CRS301

INFRARED W**IR**ELESS MICROPHONE SYSTEM

INSTALLATION INSTRUCTIONS

OWI Incorporated
Established 1978

This package contains the ff:

A - 1 each . . . . .CRS-301-CASE- MIXER/AMPLIFIER

B - 2 each . . . . CRS-IRS - IR SENSORS

C - 1 each . . . . CRS-PMIC - PENDANT MICROPHONE

D - 1 each . . . . CRS-PENCH - PENDANT CHARGER

E - 1 each . . . . CRS-PBAT37- PENDANT MICROPHONE BATTERY

F - 1 each . . . . CRS-LMIC- LAPEL MICROPHONE

G –1 each . . . . MOUNTING PLATE

H – 2 each . . . . CABINET KEYS

Optional Accessories (Sold Separately)
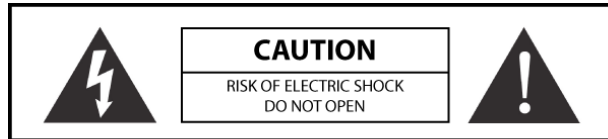
CRS-HHMIC2 - HANDHELD MICROPHONE

CRS-HSMIC - HEADSET MICROPHONE

CRS-HHBAT12 - HANDHELD MICROPHONE BATTERY FOR THE CRS-HHMIC2

CRS-HHCHARGER - CHARGER FOR THE CRSHHMIC2

SAFETY INSTRUCTIONS

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 SERVICE PERSONNEL**

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC
SHOCK, DO NOT EXPOSE THIS APPLIANCE
TO RAIN OR MOISTURE**

**WARNING
MOVE WITH CARE**

Read all of these instructions before operating and save instructions for later use.
1. **Read Instructions –** All the safety and operating instructions should be read before the appliance is operated.
2. **Retain Instructions –** The safety and operating instructions should be retained for future reference.
3. **Heed Warnings –** All warnings on the appliance and in the instructions should be adhered to.
4. **Follow Instructions –** All operating and use instructions should be followed.
5. **Water and Moisture –** The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement or near a swimming pool.
6. **Carts and Stands –** The appliance should be used only with a cart or stand that is recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
7. **Wall or Ceiling Mounting –** The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation –** The appliance should be situated so that its location or position does not interfere 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; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. **Heat –** The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. **Power Sources –** The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. **Grounding or Polarization –** Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.
12. **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 at the point where they exit from the appliance.
13. **Cleaning –** The appliance should be cleaned only as recommended by the manufacturer.
14. **Power Lines –** An outdoor antenna should be located away from the power lines.
15. **Nonuse Periods –** The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
16. **Object and Liquid Entry –** Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
17. **Damage Requiring Service –** The appliance should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damage; or
    B. Objects have fallen, or liquid has spilled into the appliance; or
    C. The appliance has been exposed to rain; or
    D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
    E. The appliance has been dropped or the enclosure damaged.
18. **Servicing –** The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

INTRODUCTION

Congratulations and thank you for purchasing the OWI CRS-301 Infrared Wireless Microphone System. This compact system is suitable for Classrooms, Training rooms, Conference rooms and for Public speaking.

The CRS System is an Infrared (IR) Wireless system that allows the speaker the freedom to move about the room without the restriction of a microphone cable. The two included CRS-IRS IR Sensors allow use of several options of microphones.

The CRS-301-CASE is an amplified audio mixer that provides inputs for infrared wireless microphones, two unbalanced 3.5 mini jack in the front, two 3.5 mini jack in the back, and two balanced inputs in the back (one is for the microphone control). The internal amplifier is a clean, powerful 20 watts per channel in a dual mono configuration (i.e. the system outputs the same mono signal to up to four speakers).

The CRS-PMIC is a IR Wireless PENDANT MICROPHONE with 2.06 MHz or 2.56 MHz frequency slide switch under the battery cover.

The CRS-PMIC is a combination IR Wireless PENDANT MICROPHONE AND BATTERY CHARGER. It gets clipped onto a coat or shirt pocket, or hung around the presenter's neck on a lanyard and is then used as a wireless microphone allowing for a hands free presentation.

The CRS-PMIC also features a MIC Input that connects to either of the also included CRS-LMIC LAPEL MICROPHONE or optional CRS-HSMIC HEADSET MICROPHONE. These two ultra-sensitive mics provide additional options for hands-free presentations.

The CRS-PMIC also features a 3.5 mini-jack stereo input to allow an audio signal to transmit wireless to the mixer unit.

The IR Wireless Microphones are similar to 'normal' mics in how they detect speech, but rather than directly connecting to a PA or other amplifier, they convert the audio signals into very strong IR pulses (invisible light pulses) that are 'seen' by the IR Sensors. The Sensors receive these pulses and output electrical pulses to the CRS-301-CASE, where the electrical pulses are converted back to audio signals, amplified and output to the speakers.

IR is invisible light and IR systems typically require a direct line-of-sight from the transmitter (microphone) to the receiver (IR Sensors) to operate. The CRS-301 was designed with ultra-high output IR circuitry that allows the IR pulses output from the microphones to reflect off ceiling, wall and hard floor surfaces. The IR Sensors are designed to 'see' IR from any direction, allowing uninterrupted presentations.

The CRS-HHMIC2 Wireless Microphone (optional) is a HAND-HELD IR WIRELESS MICROPHONE. This option can be used by the speaker for presentation or can be passed around the classroom or audience to allow questions to be clearly heard by all.

The CRS-301 System is easy to install and operate. Once set up, it will be ready for class every day. One important point: Just as students need sleep to re-charge, the microphone batteries need to be kept at peak performance levels as well, so it is important to re-charge the batteries before each use.

