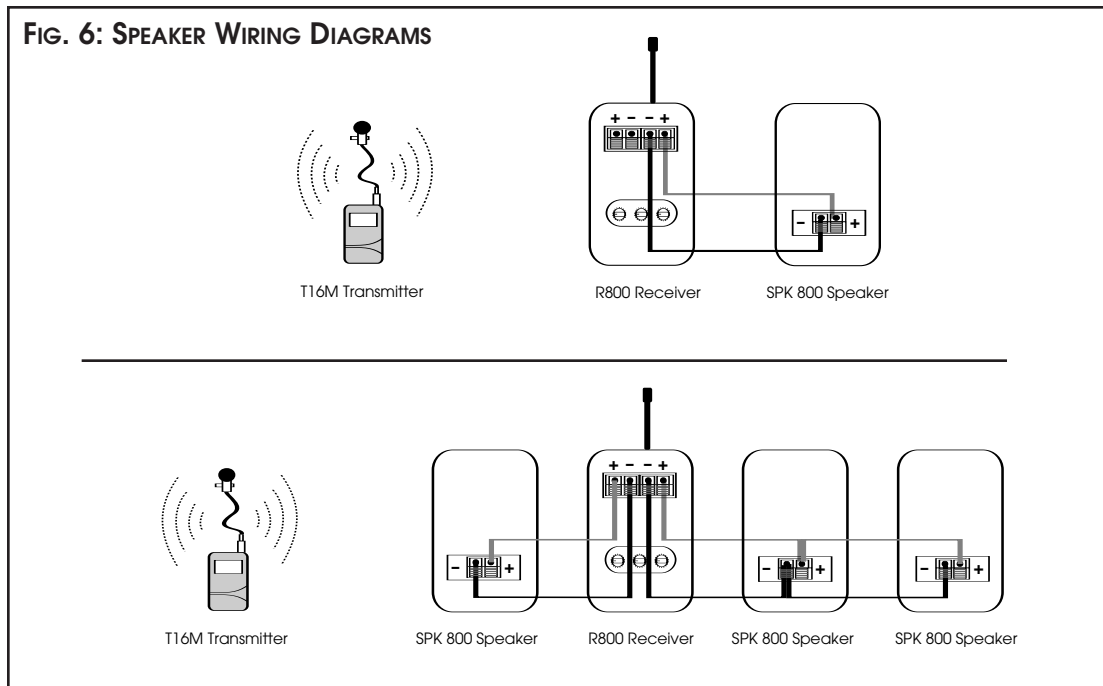
RECEIVER/SPEAKER SET-UP

1. Place the R800 Receiver and SPK 800 Speaker at the front of the room as shown in Figure 5.



- Set the height for both at about 4–5 feet above the floor, but not at the same height as the microphone.
- Connect the SPK 800 Speaker to the R800 Receiver using the black speaker cable provided. (See Figure 6) Pull apart the two strands as necessary. **Observe that one strand’s insulation is furrowed or ridged, while the other is smooth.**

To make the connection, press the connector buttons on both the speaker and receiver, inserting the furrowed or ridged wire into the red connector on both the R800 and SPK 800. After the wire has been inserted, release the button and tug lightly to make sure the cable has been secured.



- Set the volume on the R800 below the level at which feedback occurs.

If you need more cable, contact Williams Sound or visit your local electronic parts store.

TO MINIMIZE THE CHANCES OF FEEDBACK

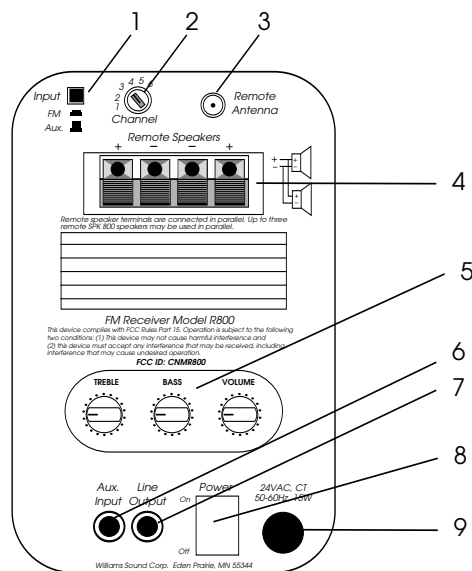
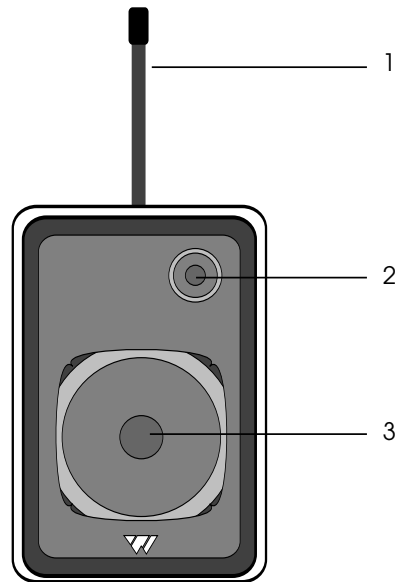
Don’t try to set the volume while standing with the microphone in the “feedback zone.” Have someone help you adjust the volume. Don’t walk directly in front of the speaker while wearing the microphone. Keep as far away from the speaker as possible and stay out of the feedback zone.

