

User Guide

freedom **2** INFRARED Amplification System™

Lifeline
Amplification Systems

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Enjoy Your Freedom 2 Infrared Amplification System

The *Freedom 2 Infrared Amplification System* is one of the best infrared sound amplification systems available today. No matter the application, the *Freedom 2 Infrared Amplification System* is a welcome addition to your classroom. At Lifeline, we know your school will see the benefits of this system from the first day you turn it on. Students will hear the clarity and volume of the teacher's voice. Their ability to concentrate will increase. This means on-task behavior will increase as well. And that translates into a better learning environment.

This manual has been designed to provide clear, step-by-step instructions for setting up the system for the first time, as well as for troubleshooting potential problems. Simply follow the directions and use the photographs and diagrams as a guide.

An equipment checklist is provided noting the pieces included in the *Freedom 2 Infrared Amplification System* and any additional equipment needed for set-up.

Each piece of equipment in the system is detailed in a separate section. This is done to familiarize both the set-up person and the teacher with the components. This manual also provides information to help users understand how the pieces fit together to complete the system.

At the end of the manual, there is a section entitled "Troubleshooting." This section is designed to help solve the most common system problems associated with set-up and usage.

EQUIPMENT

- 1 Wireless Infrared Transmitter and Receiver w/Lapel Microphone, Mic Clip and Mic Cable
- 1 Lifeline Amplifier
- 4 Lifeline Speakers with Mounting Brackets
- 150 Feet of Speaker Cable (provided in bulk for easy cutting to desired lengths)
- 1 Three-Foot Lifeline Patch Cable
- 32 Heavy-Duty Mounting Snaps (if mounting brackets are not used)
- 2 AA Nickel Metal Hydride Rechargeable Batteries
- 1 AA Battery Charger
- 1 Charging Cable
- 1 Neckloop
- 1 Lanyard w/Emitter
- 1 External Sensor

OTHER EQUIPMENT NECESSARY TO SET UP THE *FREEDOM 2 INFRARED AMPLIFICATION SYSTEM*:

- Two separate electrical outlets in each room (for two pieces of equipment)
- A pair of wire strippers

WARRANTY

All items in the *Freedom 2 Infrared Amplification System* (including parts, labor, accessories, batteries and cables) are under a **full one-year warranty**.

Lifeline Amplification Systems, Inc. will repair and/or replace, at our option, any unit that does not function properly within the warranty time period. Units under warranty needing repair work or replacement should be returned to Lifeline Amplification Systems freight prepaid. All units under warranty will be returned (freight prepaid) to the customer.

Product misuse, neglect or abuse is not covered under warranty terms.

REPAIR/CLEANING

Most simple repair work can be done by the customer using Lifeline's exclusively designed, field-replaceable parts. Any additional problems can be solved by Lifeline's trained technicians via telephone. Call for more information on the repair of any part or component.

Lifeline Amplification Systems Inc. suggests that the Infrared Wireless System be cleaned a minimum of every two years. Please contact us for a price quote and shipping instructions.

If you have questions at any time about your Freedom 2 Infrared Amplification System, please call us toll-free at: **1-800-236-4327**

IRB-10 Infrared Transmitter

1. FREQUENCY SELECTION

The IRB-10 can be set to transmit on either one of two preset frequencies. This is so that two different teachers can teach in the same room (team teaching). It is also so that you can use a lapel mic and handheld mic in the same room. While it does not matter which frequency is chosen, two wireless systems (microphones) can NOT be on the same frequency at the same time. To select the desired frequency (channel) slide the switch (1) as shown on the back of the battery door. All systems come pre-set to channel 1 for ease of use.

2. POWER MODE SELECTION

The IRB-10 has two power modes- "LO" and "HI". These modes can be selected via a power switch (2) inside the battery compartment. The system comes factory pre-set to the "HI" position. The only reason to turn the power mode switch to the low position is if the range you need is less than 15 feet or you are experiencing low battery problems.

