



### 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 within a triangle is intended to tell the user that parts inside the product are a risk of electric shock to persons.



The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are in the papers with the appliance.



This product is not designed to function normally in strong electromagnetic fields. Consequently, the audio quality may degrade while the product is exposed to strong electromagnetic fields. Normal audio quality operation will be recovered when the strong electromagnetic field is no longer present.

### WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, SO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



Ce produit n'est pas conçu pour un fonctionnement dans de forts champs électromagnétiques. Par conséquent, la qualité sonore peut diminuer si ce produit est exposé à un fort champ électromagnétique. La qualité sonore redeviendra normale après affaiblissement du champ électromagnétique.

## IMPORTANT SAFETY INSTRUCTIONS

**ATTENTION: ALL SAFETY AND OPERATING INSTRUCTIONS SHOULD BE READ BEFORE OPERATING APPLIANCE. ALL OPERATING AND USE INSTRUCTIONS SHOULD BE FOLLOWED WHEN OPERATING THE APPLIANCE. HEED AND ADHERE TO ALL WARNINGS ON THE APPLIANCE AND IN THE OPERATING INSTRUCTIONS. RETAIN ALL SAFETY AND OPERATING INSTRUCTIONS FOR FUTURE REFERENCE.**

**WATER & MOISTURE - DO NOT USE THE APPLIANCE NEAR WATER; IE. BATHTUB, WASHBOWL, KITCHEN SINK, LAUNDRY TUB, WET BASEMENT OR SWIMMING POOL.**

**VENTILATION - DO NOT SITUATE THE APPLIANCE SO THAT ITS LOCATION OR POSITION INTERFERES WITH ITS PROPER VENTILATION. FOR EXAMPLE, THE APPLIANCE SHOULD NOT BE SITUATED ON A BED, SOFA, RUG OR SIMILAR SURFACE THAT MAY BLOCK THE VENTILATION OPENINGS. THE APPLIANCE SHOULD NOT BE PLACED IN A BUILT-IN INSTALLATION, SUCH AS A BOOKCASE OR CABINET, THAT MAY IMPEDE THE FLOW OF AIR THROUGH THE VENTILATION OPENINGS.**

**HEAT - SITUATE THE APPLIANCE AWAY FROM HEAT SOURCES SUCH AS RADIATORS, HEAT REGISTERS, STOVES OR OTHER APPLIANCES (INCLUDING AMPLIFIERS) THAT PRODUCE HEAT.**

**POWER SOURCES - CONNECT THE APPLIANCE ONLY TO A POWER SUPPLY TYPE DESCRIBED IN THE OPERATING INSTRUCTIONS OR MARKED ON THE APPLIANCE.**

**GROUNDING OR POLARIZATION - PRECAUTIONS SHOULD BE TAKEN SO THAT THE GROUNDING OR POLARIZATION MEANS OF THE APPLIANCE ARE NOT DEFEATED.**

**POWER CORD PROTECTION - POWER SUPPLY CORDS SHOULD BE ROUTED SO THAT THEY ARE NOT LIKELY TO BE WALKED ON OR PINCHED BY ITEMS PLACED UPON OR AGAINST THEM, PAYING PARTICULAR ATTENTION TO CORDS AT PLUGS, CONVENIENCE RECEPTACLES, AND THE POINT WHERE THEY EXIT FROM THE APPLIANCE.**

**CLEANING - THE APPLIANCE SHOULD BE CLEANED ONLY AS RECOMMENDED BY THE MANUFACTURER.**

**NON USE PERIODS - UNPLUG THE APPLIANCE POWER CORD FROM THE OUTLET WHEN LEFT UNUSED FOR A LONG PERIOD OF TIME.**

**OBJECT & LIQUID ENTRY - CARE SHOULD BE TAKEN SO THAT OBJECTS DO NOT FALL AND LIQUIDS ARE NOT SPILLED INTO THE ENCLOSURE THROUGH OPENINGS.**