When not in use, the CRS-301-CASE provides a secure, locking door to prevent touching

The CRS-301 when combined with OWI's P5278 Bookshelf or IC5 or IC6 in-ceiling speakers help create professional easy to hear presentations of both spoken content and audio from external sources such as CD/DVD players, Computers, Cable, Satellite, VCR, etc.

OWI CRS-301 Infrared Wireless Microphone System. Always at the head of the class.

CRS-301-CASE Features
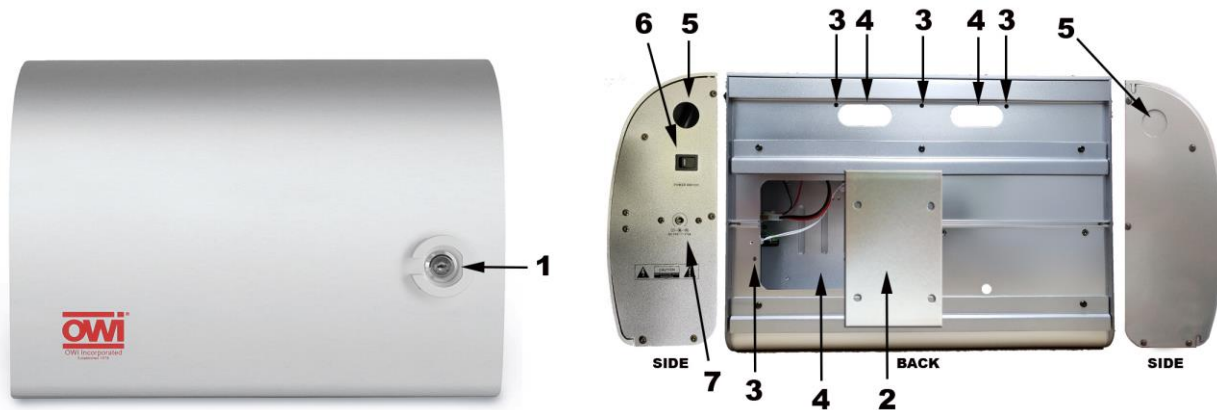
Figure 1. CRS-301-CASE Front View - Door Closed   **Figure 2.** CRS-301-CASE Back and Side Views

CRS-301-CASE CABINET FEATURES

1. **DOOR LOCK –** Locks the **CRS-301-CASE Door** to keep unauthorized fingers off the system controls and settings.
2. **MOUNTING PLATE –** Holds the CRS-301-CASE securely on the wall.
3. **MOUNTING KEYHOLES –** Five screw keyholes for securing the **CRS-301-CASE** to a wall or shelf.
4. **WIRE ACCESS –** Space in the **CRS-301-CASE** cabinet allows connection to an external audio source and two wired microphones, with the door closed.
5. **KNOCKOUTS –** Two knockouts. Additional wire access on the side of the CRS-301.
6. **POWER SWITCH –** One, two position toggle switch turns the power mains to the **CRS-301-CASE ON/OFF**.
7. **POWER INPUT –** 15 VOLT, 3.5 AMP POWER INPUT

Figure 3. CRS-301-CASE Front Panel (Door Open)
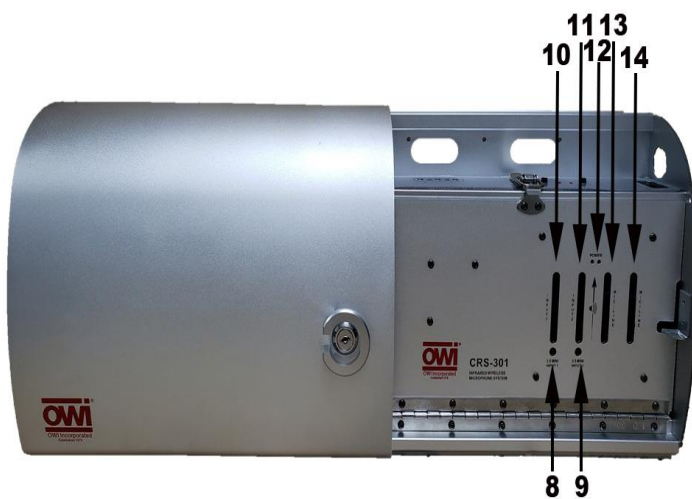
CRS-301-CASE FRONT PANEL FEATURES
The CRS-301-CASE Front Panel features all of the controls for the CRS-301 System.

8.   **3.5 Stereo Mini Jack input – on slider 1 (#10)**
9.   **3.5 Stereo Mini Jack input – on slider 2 (#11)**
10.   **SLIDER VOLUME # 1 – Line Level input control**
11.   **SLIDER VOLUME # 2 – Line Level input control**
12.   **POWER LED INDICATOR LIGHTS**
13.   **SLIDER VOLUME # 3 – Microphone or line level control**
14.   **SLIDER VOLUME # 4 – wireless microphone control**

Figure 4. CRS-301-CASE Inside Panel

CRS-301-CASE INSIDE PANEL FEATURES

An external audio source such as a CD/DVD Player, computer, projector, cable, satellite, etc and standard unbalanced, low impedance wired microphones can be connected to the Inside Panel.

15. **3.5 Mini Jack LINE IN –** 3.5 Stereo Mini Jack input **NOTE:** The CRS will output BOTH channels to BOTH Speakers (mono). Use either channel for a mono source.

