

# frontrow™ juno



## **USER GUIDE**

ITR-02 Tower Receiver

ITM-02 Pendant Microphone

ISM-02 Pass-Around Microphone

IMC-01 Microphone Charger

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# Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
10. Only use attachments/accessories specified by the manufacturer.
11. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Do not use batteries that have been dropped or otherwise damaged.
15. The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
16. Discoloration of the materials with this product may occur over time, especially if exposed to direct sunlight. This is cosmetic and will not affect the safety or usability.



# Electrical Warnings

## 1. Avoid Abuse to the Power Supply

To reduce risk of electric shock, unplug the power supply from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.

**WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

**DO NOT** disassemble the power supply. Return the apparatus to FrontRow for qualified service and repair if required. Incorrect reassembly may result in a risk of electric shock or fire.

**DO NOT** expose the power supply to rain, snow, water, gas, oil, etc.

**DO NOT** operate the power supply if it has received a sharp blow, been dropped, or otherwise damaged in any way; return the apparatus to FrontRow for qualified service and repair.

**DO NOT** block or cover the apparatus and impede ventilation.

**DO NOT** expose batteries (battery pack or batteries installed) to excessive heat such as sunshine, fire, or the like or excessive cold.

## 2. Proper Use of the Power Supply and Wiring

An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. The cord **MUST** be plugged into a grounded outlet. Make sure it is properly wired, in good electrical condition, and wire size is large enough for AC ampere rating of the power supply or charger. To reduce risk of damage to plug and cord when disconnecting the power supply or charger, **ALWAYS** pull on plug - **NEVER** on cord.

Locate cord so that it will not be stepped on, tripped over, or otherwise subject to damage or stress. **DO NOT** lay extension cord on charger. **DO NOT** operate the power supply with damaged cord or plug - replace them immediately.

## Electrical Safety Information:



### PRECAUTIONS & SAFETY RECOMMENDATIONS

#### *Follow Manufacturers' Recommendations*

Before using the Tower and power supply, read all instructions for, and caution markings on the receiver and power supply and in this user guide.

# System Contents



ITR-02 Juno Tower  
Amplifier / Receiver



ITM-02 Pendant  
Microphone



Lithium Ion  
Battery



Aux-in cord



1 meter micro  
USB cable



Phillips head  
screwdriver



Wall mounting  
screw set



Power supply



AC cable



4 meter USB cable

## Optional components



ISM-02  
Pass-Around  
Microphone



IMC-01  
Microphone  
charger

## Expansion Modules



3 Channel Expansion Module  
Add up to 3 additional microphones



Speaker Expansion  
Module



Page Override  
Module



Juno Connect  
Communications Module

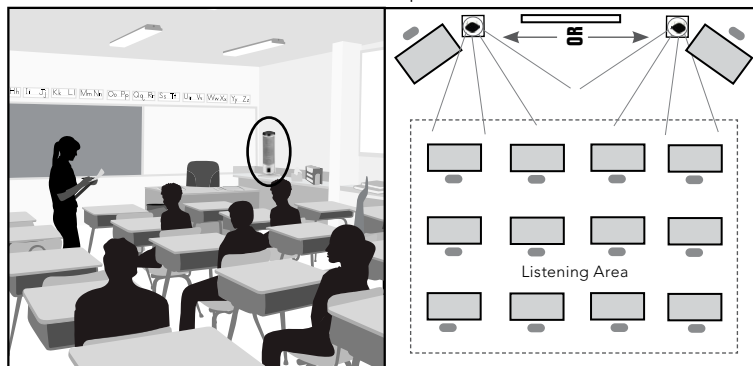
# Setup and Placement

Your Juno Tower will perform best when you place it:

- Even with either the front or rear edge of the main listening area (i.e. where students sit) **and**
- With the speaker facing the center of the listening area (see Top View below).

Choose the location that allows connection to the teaching computer (4m USB cable provided) and other audio sources (e.g. DVD player)

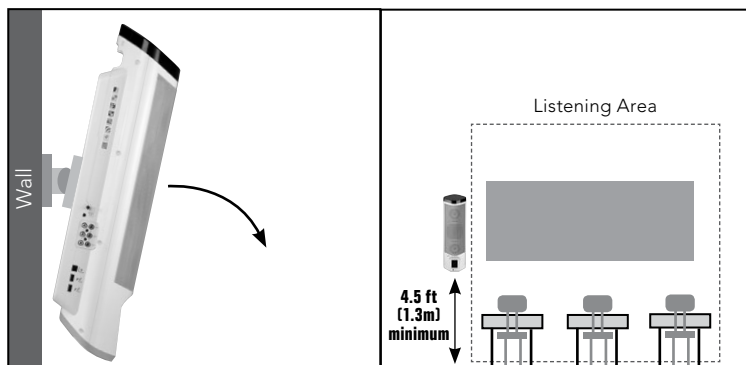
Top View



You can either mount the Juno Tower on a wall using a standard 100mm VESA mount (recommended) or simply place it on a table using the stand provided. In any case, the bottom edge of the Tower should be be at least 4.5 feet (1.3m) from the floor.

If wall mounting, angle the tower down to point at the center of the listening area.

Side View



**NOTE:** For wall mounting instructions, please see the Juno Installation Guide available at [gofrontrow.com/guides-resources](http://gofrontrow.com/guides-resources)

## Volume Setting Guidance

Your Juno Tower is equipped with a powerful Adapto™ feedback suppression engine that helps avoid harsh squealing noise that would normally occur when a microphone gets too close to a speaker. Nevertheless, try to use volume settings for daily use that give good audibility without constantly activating the feedback suppression engine.

The chart below shows the volume settings for the Pendant and Pass-Around microphones that are adequate for a typical classroom environment (600 - 900ft<sup>2</sup>/56 - 84m<sup>2</sup>). If more volume is required for a large or noisy room, you may notice the Adapto engine activating and at a high volume or short distance, the engine may not be able to maintain a pleasant audio quality. If feedback occurs, move away from the Tower, remain behind it while talking, or lower either the master volume or the volume for the microphone that is causing the feedback. (See pages 12, 13)

Recommended:

Master Volume	18 - 20
Pendant Microphone Volume	5 - 6
Student Microphone Volume	4 - 5

## System Integration Guidelines

Today's modern classroom has a host of electronic devices used to support the instructional environment. Many of these devices are connected together via a Personal Computer that typically acts as the control point for these devices. Projectors, Interactive White Boards, Document Cameras, Paging Interfaces, etc, are all typically connected to a classroom PC. In addition to these devices there are often other support devices used to make these connections.

Your new Juno Tower is another electronic device that can also be connected to your classroom PC. But unlike the other electronic devices mentioned above, the Juno Tower contains a sensitive Infrared radio receiver. To ensure that the Juno Tower is providing good performance, it is important to follow good installation practices.

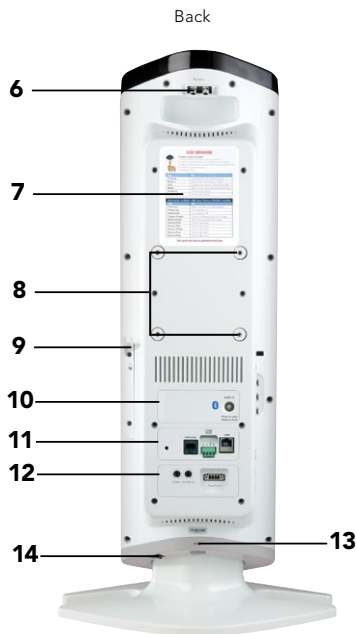
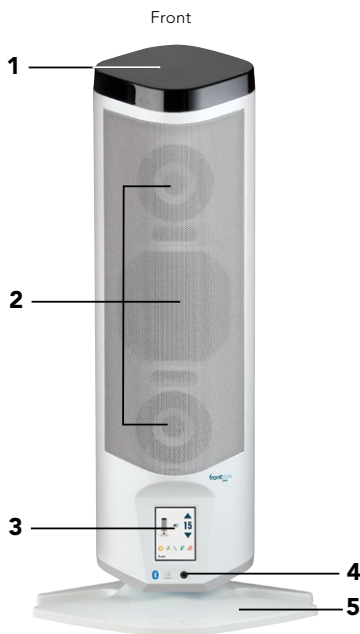
When the Juno Tower is connected to the classroom PC, it is now sharing a common ground reference with all the other devices connected to the PC. If one or more of the devices has a poor or noisy ground reference, its poor performance can influence other devices connected to the same reference and this includes your Juno Tower. To help ensure the best performance possible, please refer to the installation guidelines below:

1. Connect the Juno Tower's external power supply to a wall outlet. Do not use extension cords and if a power strip is needed, ensure that it is of good quality.
2. Do not position the Juno Tower where sunlight can directly shine on the Tower. The Tower uses infrared signals to link the transmitter to the receiver. Sunlight contains infrared energy and will reduce the system's performance.
3. Use good quality audio cables when connecting the Tower to the classroom PC.
4. The USB cable provided with your Tower System has been qualified by FrontRow. Use this cable whenever possible. If another length of cable is needed, it must be certified for USB 2.0 or better.
5. Connect the USB cable directly to the classroom PC. Do not connect via an External USB Hub device.
6. Avoid running the USB and audio cables connecting your Juno Tower to the classroom PC with other cables. Noise can be present on the other cables that can be transferred to the cables connecting the Juno Tower to the classroom PC.