**DAMAGE REQUIRING SERVICE - THE APPLIANCE SHOULD BE SERVICED BY QUALIFIED SERVICE PERSONNEL WHEN: (A) THE POWER SUPPLY CORD OR THE PLUG HAS BEEN DAMAGED (B) OBJECTS HAVE FALLEN OR LIQUID HAS BEEN SPILLED INTO THE APPLIANCE (C) THE APPLIANCE HAS BEEN EXPOSED TO RAIN (D) THE APPLIANCE DOES NOT APPEAR TO BE OPERATING NORMALLY OR EXHIBITS A MARKED CHANGE IN PERFORMANCE (E) THE APPLIANCE HAS BEEN DROPPED OR THE ENCLOSURE DAMAGED.**

**SERVICING - THE USER SHOULD NOT ATTEMPT TO SERVICE THE APPLIANCE BEYOND THAT DESCRIBED IN THE OPERATING INSTRUCTIONS. ALL OTHER SERVICING REFER TO A QUALIFIED SERVICE PERSONNEL.**



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# Infrared Classroom Audio System



## PA-IRSYS Operating Instructions

**Quick Operating Guide**

These descriptions list out to insure their functions listed on the front & inside facing panels.

**Using the System:** See each:

- MC-1:** Selects the function on the front facing panel, which controls the MC-1 to the receiver of your Infrared Classroom Audio System after the initial connection has been made or the MC-1 plug is inserted.
- MC-2:** Selects the volume control of the Receiver. The volume can be adjusted from the front or receiver & you must adjust the volume.
- MC-3:** Selects the volume control of the Receiver. The volume can be adjusted from the front or receiver & you must adjust the volume.
- MC-4:** Selects the volume control of the Receiver. The volume can be adjusted from the front or receiver & you must adjust the volume.

**Connecting the System:**

- MC-1:** Select an additional power source (see manual for an AC plug).
- MC-2:** Select an additional power source (see manual for an AC plug).
- MC-3:** Select an additional power source (see manual for an AC plug).
- MC-4:** Select an additional power source (see manual for an AC plug).

**MC-1:** Select an additional power source (see manual for an AC plug).

**MC-2:** Select an additional power source (see manual for an AC plug).

**MC-3:** Select an additional power source (see manual for an AC plug).

**MC-4:** Select an additional power source (see manual for an AC plug).



# PA-IRSYS Infrared Classroom Audio System Operating Instructions

Thank you for purchasing the Califone® PA-IRSYS Infrared Classroom Audio System.

We encourage you to visit our website [www.califone.com](http://www.califone.com) to register your product for its warranty coverage, to sign up to receive our newsletter, download our catalog, and learn more about the complete line of Califone® audio visual products, including portable and installed wireless PA systems, multimedia players and recorders, headphones and headsets, computer peripheral equipment, visual presentation products and language learning materials.

## Unpacking the Unit

Inspect the unit once the packaging has been opened for any damage occurred during shipping & contact us immediately. Please keep the packing material for further use.

## Warranty Registration

Califone warrants the Infrared Classroom Audio System to be free from defective material and workmanship for one year from the purchase date (six years for the speakers). Our "Project Intercept" Customer Satisfaction program will replace defective parts and repair malfunctioning equipment under this warranty when the defect occurs under normal use.

## All Damage Claims Must Be Made With The Freight Carrier

Notify the freight carrier immediately if you observe any damage to the shipping carton or product. Repack the unit in the carton and await inspection by the carrier's claim agent. Notify your dealer of the pending freight claim.

## Returning Your Unit for Service or Repairs

Should your unit require service, contact our Customer Service Department online at [califone.com/techsupport](http://califone.com/techsupport) or via email [warranty@califone.com](mailto:warranty@califone.com) or by phone at **800-722-0500 / 818-407-2400** to first obtain an RA number before returning it back to Califone. The unit must be returned to our factory via prepaid transportation **only after the factory issues an RA (Return Authorization) number which must be clearly written on the outside of the box.**