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17. **Balanced input – Mic or Line input***   ***This input is for the microphones**

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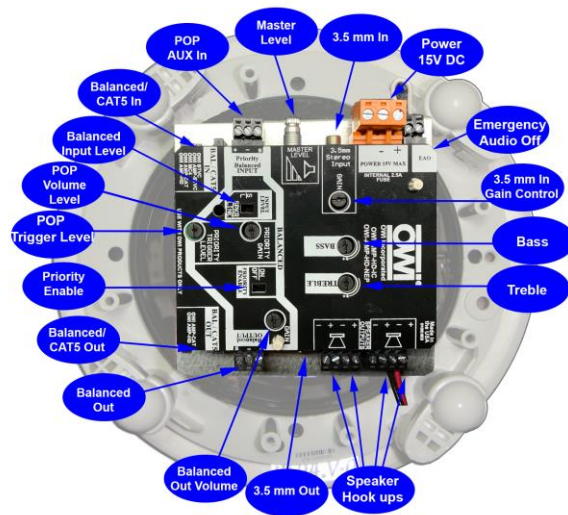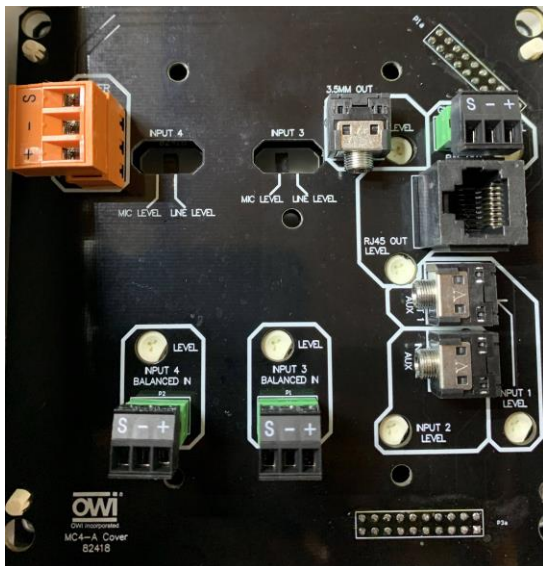
A. Input #1 (3.5 mini stereo input) –
       A1 - Gain/level control for input #1 **A**
B. Input #2 (3.5 mini stereo input) –
       B1 – Gain/level control for input #2 **B**
C. Input #3 (balanced line input) –
       C1 – Gain/level control for input #3 **C**
D. Input #4 – (balanced line input) –
       D1 – Gain/level control for input #4 **D**
E. Power input – 15V DV
F. Microphone or Line Level Selector Switch for Input # 3 and 4
       F1. Gain/level control for input C or D
  K.   3.5 Mini jack – Dual Mono signal output

6

K1. Gain/level control for K

L. Balanced Line Level output

L1. Gain/level control for L

M. CAT5 output to OWI AMP Speakers only

Speakers
1. Strip approximately ¼" off each lead and twist the ends so there are no loose strands that can cause shorts. The recommended speaker wire size is 14 to 16 gauge.
2. Connect to the appropriate + and – Speaker Terminal. Maintain polarity from the speaker.

NOTE: Though the CRS has Left and Right Line Inputs, the Speaker Outputs are mono, so BOTH channels will be output from BOTH speakers.

Line In
1. Connect the left and right line level audio outputs of an audio source to the L and R Inputs on the CRS-301-CASE using a stereo RCA-RCA patch cable with gold ends.
NOTE: Though the CRS has Left and Right Inputs, the Speaker Outputs are mono, so BOTH channels will be output from BOTH speakers.
2. Feed the audio patch cable through the Wire Access in the CRS-301-CASE Cabinet to allow connection with the door closed.

Balanced line input
1. Connect the left and right line level outputs of a TV/Projector or DVD Player using a stereo male RCA to stereo male ¼" phonoadapter.
NOTE: The TV/DVD Input can be adapted to any line level audio device. Connections may vary by device.

COMP
1. Connect the line level audio output of a Computer (stereo 3.5mm mini jack typical) using a stereo male 3.5mm mini plug to stereo male ¼" phonoadapter.
NOTE: The COMP Input can be adapted to any line level audio device. Connections may vary by device.
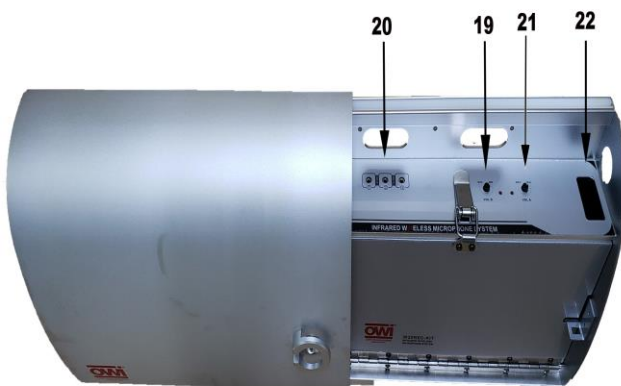
Figure 5. CRS-301-CASE Top Panel   **Figure 6. CRS-301-CASE Side Panel**

CRS-301-CASE TOP PANEL FEATURES - The IR Sensors and Speakers get connected to the Side Panel

