Product Specifications
classroom audio systems

Which system fits your needs?

	ezRoom Clean, connected classroom AV	Juno All-in-one classroom AV	ToGo Portable audio anywhere	Pro Digital Digital voice clarity
AV Control & Two-way Communication				
Networkable	✓	✓*		
Voice Activated Intercom	✓	✓*		
Paging	✓	✓*		
Digital Page Override	✓	✓*		
Bells/Alerts	✓	✓*		
Network/Serial Device Control	✓	✓*		
Voice Activated AV Control	✓	✓*		
Flipped Classrooms & Digital Content				
Automatic Lesson Capture & Sharing	✓	✓	✓	✓
Class2Class™ Distance Learning Support				
Adapto™ Digital Feedback Suppression	✓	✓		✓
Bluetooth® Audio Streaming	✓	✓	✓	✓
Voice Command	✓	✓		
Installation-Free & Portable Voice Amplification				
Indoor Use	✓	✓	✓	✓
Outdoor Use (not weatherproof)			✓	
Integrated Speaker Line Array		✓	✓	
Battery Power Option			✓	
Installation-Free		✓	✓	
Carry-Case Available		✓	✓	
Installed Amplification (Emphasizing Voice Clarity)				
OptiVoice™ Speech Clarification	✓	✓	✓	✓
PrioriTeach™ Teacher Voice Priority	✓	✓		
Integrated Infrared Sensor	✓	✓	N/A	✓
Installed Amplification (Emphasizing Media Clarity)				
Audio Inputs	✓	4	1	2
Speaker Expansion Module	✓	✓		
Audio Output (PFM/Podcasting)	1	1	1	1
Stereo Sound	✓	✓		✓
Features				
Number of Systems per School	Unlimited	Unlimited	16**	Unlimited
Energy savings	✓	✓		✓
Directly Compatible with…	PFM devices (rebroadcast)	PFM devices (rebroadcast)	PFM devices (direct transmission, rebroadcast)	PFM devices (rebroadcast)
One-touch Operation	✓	✓		✓
Touch-Screen Interface	✓	✓		
Lead Free/RoHS Compliance	✓	✓	✓	✓
SmartCharge Fail Safe Battery System	N/A (Li-Ion)	N/A (Li-Ion)	✓	✓
Simultaneous Microphone Channels	Up to 5	5	2	2
Microphone Channel Choices	7 (2 Legacy)	7 (2 Legacy)	16	2
External Sensor Inputs	3	2	N/A	3
Optional Student Microphone	✓	✓	✓	✓
Transmission Technology	Infrared	Infrared	FM	Infrared
Platform	Digital	Digital	Analog	Digital
Warranty	3–5 Years	5 Years	5 Years	5 Years

*Available with Juno Connect   **More systems possible with channel separation

frontrow™
your school. connected.

FRONT

BACK

Lead Free

SPECIFICATIONS

Network support: 10/100Mb/s (auto sensing)

Serial Baud rate: 2400 to 115k baud

Power supply: 12VDC (via UTP Cat 5e)

Format: Double-gang

Size (wxhxd): 11.4 x 11.4 x 3.3cm/4.5 x 4.5 x 1.3125in

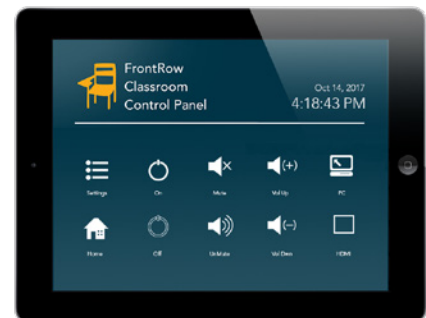**Weight:** 113g/4oz

Control/Jump Buttons/Page: 8

Pages: 5

USER CONTROLS

• 9cm/3.5in 320x240 resolution color touch-screen

INPUTS/OUTPUTS

• Network (RJ45)
• Aux (RJ45):
  • (2) bi-directional serial
  • (1) IR control output or general purpose input (GPI)
  • +12V input

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1 Saves time & money
Organizes all classroom device control into a single, reliable touch-screen; allows remote/scheduled control of devices over the network — saving potentially thousands of dollars per year in projector bulb life alone.

2 Customizable and teacher-friendly
No hunting for the remote, and no button overload. Because the CB6000 is a programmable touch-screen, buttons can be logically grouped and then navigated via automatic page flips.

Easy to see, easy to use
Large, 9cm/3.5in color touch-screen with 320x240 resolution. Display information such as room number, course, and teacher's name — even customizable with your school logo.

Date/time display

Built-in stop watch
A count-down clock is built in for timing tests and other activities.

Energy saving
Sleep mode keeps energy usage low and dims the display when not in use to avoid distractions in dark rooms.

3 IR learning
Need to control non-serial devices? The CB6000 has a built-in IR learning sensor to make configuration a snap.

4 More control
Simultaneously controls 2 serial devices (bi-directional, 2400 to 115k Baud), numerous network devices, and an infrared device. Easily switch the IR output to GPI for even more automatic action possibilities.

Networked
Communicates over standard 10/100Mb/s networks (auto-sensing) using either TCP/IP or UDP protocols.

Puts even non-networked devices on the network
The CB6000 accepts network-based "pass through" commands — so FrontRow's Encore™, Maestro™, and Conductor™ network software can control and help you manage devices that are not directly networkable!

Immediate or scheduled actions
A single button press can initiate one or more simultaneous or chained actions. What's more, you can program the CB6000 to execute actions based on timed events — for example, shutting down all projectors at 8pm.

Remote update
As projectors and other controlled devices change, you can remotely update the configuration software.

Secure
The touch-screen can be password-protected; and network access can also be protected against unauthorized use.

5 Easier installation
Extremely easy to install either as a standalone controller or as part of a more complete ezRoom® system. Fits in virtually any US-standard double-gang AV box, electrical box, or surface box on a wall, lectern, or any flat surface. Just one UTP Cat 5e cable supplies power and control.

Easier configuration
Configuration is as simple and flexible as you need it to be. Use DHCP or static IP addressing and our pre-programmed, downloadable file for the projector you want to control. Modify these as little or as much as you like with the GUI touchscreen layout design software!

Broad compatibility
Works with practically any device that allows serial, IR, or network control; all FrontRow ezRoom® hardware, and the FrontRow Encore™, Maestro™, and Conductor™ network software.

FRONTROW CONTROL FOR IOS AND ANDROID

Available on the App Store and Google Play, FrontRow Control is a dynamic, user friendly app that works directly with the CB6000 control panel.

Available on the App Store

GET IT ON Google Play

Easy to setup
Pair with a CB6000 to configure the application in seconds.

Easy to use
Buttons and actions match the CB6000 to make it easy to learn and switch between mobile device and wall panel.

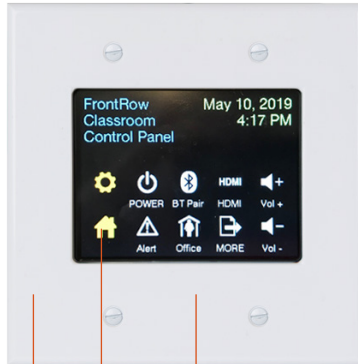**Secure**
Password protection prevents unauthorized use.

Customizable
Allows the teacher to update the text on the app and the control panel simultaneously.
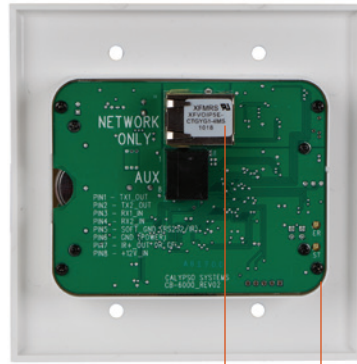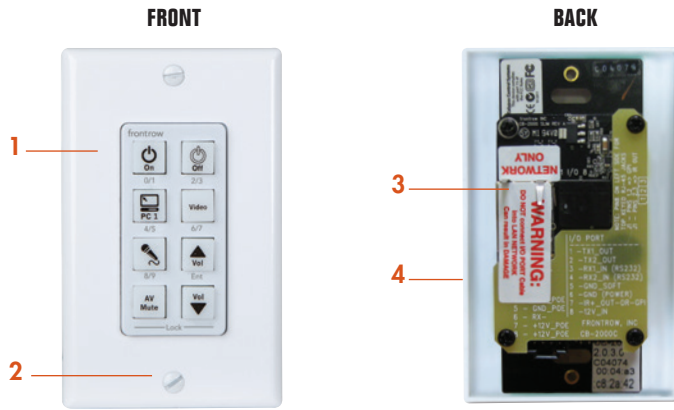
REQUIREMENTS

• Android 7.1.1 and up
• iOS 9.3 and up
• Works on the school LAN / wireless network

FRONT

BACK

Lead Free

SPECIFICATIONS

Network support: 10/100Mb/s (auto sensing)

Serial Baud rate: 2400 to 115k baud

Power supply: 12VDC (via UTP Cat 5e)

Format: Single-gang, Decora®

Size (wxhxd): 5.1 x 4.4 x 12.7cm/2 x 1.75 x 5in

Weight: 102g/3.6 oz

User controls: 8 customizable buttons, optional rotary volume control

INPUTS/OUTPUTS

- Network (RJ45)
- Aux (RJ45):
  - (2) bi-directional serial
  - (1) IR control output or general purpose input (GPI)
  - +12V input

CB2000 ACCESSORIES

button icon set
(included)

1 Saves time & money
Organizes all classroom device control into a single, reliable button panel; allows remote/scheduled control of devices over the network — saving potentially thousands of dollars per year in projector bulb life alone.

Customizable & teacher-friendly
Customizable, backlit panel greatly simplifies using technology in the classroom.

2 IR learning
Need to control non-serial devices? The CB2000 has a built-in IR learning sensor to make configuration a snap.

3 More control
Controls 2 serial devices (bi-directional, 2400 to 115k Baud), numerous network devices, and an infrared device. Easily switch the IR output to GPI for even more automatic action possibilities.

4 Networked
Communicates over standard 10/100Mb/s networks (auto-sensing) using either TCP/IP or UDP protocols.

Puts even non-networked devices on the network
The CB2000 accepts network-based "pass through" commands — so FrontRow's Encore™, Maestro™, and Conductor™ network software can control and help you manage devices that are not directly networkable!

Immediate or scheduled actions
You can program the CB2000 to execute actions based on timed events — for example, shutting down all projectors at 8pm.

Remote update
As projectors and other controlled devices change, you can remotely update the configuration software.

Secure
The control panel can be password-protected; and network access can also be protected against unauthorized use.

Easier installation
Fits in virtually any US-standard double-gang AV box, electrical box, or surface box on a wall, lectern, or any flat surface. Just one UTP Cat 5e cable supplies power and control.

Easier configuration
Use DHCP or static IP addressing and our pre-programmed, downloadable file for the projector you want to control. Modify these with the onboard GUI configuration software!

Broad compatibility
Works with practically any device that allows serial, IR, or network control; all FrontRow ezRoom® hardware, and the FrontRow Encore™, Maestro™, and Conductor™ network software.
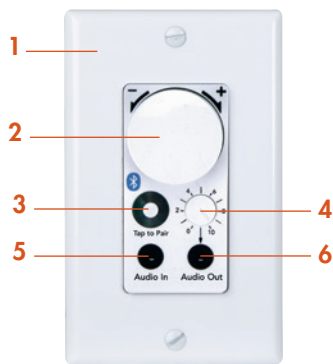
FRONT

BACK

Lead Free

SPECIFICATIONS

Format: Single-gang, Decora®
Size (wxhxd): 5.1 x 4.4 x 12.7cm/2 x 1.75 x 5in
Weight: 102g/3.6 oz

1 Decora® panel
Can be dual-ganged with CB2000, freeing up button for other functions.

2 Rotary volume control and push button mute toggle

3 4-pin connector
For bridging to the CB2000.