The system is not intended to play loudly. It should slightly boost the teacher’s voice above normal background noise levels. (Approximately +10dB)

USING ADDITIONAL RECEIVERS & SPEAKERS

Depending on the size of the room, it may be necessary to use more than one SPK 800 Speaker. If you’re using two or three SPK 800s, place the additional speakers in the rear

FIG. 7: R800 FEATURES



R800 FRONT PANEL FEATURES

1. Flexible "Rubber Duckie" Antenna
Threads onto the mounting stud on top of the receiver.
2. High Frequency Speaker
Reproduces high frequencies.
3. Low Frequency Speaker
Reproduces low frequencies.

R800 REAR PANEL FEATURES

1. FM/Auxiliary Switch
Turns FM receiver on or off and allows input of auxiliary device signals.
2. FM Channel Switch
Selects FM operating channel.
3. Remote Antenna Connector
"F-type" connector for 75Ω Coaxial Antenna
4. Remote Speaker Connectors
Connects R800 to the SPK 800 and up to two additional speakers.
5. Volume, Treble, and Bass Controls
Adjusts speaker loudness, high and low frequencies
6. Auxiliary Input Jack
Allows R800 to receive a line level signal from a VCR, tape player, etc.
7. Line Output Jack
Allows signal to be sent to an amplifier, tape recorder, or another R800.
8. Power On/OFF Switch
Turns R800 power on or off.
9. AC Power Supply
Connects to 120VAC, 50/60 Hz outlet.

corners of the room. Personal receivers are also available for students with special listening needs. (See Page 16 for more information on optional personal receivers.)

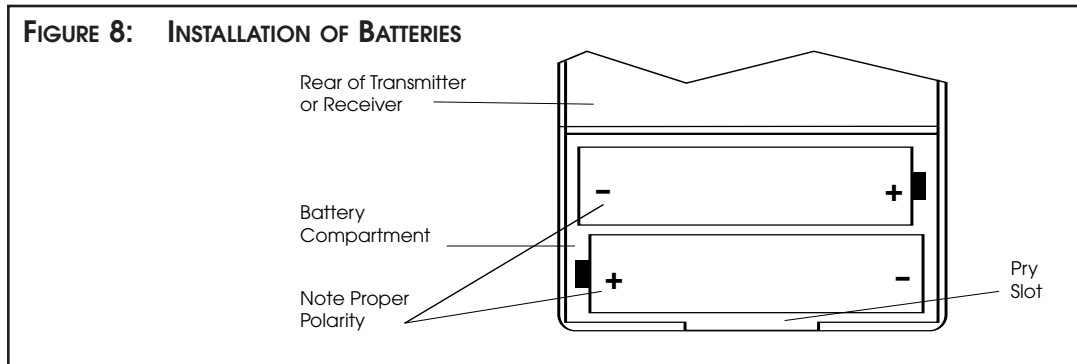
USING A REMOTE ANTENNA

For reception over longer distances, you may want to use the optional ANT 005 Coaxial Antenna. This antenna connects to the Remote Antenna Connector on the back of the R800 Receiver. (See Figure 7.)

BATTERY INFORMATION

INSTALLATION

Open the battery compartment using a coin in the slot in the bottom of the transmitter. Press the batteries into place, observing proper polarity. (See Figure 8.)



Incorrect insertion of the battery is difficult, and may cause both mechanical and electrical damage not covered by the 5 year warranty to transmitters or receivers. Units will not work with the battery incorrectly installed.

DISPOSABLE BATTERIES

In normal use, two AA 1.5 V alkaline batteries will last about 12 hours in the T31 Transmitter and approximately 80 hours in the optional R31 and R32 Receivers, respectively.

If the sound becomes weak or distorted, replace the batteries. The indicator light may still be on, even with batteries that are weak. Do not leave dead batteries in the receivers. Battery corrosion is not covered by the Williams Sound five year warranty.

RECHARGEABLE BATTERIES

The T31 Transmitter and optional R31 and R32 Receivers can use rechargeable AA batteries (BAT 026). On an overnight charge, these Ni-Cad batteries are designed to operate a T31 Transmitter for about 10 hours, R31 and R32 Receivers about 50 and 60 hours, respectively.