19. **Microphone A control –** Main Volume for the microphone A
20. **IR SENSOR JACKS –** Three, 3.5mm mini jacks connect to the **CRS-IRS IR Sensors** for input of IR pulses (audio signals) from the **Headset**, **Lapel**, **Pendant** or **Handheld Microphones**. Use any two of the three inputs with the included IR Sensors
21. **Microphone B control -** Main Volume for the microphone B
22. **WIRE ACCESS –** Space in the **CRS-301-CASE** cabinet allows connection to an external audio source and two wired microphones, with the door closed.
23. **Power switch and power transformer input –** One power supply to power the CRS-301.
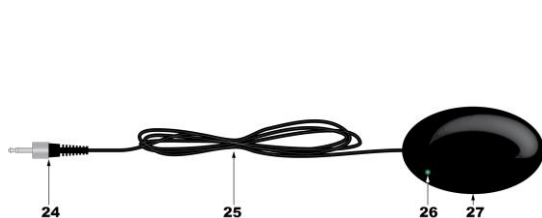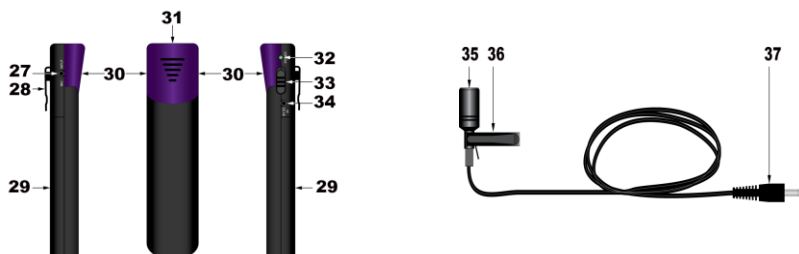
Figure 7. CRS-IRS IR Sensor   **Figure 8. CRS-PMIC Pendant Mic/Charger**

CRS-IRS IR SENSOR FEATURES
24. **MINI PLUG –** One, 3.5mm mini plug connects to one of the three **IR Sensor Jacks** on the **CRS-301-CASE Side Panel**.
25. **CABLE –** 50' cable allows the **IR Sensors** to be positioned away from the **CRS-301-CASE** for optimum coverage for reception of IR pulses from the **CRS IR Microphones**.
26. **ON LED –** One, LED illuminates green to indicate that the **CRS System** is **ON** and the **IR Sensors** are connected and active.
27. **IR SENSOR –** Senses the IR pulses output from the **CRS IR Microphones**. Must be positioned to have clear 'line-of-sight' to the classroom and any location that the **CRS Microphones** may be used. The **IR Sensor** senses IR in an omni-directional pattern (140° off-axis) and will also sense IR reflected off the ceiling, wall and hard floor surfaces. It has a range of 66 feet. **INPUT – One,**

CRS-PMIC PENDANT MIC/CHARGER FEATURES
The CRS-PMIC Pendant Microphone can be used as a wireless microphone itself or as an IR Transmitter when used with the Lapel or Headset Mics.

27. **MIC INPUT –** One, 3.5mm mini jack connects to the mini plug on either the **CRS Lapel Mic** or **Headset Mic**. When either is connected to this jack, it overrides the **Pendant Microphone**, so only the **Lapel Mic** or **Headset Mic** will be active.
28. **CLIP –** Clips the **Pendant Mic** on to the included **lanyard** or a coat or shirt pocket for use as a hands free microphone.
29. **BATTERY DOOR –** Removable battery door for access to the AA re-chargeable Lithium battery. A regular alkaline battery can be used if necessary, but will not last as long as the Lithium (approx. 4 hours).
NOTE: THE PENDANT IS ALSO A CHARGER. DO NOT CONNECT THE CHARGER POWER SUPPLY WHEN USING NON-RECHARGEABLE BATTERIES!
30. **IR OUTPUT ARRAY –** High output IR LED's output audio as infrared pulses in an omni-directional pattern that are received by the **CRS-IRS IR Sensors**. The **IR Sensors** output electrical DC pulses to the **CRS-301-CASE** which converts them back to audio signals, amplifies them and outputs the audio to the **Speakers**.
31. **MICROPHONE –** The **Pendant Microphone** is located at the top of the Pendant.
32. **ON LED –** One LED illuminates green to indicate that the microphone is ON.
33. **ON/OFF SWITCH –** Turns the **Pendant** ON/OFF.
34. **6V DC IN –** One 3.5mm mini jack connects to the included **CRS-PENCH Charger Power Supply** for re-charging the Lithium battery. (Charging Time: 3 Hours).
      NOTE: THE PENDANT IS ALSO A CHARGER. DO NOT CONNECT THE CHARGER POWER SUPPLY WHEN USING NON-RECHARGEABLE BATTERIES!
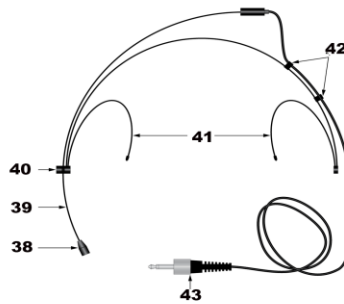
CRS-LMIC LAPEL MIC FEATURES - The CRS-LMIC Lapel Microphone is used with the Pendant Mic for inconspicuous hands-free presentations.

35. **MICROPHONE –** Detects audible sound such as voice. Should be positioned as close to the speaker's mouth as possible.
36. **LAPEL CLIP –** Attaches the **Lapel Microphone** to a jacket lapel, shirt or blouse.
37. **MINI PLUG -** Connects to the **MIC Input** on the **CRS-PMIC Pendant**. High output IR LED's on the **Pendant** output audio as infrared pulses in an omni-directional pattern that are received by the **CRS-IRS IR Sensors**. The IR Sensors electrical DC pulses to the **CRS-301-CASE** which converts them back to audio signals, amplifies them and outputs the audio to the **Speakers**.

NOTE: When connected, the **Lapel Mic** overrides the **Pendant Microphone**, so only the **Lapel Mic** will be active.

Figure 9. CRS-LMIC Lapel Mic Figure   10. CRS-HSMIC Headset Mic (Optional)

The CRS-HSMIC Lapel Microphone is used with the Pendant Mic and is another option for hands-free presentations.

NOTE: The **CRS-HSMIC** is an optional accessory and must be purchased separate from the **CRS-301**.

