Lightspeed

Cat 800 Series

Classroom Audio Systems

Cat 855

Cat 885

User Manual
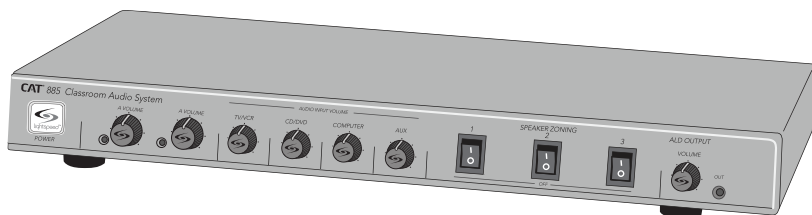
TABLE OF CONTENTS

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use the apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding- type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. When the mains plug or appliance coupler is used as the disconnect device, it shall remain readily operable.
16. Please keep the unit in a good ventilation environment.
17. WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
18. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
19. Warning - battery pack shall not be exposed to excessive heat such as sunshine, fire or the like.

5. Warranty &
Specifications

4. Troubleshooting

3. Optional
Accessories

2. Daily Operarion

1. Overview

SECTION 1:

OVERVIEW

SYSTEM COMPONENTS AND UNPACKING

The standard configuration of the Cat 800 system will contain:

Cat 855 Amplifier

Cat 885 Amplifier

Amplifier
Power Supply

ISR Infrared Sensor/
Receiver and Cable

SYSTEM COMPONENTS AND UNPACKING

CONT'D

5. Warranty &
Specifications

4. Troubleshooting

3. Optional
Accessories

2. Daily Operarion

1. Overview
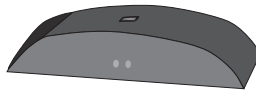
Redmike®
Classroom
Microphone

Cradle Charger and
Power Supply

Wall Bracket
(855WB) for Cat
855 Amplifier Only

SYSTEM COMPONENTS AND UNPACKING
CONT'D

Speakers
Systems can be configured with a variety of different speaker types, including the following:

TCQ (x 1)
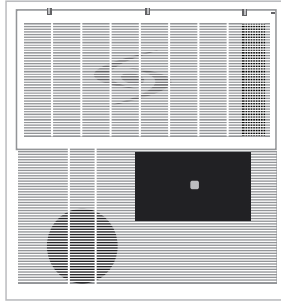
DRQ (x 4)
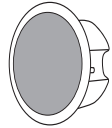
WMQ (x 4)
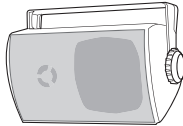
4jCS (x4)
(plenum rated)
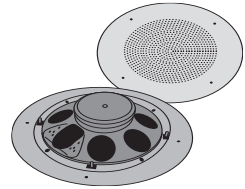
SYSTEM COMPONENTS AND UNPACKING

CONT'D

Standard Components for 855/885

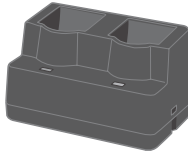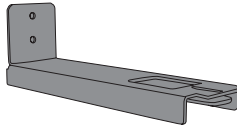|	
855 (or)	Audio amplifier/mixer
885	Audio amplifier/mixer
24V-2.5-NA	24V/2.5A power supply for 855/885 in U.S. and Canada
24V-2.5-_	24V/2.5A power supplyfor 855/885, specify country
ISR	Infrared sensor/receiver with mounting bracket
P5E50	50' plenum-rated Cat 5e cable
RMT2	Redmike classroom microphone with battery & lavaliere cord
NH2A27	AA NiMH rechargeable sensing battery for Redmike
RMCC	Redmike cradle charger
5V-1.0-NA	5V/1.0A power supply for cradle charger in U.S. and Canada
5V-1.0-INT	5V/1.0A power supply for cradle charger outside U.S. and Canada
855WB	Wall mount bracket for 855 only.
SPEAKERS	As ordered.

OPTIONAL ACCESSORIES CONT'D

Optional equipment which may be part of your CAT 885 or 855 system:

Redmike® VC
Volume Control
Microphone (RMV2)

Redmike Share
Handheld Mic &
Charger Cable
(RMS2)
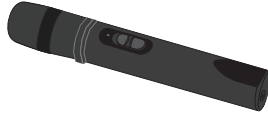
Infrared Media
Connector
(IRMC2)

Page First Kit
(PFSC)
for 855/885
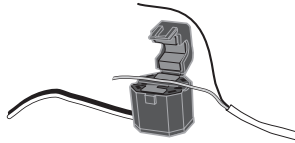
Amplifier Shelf
(800WB) for
Cat 885
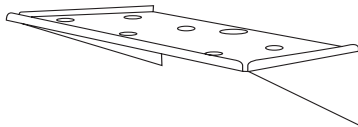
Replacement Parts

NH2A27	AA NiMH rechargeable sensing battery for Redmike & RMV
NH2APK	NiMH rechargeable battery pack for Redmike Share
TCC7	Charging Cable for Redmike Share

CAT 855: FRONT PANEL CONTROLS
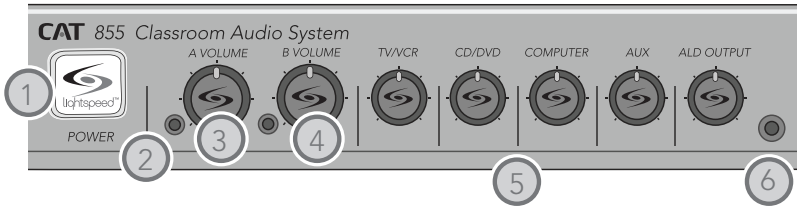
1. POWER SWITCH/INDICATOR: Press this button to turn the Cat 855 on (pushed in) or off. When the POWER is switched on, the blue LED indicator will light.

2. AUDIO INDICATORS: These lights flash red when audio (voice) from the microphone is detected.

3. A VOLUME: Controls the volume of the teacher microphone (set to channel A). Rotating the knob clockwise increases output level.

4. B VOLUME: Controls the volume of the student or second teacher microphone (set to channel B). Rotating the knob clockwise increases output level.

5. AUDIO INPUT VOLUMES: Control the volume of the audio coming from the media source (computer, TV/VCR, CD/DVD, etc.) connected to the corresponding input on the rear panel.

6. ALD OUTPUT AND VOLUME: 3.5mm stereo jack sends audio signal to external equipment such as a recorder or an assistive listening device like Lightspeed's 370 Transmitter. Use the volume control to set the optimum signal level for the device.

