Touchboards

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Fax: (732)-222-7088 | E-mail: sales@touchboards.com

VoiceLink *Plus*

owner's manual

Infrared Wireless Microphone System

TeachLogic
FOR SOUND LEARNING

notes

Date of Purchase: _____
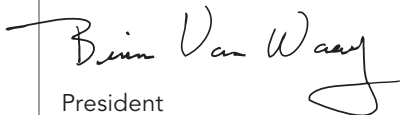
Model Number: _____

Serial Number: _____

Notes:

thank you

Congratulations on the purchase of your new VoiceLink PLUS Infrared Wireless Microphone Sound System. You can be assured that the VoiceLink PLUS fulfills all specifications and was produced to very 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.

We hope you will take the time to view this manual to familiarize yourself with the product operation and features. This manual will help you learn to use and gain the maximum benefit of the VoiceLink PLUS system. The manual provides a basic explanation on the principles and advantages of infrared transmission. Following by the system description, operation and installation instructions, the manual will conclude with maintenance and troubleshooting procedures.

Brian Van Waay

President

contact

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

☎ 1·800·588·0018
✉ sales@teachlogic.com
📠 1·760·631·1283
🖥 www.teachlogic.com

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

certifications

US   CA

Listed

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).

caution

Recycle—Do not dispose
of rechargeable batteries in
trash. Actually it is unlawful
to do so in CA, NY & ME.
Contact: Earth911.com
          1-800-CLEANUP
Save our resources and
don't contaminate.
Go Green

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.

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 thus
lifting the earth ground connection.

VoiceLink *Plus*
owner's manual

table of contents

a brief word about infrared

Infrared is a light ray that is below the visible spectrum, just like the sound spectrum extends beyond your hearing ability. An example of infrared transmission is the remote control for your TV set. When a button is pressed, a beam of infrared light is emitted by a Light Emitting Diode (LED) from the remote control. It is detected by a receiving diode in your TV set. When you press a certain command on your control, the internal electronics cause the infrared light to flicker in a programmed sequential pattern (called modulating the light beam). The modulated infrared beam is detected by a receiving diode and is electronically decoded. The decoded signal activates the circuitry to perform the command function on your TV set.

So how does this apply to the infrared communication system you are about to start using? The microphone/transmitter has several Light Emitting Diodes (LED) that emit infrared light beams to the sensor located in the ceiling of the room. Now when you talk into the microphone, the microphone element modulates the light beam, causing it to flicker in sync with your speech. The sensor detects the sequential signal and the electronic circuitry in the VoiceLink PLUS converts that sequential signal into a line level analog audio signal. Now that audio signal can be fed into an amplifier. The amplifier magnifies the electronic signal and sends it output to the speakers. This causes the speaker cone to move in sync with your voice. The speaker replicates your voice and disperses your voice evenly throughout the room.

IR transmission

The IR transmitter transmits directly to the sensor. However; due to the strength of the IR transmitter, the infrared signal will bounce off the walls, ceiling and floor for reception thus providing continuous connectivity throughout the room. Benefit: total freedom of movement within the room with no restriction of orientation.

"What's said in the room, stays in the room"

Infrared will not penetrate a solid surface thus preventing any transmission going out of the room.

VoiceLink *Plus*

owner's manual

product description

The VoiceLink PLUS is a complete classroom sound system. It includes an infrared wireless microphone/transmitter receiver and a 20 watt power amplifier. A ceiling sensor senses the infrared signal emitted from the microphone/transmitter and sends the voice signal to the receiver. The receiver can also accept an input from another audio source such as an iPod™, Computer, DVD, or video projector. The receiver passes the composite signal to the power amplifier which drives the two speakers. In addition, a drop-in charger is included to recharge the transmitter battery for daily use.

Reliable Performance. Use with confidence.

