



REDCAT™

Classroom Audio System



User Manual

CONGRATULATIONS!



Congratulations on your purchase of the REDCAT™ All-in-One Classroom Audio System! This simple, yet powerful technology provides crystal-clear sound throughout the classroom, allowing every child to hear every word every time.

As the teacher speaks into the REDMIKE™ classroom microphone, his or her voice is transmitted to the REDCAT and then amplified through the built-in flat panel speaker. The REDCAT system is fully integrated and includes a receiver/amplifier, infrared sensors, flat panel speaker and the REDMIKE classroom microphone.

The REDCAT is a two-channel receiver/amplifier that allows the use of up to two microphones simultaneously and two audio input sources such as TV, VCR, DVD, CD, MP3, etc.

The REDMIKE is an infrared classroom microphone. This pendant-style microphone is clipped to a lavalier cord and worn around the teacher's neck. It can also be used as a standard handheld microphone for student interaction and class participation.

SAFETY INSTRUCTIONS AND CERTIFICATIONS



CAUTION



RISK OF ELECTRIC SHOCK DO NOT OPEN

**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED PERSONNEL**



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CERTIFICATIONS



Complies with 72/23/EEC Low Voltage Directive and 89/336/EEC Electromagnetic Compatibility Directive. Compliance was demonstrated to the following specifications as listed in the Official Journal of the European Union:

EN 60950: Electrical Safety – A1:1993, A2:1993, A3:1993, A4:1997

EN 55022: RF Emissions, Information Technology Equipment

EN 55024: EMC Immunity Standard

EN 61000-3-2: Harmonics

EN 61000-3-3: Voltage Fluctuation



Lightspeed Technologies launched a formal product recycle program in Europe that complies with the European Union Directive 2002/96/EC on Waste Electrical and Electronic Equipment ("WEEE Directive"). Please visit our website at www.lightspeed-tek.com for more information.



REDCAT is manufactured using lead-free processes and is free of other materials harmful to the environment. It conforms to the most stringent new European guidelines for consumer products (RoHS).

- 1. Read Instructions**—All the safety and operation instructions should be read before this Lightspeed product is operated.
- 2. Retain Instructions**—The safety and operating instructions should be kept for future reference.
- 3. Heed Warning**—All warnings on this Lightspeed product and in these instructions should be followed.
- 4. Follow Instructions**—All operating and other instructions should be followed.
- 5. Water and Moisture**—This Lightspeed product should not be used near water.
- 6. Heat**—This Lightspeed product should be situated away from heat sources such as radiators, etc.
- 7. Power Sources**—This Lightspeed product should be connected to a power supply only of the type described in the operation instructions or as marked on this Lightspeed product.
- 8. Power Cord Protection**—Power supply cords should be routed so that they are not likely to be walked upon or pinched by items placed upon or against them.
- 9. Object and Liquid Entry**—Care should be taken so that objects do not fall onto and liquids are not spilled into the Lightspeed product.
- 10. Damage Requiring Service**—This Lightspeed product should be serviced only by qualified service personnel. The user should not attempt to service this Lightspeed product.
- 11. Prevent Electric Shock**—Do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

TABLE OF CONTENTS

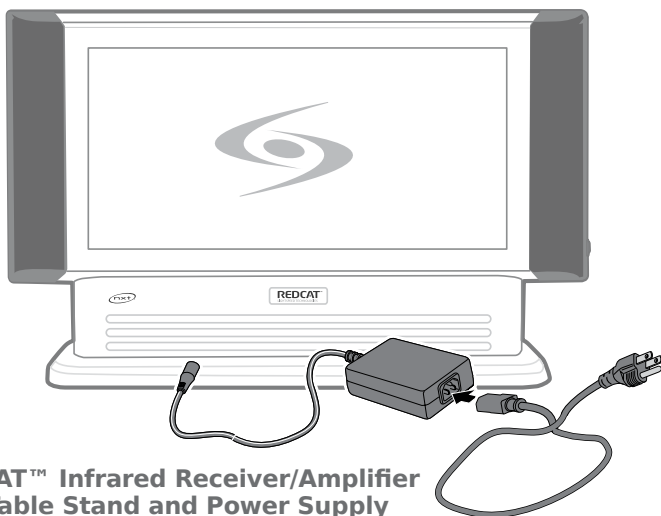
REDCAT CLASSROOM AUDIO SYSTEM

Safety Instructions and Certifications	ii
SECTION 1: System Overview	1
System Components	2
Side Panel Controls and Connections	3
Rear Panel Controls and Connections	4
REDMIKE Controls and Connections	5
Attaching the Lanyard to REDMIKE.....	6
Cradle Charger Controls and Connections.....	7
Optional LT-71 LightMic Controls and Connections	8
Optional HM-70 Handheld Controls and Connections	9
SECTION 2: Set-up	10
Unpacking Your System.....	11
Determine Set-up Method	12
Tabletop Set-up	12
Wall-mount Set-up.....	13
Remove the Base/Wall Bracket.....	13
Mount Base/Wall Bracket.....	14
Audio Integration.....	15
Connecting External Audio Sources.....	16
Connecting the Power Supply.....	17
Final Check	17
SECTION 3: System Operation and Optional Features	18
Initial Set-Up: REDMIKE	19
Initial Set-Up: Optional LT-71	20
Initial Set-Up: Optional HM-70	21
Charging the REDMIKE	22
Charging the Optional LT-71	23
Charging the Optional HM-70	24
Output to assistive listening device (ALD).....	25
Using the REDMIKE to Amplify External Audio Equipment.....	26
SECTION 4: Troubleshooting, Daily Use and Warranty.....	27
Troubleshooting Guide.....	28
Daily Use Instructions.....	29
Tips on Classroom Audio	30
Warranty Statement	30
System Specifications	31
Individual Components and Optional Accessories	32
User Notes	33

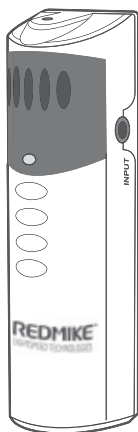
SECTION 1

System Overview

SYSTEM COMPONENTS

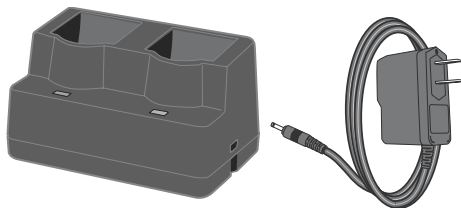


**REDCAT™ Infrared Receiver/Amplifier
w/Table Stand and Power Supply**

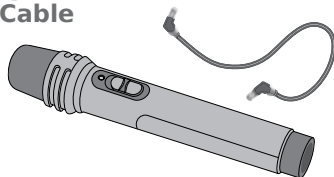
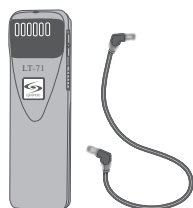