## PA-IRSYS Contents

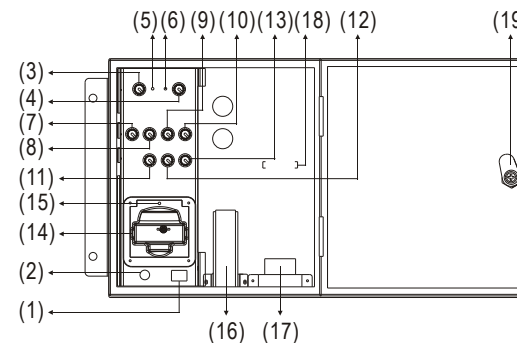
- Control Panel
- Two Control Panel keys
- AC Power cord
- User Manual
- Two infrared ceiling sensors (PI30-SENSOR), each with an integrated 32' connecting cable
- HBM-316 microphone used with beltpack transmitter
- Teacher Beltpack transmitter (PI30-BP)
- Beltpack lanyard with neck strap
- Student handheld microphone (PI30-HH)
- Four 1.2V AA Rechargeable NiMH batteries (for use with handheld and beltpack microphones)
- Two non-powered PI30-SP

## PA-IRSYSB

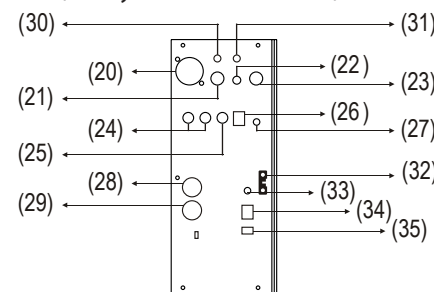
- PA-IRSYS with two additional powered (PI30-PS) array speakers

## Control Panel Descriptions

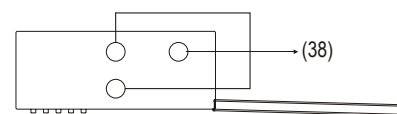
### Front View, Front Facing Panel (For Sound Adjustments)



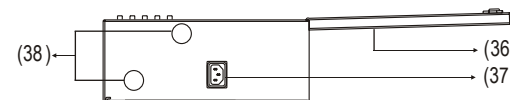
### Front View, Inside Facing Panel (For System Connections)



### Top View



### Bottom View



### Front View Forward Facing Panel

- (1) Power Switch
- (2) Main Power Fuse (3.15A)
- (3) IR Teacher Mic Volume Control
- (4) IR Student Mic Volume Control
- (5) IR Signal Indicator (Teacher Mic)
- (6) IR Signal Indicator (Student Mic)
- (7) Mic 1 Volume Control
- (8) Mic 2 Volume Control
- (9) Aux 1 Volume Control
- (10) Aux 2 Volume Control
- (11) Treble Level Control
- (12) Bass Level Control
- (13) Master Volume Control
- (14) Beltpack Transmitter Recharging Station
- (15) Beltpack Transmitter Recharge Status Indicator
- (16) Power Adapter
- (17) Handheld Microphone Recharging Station & Status Indicator
- (18) Handheld Mic Holder
- (19) Door Lock

### Front View Inside Panel

- (20) Mic 1 Input (Balanced XLR)
- (21) Mic 2 Input (Unbalanced 1/4")
- (22) Aux Input 1 (3.5mm)
- (23) Line Output (Mono 1/4")
- (24) Aux Input 2 (Stereo RCA)
- (25) Mic Pre-out (Mono RCA)
- (26) DC 18V In
- (27) DC Out
- (28) Speaker Output (+ terminal)
- (29) Speaker Output (- terminal)
- (30) Infrared Ceiling Sensor Input (B)
- (31) Infrared Ceiling Sensor Input (A)
- (32) Cable Holder
- (33) Paging Input Volume Control
- (34) Paging Input Jack
- (35) 25V / 70V Paging Input Sensitivity Switch

### Top and Bottom Views

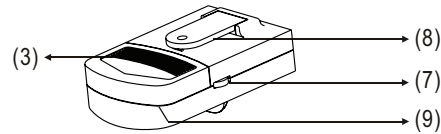
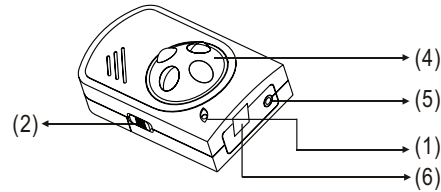
- (36) Panel Door
- (37) AC Input
- (38) Knockouts to feed wires through

