



TeachLogic Forum IMA-240 Classroom Audio System Instruction Manual

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TeachLogic Forum IMA-240 Classroom Audio System



Welcome

Congratulations on the purchase of your new TeachLogic® classroom audio system. You can be assured that this product 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 reseller support. This manual will help you learn to use and gain the maximum benefit of the 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.

- **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. Do not drill hole in or screw objects into the product except as specified by manufacturer.

- **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.

Certifications



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

C AUTION

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

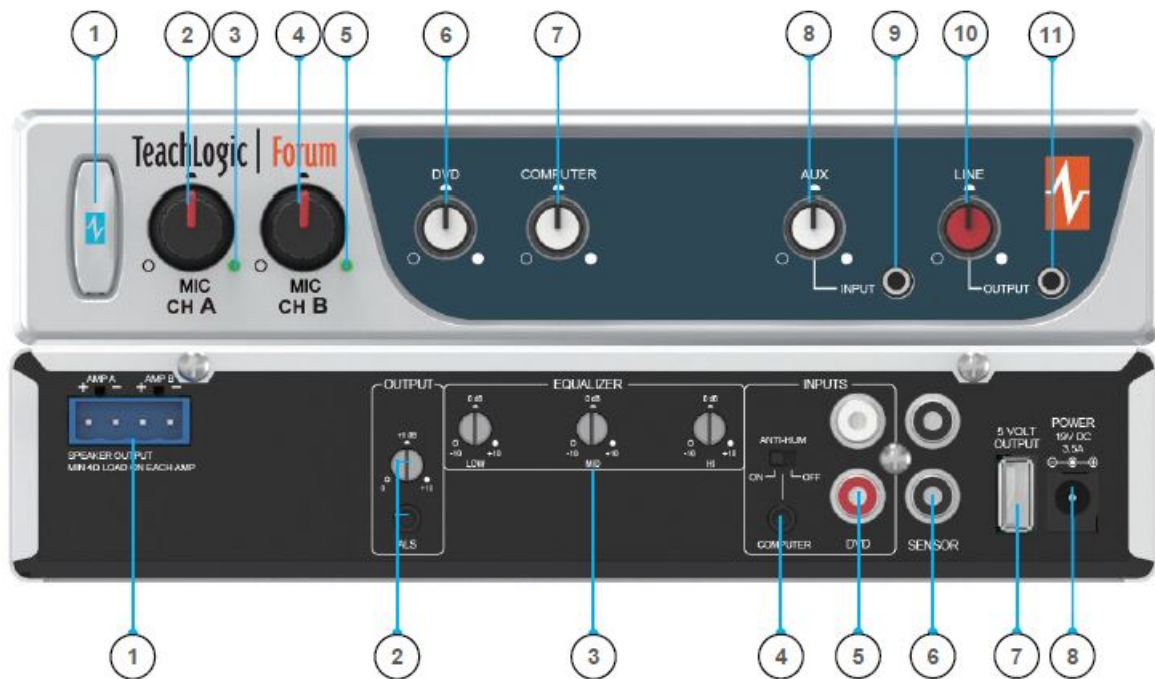
Limited warranty

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

System Overview

Front Panel

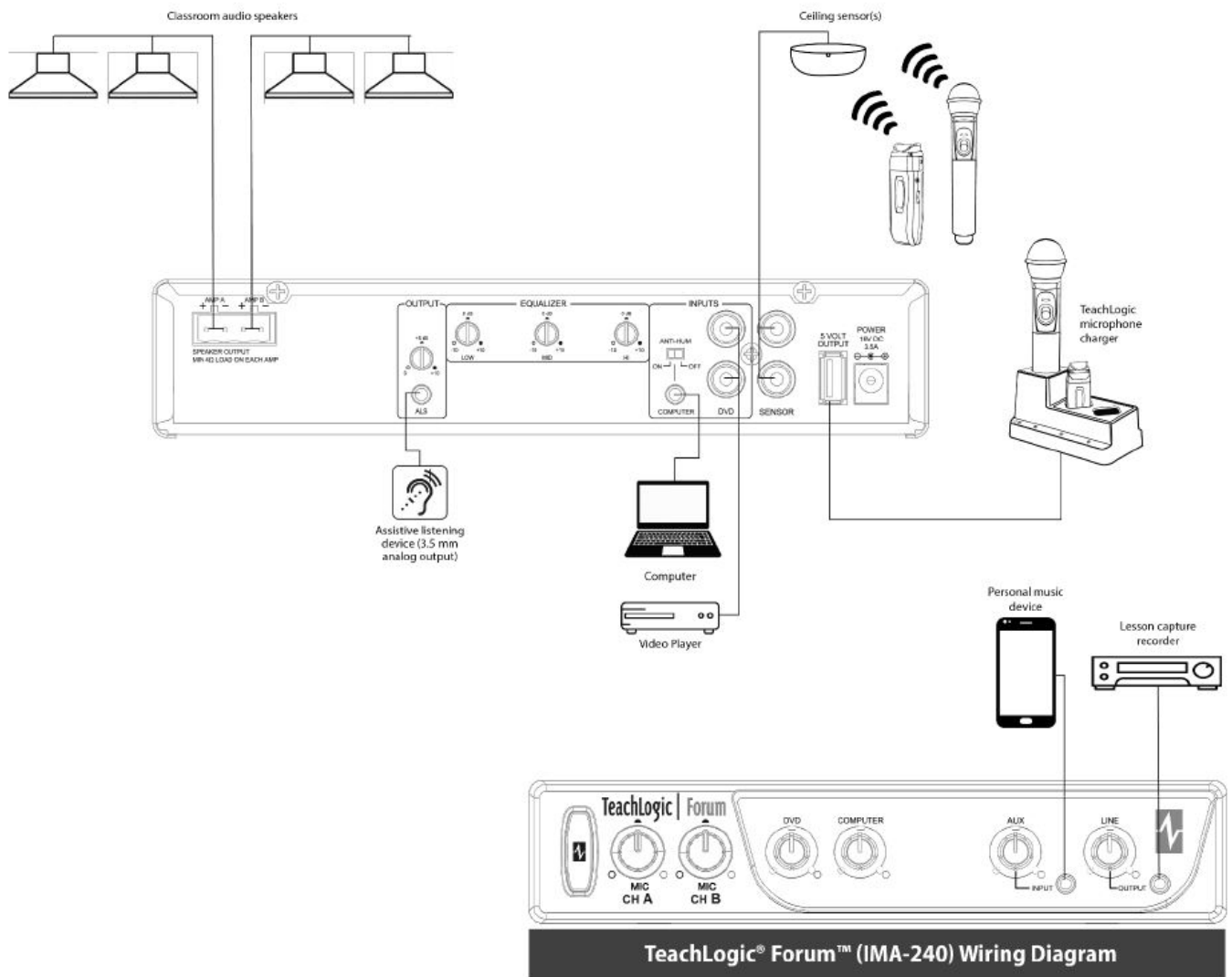
1. Power Button/ Indicator LED
2. Channel A Microphone Volume Control
3. Channel A Connectivity Indicator LED
4. Channel B Microphone Volume Control
5. Channel B Connectivity Indicator LED
6. DVD Input Volume Control
7. Computer Input Volume Control
8. Aux Input Volume Control
9. Aux Input Port (3.5 mm)
10. Line Output Volume Control
11. Line Output Port (3.5 mm) (suitable for Lesson Capture)