VoiceLink plus system

The VoiceLink PLUS system is comprised of a microphone/transmitter, either the Sapphire (IRT-55) or Handheld (for voice transmission to a ceiling sensor (ICS-55). The sensor sends the signal to the receiver/mixer (IMA-100). The receiver processes the signal and produces an analog signal which is fed to the power amplifier. The output of the amplifier is fed to the speakers (SP-628, SP-628L or SP-2000).
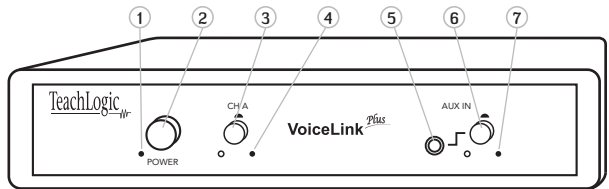
front of IMA-100 receiver/mixer

1 Power LED (Red)
2 Power Button (Black)
3 Microphone Volume Control
4 Microphone Transmission Indicator LED (Orange)

5 Auxiliary Input (3.5mm)
6 Auxiliary Volume Control
7 Auxiliary Signal Present Indicator LED (Orange)
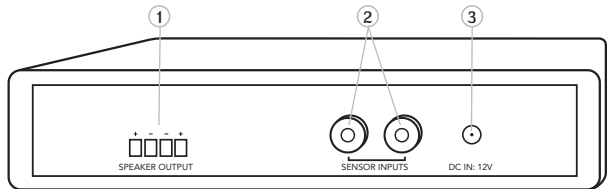
back of IMA-100 receiver/mixer

1 Two Amplifier Outputs (10 Watts ea.) (Dual 2-pin Phoenix Connector)
2 Two Sensor Inputs (RCA)
3 Power Input: 12VDC

infrared microphone/transmitters

The infrared microphone/transmitter is comprised of a microphone input, signal processing circuits and several emitting diodes that transmit the vocal signal to the sensor.

The microphone/transmitter can be the Sapphire or Handheld. The rechargeable batteries will provide 6–8 hours of service per charge. Place the microphone/transmitter in the charger for overnight charge and it will be ready for another day's use.

The drop-in battery chargers are specifically designed to recharge lithium & NiMH batteries

at an optimum rate for maximum operating capacity and extended service life. Charger will automatically start charging the batteries upon insertion and will shift to a maintenance charge when batteries are fully charged.

features

- Elegant design
- Only 1.4 oz. including battery
- Long life "Lithium ion" battery
- Rechargeable via USB cable to computer
- Battery level indicator – Back light under power switch
- Momentary mute button, backlight blinks in mute mode
- Push "on/off" power
- Channel "A" or "B" selectable
- Three level microphone volume switch (low, medium, high)
- Auxiliary input (3.5mm)
- Wear with a lanyard or slide directly on neckline collar

IRT-55 sapphire transmitter

The Sapphire's vocal clarity is unsurpassed. Its high level output is achieved by the unidirectional (Cardioid) microphone and a unique free air suspension system. With a built-in breatn filter, the Sapphire can function as a pass around hand mic.

The strategic alignment of the emitting diodes assures reliable connectivity throughout the room without static or drop out.

With a tap on the power button, the microphone is muted for private conversation—tap again to restore to normal operation. The auxiliary input allows wireless playback of your iPod™ through the Sapphire. A three position slide switch provides selection of low, medium, or high microphone sensitivity.

- Condenser microphone element
- Power "on/off" switch
- Battery level indicator—LED
- Channel "A" or "B" selectable
- 10 high-power emitting diodes
- Diodes at top and bottom of handle for increased Coverage (2 Top aimed out, 6 Bottom 360°, 2 Bottom aimed down)
- 360º IR radiation for assured connectivity
- Two "AA", Duracell, rechargeable NiMH batteries

IRH-35 handheld transmitter

The Handheld Microphone Transmitter (IRH-35) is most applicable for student use or direct presentation. It has an "on/off" switch and a battery level indicator LED; Green=useable charge, Red=low battery. The transmitter has 10 emitting diodes: 8 around the bottom of the handle, and 2 toward the top of the handle. The metal housing provides low handling noise and insures durable longevity.