3. MICROPHONE GAIN

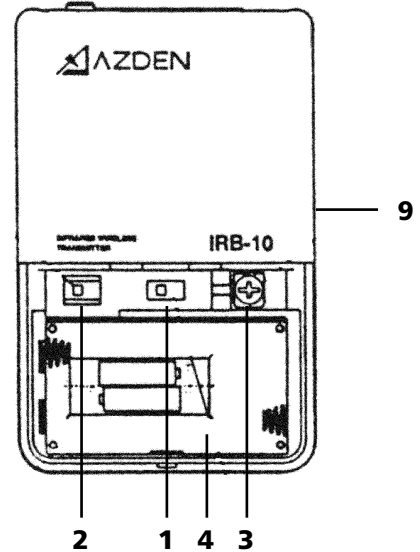
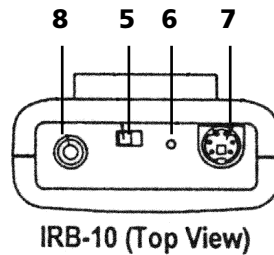
The microphone gain (volume) can be adjustable if you experience a lower volume level than desired. The microphone gain control is found on the inside of the battery compartment (3). A tool has been provided (inside the battery compartment) to adjust the gain if necessary. Adjustment of gain control should only be necessary if you have already tried to adjust the volume on the amplifier and you are still experiencing low volume.

4. BATTERY COMPARTMENT

Two AA Nickel Metal Hydride rechargeable batteries have been included with your *Freedom 2 Infrared System*. These batteries should last several hours per day for a period of at least one year. The number one cause of battery problems is overcharging a battery. Be sure to never charge your battery over 72 hours. Always use Lifeline Amplification Systems rechargeable batteries for best results.

5. ON/OFF SWITCH

Turns the transmitter "ON" and "OFF". If you are not going to use the unit for more than 15 minutes, turn the unit "OFF" to conserve battery life.



6. POWER LED

When the on/off switch is in the "ON" position the power LED should glow red. If it does not glow red this typically means a low battery.

7. EMITTER

The emitter must be plugged into the IRB-10 transmitter and either attached to the clothing via the clip or worn around the neck with the lanyard.

8. EXT. MIC

The provided microphone cable and mic must be plugged into the IRB-10 transmitter. Multiple different microphone options are available from Lifeline Amplification Systems including collar and headset mics.

9. CHARGING JACK

The charging jack is used to charge the battery. The WH-1 charging cable, rechargeable batteries, and battery charger are included in with your *Freedom 2 Infrared System*.

Receiver

1. POWER SWITCH

Turn the receiver ON and OFF.

2. POWER LED

Indicates if the receiver is ON or OFF.

3. RECEIVING SENSORS

Internal receiving infrared sensors

4. CHANNEL 1 VOLUME

Controls the volume for channel 1.

5. CHANNEL 1 INDICATOR

Glows red when receiving signal from transmitter to channel 1.

6. CHANNEL 2 VOLUME

Controls the volume for channel 2.

7. CHANNEL 2 INDICATOR

Glows red when receiving signal from channel 2.

8. SWITCHED EXTERNAL SENSOR INPUT (RCA CONNECTOR)

Plugging an external sensor in here turns the front panel sensor (C) off. This will hardly ever get used.

9. 2-EXTERNAL INPUTS (RCA CONNECTORS)

Each sensor will extend the range by 1600 square feet. One external sensor comes with the *Freedom 2 Infrared Amplification System*. This might not be needed in some instances.

10. INPUT SELECTOR

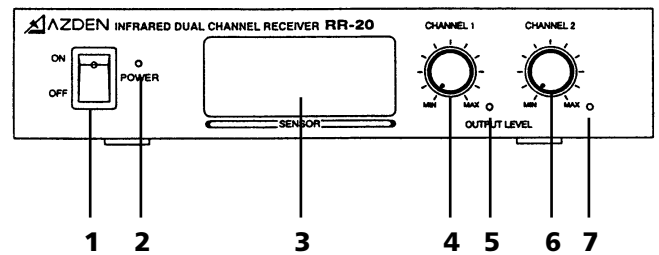
Always have this in the LINE position.