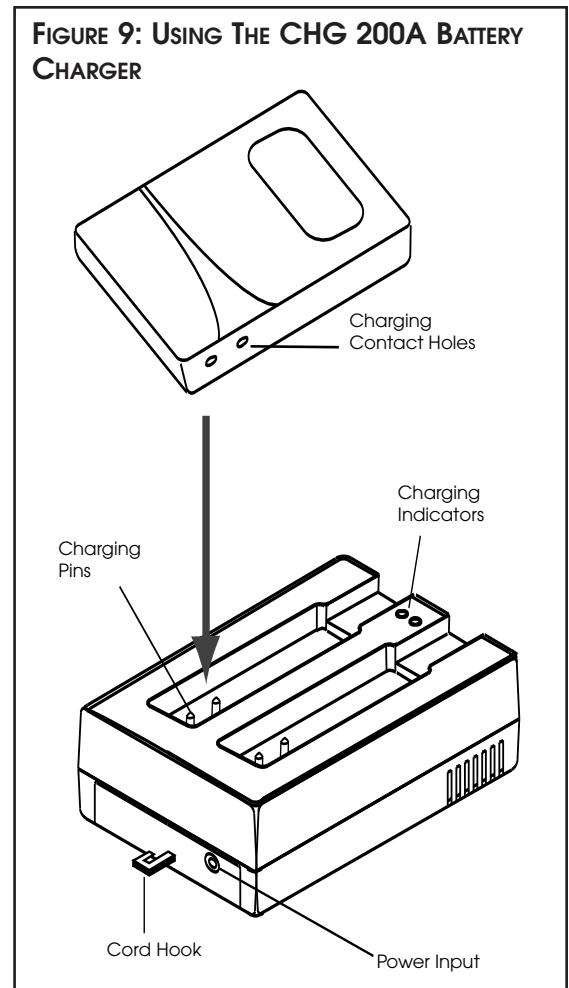
The battery installed in the receiver may be recharged in the receiver *only* if it is a Nickel Cadmium battery, and *only* if the Williams Sound CHG 200A charger is used. Damage from improper charging is not covered by the Williams Sound five year warranty. For charging directions, see figure 9, *Using The CHG 200A Battery Charger To Charge Transmitters and Personal Receivers*.

USING THE CHG 200A BATTERY CHARGER

1. Plug the CHG 200's power supply into the Power Input on the charger's side and a standard AC wall outlet.
2. Route the power cord around the Cord Hook (see figure at right). This will minimize strain on the cord and jack and insure that the power cord is not detached during charging.
3. Make sure the transmitter or receiver units to be charged are turned OFF.
4. Place the transmitters/receivers in the slots so that the CHG 200's Charging Pins and units' side panel contacts are coupled. Make sure that the charging contact holes line up with the charging pins. The transmitters/receivers should drop easily into the slots. **DO NOT FORCE THEM IN BACKWARDS.**
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 or receivers when charging is completed.

Further Suggestions

- Receivers and transmitters **SHOULD NOT** be left charging continuously when not in use. Receivers and transmitters 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.
- Repeatedly charging the batteries after short periods of use (1-2 hours) will shorten battery life.
- Rechargeable batteries will need to be replaced after 1–2 years of use.



!! IMPORTANT WARNINGS !!

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

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!

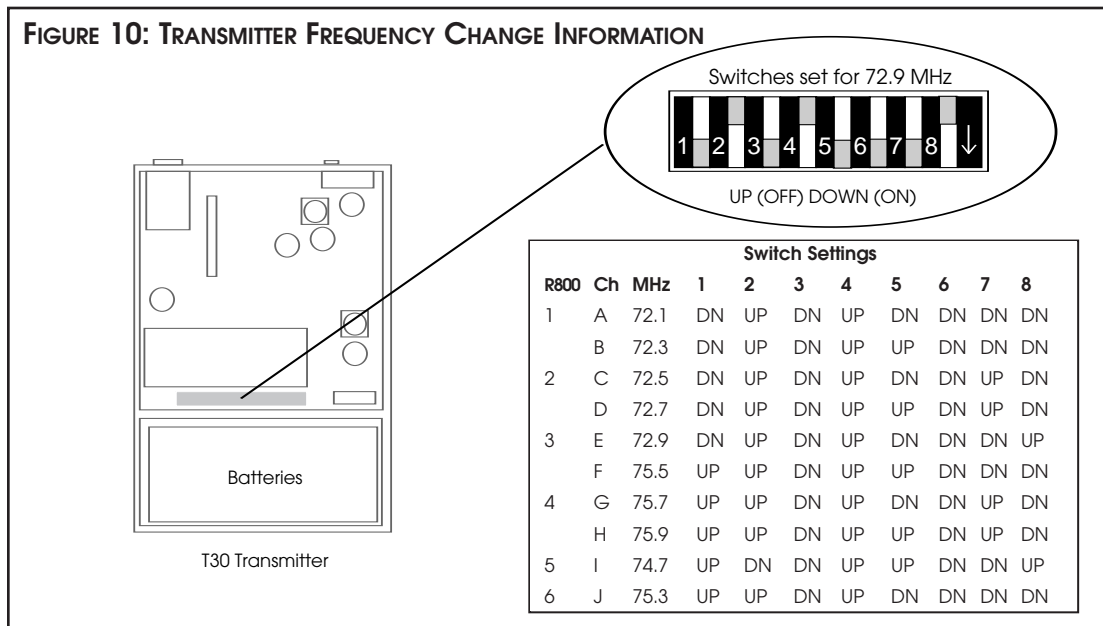
Use only Williams Sound supplied chargers and batteries.