BRC-55 drop-in battery charger

This stylish desktop drop-in charging station makes it convenient and easy to recharge both Sapphire Pendant and Handheld Microphones. Charge one IRH-35 handheld transmitter and up to two IRT-55 Sapphire transmitters simultaneously. Charging indicator lights illuminate Red when charging, and Green when fully charged. The "TL" logo illuminates Blue when plugged in.


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power "on" LED

Green light indicates that the sensor is receiving power from the receiver.

ICS-55 ceiling sensor

The ceiling sensor is the preferred infrared sensor for optimum performance. This is the unit that needs to be installed on the ceiling. It comes with a mounting/support bracket and 50 feet of plenum rated cable with RCA connector on each end. The ideal location for the dome sensor would be in the center of the ceiling. This will provide a clear signal path for the IR transmission from the transmitter to the dome sensor without obstruction. In addition, you will have 360° coverage and will minimize the transmission distance for more reliable performance. It collects the infrared transmission signal via 6 large detecting diodes.
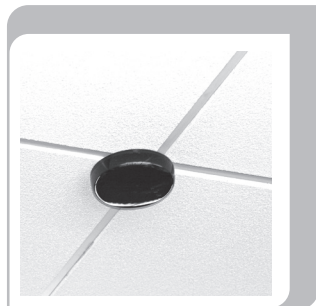
sensor cable

A Cable connects the sensor to the receiver. The cable is dual-shielded with a male RCA connector on each end and is plenum rated.

installation of receiver/amplifier

Location of the receiver/amplifier is primarily determined by user accessibility, availability of an electrical outlet, location of the auxiliary input source, and routing of the sensor and speaker cables. The receiver/amplifier can be placed on desk top, mounted on the wall, mounted on top or under a shelf using the mounting flanges and hardware provided.
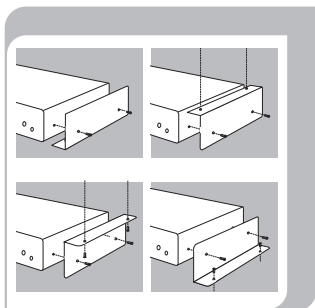
mounting receiver/amplifier

Desk Top Location
- Install soft vinyl pads on bottom of receiver
- Locate for convenient use

Shelf or Wall Mount
- Attach the mounting flanges using round holes and small plastic rivets.

Caution: Assure rivets are aligned and seated before pushing rivet into hole

- With flanges attached, hold receiver in place.
- Mark mounting holes
- Drill a $^3/_{32}$" pilot hole for screwing directly into a solid surface using the mounting screws.
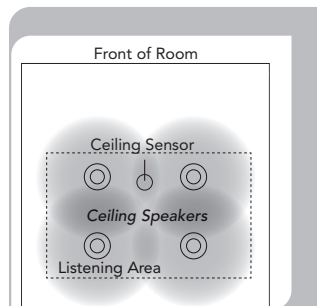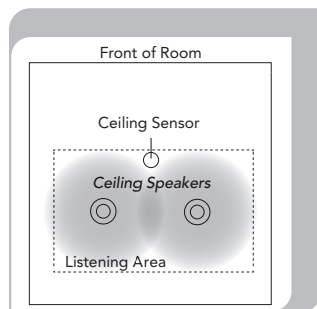- Drill a $^5/_{32}$" hole and insert a plastic anchor in drywall or concrete wall.

installation of speakers

Two wall mount or ceiling speakers can be powered by the receiver/amplifier. It has two amplifiers (10 watts ea.). One speaker will be connected to each amplifier.
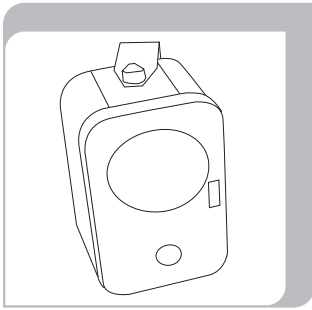
Optional: Two additional speakers can be powered by the amplifier. Connect two speakers in parallel. Then bring a cable from each pair to the amplifier. Connect one pair to each amplifier.