**NOTE:** Your Juno Tower has 2 ports for charging and programming FrontRow microphones. These ports should not be used to connect other devices to your computer.

# Features

## ITR-02 Juno Tower Receiver



### 1 Integrated Sensor

Integrated high sensitivity infrared diode array covers a typical classroom without the need for additional sensors.

### 2 2.1 Speaker Array

Two mid-range/HF drivers and one woofer provide full, rich stereo sound. The array design ensures good room coverage even with just one Tower.

### 3 LCD Touchscreen

Full-color touch screen puts daily system controls in one easy-to-find place.

### 4 Stereo Quick Connect

Easily and quickly connect an MP3 player or other audio device.

### 5 Table/shelf/desk Stand

Sturdy desk stand is easily removed for wall mounting.

### 6 Additional Sensor Ports

Two ports for adding sensors for use in large or odd shaped rooms.

### 7 Channel Expansion Module Bay (behind main cover)

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

### 8 Wall Mount Screw Taps

100mm VESA mount compliant.

### 9 Transmitter/USB Cable Hook

Neatly hang your transmitters while charging from the tower. When not charging, the USB cable hangs from the center of the hook.

### 10 Bluetooth® Audio Receiver

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

#### OR

### Speaker Expansion Module Bay

Install the optional module to add additional speakers (up to six) for expanded audio coverage.

### 11 Juno Connect Module Bay

Optional module for adding software and voice control of AV devices plus, in conjunction with Conductor, two-way communication between classroom and front office.

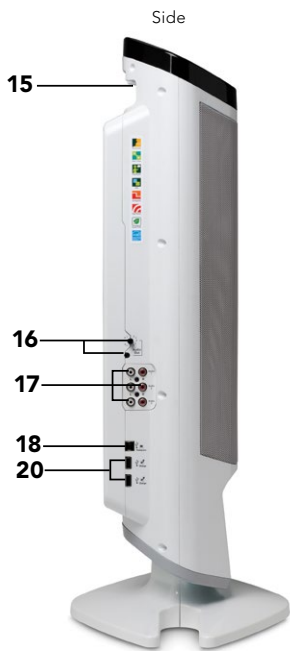
### 12 Page Override Module Bay

Simply install the optional module to mute all audio whenever an announcement is made over the school's public address system.

### 13 Power Jack

### 14 Power Switch





## 15 Easy Grip Handle

Integrated ergonomic handle makes carrying or moving the Juno Tower easy.

## 16 Auxiliary Output

Output with volume control. Connect to a computer running the FrontRow Desktop or Teacher Edition software to capture lectures or connect personal FM systems for listeners with hearing impairment.

## 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 or Teacher Edition software application for remote control of the Juno Tower.

## 19 Integrated Serial Hub

Two serial ports for charging microphones, and for programming microphones through a connected PC using the FrontRow Microphone Settings application.

## 20 Custom naming

Tower name can be customized using the optional FrontRow Desktop or Teacher Edition software. Name is displayed on the LCD touch screen for easy identification.

## 21 Feedback suppression

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

## 22 Optimized speech clarity

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

## 23 Easy lesson capture

With a few simple voice commands, the Juno lesson capture system records screen and audio and automatically titles and prepares the recordings for upload where students can review them at night.

## 24 Connect with classrooms around the world

Using Juno with tools like Skype™ and Adobe® Connect™, you can easily set up a real-time audio/video connection between your class and any location.

## 25 Voice command

Control important functions by speaking simple voice commands into the teacher microphone.

## 26 Teacher priority

PrioriTeach™ gives priority to the teacher microphone by reducing the volume of all other devices and microphones when the teacher microphone is used.

# ITM-02 Pendant Microphone

## 1 Amazing Sound Quality

With FrontRow's ClearVoice™ digital synthesis technology, the ITM-02 uses a single cardioid microphone element to deliver superb pickup and audio quality. And combined with a high-isolation, low-noise, open air microphone suspension, the ITM-02 minimizes noise from friction against clothing, buttons or jewelry.

## 2 Mute Indicator

OFF/STANDBY ..... Un-muted  
SOLID RED ..... Muted

## 3 Power Indicator

SOLID GREEN ..... Power On  
OFF ..... Standby

## 4 One-Touch Button

Controls all of the features of the Pendant Microphone. Use with voice command to activate the Juno lesson capture software and control your Juno Tower.

**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.

## 6 Battery Indicator

**In Use**

OFF ..... Battery Charged

FLASHING RED ..... Battery Low

**When Charging**

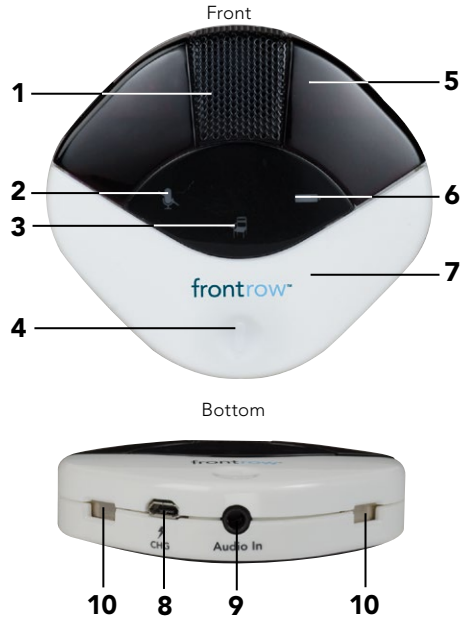
SOLID RED ..... Charging

SOLID GREEN ..... Fully Charged

FLASHING RED/GREEN ..... Charge fault

## 7 Lithium Ion Battery

3-year life expectancy, lightweight, rechargeable lithium ion battery.



## 8 Charging / Programming Jack

For charging via USB cable or for configuring settings using the FrontRow Microphone Settings application.

## 9 Portable Audio Interface

3.5mm audio input jack lets you use the Pendant Microphone to transmit audio from any secondary audio source such as a computer or MP3 player.

## 10 Charge Contacts

For use with the optional IMC-01 microphone charger.

## 11 Adjustable power

Adjust the power to increase either battery life or range.

## 12 Programmable channels

Program the switch positions to 2 of 5 available channels.

## 13 Custom naming

Assign custom names to microphones for easy identification on the Tower LCD or in the optional FrontRow Desktop or Teacher Edition software.

# ISM-02 Pass-Around Microphone

## 1 Amazing Sound Quality

With FrontRow's ClearVoice™ digital synthesis technology, the ISM-02 uses a single cardioid microphone element to deliver superb pick up and audio quality. And combined with a high isolation, low noise, open air microphone suspension – the ISM-02 minimizes handling noise.

## 2 360° Emitter Diodes

360° emitter diodes let 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  
FLASHING RED/GREEN .....Charge fault

## 5 Small and Lightweight

At less than 15cm/6in tall and just 73.7g/2.6oz the microphone is much easier for even young students to use than a standard-sized mic.

## 6 Power/Push-to-talk Switch

The push-to-talk option makes transitions when passing the microphone between students easier (e.g. no need to take time from the conversation to turn the mic on and off during transition).

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

## 7 Name Plate

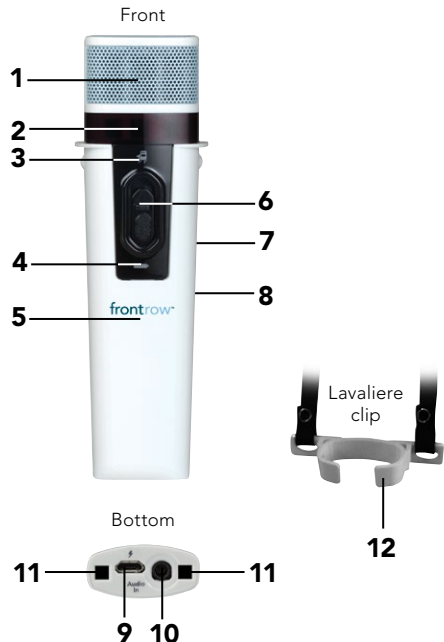
Perfect for adding a name or room number for easy identification.

## 8 Lithium Ion Battery

3-year life expectancy, lightweight, rechargeable lithium ion battery.