38. **MICROPHONE –** Detects audible sound such as voice. Should be positioned as close to the speaker's mouth as possible.
39. **MIC BOOM –** Adjustable mic boom allows the microphone to be set to the optimum position. The **Boom** will extend out from the **Headset** by carefully pulling the **Boom**, *not the microphone*, from the **Boom Hinge**. The **Boom** can also be swiveled into position by carefully turning the **Boom** at the **Boom Hinge**. Push the **Wire Clips** *toward* the **Boom Hinge** to create slack in the wire *before* adjusting. Try not to flex or strain the wire connection at the end of the boom more than necessary to avoid damaging the wire.
40. **BOOM HINGE –** Allows positioning the **microphone** as described in **Item 38** above.
41. **EAR CLIPS –** Secures the **Headset** by wrapping the ear clips around the user's ears.
42. **WIRE CLIPS –** Secure the **Headset Wires** to the **Headset**.
43. **MINI PLUG –** Connects to the **MIC Input** on the **CRS-PMIC Pendant**. High output IR LED's on the **Pendant** output audio as infrared pulses in an omni-directional pattern that are received by the **CRS-IRS IR Sensors**. The IR Sensors output DC electrical pulses to the **CRS-301-CASE** which converts them back to audio signals, amplifies them and outputs the audio to the **Speakers**.

NOTE: When connected the **Headset Mic** overrides the **Pendant Microphone**, so only the **Headset Mic** will be active.
NOTE 1: The **CRS-HHMIC2** is an optional accessory and must be purchased separate from the **CRS-301**.

44. **Reserved**
45. **ON LED –** One LED illuminates green to indicate that the **microphone** is ON.
46. **ON/OFF SWITCH –** Turns the **microphone** ON/OFF.
47. **IR OUTPUT ARRAY –** High output IR LED's output audio as infrared pulses in an omni-directional pattern that are received by the **CRS-IRS IR Sensors**.
48. **CHARGER CONTACTS –** These contacts charge the microphone's re-chargeable battery when inserted into the **CRS-HHMCS Hand Held Microphone Charger.**

NOTE: The **CRS-HHMCS Charger** is also an optional accessory and is purchased separate from *both* the **CRS-301** and **CRS-HHMIC**.
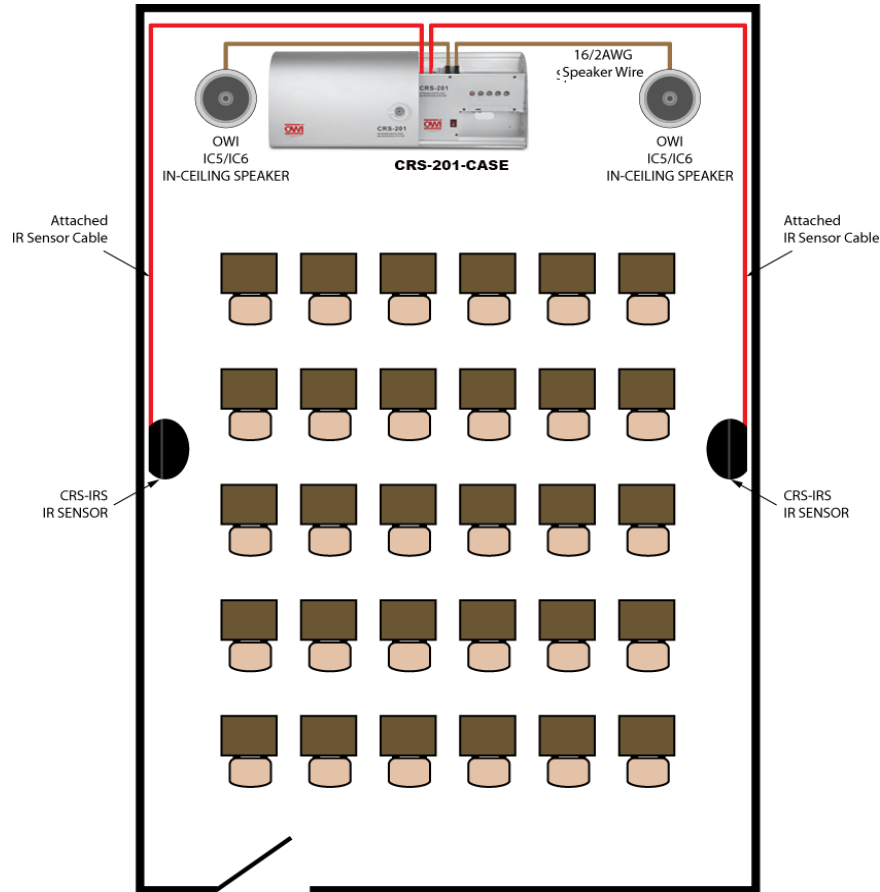
**Figure 12. Typical Classroom Application**