**REDMIKE™ Classroom
Microphone**

Charging Cradle and Power Supply



Optional LT-71 LightMic and Charging Cable



**Optional HM-70
Handheld Microphone
and Charging Cable**

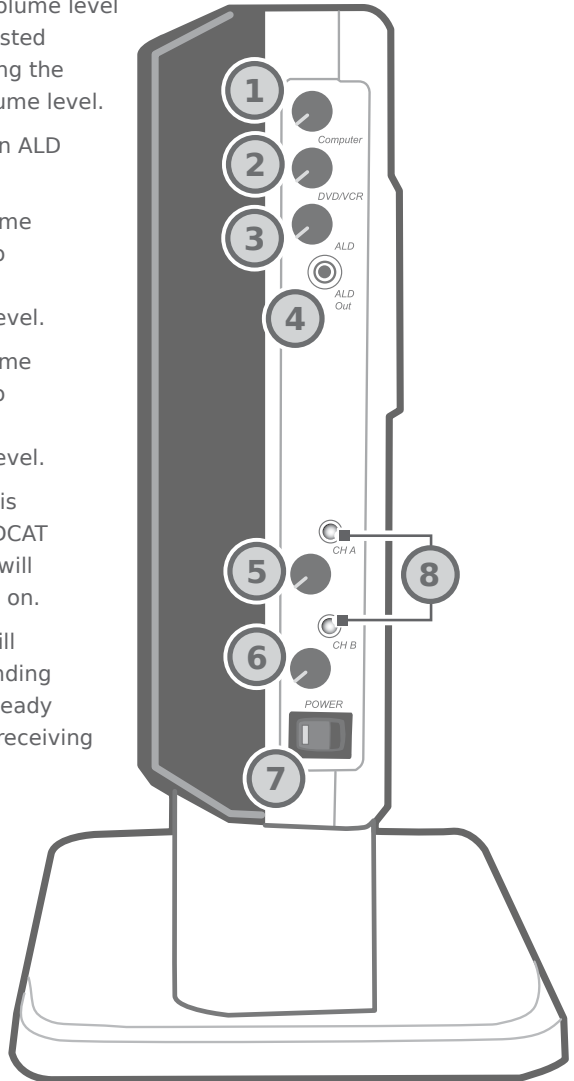


Helpful Hint

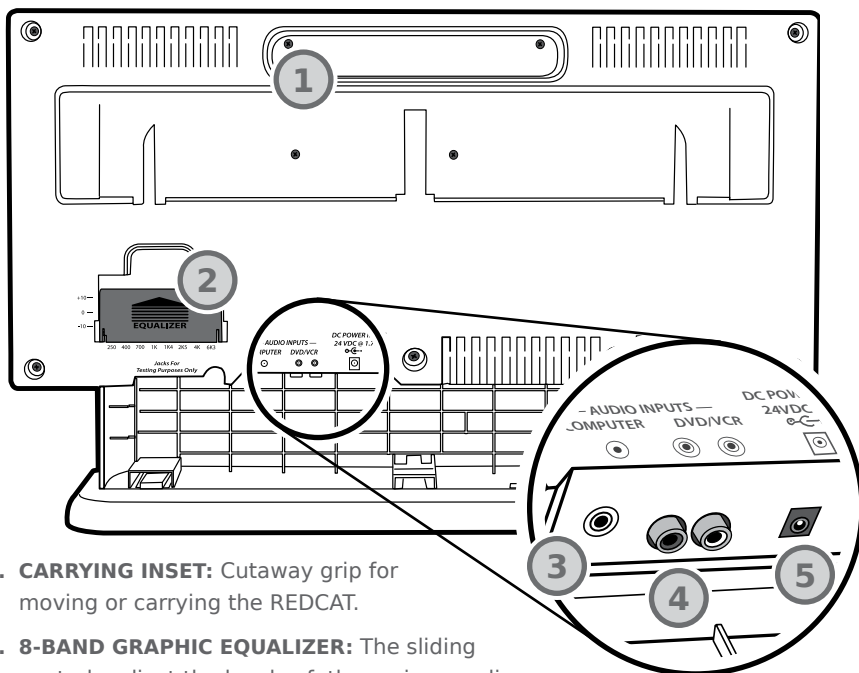
Keep ALL packaging materials. If the system must be returned, using the original packing material will be quick, convenient and prevent damage.

SIDE PANEL CONTROLS AND CONNECTIONS

- 1. COMPUTER VOLUME:** Controls the volume level of the audio input from a computer or other device connected to the “computer” input. Rotating the knob clockwise increases volume level.
- 2. DVD/VCR VOLUME:** Controls the volume level of the audio input from a DVD/VCR or other device connected to the “DVD/VCR” input. Rotating the knob clockwise increases volume level.
- 3. ALD VOLUME:** Controls the volume level of the audio output to an assisted listening device (ALD). Rotating the knob clockwise increases volume level.
- 4. ALD OUT:** 3.5mm output to an ALD or recording device.
- 5. A VOLUME:** Controls the volume level of the microphone set to Channel A. Rotating the knob clockwise increases volume level.
- 6. B VOLUME:** Controls the volume level of the microphone set to Channel B. Rotating the knob clockwise increases volume level.
- 7. POWER Switch/Indicator:** This switch is used to turn the REDCAT ON or OFF. The POWER light will glow RED when the system is on.
- 8. IR Indicators:** These lights will glow RED when the corresponding microphone is turned on. A steady light confirms the REDCAT is receiving a strong infrared signal.



REAR PANEL CONTROLS AND CONNECTIONS



- 1. CARRYING INSET:** Cutaway grip for moving or carrying the REDCAT.
- 2. 8-BAND GRAPHIC EQUALIZER:** The sliding controls adjust the levels of the various audio frequencies. This allows the installer to properly equalize the system to produce optimum sound quality.
- 3. COMPUTER AUDIO INPUT:** Plug the 3.5mm cord from computer or other audio source into this jack.
- 4. DVD/VCR AUDIO INPUT:** Plug the RCA stereo cord from any DVD or VCR into this mono input jack.
- 5. DC INPUT:** Plug the power supply (24 V/1.75 A) into this jack.

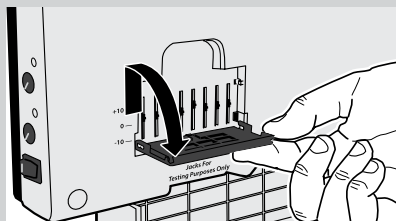


Helpful Hint

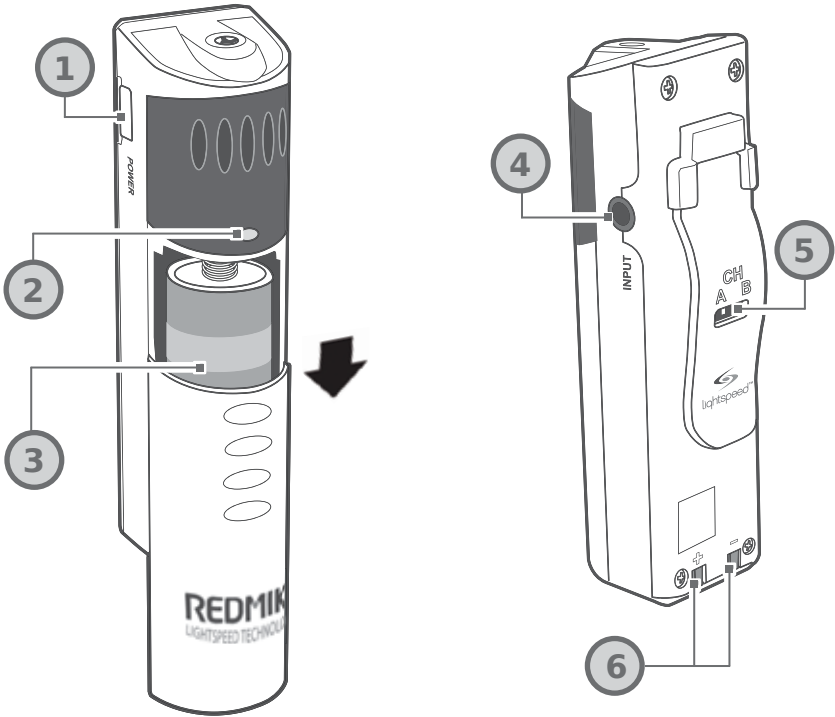
Before adjusting the graphic equalizer refer to the initial set-up on page 18. Sometimes fine-tuning is required to eliminate feedback.

Fine-tuning the Graphic Equalizer:

1. Slide up and flip down the EQ cover door.
2. Walk the room listening for feedback (squealing).
3. Lower the 2K5 and/or 4K sliders if a high-pitched ring is present.
4. Lower the 400 and/or 700 sliders if a low-pitched ring is present.
5. Reduce volume if feedback is still present.



REDMIKE CONTROLS AND CONNECTIONS

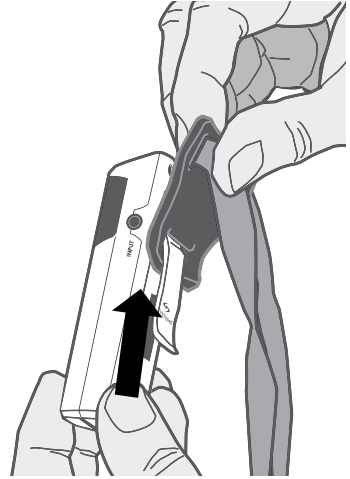
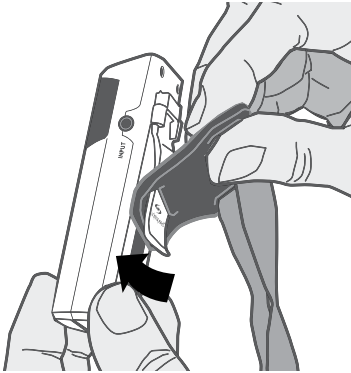


- 1. POWER BUTTON:** Press this button to turn the REDMIKE ON, press again to turn it OFF (mute).
- 2. POWER/LOW BATTERY INDICATOR:** A BLUE light indicates the REDMIKE is on and fully charged. A RED light indicates a charge is needed.
- 3. BATTERY COMPARTMENT:** To access the battery compartment, slide the door downward. The battery should only be replaced by a Lightspeed AA rechargeable sensing battery (part # BA-NH2A27).
- 4. AUDIO/MICROPHONE INPUT:** Use this input to plug in a laptop, MP3 player or other audio source to wirelessly transmit audio to be played through the system. Alternatively, an external microphone can be connected.
- 5. CHANNEL SELECT SWITCH (CH A/B):** This switch allows for selection between Channel A or B. If you are using a single microphone, we recommend using Channel A.
- 6. CHARGER CONTACTS (+ -):** These contacts interface with the charging tabs in the BC-RMCC cradle charger for daily charging. Simply place the REDMIKE in the charger.

ATTACHING THE LANYARD TO REDMIKE

1. ATTACH THE FOAM HOLDER

Insert the REDMIKE clip into the slot at the bottom of the foam holder.

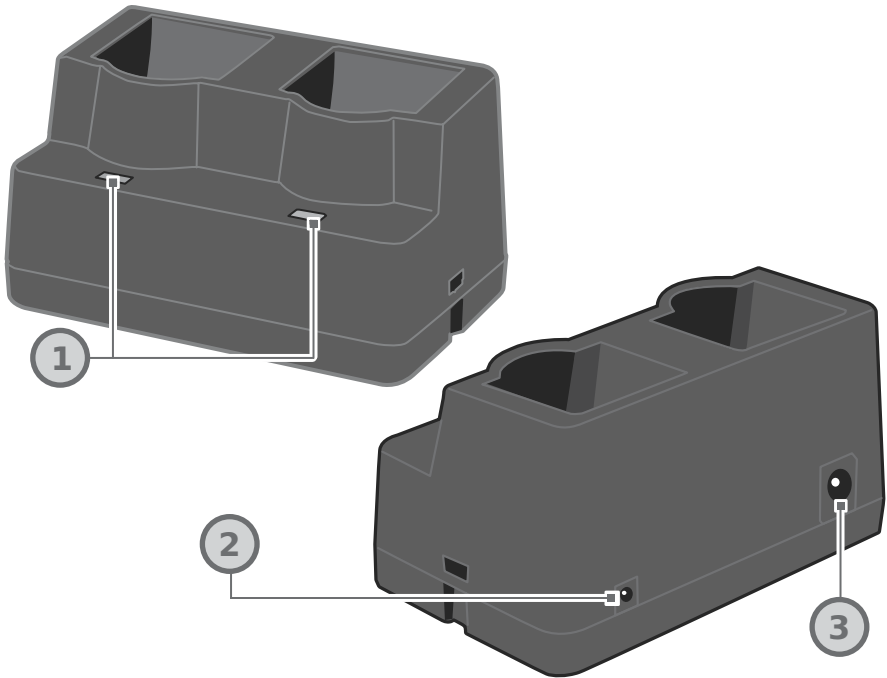


2. POSITION THE REDMIKE

Slip the REDMIKE with lanyard around the neck. Adjust the neck strap so the top of the microphone rests just below your collarbone.