## 9 Charging / Programming Jack

For charging via USB cable or for configuring settings using the FrontRow Microsoft Settings application.



## 10 Portable Audio Interface

3.5mm audio input jack lets you use the Pass-Around Microphone to transmit audio 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 lavalier clip makes reading in front of class simple and lets the Pass-Around Microphone double as a lightweight teacher microphone.

## 13 Adjustable power

Adjust the power to increase either battery life or range.

## 14 Programmable channels

Program the switch positions to 2 of 5 available channels.

## 15 Custom naming

Assign custom names to microphones for easy identification on the Tower LCD or in the optional FrontRow Desktop software.

# Activate Tower and Microphone

1. Turn Tower on. See Image 1
2. Place microphone around neck and connect clasp.
3. Adjust neck straps to position microphone approximately 5in (14cm) from mouth. See Image 2
4. Press One-Touch button to wake microphone. Power indicator (chair icon) should be green. See Image 3

## Sleep Mode

For daily use, you do not need to turn the Tower on and off. The Tower will wake up from its energy-saving standby mode whenever you turn on a microphone or play audio through one of the audio connections. The Tower will go back to sleep 30 minutes after your microphones enter sleep mode or you stop playing audio. After 2 hours and 30 minutes, the Tower will enter an energy-saving deep sleep mode. When waking up the Tower from this state, it will take approximately 30 seconds.

**NOTE:** If playing audio through one of Juno's auxiliary inputs, set the volume **on the device** (MP3 player, computer, etc.) to its maximum level. Failure to do so may result in the Juno Tower going into sleep mode unexpectedly.

Image 1

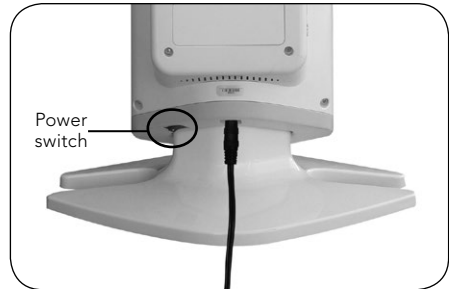


Image 2

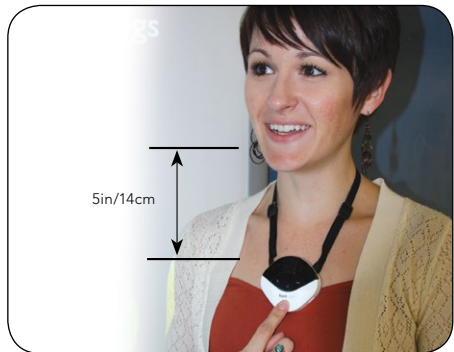
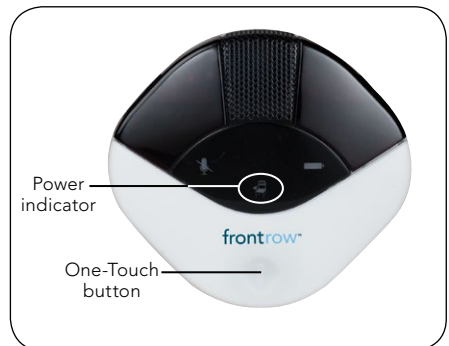
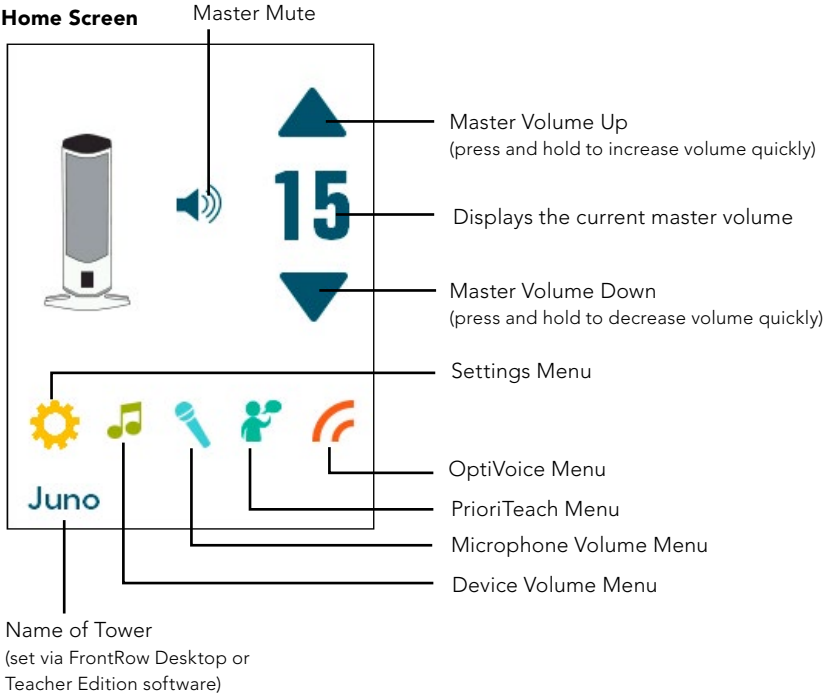


Image 3



# Tower Controls



# Volume

## Master Volume

Your Juno system has a master volume control that increases or decreases the mixed volume of all devices and microphones. From the home screen you can adjust or mute the master volume of your Juno Tower.



## Device Volume

You can control the individual volume of each device connected to your Juno Tower. Devices that are currently playing audio will appear in white text and have a green check mark in the far right on the blue bar.\*

1. Press the Device Volume Menu icon.
2. Select the audio device for which you want to change the volume.
3. Adjust the volume of the connected device using the up or down arrow.



**NOTE:** Using the optional FrontRow Desktop or Teacher Edition software, you can name the devices used with your Juno system for easier identification. For more information visit [gofrontrow.com/guides-resources](http://gofrontrow.com/guides-resources).

\*For best results, the volume on the device should be at least 75% of its maximum volume.

### Microphone Volume

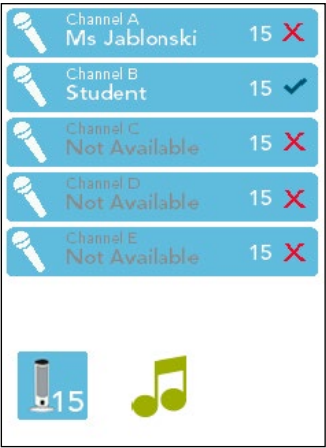
You can separately control the volume of each microphone used with your Juno Tower.

1. Press the Microphone Volume Menu icon.
2. Select the microphone for which you want to change the volume (microphones that are active – on and unmuted – will appear in white text and will have a green check-mark in the far right of the blue bar).
3. Adjust the volume of the microphone.

**NOTE:** Using the optional FrontRow Microphone Settings application, you can name the microphones used with your Juno system for easier identification. For more information visit [gofrontrow.com/guides-resources](http://gofrontrow.com/guides-resources).

**NOTE:** A Juno system comes standard with the ability to use two microphones simultaneously. With the optional Channel Expansion Module your Juno system can be used with up to five microphones simultaneously.

**NOTE:** When playing music from a device connected to the Microphone's Audio In jack, check the Music Audio In box for best audio performance.



# Settings

From the Settings Menu, you can customize some of your Juno Tower's available features.

- 1. Select the feature you would like to configure.
- 2. See details for each feature below.

**NOTE:** Additional settings are available through the optional FrontRow Desktop or Teacher Edition software application.

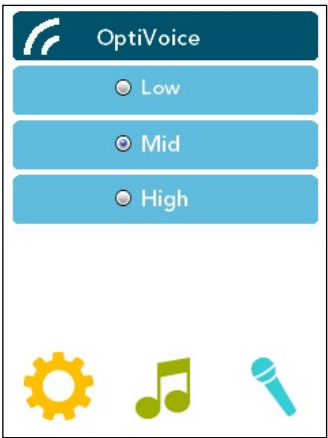


## OptiVoice™

A powerful tool for test taking, directions and ESL instruction. Fragile consonant sounds carry 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.

For low background noise environments and for a more natural reproduction of your voice, use the low setting. For environments with higher background noise, use the mid or high setting. Experiment with the right mix of microphone volume and OptiVoice setting to find the optimal solution for your environment.

**NOTE:** OptiVoice affects microphone audio only; auxiliary audio sources can be adjusted using the equalizer adjustment in the optional FrontRow Desktop or Teacher Edition software application.



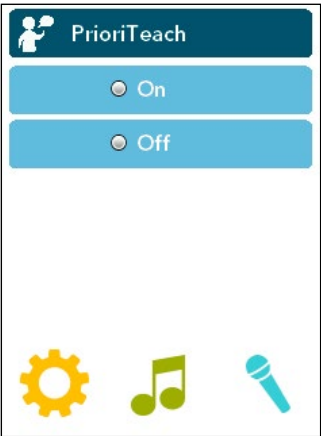


**PrioriTeach™**

Use PrioriTeach to have the Juno Tower automatically reduce the volume of all other audio sources including Pass-Around Microphones when you speak into the Pendant Microphone.