Back Panel

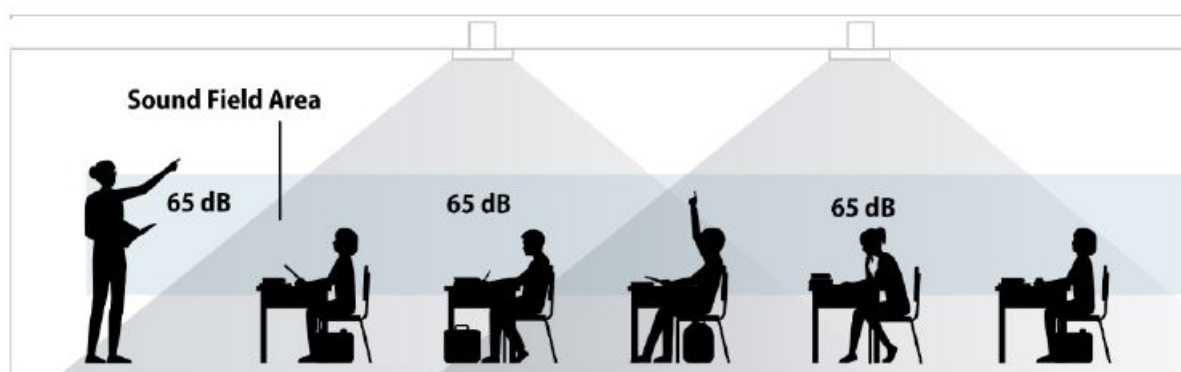
1. Speaker Output
2. ALS Output (3.5 mm) & Gain Control
3. Three Band Equalizer Controls
4. Computer Input Port (3.5 mm) / Computer Anti-Hum ON/OFF Switch
5. DVD Input Ports (Dual RCA, 0 dB)
6. Powered IR Ceiling Sensor Inputs (RCA x 2)
7. 5 Volt USB Output for chargers
8. Power Input: 19 VDC, 6.5 A

System Diagram



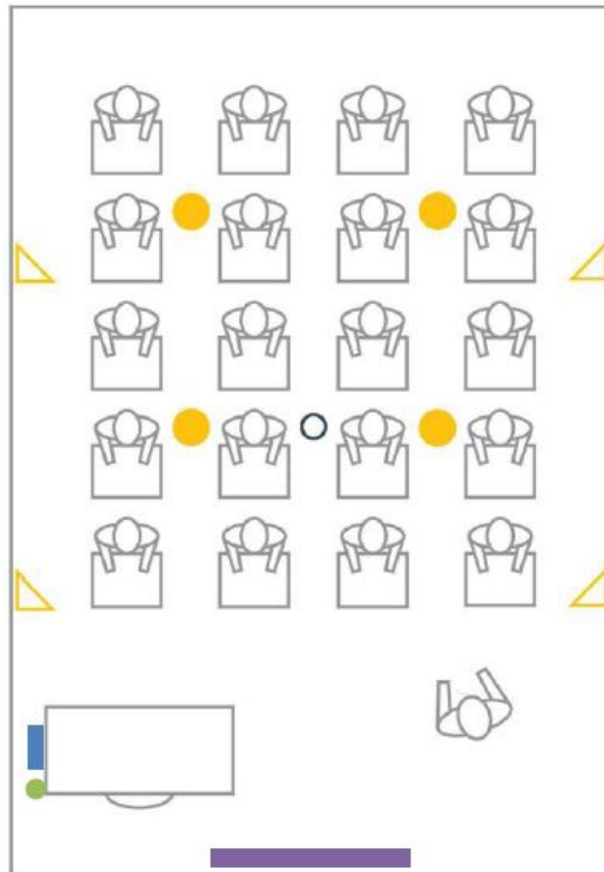
Installation Planning

The goal of a classroom audio system is to evenly distribute sound throughout the listening area.



Component Placement

1. Amplifier: 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 to teacher locations; keep away from direct sunlight and electrical interference.
3. Speakers: The Forum™ can power 4 classroom 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, computer, TV, projector, etc., noting how the wiring needs to run.
5. Charger: Confirm microphone charging location for daily use/charging.