CHANGING FREQUENCIES

If you experience FM signal interference, you can easily adjust your transmitter and receiver to use different frequencies.

CHANGING THE PFM T31 TRANSMITTER FREQUENCY

1. Open the battery compartment using a coin in the slot in the bottom of the transmitter. Remove the batteries.
2. Lift the flap up and to your left. The back of the transmitter case will open like a book, exposing the circuit board.
3. Use the diagram in Figure 10 to locate the channel selector switches.



4. Use the tip of a paper clip or a small screwdriver (not a pencil point) to move the switches to correspond with the switch positions on the programming chart in Figure 10. You must choose one of the standard R800 channels (A/C/E/G/I/J) unless there is interference on each (extremely unlikely). Do not touch any other adjustments.
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.
7. Change the R800 to the corresponding channel. (See Figure 10.)

USING MULTIPLE SYSTEMS

When multiple systems are used in adjacent rooms, it is important to coordinate which channel is being used in each room to avoid interference.

Follow the channel assignment diagram in Figure 11 to minimize the chances of interference.

FIG. 11: MULTIPLE SYSTEM CHANNEL PLAN

Ch 1 (A) Room 1	Ch 2 (C) Room 2	Ch 3 (E) Room 3	Ch 4 (G) Room 4	Ch 5 (I) Room 5	Ch 6 (J) Room 6
Ch 4 (G) Room 7	Ch 5 (I) Room 8	Ch 6 (J) Room 9	Ch 1 (A) Room 10	Ch 2 (C) Room 11	Ch 3 (E) Room 12

To achieve the best performance, DO NOT operate two transmitters on the same channel in the same room and make sure the transmitter and receiver channels match. Consult your dealer or Williams Sound for help if needed.

IN CASE OF DIFFICULTY

IF NO SOUND IS PRODUCED

1. Make sure the batteries are fresh or completely charged and that the “plus” and “minus” terminals are installed correctly in the transmitter.
2. Make sure the transmitter FM switch is ON and the mute switch is OFF.
3. Make sure the microphone is plugged into the T31 Transmitter
4. Make sure the R800’s Power and FM switches are ON.
5. Make sure the transmitter and receiver are set on the same channel.
6. 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.



IF FEEDBACK OCCURS

1. Do not stand with the microphone directly in front of the speaker. Don't try to set the volume while standing with the microphone in the "feedback zone." Have someone help you adjust the volume.
2. Place the receiver and speaker as shown in Figure 5. Avoid pointing receivers or speakers directly perpendicular to a wall.
3. Turn the volume down. Remember, the system is not intended to play loudly. It should slightly boost the teacher's voice above normal background noise levels.
4. Turn down the treble control. This will reduce the volume of higher frequencies.
5. Use the MIC 074 Headset Microphone. This brings the microphone closer to the sound source (the speaker's mouth) and thus reduces the amount of amplification required to achieve the desired volume.

IF INTERFERENCE OCCURS

1. 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 systems 50 - 100 feet apart or use separate channels for each system used.
2. 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. See the frequency change instructions elsewhere in this manual.
3. Make sure that the transmitter and optional personal receivers are tuned to the same channel. The units have stickers inside the back cover identifying the channel. Unless the transmitter channel has been changed, set the personal receiver to channel 1.

IF OTHER PROBLEMS OCCUR

1. 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 transmitter or receiver with the unit turned on for 5 - 6 hours. Then turn the transmitter or receiver off, place it in the charger, and charge for 14 - 16 hours. This should restore normal battery life. Rechargeable batteries will gradually lose their capacity over time and should be replaced every year.
2. If you're using the SoundFocus System with the optional PFM R31 Receiver, make sure that the earphone has been plugged into the earphone jack and not into the R31 Receiver's microphone jack.

IF PROBLEMS REMAIN

If none of the remedies above provides the solution, call Williams Sound's Customer Service Department at 1-800-843-3544 (8:00 AM– 4:30 PM Central Time).