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## Beltpack Transmitter and Mic Description

**Beltpack Transmitter** Transmits Voice to the Infrared Ceiling Sensors

- (1) Power LED Indicator
- (2) Power Switch
- (3) Battery Cover
- (4) Infrared Transmitting Head
- (5) MIC-IN Jack
- (6) DC-IN Jack/Battery Charger
- (7) Volume Control
- (8) Belt Clip
- (9) Battery Compartment



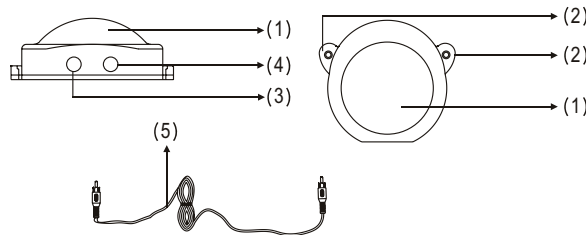
**HBM-316** microphone shown with **PI30-BP** beltpack transmitter



**PI30-HH** handheld student microphone

**Infrared Ceiling Sensors** (two units are included)

- (1) Receiver Cover
- (2) Fixed Ear
- (3) Infrared External Input
- (4) Infrared External Output
- (5) Signal Cable with 32' cord



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## Installation

### Speakers

**CAUTION:** The included PI30-SP speakers have a total impedance of about 5.3 ohms when connected in parallel. Therefore, no more than 2pcs PI30-SP should be connected to the PA-IRSYS to avoid the impedance dropping too low for the amplifier output. Speakers with higher impedance ratings can be used as long as the total load impedance on the amplifier is not below approximately 3 ohms.

1. Install each of the PI30-SP non-powered speakers on the front & back walls of the room. Optimal placement is approximately 3 feet below the ceiling in the middle of the wall.

**Note:** If the PA-IRSYSB package has been purchased, then 4 speakers (2 non-powered + 2 powered) can be connected to the PA-IRSYS Control Panel. The PI30-SP (non-powered) speakers should be connected as described above. The PI30-PS speakers should be connected as follows:

1. Install the PI30-PS speakers on the wall in the desired locations.
2. Connect the line output (1/4") of the control panel to one of the line inputs on one of the PI30-PS speakers (RCA jacks).
3. Connecting the second PI30-PS speaker:
4. **Option 1:** The speakers can be daisy-chained by connecting one of the line outputs (variable or fixed) on one PI30-PS speaker to the line input of the other PI30-PS speaker.
5. **Option 2:** A splitter may be put on the line output from the control panel so that each PI30-PS speaker is fed with its own cable.
6. Volume adjustment: Depending on if the speakers are daisy chained and if the fixed or variable line outputs, were used, the method to adjust the volume will be different. Adjust the volume levels of each of the speakers to achieve a balanced sound field in the listening area.

### Infrared Ceiling Sensors

1. Install the two included infrared ceiling sensors along an imaginary center line in the middle of the ceiling, with each sensor located approximately one third of the length of the room away from the back or front wall.

**Note:** With proper installation, the Classroom Audio system (with two ceiling sensors) can be used in rooms up to 2,000 sq. feet in size. If greater coverage is needed, up to 4 ceiling sensors can be daisy-chained & connected to the control panel.

**Tip:** If reception of the infrared microphones is noisy or the signal cuts out, try moving and/or rotating the receivers until better reception is obtained.

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### Control Panel

The Control Panel has two possible mounting configurations:

1. **Option 1:** The default configuration is the surface-mount the box on the wall. The mounting ears are designed with 4 holes for screws. Wall anchors or other hardware should be used as necessary to securely attach the box to the wall.
2. **Option 2:** The second configuration is a flush-mount. The mounting ears can be unscrewed, flipped around and unscrewed into the holes towards the front of the box. In this configuration, a hole will need to be made in the wall the same size as the control panel. The control panel will protrude from the wall only enough to allow for the door to open fully.