INSTALLATION
CRS-301-CASE
The CRS-301-CASE can be wall or shelf mounted. It should be located in a central location that allows the **IR Sensors** to be equally spread in the classroom for optimum visibility to the **microphones**. Consideration should also be given to locating the **CRS-301-CASE** in close proximity to any **audio source** that will be connected to the **Line In**, such as a CD/DVD Player, Projector, Computer, VCR, Cable, Satellite, etc. It should be installed in a location free from moisture or humidity. The location should also be easily accessible for operation.
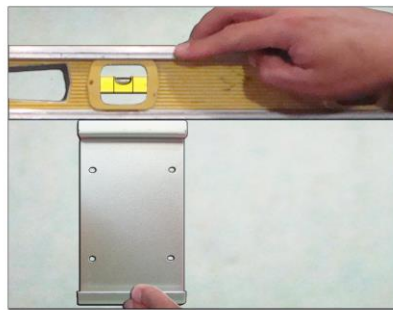
Wall Mount
The **CRS-301-CASE** comes with a mounting plate that can be screwed on a wood panel wall to hang the CRS-301-CASE. There are five screw keyholes on the **Back Panel** (**Figure 2**) that allow it to be secured to a wall or cabinet.
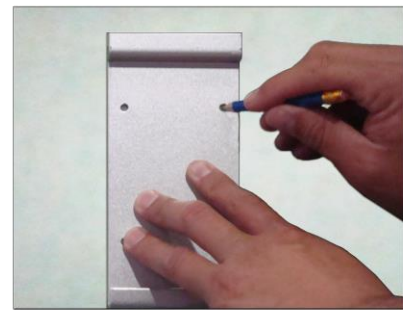
HOW TO MOUNT THE CRS301 USING THE MOUNTING PLATE
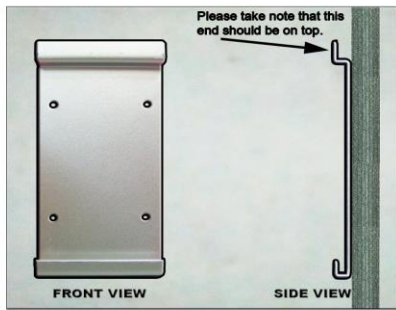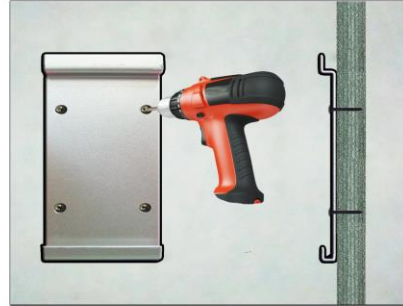
1. Place the bracket on the wall at your desired location.

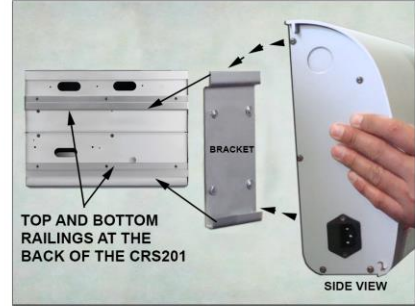2. Use a level to determine the proper level of the CRS201.

3. Mark the four screw holes on the bracket with a pencil.

4. Drill the four holes on the wall using the drill bit for a 3mm self-tapping screw.

5. Mount the bracket on the wall using the four 3mm self-tapping screws.

6. Mount or hang the CRS201 on the bracket.

7. Use the level again to double check the level of the CRS201.

8. Slide the door all the way to the left then mark the five screw holes with a pencil.

9. Remove the CRS201 from the bracket.

10. Open the CRS201 door and align the screw holes with the holes on the wall then drill the five security screws.

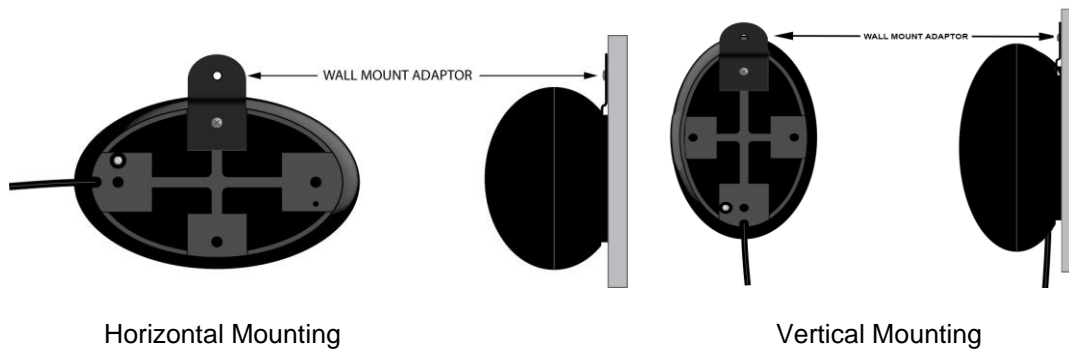

11. Connect the power cord and plug it in a power source.

Horizontal Mounting   Vertical Mounting

Figure 13. IR Sensor Wall Mount Adaptor

CRS-IRS IR SENSORS
The **CRS Microphones** output **IR Pulses** that are invisible light pulses. Ideally, the **IR Sensors** should be 'line-of-sight' to the **microphones**. The microphones output very strong IR pulses that will reflect off wall, ceiling and hard floor surfaces and are then 'seen' by the sensors which enhances system performance when a microphone is moving around a classroom. The IR Sensors should be installed on wall surfaces as high up the wall as possible (in a normal ceiling room) and one should be installed on *each side* of the room for best coverage.

1. Attach the **Wall-Mount Adaptor** to the **CRS-IRS** as shown in **Figure 13**.
2. Mount the **CRS-IRS** as high on the wall as possible, but at least seven feet, so people walking past or standing in front of the sensor will not block the line-of-sight to the microphones.
3. Pull **CRS-IRS Wire** to **CRS-301-CASE** location.

Figure 14. Typical CRS System Connections

CONNECTIONS

The CRS-301 System requires only a few simple connections and sets up in minutes. The only required connections are the **IR Sensors**, **Speakers** and **Power Cord**. Connecting an optional audio source such as a CD/DVD Player, VCR, Computer, Projector, Cable, Satellite, etc is also simple using standard RCA-RCA audio patch cables.