OPTIONAL PERSONAL RECEIVERS

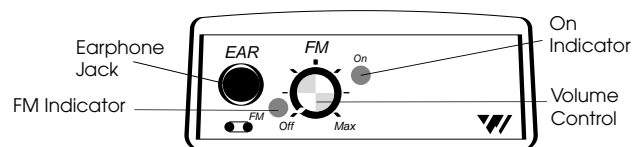
The optional PFM R32 and PFM R31 Personal Receivers can both be used with the SoundFocus™ System. On each, the earphone cord is also the receiving antenna. Do not bunch up the cord or wrap it around the receiver. For best reception, the cord should hang as straight as possible. Make sure receivers are turned OFF when not in use. The channel selector on both receivers can be used to switch between an individual and a group channel.

USING THE PFM R32 RECEIVER:

Receiver Model PFM R32 has a single volume control and an earphone output jack.

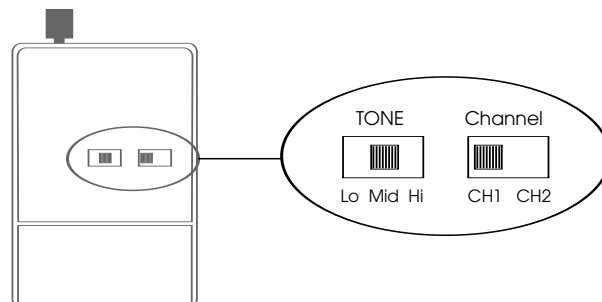
1. Make sure there are two charged AA batteries in the receiver. If batteries are not installed, see *Battery Information* on page 10.
2. Plug the earphone or headphone into the “Ear” jack on top of the receiver.

FIGURE 12: R32 RECEIVER TOP VIEW



3. Turn the power on by rotating the volume control knob on top of the receiver.
4. Place the earphone in your ear.
5. Choose the correct channel using the right switch on the R32's back panel. Unless you have changed the transmitter channel, set the receiver to channel 1. If the transmitter is on and tuned to channel 1, the FM Indicator light on the R32 will light.

FIGURE 13: RECEIVER TONE & CHANNEL CONTROLS



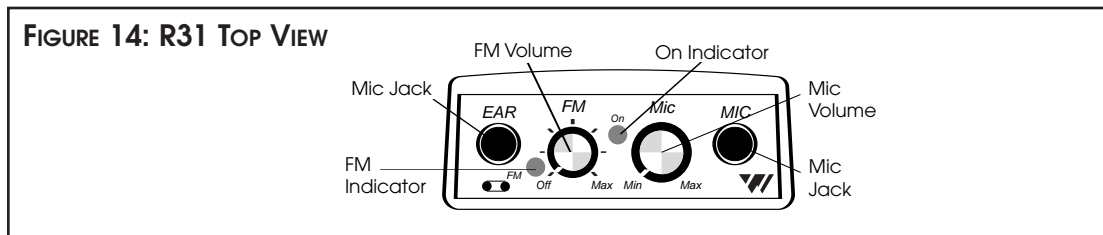
6. Adjust the receiver volume control to a comfortable listening level. You should be able to hear someone speaking into the transmitter microphone.
7. Adjust the receiver tone control to your needs. (See Figure 13.)
Lo = more low frequencies; Mid = some low frequency cut; Hi = maximum low frequency cut, emphasizes higher frequencies.

- Place the receiver in the belt clip case provided. The receiver can be placed in a pants pocket, or clipped onto a belt, harness, or waistband.

USING THE PFM R31 RECEIVER:

Receiver Model PFM R31 has two volume control knobs (one for the FM signal, one for environmental sounds), a microphone input jack, and an earphone output jack.

- Make sure there are two charged AA batteries in the receiver. If batteries are not installed, see *Battery Information* on page 10.
- Insert the small Plug Mount Microphone (MIC 014) into the “Mic” jack on top of the R31 Receiver. (See Figure 14.)
- Plug the earphone or headphone into the “Ear” jack on top of the receiver.
- Turn the power on by rotating the taller “FM” volume control on top of the receiver.



- Place the earphone in your ear.
- Choose the correct channel using the right switch on the R31's back panel. If the transmitter is on and tuned to channel 1, the FM Indicator light on the R31 will light.
- Adjust the receiver tone control to your needs. (See Figure 13.)
Lo = more low frequencies; Mid = some low frequency cut; Hi = maximum low frequency cut, emphasizes higher frequencies.
- Place the receiver in the belt clip case provided. The receiver can be placed in a pants pocket, or clipped onto a belt, harness, or waistband.