**NOTE:** Advanced settings for PrioriTeach are available through the optional FrontRow Desktop or Teacher Edition software.

**NOTE:** The PrioriTeach feature is only activated by a Pendant Microphone and only when on channel A or B.

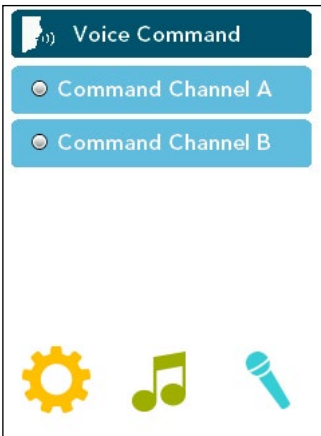


**Voice Command**

Your Juno System can be controlled using your ITM-02 Pendant Microphone and your voice. See page 19 for details, a list of available voice commands, and instructions for use.

Voice Command can be used on only one channel at a time. Set the command channel to A or B depending on the channel you are using with your Pendant Microphone.

**NOTE:** Advanced settings for Voice Command are available through the optional FrontRow Desktop or Teacher Edition software application.



**Speaker Balancing**

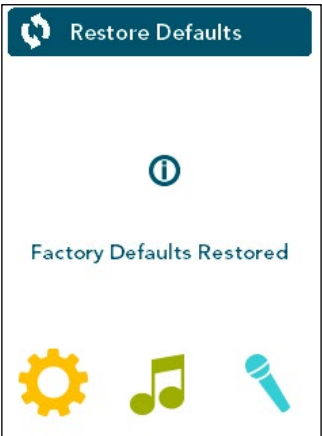
With the optional Speaker Expansion Module, your Juno tower can be connected to external speakers mounted in the ceiling or on the wall. Use the Speaker Balancing option to adjust the balance between the Tower’s internal speakers and the external speakers.



**Restore Defaults**

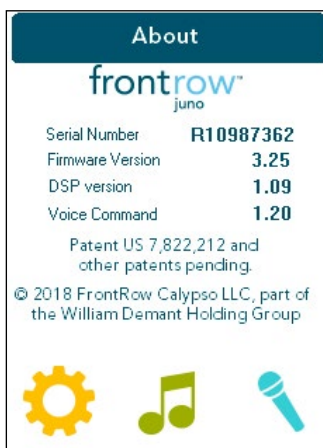
Your Juno Tower can be restored to factory defaults if necessary.

**NOTE:** If turning off Tower after restoring defaults, wait 10 seconds.



## About

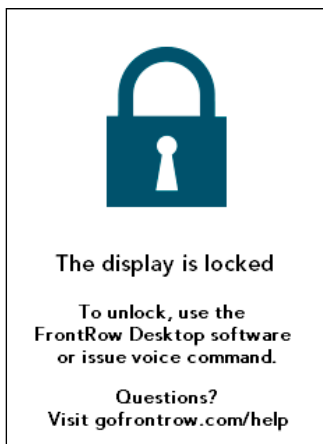
The About screen displays your Tower serial number, firmware version and DSP version.



## Locking the LCD

To prevent tampering with settings, the LCD on your Juno Tower can be locked using a voice command or the optional FrontRow Desktop or Teacher Edition software. To lock or unlock your Tower LCD using Voice Command, say "LCD". For details on using the voice command feature of your Juno System, see page 19.

**NOTE:** When the display is locked and you attempt to make a selection, the lock screen will appear for approximately 10 seconds.



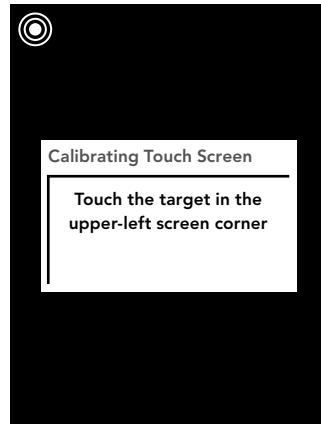
# LCD Calibration

## Touch Screen Calibration

Although unlikely, the Juno Tower's touch screen may drift out of alignment over time. If it does not respond accurately when you touch it, it will need to be calibrated.

1. Turn the Tower off.
2. Press and hold the touch screen while turning the Tower back on.
3. Continue pressing the touch screen until the screen turns black.
4. Release the touch screen and wait for calibration screen.
5. Follow the on screen instructions.

**NOTE:** Use a stylus intended for touch screens or similar soft-tipped object for best accuracy.



## Firmware Update

From time to time, FrontRow may make improvements or enhancements to your Tower's firmware. Use the FrontRow Desktop or Teacher Edition software application to update the Tower firmware (download from [gofrontrow.com/guides-resources](http://gofrontrow.com/guides-resources)).

### If using the FrontRow Desktop:

1. Connect the Tower to a computer running the FrontRow Desktop application.
2. Open the Tower settings menu by clicking the Tower settings button.
3. Click the Check for Update button and follow the on screen prompts.

### If using Teacher Edition:

The software will notify you automatically if a firmware update is available.

# Voice Command



Your Juno System lets you remotely control parameters of your Juno Tower using a few simple voice commands.

## To issue a voice command:

1. Press and hold the One-Touch button on the Pendant Microphone.
2. Wait for Voice Command tone and Tower LCD background to turn green.
3. Keeping the button pressed, issue one of the commands below.
4. Wait for confirmation tone and Tower LCD background to return to white.
5. Release the button.

## For best performance:

- Follow the sequence above precisely when issuing voice command.
- Avoid brushing the microphone against clothing, jewelry, etc. while issuing voice command.
- Speak clearly with a normal conversational tone.
- When issuing the Finish command, wait until the LCD background returns to white before releasing the button.
- Avoid holding the microphone close to the mouth with speaking a command. The microphone is optimized to understand commands when it is sitting flat on the chest.

Say:	When you want to:
<b>Increase</b>	Increase the volume by 2 steps
<b>Reduce</b>	Reduce the volume by 2 steps
<b>LCD</b>	Toggle Juno Tower LCD lock on/off
<b>Begin</b>	Begin or resume a suspended recording through the optional Juno lecture capture application
<b>Suspend</b>	Suspend a recording through the optional Juno lecture capture application
<b>Finish</b>	Stop, encode and automatically name a recording based on your personalized settings using the optional Juno lecture capture application

**NOTE:** Voice command works only with the Pendant (teacher) Microphone, and only on either channel A or B.

**NOTE:** While recording, voice command tone and confirmation tones are not heard so they will not be recorded.

**NOTE:** In some cases, if the Tower does not recognize a command, the LCD will remain green for up to 10 seconds. During this time, audio will not transmit from the microphones.

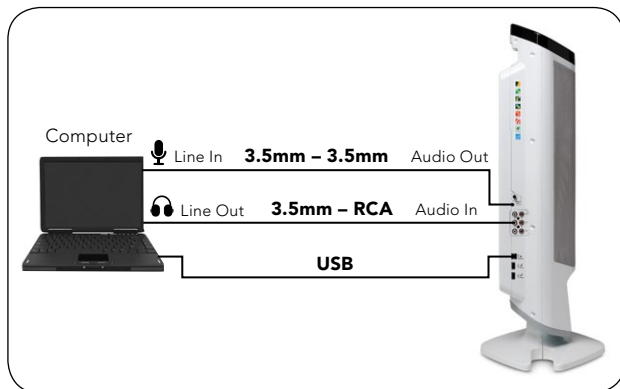
Commands available with Juno Connect Communications Module installed	
<b>Intercom</b>	Make an intercom call request
<b>Power Up</b>	Turn display on
<b>Shut Down</b>	Turn display off
<b>Freeze Screen</b>	Freeze/Unfreeze projector image
<b>Blank Screen</b>	Blank/Show projector image
<b>Source One</b>	Switch AV input
<b>Source Two</b>	Switch AV input
<b>Source Three</b>	Switch AV input
<b>Source Four</b>	Switch AV input
<b>Source Five</b>	Switch AV input

# Using Lesson Capture through Juno



FrontRow's superior microphone and optional Juno lecture capture system open a world of lesson capture and sharing possibilities – without tying teachers to the computer.