4 4-pin connector
Can also be programmed as a button trigger for GPI.

5 Can also be used as volume control standalone for CA1000

FRONT

BACK

Lead Free

SPECIFICATIONS

Format: Single-gang, Decora®
Size (wxhxd): 5.1 x 4.4 x 12.7cm/2 x 1.75 x 5in
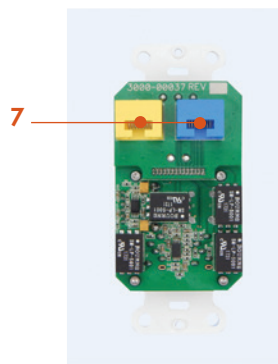**Weight:** 102g/3.6 oz
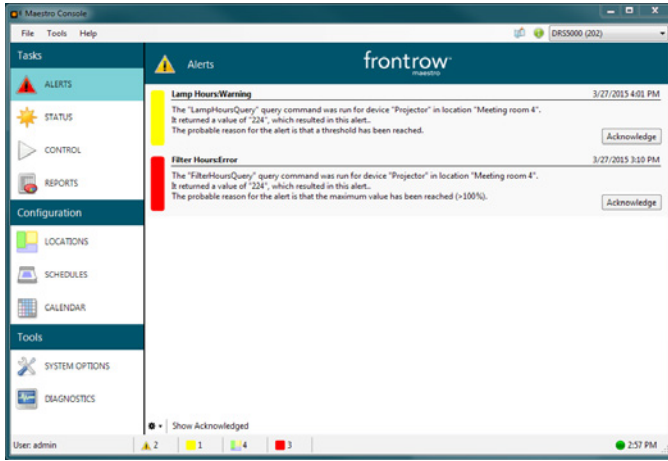**NOTE:** Requires CMBT Bluetooth Audio Receiver

1 Decora® panel
Can be dual-ganged with CB2000, freeing up button for other functions.

2 Rotary volume control and push button mute toggle

3 Pairing/reset button

4 Audio out gain control
Ideal for assistive listening device fitting

5 3.5mm audio input

6 3.5mm audio output

7 RJ45 connection to Bluetooth audio receiver
CB55 requires use of CMBT receiver

SPECIFICATIONS

System requirements: Windows 7 or later, .NET Framework 4.5 (included in the installer). 100MB hard disk space.

Device requirements: Controllable via network commands, serial (RS-232), IR, or relays. For bulb life and filter status queries, a driver is required. Many manufacturer drivers are available on the FrontRow website. New drivers can be purchased from FrontRow using part number TSG-DRV.

Centrally monitor thousands of devices
Track and support projectors, HD displays, audio amplifiers, and more across multiple locations.

Save money and time
Maestro™ lets you conserve expensive projector bulb hours with scheduled or immediate projector and display shut down from the comfort of your office. Remotely control classroom projectors, displays, or amplifiers, simplifying teacher tech support. Maestro can also notify you if a device goes offline or is disconnected, helping secure your investment and ensure communication works in an emergency.

Windows-based, client-server app
The heart of Maestro resides on the DRS-5000 server, with access via any networked web browser. Thanks to network endpoints like the FrontRow CB6000 and CM3000, even non-networked projectors can be visible and controlled by the administrator via Maestro.

Real-time data, automated control
The Maestro console monitors and reports on the real-time status of items like projector lamp and filter hours, power state and input status, while providing an interface for immediate or scheduled, specific or broadcast control of all attached equipment.

See it the way you want it
Maestro allows user-defined device grouping and detailed room views, all through a clean graphic console with color-coded alerts.

Generate reports
Create and export reports to identify trends and estimate budgets for maintenance.

SPECIFICATIONS

Platform requirements: Windows XP or higher; Mac OSX

Desktop user interface for virtually any device
Organizes all classroom device control
into a single reliable desktop UI. Works either as a
stand-alone interface — steering commands through
serial ports or to IP addresses — or with FrontRow
network controllers.

Real-time feedback
Encore™ supports bi-directional communication. With
no code-writing, and when used with a FrontRow
controller, Encore buttons can be
configured to reflect the current state of projectors,
AV switches and more.

Easy to build
The software package provides the tools needed
by dealers and system integrators to quickly build
Windows-based, graphical control interfaces. Using a
standard Windows drag-and-drop environment, devel-
opers can create a unique look and feel for each
interface, or can create a set of standard templates
to be used on any number of projects. You can even
import custom graphics and enjoy transparent mode
operation. Yet these software tools require little
training and no programming skills, while offering
remarkable power
and flexibility.
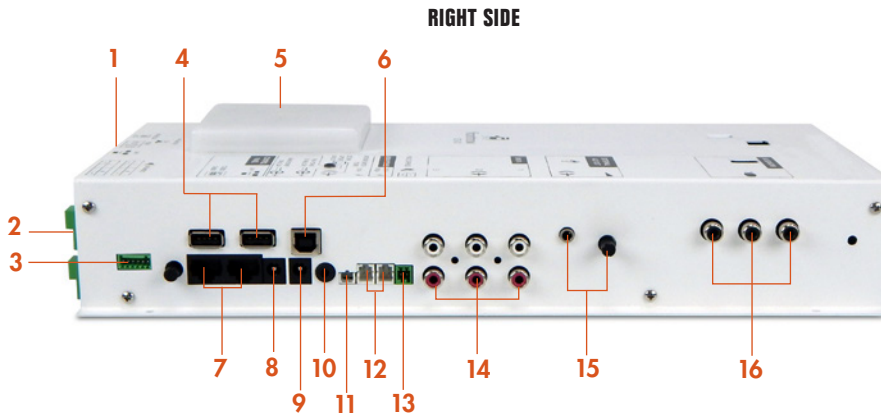
Immediate or scheduled actions
A single button press can initiate one or more simul-
taneous or chained actions. What's more, you can
program Encore to execute actions based on timed
events — for example, shutting down all projectors
at 8pm.

Remote update
As projectors and other controlled devices change,
you can remotely update the software.

Automatic update and licensing
The DRS5000 server can save hours of work by
auto-updating and auto-licensing your Encore
copies — for example, when computers are wiped
for the new school year.

RIGHT SIDE

1. **Single solution for media, public address, and voice audio**
Because it is compatible with the Conductor™ IP-based paging and bell system, the Smart Receiver is the most efficient choice for audio amplification in the classroom. It easily handles both streaming and analog audio from sources within the classroom or from the office.

Reduces installation & maintenance costs
Eliminates redundant amplifiers and speakers as a single solution.

Easier configuration
Just use DHCP or static methods to set an IP address, set up your projector baud rate, and you're done. The onboard GUI software makes it easy to adjust audio channel settings and more as needed.

Schedule actions
Just like our control panels, you can program the Smart Receiver to execute actions based on timed events — for example, shutting down all projectors at 8pm.

Alert priority
Auto-detects priority messages coming from the office via the Conductor IP-based paging system, or analog system, and mutes media and mic audio.

Remote update
As projectors and other controlled devices change, you can remotely update the configuration software.

Secure
Keep out hackers by setting up passwords for network access.

2. **Low profile, easy to mount**
Ordinarily built into ezRoom core enclosures, the Smart Receiver can also be mounted behind whiteboards or under furnishings as a standalone component.

Digital feedback suppression
Adapto Generation II actively scans audio 375 times/second to suppress feedback squeal before it starts.

Optimized Speech Clarity
Patented OptiVoice technology emphasizes critical speech sounds so students understand even more.

Easy Lecture Capture
Software records screen and audio; automatically titles and prepares recordings for viewing by students.

Voice Command
Control ezRoom and other devices by speaking commands into the teacher microphone.

Auto EQ Calibration
In software, select speaker type to auto calibrate sound quality.

PrioriTeach
Gives priority to the teacher microphone.

Advanced Software Control
Adjust volume, 12-band EQ, feature settings, and more.

3. **Captive Screw GPO Terminals (6 positions)**

4. **Integrated Serial Hub**
Two ports for charging or programming microphones.

5. **LED Beacon**
Color based on status (e.g., recording, incoming page or intercom active).

6. **Serial Port**
Connect a USB cable to a computer running the FrontRow Desktop software application for remote control of the Smart Receiver.

7. **Control Panel Power**
Connect and power a FrontRow CB2000 or CB6000 wall control panel.

8. **Mains Power Connector**

9. **PoE Power Connector**

10. **Line Out for Lecture Capture**

11. **Network Switch Power**

12. **HDMI Power**
Can power up to two HDBaseT HDMI receivers and audio de-embedders.

13. **Analog Page Override Connection**
Interface with 20V, 70V or 100V analog paging systems.

14. **Stereo Inputs for External Audio**

15. **External ALD Out**
Output with gain control for connecting to personal FM assistive listening devices.

16. **Ceiling or wall sensor ports for microphone**

ITM-02 PENDANT MICROPHONE

Transmission type: Infrared

Transmitting frequency: 2.1MHz, 2.3MHz 2.4MHz, 2.8MHz, 3.3MHz, 3.6MHz programmable

Wavelength: 940nm

Frequency response: 70Hz – 8kHz

Microphone: Unidirectional cardioid

Battery life: 7 hours (typical)

Battery type: Li-Ion, 3.7V, 850mAH

Operating range: 30.5m/100ft, line of sight (typical)

Size (wxhxd): 7.4 x 6.6 x 1.3cm/2.9 x 2.6 x 0.5in
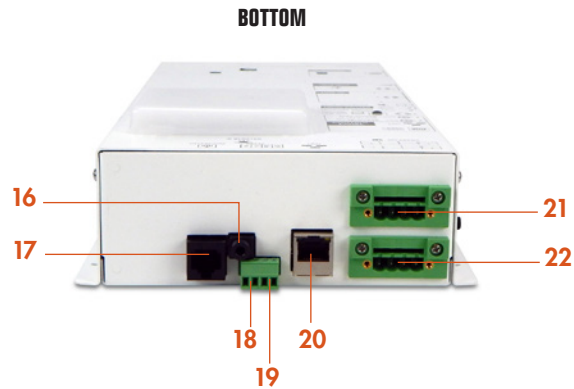
Weight: 73.7g/2.6oz (with battery and lanyard)*

USER CONTROLS
- wake/mute/voice command/trigger button
- channel select

INPUTS/OUTPUTS
- Aux input (3.5mm)
- Charge/programming jack

Competitor models report weight without lanyard

BOTTOM

16 IR Blaster Port
Routes commands from physical or virtual control panels or Maestro and Conductor platforms to devices connected via an IR emitter cable.

17 Intercom Input
Connect the CB75 intercom panel microphone for communication with front office when push-to-talk is required (can also be used with CB85). Connect a CB50 volume control with a TB8 cable for basic volume and mute control.

18 Serial Control
Send / receive RS232 commands between connected serial devices such as projectors and displays.

19 General Purpose Input (GPI)

20 Network Connection
Communicates over standard 10/100Mb/s networks (auto sensing) using either TCP/IP or UDP protocols.