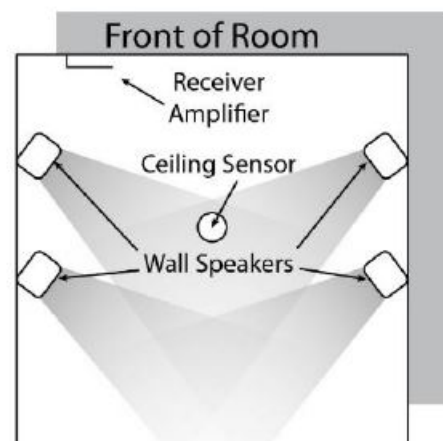
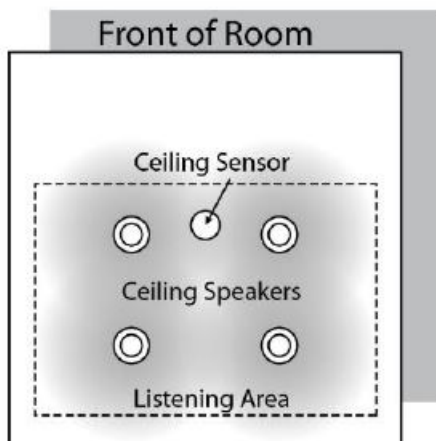
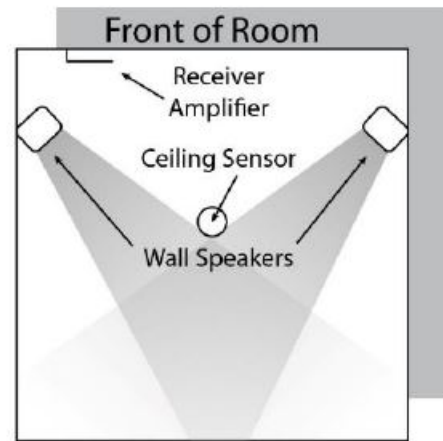
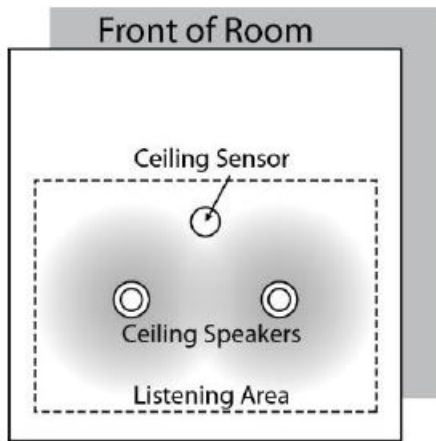
Speaker Installation

Speaker Location

Below are examples of room coverage for two and four-speaker installations. For more than 4 speakers, space the next row(s) accordingly.

Ceiling Speakers: Locate and identify the center-most tile in each quadrant.