Adjusting The R31 Volume Controls

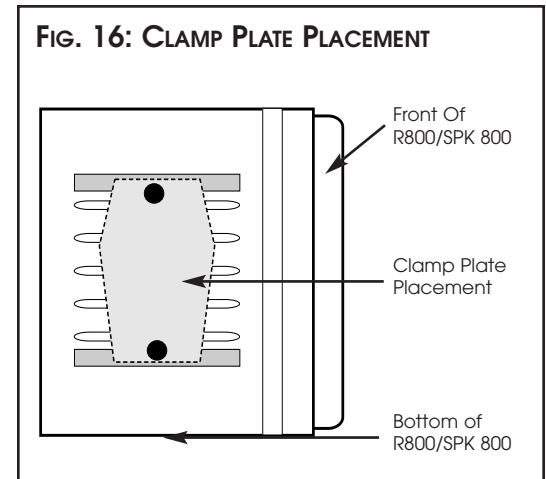
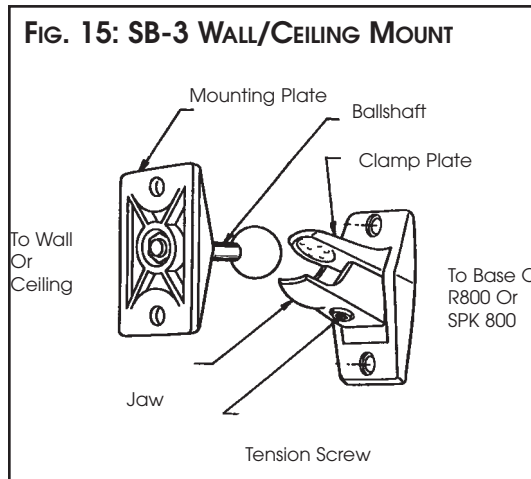
- Adjust the taller “FM” volume control to a comfortable listening level. You should be able to hear someone speaking into the transmitter microphone.
- Now adjust the shorter “Mic” volume control until you can hear sounds picked up by the environmental microphone on top of the receiver.
- Adjust the two volume controls for a comfortable mix of FM and environmental sounds. You will normally want to have the FM signal louder than the environmental Mic signal to avoid picking up extra background noise. If no environmental sounds are desired, turn the “Mic” control fully to “Min”. If you want to hear nearby conversation or your own voice, turn the “Mic” control up.

OPTIONAL MOUNTING KITS

Williams Sound offers two optional mounting kits for use with the SoundFocus FM System. Use the SB-3 Wall/Ceiling Mount Kit to mount an R800 Receiver or SPK 800 Speaker to a wall or ceiling. The SS-3 Floor Stand Kit includes an adjustable stand and flange which allow you to elevate the R800 or SPK 800 as you choose. To order these optional components, contact your dealer or Williams Sound Corp.

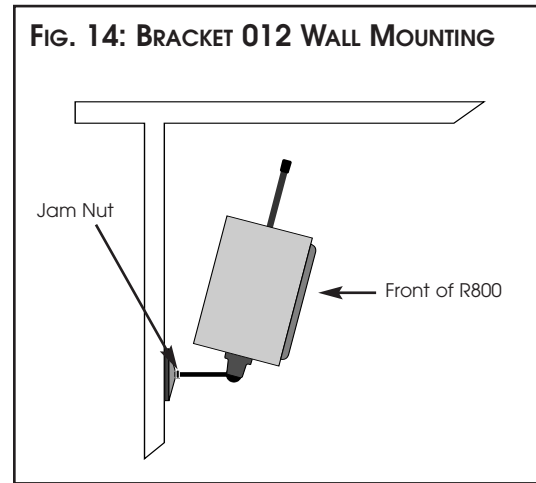
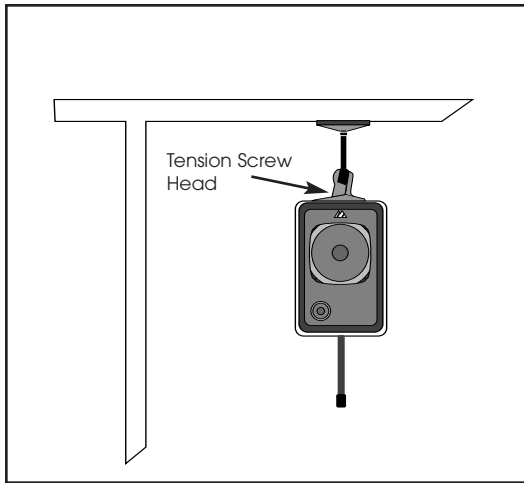
INSTALLING THE SB-3 WALL/CEILING MOUNT KIT

1. Use the 5/32" allen wrench to loosen the tension screw in the Clamp Assembly enough to release the ball. DO NOT unscrew the tension screw completely.
2. Position the Clamp Plate LENGTHWISE on the BOTTOM of the R800 Receiver or SPK 800 Speaker. (See Figure 15.) Mark TWO hole locations for drilling.