CAT 855: BACK PANEL CONTROLS
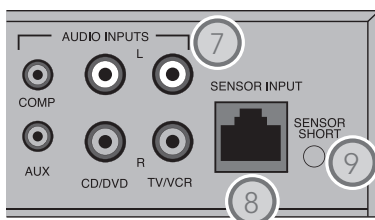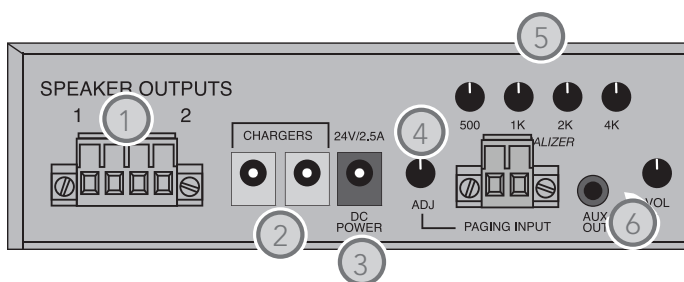
1. SPEAKER OUTPUTS (1-2): This euro-block connector is used to connect the Cat 855 to the loudspeaker(s). Up to two 8-ohm speakers can be connected to each output.

   Note: Wiring to these terminals should follow the Class 2 wiring methods as outlined in the National Electric Code.

2. CHARGERS: These jacks can be used to charge the handheld microphone.

3. DC POWER: Plug the power supply (24V/2.5A) into this jack.

4. PAGING INPUT AND ADJ: Connect the input from optional PageFirst sensor here when interfacing with a building's paging system. Use the ADJ control to adjust the sensitivity if needed.

5. EQUALIZER (4-BAND): Adjust these controls upon installation to properly equalize the system to produce optimum audio quality from the microphone(s).

6. AUX OUT AND VOL: This jack sends audio to external equipment such as an assistive listening device (Personal FM System) or recording device. Use the volume control to set the optimum signal level for the device.

7. AUDIO INPUTS: These connections accept an audio signal from other technology so all multimedia can be distributed evenly throughout the classroom.

8. SENSOR INPUT: The infrared microphone audio from the ISR is connected to this input via Cat 5 cable.

9. SENSOR SHORT: This LED glows red when there is a short in the ISR or cable. The system will not operate, but is protected from damage when the LED is lit.

5. Warranty &
Specifications

4. Troubleshooting

3. Optional
Accessories

2. Daily Operarion

1. Overview

CAT 885: FRONT PANEL CONTROLS
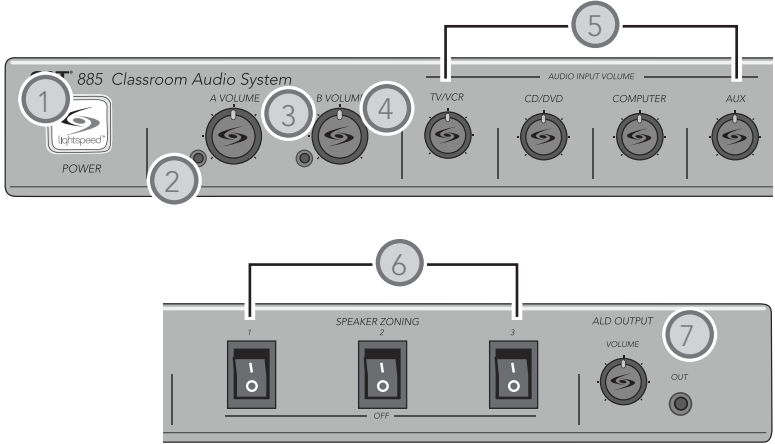

1. **POWER SWITCH/INDICATOR:** Press this button to turn the Cat 885 on (pushed in) or off. When the POWER is switched on, the blue LED indicator will light.

2. **AUDIO INDICATORS:** These lights flash red when audio (voice) from the microphone is detected.

3. **A VOLUME:** Controls the volume of the teacher microphone (set to channel A). Rotating the knob clockwise increases output level.

4. **B VOLUME:** Controls the volume of the student or second teacher microphone (set to channel B). Rotating the knob clockwise increases output level.

5. **AUDIO INPUT VOLUMES:** Control the volume of the audio coming from the media source (computer, TV/VCR, CD/DVD, etc.) connected to the corresponding input on the rear panel.

6. **SPEAKER ZONING:** These switches turn the corresponding speakers (connected to speaker outputs in the corresponding zones on the back panel) on or off.

7. **ALD OUTPUT AND VOLUME:** 3.5mm stereo jack sends audio signal to external equipment such as a recorder or an assistive listening device like Lightspeed's 370 Transmitter. Use the volume control to set the optimum signal level for the device.
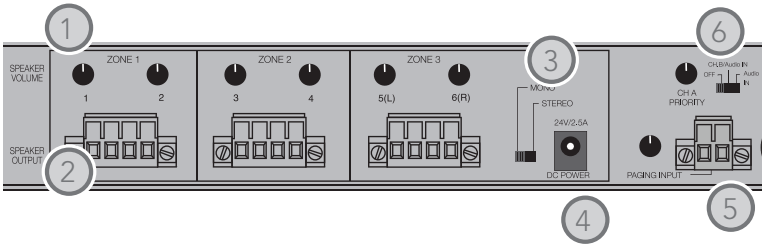
CAT 885: BACK PANEL CONTROLS

1. SPEAKER VOLUME (1-6): Controls the output volume of the corresponding speaker. Fully clockwise represents maximum audio level supplied to the speaker.

2. SPEAKER OUTPUTS (1-6): This euro-block connector is used to connect the Cat 885 to the loudspeaker(s). Up to two 8-ohm speakers can be connected to each output (maximum of 12 8-ohm speakers).

   *Note: Wiring to these terminals should follow the Class 2 wiring methods as outlined in the National Electric Code.

3. MONO/STEREO SWITCH: This switch toggles between mono and stereo speaker output for channels 5 (left) and 6 (right). This switch impacts only the multimedia sources (voice is always mono) and only outputs 5 and 6.

4. DC POWER: Plug the power supply (24V/2.5A) into this jack.

5. PAGING INPUT AND ADJ: Connect the input from optional PageFirst sensor here when interfacing with a building's paging system. Use the ADJ control to adjust the sensitivity if needed.

6. TEACHER VOICE PRIORITY: This 3-position switch activates the Teacher Voice Priority function.
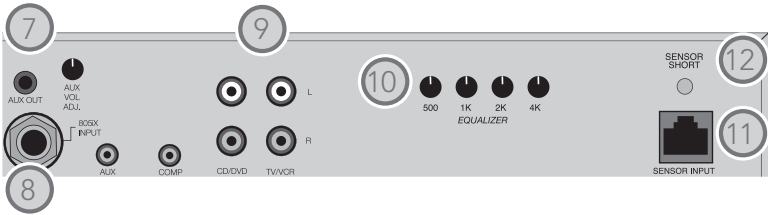
7. AUX OUT AND VOL: This jack sends audio to external equipment such as an assistive listening device (Personal FM System) or recording device. Use the volume control to set the optimum signal level for the device.