installing two SP-628 ceiling speakers

- Determine the listening area.
- Divide listening area into two quadrants
- Locate and identify the center most tile in each quadrant
- Lay ceiling tile face down on clean flat surface
- Lay tile bridge on ceiling tile and center it
- Trace and cut the large hole using a keyhole or drywall saw
- Strip the speaker cable ends, approx. ½"
- Route speaker wire from speaker opening to amplifier
- Reinstall ceiling tile with tile bridge in place above the hole
- Pull speaker cable back down through speaker hole
- With a pointed tool or paper clip, lift up and remove speaker grille
- Set speaker on top of ladder and connect speaker cable connect
- Observe speaker polarity, connect Red wire to (+) terminal and black wire to the (C) terminal
- With the mounting clamps folded back, position speaker into speaker hole
- With a #2 Phillips screwdriver, tighten the quick clamps
- Reinstall speaker grille and remove any soil or fingerprints
- Repeat same for other speaker

Front of Room

Ceiling Sensor

Ceiling Speakers

Listening Area

Front of Room

Ceiling Sensor

Ceiling Speakers

Listening Area

Optional:
Two Additional Speakers

## installing SP-2000 wall mount 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 approximately even with the front row of listeners
- Mount the speakers 6–7 feet above the floor
- Install the mounting brackets in the vertical (up/down) orientation
- Mount brackets using the appropriate hardware
- Insert speaker with the tweeter in upper position
- Secure speaker in bracket with the hand fasteners
- Orient each speaker toward the center of that half of the listening area
- Strip speaker cable ends ½" and connect to speaker
- Observe speaker polarity: Connect (+) wire (with printed writing) to (+) terminal and (-) wire (unprinted & textured) to the (-) terminal
- Route speaker cable to the receiver/amplifier in a safe, least visible, tidy manner

Front of Room
VoiceLink I
Receiver
Ceiling Sensor
Wall Speakers
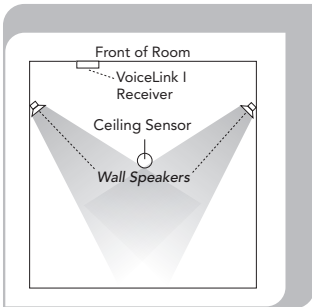
final connection of the system

With receiver/amplifier located, speaker and sensor cables neatly routed, we are ready to complete the installation.

- Cut the speaker wire to the appropriate length
- Strip about 3/8" off the end of each speaker wire.
- Twist the wire and if you have a soldering iron, tin the wire ends
- Unplug the phoenix connector, insert (+) wire (with printed writing) into either outside (+) terminal. Plug the other (-) wire into center (-).
- Tighten set screws.
- Repeat for other pair and insert plug firmly into speaker receptacle
- Plug power supply into AC outlet

Front of Room
VoiceLink I
Receiver
Ceiling Sensor
Wall Speakers
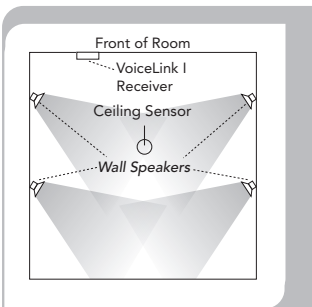
Optional:
Two Additional Speakers

installation of speakers

Wiring configuration for two or four 8 ohm speakers.

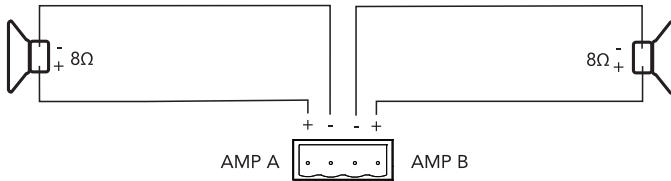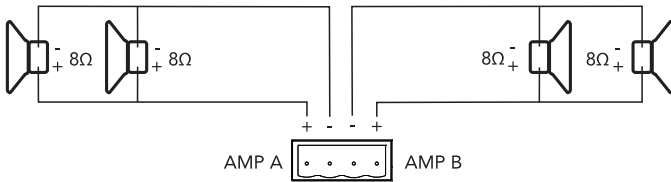Figure A
Wiring configuration for two 8ohm speakers.