CRADLE CHARGER CONTROLS AND CONNECTIONS

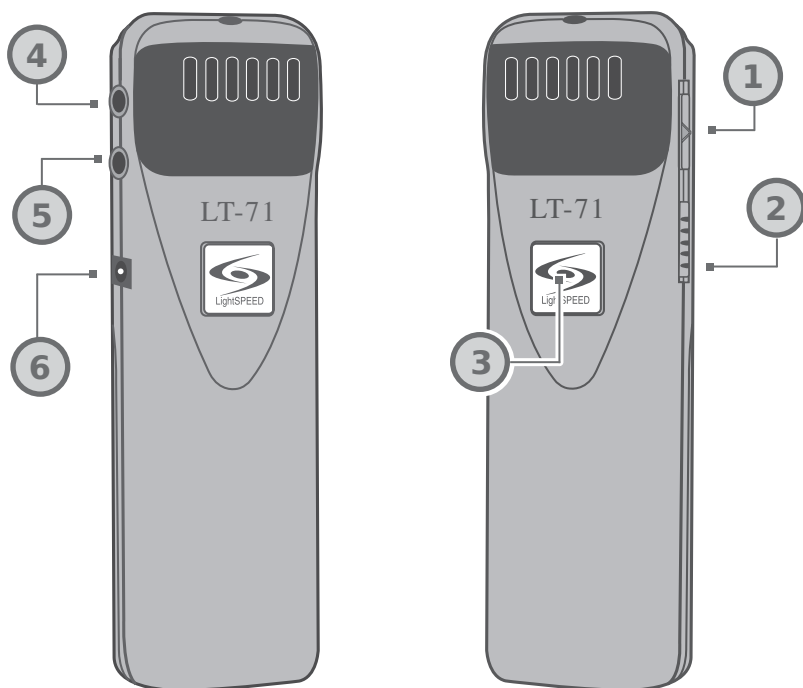


1. CHARGE INDICATORS: The light glows RED while the REDMIKE is charging. When fully charged, the light will glow GREEN. A blinking RED light indicates that no battery is sensed, (paper insulator may not have been completely removed.) A blinking Green LED means a non- Lightspeed battery has been installed (possibly an alkaline battery).

2. DC POWER PORT: Connect the DC power cord here.

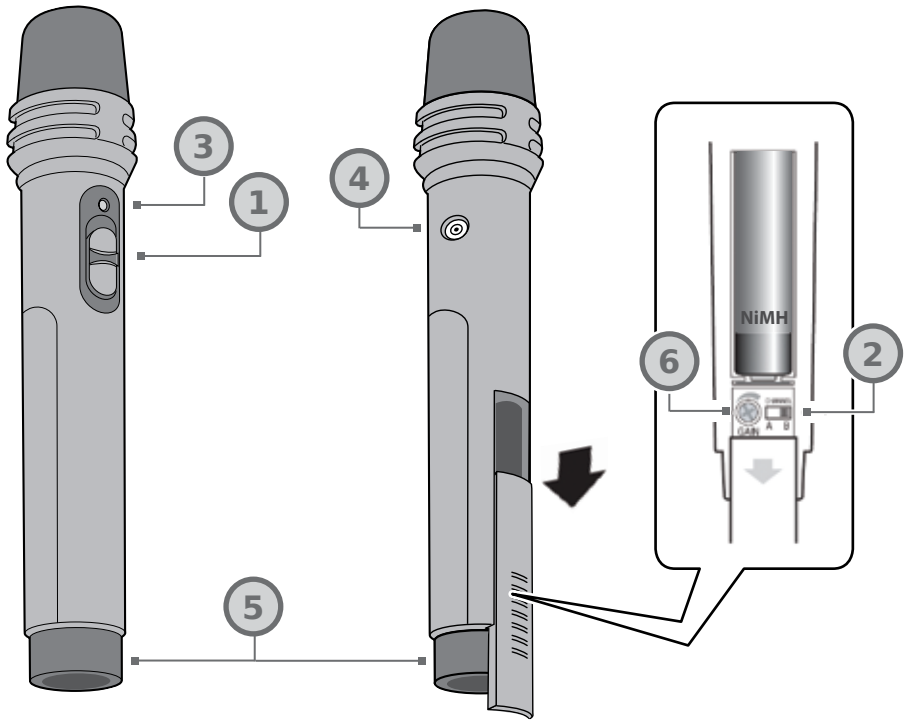
3. OPTIONAL CHARGING PORT: Plug the charging cord for the optional LT-71 or the HM-70 microphones here.

OPTIONAL LT-71 LIGHTMIC CONTROLS AND CONNECTIONS



- 1. ON/OFF/MUTE Switch:** This switch turns LT-71 ON or OFF (mute).
- 2. Channel Select Switch (CH A/B):** This switch allows for selection of Channel A or B. If you are using a single microphone, we recommend using Channel A.
- 3. Power/Charge Indicator:** The light glows BLUE when the LT-71 is powered ON, RED when being charged.
- 4. External Microphone Input (MIC):** Use the 3.5mm MIC jack for the optional TK-250 headset microphone (part# MC-TK250LTM).
- 5. Auxiliary (AUX):** Plug a laptop, MP3 player or other audio source into this jack to wirelessly transmit the audio signal to be played through the system.
- 6. Charger Input (CHARGER):** Plug the charging cable from the charger into this jack for daily charging. The LED on the front will glow RED to indicate charging.

OPTIONAL HM-70 HANDHELD CONTROLS AND CONNECTIONS



1. ON/OFF/MUTE Switch: This switch turns the unit ON, OFF or MUTE.

2. Channel Select Switch (CH A/B): Located in the battery compartment, the switch is set to Channel B at the factory.

3. Power/Charge Indicator: The light glows RED when the HM-70 is powered ON, GREEN when charging.

4. Charger Input (CHARGER): Plug the charging cable from the charger into this jack for daily charging.

5. Infrared Emitters: Avoid covering the emitters as you grip the HM-70 as this could interrupt signal transmission from the microphone.

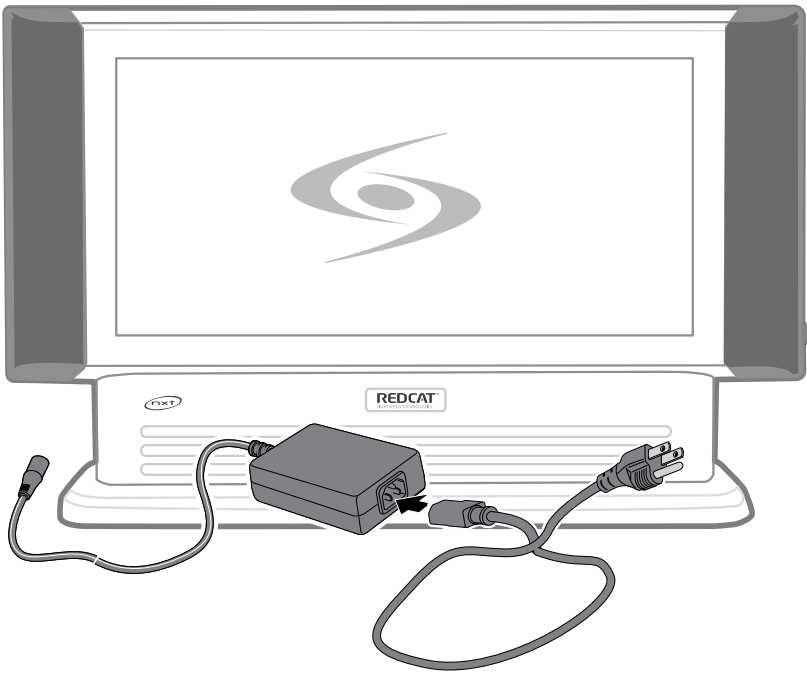
6. Volume Gain Adjustment: Optimum volume level is pre-set at the factory and no adjustment should be necessary.

SECTION 2

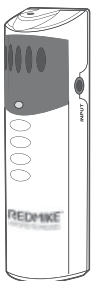
Set-up

1. UNPACKING YOUR SYSTEM

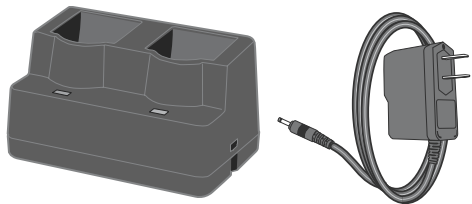
Ensure that you have received all of the components of your system.