#### Tips:

- Install the panel in an accessible area of the classroom where computers and other external media sources can be easily connected to the panel.
- Note that longer runs of cable and poorly shielded cable can cause hum or other noise to enter the system and output through the speakers and other outputs.
- Plug the power of different equipment into the same power outlet when possible to avoid ground loops. Also see "Connecting the System" on the right side of the inner door panel.

### Connecting the System Once the Control Panel is Installed

**Note:** The connections described in the following section are found on the the inside facing panel of the control box.

1. Connect the two PI30-SP speakers to the **Speaker Output Jacks** (28, 29).
2. Connect the two individual or daisy-chained signal cables from the infrared ceiling sensors to the **Infrared Ceiling Sensor Jacks** (30, 31).
3. Connect the AC power cord to the **Power Connector** (34) on the bottom of the Control Panel and then to the wall outlet.
4. If an external amplifier or assistive listening system is used, connect the amplifier/assistive listening system input to the **Line Output Jack** (23).
5. When using an external sound source (such as a DVD/VCR, computer or a Califone® media player), connect the output from the media source to one of the **Aux In Jacks** (22, 24). Depending on the cable you have and the output jack type of the external source, you may use either 3.5mm jack (Aux 1) or the RCA jacks (Aux 2). All

## Installation & Operation

stereo signals are automatically mixed down to a mono signal for playback through the system. The volume for the inputs can be controlled by the **Aux Volume Controls** (9,10).

- Turn all the Volume Controls to their minimum position (approximately 7 o'clock). The **Treble** and **Bass** (11, 12) controls should set to 12 o'clock (straight up).
- Turn on the **Power Switch** (2) and the power LED Indicator will light.
- The PA-IRSYS should now be operational. The **Treble** (11) and **Bass** (12) Control knobs can be adjusted to improve quality/intelligibility of the audio through the system.

### Connecting the System for Teleconferencing

The Califone PA-IRSYS is specifically designed to work with PC/MAC teleconference systems such as Microsoft® Netmeeting.

- When using a computer teleconference system plug the **Mic Pre-out** (25) to the line input on the computer.
- Connect the PC line/headphone output to the **Aux 1** (22) or **Aux 2 Input** (24) on the Control Panel.
- By connecting the system in this configuration, all of the microphone signals from the PA-IRSYS (the wireless teacher & student mics, and connected wired mics 1 and 2) are mixed and sent into the PC and sent to the remote teleconference site. The microphone signals will still also come out of the PA-IRSYS speakers along with the audio from the remote teleconference site.
- You can adjust the **Master Volume** (13) and **Aux Input Volume** (9, 10) to get an appropriate loudness and mix of the signals.

**Note:** You may need to adjust volume settings of the microphones as appropriate to get a good level signal into the computer. You may also need to adjust sound settings in the application to use the appropriate inputs/outputs for the audio on your computer.

**Tip:** Do not connect the Mic Pre-out to the microphone input of the computer as you may get a distorted sound.

### Connecting the System to a 25 / 70 / 100V Paging System

The output of a 25 / 70 / 100 V Paging System may be connected to the PA-IRSYS paging input for non-emergency paging.

- To do this, first wire the paging system output to the included 2-pin phoenix connector.
- Then plug the connector into the paging input jack.
- Adjust the sensitivity switch to the appropriate setting.

- Adjust the paging input volume to the desired setting. Note that the Master Volume must be also turned up for the signal from the paging system to be heard through the PA-IRSYS speakers. Due to this, the PA-IRSYS should not be relied on for emergency paging or announcements.

### Operating the Infrared Belt Pack and Handheld Microphones

#### Notes:

- The volume adjustments for the two wireless mics, the two auxiliary inputs, and the Master System controls described in the following section are found on the front facing panel.
- The **Beltpack Transmitter** comes with a lanyard that can be slipped over the belt pack and hung around the neck.