21 Stereo Speaker Connection
Captive screw terminals for easy speaker connection.

22 Optional Stereo Speaker Expansion
Add up to four more 8Ω speakers for use in larger spaces.

SPECIFICATIONS

Transmission type: Infrared

Receiving frequencies: 2.1MHz, 2.4MHz; (2.8MHz, 3.3MHz, 3.6MHz with Channel Expansion Module)

Frequency response: 50Hz – 20kHz

Wavelength: 940nm

Signal-to-noise: >70dB

THD: <1% @ 1kHz

Maximum audio output power: 2 x 13w (8Ω), 2 x 20w (4Ω)

Speaker Expansion Module: 2 x 10w (8Ω), 2 x 20w (4Ω)

Total System Power: 80w peak program

Power supply: 18VDC @ 3.4AMP

Network Support: 10/100 Mb/s (Auto Sensing)

Baud Rate: 2400 – 115,200

Size (wxhxd): 34.92 x 16.8 x 5.5cm/ 13.75 x 6.5 x 2.75in

Weight: 1.72kg/3.8lbs

INPUTS/OUTPUTS

- Input power jack (mains 18Vdc, 3.5A)
- Input power jack (PoE 12-18Vdc, 24W)
- (3) Jacks for external sensor connection (RCA)
- Audio out jack (with gain control) (3.5mm)
- Audio out jack (max gain output) (3.5mm)
- (3) Stereo audio in jacks (with stereo sound output) (RCA)
- (1) Serial communications port
- (1) Jack Pair (supplying 12VDC to power and connectivity to control panels) (RJ45)
- (1) 5V, 1A power output (for network switch)
- (1) 18V, 2A power output (for HDBaseT HDMI receiver)
- (1) 5V, 1A power output (for HDMI audio de-embedder)
- (1) Terminal block for analog page override
- (1) Intercom input jack (RJ45)
- (1) IR blaster port (3.5mm)
- (1) Network Jack (RJ45)
- (2) 4-pin captive screw loud speaker terminals (second is optional). Left and right (stereo output)
- (1) 4-pin captive screw general purpose input (GPI) relay terminal
- (1) 4-pin captive screw RS232 serial control input/output terminal (3 position)
- (1) 6-pin captive screw general purpose output (GPO) relay terminal

SPECIFICATIONS

Network support: 10/100Mb/s (auto sensing)
Power output: 21W

INPUTS/OUTPUTS

- (1) Network input jack with POE (RJ45)
- (1) Network output jack (RJ45)
- (1) Corded power plug (2.1mm)
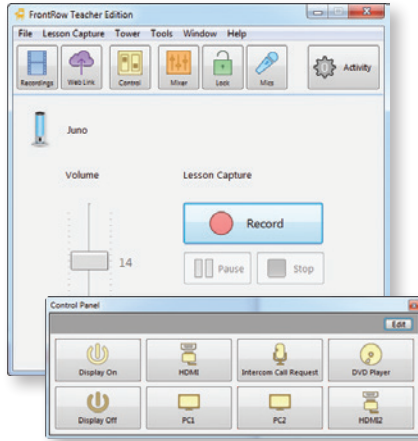
MIDSPAN INJECTOR REQUIREMENTS

POE Type: High Power Midspan Injector

POE Standard: POE IEEE 802.3at

Device Pin-out: 1 pins, 4,5 DC power (+), pins 7, 8 DC power (–)

POE Protection: Over Temp, Over Current, Over/Under Voltage

Power: >30W per Port

1 **Keeps paging and other emergency alert functions running during a power outage**
The POE-X extractor supplies ezRoom with power if mains power fails. The ezRoom Smart Receiver automatically and instantly switches to PoE when a power loss is detected.

Works with any qualified third-party POE midspan injector and POE-enabled network switch

2 **Network power/data input**

3 **Network pass-through output**

4 **12V/1.75A (21W) output**

5 **Mounts inside Plenum Enclosure**

Windows

Mac OS

SPECIFICATIONS

Recording types: Screen and audio, screen only, audio only
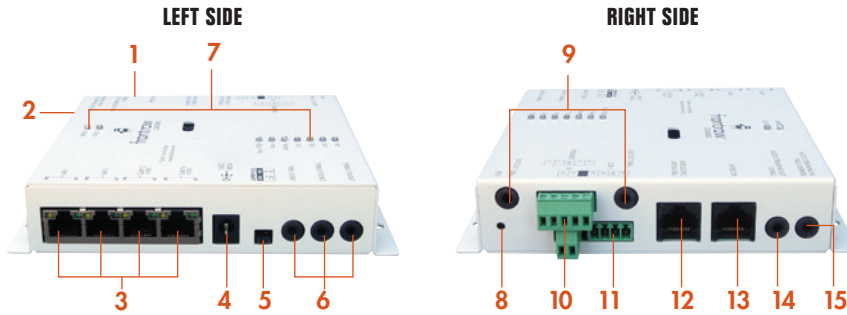**File format:** mp4, m4a
Recording length: Unlimited

SYSTEM REQUIREMENTS

Windows
• Windows XP SP3, Windows Vista, Windows 7, Windows 8.1, Windows 10, SP1
• 2GHz Processor or faster
• 1 GB of RAM
• 90 MB of hard disk space for the application (recordings will require additional hard disk space)

Mac OS
• Mac OSX - 10.9 (Mavericks) or later
• 64-bit Processor (Core 2 Duo or later)
• 150 MB of hard disk space for the application (recordings will require additional hard disk space)

Lesson Capture
Teacher Edition Capture is the basic version of Teacher Edition. It makes lesson capture and sharing effortless so students are always prepared. Records screen and audio, then automatically titles the recording based on instructor's schedule and saves it to a pre-determined location. Teacher Edition is available with any FrontRow classroom audio system including Juno, Pro Digital, and ezRoom.

AV Control
Teacher Edition Control is a plug-in for Teacher Edition for use with ezRoom or Juno Connect. Teacher Edition Control enables teachers to control projector, audio setup, and lesson capture within the same application. Program up to eight buttons to turn display on and off, change input sources and more.

Juno Control
When used with a Juno system, Teacher Edition also makes controlling Juno settings easy. Control volume and other audio settings right from the desktop.

LEFT SIDE

RIGHT SIDE

Lead Free   PrioriTeach

SPECIFICATIONS

Network support: 10/100Mb/s (auto sensing)

Serial Baud rate: 2400 to 57600 baud

Amplifier type: Class D

Frequency response: 20Hz to 20kHz

Signal-to-noise: >84 dB @ 20 Hz to 20 kHz at maximum output (unweighted, with balanced input)

THD: 0.1% @ 1kHz, at nominal level (1 watt, 8 ohm load)

Maximum audio output power: 2 x 8w (8Ω), 2 x 16w (4Ω)

Power supply: 12VDC at 3.5A

Size (wxhxd): 13 x 14.9 x 2.86cm/ 5.125 x 5.875 x 1.125in

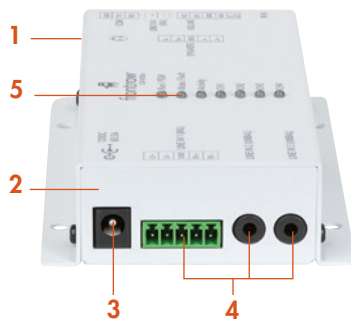**Weight:** 0.35kg/0.77lbs

INPUTS/OUTPUTS

- Input power jack
- (4) Network jacks (2 supplying 12VDC to power control panels) (RJ45)
- (2) Unbalanced inputs and (1) 3.5mm configurable balanced/unbalanced input (3.5mm)
- (1) Mic input jack (RJ45)
- (1) Intercom input jack (RJ45)
- (3) Audio output jacks (unbalanced) (3.5mm)
- (1) captive screw loudspeaker terminal left and right (mono output)
- (1) captive screw IR control terminal
- (1) captive screw serial control terminal

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1   Single solution for media and public address audio

Because it is compatible with the Conductor™ IP-based paging and bell system, the CM3000 is the most efficient choice for audio amplification in the classroom. It easily handles both streaming and analog audio from sources within the classroom or from the office.

Reduces installation & maintenance costs

Eliminates redundant amplifiers and speakers as a single solution.

Easier configuration

Just use DHCP or static methods to set an IP address, set up your projector baud rate, and you're done. The onboard GUI software makes it easy to adjust audio channel settings and more as needed.

Schedule actions

Just like our control panels, you can program the CM3000 to execute actions based on timed events — for example, shutting down all projectors at 8pm.

Alert priority

Auto-detects priority messages coming from the office via the Conductor IP-based paging system, or analog system, and mutes media and mic audio.

Mic priority

Attenuates media audio whenever teachers or students use FrontRow wireless mics.

Remote update

As projectors and other controlled devices change, you can remotely update the configuration software.

Secure

Keep out hackers by setting up passwords for network access.

2   Low profile, easy to mount

Ordinarily built into ezRoom core enclosures, the CM3000 can also be mounted behind whiteboards or under furnishings as a standalone component.

3   Networked, without hogging a network drop

CM3000 includes a 4-port network switch that eliminates the need for an additional network drop and reduces the amount of network cable required in the classroom. Communicates over standard 10/100Mb/s networks (auto-sensing) using either TCP/IP or UDP protocols.

4   Power jack

5   Jumper plug

Provides a hard ground reference for the unbalanced input.

6   Balanced and unbalanced stereo audio inputs

7   Verification LEDs

8   IR remote input window

For control of the amplifier using legacy infrared remotes.

9   Audio outputs

10   Simple speaker hookup

Captive screw terminals make speaker connection quick and easy.

11   IR and serial control outputs

Routes control signals from CB2000, CB6000, or Encore control panels or from the Maestro and Conductor platforms to serial projectors and other devices.

12   Wireless mic input

Connect the Symbio receiver for amazing voice reinforcement quality.

13   Intercom input

Connect the CB75 intercom panel or CB85 ceiling mic to build two-way communication with the front office into your integrated classroom.

14   PA audio output

Outputs only the audio stream from Conductor.

15   Analog audio streaming source input

Can also be used with the TB13 analog page override adapter.

LEFT SIDE

RIGHT SIDE

Lead Free

SPECIFICATIONS

Serial Baud rate: 2400 to 57600 baud
(19.2k default)

Amplifier type: Class D

Frequency response: 20Hz to 20kHz

Signal-to-noise: >84 dB @ 20 Hz to 20 kHz at
maximum output (unweighted, with balanced input)

THD: 0.1% @ 1kHz, at nominal level
(1 watt, 8 ohm load)

Maximum audio output power: 2 x 8w (8Ω),
2 x 16w (4Ω)

Power supply: 12VDC at 3.5A

Size (wxhxd): 13 x 8.3 x 2.86cm/
5.125 x 3.25 x 1.125in

Weight: 0.23kg/0.5lbs

INPUTS/OUTPUTS

- Input power jack
- (1) 5-pin captive screw terminal block
  (balanced stereo audio input)
- (1) captive screw terminal block balanced
  mono audio input (e.g., for Symbio receiver)
- (2) Unbalanced stereo audio input (3.5mm)
- (1) IR sensor
- (1) 5-pin captive screw terminal block (IR control
  input/repeater/12VDC to power control panels)
- (1) 3-pin captive screw terminal block
  (serial control input/output)
- (1) 4-pin captive screw loudspeaker terminal
  left and right, (mono output)
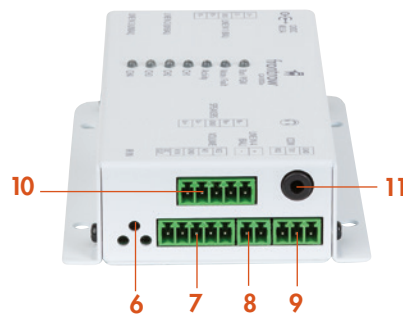- (1) 3.5mm (stereo audio output)

CA1000 ACCESSORIES

CB50 Decora®
compatible rotary

---

1   Software configuration
Use a convenient Java-based client app
to set preferences for audio
channels and communication.

Page priority
Mutes media and mic audio whenever
an announcement is made over an
analog PA system.

Mic priority
Attenuates media audio whenever
teachers or students use FrontRow
wireless mics.

2   Low profile, easy to mount
Ordinarily built into ezRoom core
enclosures, the CA1000 can also be
mounted behind whiteboards or under
furnishings as a standalone compo-
nent.

3   Power jack

**4   Balanced stereo audio input
terminal block**

**4   Balanced/unbalanced 3.5mm
stereo audio inputs**

5   Verification LEDs

6   IR remote input window
For control of the amplifier using
legacy infrared remotes.

7   IR control input

**8   Balanced/unbalanced mono
audio input**
Connect the Symbio wireless mic
receiver for amazing voice
reinforcement quality.

9   Serial control input/output
Connect the FrontRow CB2000 or
CB6000 via a TB12 adapter to send
RS232 commands and receive data
from the amplifier.