REDCAT™ Infrared Receiver/Amplifier w/Table Stand and Power Supply



**REDMIKE™ Classroom
Microphone**



Charging Cradle and Power Supply

2. SETTING UP THE REDCAT

DETERMINE SET-UP METHOD

The REDCAT is shipped with a table stand connected and ready for use. Alternatively, the table stand can be used as the wall mount bracket.

Advantages of either include:

Tabletop (recommended):

- Virtually no setup time
- Greater flexibility to move to different locations

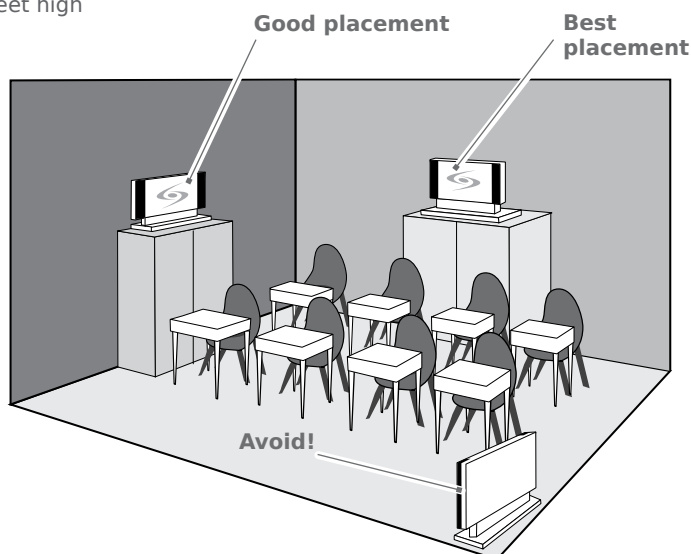
Wall-mount:

- More permanent setup
- Greater security

TABLETOP SET-UP

Select a Location. Find a flat surface and keep in mind the following:

- **Power Source**
Within 7 feet of an electrical outlet
- **Proximity**
BEST: Along the wall in the back of the classroom
GOOD: Along either side of the wall or in a corner
AVOID: Locations next to where the teacher instructs (can result in feedback)
- **Height**
3–6 feet high



SETTING UP THE REDCAT (cont'd)

WALL-MOUNT SET-UP

Select a location.

Identify an open area on the wall with the following characteristics:

- **Power Source**

Within 7 feet of an electrical outlet

- **Proximity**

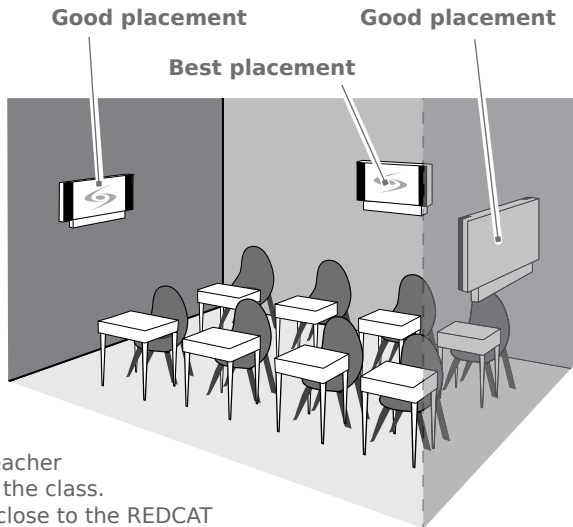
BEST: Centered on the long wall in the back of the classroom

GOOD: On the wall on either side of the classroom

AVOID: Locations on any wall close to where the teacher usually stands to instruct the class. Having the REDMIKE too close to the REDCAT can result in feedback.

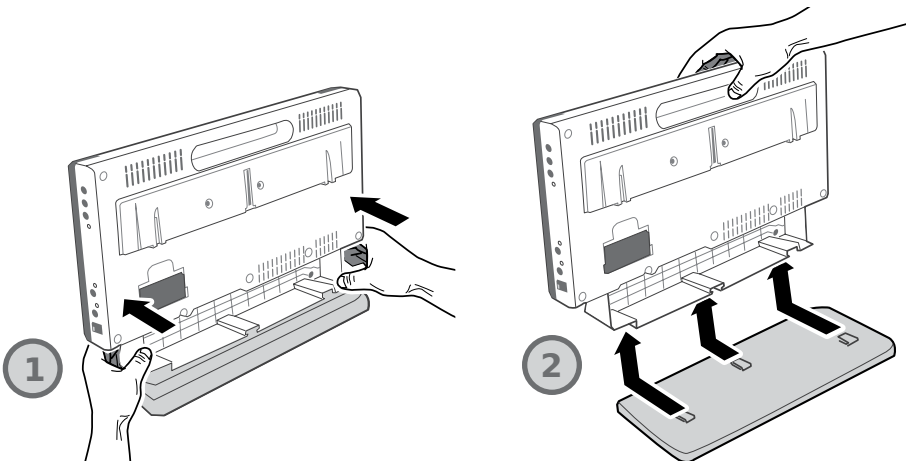
- **Height**

6–8 feet high



REMOVE THE BASE/WALL BRACKET

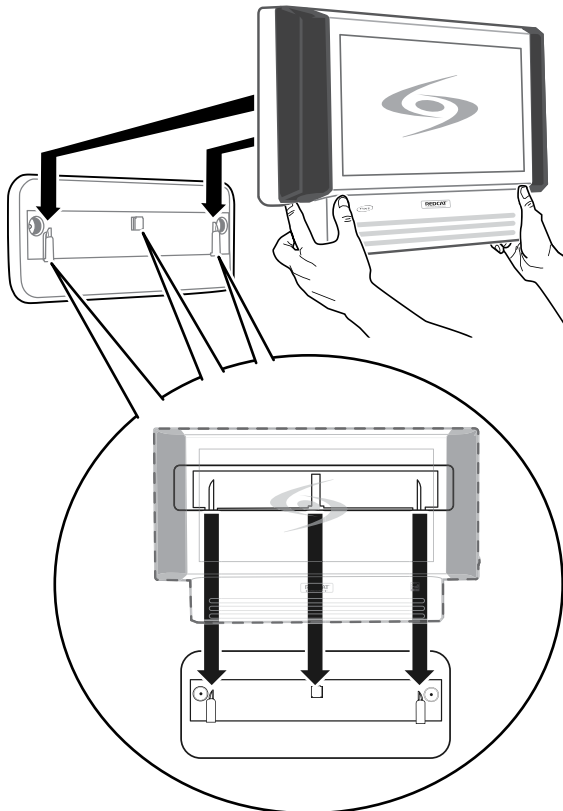
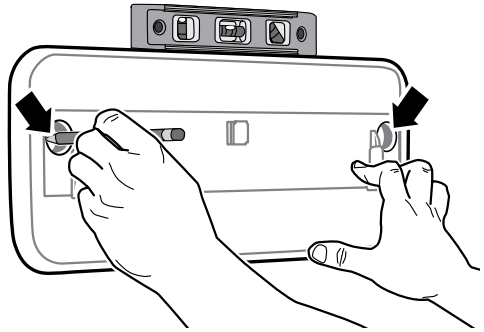
1. **Grip** the bottom of the REDCAT where it meets the base.
2. **Slide** REDCAT off the base clearing the three guides, then lift clear.



SETTING UP THE REDCAT (cont'd)

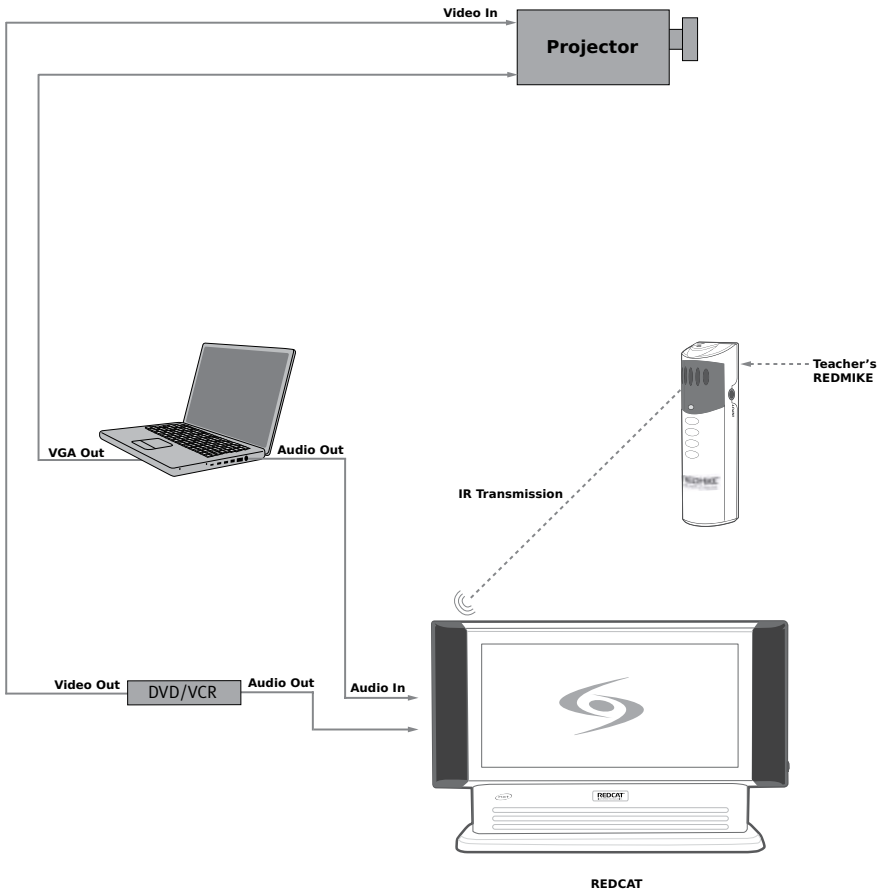
MOUNT BASE/WALL BRACKET

1. **Ensure** proper orientation of the bracket as shown in the illustration.
2. **Place** the base/wall bracket against the wall and use a level to confirm the positioning is straight.
3. **Mark** the wall where the retaining screws will be installed.
4. **Attach** the bracket to the wall using the mounting screws and drywall anchors (if required).
5. **Holding** the REDCAT firmly by the bottom quarter, slide the REDCAT onto the wall bracket as illustrated below.