Figure B
Wiring configuration for four 8ohm speakers with two home run wires
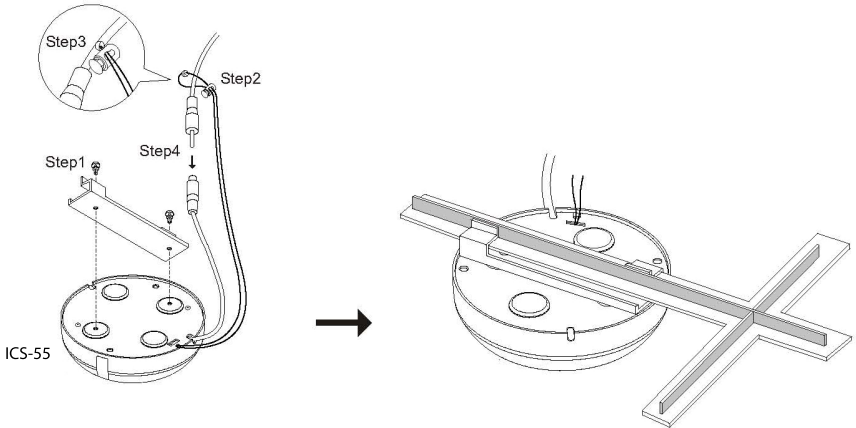This configuration saves wire, time and money.

installation of ICS-55 ceiling sensor

The ideal location for the ceiling sensor is in the center of the ceiling. This will provide a clear signal path for the IR transmission from the transmitter to the dome sensor without obstruction. In addition, you will have 360º coverage and will minimize the transmission distance for more reliable performance.

Attaching the infrared ceiling sensor
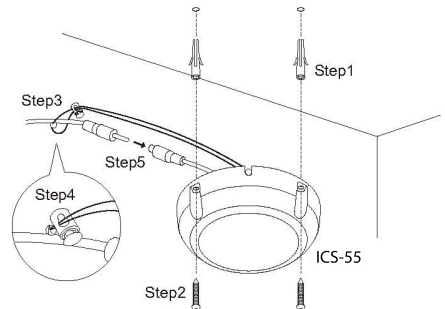
Installation 1 ------ Attach to T-bar Rail

Step3
Step2
Step4
Step1
ICS-55

Installation 2 ------ Attach to wood surface

Step3
Step2
Step4
Step1
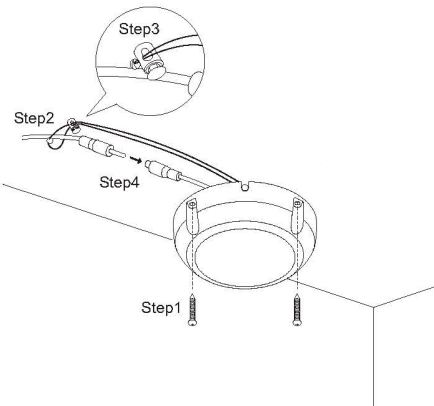
Installation 3 ------ Attach to concrete surface

Step1
Step3
Step5
Step4
ICS-55
Step2

VoiceLink *Plus*

operating the system

We will test of the system with the wireless microphone/transmitter purchased with the system and an external auxiliary source i.e., an iPod™, computer, or DVD player.

system operation

- Set volume control of receiver and microphone to "Minimum"
- Turn power "on", push button on left side
- Red LED indicates power "on"
- Check power to sensor, "Yellow" LED on corner sensor, "Green" on ceiling sensor
- Rotate "CH A" volume control to about mid scale
- Turn "on" microphone, Green LED
- Verify IR transmission, "Orange" LED adjacent to volume control
- While standing either under or in front of a speaker, slowly increase the volume of the microphone while talking into microphone
- Adjust until you begin to get feedback (squealing)
- Reduce volume to stable non-ringing condition
- While talking into microphone, walk around the room verifying continuous connectivity throughout the room
- Hopefully the test was 100% satisfactory, this competes the vocal test of the system