8. 805iX INPUT: This input jack allows for interface with the Lightspeed 805iX wireless microphone system, which adds two additional microphone channels.

9. AUDIO INPUTS: These connections accept an audio signal from other technology so all multimedia can be distributed evenly throughout the classroom.

10. 4-BAND AUDIO EQUALIZER: Adjust these controls upon installation to properly equalize the system to produce optimum audio quality from the microphone(s).

11. SENSOR INPUT: The infrared microphone audio from the ISR is connected to this input via Cat 5 cable.

12. SENSOR SHORT: This LED glows red when there is a short in the ISR or cable. The system will not operate, but is protected from damage when the LED is lit.

ISR: INFRARED SENSOR/RECEIVER
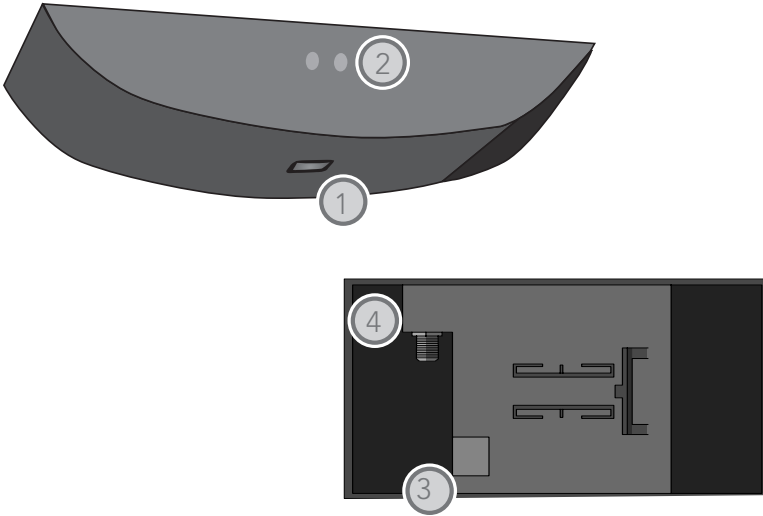
1. POWER INDICATOR: This light will glow blue when the ISR is receiving power from the amplifier.

2. A/B IR INDICATORS:
These lights glow when the corresponding microphone is turned on and transmitting. A red LED indicates channel A microphone is transmitting and a green LED indicates channel B microphone is transmitting. A steady light indicates a strong signal is being received.

3. SENSOR OUT: Connect the Cat5e sensor cable to this connection to send audio from the microphones to the amplifier.

4. IR EXPANSION: Connect up to three passive IR sensors (SR70F) to this connection for larger classrooms. For more than one additional sensor a 3-way coax splitter is required (HS3-1).

REDMIKE: CONTROLS AND CONNECTIONS
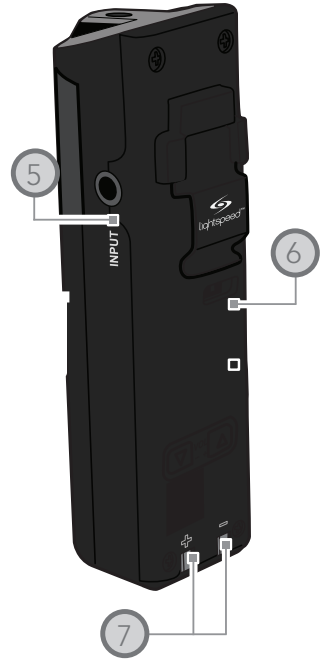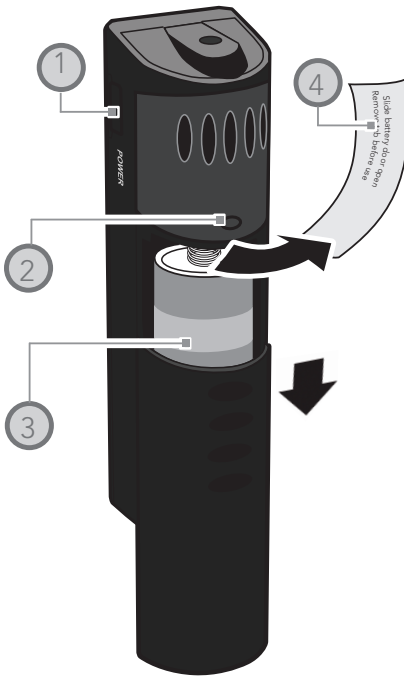
1. POWER BUTTON: Press this button to turn the Redmike on, press again to turn it off (mute).

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 (NH2A27).

4. YELLOW PROTECTIVE TAB: Slide the battery compartment door open to remove this disposable protective tab before use. NOTE: do not attempt to remove the tab without first opening the

compartment door, as it may tear, leaving fragments.

5. 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.

6. 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.

7. CHARGER CONTACTS (+ -): These contacts interface with the charging tabs in the RMCC cradle charger for daily charging. Simply place the Redmike in the charger.

REDMIKE CRADLE CHARGER CONTROLS AND CONNECTIONS
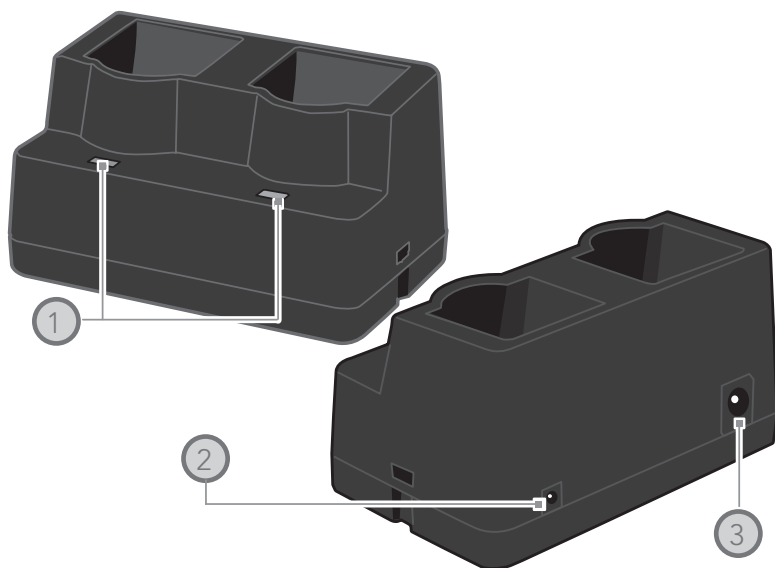
1. CHARGE INDICATORS: The light glows red while the Redmike is charging. When fully charged, the light will glow green. A blinking red light indicates that no battery is sensed, (Redmike Yellow Protective Tab may not have been completely removed—see page 19, item 4.) A blinking green LED means a non- Lightspeed battery has been installed (possibly an alkaline battery).