3. AUDIO INTEGRATION

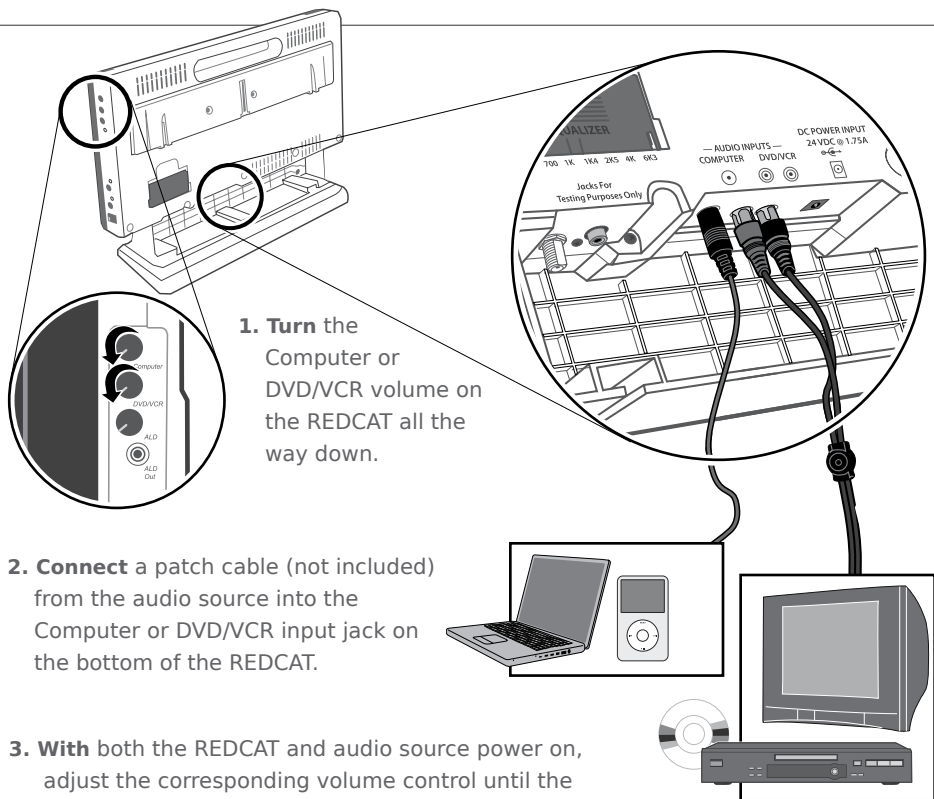
REDCAT BLOCK DIAGRAM



The REDCAT is designed to integrate with multiple audio sources allowing other instructional technologies to be clearly heard throughout the classroom.

AUDIO INTEGRATION (cont'd)

Below are instructions on how to connect an external audio device like a TV, VCR, DVD, MP3 or computer directly into the REDCAT.

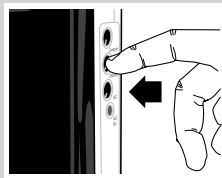
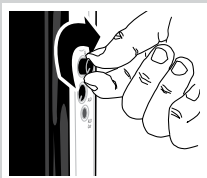


1. Turn the Computer or DVD/VCR volume on the REDCAT all the way down.

2. Connect a patch cable (not included) from the audio source into the Computer or DVD/VCR input jack on the bottom of the REDCAT.

3. With both the REDCAT and audio source power on, adjust the corresponding volume control until the desired level is achieved.

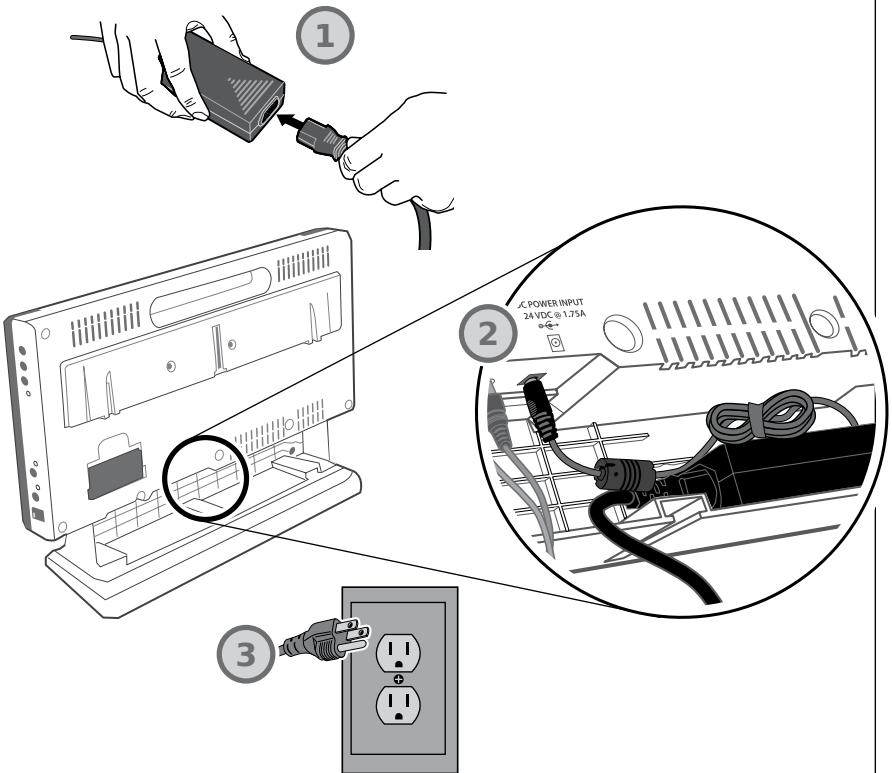
NOTE! Be careful to not to set the volume too high, as this can distort the speaker and potentially cause damage.



REDCAT volume controls push in and lock to prevent accidental adjustment.

4. CONNECTING THE POWER SUPPLY

- 1. Locate** the power supply and AC power cord. Connect the AC power cord into the DC power supply.
- 2. Place** the power supply into the REDCAT base as shown. If desired, remove the plastic cover of the included Velcro strip and attach the supply to the Velcro for a more secure fit.
- 3. Insert** the DC connector into the “DC POWER INPUT” connector on the bottom of the REDCAT and plug the other end to an electrical outlet.



FINAL CHECK

- 1. Ensure** all cables are appropriately routed out of walking paths and work areas to prevent safety hazards to individuals in the room.
- 2. The REDCAT** packing material should be kept for warranty shipping purposes.
- 3. Proceed** to initial set-up to test system performance.

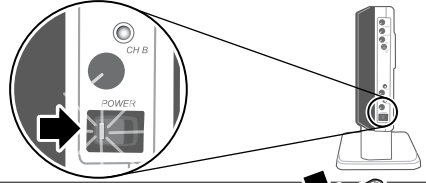
***Leave microphones charging so they are ready for use.
Microphones will need to be charged on a daily basis.***

SECTION 3

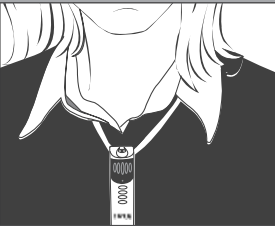
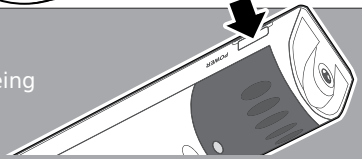
System Operation and Optional Features

INITIAL SET-UP: REDMIKE

1. **Turn** the REDCAT switch to the ON position. The RED LED on the switch will glow.

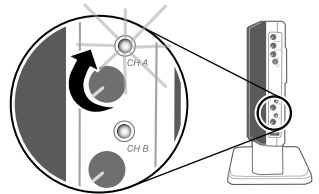


2. **Turn** on the REDMIKE. The CH A/B GREEN LED on the REDCAT will light to indicate an IR signal is being received.

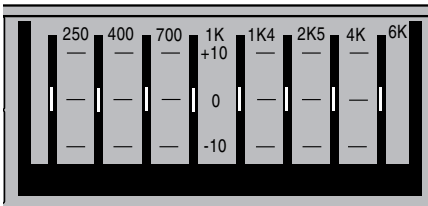


3. **Slip** the REDMIKE with lanyard around the neck and position the top of the microphone just below the collarbone. **NOTE:** Positioning of the REDMIKE is critical for proper volume adjustment.

4. **While** speaking in a normal voice slowly increase the volume of the corresponding channel on the REDCAT until your voice is barely audible. **REMEMBER:** This equipment supplements user's voice so they are able to speak in a conversational tone. Having the volume set too high will result in feedback and listener fatigue.

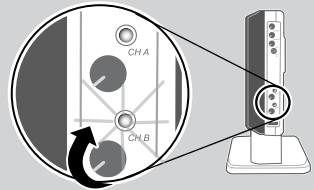


5. **Once** initial volume level is set, walk around the room and listen for audio dropout and overall audio quality. Fine-tuning the audio is accomplished by making minor adjustments to the 8-Band Graphic Equalizer on the back panel of the REDCAT.



