



Forum™ 232

Classroom Audio System

Amplifier | Mixer | Receiver



Installation Manual

Welcome

Congratulations on the purchase of your new Forum™ 232 Sound Field system. You can be assured that the Forum™ 232 fulfills all specifications and was produced to high quality control standards.

TeachLogic incorporates the latest state of the art technology, employs the most advanced manufacturing methodology and uses only premium quality components to assure many years of reliable performance. We appreciate your confidence by your selection of our product. It is TeachLogic's intent to uphold that confidence by providing factory assistance and dealer support. This manual will help you learn to use and gain the maximum benefit of the Forum™ 232 system.

We hope you will take the time to review this manual to familiarize yourself with the product operation and features.

TeachLogic LLC
Longmont, Colorado USA
www.TeachLogic.com

Safety Instructions

Read Instructions

All safety and operation instructions should be read before operating this TeachLogic product.

Retain Instructions

Safety and operating instructions should be kept for future reference.

Water & Moisture

This product should not be operated near water.

Heat Environment

Do not subject this product to excessive heat conditions.

Power Source

This product must be connected to an AC power source per the voltage input specified and marked on the power supply.

Do not insert any power cable not provided by the manufacturer into the product. Long prongs can penetrate inside electrical components or current charging conductors.

Certifications



TeachLogic systems are manufactured using lead-free processes and are free of materials harmful to the environment. They conform to the most stringent new European guidelines for consumer products (RoHS).

Power Cord Caution

Power cable should be routed clear of foot traffic and supported clear of kinking or abrasion.

Object Protection

Locate the operating unit so it will not be subjected to falling objects or water entry.

Internal Service

User should not attempt to service this product. All internal service must be accomplished by a qualified technician.

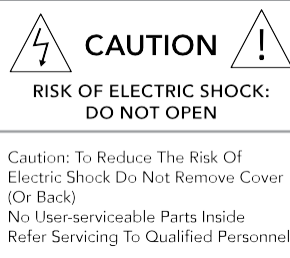
Electric Shock

Do not adapt or modify the AC power plug. Do not remove thus lifting the earth ground connection (3rd prong) or use power supply without a connector to a 3-prong grounded outlet.

CAUTION

Recycle—Do not dispose rechargeable batteries in trash. It is unlawful to do so in numerous states. **Go Green.** Save our resources and don't contaminate.

Contact: Earth911.com
1-800-CLEANUP



System info

Date of Purchase

Model Number

Serial Number

Notes

Contact

If you should encounter an unresolved issue, please contact the TeachLogic customer service department for further assistance.

760-631-7800 | support@teachlogic.com | teachlogic.com

Limited warranty

For full warranty details refer to teachlogic.com/warranty.