11. OUTPUT JACK

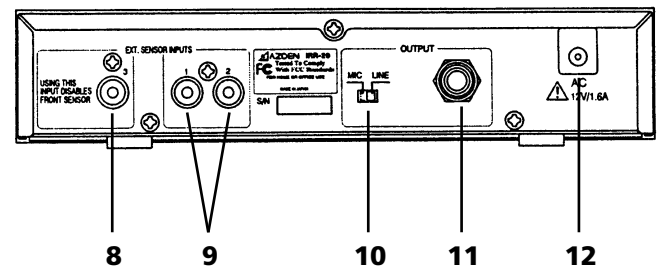
This connects the receiver to the Lifeline amplifier. Cable has been provided.

12. POWER INPUT

Plug the provided AC adapter (BC-28I) into a standard electrical outlet.



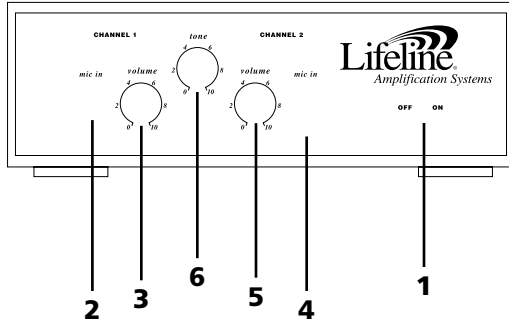
Receiver front



Receiver back

Amplifier

Front view



FRONT VIEW

1. ON/OFF POWER INDICATOR

The red Lifeline amplifier power light will be on when the power switch is in the “ON” position.

2. MIC IN, CHANNEL 1

This accepts the black, three-foot Lifeline cable (included) from a source such as a wireless receiver.

3. VOLUME FOR MIC IN, CHANNEL 1

This controls the volume for everything plugged into Mic In, Channel 1.

4. MIC IN, CHANNEL 2

This accepts the black, three-foot Lifeline cable (included) from a source such as a wireless receiver.

5. VOLUME FOR MIC 2

This controls the volume for everything plugged into Mic In, Channel 2.

IMPORTANT: This is also the volume control for the phono/auxiliary input, located on the back of the amplifier. The phono/auxiliary input will not work if the Mic In, Channel 2 input jack has a unit plugged into it.

6. TONE

This control changes the tone of all pieces that may be plugged into the amplifier.

Adjust the tone control knob to make the teacher’s amplified speech sound natural. The low numbered settings add more bass (low frequencies). The higher numbered settings add more treble (higher frequencies) to the amplified signal, i.e. speech, music, etc.

REAR VIEW

7. PHONO/AUXILIARY INPUT

Standard RCA stereo patch cables connect a turntable, CD player, tape deck, TV monitor, etc., to the phono/auxiliary input.

When a turntable is in use, the switch must be set in the “Phono” position. For all other devices plugged into the phono/auxiliary input (CD players, TVs, tape decks, etc.), the switch must be set in the “Auxiliary” position. **NOTE:** The phono/auxiliary inputs will not function if Mic In, Channel 2 already has something plugged into it.

The volume control for items plugged into the phono/auxiliary input is the Mic In, Channel 2 volume control.

8. SPEAKER TERMINALS

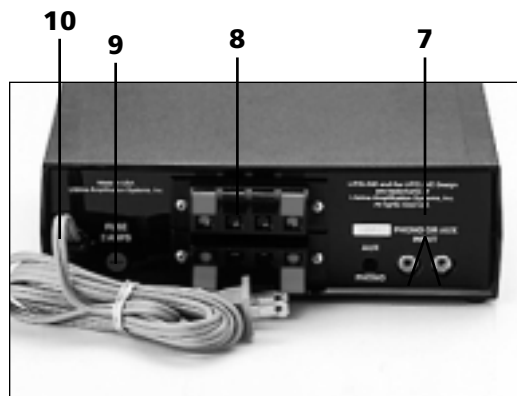
These ports are used to insert the speaker cables into the amplifier.

9. FUSE

The fuse is located within the cap of the fuse holder. If the fuse should fail, **IT MUST BE REPLACED WITH A FUSE OF THE SAME TYPE AND VALUE IN ORDER TO AVOID DAMAGE TO THE EQUIPMENT AND TO PREVENT VOIDING THE WARRANTY.** If the amplifier repeatedly blows fuses, contact your Lifeline distributor.

10. AC POWER CORD

The power cord must be connected to a 120-volt standard electrical outlet.