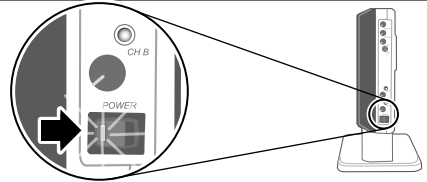
See page 4 for hints on setting the EQ.

6. **If** a second REDMIKE was purchased, repeat steps 2-4. **NOTE:** Each REDMIKE has its Channel pre-set to either A or B. No further adjustment is necessary.

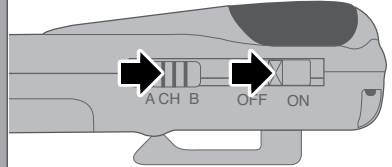


INITIAL SET-UP: OPTIONAL LT-71

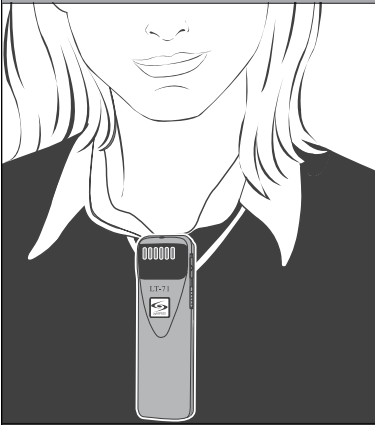
- 1. Ensure** the REDCAT is ON. The RED LED on the switch will glow.



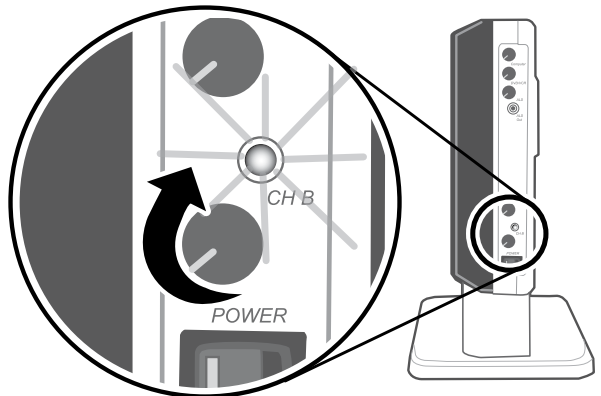
- 2. Turn** on the LT-71 and set the operating channel to "B".



- 3. Slip** the LT-71 with lanyard around the neck and position the top of the microphone just below the collarbone. **NOTE:** Positioning of the LT-71 is critical for proper volume adjustment.

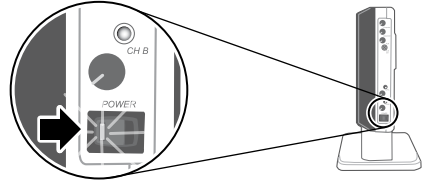


- 4. While** speaking in a normal voice, increase the B VOLUME level until your voice is barely audible. **REMEMBER:** This equipment is designed to supplement and distribute the end user's voice so they are able to speak in a conversational tone. Having the volume set too high will result in feedback and listener fatigue.

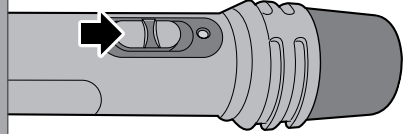


INITIAL SET-UP: OPTIONAL HM-70

- 1. Ensure** the REDCAT is ON. The RED LED on the switch will glow.



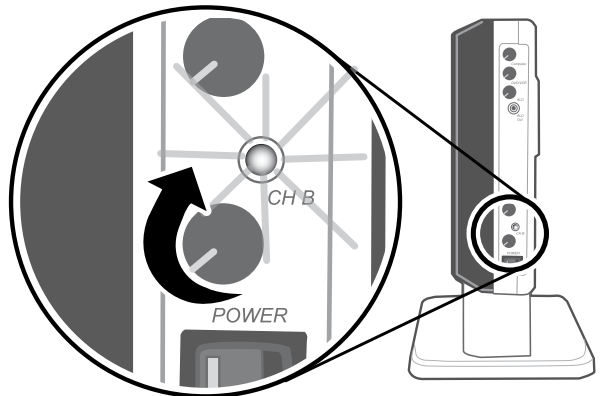
- 2. Turn** on the HM-70 by sliding the switch to the top position.



- 3. Grip** the barrel in the center section. Avoid covering the infrared emitters circling the base. This could interrupt signal transmission.

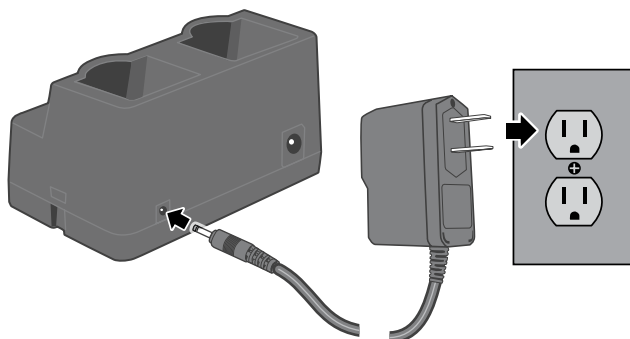


- 4. While** speaking in a normal voice, increase the B VOLUME level until your voice is barely audible. **REMEMBER:** This equipment is designed to supplement and distribute the user's voice so they are able to speak in a conversational tone. Having the volume set too high will result in feedback and listener fatigue.

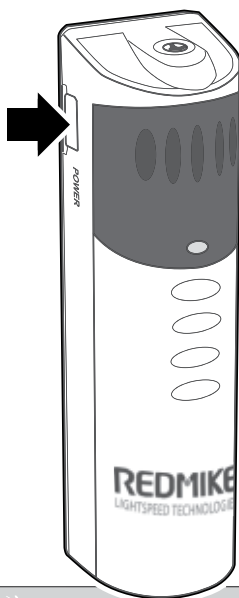


CHARGING THE REDMIKE

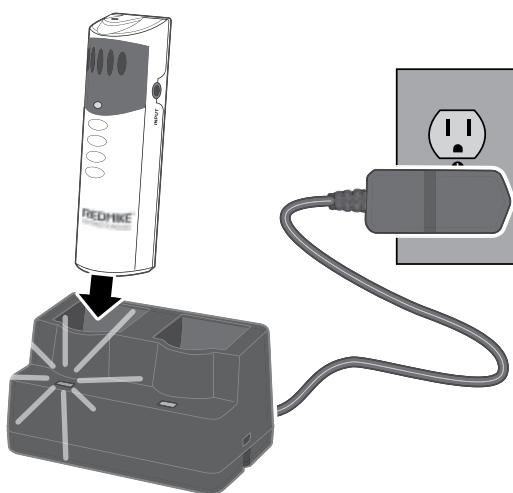
- 1. Plug** power cord into the cradle charger and then plug the AC end into an electrical outlet.



- 2. Ensure** that the REDMIKE is turned OFF.



- 3. Place** the REDMIKE into the cradle. The LED on the cradle will glow RED indicating charging has started. When the REDMIKE is fully charged the LED on the cradle charger will change to GREEN.

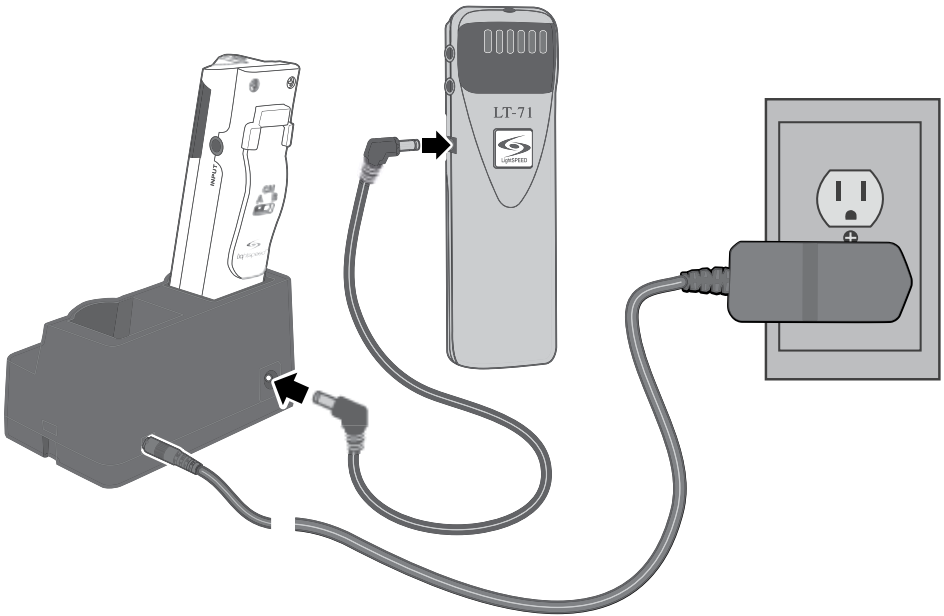


Helpful Hint

- REDMIKE incorporates alkaline protection into the microphone design. Replacement AA NiMH batteries may only be purchased through Lightspeed technologies (part # BA-NH2A27).
- A blinking LED indicates a charging error (see page 7). Be sure to use a Lightspeed rechargeable sensing battery.