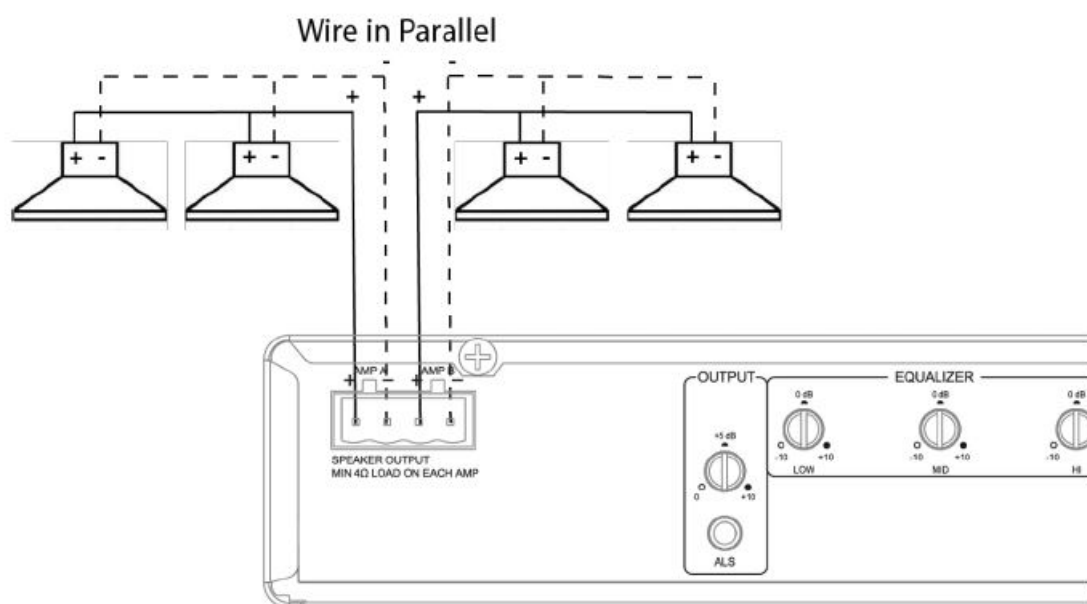
Wall Speakers: First observe the shape of the room: ceiling height, door locations, windows, mounting surface, and seating area. Ordinary installation would be to locate the speakers on each side wall beginning at the front row of listeners, approximately 6–7 feet above the floor.



Connection of speakers

The IMA-240 has two channels of amplified audio, rated for a minimum 4-ohm speaker load (two 8-ohm speakers each, connected in parallel provide 4 ohms impedance).

There is one blue phoenix style speaker connector on the back panel, providing two pairs of speaker terminals.



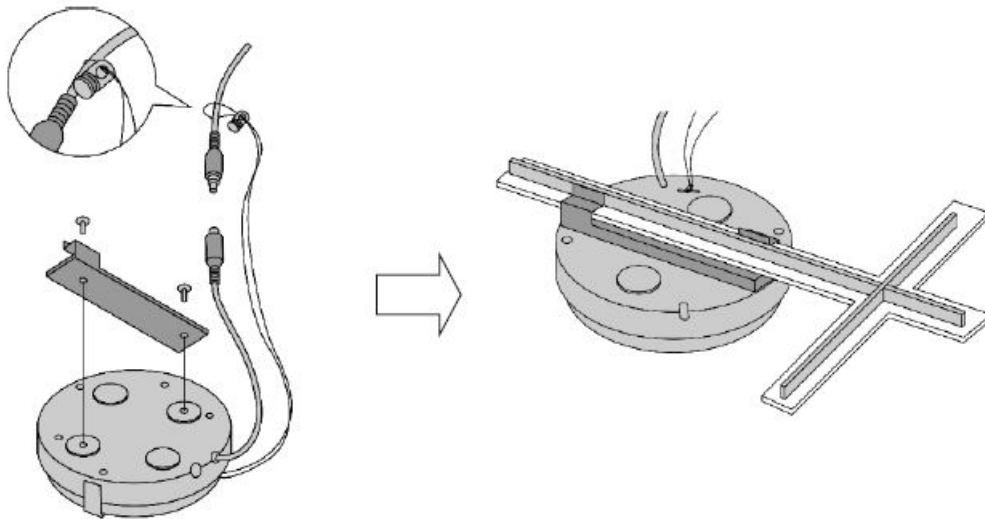
Ceiling Sensor Installation

Installation of Infrared (IR) 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 suspended acoustic ceiling tiles. This will ensure 360° coverage and will minimize the transmission distance for more reliable performance.