Test of the auxiliary input using an external audio source i.e. iPod, DVD, or computer
- With receiver turned "on", set "AUX IN" volume to minimum
- Plug in an auxiliary source using an audio cable with a 3.5mm plug
- Turn "on" your auxiliary source i.e. iPod, DVD, Computer
- Observe signal presence indicator, "Orange" LED
- Increase "AUX" volume to about mid scale
- Slowly increase volume or gain of auxiliary source to desired volume

| Problem	Solution
System is turned "on" but there is no sound	• Verify AC power; the Red LED lights when turned "on" 　• Check if system has been unplugged 　• Check circuit breaker 　• Call maintenance for assistance
System has power but no sound	• Turn "on" microphone/ transmitter • Check for IR transmission, Signal presence (Orange LED) • Check the Green LED in the sensor • If sensor LED is not lit 　• Sensor has been disconnected (unplug- ged or broken cable) 　• Power output to sensor has failed (Receiver/ amplifier needs to be replaced)
Voice is distorted and/or signal drop- out occurs	• Check the charge on your batteries • Verify that the diodes on transmitter or sensor are not being covered or obstruction between transmitter and sensor
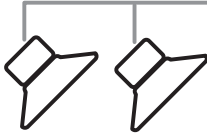
Speakers

Infrared Transmitter
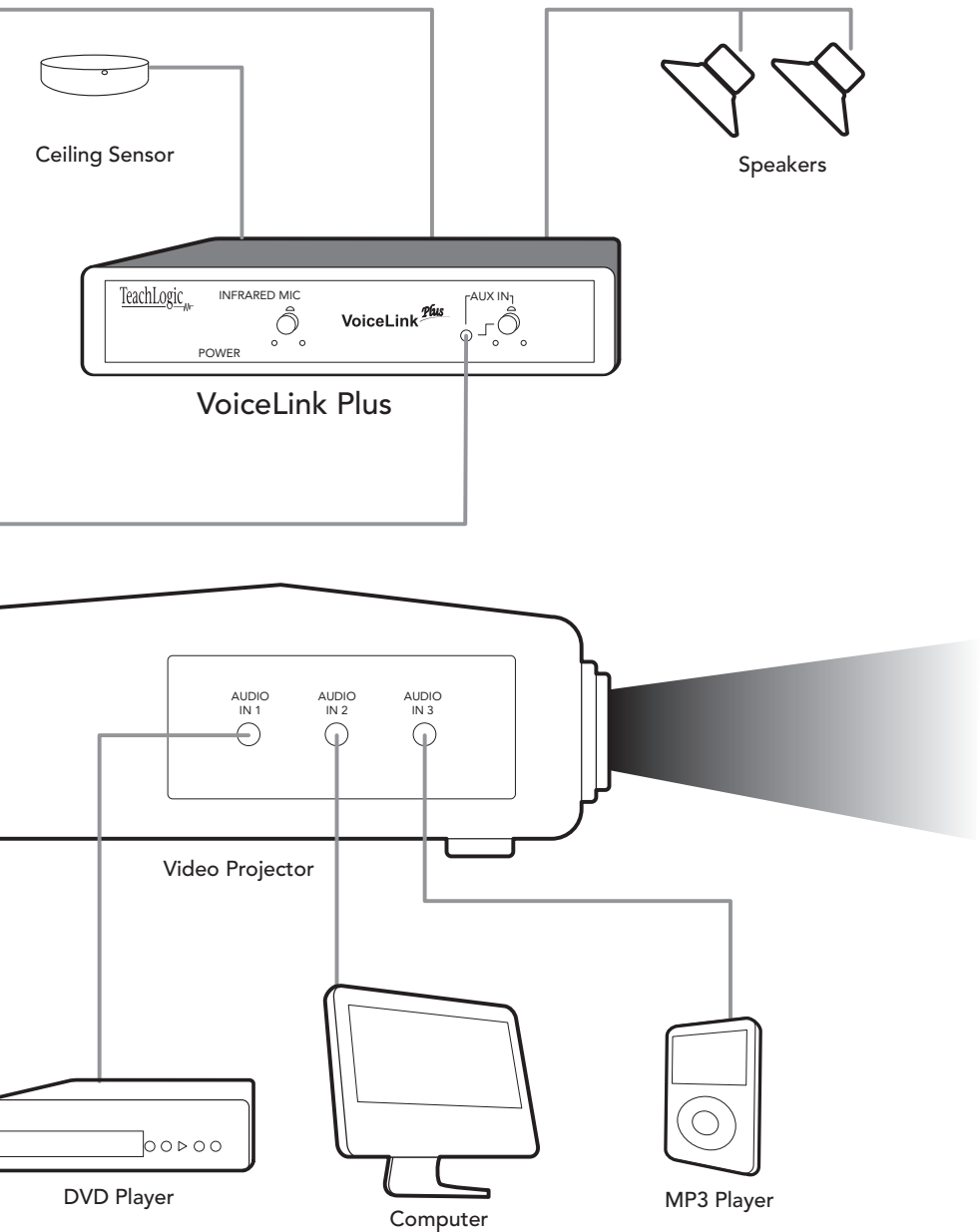"Sapphire" IRT-55
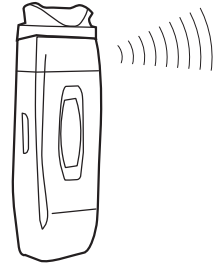
projector system setup