CHARGING THE OPTIONAL LT-71

1. **Ensure** that the LT-71 is turned OFF.
2. **Make** sure the cradle charger is plugged into a wall outlet. Connect one end of the charging cable into the jack labeled CHARGER on the side of the LT-71 and plug the other end into the charging jack on the rear of the REDMIKE cradle charger. The LT-71's rechargeable batteries are factory installed. The LED on the front of the LT-71 will glow RED when charging.
3. **Leave** the LT-71 plugged in overnight (8–10 hrs.) to obtain a full charge.

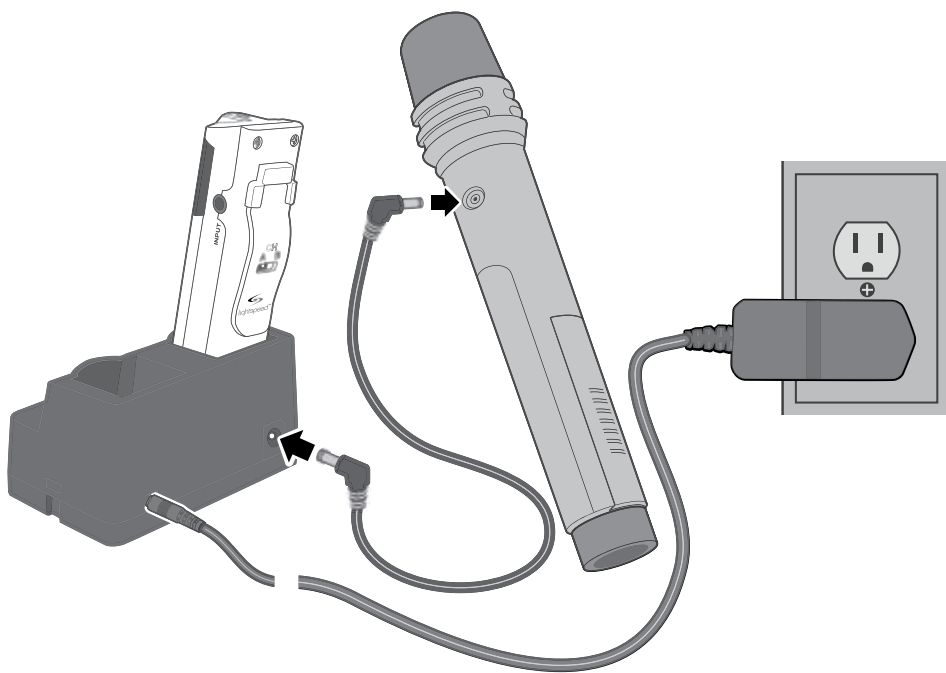


Helpful Hint

- Microphones can be left in the charger for up to two weeks without degradation to battery life
- A full charge will be attained in 8-10 hours
- Fully charged Lightspeed microphones will last over 7 hours

CHARGING THE OPTIONAL HM-70

1. **Ensure** that the HM-70 is turned OFF.
2. **Make** sure the cradle charger is plugged into a wall outlet. Connect one end of the charging cable into the jack labeled CHARGER on the side of the HM-70 and plug the other end into the charging jack on the rear of the cradle charger. The HM-70's rechargeable batteries are factory installed. The LED on the front of the Handheld Mic will glow GREEN when charging.
3. **Leave** the HM-70 plugged in overnight (8–10 hrs.) to obtain a full charge. The GREEN light will turn off when fully charged.

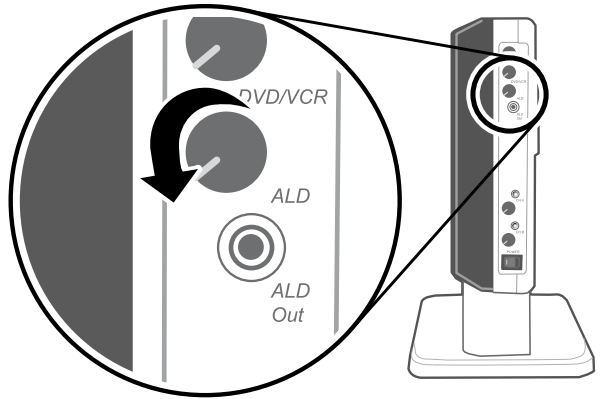


Helpful Hint

Do not attempt to charge alkaline batteries. They can overheat and expand, creating a significant hazard and damaging the LT-71 and HM-70. (This is not covered by the warranty.)

OUTPUT TO ASSISTIVE LISTENING DEVICE (ALD)

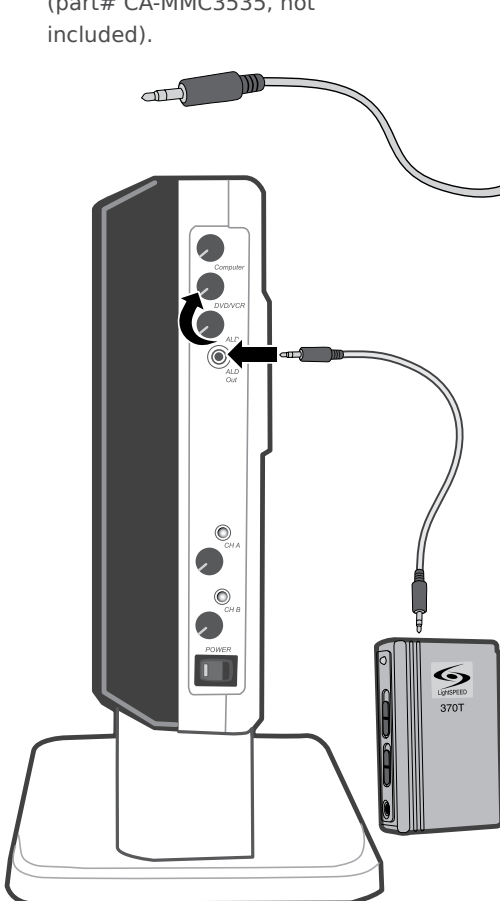
- 1. Turn** the ALD (Assistive Listening Device) volume control all way the down.
- 2. Determine** the size and type of audio input jack on the device as many manufacturers' products differ in connector size and shape. The Lightspeed LES-370 Personal FM System requires a 3.5mm to 3.5mm patch cable (part# CA-MMC3535, not included).



- 3. Connect** a patch cable from the ALD's microphone jack or AUX input to the 3.5mm audio jack labeled "ALD OUT" on the side of the REDCAT.

- 4. Adjust** the volume control on the ALD's receiver to maximum output. **NOTE:** This is to set the maximum allowable signal from the REDCAT.

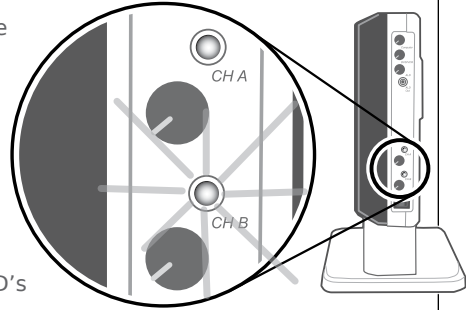
- 5. With** the REDCAT and ALD turned on, speak into the REDMIKE and slowly adjust the ALD volume control until the appropriate audio level is attained in the ALD's receiver headphones.



USING THE REDMIKE TO AMPLIFY EXTERNAL AUDIO EQUIPMENT

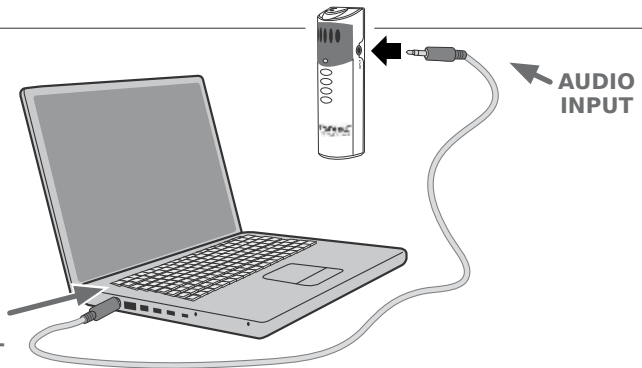
The REDMIKE includes a 3.5mm audio input jack to connect to an audio source like a laptop or MP3 player. The REDMIKE will transmit the audio signal to be played through the system.

1. If your system includes two REDMIKEs, use the student microphone (already set to Channel B). **NOTE:** This feature works on both channels but we recommend using Channel B so the teacher's volume on the CH A does not have to be adjusted. **REMEMBER:** It's easy to determine which REDMIKE is set to Channel B by speaking into the mic and watching which set of LED's glow on the side of the REDCAT.

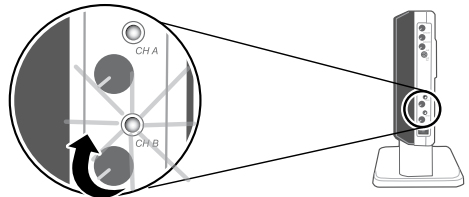


2. Plug your laptop, MP3 player or other audio source into the input on the REDMIKE labeled "INPUT" using a 3.5mm patch cable.

**AUDIO
OUTPUT**

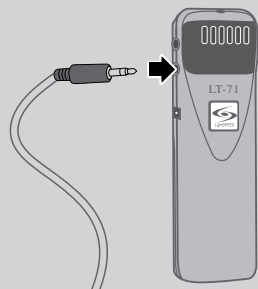


3. **Adjust** the volume of the selected mic channel to achieve desired loudness.



Helpful Hint

The optional LT-71 can also amplify external audio. Simply plug the 3.5mm patch cable from the audio source into the input labeled "AUX IN" and adjust the volume of the source to the desired sound level.