2. DC POWER PORT: Connect the 5V/1.0A DC power cord here.

3. OPTIONAL CHARGING PORT: Plug the charging cord for the optional Redmike Share microphones here.

SECTION 2:

DAILY OPERATION
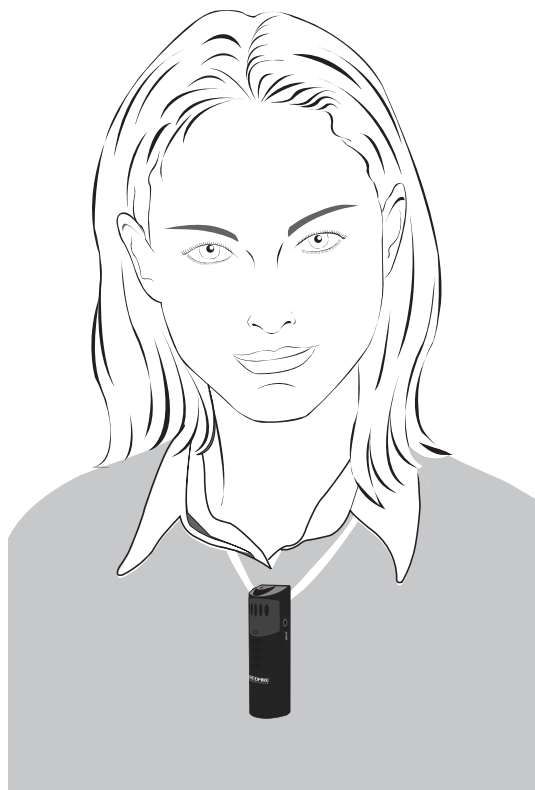
1. CHARGING THE REDMIKE

Before use, the Redmike should be charged. It will take 8-9 hours for the Redmike to obtain a full charge. A fully charged Redmike will last for over 7 hours of use. If microphones are used daily, they should be stored in the cradle charger after each use. Microphones can be left in a charging cradle constantly for up to 2 weeks without causing degradation to battery life. For longer storage periods, microphones should be fully charged and then taken off the cradle charger until use of the system resumes.

A red light on the charging cradle indicates the Redmike is charging. A green light indicates that charging is complete and a full charge has been reached. A blinking light indicates a charging or sensing error. See Troubleshooting section for more information.

Redmike incorporates alkaline protection into the microphone design. Always use a Lightspeed rechargeable sensing battery. Replacement AA NiMH batteries may only be purchased through Lightspeed Technologies (part# NH2A27). Do not attempt to charge alkaline batteries. They can overheat and expand creating a significant hazard and damaging the microphone (this is not covered by warranty).

1. Plug power cord into the cradle charger and then plug the AC end into an electrical outlet.
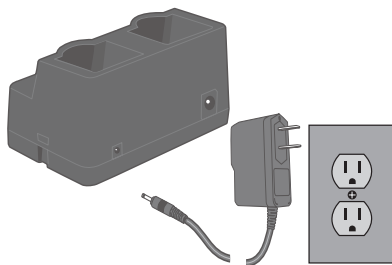
2. Place the Redmike into the cradle. The Redmike will automatically turn off. The LED on the cradle will glow red indicating charging has started. When the Redmike is fully charged the LED on the cradle charger will change to green.
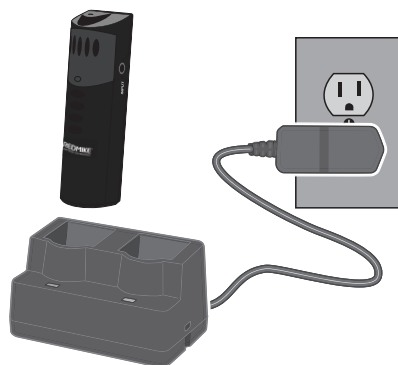
2. OPERATING THE REDMIKE

Once the Redmike is charged, follow these steps to set it up for use.

1. Turn the amplifier power on. The blue LED will glow.

2. Remove the Redmike from the charging cradle and turn it on.

3. Slip the Redmike with lanyard around the neck. The mic will be positioned at approximately the top of the collarbone.

4. While speaking in a normal voice, slowly increase the volume of the corresponding channel on the amplifier until your voice is barely audible. Each Redmike has its channel pre-set to either A or B, as indicated on the back of the Mic.

    REMEMBER: This equipment supplements 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.

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 equalizer on the back panel of the amplifier.

6. If a second Redmike was purchased, repeat steps 2-4.
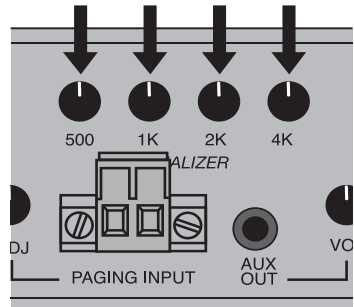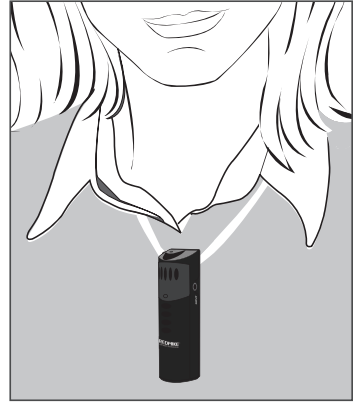
3. USING THE REDMIKE TO AMPLIFY EXTERNAL AUDIO EQUIPMENT

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.

If your system includes two Redmikes, we recommend using channel B (student mic) to amplify the external audio equipment so the teacher's volume on the channel A (teacher mic) does not have to be adjusted.

To determine which Redmike is set to channel B, you can look at the switch on the back of the mic or speak into one of the mics and watch which set of LED's glow on the front panel of the amplifier (A volume and B volume correspond to channels A or B).

1. Plug your external audio equipment (for example, laptop), into the input on the Redmike labeled "INPUT" using a 3.5mm patch cable.