Rear view

Setting Up Your System

1. Take an inventory of all the pieces supplied for the *Freedom 2 Infrared Amplification System*.

This should include:

- 1 Lifeline Amplifier
- 1 Wireless Infrared Transmitter and Receiver w/Lapel Microphone, Mic Clip and Mic Cable
- 4 Lifeline Speakers with Mounting Brackets
- 150 Feet of Speaker Cable (provided in bulk for easy cutting to desired lengths)
- 1 Three-foot Lifeline Patch Cable
- 32 Heavy-Duty Mounting Snaps (if mounting brackets are not used)
- 2 AA Nickel Metal Hydride Rechargeable Battery
- 1 AA Battery Charger
- 1 Charging Cable
- 1 Neckloop
- 1 Lanyard w/Emitter
- 1 External Sensor

2. Look carefully at the room where the system will be installed. Where will large group discussion take place? Because the *Freedom 2 Infrared Amplification System* is intended to amplify the teacher's voice for large group discussion, the speakers should be positioned for maximum benefit to students in that large group discussion area.

Speakers should be placed at students' ear levels. For best results, divide the large group discussion area into four equal parts. Each of the four speakers should be placed in the room in order to serve 1/4th of that large group discussion area.

3. Place all four speakers in their optimal locations. Do not permanently attach them at this time. (Assembly of brackets are shown on pg. 9)

4. The amplifier and receiver must be placed in a convenient location for daily use. Both the amplifier and receiver will need to be plugged into electricity. Remember infrared is line of sight. Place the receiver in a location where nothing will block the signal from the teacher.

5. Plug the amplifier and the wireless receiver's power supply into outlets next to each other. The opposite end of the power supply (the end not plugged into the outlet) must be plugged into the

receiver. The receiver can sit on top or next to the amplifier. Be sure the mic/line switch on the back of the receiver is set to in the line position. If you are plugging into an outlet strip, be sure NO other items beside the Soundfield Equipment is plugged into the strip (Example: computer, TV, VCR, etc...).

6. The black three-foot Lifeline patch cable can now be used to connect the amplifier and the receiver. Plug the patch cable into the **Mic In, Channel 1 input on the amplifier**, and into the **Output jack on the back of the receiver**.

7. It's easy for you to connect the speakers to the Lifeline Amplifier. We offer two simple methods that can be used. The daisy-chaining method and the independent method. Both are diagrammed on page 7. Look at the wiring diagrams for both methods and determine which is best for your classroom. After the four speakers and the amplifier have been placed in convenient locations, the speaker cable can be strung and the speakers connected to the amplifier. **Read the Daisy Chaining and Independent Connecting directions and diagrams on the next page before cutting or stripping any wire.**

8. Take the 150' of supplied speaker cable and start with one speaker at a time. Run the cable from the amplifier to Speaker 1, carefully placing the cord where it can be concealed (along walls, under chalkboards or furniture, etc.). Allow one extra foot of cable (beyond original measurements) for the speaker. The excess can always be cut away later.

9. Using a pair of wire strippers, begin stripping about two inches (2") of the ends of the cut cables. The wires themselves look the same when the plastic coating is stripped away. For purposes of connecting, the wires will be differentiated by their plastic coatings. One wire is coated with plain coating, and the other wire has a blue stripe running through the coating.

10. After all ends have been stripped, connect the speakers to the amplifier, using either the **Daisy Chaining Method** or the **Independent Connecting Method**:

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1-800-236-4327

Setting Up Your System (CONT.)