- Absent students can still access the original lesson – a huge time saver
- Makes flipped classrooms possible, and allows learning at one's own pace
- Makes podcasting easy
- Students with mobile devices can get lessons on the go
- Helpful tool for keeping parents involved with reinforcing your lessons



## Connect the Juno Tower to your computer

1. Using a 3.5mm to 3.5mm cable, plug the Audio Out from the Tower to the "microphone" or "line in" on your computer. *See image above*
2. Using a 3.5mm to RCA cable, plug the "audio" or "headset" out on your computer to one of the audio in connections on the Tower. *See image above*

**NOTE:** Some computers have a single audio combination jack for both microphone and headset use. If your computer has this type of jack, you must use a headphone/microphone combo jack splitter. This adapter has a single 3.5mm male connector and two 3.5mm female connectors.

3. Using the supplied USB cable, connect the Juno Tower to your computer.
4. Set the auxiliary output volume dial between 4 and 6.
5. Install the FrontRow Desktop or Teacher Edition software which includes the **Juno lecture capture system**. Download from [gofrontrow.com/guides-resources](http://gofrontrow.com/guides-resources).
6. Follow the easy on-screen configuration instructions.
7. Using the ITM-02 Pendant Microphone, and the voice commands on page 19, begin, suspend, and finish your recording. The **Juno lecture capture system** automatically names and saves your recordings (screen and audio) to your computer's hard drive. Follow the software's guidance to help you upload it to Google Apps for Education or another host of your choice.

**NOTE:** Test the audio quality of your recording. If the volume is too low or too high, check your computer's microphone or line input volume settings and adjust.

8. Share the location of your uploaded files with your students according to the host's instructions.
9. Students can benefit from the recordings anytime, anywhere – files are not only accessible by students using any computer but are also accessible on most portable devices including iPad™, iPhone™, iPod Touch™, and Kindle Fire™.

**NOTE:** To learn more about the FrontRow **Juno lecture capture system**, visit [gofrontrow.com/guides-resources](http://gofrontrow.com/guides-resources).

**NOTE:** The use of high quality audio cables is recommended to avoid the introduction of interference to the system.

**NOTE:** If you are also using Juno to rebroadcast via a personal FM transmitter, you will need a splitter cable. See page 27 for details.

\*These applications are not supplied or supported by FrontRow.

# Collaborative Learning using Class2Class



Class collaboration expands the reach of your lesson and introduces your class to new and exciting experiences. The Juno system ensures everyone can hear equally and participate in the learning forum.

Numerous online resources such as **education.skype.com** provide opportunities for your classroom to participate in live educational events and projects with other classes and programs such as Skype™, Adobe® Connect™ and others\* provide the medium to see and hear your collaborative classroom partners. Use the Juno Tower to ensure all students are able to effectively participate in the learning session by easily hearing the conversation as well as sharing their thoughts during the session using the optional Pass-Around Microphones. For example, FrontRow classrooms have used this technique to simultaneously connect 14 different classrooms to a live talk with an Olympic athlete, and let students communicate with a NASA Command Center during an emergency simulation.

## In both classrooms:

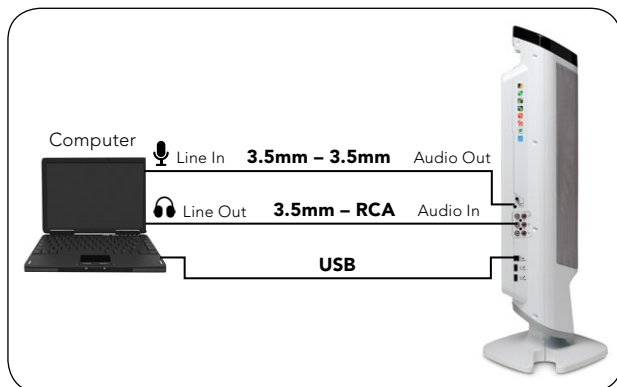
1. Using a 3.5mm to 3.5mm cable, plug the Audio Out from the Tower to the "microphone" or "line in" on your computer. *See image below*
2. Using a 3.5mm to RCA cable, plug the "audio" or "headset" out on your computer to one of the audio in connections on the Tower. *See image below*

**NOTE:** Some computers have a single audio combination jack for both microphone and headset use. If your computer has this type of jack, you must use a headphone/microphone combo jack splitter. This adapter has a single 3.5mm male connector and two 3.5mm female connectors.

3. Using the supplied USB cable, connect the Juno Tower to your computer.
4. Using the optional FrontRow Desktop or Teacher Edition software (download from **gofrontrow.com/guides-resources**), enable the Class2Class option.
5. Install and run the communication software application (e.g., Skype™, Adobe® Connect™)
6. Connect to other classroom or collaborator using the communication software.
7. Speak into the Juno microphones; all microphone audio will be transmitted between classrooms and audible via the Tower speakers.
8. If you like, you may start a recording of the session. Note that media audio originating from the computer and audio from the remote classroom will not be recorded.
9. When finished, disable the Class2Class option to ensure that computer audio is recorded during normal recording sessions.

**NOTE:** To learn more about FrontRow software, visit **gofrontrow.com/guides-resources**.

**NOTE:** The use of high quality audio cables is recommended to avoid the introduction of interference to the system.



\*These applications are not supplied or supported by FrontRow.

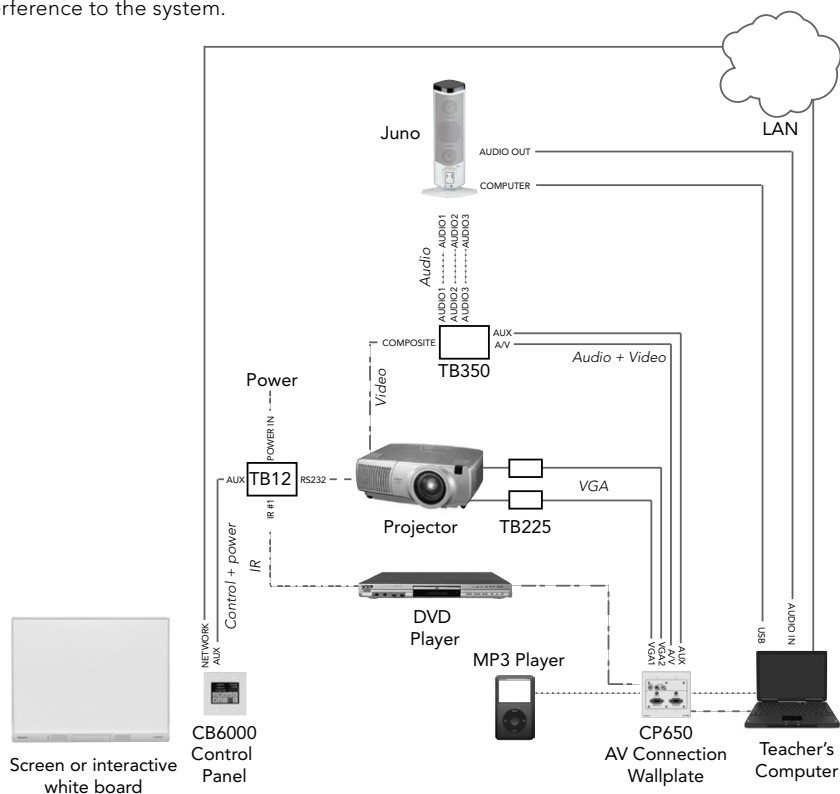
## Connecting to other Classroom Media

Your FrontRow Juno System can connect to other media to enhance the overall audio experience in your classroom. Ideally, these connections were made during installation; however, they can easily be made after the unit is installed using standard audio cords from your local electronics store.

### Example 1

Many classrooms use a FrontRow EZRoom™ AV control system to manage projectors and other equipment online. If your classroom uses EZRoom™, you'll connect your computer audio and video into your AV wallplate and connect your Tower to the TB350 adapter via a 3.5mm cable.

**NOTE:** The use of high quality audio cables is recommended to avoid the introduction of interference to the system.



NOTE: This is a schematic illustration intended to clarify the relationship of components to each other. The location of jacks shown here may not reflect their true position on specific devices.

- Cat 5 cable  
Serial cable  
Audio cable  
RCA cable  
Speaker cable  
Sensor cable  
Other cable



## Example 2

If your classroom does not have an EZRoom AV Control System, you can connect your computer directly to your Juno Tower. This can be done by connecting your computer's headphone jack to one of the three stereo RCA inputs.