AUDIO INPUT

AUDIO OUTPUT
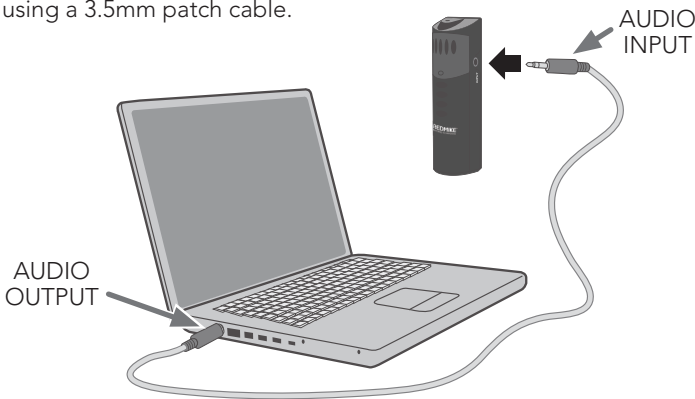
2. Adjust the volume on the amplifier which corresponds to selected mic channel A or B.

Classroom Audio System
A VOLUME   B VOLUME

4. OUTPUT TO PERSONAL ASSISTIVE LISTENING DEVICE (ALD)

1. Turn the AUX OUT volume control on the back panel all the way down (fully counterclockwise), or turn the ALD volume control on the front panel all the way down (fully counterclockwise).

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 370 Transmitter requires a 3.5 mm to 3.5 mm patch cable (part# MSC3535, not included).

3. Connect a patch cable from the ALD's microphone jack or AUX input to one of the
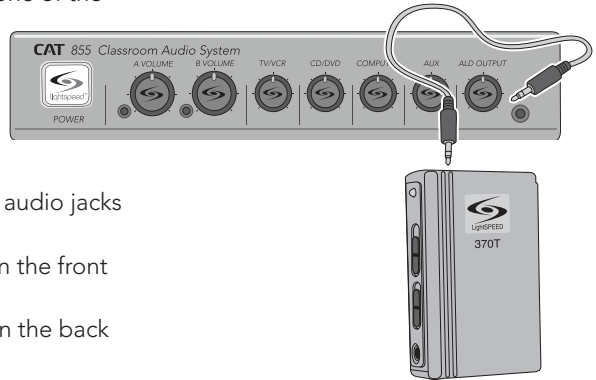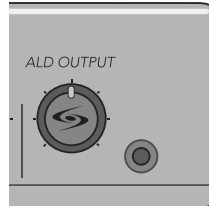
following 3.5mm audio jacks on the amplifier:

- "ALD OUT" on the front panel

- "AUX OUT" on the back panel

4. With the amplifier and ALD turned on, speak into the Redmike and slowly adjust the corresponding volume control on the amplifier until the appropriate audio level is obtained in the ALD.

5. It may be necessary to adjust the volume on the Personal FM receiver to achieve appropriate volume level.

5. AUDIO INTEGRATION

Your 855 or 885 system can be connected to the other multimedia devices in your classroom. You may have a computer, television, DVD/VCR player, a visual projection system or other devices. Below are instructions on how to integrate TV/VCR, CD/DVD or computer directly into the amplifier.

1. Ensure the power is switched off and the audio input volume controls are turned all the way down.

2. Connect the appropriate RCA or 3.5mm audio cable (not included) from the audio source into the corresponding input jack on the rear panel of the amplifier.

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

One Possible Set-up
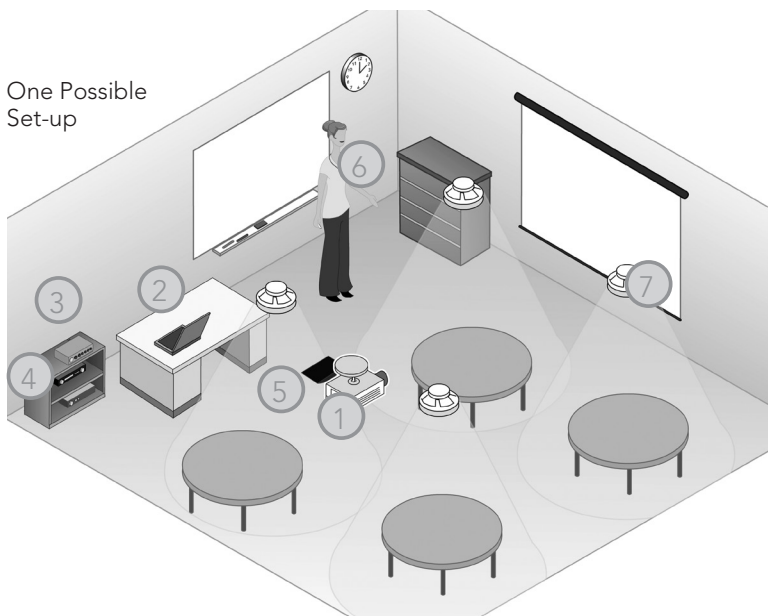
1. PROJECTOR
2. LAPTOP
3. 855 OR 885
4. DVD

5. ISR SENSOR
6. TEACHER'S MICROPHONE
7. SPEAKERS

6. TIPS TO OBTAIN OPTIMUM AUDIO PERFORMANCE

- 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.

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

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

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

SECTION 3:

OPTIONAL ACCESSORIES

OPTIONAL REDMIKE VC (Volume Control) Controls and Connections
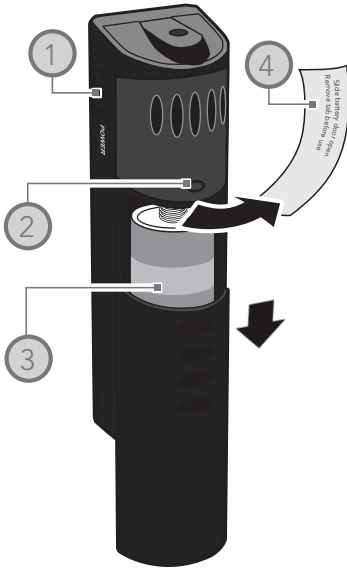
1. POWER/MUTE BUTTON

2. POWER/LOW BATTERY INDICATOR: A blue light indicates the Redmike VC is on and fully charged. A red light indicates a charge is needed.

3. BATTERY COMPARTMENT: To open, slide the door downward. The battery should only be replaced by a Lightspeed AA rechargeable sensing battery (part# NH2A27).