OPTION 1 DAISY-CHAINING

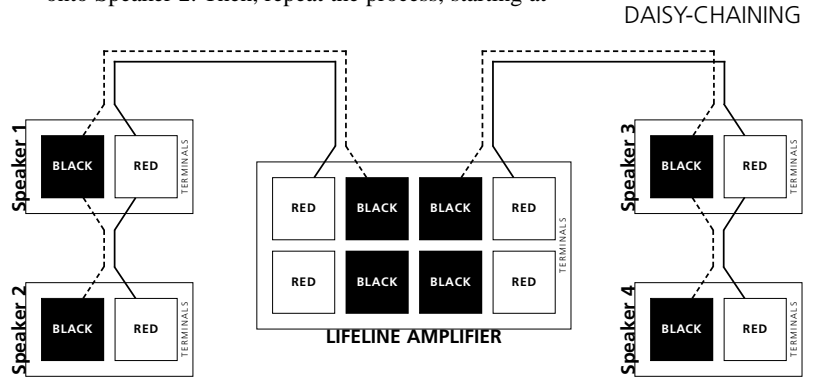
Take the stripped end of the speaker cable nearest the amplifier, and pull the wires apart about two inches. Place the **blue striped wire** into the back of the amplifier in the **black, spring-loaded terminal**. Push down firmly on the bottom half of this terminal to make an opening for the wire to enter. Place the **plain wire** into the **red, spring-loaded terminal** next to it, on the top row of terminals. **Both wires for Speaker 1 must be on the top row of the amplifier.**

Next, follow the cable from the amplifier (now wired in) to Speaker 1. Repeat the splitting process by pulling the wires apart two inches. Take the end of the speaker cable for Speaker 2 and split it. Twist the wires together (**blue stripes with blue stripes** and **plains with plains**). Place the twisted blue striped wires into the back of Speaker 1 in the black, spring-loaded speaker port. Place the plain wires into the back of Speaker 1 in the red, spring-loaded speaker port.

Repeat the splitting and twisting process,

making sure the plain or striped pairs are always twisted together the same way and are plugged into the same (top) ports consistently.

Connect or chain the amplifier to Speaker 1 and onto Speaker 2. Then, repeat the process, starting at



the amplifier, chaining Speaker 3 to Speaker 4. **+With Option 1**, all plain and striped pairs must be inserted into the **top row** of spring-loaded ports on the **amplifier**.

DAISY-CHAINING
 BLUE-STRIPED WIRE
 PLAIN WIRE

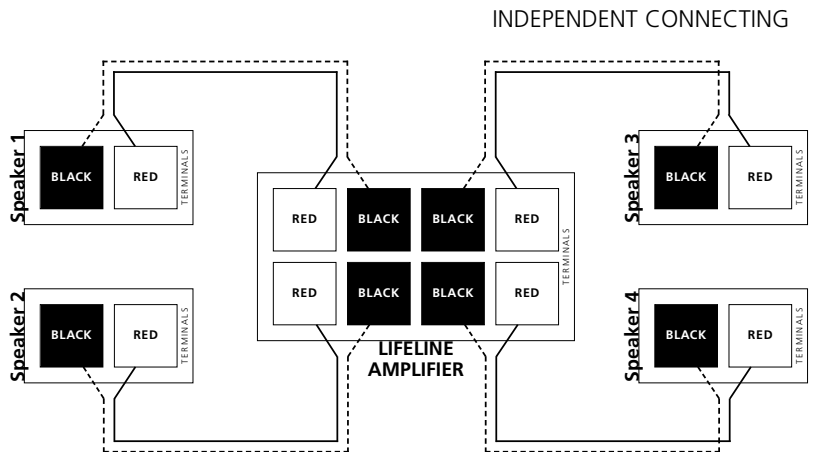
OPTION 2 INDEPENDENT CONNECTING

Independently connecting the speakers to the black and red terminals on the back of the Lifeline Amplifier is a simple task as described above for the daisy-chaining method. Take the stripped end of the speaker cable nearest the amplifier, and pull the wires apart about two inches. Place the **blue striped wire** into the back of the amplifier in the **black, spring-loaded terminal**. Place the **plain wire** into the **red, spring-loaded terminal** next to it, on the top row of terminals.

Next, follow the cable for Speaker 1 from the amplifier (now wired in) to the speaker itself. Repeat the splitting process by pulling the wires apart two inches. Place the blue striped wire into the back of the speaker in the black, spring-loaded terminal. Place the plain wire into the red, spring-loaded terminal next to it.