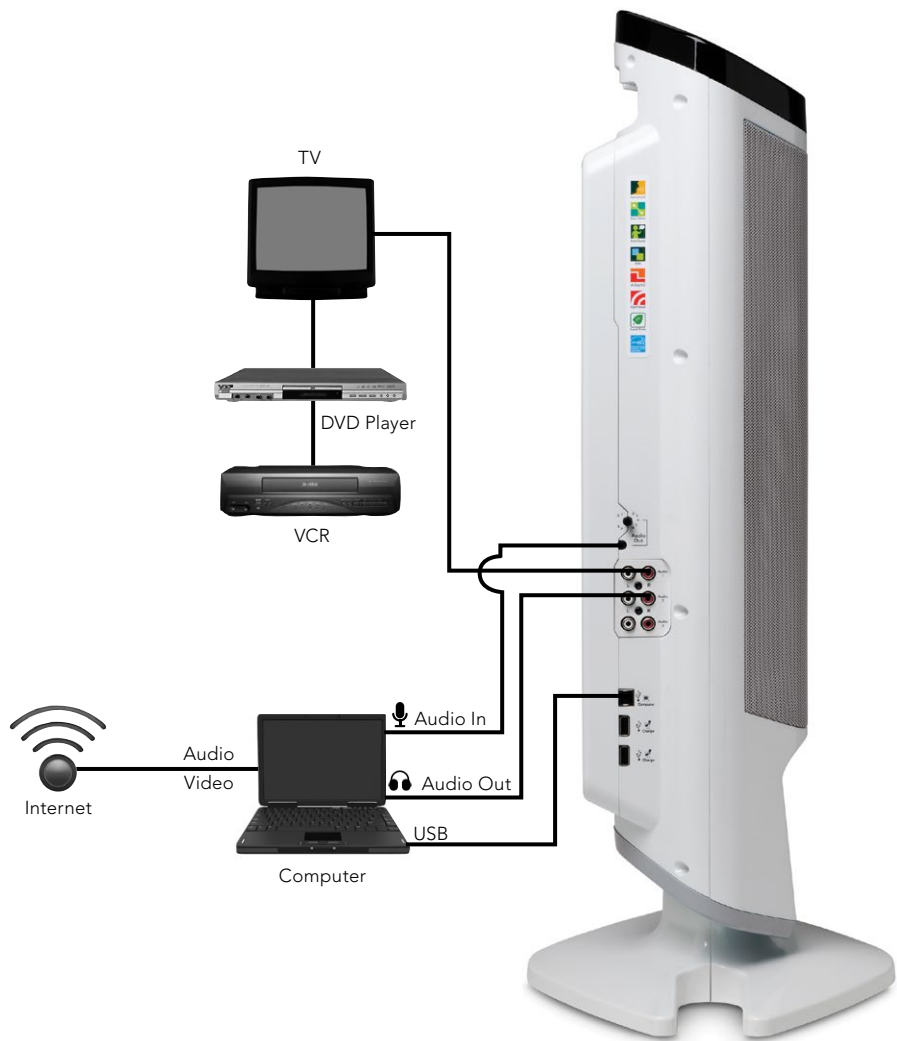
**NOTE:** The use of high quality audio cables is recommended to avoid the introduction of interference to the system.



**Example 3**

Some classrooms use the TV/DVD/VCR as stand-alone media. For these classrooms, you may need to use two auxiliary audio input connections to the Juno Tower.

**NOTE:** The use of high quality audio cables is recommended to avoid the introduction of interference to the system.



#### Example 4

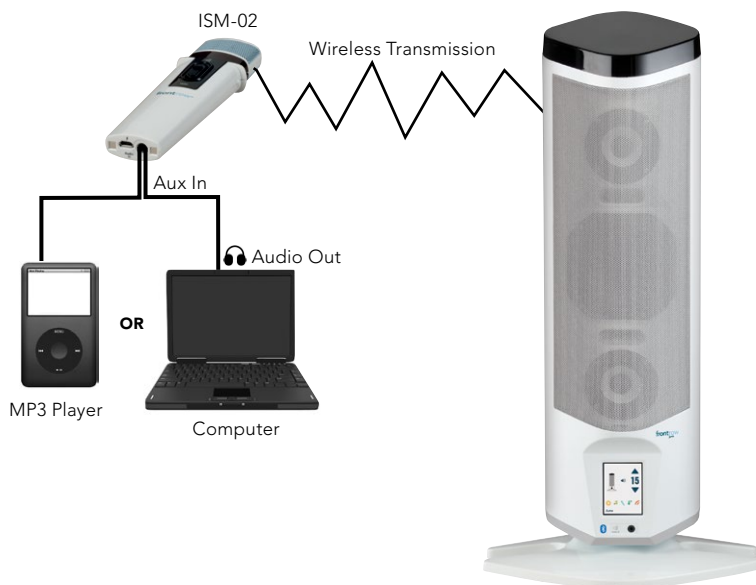
To amplify audio from portable electronics, it may be most convenient to connect these as needed through the quick connect jack on the front of the Juno Tower. Turn the volume on the MP3 player at least 75% of the way up for best sound quality.

**NOTE:** The use of high quality audio cables is recommended to avoid the introduction of interference to the system.



### Example 5

Connect either the ITM-02 Pendant or ISM-02 Pass-Around Microphone to any audio source that's too far from the Juno Tower to conveniently connect directly.



The ITM-02 Pendant or the ISM-02 Pass-Around Microphones can be used to transmit audio from a secondary audio source (MP3 player, computer, portable radio/CD/tape player) to the receiver.

1. Plug one end of the audio adapter cord (included) in the Audio Out/headphone jack of the secondary audio source. Plug the other end of the adapter cord to the Audio In jack on the Microphone.
2. On the Juno Tower LCD, check the "Music Audio in" box on the Microphone's Volume Setting screen. (See page 13)
3. Turn on the secondary audio source.
4. Turn the volume on the secondary audio source at least 75% of the way up and adjust the microphone volume using the Juno Tower LCD to obtain the optimal volume. (See page 13)

**NOTE:** The use of high quality audio cables is recommended to avoid the introduction of interference to the system.

# Playing Audio over Bluetooth

Juno is equipped with the Bluetooth Audio Receiver, which allows you to stream audio wirelessly to Juno from phones, tablets, and computers. This allows teachers to be “untethered” from the audio system and move about the room.

To play audio over Bluetooth, you will first need to pair the device you want to stream from. (You only need to pair a device once.) After it is paired, the device can stream audio whenever “connected” to Juno. On the device settings you can connect and disconnect from Juno.

## Pairing your Bluetooth® device with Juno\*

### Pairing setup

1. Press the Bluetooth button on the back of the Juno Tower to activate pairing mode.  
*See Image 1*
2. Juno will play a tone and the button will flash blue.
3. Go to the Bluetooth settings on your computer, phone, or tablet and look for FrontRow Juno xxxx (a 4-digit number), then pair with the device. *See Image 2*

### Once device is paired:

1. When connected, the Juno will play a chime tone and the Bluetooth button will be solid blue. *See Image 3*
2. Your device is now ready to stream music and more!

### NOTE:

- You only need to pair each device once.
- You can connect up to two devices at once, but only one can stream at a time.
- You can disconnect and re-connect to Juno at any time using your device settings or quick access menus (varies by device).
- If you go out of range, you will need to re-connect when you return.

Image 1

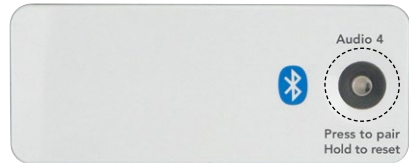


Image 2

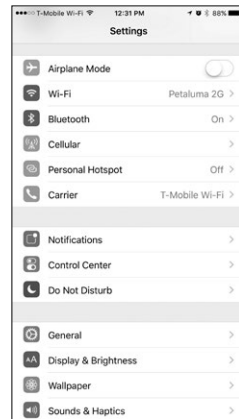
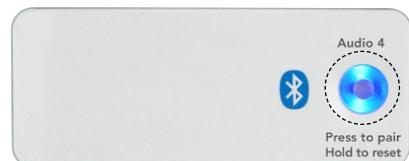


Image 3



Bluetooth Button functions

<b>Short press</b>	Puts Juno in pairing mode so that you can pair your devices. The LED will flash when in pairing mode. Juno will remain in pairing mode for 60 seconds.
<b>Press and hold for 3 seconds</b>	“Reboots” the Bluetooth module. Use this if you are having trouble connecting to Juno.
<b>While in pairing mode (LED is flashing): Double-press</b>	Exits pairing mode.
<b>While in pairing mode (LED is flashing): Hold for 3 seconds</b>	Clears the list of paired devices and reboots the Bluetooth module. Use this as a last resort for troubleshooting, or if unauthorized users have paired with Juno. You will need to pair all of your devices again.

Bluetooth settings

All devices have a Bluetooth settings screen where you can:

- Pair devices
- Connect and disconnect
- Forget devices (the opposite of pairing)

There may also be alternate, easier ways of connecting and disconnecting without going to the settings.

**NOTE:** Your device experience may differ, depending on the model and version of the operating system.

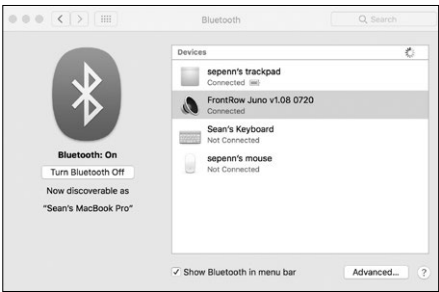
Bluetooth on Mac

To pair or forget devices:

Go to **System Preferences**, then to the **Bluetooth settings**.