4. YELLOW PROTECTIVE TAB: Slide the battery compartment door and remove this disposable protective tab before use.

5. AUDIO/MICROPHONE
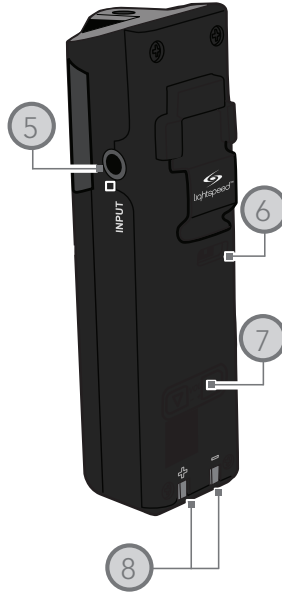
INPUT: Use this input to plug in a laptop, MP3 player or other audio source to wirelessly transmit audio to be played through the system. Alternatively, an external microphone can be connected.

6. CHANNEL SELECT SWITCH (CH A/B): Use this to choose channel A or B. If you are using a single microphone, we recommend using channel A.

7. VOLUME CONTROLS (UP - DOWN)

8. CHARGER CONTACTS (+ -): These contacts interface with the charging tabs when the Redmike VC is placed in the RMCC cradle charger.

REDMIKE VC : CHARGING

Before use, the Redmike VC should be charged. See page 19 and follow the same instructions for the Redmike.

REDMIKE VC : INITIAL SET-UP

See page 20 and follow the same instructions for the Redmike to setup the Redmike VC.

The teacher can now use the controls on the Redmike VC to adjust the volume level from anywhere in the room. The microphone volume control has 4 steps up and 4 steps down from the mid point (9 levels total).

REDMIKE SHARE: CONTROLS AND CONNECTIONS
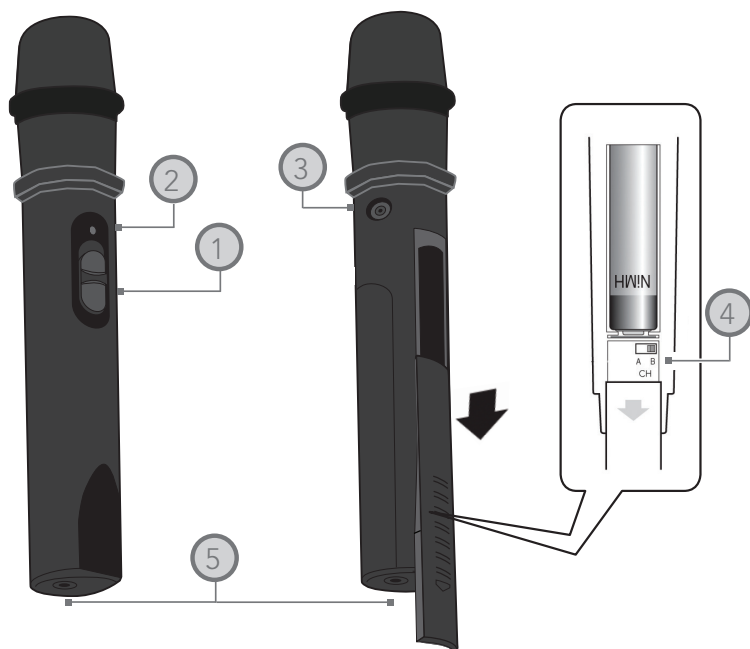
1. POWER SWITCH

2. POWER/CHARGE INDICATOR: this light glows blue when turned on and turns off to indicate low battery level. When charging, the light glows red.

3. AUDIO INPUT: plug a laptop, MP3 player or other audio device into this jack to wirelessly transmit the audio signal to be played through the system.

4. CHANNEL SELECT SWITCH

(CH A/B): Located in the battery compartment, this switch is set to channel B at the factory.

5. CHARGER INPUT: Plug the charging cable from the Redmike cradle charger into this jack.

REDMIKE Share: Charging

1. Ensure that the Redmike Share 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 bottom of the Redmike Share.

3. Plug the other end into the charging jack on the rear of the cradle charger.

4. The LED on the microphone will glow red to indicate charging.

5. Leave the Redmike Share plugged in overnight (8-10 hours) to obtain a full charge. The LED will blink red when charging is complete.
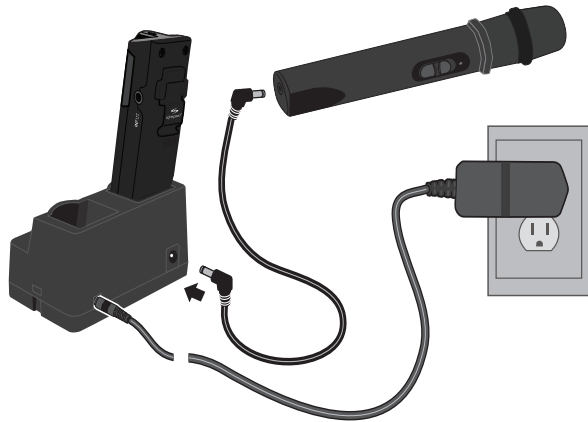
NOTE: The Redmike Share can also utilize the charger jacks on the back of the 855 amplifier.
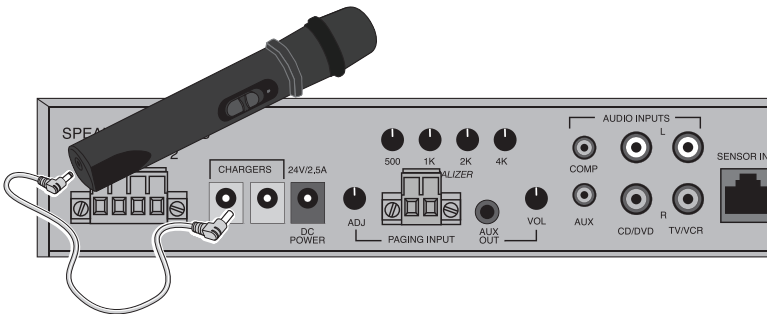
REDMIKE Share: Initial Set-up

1. Ensure the amplifier is on. The LED on the power switch will glow blue.

2. Turn on the Redmike Share by sliding the switch to the up position.

3. Grip the barrel in the center section. Avoid covering the infrared emitters circling the base of the screened microphone element. This could interrupt signal transmission.

4. While speaking in a normal voice, increase the B volume level of the amplifier 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.

Setting Mic Priorities

Teacher Voice Priority for the Cat 885

This feature allows the teacher's voice to be heard over the other audio being played through the Cat 885. The three-position switch has the following functionality:

- OFF: Normal operation—turns Teacher Priority off.

- CH.B/Audio IN: Teacher's voice (the microphone set to Channel A) has priority over the student microphone (Channel B) and audio inputs. When the teacher speaks into the microphone, the audio of the other sources will mute. When the teacher stops talking or the Redmike is turned off, the audio returns.