SECTION 4

Troubleshooting, Daily Use and Warranty

TROUBLESHOOTING GUIDE

NOTE: Most problems are directly related to low battery power. Please run through the "Battery Check" items first. For remaining troubleshooting, use known good, fully-charged batteries.

Battery Check

- **Confirm** batteries are charged each night.
- **Confirm** proper batteries are used. The REDMIKE requires the Lightspeed BA-NH2A27 rechargeable sensing battery for proper charging. The LT-71 & HM-70 require NiMH AA rechargeable batteries.
- **Make** sure the REDMIKE is turned off while charging so that it will attain a full charge. Full charge will last eight hours.
- **Inspect** the battery contacts. Clean and adjust if necessary.

Hearing Static

- **Ensure** sensor is in optimum location (refer to sensor placement in manual). A single sensor will cover a 1600 sq. ft. enclosed classroom.
- **Ensure** that no other REDMIKE/LT71/HM70 is operating on the same channel.
- **If** an external microphone is in use, try another REDMIKE that is known to be working (if available) to isolate the problem. If static persists with "known good" microphone, the REDMIKE input jack will need service.

Low Volume or Feedback

- **Ensure** microphone is positioned appropriately, just below the collar bone.
- **Check** volume level on the amplifier. If the volume is too high, feedback WILL occur. Adjust accordingly.

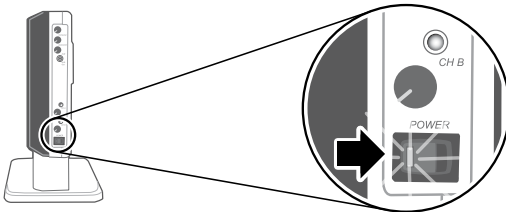
No Sound From Speaker

- **Turn** the REDCAT on. Confirm that the POWER light located on the front panel switch is on.
- **Confirm** signal is being received at the REDCAT. The IR signal light will be GREEN indicating a signal is being received.
- **Confirm** that REDMIKE is turned on. There will be a BLUE LED on the microphone to indicate it is powered on.

If you review these instructions and still have questions, write down the serial number and model number of your system and call Lightspeed Technical Services at 800.732.8999, 5 a.m. – 5 p.m. PST.

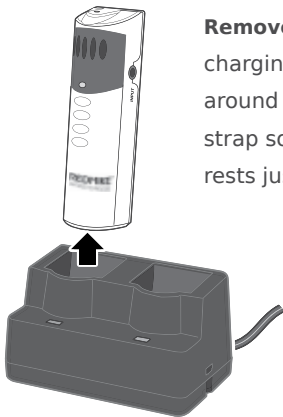
DAILY USE INSTRUCTIONS

1. TURN ON THE REDCAT

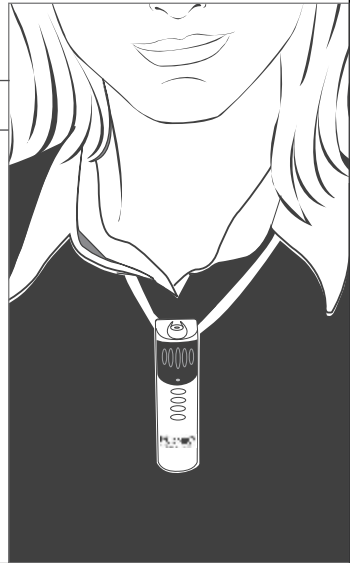


Ensure the power is switched on.

2. POSITION THE REDMIKE

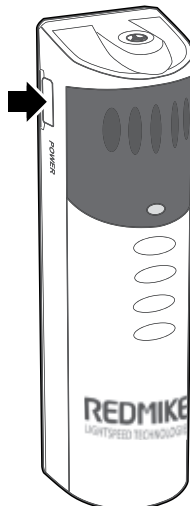


Remove the REDMIKE from the charging cradle and place it around your neck. Adjust the neck strap so the top of the microphone rests just below your collarbone.



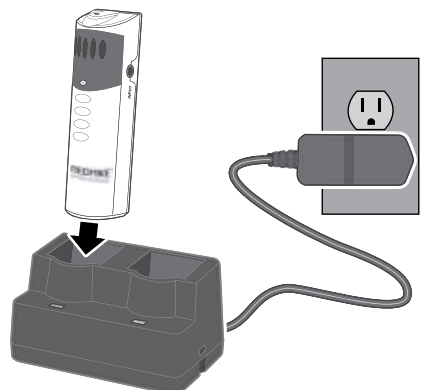
3. TURN ON THE REDMIKE

Turn the microphone ON using the ON/OFF switch on the side of the REDMIKE and speak normally.



4. CHARGE BATTERIES

Place the REDMIKE back into the charging cradle to recharge at the end of the day.



TIPS ON CLASSROOM AUDIO

1

Speak in a natural voice. A normal conversational speech level will provide an adequate signal. It is not necessary to increase the intensity of your voice—the audio system provides adequate amplification (approximately 5 – 10 dB) above ambient room noises.

2

Avoid wearing jewelry that may rub or bump against the microphone.

3

Turn the REDMIKE off during private conversations with a student, parent, or other classroom visitor. You can also cover the LED lens on the REDMIKE to block the signal.

4

Recharge batteries each night. When recharged nightly, operating time (actual usage) for the microphones will last through a typical school day.

Five-year Limited Warranty

Lightspeed Classroom Audio Systems are guaranteed against malfunction due to defects in materials and workmanship for a period of FIVE (5) YEARS, beginning at the date of the purchase invoice. If such malfunction occurs, the product will be repaired or replaced (at Lightspeed's option) without charge during the warranty period.

1. Warranty on infrared microphones is FIVE (5) YEARS.
2. Warranty on Lightspeed rechargeable batteries, all external cables and wires provided by Lightspeed is one (1) year.
3. Prepaid shipping labels are provided by Lightspeed factory or an authorized warranty service center for warranty repairs.
4. Warranty does not extend to finish, appearance items, or malfunctions due to abuse or operation other than specified conditions, nor does it extend to incidental or consequential damages. Repair by other than Lightspeed or its authorized service agencies will void this guarantee. Information on authorized service agencies is available from Lightspeed Technologies, Inc.

**Our Service Department (800.732.8999, 5 a.m. – 5 p.m., PST)
will handle all your repair/replacement needs.**

SYSTEM SPECIFICATIONS

OVERALL SPECIFICATIONS

Power Output	20 Watts
Amplifier Frequency Response	120 Hz – 13 kHz
Signal-to-Noise Ratio.....	>77 dB
Dynamic Range.....	> 73 dB
Overall Dimensions (W x D x H)	14" x 22.25" x 3"
Table Stand Footprint (W x D)	18.9" X 7"
Weight.....	8 lbs.

RECEIVER SPECIFICATIONS

Carrier Frequencies (IR)	2.06 / 2.54 MHz
IR Operating Range.....	up to 1600 square feet
Receiver Type.....	Superheterodyne
Receiver Sensitivity.....	6 µV for 60 dB S/N
Image and Spurious Rejection.....	> 70 dB

TRANSMITTER SPECIFICATIONS

REDMIKE

Audio Distortion	< 1 %
Built-in Microphone	Unidirectional Electret
Battery Power (1-year warranty).....	1 AA NiMH Rechargeable Sensing Battery
Audio Input	3.5mm
Dimensions (W x D x H)	0.9" x 1.0" x 3.5"
Weight.....	2.1 oz.

LT-71

Audio Distortion	< 1 %
Built-in Microphone	Unidirectional Electret
Battery Power (1-year warranty).....	2 AA NiMH Rechargeable
Audio Inputs.....	Mic Level 3.5mm Line Level 3.5mm
Dimensions (W x D x H)	1.375" x .75" x 4.625"
Weight.....	3.7 oz.

HM-70

Audio Distortion	< 1 %
Built-in Microphone	Unidirectional Electret
Battery Power (1-year warranty).....	2 AA NiMH Rechargeable
Dimensions (W x D x H)	2.25" x 2.25" x 8.75"
Weight.....	7.36 oz.

INDIVIDUAL COMPONENTS & OPTIONAL ACCESSORIES

Part Number	Description
RX-RC	REDCAT all-in-one receiver/amplifier/speaker
PS-24V-1.75	Power supply for REDCAT
RMT	REDMIKE classroom microphone with lavalier cord and rechargeable AA battery
AC-PFC	PageFirst Sensor
BA-NH2A27	Lightspeed AA rechargeable sensing battery (for REDMIKE)
AC-RMLC	Lavalier cord for REDMIKE
BC-RMCC	REDMIKE cradle charger
PS-5V-1.0	Cradle charger power supply
Optional Accessories	
LT71	LightMic microphone with lavalier cord, rechargeable batteries and charging cable
HM70	Handheld microphone with rechargeable batteries and charging cable
MC-TK250LTM	Noise-canceling headset microphone
AC-TCC7	Charging cable for LT-71 and HM-70 microphones
CA-RCA6	6' dual RCA audio cable
CA-RCA24	24' dual RCA audio cable
CA-MS3535	3.5mm to 3.5mm stereo audio cable
CA-MM3535	Audio patch cable (2.5mm to 3.5mm mono)
BA-NH1	AA Rechargeable battery (for LT-71 and HM-70)

USER NOTES

	Record your system serial numbers and purchase information. This is helpful when ordering additional components, accessories, and/or warranty service.
Components	Serial Number
REDCAT	
Microphones	
Purchase Information	
Your School/Organization	
District	
Purchase Date	
Invoice	

USER NOTES

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