Once paired, you can right click (or control click) to connect or disconnect from Juno.



You can also use the menu bar Bluetooth icon to easily connect or disconnect from Juno.

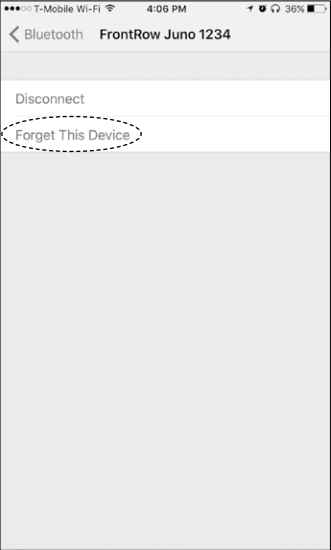
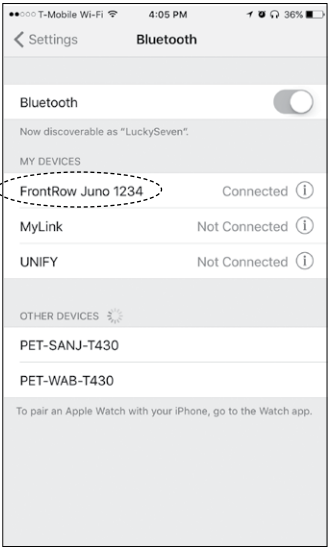


**Bluetooth on iOS (iPhone and iPad):**

To pair or forget devices:

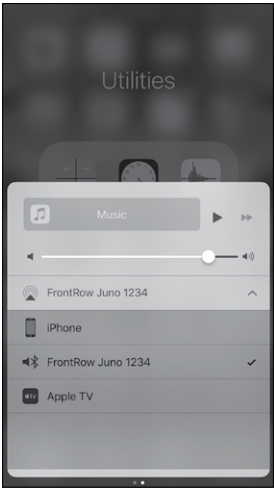
Go to the **Settings app** and select **Bluetooth**. Once paired, you can also connect or disconnect by tapping the device.

You can forget the device by tapping the **Info** icon then selecting **Forget This Device**.



To connect and disconnect:

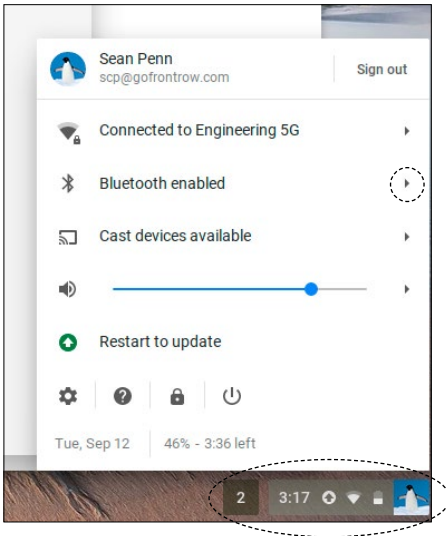
You can also easily connect and disconnect while in range by swiping up to get to the dashboard, then swiping right to access the music dashboard.



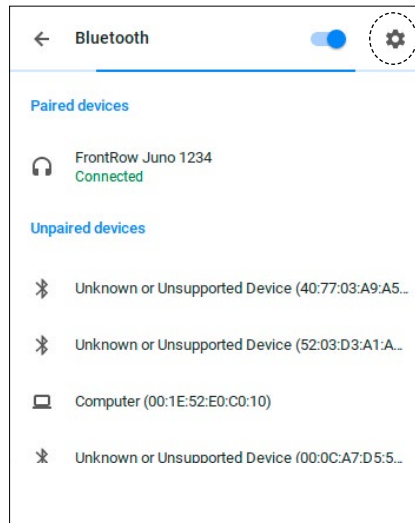
## Bluetooth on Chromebook:

To pair or forget devices:

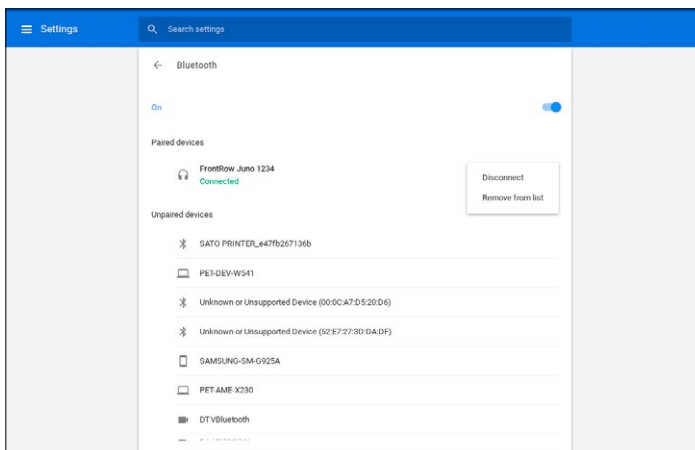
Click on the status icons in the lower right, then make sure Bluetooth is enabled.



Click on the settings icon to access the Bluetooth settings.



You can pair, forget, connect, and disconnect devices in the settings window.

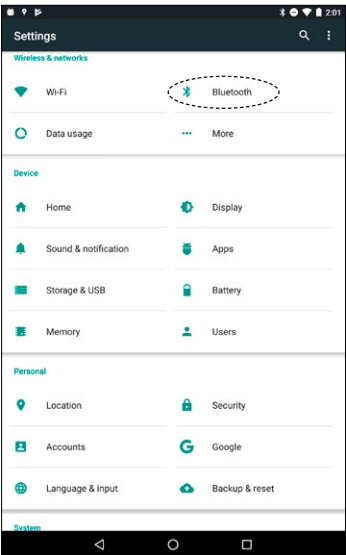




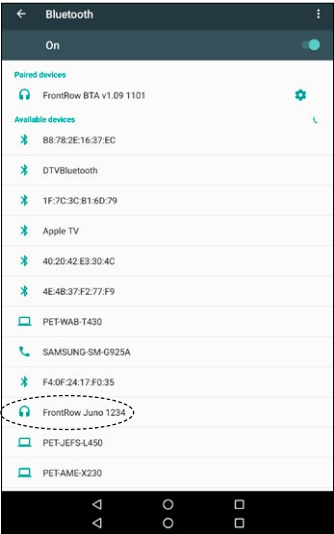
**Bluetooth on Android:**

To pair or forget devices:

Go to the **Settings** app and select **Bluetooth**.

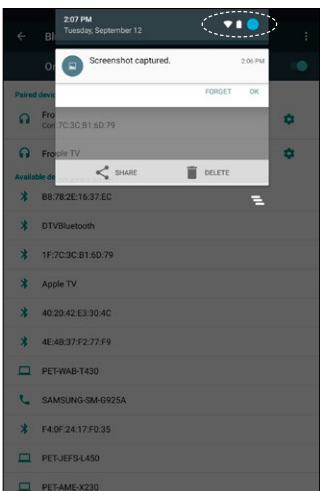


You can pair or forget the device by tapping the **FrontRow Juno** device from the list of Bluetooth devices.

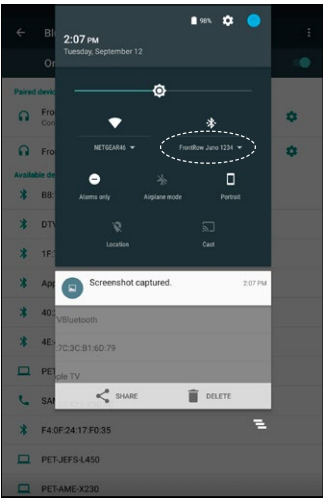


To connect and disconnect:

You can connect and disconnect by swiping down from the top, then tapping on the status icons.



In the dashboard, tap the Juno to go to the next window where you can connect and disconnect.