- Audio In: Teacher's voice has priority over any audio sources that are plugged into the Audio Inputs only (Computer, TV/VCR, CD/DVD, etc.). When the teacher speaks into the microphone, the audio of the input sources will mute. When the teacher stops talking or the Redmike is turned off, the audio returns.

Optional PageFirst Kit

This optional feature for Cat 855 or 885 interfaces with an independent classroom paging system. When the page is broadcast, all audio from the system is muted, ensuring important school-wide messages are never missed. Please note that PageFirst is not compatible with telephone or IP-based paging systems.

How it works:

1. PageFirst sensor clip is hung around a lead wire attached to the classroom paging speaker.

2. The clip is hard-wired to the amplifier.

3. As a page is broadcast, the sensor clip detects the audio signal through induction and immediately mutes the amplifier.

4. When the page is over, the audio from the amplifier returns to normal volume level.
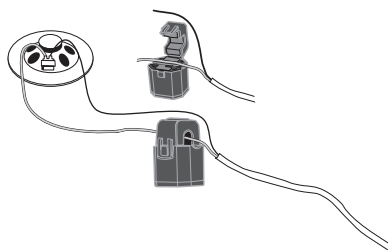
OPTIONAL IR MEDIA CONNECTOR: Initial Set-up

1. Turn off the second microphone. The iR Media Connector (iRMC) uses the same channel (channel B) as the optional second microphone (Redmike or Redmike Share). As a result, they cannot be used simultaneously. If you have a second microphone, turn it off before transmitting audio from the iRMC.
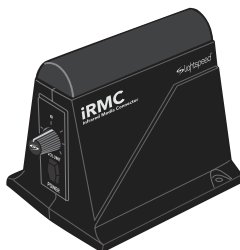
   NOTE: If you adjust the CH B volume on the classroom audio system, you will also be changing the volume for your second microphone. Return the CH B volume knob to the original position before turning the second microphone back on.

2. The iR Media Connector volume is preset for most standard audio signals. If you need to turn the volume up or down, follow this procedure:

   A. Adjust the volume at the computer, television, or other audio source if possible.

   B. If the audio source does not have a volume control (such as many DVD players) adjust the volume at the iRMC.

   C. If the first two options do not give optimum volume level, the last place to adjust the volume is the CH. B Volume on the amplifier.
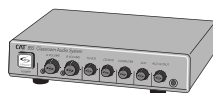
OPTIONAL IR MEDIA CONNECTOR:
Audio Integration

The iRMC is designed to integrate with the 855 or 885 and multiple audio sources, allowing other instructional technologies to be clearly heard throughout the classroom.
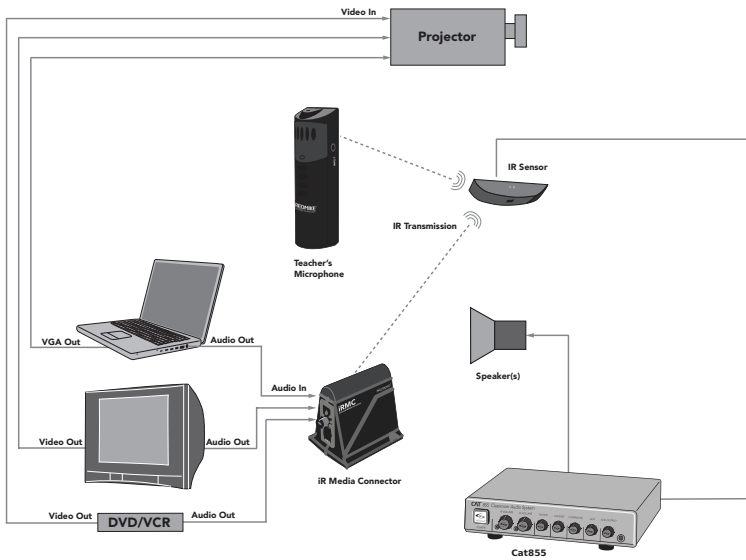
OTHER OPTIONAL ACCESSORIES

TK250M	Noise-canceling headset microphone
TCC7	Charging cable for Redmike Share
RCA6	6' dual RCA audio cable
MSC3535	3.5mm to 3.5mm stereo audio cable

SECTION 4:

TROUBLESHOOTING

COMMON PROBLEMS AND SOLUTIONS

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.

ALL PROBLEMS: Most Problems are related to low battery power.

SOLUTION: Battery Check

- Confirm batteries are charged each night.

- Confirm proper batteries are used. The Redmike/RMV requires the Lightspeed NH2A27 rechargeable sensing battery for proper charging. The Redmike Share uses the NH2APK rechargeable battery pack.

- Make sure the microphones are turned off while charging so a full charge is attained. Full charge will last eight hours.

- Inspect the battery contacts. Clean and adjust if necessary.

PROBLEM: Hearing Static

SOLUTION: Follow these steps to eliminate 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/ Redmike VC/Redmike Share is operating on the same channel.

- If the optional iR Media Connector
is in use, set the microphone to channel A.

PROBLEM: Low Volume or

Feedback

SOLUTION: Follow these steps to eliminate 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.

- Adjust the volume level on the back of the optional Redmike VC.

PROBLEM: No Sound From Speaker

SOLUTION: Follow these steps to produce sound from speakers.

- Turn the amplifier on. Confirm that the POWER light located on the front panel switch is on.

- Confirm signal is being received at the amplifier. The IR signal light will be red 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. ***Customers outside the U.S. should contact their local reseller.***

5. Warranty &
Specifications

4. Troubleshooting

3. Optional
Accessories

2. Daily Operarion

1. Overview

AUDIO EQUALIZATION

The 855 and 885 use a 4-band audio equalizer designed to optimize and fine-tune the microphone sound quality for the classroom. Below are some tips on proper system equalization:

- The voice should be natural, very clear and without any audio feedback (ringing)

- Walk the room listening for the overall quality and any feedback that is present

- If there is a lot of audio feedback, it is likely the volume is too high. Ensure the volume is at the appropriate level, a second person is helpful to determine this.

- If feedback is still present with the audio set at the right level, make the following EQ adjustments:

  – High pitched ring: lower the 2K and/or 4K adjustment by 1/4 turn

  – Lower pitched ring: lower the 500 and/or 1K adjustment by 1/4 turn

- If you notice the sound is "muddy" or has too much bass:

  – Reduce the 500 adjustment by 1/4 turn and/or

  – Raise the 2K or 4K adjustment by 1/8 turn

- Note: the EQ adjustments should be preset at "12:00." This is the nominal level and any adjustments (up or down) should be made from this level.