How to Interface VoiceLink Plus with a Video Projector
and incorporate the Projector's Remote Control

- With sensor installed, connect it to VoiceLink Plus
- Connect VoiceLink Plus into AC power and locate it near projector
- Connect an audio cable with 3.5mm connectors from projector audio output to VoiceLink Plus input (front panel)
- Connect the speaker outputs to installed speakers
- Turn "on" VoiceLink Plus and Video Projector
- Set "AUX IN" control on VoiceLink Plus to 2 o'clock position
- With microphone turned "on", speak and adjust microphone volume using "MIC" volume control on VoiceLink Plus
- With an Auxiliary program turned "on" and plugged into the projector, adjust the auxiliary volume with the remote control
- Once auxiliary volume is optimized, readjust microphone volume using "MIC" volume control
- System is now ready to use with remote control of AUX inputs and consistent Mic volume (Mic volume does not change with remote volume control)

AUDIO OUT

REMOTE
SENSOR

Projector
Remote Control
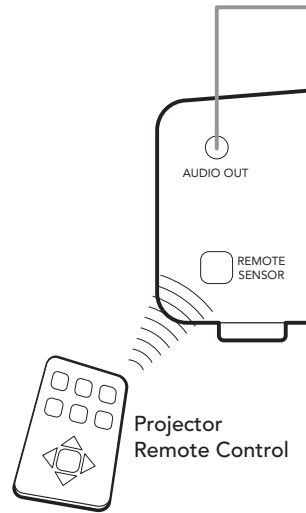
note
Microphone volume is not affected by the remote control of the auxiliary inputs.

Ceiling Sensor

Speakers

TeachLogic

INFRARED MIC

VoiceLink *Plus*

AUX IN

POWER

VoiceLink Plus

AUDIO
IN 1

AUDIO
IN 2

AUDIO
IN 3

Video Projector

DVD Player

Computer

MP3 Player

VoiceLink Plus (IMA-100) specs.