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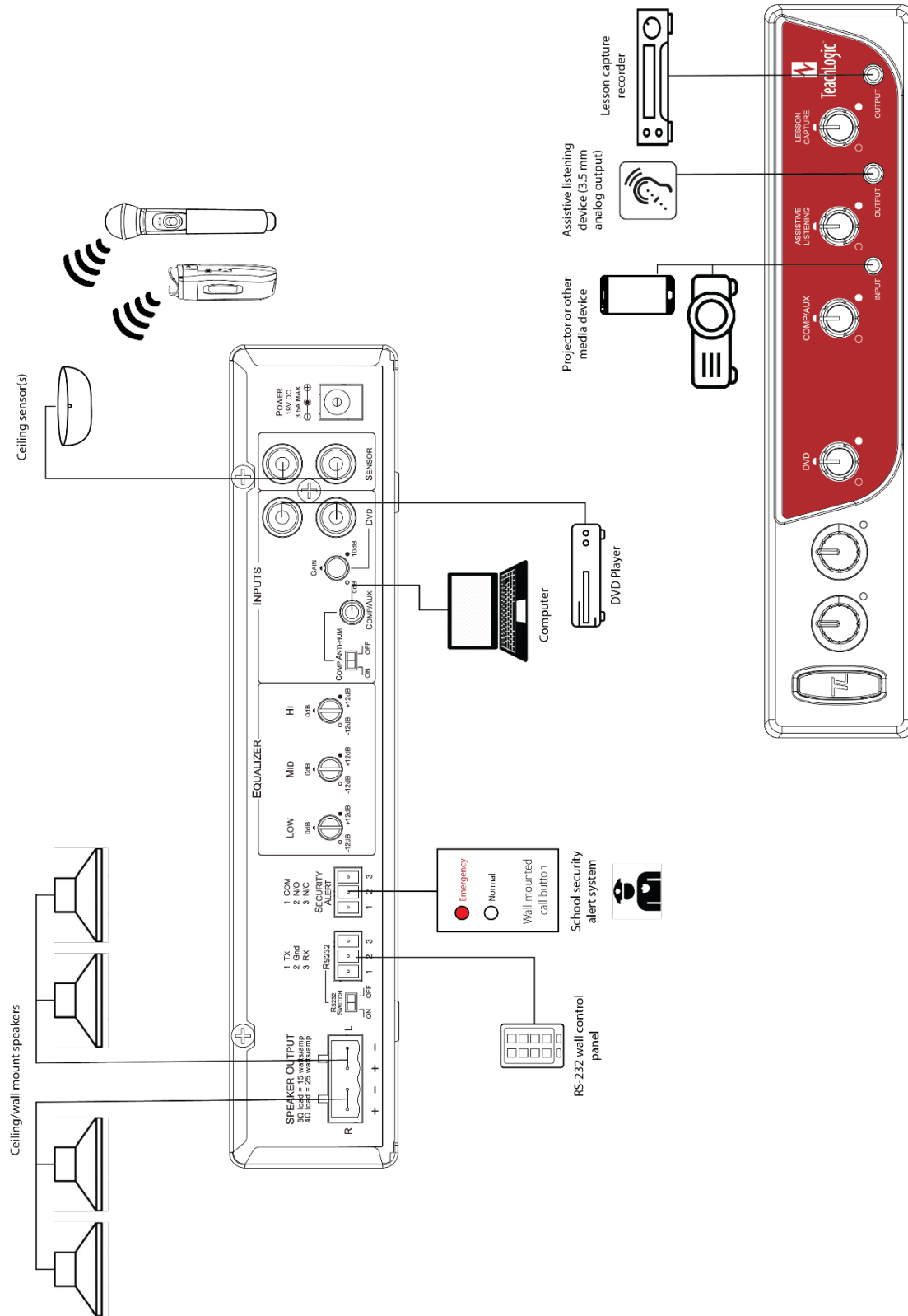
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Front of IMA-232 receiver/amplifier

1. Power Button/ "TL" Indicator LED
2. Channel A Microphone Volume Control
3. Channel B Connectivity Indicator LED
4. Channel B Microphone Volume Control
5. Channel B Connectivity Indicator LED
6. DVD Volume Control
7. Computer/Auxiliary Input Volume Control
8. Computer/Auxiliary Input Port (3.5 mm)
9. Assistive Listening Output Volume Control
10. Assistive Listening Output Port (3.5 mm)
11. Lesson Capture Volume Control
12. Lesson Capture Output Port (3.5 mm)