SECTION 6:
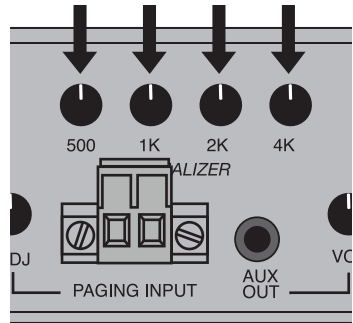
WARRANTY, SAFETY & SPECIFICATIONS

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.

Lightspeed's Warranty Exchange Program applies to all infrared systems within the five (5) year warranty period. If an infrared product or component has an issue that requires service, a refurbished replacement will immediately be sent to the customer to minimize downtime. Customers will receive the exchange product(s) or component(s) within 2-3 days. A prepaid return label will be included with exchanged products so original malfunctioned equipment can be returned to Lightspeed. Any exchanged equipment will remain covered under the original five (5) year warranty.

1. Warranty on infrared microphones is FIVE (5) YEARS.

2. Warranty on Lightspeed NiMH rechargeable batteries is one (1) year.

3. Prepaid shipping label provided by Lightspeed for warranty repairs within the U.S. *Customers outside the U.S. should refer to the Lightspeed website (www.lightspeed-tek.com) for warranty repair instructions.*

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. **Customers outside the U.S should contact their local reseller.**

5. Warranty &
Specifications

4. Troubleshooting

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Accessories

2. Daily Operarion

1. Overview

SAFETY WARNINGS AND CERTIFICATIONS

CAUTION
RISK OF ELECTRICAL SHOCK
DO NOT OPEN

THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE INSTALLATION CODE BY A PERSON FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE PRODUCT AND THE HAZARDS INVOLVED.

CAUTION
RISK OF ELECTRICAL SHOCK
DO NOT OPEN

USE A LIGHTSPEED
SUPPLIED BATTERY ONLY

CERTIFICATIONS

This product is listed to UL standards and requirements for electrical safety by Underwriters Laboratories Inc.

This product conforms with the essential requirements of the following European Union Directives: 2004/108/EC Electromagnetic Compatibility (EMC) and 2006/95/EC Low Voltage Directive (LVD).

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.

This product 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).

DECLARATION OF CONFORMITY
ACCORDING TO EC LVD DIRECTIVE 2006/42/EC

Manufacturer: Lightspeed Technologies,Inc.

Address: 11509 SW Herman Rd,
                   Tualatin, Oregon 97062

We Herewith declare, that the following system complies with the appropriate basic safety and health requirements of the Directive based on its design and type, as brought into circulation by us. In case of alteration of the system, not agreed upon by us, this declaration will lose its validity.

Product: 8X5 Series

Model Number(s): 855, and 860

Conforms to the following EU Directives and the standards stated:

   Low Voltage Directive: 73/23/EEC and amendments; UL/IEC 60065

   EMC Directives: 89/336/EEC, 92/31/EEC, 93/68/EEC, 2004/108/EC

   EN 55022/CISPR 22, Class A - Radiated and Conducted Emissions from Audio Equipment

   EN55024/ EN61000-3 & -4 - Generic Immunity Standard
                   Including: EN 61000-3-2/2006
                               EN 61000-3-3/1995 + A1/2001 + A2/2005
                               EN 61000-6-3/2007
                               EN 61000-4-2/2001
                               EN 61000-4-3/2002 + A1/2002
                               EN 61000-4-4/2004
                               EN 61000-4-5-2001
                               EN 61000-4-6/2003
                               EN 61000-4-8/2001
                               EN 61000-4-11/2001

The Technical Construction File is available to proper authorities and the product is CE marked.

DECLARATION OF CONFORMITY
ACCORDING TO EC LVD DIRECTIVE 2006/42/EC

Manufacturer: Lightspeed Technologies,Inc.

Address: 11509 SW Herman Rd,
Tualatin, Oregon 97062

We Herewith declare, that the following system complies with the appropriate basic safety and health requirements of the Directive based on its design and type, as brought into circulation by us. In case of alteration of the system, not agreed upon by us, this declaration will lose its validity.

Product: 8X5 Series

Model Number: 885

Conforms to the following EU Directives and the standards stated:

Low Voltage Directive: 73/23/EEC and amendments; UL/IEC 60065

EMC Directives: 89/336/EEC, 92/31/EEC, 93/68/EEC, 2004/108/EC

EN 55022/2006+A1, CISPR 22, Class A - Radiated and Conducted Emissions from Audio Equipment

EN55024/ EN61000-3 & -4 - Generic Immunity Standard
     Including: EN 61000-3-2/2006
                EN 61000-3-3/1995 + A1/2001 + A2/2005
                EN 61000-6-3/2007
                EN 61000-4-2/2001
                EN 61000-4-3/2002 + A1/2002
                EN 61000-4-4/2004
                EN 61000-4-5-2001
                EN 61000-4-6/2003
                EN 61000-4-8/2001
                EN 61000-4-11/2001

The Technical Construction File is available to proper authorities and the product is CE marked.

SYSTEM SPECIFICATIONS

OVERALL SPECIFICATIONS	CAT 855 or CAT 885
Power Output	12 W per channel (24 W total)
Amplifier Frequency Response	60 Hz to 20 kHz ±3 dB
Carrier Frequencies (IR)	2.06/2.54; 3.2/3.7 MHz
Signal-to-Noise Ratio	> 73 dB
Image and Spurious Rejection	> 70 dB

AMPLIFIER SPECIFICATIONS

Image and Spurious Rejection	> 70 dB
Dimensions (W x D x H) of CAT 855	8.6" x 6.8" x 2.2"
Weight of CAT 855	2.75 lbs.
Dimensions (W x D x H) of CAT 885	8.6" x 6.8" x 2.2"
Weight of CAT 885	4.8 lbs.

ISR SENSOR SPECIFICATIONS

Receiver Type	Superheterodyne
Receiver Sensitivity	6 µV for 60 dB S/N
Operating Range	Up to 1600 square feet
Cable	50 ft, Plenum-rated Cat 5e
Mounting	Ceiling clip/Wall braket
Dimensions (W x D x H)	9.4" x 1.4" x 5.2"
Weight	14.3 oz.

TRANSMITTER SPECIFICATIONS

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

Redmike Share Handheld Microphone	
Audio distortion	<1%
Built-in Microphone	Unidirectional Electret
Battery Power (1-year warranty)	2 AA NiMH Rechargeable Battery Pack
Audio Input	3.5 mm
Dimensions (W x D x H)	8.25" x 1.3" x 1.3"
Weight	7.9 oz
Dimensions (W x D x H)	9.4" x 1.4" x 5.2"
Weight	14.3 oz.

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