10   Simple speaker hookup
Captive screw terminals make speaker
connection quick and easy.

11   ALD output
Use for assistive listening devices or
podcast recording.

FRONT

BACK

1 **Adds voice reinforcement to ezRoom**
Works with 940TM and 950H infrared microphones to boost comprehension, student performance, and teacher energy and vocal health.

2 **Power switch**

3 **Two channels for more dynamic teaching**
Encourage student participation with a pass-around mic; or amplify two teachers at the same time.

4 **Microphone indicator lights**
Offer clear, visual confirmation of signal reception.

5 **Power on, ready light**

6 **External sensor ports**
Get great signal pickup in almost any classroom with convenient ceiling or wall sensors.

7 **Audio out jack**
High quality 1/4in jack for connection to practically any standard amplifier.

8 **Mic/line switch**
Match your amplifier's level requirements instantly.

9 **DC input**

SPECIFICATIONS

(See Product Specifications for Classroom Amplification Systems for details on microphones, sensors, speakers, and other components)

Transmission type: Infrared

Receiving frequency: 2.3MHz & 2.8MHz

Frequency response: 50Hz to 10kHz

Signal to Noise: > 65dB (system)

THD: < 1% @ 1kHz

Power Supply: 12V @ 500mA

Size (wxhxd): 14 x 4 x 19.25cm/5.5 x 1.62 x 7.75in

Weight: 766g/1.7lbs.

Mic level out: 0V to 100mVrms at maximum volume & maximum deviation (typical)

Line level out: 0V to 1Vrms at maximum volume & maximum deviation (typical)

USER CONTROLS
• Power
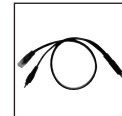• Microphone A volume
• Microphone B volume
• Output level

INPUTS/OUTPUTS
• Input power jack
• (3) Jacks for external sensor connection (RCA)

SELECTED 5201R ACCESSORIES

receiver power supply

adapter cable

RJ45-RJ45 adapter

UTP Cat 5e cable

ceiling sensor

ITM-02L microphone

ISM-02L microphone

FRONT   SIDE

Lead Free

SPECIFICATIONS

Bluetooth standard: 4.1 BR/EDR

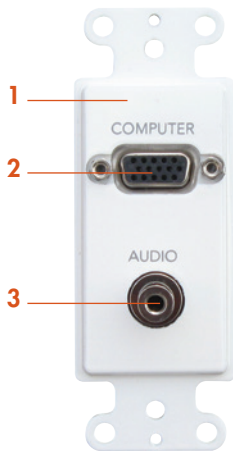**Profile:** A2DP for high quality stereo audio

Codecs: SBC, MP3, FastStream

Multipoint support: Connect up to 2 devices at once (1 can stream at a time)

Typical range: Up to 18.2m/60ft depending on transmitter

Latency: 40ms - 200ms depending on codec and environment

1 **5VDC input (optional)**
Powers module when not used with CM800Si, CM3000, or ICR-01 amplifiers

2 **Pairing/reset button**

3 **Audio out summing/separation**
Accommodates amps with single inputs

4 **CB55 inputs (optional)**
For control via CB55 wall plate

5 **Audio in (from amp to CB55)**

6 **Audio out (from CB55 to amp)**

7 **Bluetooth audio out (to amp)**

7 **Intercom mic input (optional)**
Connect the CB85 ceiling mic for communication with front office when push-to-talk via CB55 is required

8 **Intercom pass-through (optional)**

9 **IR lead control (optional)**
For control via CM3000 amp

Connect a computer to the projector and amplifier.

SPECIFICATIONS

AV Cable: UL Listed, RoHS compliant
Display resolution: Up to UXGA (1600x1200)
Cabling: Plenum-rated 15.25m/50ft AV cable
• Fits through 3/4 inch conduit
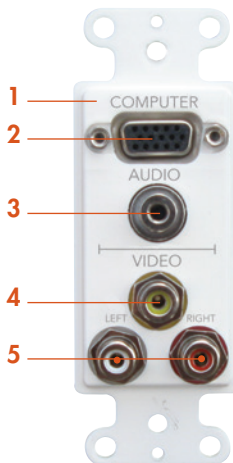
INPUTS/OUTPUTS

Input: Female connectors - DB 15 VGA, 3.5mm TRS
Output: Male connectors - DB 15 VGA, 3.5mm TRS

1 Decora®-compatible wall plate
Single-gang wall plate with flying lead to 13-pin DIN connector.

2 DB15 VGA input

3 3.5mm audio input

4 15m/50ft AV snake cable
Plenum-rated with locking 13-pin DIN connector

5 2m/7ft fan out of audio/video leads

Connect a computer and video device such as DVD or VCR to the projector and amplifier.

SPECIFICATIONS

AV Cable: UL Listed, RoHS compliant
Display resolution: Up to UXGA (1600x1200)
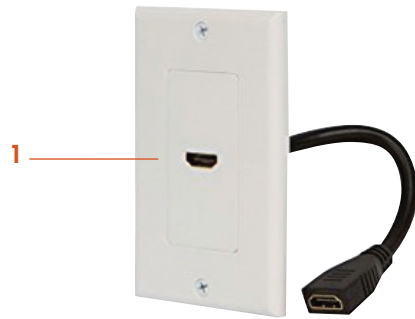**Cabling:** Plenum-rated 15.25m/50ft AV cable
• Fits through 3/4 inch conduit

INPUTS/OUTPUTS

Input: Female connectors - DB 15 VGA, 3.5mm TRS, RCA composite video coaxial, RCA L/R coaxial
Output: Male connectors - DB 15 VGA, 3.5mm TRS, RCA composite video coaxial, RCA L/R coaxial

1 Decora®-compatible wall plate
Single-gang wall plate with flying lead to 13-pin DIN connector.

2 DB15 VGA input

3 3.5mm audio input

4 Composite video input

5 Stereo RCA audio input

6 15m/50ft AV snake cable
Plenum-rated with locking 13-pin DIN connector

7 2m/7ft fan out of audio/video leads

1 Decora®-compatible single-gang HDMI transmitter wall plate
Single-gang wall plate. Connect computers, tablets, Blu-Ray players and more to drive HDMI projectors and digital displays.

SPECIFICATIONS

Wall plate: Decora®-compatible single gang

Digital video resolutions: 480i, 480p, 576i, 576p, 720p, 1080i, 1080p*

PC resolution: Up to 1600x1200 UXGA

Audio extraction: Digital 2.0CH/5.1CH LPCM, Dolby Digital, or DTS audio to stereo 3.5mm analog

Line power: +5V 300mA available HDMI line power, green LED on transmitter and receiver

Power source: +5VDC, 500mA

Input (transmitter): Type A female connector

Cabling: High-Speed HDMI, M/M Type A connectors, plenum jacket (10' cable)

RoHS Compliance: HDMI cable, FCC/CE certified HDMI audio extractor, CE certified HDMI extender (transmitter/receiver)

1 Multi-channel Audio, Dolby TrueHD, DTS-HD Master Audio

2 EMI & RFI Immunity

3 Plug & Play Operation

4 Integrator-oriented removable HDMI-A ends for easy advanced wiring

5 Interoperable field flexibility
HDMI-D with HDMI-A & HDMI-D with DVI-D single link

6 Built-in Powering
(No external 5V USB power port)

7 High Pulling Strength & Compression Load

8 Low Power Consumption

9 Compliant with International Flame Retardant Standards
UL CMP-OF (Plenum), IEC LSZH (Low Smoke Zero Halogen)

SPECIFICATIONS

HDMI 1.4 Compliant: EDID, CEC, HDCP

Resolution: Up to 4K 30Hz, 3D, Deep Color

Power consumption: 0.25W typical

TMDS data bit rate: 250 to 3400 Mbps

Cable Dimensions (WxH): 3.4mm (±0.2mm)

Optical Fiber: Multi-mode fiber

Copper Wire: 28 AWG TA (7/0.127mm)

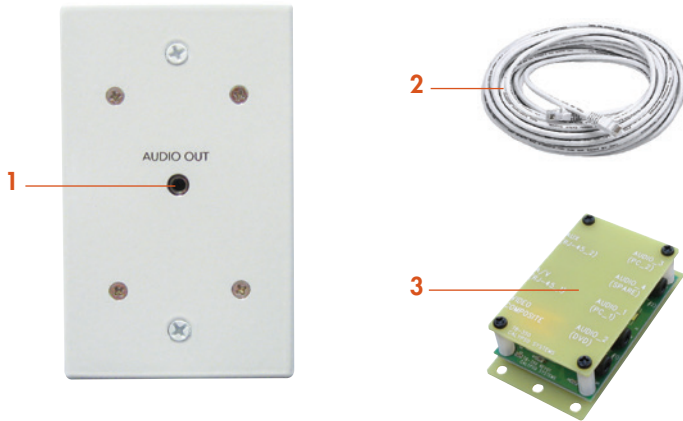**Cable Jacket Material:** CMP-OF (UL) & LSZH

Connector Pull Strength: 10Kg

Compression Load Resistance: 50Kg

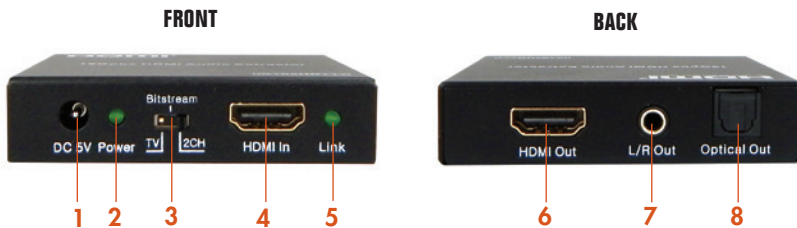**Minimum Bending Radius:** 6mm

Case Material: ABS

Lead Free

c(UL)us

SPECIFICATIONS

Cabling: CAT5e

Output: Unbalanced 3.5mm

Audio: Transports stereo analog audio but commonly used for mono

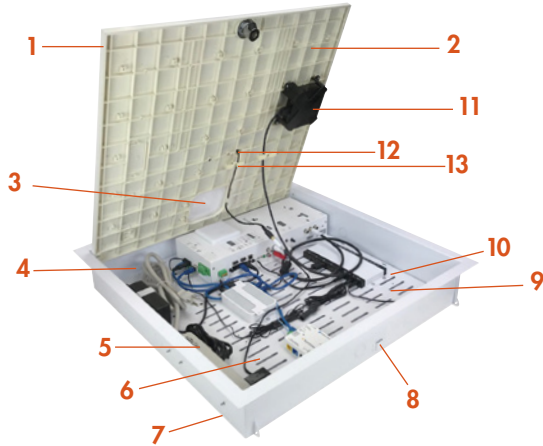**1** **3.5mm audio output**
Single-gang audio out wall plate for use with ezRoom and Teacher Edition lesson capture software. Connect the line output of the CM3000 or headphone out of CA1000 to the mic input on the computer to capture voice and media.