- Insert two 1.2V AA rechargeable batteries into the infrared **Beltpack Battery Compartment** (9), paying attention to the positive and negative poles. Then close the battery cover.
- Turn on the **Microphone Power Switch** (1) and the power LED indicator will light, indicating that transmitter is ready to use. A couple seconds later the appropriate **IR Signal LED** (5, 6) will light red, meaning the receiver has good signal reception from that particular mic.
- If using the beltpack transmitter, adjust the **Volume Control** (7) on the side of the beltpack. Also, adjust the appropriate **Wireless Mic Volume Control** (7, 8) on the panel. The **Master Volume** will also need to be adjusted to an appropriate level.
- At this point, the microphones should be heard through the system.
- Both of the wireless microphones can be used throughout a typical day on a single charge and should be recharged overnight while not in use (without taking out batteries). Both the **Beltpack** and **Handheld Mics** have **Built-in Chargers** (14, 17) and are to be placed into their respective charging stations and charged overnight.
- The LEDs on the **Handheld** and **Beltpack Microphone** chargers indicate when the system is charging the microphones and when charging is complete. The LEDs will light up red when recharging and will turn green once the batteries are fully recharged.

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## Operation & Specifications

### General Notes

- The **Master Volume** controls the overall volume of the system. If the master volume is not up, then no sound will be output from the system speaker outputs.
- Because the PA-IRSYS wireless microphones use infrared signals, they are not suitable for outdoor use since direct sunlight can interfere with the transmission.
- Do not cover the infrared transmitter head on either the handheld microphone or the belt pack microphone as the transmission to the ceiling sensors requires line-of-sight for clear noise-free operation.

### Troubleshooting

#### There is no sound output.

- Is the AC cord connected the Control Panel and to the power outlet?
- Is the power switch on and the power LED lit?
- If using the beltpack transmitter:
  - Is the power on the beltpack on and the power LED on the beltpack is lit?
    - If not, try new batteries.
  - Is the Teacher Mic Signal Indicator lit on the Control Panel?
    - If not, make sure the ceiling sensors are picking up the signal from the beltpack and that the IR transmission is not being blocked.
  - Is the volume control on the beltpack up?
  - Is the Teacher Mic volume control up?
  - Is the Master volume control up?
  - Are the speakers connected to the speaker outputs?

#### There is feedback from the speakers.

- Try decreasing the volume of the microphone, master volume control, etc. until there is no feedback.
- Try adjusting the treble and base controls to reduce feedback.

#### There is noise or hum from the speakers.

- Check the installation:
  - Ensure that cables are as short as possible and not run next to noise-generating cables or equipment.
  - Ensure that power cables of different equipment use the same power outlet to avoid ground loops.

### System Specification

Storage Temperature:	-25°C – 65°C
Operational Temperature:	0°C – 45°C
Power Supply:	Integrated 100-240VAC 50/60Hz switching power supply

### Amplifier

Power:	30W RMS
Frequency Response:	(+/- 3dB): 20Hz – 20kHz
THD:	<1%

### Infrared Microphones

Belt Pack Microphone	
Carrier Frequency:	2.35MHz
Handheld Microphone	
Carrier Frequency:	2.85MHz
Microphone Recharging Time : (both handheld and beltpack)	Approx. 8 hours
Microphone Operational Time: (both handheld and beltpack)	Approx. 5-6 hours continuous usage 40 feet (From microphone to ceiling receiver)
Max Range:	

If the above section has not fully answered your question, visit the FAQ section of our website [califone.com/faqs](http://califone.com/faqs) or contact our Customer Service Department directly via email ([warranty@califone.com](mailto:warranty@califone.com)) or by phone at **800-722-0500 / 818-407-2400**.

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## Complimentary Products

The following Califone products compliment your Infrared Classroom Audio System

### Media Players to connect to the Classroom Audio System



**2396**

Multimedia player with variable speed playback and built in USB port to transfer files to and from a computer

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## Complimentary Products



**CD102**

Personal CD Player that's built school tough



**8102**

The first MP3 player designed for school use with a built-in mic for podcasting and dual headphone jacks

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