Receiver Input	Infrared FM
Modulation	FM Wide-band
Reception Frequencies	Ch. A: 2.08 MHz
Infrared Wavelength	850 nm
Tone Signal	Ch. A: 32.768 KHz
De-emphasis	50 μs
Frequency Response	50 Hz, -13KHz, ± 3dB
S/N Ratio	›65 dB
THD	‹1% @1KHz
Nominal Deviation	± 10 KHz
Maximum Deviation	± 25 KHz
External Sensor Input	Two, RCA
Aux Input	3.5mm with Gain Control, Front
Output Power	Panel
	Two Amplifiers, 10 Watts ea. (RMS)
	20 Watts total (RMS)
Output Impedance	4Ω
Output Connection	One Four Pin Phoenix Connectors
Power Supply	12VDC / 0.6A / 7.2W
Dimensions	5" W x 1" H x 4 ½ " D
Weight	1 lb.
Enclosure	ABS

general transmitter specs.

Transmission Carrier	Infrared
Transmission Frequencies	2.08 MHz & 2.54 MHz
Channel Switchable A or B	Field Switchable
Modulation	FM Wide-Band
Pilotone Frequency	32.768 KHz
Peak Deviation	± 25KHz
Operating Range	2500 Ft². 60 Ft.

power supply (AC-15) specs.

Type	Regulated Switching Power Supply
Input Voltage	100–240 volts AC, 47–63Hz
Output Voltage	12.0 volts DC, 2.0A
Power Output	24 watts Max.

Sapphire transmitter (IRT-55) specs.

Transmitting Diodes	6
Operating Range	1,500 Ft ². 60 Ft. Line of Sight
Battery Discharge Indicator	
Blue	Full
Purple	Medium
Red	Low
Flashing Red	Very Low Battery
Battery Used	Lithium-ion (3.7V / 620mAh)
Battery Life	Approx. 8-9 Hrs/Charge
External Power Charger	DC +5V, Micro USB Connector
Transmission Angle	Conical
User Controls	
Power Switch (push)	On/Off
Mute Switch (push)	On/Off
Mic Switch (3 position)	+6db, Normal, -3db
Aux. Vol./Gain	Increase, Decrease
Channel Select	(A or B) in battery compartment
External Aux. Input	3.5mm Stereo Line Level
Dimensions	3 5/8" H x 1¼" W x ¾" D
Weight	1.4 oz. Including battery

Handheld transmitter (IRH-35) specs.

2 Channel Switchable	Field Switchable
Transmitting Diodes	Ten
Modulation	FM Wide-Band
Pilotone Frequency	32.768 KHz
Peak Deviation	± 25KHz
Operating Range	2500 Ft². 60 Ft.
Power Switch (Slide)	On/Off
Battery Charge Level (LED)	Green (Useable Charge)
	Red (Needs Charging)
Battery Life	Approx. 7 Hr./Charge
Dimensions	21/8" Dia. Head,
	17/16" Dia. Body, 95/8" H
Weight	10.3 oz. w/ Battery

drop-in battery charger (BRC-55) spec

Charging Port	2 Sapphire, i Handheld
Red LED	Battery being charged
Green LED	Battery fully charged
Power Supply	5 VDC, 1 Amp
Dimensions	7 3/4" L x 2 3/4" W x 3 3/4" H
Weight	1 lb. 12 oz.

five year limited warranty

TeachLogic IR products are guaranteed to be free of defects in workmanship or material for a period of five (5) years from date of original purchase, subject to the following conditions:

1. Warranty excludes defects caused by normal use and wear, any abuse, or failure to use the product in accordance per instructions.
2. Warranty is void if damage occurred because of misuse, or attempted repair or modification by unauthorized personnel.
3. Warranty on batteries is for two (2) years.
4. Warranty does not extend to finish.
5. All warranty service will be provided by TeachLogic or authorized service center
6. Warranty is made to the original purchaser and may not be transferred to another user.
7. Warranty service rendered will be on a repair or replacement basis, whichever TeachLogic deems to be most prudent for customer satisfaction and economic feasibility.

TeachLogic will only accept warranty shipments accompanied by Return Authorization Number previously assigned by TeachLogic personnel. Advance warranty replacements will be made per the discretion of TeachLogic personnel.

TeachLogic will pay return shipping cost on all warranty repairs or replacements.

contact

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5/28/14