2 **15.25m/50ft**
Plenum CAT5e cable

3 **TB350 audio interface**

FRONT

BACK

Lead Free

c(UL)us

SPECIFICATIONS

HDMI compliance: HDMI 2.0b

HDCP compliance: HDCP 2.2 and HDCP 1.4

Video Bandwidth: 18Gbps

Inputs: 1x HDMI Type A [19-pin female]

Outputs: 1x HDMI Type A [19-pin female]
 1x L/R Audio Out [3.5mm Stereo Mini-jack]
 1x Optical Out [S/PDIF]

HDMI Audio Formats (Pass-through):
LPCM 2/5. 1/7. 1CH, Dolby Digital
DTS 5.1, Dolby Digital+, Dolby TrueHD,
DTS-HD Master Audio, Dolby Atmos, DTS:X

Optical Audio Formats: LPCM 2CH, LPCM 5.1, Dolby Digital 2/5. 1CH, DTS 2/5.1CH

L/R Audio Formats: Analog Stereo 2CH

ESD Protection: Human body model – ±8kV (air-gap discharge) & ±4kV (contact discharge)

1 **DC5V**
Connect 5V/1A adaptor to AC wall outlet for power supply

2 **Power LED**
System power indicator

3 **TV/Bit Stream/2CH**
This allows users to select audio format according to TV, Bit Stream or LPCM 2CH

4 **HDMI In**
Connect this to HDMI source devices such as Bluray or PS4 player

5 **Link LED**
The LED will illuminate when detected HDMI input signal

6 **HDMI Out**
Connect to HDMI display devices such as TV/Projector

7 **L/R Out**
Connect to audio amplifier or TV L/R audio input port

8 **Optical Out**
Connect to audio amplifier optical audio input port

CEILING ENCLOSURE

RoHS COMPLIANT 2002/95/EC

SPECIFICATIONS

Weight: 8.39kg/18.5lbs

Size (wxhxd): (60x60) 58.5 x 59.05 x 8.18 cm;
               (2x2) 23.81 x 23.70 x 3.22 in

ALSO AVAILABLE IN 2X1 ENCLOSURE SIZE

SPECIFICATIONS

Weight: 4.08kg/9lbs

Size (wxhxd): 60.3 x 30.5 x 6.4cm/23.75 x 12 x 2.5in

1 Slam lock closes easily with one hand

2 RF-friendly lid allows Bluetooth, wireless display and other signals to pass easily

3 Beacon lens for Smart Receiver status indication

4 Route AC cable through lid to existing receptacle

5 Available with 4-port power strip pre-installed

6 Removable panel exposes opening for mounting an AC duplex outlet box

7 Multiple harness points on the back for safety

8 Above-ceiling key storage

9 Plenty of room for equipment and cable routing

10 Removable tray allows installation flexibility and convenience when securing equipment

11 Universal wireless display mount (optional)

12 Easily mount IR sensor, ambient microphone, and other equipment to lid

13 Cable combs keep wiring neat and secure

WALL ENCLOSURE

SPECIFICATIONS

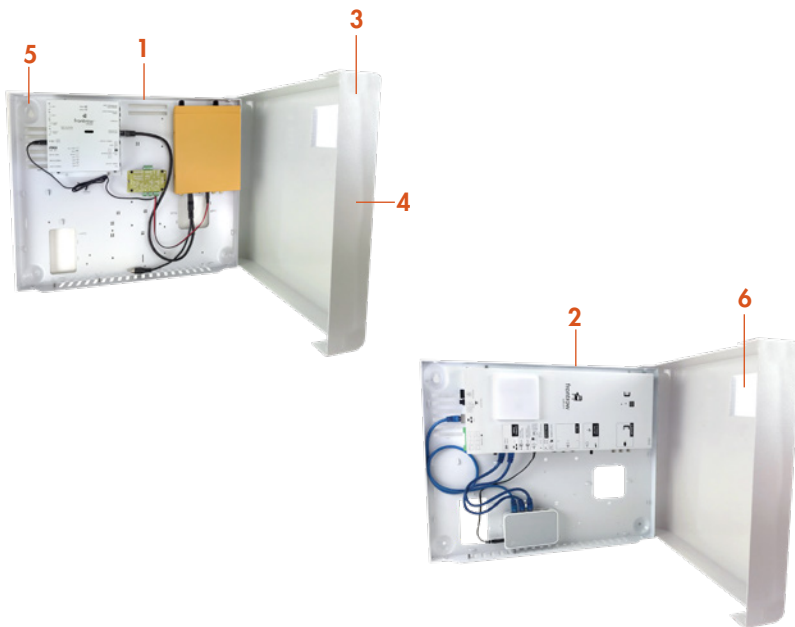**SHALLOW ENCLOSURE** (for CM3000/CM800Si/CA1000)

Weight: 2.20kg/4.85lbs

Size (wxhxd): 45.8 x 37 x 6.75cm/
18 x 14.5625 x 2.625 in
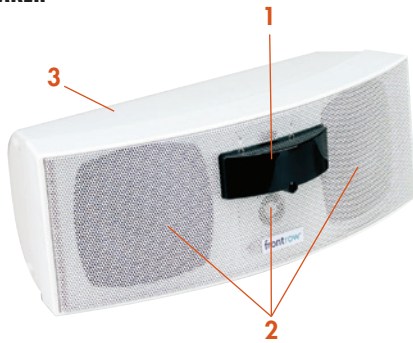
DEEP ENCLOSURE (for ICR-01)

Weight: 2.25kg/4.95lbs

Size (wxhxd): 45.8 x 37 x 9.6cm/
18 x 14.5625 x 3.75 in

1 Surface-mount enclosure for CM3000, CM800Si, and CA1000-equipped ezRoom installations

2 Surface-mount enclosure for ICR-01 Smart Receiver-equipped ezRoom installations

3 RF-friendly cover allows Bluetooth and wireless display signals to pass

4 Paintable surface allows matching room decor

5 TMetal back plate with anchor points for multiple components and attachment holes for wall studs or ceilings

6 Beacon lens for the Smart Receiver's multi-colored notifications and strobe

IR SPEAKER

1. **Integrated sensor**
2. **Two 4" woofers, one 1" tweeter**
3. **Cut installation time in half**

Lead Free

SPEAKER SPECIFICATIONS

Speaker type: Two 10cm/4in woofers; 2.5cm/1in tweeter
Impedance: 4Ω nominal
Continuous power: 20W
Peak power: 30W
Frequency response: 150Hz to 20kHz
Dimensions (wxhxd): 355 x 130 x 230mm / 14 x 5 x 9in
Weight: 3.4kg / 7.5lbs
Mounting: Wall mounting brackets provided
Combo cable incorporates:
   Speaker wire: 18 AWG 2 conductor UL listed CL3P Plenum-rated
   Sensor wire: 15.25m/50ft RG59/u coaxial cable CL3P shielded, UL listed Plenum rated jacket available

SENSOR SPECIFICATIONS

Operating frequency: 2.1MHz – 3.6MHz
Signal/Power interface: RCA female jack
Number of IR photodiodes: 3
Power indicator LED: Green
IR Reception area: 139m^2/1500ft^2
(typical with receiver sensors)

DISTRIBUTED CEILING SPEAKER (REQUIRES SEPARATE SENSORS)

- Full range for faithful reproduction of voice and music
- Great sound coverage
- Separate back enclosure, designed for plenum spaces, prevents sound from traveling to other classrooms
- Mounts flush with ceiling for neat installation

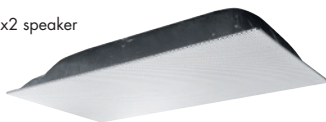**Lead Free**

SPECIFICATIONS

Average sensitivity: 86dB-SPL 1W/1M
Speaker type: coaxial: 10cm/6.5in woofer, 2.5cm/1in tweeter
Impedance: 8Ω nominal
Continuous power: 30W
Peak power: 45W
Frequency response: 60Hz to 20kHz
Dimensions (dia x d): 21.7 x 7 cm / 8.5 x 2.75 in
Weight: 1.1kg/2.5lbs
Mounting: Metal tile bridge, steel back enclosure, built for Plenum spaces
Speaker wire: 18 AWG 2 conductor UL listed CL3P Plenum-rated

LAY-IN CEILING SPEAKER (REQUIRES SEPARATE SENSORS)

2x2 speaker

1x2 speaker

- Great sound coverage
- Cable clamp is included
- Mounts flush with ceiling for neat installation
- Rated for plenum spaces
- No assembly required

Lead Free   c(UL)us

SPECIFICATIONS

Average sensitivity: 92dB-SPL 1W/1M
Speaker type: 8in full range cone
Impedance: 8Ω nominal
Loudspeaker power rating: 12W-RMS EIA 426A Standard
Calculated maximum system output: 103dB-SPL, 12W/1M
Magnet type: 4.8oz BeFe Ceramic
Size (wxhxd): (1x2) 29.9 x 32.5 x 9.7cm/11.81 x 12.81 x 3.81in
      (2x2) 60.5 x 60.5 x 8.74cm/23.82 x 23.82 x 3.44 in
Frequency response: 65Hz – 17kHz EIA 426A standard
Nominal coverage angle: 100° included angle -6dB/2kHz half space
Audio connection: Pre-cut 17.8cm/7in
Mounting: Replaces existing ceiling tile, mounts in tile grid, built for Plenum spaces

CEILING SENSOR

- Easy-to-install bracket allows quick and easy installation
- LED power indicator lets you know when unit is connected properly
- 360 degree 'full-sweep' signal coverage helps prevent signal dropout
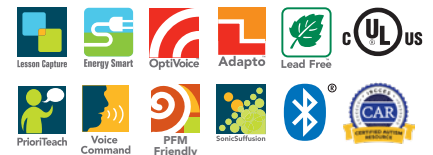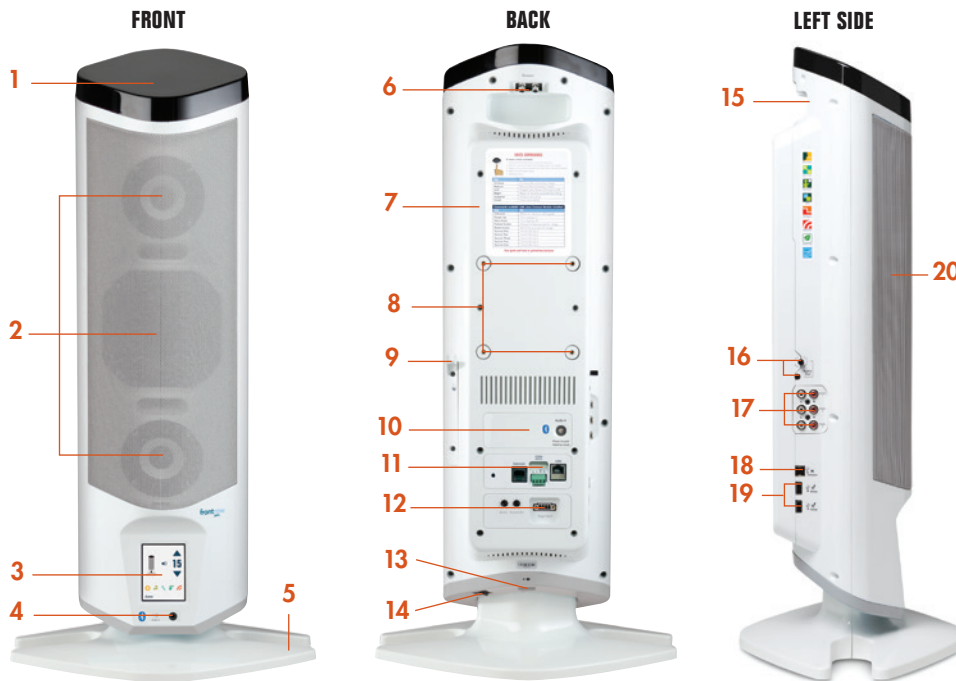
Lead Free

SPECIFICATIONS
Operating frequency: 2.1MHz – 3.6MHz
Signal/Power interface: RCA-female jack, 8" lead
Number of IR photodiodes: 6
Power indicator LED: Green
Reception area: 139m^2/1500ft^2 (typical with receiver sensors)
Dimensions (Dia x h): 13.5 x 3.3 cm / 5.1 x 1.3 in
Weight: 224g/7.9oz (with bracket)
Mounting: Drop ceiling acoustic tile or sheetrock ceiling
Sensor wire: 15.25m/50ft RG59/u coaxial cable CL2P double shielded, UL listed Plenum rated jacket available

WALL SENSOR

- Easy-to-install bracket allows proper angling for optimum room coverage
- LED power indicator lets you know when unit is connected properly
- Great for covering rooms with high ceilings, hanging student art, projector mounts, or other challenging obstructions
- Corner-compatible mounting bracket