Repeat this stripping process, inserting the cable for Speaker 2 into the amplifier and then to Speaker 2. Complete Speaker 3 and finally Speaker 4. Each speaker will be independently connected to

the amplifier. *Make sure that the wires are always inserted consistently into each of the black and red ports. If the blue striped wire from the speaker is placed into the black terminal in the amplifier,*



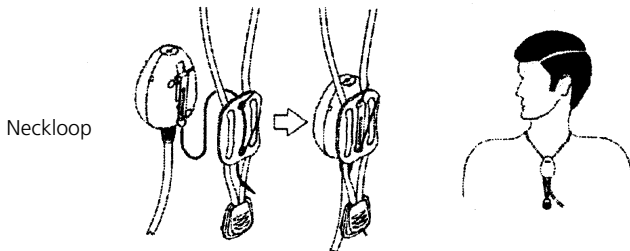
the blue striped wires must be connected to the black terminals on the speakers.

Setting Up Your System (CONT.)

11. Place in the battery compartment the 2 rechargeable AA batteries that have been included with the system. **These AA batteries typically need to be charged for at least 6 hours before using them for the first time.** Be sure the batteries are installed properly (+ and - polarity). The proper polarity is on the inside of the battery compartment. Use only the rechargeable batteries supplied by Lifeline Amplification Systems.

- The number one cause of battery failure is overcharging the battery. Never leave a battery charging over extended breaks (spring break, Christmas vacation, etc.). Overcharging the battery will cause battery life expectancy per day to be less and the battery will not last as long (meaning throughout the year).

12. Attach the emitter (1) to your clothing using the clip on the back of the emitter (2) OR use the lanyard with your emitter as shown (3). Either way will work fine.



13. Using the mic clip attach the microphone to either your clothing, the provided neckloop, or attach to the lanyard (6). Be sure the microphone is no more than 6 inches from your chin no matter which method you use!

14. **Adjust the controls** to the proper settings:

- Receiver:** 10 o'clock
 - Amplifier:** tone 2-5
 - Mic In, Channel 1:** 2-5
 - Receiver Channel 1 Volume:** 9-11 o'clock
- Final adjustments should be made with the user's voice, not with the person's voice that is setting up the system.*

15. Turn the **amplifier** on. The **red light** should be "ON".

16. Turn the receiver power on. This power switch is on the front of the receiver.

17. Turn the **transmitter** (in the pocket or clipped to a belt) power switch to "on". An audible "pop" may be heard through the speakers. **This is normal.**

18. The user can now broadcast. The volume of the user's voice, throughout the room, should be the same as if he/she were speaking **one-on-one to a student from a distance of two feet.** Sit at a student's desk to check and adjust volume from their perspective. **Always set the volume with the user's voice.**

19. Sound should change no more than 2db throughout the room. If sound is consistent and you are not experiencing any problems, you can mount the speakers using either the provided mounting snaps or bracket mounting hardware. (Diagram on page 9)

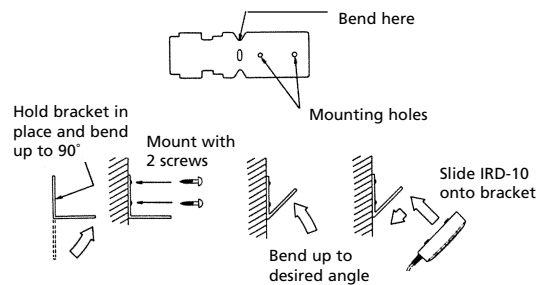
20. DROPOUTS

Infrared signals are line of sight between the emitter and the receiver. If you are experiencing dropouts you need to install the external sensor, as many systems require it. This is included with the **Freedom 2 Infrared System.**

Installation of the external sensor:

A) Plug one end of the external sensor (end with the RCA plug) into the back of the receiver marked Ext. Sensor Inputs number 1. (Shown as #9 on page 5)

B) Next follow the directions as listed.