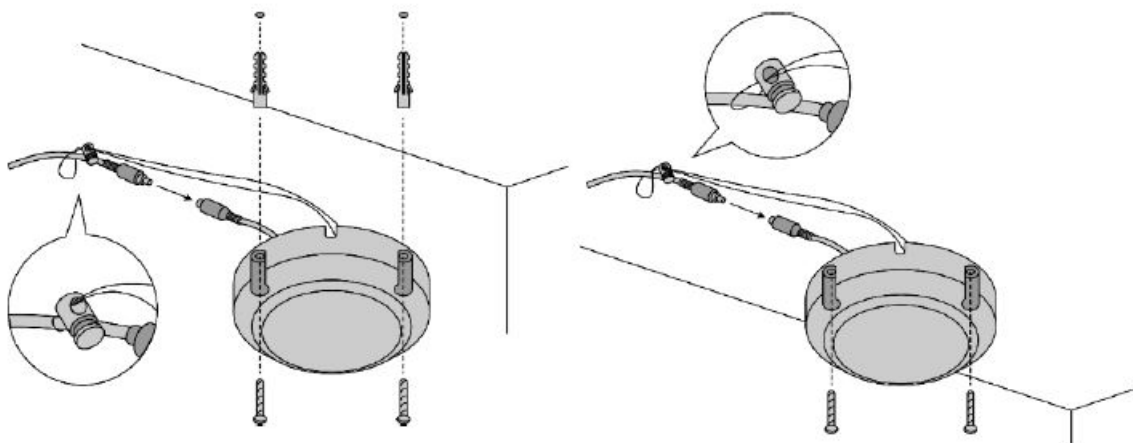
For additional coverage, or in large rooms, a second IR sensor may be placed on ceiling or a wall and connected to the second sensor input. As many as three sensors may be powered by the amplifier (use a wye adapter for two of them to connect to one input). The max cable length is 100 ft.

Installation 1 – Attach to T-bar rail



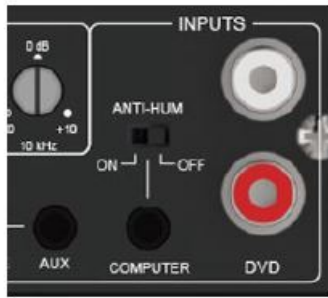
Installation 2 – Concrete or Drywall Surface

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.

Anti-Hum Feature



Anti-Hum Feature

The rear panel input port labeled “Computer” has a switchable feature to eliminate or reduce hum sounds often present when computers are connected to external amplifiers. The hum is known as a ground loop hum and may be present if the computer and amplifier have electrical grounding differences. The telltale characteristic is that it is 60 hertz (a somewhat low tone.) Inside the amplifier is a ground isolating balun that may reduce or eliminate the hum when switched ON. If not needed, it is better to leave the switch OFF as the sound quality for the connected device will be slightly better in this case.

Video Conferencing Connection

Video Conferencing Connection

All media devices connected to the TeachLogic amplifier (including microphones) will be heard by online viewers. All audio—including devices connected directly to the computer—will play through the TeachLogic amplifier/receiver in the classroom.

- Amplifier Output > Computer Microphone Input: enables online learners to hear classroom audio including wireless microphones
- Computer Speaker Output > Amplifier Input: enables classroom learners to hear computer & conference audio
- For more detailed instructions, visit <https://teachlogic.com/distance-learning/>.



Final Setup

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 (infrared) microphone (Sapphire™ or Handheld) to confirm good connectivity.

AMPLIFIER

- Connect power supply to amplifier, then plug into outlet.
- Turn the amplifier 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 should be 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.

Power Button Lights/Standby Function

Power Button Operation

The main power button on the amplifier's front panel has multiple indications as shown in the table below.

Red, solid	Off state; power is still supplied to USB port on back panel used to charge microphones
Blue, solid	On
Blue flashing	Page received and audio sources muted
Amber, solid	In Standby (or "Sleep") mode. See below
Red, flashing	Muted by Fire Alarm Mute Input
Purple, flashing	System in Ducked mode with all line inputs lowered in volume to allow microphones to be better heard. The Sapphire mic on Channel A can trigger this "Teacher Priority" mode with a press of its priority button (toggles mode on and off)
Green/Red flashing	Indications of Security Alert pulse mode (see section above)
Green Flashing	Security Alert activated

System Standby Function

Standby Mode is a feature that reduces power consumption after the amplifier has not been used to amplify audio signal for a period of two hours. After entering the automatic standby mode, the amplifier displays an amber light at power button.