**Back of IMA-232 receiver/amplifier**

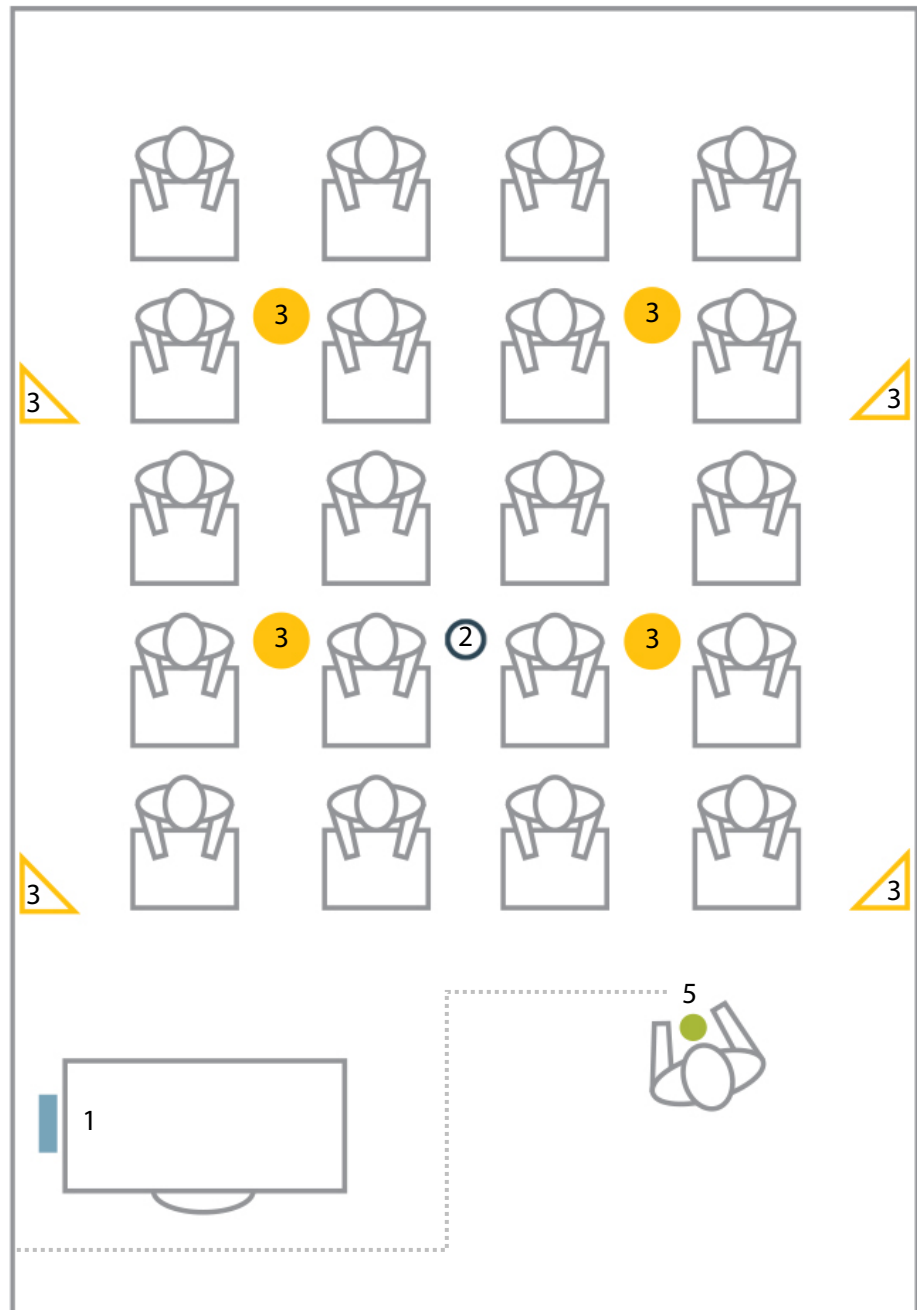
1. Speaker Output
2. RS-232 Input & OFF/ON Switch
3. Security Alert Interface
4. 3 Band Digital Equalizer
5. Computer Input (3.5 mm) / Computer Anti-Hum ON/OFF Switch
6. DVD Dual Mono Inputs (RCA)
7. Two IR Ceiling Sensor Inputs (RCA)
8. Power Input: 19 V DC 3.4 A