IR Sensors
1. Connect the **CRS-IRS IR Sensor mini plugs** to any two of the three **IR Sensor Inputs** on the **CRS-301-CASE Top Panel**.
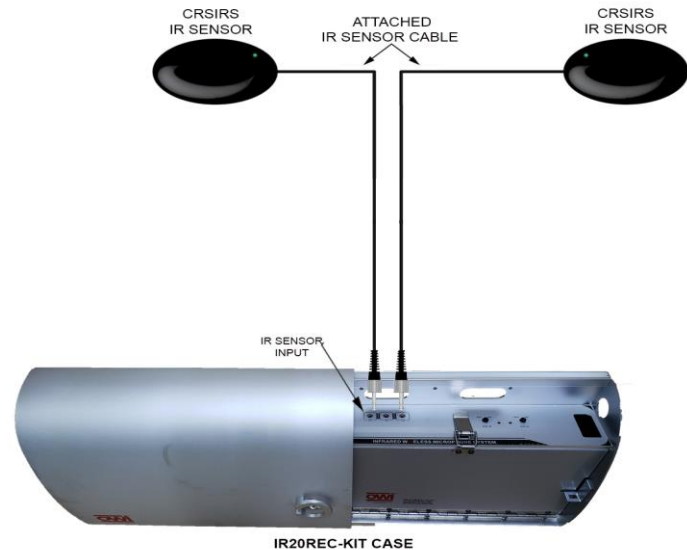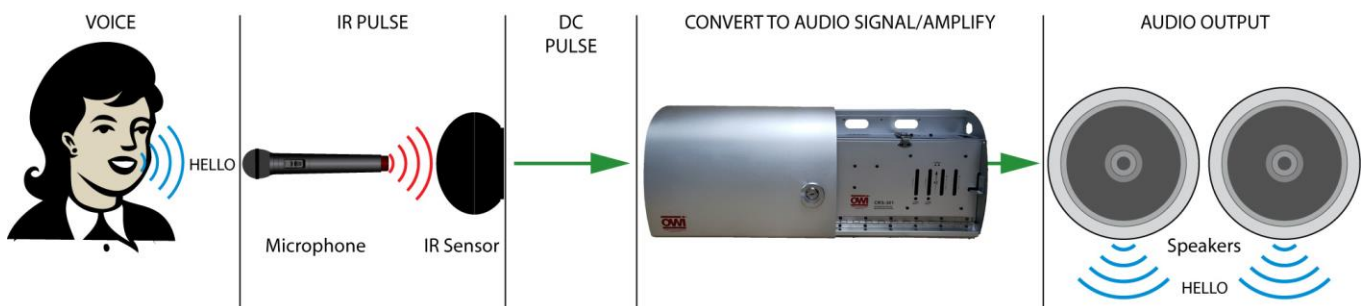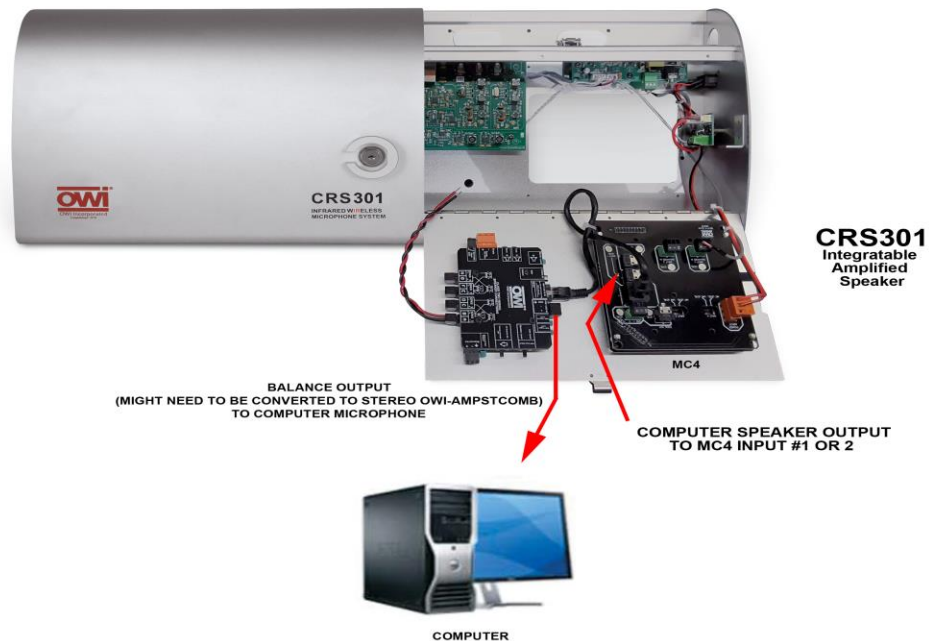
Figure 15. CRS-301 System Signal Path

12

OWI CRS301 WIRING DIAGRAM
FOR DISTANCE LEARNING SETUP

CRS301
INFRARED WIRELESS
MICROPHONE SYSTEM

CRS301
Integratable
Amplified
Speaker

MC4

BALANCE OUTPUT
(MIGHT NEED TO BE CONVERTED TO STEREO OWI-AMPSTCOMB)
TO COMPUTER MICROPHONE

COMPUTER SPEAKER OUTPUT
TO MC4 INPUT #1 OR 2

COMPUTER

OPERATION

1. IF TURNING THE SYSTEM ON FOR THE FIRST TIME, turn the **VOL Knobs** all the way down (full counterclockwise).
2. With all system connections confirmed, press the **Power Switch** to turn the system **ON**.
3. If using the **Lapel** or **Headset Mic**, connect to the **Pendant** as shown in **Figure 16**. Be sure the **Pendant** is pointing toward the **IR Sensors** so the **IR Pulses** from the **Pendant** will be 'seen' by the **IR Sensors**.
4. Turn the **Hand Held Microphone** (or **Pendant**) **ON**.
5. Set the **MAIN VOL Knob** on the **CRS-301-CASE** to **12 o'clock**.
6. Slowly raise the **WIRELESS VOL** level until the output from the **Speakers** is set to the desired level. If feedback occurs (audio squeal from the speakers) lower the **WIRELESS VOL** level or move the **microphone** away from the **speaker**.
7. Repeat **Step 6** for any **audio device(s)** connected to **LINE IN, TV/DVD** and **COMP,** and adjust the **LINE IN, TV/DVD** and **COMP** levels as needed.
8. Confirm the *relative volume* of the **microphone(s)** to the **audio device(s)** and adjust if necessary. (The audio from the **microphone(s)** should be heard *above* the audio from the **device(s)** connected to **LINE IN, TV/DVD** and **COMP**.)
9. Adjust the **MAIN VOL** as appropriate so the **microphone(s)** and **audio device(s)** can be clearly heard throughout the entire room. (Set to the highest comfortable listening level to avoid listener fatigue.)
10. When finished using the system, turn the **microphones OFF** and turn the **CRS-301-CASE POWER Switch OFF**. Do not change the Volume settings. They will now be set for typical use in that room and should not need further adjustment.