Lead Free

SPECIFICATIONS
Operating frequency: 2.1MHz – 3.6MHz
Signal/Power interface: RCA-female jack
Number of IR photodiodes: 3
Power indicator LED: Green
Reception area: 139m^2/1500ft^2 (with 2 wall sensors)
Dimensions (wxhxd): 7.5 x 3.9 x 6.0 cm / 2.9 x 1.5 x 2.4 in
Weight: 80g/2.5oz
Mounting: Wall mount bracket provided
Sensor wire: Two 15.25m/50ft RG59/u coaxial cables CL2P double shielded, UL listed Plenum rated jacket available

FRONT

BACK

LEFT SIDE

SPECIFICATIONS

Transmission type: Infrared

Receiving frequencies: 2.1MHz, 2.4MHz; (2.8MHz, 3.3MHz, 3.6MHz with Channel Expansion Module)

Frequency response: 50Hz – 20kHz

Signal-to-noise: >70dB

THD: <1% @ 1kHz

Maximum audio output power: 40W, peak program

Power supply: 18VDC @ 3.3AMP

Size (wxhxd):
   Tower without base: 19.7 x 68.6 x 16.5cm/ 7.75 x 27 x 6.5in
   Tower with base: 35.6 x 71.8 x 26.7cm/ 14 x 28.25 x 10.5in

Weight:
   Tower without base: 5.7kg/12.5lbs
   Tower with base: 6.4kg/14lbs

Operating range: 30.4m/100ft, line of sight (typical)

Sound Coverage Area: 274.3m/900ft^2 (up to 487.6m^2/1600ft^2 with speaker expansion)
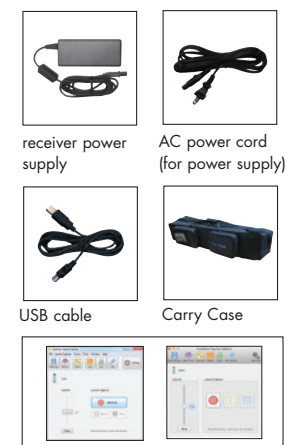
IR Reception area: 487.6m^2/1600f^2 (typical)

USER CONTROLS
- Power
- Master volume
- Microphone volume (5)
- Auxiliary audio volume (4)
- Audio out volume
- Tower settings

INPUTS/OUTPUTS
- Input power jack
- (2) RCA jacks for external sensor connection
- 3.5mm audio out jack
- (3) RCA stereo audio in jacks (with stereo sound output)
- (1) 3.5mm stereo audio in jack (with stereo sound output)
- (2) serial microphone charging/ programming jacks
- (1) serial communications port

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1 **Integrated Sensor**
Integrated high sensitivity infrared diode array.

2 **Digital, 3 Speaker 2.1 Array**
Two mid-range HF drivers and one woofer provide full, rich stereo sound.

3 **LCD touch screen**
Lockable full-color touch screen control.

4 **Stereo Quick Connect**
Easily and quickly connect an MP3 player or other audio device.

5 **Table/desk Stand**

6 **Additional Sensor Ports**
Two ports for additional sensors.

7 **Channel Expansion Module Bay**
Add the optional Channel Expansion Module to use up to five microphones with the Juno Tower.

8 **100mm VESA Wall Mount Screw Taps**

9 **Transmitter/USB Cable Hook**

10 **Bluetooth or Speaker Expansion Module Bay**

11 **Juno Connect™** (Optional)
Adds software and voice control of AV devices and, in conjunction with Conductor, adds two-way communication between classroom and front office.

Onboard Microphone
Communicate with front office even without the Juno mic.

Intercom Input (optional)
Connect the CB75 or CB85 mic for communication with front office.

Serial Control
Send RS232 commands to serial projectors and other AV devices.

Network Connection
Sends commands to IP addressable devices via voice or Teacher Edition Software.

12 **Page Override Module Bay**
The optional module mutes all audio whenever an announcement is made over the school's public address system.

13 **Power Jack**

14 **Power Switch**

15 **Easy Grip Handle**

16 **Auxiliary Output**
Output with volume control for capturing lectures or to connect personal FM systems.

17 **Stereo Inputs for External Audio**
Connect other classroom A/V equipment such as a DVD player, television or VCR.

18 **Serial Port**
Using the included USB cable, connect to a computer running the FrontRow Desktop software application for remote control of the Juno Tower.

19 **Integrated Serial Hub**
Two ports for charging or programming microphones.

20 **Feedback Suppression**
The next-generation Adapto™ digital engine actively scans audio 375 times per second to suppress feedback squeal before it starts.

Optimized Speech Clarity
FrontRow's patented OptiVoice™ technology is designed to emphasize critical speech sounds, so kids comprehend even more.

Easy Lesson Capture
The Juno lesson capture system records screen and audio. Automatically titles and prepares the recordings for upload.

Class2Class
Supports distance learning by removing audio echo when using Skype™ and other tools

Voice Command
Control Juno and other devices by speaking voice commands into the teacher microphone.

PrioriTeach™
Gives priority to the teacher microphone

Advanced Software Control
Volume, 12-band EQ, speaker balancing, and more are controllable via Teacher Edition Software while keeping the daily user interface neat and simple.

Bluetooth® Audio Receiver
Easily pair with phones, tablets, and computers to play audio wirelessly from anywhere in the room.

ITR-01 ACCESSORIES

receiver power supply

AC power cord (for power supply)

USB cable

Carry Case

Teacher Edition Software (Windows or Mac OS)

FRONT

BOTTOM

SPECIFICATIONS

Transmission type: Infrared

Transmitting frequency: 2.1MHz, 2.3MHz 2.4MHz, 2.8MHz, 3.3MHz, 3.6MHz programmable

Frequency response: 70Hz – 8kHz

Microphone: Unidirectional cardioid

Battery life: 7 hours (typical)

Battery type: Li-Ion, 3.7V, 850mAH

Operating range: 30.4m/100ft, line of sight (typical)

Size (wxhxd): 7.4 x 6.6 x 1.3cm/2.9 x 2.6 x 0.5in

Weight: 73.7g/2.6oz (with battery and lanyard)*

USER CONTROLS
- wake/mute/voice command button
- channel select

INPUTS/OUTPUTS
- 3.5mm aux input
- charge/programming jack

*Competitor models report weight without lanyard

ITM-02 ACCESSORIES

Li-Ion battery   audio cable   micro USB cable

Teacher Edition Software
(Windows or Mac OS)

1 Amazing Sound Quality
Superb pick up and audio quality thanks to a high-isolation microphone suspension, broad frequency response, and low-distortion direct digital synthesis.

2 Mute Indicator
OFF . . . . Un-muted
SOLID RED . . . . Muted

3 Power Indicator
SOLID GREEN . . . . .Power On
OFF . . . . Standby

4 One-Touch Button
When used with Juno or Smart Receiver, enables voice commands for lesson capture, device control, and other functions, or can be programmed to trigger an alert.

When the Pendant Microphone is in standby mode:
PRESS MOMENTARILY . . . . Awaken

When the Pendant Microphone is active:
PRESS MOMENTARILY . . . Mute / Un-mute
PRESS AND HOLD . . . Issue Voice Command

5 Superior Comfort
Lightweight (just 73.7g/2.6oz) with soft backing that provides comfort and reduces friction noise from contact with clothing, buttons or jewelry. Ergonomic lanyard suspension points keep the mic stable and help keep it from swinging away from the body when leaning over to help a student.

6 Battery Indicator
In Use
OFF . . . . Battery Charged
FLASHING RED . . . . Battery Low
When Charging
SOLID RED . . . . Charging
SOLID GREEN . . . . Fully Charged

7 Lithium Ion Battery
3-year life expectancy, lightweight and rechargeable.

8 Charging/Programming Jack
For charging via USB cable or for configuring settings.

9 Portable Audio Interface
3.5mm audio input jack for wireless transmission from any secondary audio source such as a computer or MP3 player.

10 Charge Contacts
For use with the optional IMC-01 microphone charger.

Adjustable Power
Factory set to achieve complete coverage in a typical classroom with 7 hours of talk time. Increase talk time or expand coverage for very large rooms with a quick software adjustment.

Programmable Channels
Program the switch positions to 2 of 7 available channels.

Digital Naming
Assign custom names to microphones for easy identification on the Juno LCD and Desktop Software.

Data Transmission
Reports battery status to Desktop Software, visible from an interactive whiteboard.

FRONT

BOTTOM

LAVALIERE CLIP

SPECIFICATIONS

Transmission type: Infrared

Transmitting frequency: 2.1MHz, 2.3MHz 2.4MHz, 2.8MHz, 3.3MHz, 3.6MHz programmable

Frequency response: 70Hz – 8kHz

Microphone: Unidirectional cardioid

Battery life: 7 hours (typical)

Battery type: Li-Ion, 3.7V, 850mAH

Operating range: 21.3m/70ft, line of sight (typical)

Size (wxhxd): 3.8 x 14.7 x 2.2cm/1.5 x 5.8 x 0.85in

Weight: 70.8g/2.5oz

USER CONTROLS
- on/off
- push-to-talk
- channel select

INPUTS/OUTPUTS
- 3.5mm aux input
- Charge/programming jack

ISM-02 ACCESSORIES

Li-Ion battery   micro USB cable   lavaliere clip

Teacher Edition Software
(Windows or Mac OS)

6 Power/Push-to-talk Switch
PRESS AND HOLD. . . . . Push-to-talk
PRESS AND SLIDE UP . . . . . . .Power On

7 Name Plate
For adding a name or room number for easy identification.

8 Lithium Ion Battery
3-year life expectancy, lightweight and rechargeable.

9 Charging/Programming Jack
For charging via USB cable or for configuring settings.

10 Portable Audio Interface
3.5mm audio input jack for wireless transmission from any secondary audio source such as a computer or MP3 player.

11 Charge Contacts
For use with the optional IMC-01 microphone charger.

12 Comfortable Hands Free Option
Easy, comfortable lavaliere clip makes reading in front of class simple and lets the Pass-Around Microphone double as a lightweight teacher microphone.

Adjustable Power
Factory set to achieve complete coverage in a typical classroom with 7 hours of talk time. Increase talk time or expand coverage for very large rooms with a quick software adjustment.

Programmable Channels
Program the switch positions to 2 of 7 available channels.

Digital Naming
Assign custom names to microphones for easy identification on the Juno LCD or in the optional FrontRow Desktop Software.
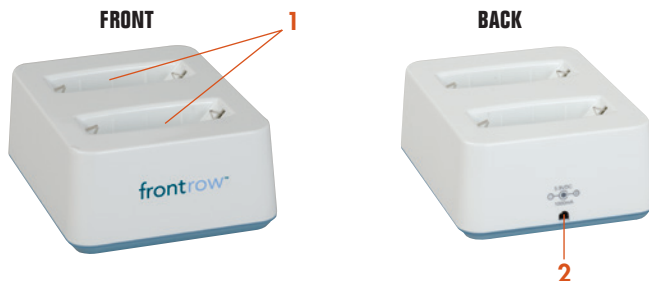
1 Amazing Sound Quality
Superb pick up and audio quality thanks to a high-isolation microphone suspension, broad frequency response, and low-distortion direct digital synthesis.

2 360° Emitter Diodes
Lets students hold the Pass-Around Microphone the way it's most comfortable for them without worry of dropout.