3. Using your hole markings as a guide, drill TWO pilot holes using a 3/16" bit.
Caution: The receiver/speaker walls are 1/4" thick. Drill only deep enough to pass through the enclosure wall and no more than 1".
4. Attach the Clamp Plate to the receiver/speaker, using the two screws provided.
5. Using the Wall/Ceiling Mounting Plate as a template, mark TWO holes on the wall, ceiling, or other surface upon which you will be mounting the R800 or SPK 800. (See Figures 16 and 17.)
6. Drill TWO pilot holes.
7. Use fasteners appropriate for the mounting surface (wood screws, lag bolts, wall anchors) to attach the Mounting Plate. Recommended fastener size is 1/4".
8. Place the Receiver-Clamp Plate Assembly onto the the Mounting Plate ballshaft. Aim the receiver/speaker at the desired angle and support it fully while using the hex wrench to tighten the tension screw.

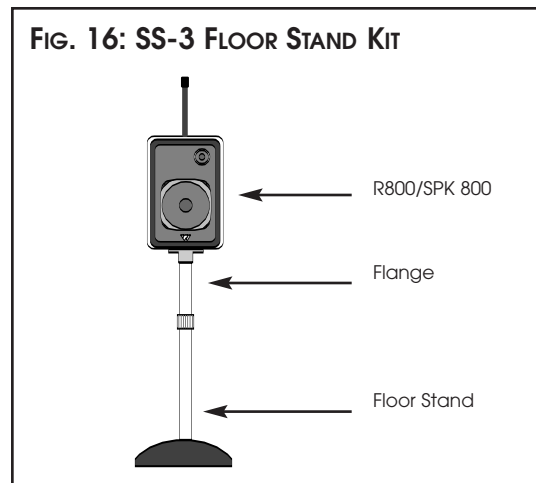
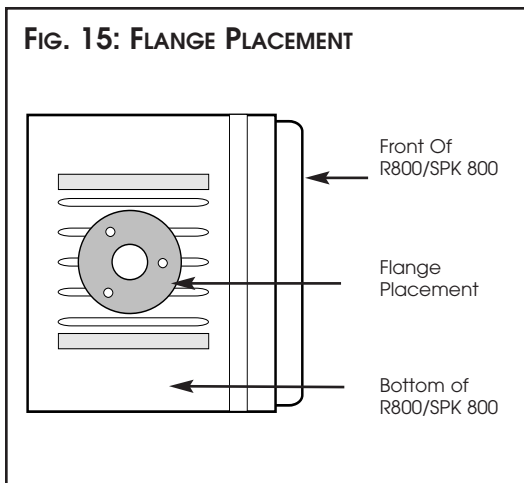
After initial installation, the ball will slowly compress under pressure. Check the tension screw after 15 minutes and re-tighten if necessary. DO NOT OVER TIGHTEN.



If rotational adjustment is required, use a 7/16" open-end wrench to loosen the jam nut on the ballshaft. Rotate the receiver/ speaker and re-tighten the jam nut.

INSTALLING THE SS-3 FLOOR STAND KIT

1. Align the three holes in the MFL 002 flange with the three pre-drilled holes in the base of the R800 or SPK 800. (See Figure 15.)



2. Secure the MFL 002 flange to the receiver or speaker using the three screws provided.
3. Set the resulting flange/speaker assembly on the threaded top of the STD 003 Floor Stand and turn until secure. **DO NOT OVER TIGHTEN.** (See Figure 16.)



WARRANTY

The SoundFocus Classroom FM System is engineered and designed to provide you with many years of reliable service. Williams Sound warrants it against defects in materials and workmanship for FIVE (5) years EXCEPT FOR earphones, headphones, rechargeable batteries, chargers, cables, antennas, carry cases, and all other accessory products. Accessory products carry a 90 day warranty.

If the product fails within the specified warranty period, Williams Sound will determine whether to repair or replace the defective equipment. This warranty does not apply to physical damage, products that have been abused or mis-used, or modified.

If you experience difficulty with your system, call Toll-Free for Customer Assistance: 1-800-843-3544.

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.
10399 W. 70th St.
Eden Prairie, MN 55344

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 the warranty card. Thank you.

IF YOU SEND EQUIPMENT FOR REPAIR

Before sending equipment to the factory for repair, please call Williams Sound Customer Service department for a Return Authorization Number.