TeachLogic Forum™ 232 Wiring Diagram

Installation planning

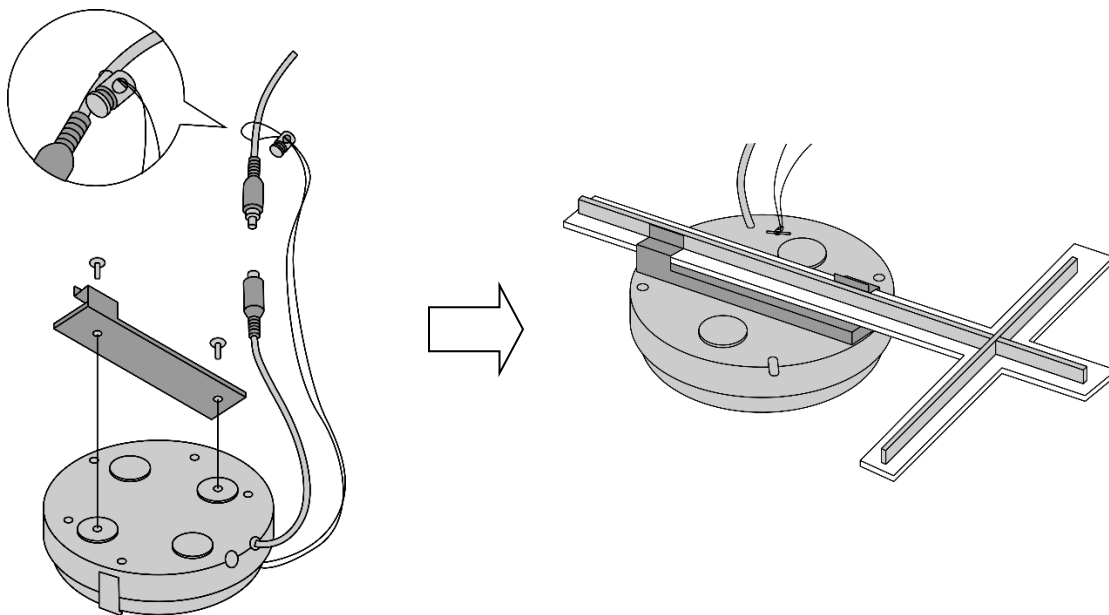
1. **Amplifier/Receiver:**
Choose location that supports accessibility requirements and wiring constraints for power, speakers, ceiling sensor, and audio devices connecting to the amplifier.
2. **Ceiling Sensor:** Locate in the center of the ceiling; maintain line of sight; keep away from direct light and electrical interference.
3. **Speakers:** Mark location for wall mount vs. ceiling mount and confirm wiring run to the amplifier. Ensure speakers evenly cover the listening area.
4. **Integrations/Connections:**
Confirm location of other systems you plan to connect to the amplifier such as audio devices, intercom connections, fire alarm, noting how the wiring needs to run.
5. **Microphones/Charger:**
Confirm microphone charging location for daily use/charging.



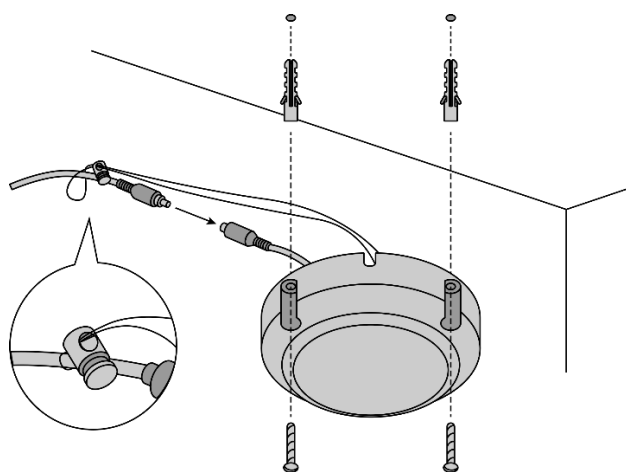
Installation of Ceiling Sensor (ICS-55)

The ideal mounting location is in the center of the room's ceiling. The ideal installation is flush mounted on a white, reflective ceiling like the acoustic drop-down style. This will ensure 360° coverage and will minimize the transmission distance for more reliable performance.