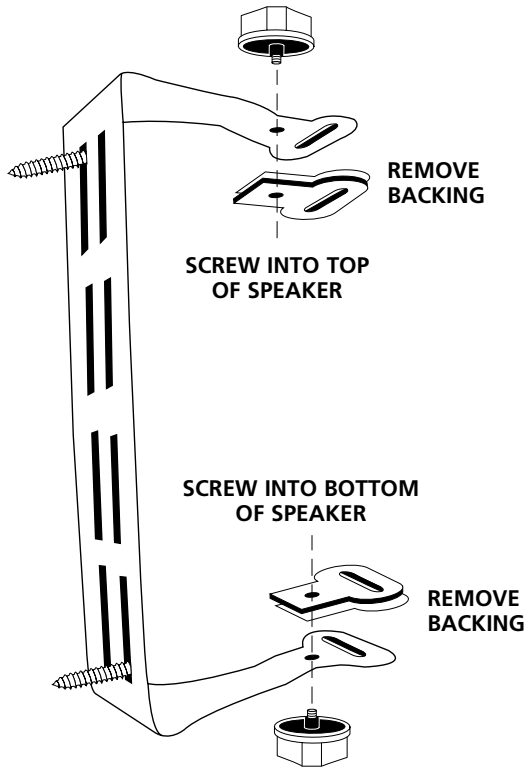
21. Once the proper settings of the components have been determined for the room, write them down, both for the teacher and the school audiologist. Check the settings each week to make sure they are still accurate for the needs of teacher and students.

USE THE TROUBLESHOOTING GUIDE ON THE PAGE 10 FOR MORE TIPS ON SETTING UP EQUIPMENT AND LEVELS.

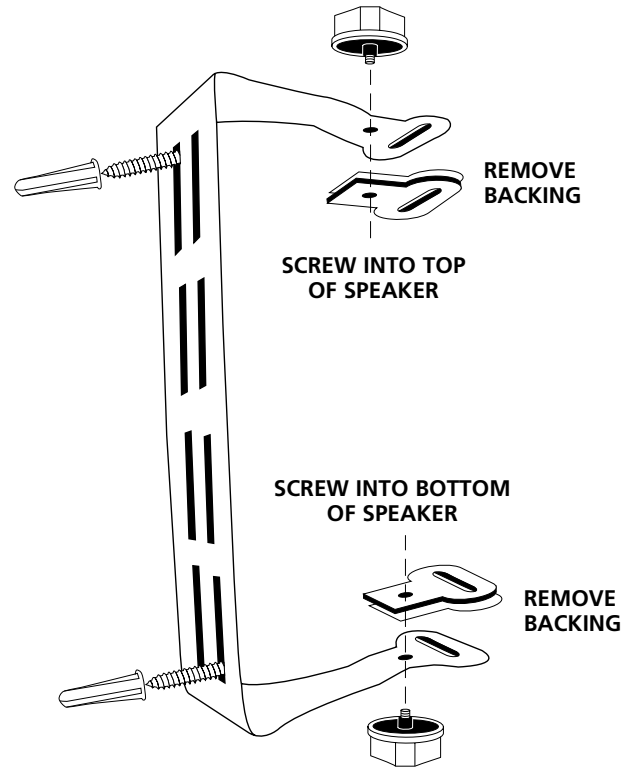
Setting Up Your System (CONT.)

BRACKET ASSEMBLY AND MOUNTING

Mounting screws and anchors are provided in the system.



MOUNTING IN WOOD



**MOUNTING IN CONCRETE
(WITH CONCRETE ANCHORS)**

BATTERY CHARGING INSTRUCTIONS*



Plug charging cable into the side of your Lifeline transmitter, attach opposite end of the charging cable to the battery charger and plug the unit into an outlet. LED light on charger remains lit while the battery is charging.

***NOTE**

Batteries can be charged while in the Lifeline transmitter.

CHARGING CABLE SHOULD REMAIN ATTACHED TO BATTERY CHARGER WHEN NOT IN USE TO REDUCE WEAR ON CABLE.

Troubleshooting Guide

IF YOUR SYSTEM ISN'T WORKING...

Check the transmitter .	Is the power indicator light, on top of the transmitter, red? If not then charge or change the batteries.
Check the sensor lights on the receiver .	The red light next to the channel # on the receiver indicates the power is on . If this is not on then you are not receiving a signal from the transmitter. Check the batteries. Also check to make sure nothing is blocking the signal from your transmitter to the receiver.
Check the amplifier .	Is amplifier power light on and shining brightly? If not, check to see if the amplifier is plugged into the electrical power supply.
Check the black, three-foot patch cable .	Is the black patch cable plugged between the amplifier (Mic In—Channel 1) and the output on the back of the receiver? Be sure both ends are plugged in firmly.
Check the settings for each component.	Are settings correct and done according to the teacher's voice? They should be: a.) Receiver: 9-10 o'clock b.) Amplifier tone: 2-5 c.) Mic In, Channel 1: 2-5
Is the emitter in line of sight to the receiver ?	Move closer to the receiver and see if this changes. If it does then increase the power (as explained on page 3).