That phone number is 1-800-843-3544. (8.00 AM–4:30 PM Central Time)

SOUNDFOCUS FM™ SYSTEM SPECIFICATIONS

FM TRANSMITTER, MODEL PFM T31

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, 12 hours approx. life (OR) Two (2) AA 1.5 V Ni-Cad Rechargeable batteries (BAT 026), 70 mA nominal current drain, 10 hours per charge approx., recharges in 14-16 hours, uses CHG 200 Charger
Operating Freq's:	Selectable, 10 channels, 72.1 - 75.9 MHz, internal DIP switch
Stability:	+ .005%, frequency synthesized, crystal reference, PLL
Modulation:	Wide-band FM, 75 kHz, 75 µs pre-emphasis
RF Output:	8000 µV/m at 30 m, max., 40 mW typical
FCC ID:	CNM T31
Freq Response:	100 to 10 kHz, + 3 dB at 1% max. THD
Signal-Noise Ratio:	55 - 60 dB, with R31 or R32 Receiver
Auto Gain Control:	40 dB range, 30 mV threshold
Transmit Antenna:	Integral with 40" microphone cord
Microphone:	Omnidirectional condenser, Lavalier-type, 40" cord, 3.5 mm mono phone plug (MIC 063)
Controls:	On/Off switch and Mic Mute Switch, slide-type
Mic Connector:	3.5 mm mono phone jack

SOUNDFOCUS FM RECEIVER/AMPLIFIER/SPEAKER, MODEL R800

Dimensions & Weight:	8.375" H x 5.5" W x 5.75" D (21.3 x 14 x 14.6 cm), 4.5 lbs. (2.04 kg)
Power Requirements:	110-125 VAC, 50/60 Hz
FCC ID:	CNM R800
Operating Frequency:	Six-Channel Selectable, 72.1, 72.5, 72.9, 75.7, 74.7, 75.3 MHz
FM Deviation:	± 75 kHz, 75 µs de-emphasis
AFC Range:	± 300 kHz
Sensitivity:	2 µV at 12 dB Sinad with squelch defeated, squelches at 10 µV for min. 50 dB S/N ratio
Frequency Response:	100 to 10 kHz, ± 3 dB
Signal-to-Noise Ratio:	50 dB at 10 µV
Receive Antenna:	Flexible "rubber duckie"-type
Controls:	Power On/Off, FM On/Off, Volume, Bass, Treble, FM Channel
Rated Power:	12 Watts, continuous, 4Ω w/ (1) SPK 800: 6W per spkr; w/ (2) SPK 800: 4W per spkr; w/ (3) SPK 800: 3W per spkr;
Frequency Response:	65 Hz to 20 kHz ± 3 dB
Distortion:	less than 0.05% at rated power
Tone Controls:	Bass: +8/-12 dB at 100 Hz, Treble: +10/-12 dB at 10 kHz
Line Input:	Unbalanced, RCA, 200 mV min. for 12 Watts output, 2.5 K input impedance
Line Output:	10 dB < Line Input with > 1 K Load
Type:	4" woofer, 1.75" dome tweeter, 4Ω
Maximum SPL:	103 dB at 1 meter

OPTIONAL PERSONAL RECEIVERS, MODELS PFM R31 & PFM R32

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:	4.6 oz (130 g) with batteries
Color:	Royal blue, shatter-resistant polypropylene
Battery Type:	Two (2) AA 1.5 V non-rechargeable Alkaline batteries (BAT 001), 14 mA nom. current drain, 80 hours approx. life (OR) Two (2) AA 1.5 V Ni-Cad rechargeable batteries (BAT 026), 14 mA nominal current drain, 50 hours per charge approx., recharges in 14-16 hours, uses CHG 200 Charger
FCC ID:	CNM R31
Operating Freq's:	Pre-Tuned, Field-tuneable, 72 MHz - 76 MHz. Pre-set channels are E (72.9 MHz) and G (75.7 MHz)
FM Deviation:	Wide-band, 75 kHz, 75 µs de-emphasis
AFC Range:	± 120 kHz
Sensitivity:	4 µV at 12 dB Sinad with squelch defeated, squelches at 10 µV for min. 50 dB S/N ratio
Freq Response:	100 to 10 kHz, + 3 dB
Signal-Noise Ratio:	50 dB at 10 µV
Receive Antenna:	Integral with earphone cord
Audio Output:	35 mW, max. at 16 Ω
Output Connector:	3.5 mm mono phone jack
Squelch:	Set to turn off audio under weak or no signal condition
Carrier Detect Ind:	Red LED, turns on in the presence of a carrier
Controls:	Volume: rotary/on/off/volume; Tone: 3-way slide switch; Lo = flat response (20 Hz), Mid = -3 dB at 235 Hz, Hi = -3 dB at 730 Hz; Channel: 2-way slide switch; Ch 1 = 72.9 MHz, Ch 2 = 75.7 MHz
Indicators:	On/off and FM
Note:	Specifications are electrical performance

PFM R31 Receiver Only

Mic Connector:	3.5 mm mono phone jack, supplies positive DC for Williams Sound electret mics
Microphone:	Plug mount electret, omnidirectional, with windscreen, 3.5mm mono phone plug (MIC 014)
Mic Volume:	Rotary control