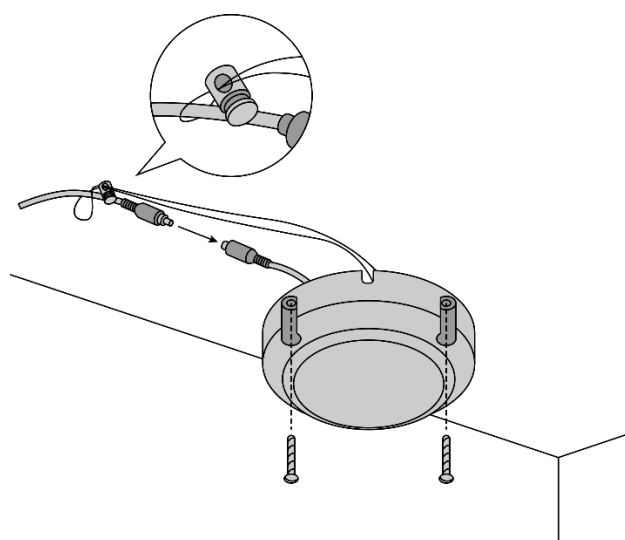
Installation 1 – Attach to T-bar tail



Installation 2 – Concrete or Drywall Surface



Installation 3 – Wood Surface

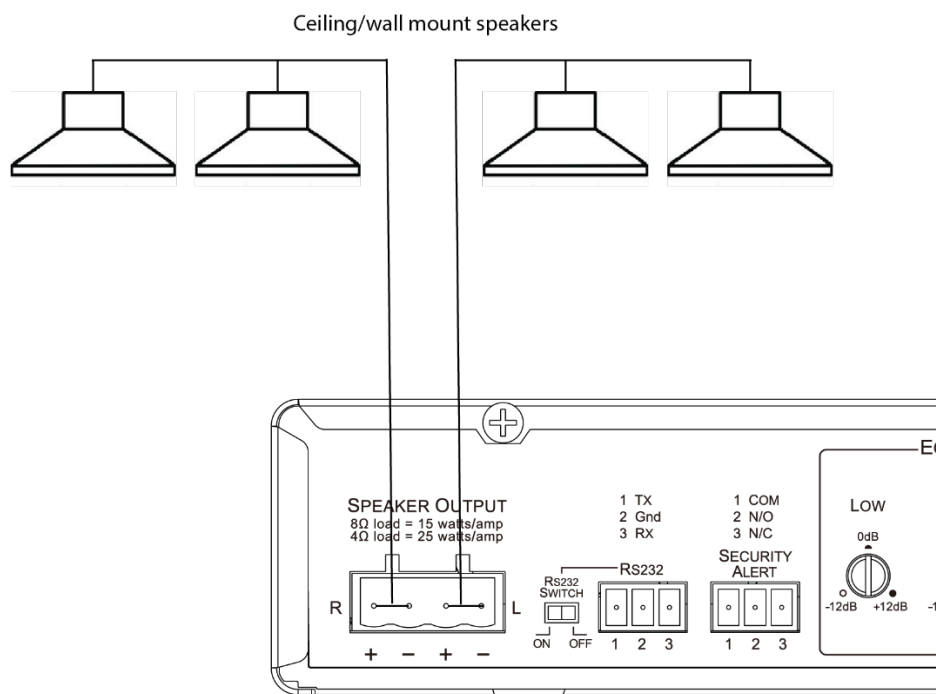


FINAL STEP: Route sensor cable to amplifier and plug into one of the amplifier's two sensor inputs. An illuminated green LED will indicate that the sensor is receiving power from the amplifier.

Connection of speakers

The IMA-232 has two channels of amplified audio, rated for a minimum 4-ohm speaker load (two 8-ohm speakers each). There is a blue Phoenix speaker connector on the back panel labeled “R” & “L”. However, the amplifier produces monoaural sound, so it **does not** matter what speakers are connected to what channel so long as no more than 2 x 8-ohm speakers are wired in parallel.

For speaker installation instructions, please refer to the installation manual included in the speaker packaging.



RS-232 feature

The RS-232 feature allows the user to remotely operate the line level media inputs via a separate wall panel controller. The RS-232 connector is connected via three wires to the back panel connector shown to the right.

This allows the receiver/amplifier to be placed in an area or compartment that is not easily accessed by the user.

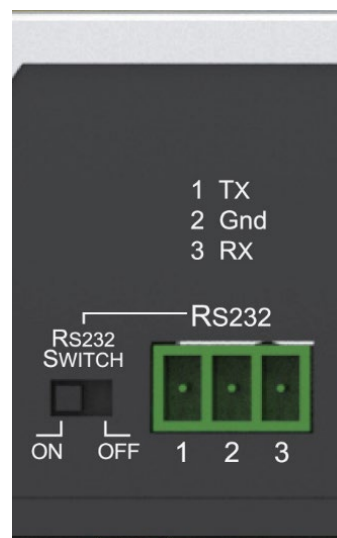
Codes that are required for this setup are available on the teachlogic.com/resources page under “Application Notes” or directly at <https://TeachLogic.com/TeachLogic-app-notes-rs-232-control/>.

Audio levels very often need to be adjusted when switching from computer audio to DVD players and other audio sources. Such operations as level UP, DOWN and MUTE are easily accomplished via a typical eight button controller. Shown here is a *Cables To Go* controller.

Connecting the control panel:

Connect the control panel wires to the provided 3-pin Phoenix connector.

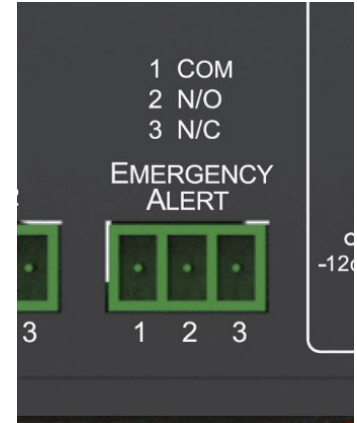
Turn RS232 SWITCH to ON position. This will disable the function of the input volume/gain control knobs on the front of the amplifier.