3 Power Indicator
SOLID GREEN. . . . . .Power On
OFF . . . . Power Off

4 Battery Indicator
In Use
OFF . . . . .Battery Charged
FLASHING RED. . . . . Battery Low

When Charging
SOLID RED . . . . Charging
SOLID GREEN. . . . . .Fully Charged

5 Small and Lightweight
At less than 15cm/6in tall and just 2.5 oz, the microphone is much easier for students to use.

FRONT

BACK
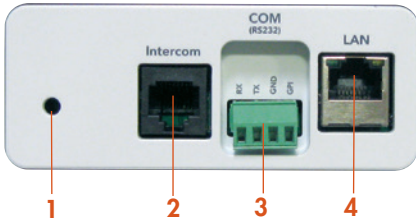
1 Charging pockets
Both charging pockets can be used to charge either the ITM-02/02L Pendant Microphone or ISM-02/02L Pass-Around Microphone

2 Power jack

SPECIFICATIONS

Size (wxhxd): 8.9 x 4.6 x 11.4cm/3.5 x 1.8 x 4.5in

Weight: 226.7g/8oz

Power supply: 5.9V dc

IMC-01 ACCESSORIES

power supply

JUNO CONNECT™ COMMUNICATION MODULE

1 Onboard Microphone
Communicate with front office even without the Juno mic

2 Intercom Input (optional)
Connect the CB75 intercom panel ceiling mic for communication with front office when push-to-talk is required (can also be used with CB85)

3 Serial Control
Send RS232 commands to serial projectors and other AV devices via voice or Teacher Edition Software

4 Network Connection
Sends commands to IP addressable devices via voice or Teacher Edition Software. Connect to front office via Conductor software. Communicates over standard 10/100Mb/s networks (auto sensing) using either TCP/IP or UDP protocols.

5 Display Shows Active Page or Intercom Call

6 Clearer, Easier Communication with Front Office
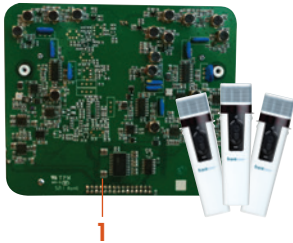Use the Juno microphone to call the office; hear higher quality paging and intercom audio through the tower

SPECIFICATIONS

Network Support: 10/100 Mb/s (Auto Sensing)
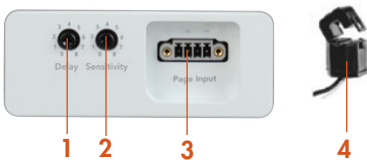**Baud Rate:** 2400 – 115,000 baud

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CHANNEL EXPANSION MODULE

1 Three additional IR channels
Add up to 3 additional microphones (total of 5)

SPECIFICATIONS

Receive Frequencies: 2.8MHz, 3.3MHz, 3.6MHz
Signal-to-noise: >70dB
THD: <1% @ 1kHz

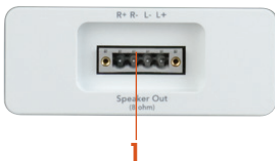## PAGE OVERRIDE MODULE (FOR ANALOG PAGING SYSTEMS)

1 Time Delay Control
2 Sensitivity Control
3 Captive Screw Terminal
4 Inductive Coupler

SPECIFICATIONS

P.A. Input: Captive screw terminal magnetic coupling
Sensitivity: 70mVrms (minimum)
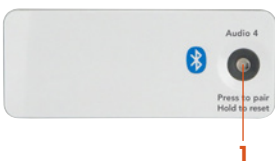**Delay:** <500mSec to >5Sec

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SPEAKER EXPANSION MODULE

1 Captive Screw Terminal

SPECIFICATIONS

Frequency response: 50Hz – 20kHz
THD: <1%
Maximum audio output power: 2x8w (8Ω), 2x16w (4Ω)
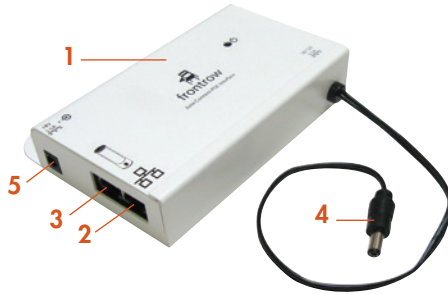

BLUETOOTH® AUDIO RECEIVER MODULE

1 Pairing/Reset Button

SPECIFICATIONS

Bluetooth Standard: 4.1 BR/EDR
Profile: A2DP for high quality stereo audio
Codecs: SBC, MP3, FastStream
Multipoint support: Yes, connect up to 2 devices at once (1 can stream at a time)
Typical range: Up to 60ft / 18.2m depending on transmitter
Latency: 40ms-200ms depending on codec and environment

JUNO POE EXTRACTOR

1   **Keeps paging and other emergency alert functions running during a power outage**
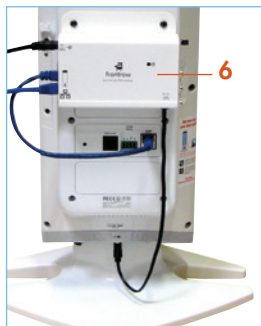The Juno POE extractor supplies Juno with the higher peak power levels it requires. Uses 18VDC mains power when POE is not required, then automatically and instantly switches to POE if main power fails.

Works with any qualified third-party POE mid-span injector and POE-enabled network switch
Installs as a bridge between the POE cable and the network endpoint, and breaks out both network and power signals from the incoming cable, sending them on as needed for amplifier support.

2   **Network power/data input**

3   **Network pass-through output**

4   **12V/1.77A (21W) output**

5   **18V DC input**

6   **Easily mounts to Juno Tower**
Mounts transparently to Juno using VESA mounting holes. Can also be mounted in combination with VESA wall mount.

SPECIFICATIONS

Network support: 10/100Mb/s (auto sensing)

External power supply: 18VDC at 3.5A

Size (wxhxd): 13 x 10.2 x 3.1cm/5.12 x 4 x 1.25in

INPUTS/OUTPUTS

• (1) RJ45 network input jack with POE
• (1) RJ45 network output jack
• (1) 2.1mm corded power plug
• (1) 2.1mm power input jack

MIDSPAN INJECTOR REQUIREMENTS
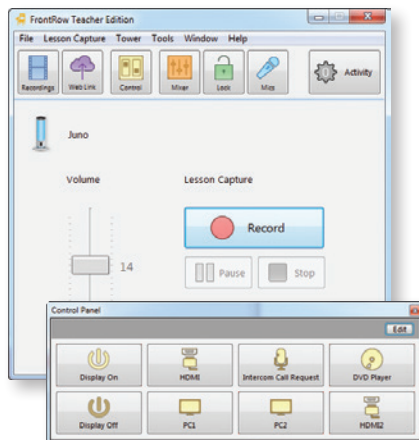
POE Type: High Power Midspan Injector

POE Standard: POE IEEE 802.3at

Device Pin-out: 1pins 4,5 DC power (+), pins 7, 8 DC power (–)

POE Protection: Over Temp, Over Current, Over/Under Voltage

Power: >30W per Port

Windows

Mac OS

SPECIFICATIONS

Recording types: Screen and audio, screen only, audio only
File format: mp4, m4a
Recording length: Unlimited

SYSTEM REQUIREMENTS

Windows
- Windows XP SP3, Windows Vista, Windows 7, Windows 8.1, SP1
- 2GHz Processor or faster
- 1 GB of RAM
- 90 MB of hard disk space for the application (recordings will require additional hard disk space)

Mac OS
- Mac OSX - 10.8 (Mountain Lion) or later
- 64-bit Processor (Core 2 Duo or later)
- 150 MB of hard disk space for the application (recordings will require additional hard disk space)
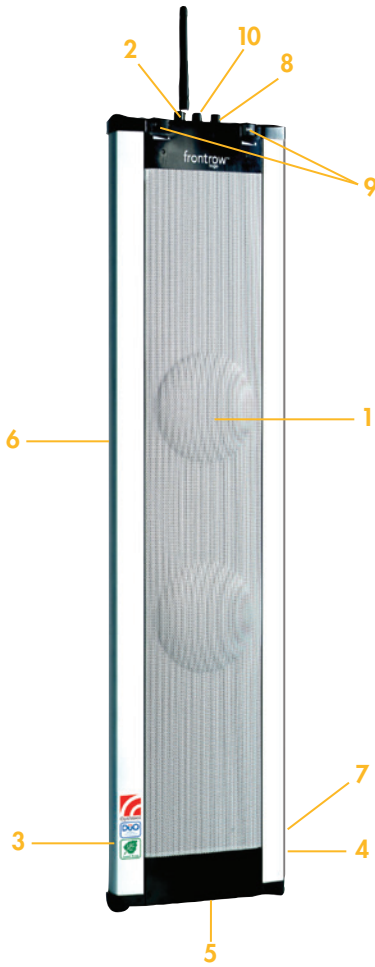
Lesson Capture

Teacher Edition Capture is the basic version of Teacher Edition. It makes lesson capture and sharing effortless so students are always prepared. Records screen and audio, then automatically titles the recording based on instructor's schedule and saves it to a pre-determined location. Teacher Edition is available with any FrontRow classroom audio system including Juno, Pro Digital, and ezRoom.

AV Control

Teacher Edition Control is a plug-in for Teacher Edition for use with ezRoom or Juno Connect. Teacher Edition Control enables teachers to control projector, audio setup, and lesson capture within the same application. Program up to eight buttons to turn display on and off, change input sources and more.

Juno Control

When used with a Juno system, Teacher Edition also makes controlling Juno settings easy. Control volume and other audio settings right from the desktop.

1 **Room-filling sound quality in a single unit**
The precision-mounted two-speaker line array reinforces and spreads more sound energy throughout the listening zone, making it able to cover an entire classroom.

2 **Optimize speech clarity**
The simple 3-position OptiVoice switch controls a sophisticated 12-band equalizer, pre-programmed to optimize speech clarity by emphasizing speech frequencies most critical to comprehension

3 **Power cable socket**

4 **On/off power switch**

5 **Table stand attachment**

6 **Integrated handle for transport**

7 **Optional built in battery for outdoor amplification**

8 **Auxiliary audio input for computer, MP3 players, CMB-02 Bluetooth audio receiver**

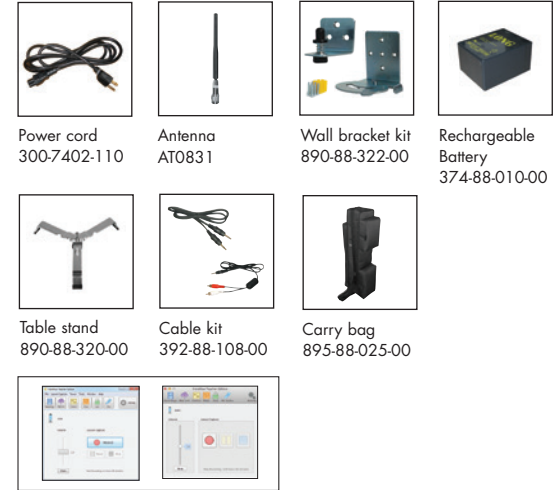9 **Two channels for more dynamic teaching**

10 **Auxiliary output**

SPECIFICATIONS

Transmission type: FM (F3E)

Receiving frequency: 216.025 - 216.875 MHz

Frequency response: 100Hz-9kHz (at rated output)

THD: <1.5% (at rated output) @ 1kHz

Signal-to-noise: >70db at rated output (system)

Maximum audio output power: Maximum 36W RMS @ 4Ω x 2

Power supply: AC 110-220V ~50-60Hz, 1A max

Battery: NiMH rechargeable

Battery life: 6.5 hours (rechargeable)

Recharging time: 8 hours

Input: 1 x aux-in, 3.5mm mono

Output: 1 x aux-out, 3.5mm mono

Size (wxdxh): 183 x 85 x 750 mm / 7.2 x 3.4 x 29.5 in

Weight: 5.7kg / 12.5lbs.