BATTERIES
Be sure to charge the batteries before each use.
Hand Held Microphone recharge time: approximately 4 hours.
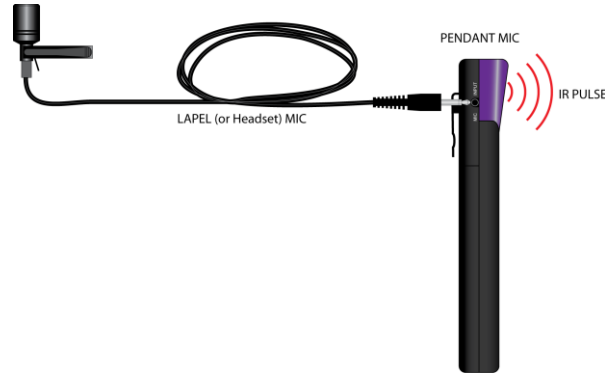**Pendant recharge time:** approximately 3 hours.

Figure 16. Using the Lapel Mic and Pendant

SPECIFICATIONS

CRS-301-CASE MIXER/AMPLIFIER

IR Carrier Frequency	2.06MHz and 2.56MHz
Deviation Range	± 40kHz
Input Sensitivity	
LINE	150mV
TV/DVD (Unbalanced Line Mono)	150mV
COMP (Unbalanced Line Mono)	150mV
Signal to Noise	
LINE	≥70dB
TV/DVD (Unbalanced Line Mono)	≥70dB
COMP (Unbalanced Line Mono)	≥70dB
WIRELESS MIC	≥100dB
THD	<0.5% @ 1KHz
Frequency Response	60Hz-14KHz ±3dB
Output Power	2-30W (Max)
Voltage	110V AC / 60Hz
Input Impedance	
LINE	47 KΩ
TV/DVD (Unbalanced Line Mono)	47 KΩ
COMP (Unbalanced Line Mono)	47 KΩ
Power Consumption (max)	70W
Dimensions	13.8W x 10.2H x 4.1D inches (350 x 258 x 103mm)
Weight	13.9 lbs. (6.3kg)
Color	Silver

CRS-IRS IR SENSORS

Carrier Frequency	2.06MHz or 2.56MHz
Off Axis Performance	140°
Range	66 feet (20mm)
Dimensions	3.25W x 2H x 1.25D inches (82.55 x 50.8 x 31.75mm)

CRS-PMIC PENDANT MICROPHONE

Polar Pattern	Unidirectional Electret Condenser Microphone
IR Carrier Frequency	2.06MHz or 2.56MHz

Battery	3.7V 800MAh AA Lithium
Dimensions H x W x D	4.7 x 1.3 x 0.7 inches (120 x 34 x 18 mm)
Weight (with battery)	0.13lbs (.57kg)

CRS-PENCH PENDANT CHARGER

Input Voltage	110V AC / 60Hz
Output Voltage	6V DC
Output Current	1000mA

CRS-LMIC LAPEL MICROPHONE

Pattern	Cardioid Directional
Frequency Response	55Hz-17KHz ± 2dB
Sensitivity	47 dB ± 2dB (1KHz, 0dB = 1v/Pa)
Output Impedance	2.2kΩ
Signal To Noise	60dB
Power	5V DC
Power Consumption	0.5mA (Max)
Cable Length	40 inches (1.016m)
Accessory	Windscreen

CRS-HSMIC HEADSET MICROPHONE

Element	Permanently Polarized Condenser
Pattern	Cardioid
Frequency Response	100Hz-17KHz
Sensitivity	-44dB (6.3mV) 1V @1 Pa
Max Input Sound Level	120dB 1KHz @1% THD
Signal To Noise	60dB 1KHZ @ 1 Pa
Battery Current/Life	0.1mA @ 5V
Voltage	2.5-11V DC
Cable Length	40 inches (1.016m)
Weight	0.04 lbs (0.02kg)
Dimensions	
Headset	6.1 inches (155 mm)
Microphone	0.20 inches (5.1 mm)
Body	6.7 inches (170 mm)
Accessory	HM-008 Windscreen

CRS-HHMIC2 HANDHELD MICROPHONE

Polar Pattern	Uni-directional Dynamic
Carrier Frequency	2.06MHz and 2.56MHz
Battery	2.4V NiMH 2400MAh approx 7 hours (low output); 4 Hours (high output)
Dimensions	1.9 x 9.5 inches (50 x 240mm)
Weight (with Battery)	.6lbs (.25kg)
Color	Black

CRS-HHCHARGER HANDHELD MICROPHONE CHARGER

Charge Mode	Pulsed Fast Charge
Power	110V AC / 60Hz
Charging Power	3.8V DC @ 400mA x 2
Charge Time	3 hours
Dimensions	5.71W x 2.6D x 4.13H inches (145 x 65 x 105mm)
Color	Black

OWI Incorporated
Established 1978