Security Alert Feature

The Forum™ 232 security alert feature, when triggered by an IRT-60 sapphire mic on Channel A, creates a relay contact closure or opening. The back panel connection is a normally closed and normally open terminal paired with the common terminal as shown to the right.

Note: the wireless microphone channel B does not trigger security alert.



System behavior:

- When the Sapphire's "Priority" button is pushed/held for 5 seconds, it sends a signal to the ceiling sensor which passes through the amp to the security alert interface (an electric relay).
- The relay contacts open or close (depending on the normal status) to pass the signal through the paging system as if the paging system's wall-mounted button was being pressed.
- The amplifier functions normally during the alert, e.g. there is no change to audio input/output volume change nor does the system produce any sound



Final Setup

Now that the system is installed and connected, turn the system “ON” and test its performance. The testing will be done using an IR Microphone (Sapphire™ or Handheld) to confirm good connectivity.

AMPLIFIER

- Connect power supply to amplifier, then plug into outlet.
- Turn the Maxim™ III ON by pushing the power button. The “TL” illuminates solid blue when the amplifier is powered ON.
- Confirm there is power to the IR ceiling sensor: A green LED on edge of sensor should be illuminated that indicates it is receiving power.
- Set all gain/volume dials to mid-scale (12 o'clock position)

IRT-60 (SAPPHIRE) MICROPHONE SETUP

- Confirm "Ch A" volume dial is at mid-scale (12 o'clock position)
- Slide gain/volume control switch on Sapphire to "Normal" setting.
- Press and hold power mic button until the LED light illuminates.
- Observe Sapphire power LED. Solid blue indicates power is on and mic is transmitting.
- Observe amplifier Ch A indicator LED. It should be green, indicating a connection between the microphone and ceiling sensor.
- If using two IRT-60 microphones in the same room, one must be changed to channel B to avoid interference. Watch the how-to video on teachlogic.com/resources.

Note: Next steps are best performed with a second person as the listener

- Stand under or in front of a speaker.
- Hold the microphone with the top at your collarbone and observe the speaker volume in the room by speaking in a natural voice.
- Raise the volume on Ch A until feedback begins, then reduce volume to an acceptable level and until indications of feedback have stopped.
- Walk around the room while talking into microphone to confirm good connectivity and sound levels and lack of feedback under/in front of each speaker.

IRH-35 HANDHELD MICROPHONE SETUP

- Confirm "Ch B" volume control is set to mid-scale (12 o'clock position)
- Power on microphone using ON/OFF switch.
- Observe LED above mic switch. Solid green indicates power is on and ready to use.
- Observe amplifier Ch B indicator LED. It should be green, indicating a connection between the microphone and IR ceiling sensor.
- Hold the microphone about 3 inches from the mouth, above chin level and perform voice test.
- Raise the volume on “Ch B” until feedback begins, then reduce volume to eliminate all feedback.
- Walk around the room while talking into the microphone to confirm good connectivity and sound under/in front of each speaker without feedback.

Once complete, charge microphones so they are ready for use.

Troubleshooting

Problem	Solution
System will not power “ON”	<p>Verify AC power; the power button will illuminate to Blue when turned ON</p> <p>Check if system has been unplugged; reconnect to power outlet or use another device to ascertain power available at outlet</p> <p>Check circuit breaker</p> <p>Call maintenance for assistance</p>
System is turned “ON” but there is no sound or System is in standby and does not “wake up”	<p>Turn “ON” microphone/ transmitter; the power button will illuminate to Blue when turned ON</p> <p>If the power button is illuminated red, the battery is low</p> <p>Ensure the mic is not muted (blinking light indicates it is muted)</p> <p>Ensure gain/volume control knob on amplifier/receiver is turned up to mid-scale (12 o'clock position)</p> <p>On amplifier/receiver, ensure a green LED is illuminated just below Ch A or Ch B knob (depending on the microphone used).</p> <p>If no LED is illuminated:</p> <ul style="list-style-type: none"> • Check the green LED on the ceiling sensor <p>If sensor LED is not lit:</p> <ul style="list-style-type: none"> • Sensor has been disconnected, or • Power output to sensor has failed (Sensor or amplifier may need to be replaced)
Voice is distorted and/or signal drop-out occurs	<p>Verify that the sensor is not being covered</p> <p>Verify there is no obstruction between microphone and sensor</p> <p>Ensure there is no direct sunlight on sensor</p> <p>Ensure no other IR mics in room are turned on</p> <p>If sensor is mounted on a dark surface or without a flush ceiling surface, reception can be hampered.</p>