IF YOUR SYSTEM EXPERIENCES FEEDBACK...

10

Check the tone on the amplifier .	Lower the tone setting. In some instances, the tone setting could be as low as 1.
Check the placement of the speakers .	Speakers should be placed at the ear level of the students . If speakers need to be placed higher than ear level and feedback occurs, experiment with different speaker angles.
Check the volume settings . Experiment with different settings until the feedback disappears.	a.) Receiver: 9-10 o'clock b.) Amplifier tone: 2-5 c.) Mic In, Channel 1: 2-5

Troubleshooting Guide (CONT.)

IF YOUR SYSTEM IS FULL OF STATIC OR CUTS OUT...

<p>Make sure the batteries have been recently charged for at least six hours.</p>	<p>Replace the batteries with a new or recharged batteries. If this does not solve the problem, contact Lifeline.</p>
<p>Check the microphone cable.</p>	<p>Replace the microphone cable with a new microphone cable.</p>
<p>External sensor.</p>	<p>Change the angle of the external sensor or place higher on the wall. Certain large rooms or rooms w/many items that can block the sensors could require the purchase of an additional IRD-10.</p>
<p>Battery tip information.</p>	<p>The number one cause of battery failure is overcharging the battery. Never leave a battery charging over extended breaks (spring break, Christmas vacation, etc.). Overcharging the battery will cause battery life expectancy per day to be less and the battery will not last as long (meaning throughout the year).</p>

For The Teacher

Important things to do and remember.

STARTING YOUR DAY

1. Unplug the WH-1 charger cable from the transmitter.
2. Place the microphone and emitter properly on your body, as explained in "Setting Up Your System," on page 8. The microphone should be no more than six (6) inches from your chin.
3. Turn on the power switch on the receiver.
4. Turn the amplifier on.
5. Turn the transmitter on.

If you have questions at any time about your Freedom 2 Infrared Amplification System, please call us toll-free at: **1-800-236-4327**

COMPLETING YOUR DAY

1. Turn the transmitter "OFF".
2. Turn power switch "OFF" on the receiver.
3. Turn the amplifier "OFF".
4. Plug the WH-1 charging cable into the transmitter.

AVOID WRAPPING THE MICROPHONE CABLE AROUND THE TRANSMITTER WHEN PUTTING IT AWAY. This could break the microphone cable.

AVOID placing speaker cables behind or next to an aquarium and **AVOID** placing computer monitors next to your receiver, if at all possible. These items can give off electrical interference that will cause a buzzing in your system.

REMEMBER...

- Your *Freedom 2 Infrared Amplification System* uses two AA Nickel Metal Hydride rechargeable battery. **AVOID using any other battery type** in your system, or it will not perform properly. Average battery life is **6 hours**.
- Batteries can be recharged over a weekend, but don't charge them any longer than two days.
- Your system is designed for use in large group discussion areas. Position speakers accordingly.
- Use your normal speaking voice, and let your system do the rest.
- Once you've determined the proper settings of the components for your room, write them down for your own information, and for the school audiologist. Check your settings each week to make sure they are still accurate for your needs and that of your students.
- If you have any questions about set-up or usage or have problems with your system, call Lifeline **TOLL FREE at 1-800-236-4327**.
- For a complete list of parts and accessories, consult the *Freedom 2 Infrared Amplification System* brochure.

INFRARED PARTS & ACCESSORIES

AALB-2	AA Batteries (Package of 2)	\$12.00
EM-10	External IR Sensor	\$65.00
IRB-10	Transmitter w/Lapel Mic and Cable	\$325.00
IRR-20	Infrared Receiver w/IRD-10	\$395.00
IRE-10	Clip-On Emitter	\$45.00
IRH-10	Hand-Held Infrared Transmitter Only	\$225.00
IRHS-10	Hand-Held Transmitter / Receiver	\$575.00
IRLS-1	Complete Infrared Transmitter and Receiver	\$695.00

SEE LIFELINE AMPLIFICATION SYSTEM BROCHURE FOR MORE ACCESSORY ITEMS