Normal ON mode may be resumed by

1. speaking into a microphone that is on,
2. sending an audio signal into one of the line inputs *such as a projector or flat panel audio signal), or
3. pressing the power button once.

It may take a few seconds for the normal mode to resume after one of these actions is taken. A page signal can also "wake" the amplifier, but to hear the full first page of a morning, be sure to wake it first with one of the methods above since, or the initial several seconds may be missed if there are no other paging speakers provided to deliver the page audio.

Troubleshooting

Problem	Solution

<p>System will not power “ON”</p>	<p>Verify AC power; the power button will illuminate Blue when turned ON</p> <p>Check if system has been unplugged; reconnect to power outlet or use a nother device to ascertain power available at outlet</p> <p>Check circuit breaker</p> <p>Call maintenance for assistance</p>
<p>System is turned “ON” but there is no sound or</p> <p>System is in standby and does not “wake up”</p>	<p>Turn “ON” microphone/ transmitter; the “TL” power button will illuminate to solid 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 on mic 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 (check cable plug ends), or • Power output to sensor has failed (Sensor or amplifier may need to be replaced)

<p>Voice is distorted and/or signal drop-out occurs</p>	<p>Verify that the sensor is not being covered</p> <p>Verify there is no obstruction between microphone and sensor 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>
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Specifications

Forum™ (IMA-240)

Amplifier Output Power	50 W RMS, 2 x 25 W channels
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 μ s
Tone Key	32.768 kHz
Infrared Wavelength	850 nm
External Sensor Input	2, RCA, powered ports
Connectivity Coverage	1,600 sq ft per sensor, up to 3 sensors supported
Total Harmonic Distortion	<1% @ 1 kHz
Frequency Response	40 Hz –18 kHz, \pm 3 dB
Line Level Inputs	Rear Panel: DVD input, dual RCA, 0dB Rear Panel: Computer input, 3.5mm, -10 dB Front panel: Auxiliary input, 3.5 mm, -10 dB
Anti-Hum Balun	Present on Computer input
Line Outputs	Front panel: 3.5mm w/ gain control Rear Panel: 3.5 mm w/ +10 dB gain control
Output Impedance	Rated Load: 4 Ω minimum impedance
Equalization	3-band, \pm 10 dB
S/N Ratio	65 dB
Speaker Connection	4-pin Phoenix Connectors
Charger Output	5 VDC, USB
Power Supply	19 VDC / 3.5 A CE, CSA and UL Listed
Dimensions	8 1/2" W x 1 3/4" H x 7 1/2" D
Weight	1.7 lb.

Power Supply (AC-36)

Type	Regulated Switching Power Supply, CE, CSA and UL listed
Input Voltage	100-240 volts AV, 47-63 Hz
Output Voltage	19 VDC, 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 hr/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







541 Main St. Longmont, Suite B, CO 80501
[TeachLogic.com](https://www.teachlogic.com) | Support@TeachLogic.com | 760-631-7800

Documents / Resources



[TeachLogic Forum IMA-240 Classroom Audio System](#) [pdf] Instruction Manual
Forum IMA-240, Classroom Audio System, Forum IMA-240 Classroom Audio System

References

-  [Earth911 - More Ideas, Less Waste](#)
-  [TeachLogic – Wireless Microphones and Audio Systems for Classrooms](#)
-  [Resources – TeachLogic](#)
-  [TeachLogic Limited Warranty – TeachLogic](#)
-  [TeachLogic – Wireless Microphones and Audio Systems for Classrooms](#)
-  [Distance Learning – TeachLogic](#)