Contact

If your problem persists and this guide has not resolved the issue, contact our customer service department for additional assistance. (760) 631-7800 | support@TeachLogic.com

Forum™ 232 (IMA-232) specs

Receiver Input	Infrared FM, 2 wireless mic channels
Modulation	Wide-band FM
Reception Frequencies	Ch. A: 2.08 MHz Ch. B: 2.54 MHz
Deviation	10 kHz Nominal, 25 kHz Maximum
De-emphasis	50 µs
Tone Signal	32.768 kHz
Infrared Wavelength	850 nm
External Sensor Input	2, RCA, powered ports
Connectivity Coverage	50 ft line of sight 1,600 sq ft per sensor
Total Harmonic Distortion	<1% @ 1 kHz
Frequency Response	20 H - 20 kHz, ± 3 dB
Aux line level Inputs	One DVD, Line Level, Dual RCA with + 10dB Gain Control One Aux input with front and rear panel 3.5mm
Anti-hum balun	present on rear Aux/Comp input for computer
Line Output	Lesson Capture: 3.5 mm with gain control - front panel ALS: 3.5 mm with gain control - front panel
Security Alert	Contact closure (COM, N/O, N/C)
Fire Alarm	Contact closure by fire panel mutes audio
Amplifier Output Power	50 W RMS, 2 x 25 W channels
Output Impedance	4 Ω minimum
Equalization	3-band, ±12 dB
S/N Ratio	>65 dB
Speaker Connection	4-pin Phoenix connector
Power Supply	19 V DC / 6.3 A; CE, CSA and UL listed
Dimensions	8.5" W x 1.75" H x 7.5" D
Weight	1 lb 9 oz

Power Supply (AC-36) specs

Type	Regulated Switching Power Supply
Input Voltage	100-240 volts AV, 47-63 Hz
Output Voltage	19 volts DC, 3.43 A
Power Output	65 watts max.

Sapphire (IRT-60) microphone/transmitter specs

Transmission Carrier	Infrared
Transmission Frequencies	2.08 MHz & 2.54 MHz
Channel Selection	Field Switchable
Transmitting Diodes	Six
Wavelength	850 nm
Modulation	FM Wide-Band
Frequency Response	100 Hz - 10 KHz
Pilotone Frequency	32.768 KHz
Peak Deviation	± 25 KHz
Dynamic Range	95.5 dB @ 2.8% THD
Operating Range	60 Ft. line of sight
Latency (mic to speakers)	0.87 ms
Battery Used	Lithium-ion polymer (3.7V / 620mAh)
Battery Life	8 Hrs/Charge
External Power Charger	5V DC Micro USB Connector
Transmission Angle	180° Conical
User Controls	
Power (On/Off)	Press & Hold
Mute Switch (On/Off)	Momentary Press (blinks when muted)
Add'l Mic Gain Control	Normal, -3dB, -6dB
Audio Source Vol./Gain	Increase, Decrease
Channel Select	(A or B) in battery compartment
External Mic/Aux Input	3.5 mm Line Level
Dimensions (H x W x D)	3.5" x 1.25" x 0.75"
Weight	1.4 oz including battery

Handheld (IRT-35) microphone/transmitter specs

Transmission Carrier	Infrared
Transmission Frequencies	2.08 MHz & 2.54 MHz
Channel Selection	Field Switchable
Transmitting Diodes	Ten
Wavelength	850 nm
Modulation	FM Wide-Band
Pilotone Frequency	32.768 KHz
Peak Deviation	± 25 KHz
Operating Range	50 ft. line of sight
Power Switch (Slide)	On/Off
Battery Charge Level (LED)	Green: Full Orange: Medium Red: Low
Battery Life	Approx. 7 Hr./Charge
Dimensions	2.125" dia. (Head), 1.4375" dia. (Body), 9.625" H
Weight	10.3 oz. w/ Battery



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