USER CONTROLS

- Channel A/B on/off/volume
- Channel A/B channel selector
- aux-in volume
- aux-out volume
- OptiVoice

925RS ACCESSORIES

Power cord
300-7402-110

Antenna
AT0831

Wall bracket kit
890-88-322-00

Rechargeable Battery
374-88-010-00

Table stand
890-88-320-00

Cable kit
392-88-108-00

Carry bag
895-88-025-00

Teacher Edition Software
(Windows or Mac OS)

Channel/frequencies for U.S. and Canada

Channel#	Channel A	Channel#	Channel B
41	216.025 MHz	51	216.525 MHz
42	216.075 MHz	52	216.575 MHz
43	216.125 MHz	53	216.625 MHz
44	216.175 MHz	54	216.675 MHz
45	216.225 MHz	55	216.725 MHz
46	216.275 MHz	56	216.775 MHz
47	216.325 MHz	57	216.825 MHz
48	216.375 MHz	58	216.875 MHz

Channel/frequencies for e.g. Denmark, Norway, Sweden, Germany, Finland and Iceland

Channel#	Channel A	Channel#	Channel B
15	173.400 MHz	26	173.640 MHz
91	173.8125 MHz	94	173.8625 MHz
93	173.9625 MHz	92	173.9125 MHz
84	174.0750 MHz	87	174.275 MHz
77	174.175 MHz	90	174.5250 MHz
78	174.325 MHz	55	174.6000 MHz
89	174.425 MHz	63	174.8500 MHz
59	174.7000 MHz	67	175.0000 MHz

Channel/frequencies for e.g. England, New Zealand, Australia and The Netherlands

Channel#	Channel A	Channel#	Channel B
13	173.350 MHz	30	173.750 MHz
15	173.400 MHz	32	173.800 MHz
17	173.450 MHz	34	173.850 MHz
21	173.500 MHz	35	173.900 MHz
24	173.550 MHz	36	173.950 MHz
25	173.600 MHz	37	174.000 MHz
27	173.650 MHz	38	174.050 MHz
29	173.700 MHz	40	174.100 MHz

1 Convenient drop-in charging
2 3-way indicator lights

SPECIFICATIONS

Power supply: AC adaptor (DC 12V / 0.5A)
Recharging time: NiMH (1600mA), 6 hours
Size (wxhxd): 230 x 47 x 135 mm / 9 x 1.9 x 5.3 in
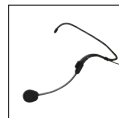**Weight:** 360g/12.7oz

1 Your choice of mics
Connect wind-resistant boom or earhook mics or inconspicuous lapel mics
2 Easy to locate on/off/standby switch
3 2-way indicator light
4 Belt clip
5 Channel selector

925T ACCESSORIES

NiMH rechargeable battery
AT0807

boom mic

SPECIFICATIONS

Carrier frequency range: 216.025 - 216.875 MHz
Modulation: FM (F3E)
Operating range: > 34m / 110ft
RF output: <15mW
THD: <0.5%
Dynamic range: 100dB
Size (wxhxd): 65 x 90 x 25 mm / 2.5 x 3.5 x 1 in
Weight: 51g / 1.8oz
Controls: on/mute/off/channel selector
Input/output: 2.5mm microphone input jack
Battery type: 2 AA NiMH rechargeable (1600mA) or 2 AA alkaline disposable
Battery life: NiMH rechargeable typically 12 hours, disposable alkaline typically 15 hours
Recharging time: 6 hours

1 2-way indicator light
2 On/off switch
3 Channel selector

925H ACCESSORY

NiMH rechargeable battery
AT0807

SPECIFICATIONS

Carrier frequency range: 216.025 - 216.875 MHz
Modulation: FM (F3E)
Operating range: > 34m / 110ft
RF output: <15mW
THD: <0.5%
Dynamic range: 100dB
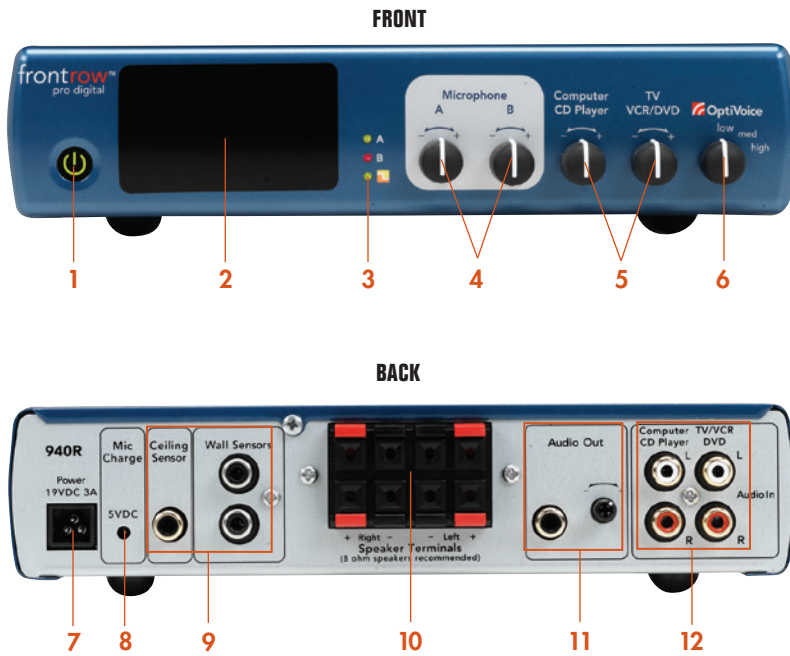**Dimensions (dia x h):** 54 x 237mm / 2.1 x 9.3 in
Weight: 230g / 8.1 oz
Controls: on/mute/off/channel selector
Battery type: 2 AA NiMH rechargeable (1600mA) or 2 AA alkaline disposable
Battery life: 12 hours (rechargeable), 15 hours (alkaline)
Recharging time: 6 hours

FRONT

BACK

1 One-Touch operation
Teachers need only turn on the mic to start teaching. The receiver automatically wakes up from its energy-saving sleep mode and goes to sleep when the mic is turned off.

2 Talk without dropout
Built-in sensor with advanced optics ensure consistent signal pick-up

3 Feedback suppression
The ADAPTO light reassures you it is automatically suppressing feedback – before it starts

4 Two channels for more dynamic teaching
Encourage student participation with a pass-around mic; or amplify two teachers at the same time

5 Easy audio control
Quickly and easily adjust the volume level of streaming audio and video content, CDs and MP3 files

6 Optimize speech clarity
OPTIVOICE, FrontRow's patented technology, is specially designed to emphasize critical speech sounds, so kids comprehend even more

7 Power jack

8 Easy recharging
Up to two transmitters can be charged directly from the receiver

9 External sensor ports
Get great signal pickup in almost any classroom with convenient ceilings or wall sensors

10 Simple speaker hook-up
Color-coded stereo push terminals make speaker connection quick and easy

11 Auxiliary output and volume control
Connect to computer to record all audio content for podcasting, or connect personal FM systems for the hearing impaired

12 Complete tech integration
Easily connect a computer or other technology to integrate true stereo audio into lessons

SPECIFICATIONS

Transmission type: Infrared

Receiving frequency: 2.3MHz & 2.8MHz

Frequency response: 50Hz to 20kHz

Signal-to-noise: >65dB (system)

THD: <1% @ 1kHz into 8Ω

Maximum audio output power: 2 x 10w (8Ω), 2 x 20w (4Ω)

Power supply: 19VDC at 3.16A

Size (wxhxd): 21.5 x 4.75 x 19cm/8.5 x 1.75 x 7.5in

Weight: .94kg/2.11lbs

Operating range: 18.5m/60ft line-of-sight (typical)

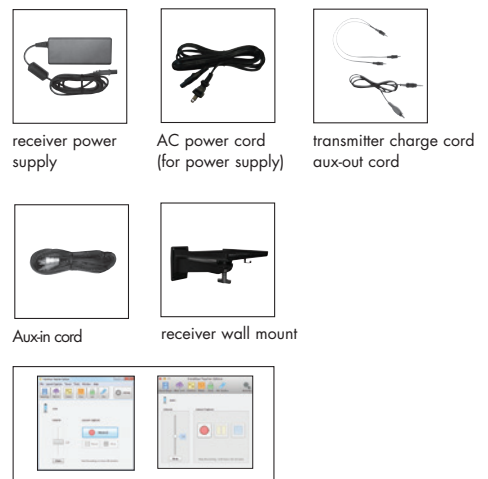**Reception area:** 139m^2/1500ft^2 (typical) with ceiling sensor

USER CONTROLS
- Power
- Microphone A volume
- Microphone B volume
- Two auxiliary audio volume
- OPTIVOICE™

INPUTS/OUTPUTS
- Input power jack
- 1.3mm mic charge jack
- 3 RCA jacks for external sensor connection
- 4 quick-connect speaker terminals
- RCA aux out jack
- 2 RCA stereo aux in jacks (with stereo sound output)

940R ACCESSORIES

receiver power supply

AC power cord (for power supply)

transmitter charge cord aux-out cord

Aux-in cord

receiver wall mount

Teacher Edition Software (Windows or Mac OS)

LOCATIONS

USA/Global
1690 Corporate Circle
Petaluma, CA 94954-6712
United States
toll-free: 800.227.0735
tel: 707.769.1110
fax: 707.769.9624
web: www.gofrontrow.com

Australia
629 Nudgee Road
Nundah QLD 4012
Australia
tel: 1 800 746 642
fax: 1300 737 983
web: www.gofrontrow.com

Canada
1600-4950 Yonge Street
Toronto, ON M2N 6K1
toll-free: 800.340.9894
tel: 905.461.5300
fax: 905.677.7760
web: www.gofrontrow.com

Scandinavia
Kongebakken 9
2765 Smørum
Denmark
tel: +45 3917 7101
fax: +45 3927 7900
web: www.gofrontrow.com

TECHNOLOGY FOR STUDENT ACHIEVEMENT

Lesson Capture

Lesson Capture. Using simple voice commands, Teacher Edition software records screen and audio then automatically title and prepare recordings for upload so students can review the video at night.

Class2Class

Class2Class. Using FrontRow with tools like Skype™ and Adobe® Connect™, you can easily set up a real-time audio/video connection between your class and any location – one that's clearly heard by everyone without echo.

PrioriTeach

PrioriTeach. PrioriTeach gives priority to the teacher microphone by reducing the volume of all other devices and microphones when the teacher microphone is used. Control how quickly and to what level the volume is reduced, how quickly the audio resumes, or turn the feature on and off.

VoiceChoice

VoiceChoice. Increase talk time or expand coverage for very large rooms with a quick software adjustment.

Voice Command

Voice Command. A teacher's voice is a powerful educational tool – now more than ever. The Juno digital sound system listens as attentively as students do, so teachers can control important functions simply by talking to it.

OptiVoice

OptiVoice™ clarity. FrontRow's patented, powerful tool for test-taking, directions, and ELL instruction. Fragile consonant sounds carry about 75% of the meaning in speech but are easily destroyed by background noise. OptiVoice strengthens these critical sounds, doing the work of a 12-band equalizer with a single switch.

SonicSuffusion

SonicSuffusion™ provides intelligent sound distribution. Juno has three digitally-controlled drivers in a single unit that evenly fills the room with the kind of exciting, multi-layered stereo sound you'd expect from a much larger installed system.

PFM Friendly

Fast, proper connection to Personal FM systems Audiologists can quickly and confidently connect students' personal FM transmitters and maintain excellent transparency. Teacher and fellow-student voices plus media audio are delivered directly to the child's personal receiver.

Adapto

DSP TEXAS INSTRUMENTS TECHNOLOGY

Adapto Digital Platform. Faster than the speed of thought — a blistering 375 times per second on the VC5502™ processor by Texas Instruments — the Adapto platform automatically adjusts sound quality, power usage, and other complex details. Adapto adapts so teachers can teach.

SmartCharge

SmartCharge™ peace of mind. The greatest killer of electronics is accidental recharging of alkaline batteries. SmartCharge technology only charges batteries that are safe to charge — protecting your investment for years to come.

Energy Smart

Save money (and maybe the planet). FrontRow products use significantly less energy – up to 63% less – than other systems. They're a smart choice for schools and the environment.

Lead Free

Earth-friendly design. FrontRow's design and manufacturing practices keep lead, mercury, PBDE and other toxins out of its products — and out of the environment.

frontrow™
your school. connected.