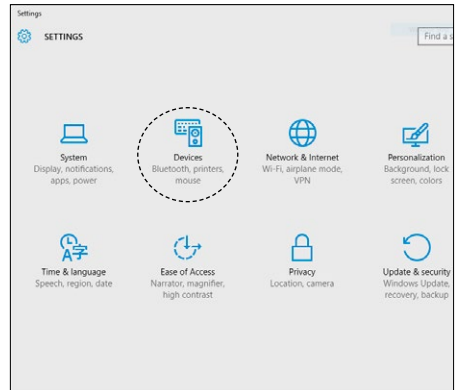
## Bluetooth on Windows 10:

To pair or forget devices:

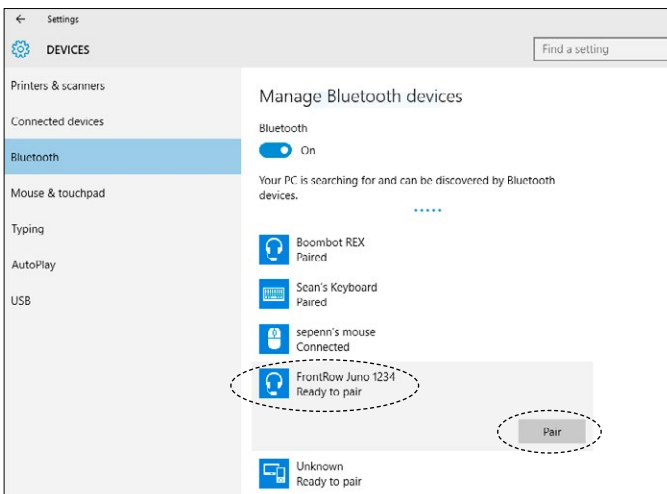
Go to the **Settings** app.



Select **Devices**.

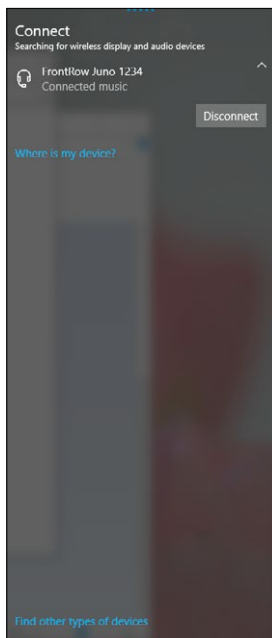
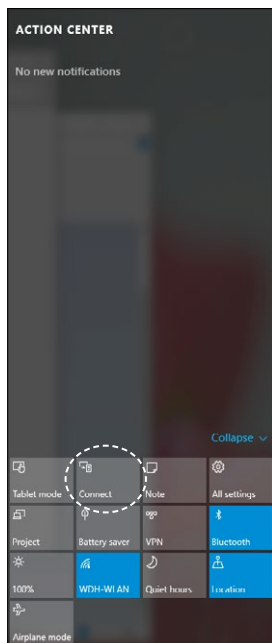


In the Bluetooth window you can pair, remove, connect and disconnect from devices.  
You may need to right click to see options.



To connect and disconnect:

You can connect and disconnect by going to the action center, then selecting Connect, and selecting the Juno.

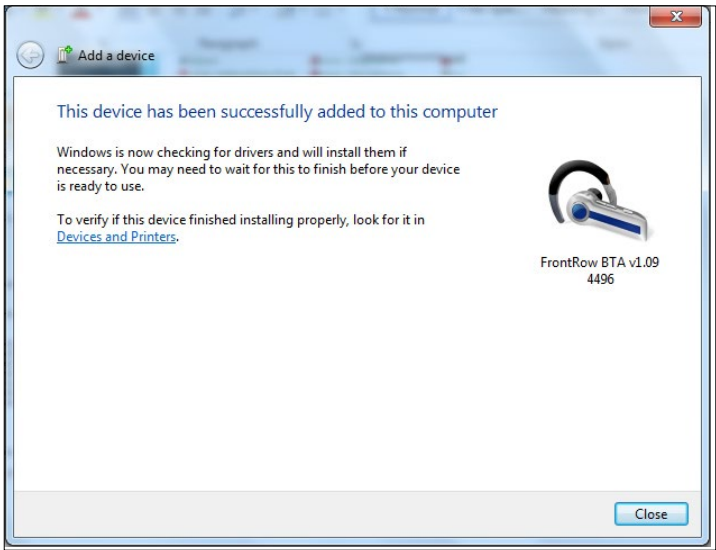
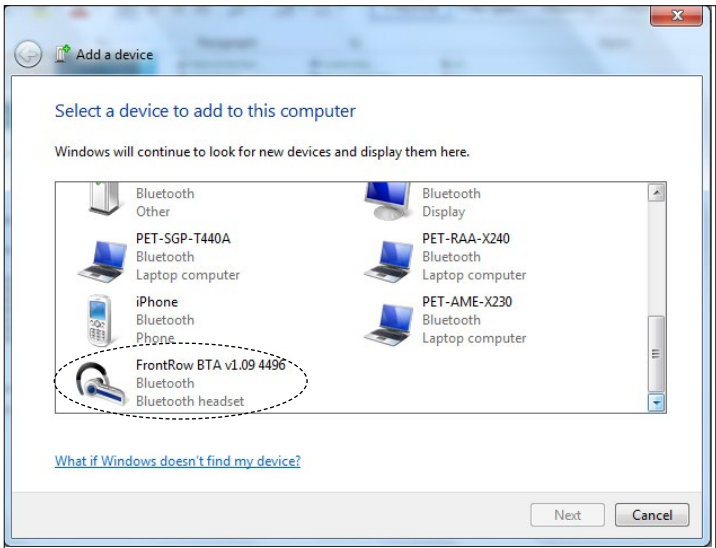


## Bluetooth Specifications

Standard: Bluetooth 4.1  
Frequency Range: 2402-2480 MHz  
Maximum RF Power: +4dBm



In the **Add a device** screen, select the FrontRow Juno



# Troubleshooting

If, for some reason, you cannot get your device to connect to Juno even though you had previously been able to stream audio, it is easy to “re-pair” the device to Juno. Simply go to your device settings and select the Juno, then “Forget” the device (may be a right-click, or another button to access this ability). You may then follow the quick steps above for pairing a device.

To clear all paired devices from Juno, press the Bluetooth button once to enter pairing mode (blue LED will flash), then press again and hold until you hear the reset tone. Note that you will need to go to each device and “forget” the Juno, then pair it again.

## FAQs

### **Q: Can I use the speaker expansion module and Bluetooth at the same time?**

A: No, the Bluetooth module uses the same slot as speaker expansion, so you can only use one or the other.

### **Q: Do I still need cables to use Lesson Capture?**

A: Yes, you still need at least the USB cable (for tower settings, and voice command start and stop of recording) and the audio out from the Juno to the computer.

### **Q: What is the multipoint feature of the Juno Bluetooth Audio Receiver?**

A: Multipoint is a feature of Bluetooth where two devices can be connected at once, making it easy for the teacher to switch between, say, a phone and the computer without disconnecting each device when she wants to play audio from the other (Only one device can stream at a time, however.)

### **Q: When I play video and audio at the same time from my computer, the audio seems a little out of sync with the video. Why?**

A: The latency of the Bluetooth signal depends on many factors, including the codecs used by the Bluetooth transmitter and receiver, the distance between them, other wireless interference, etc. Juno supports the FastStream codec, which is a low latency codec for maintaining good audio-video sync.

However, if the transmitting device does not support this codec the audio may look out of sync. Test your environment for acceptability. You can also try a transmitter that supports the FastStream codec, such as the Avantree Prima III (available on Amazon).

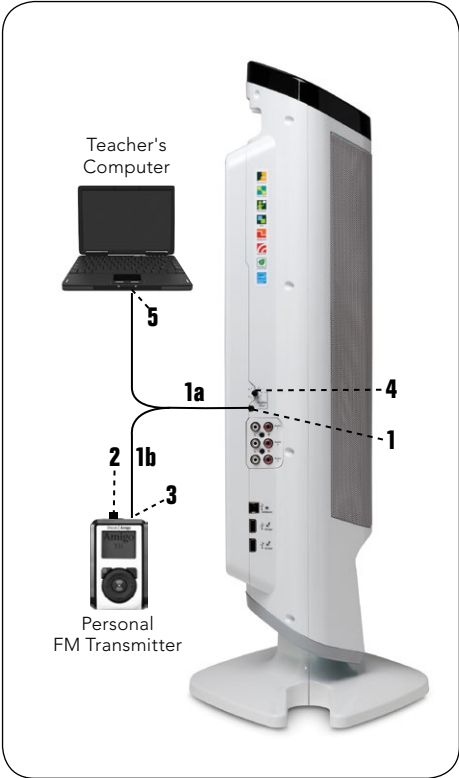
### **Q: As a teacher, I allowed a student to pair to the Juno but I don't want them to play audio whenever they want. How can I control this?**

A: Once a student pairs with the Juno and their device they can connect to Juno anytime as long as there are not already two devices connected. To break the pair, you must either “Forget the device” in the student’s device Bluetooth settings, or, as a brute force method, you can clear the pairing list on the Juno. Keep in mind that clearing the pairing list means that you will need to pair all your devices again. To clear the pairing list, press the Juno Bluetooth button once to put it in pairing mode (blue LED flashing), then press again and hold to reset while in pairing mode.

# How to Connect a Personal FM System to a Classroom Audio System

1. Connect an audio cable to the classroom audio receiver output jack. If recording, first connect a splitter cable (1a), then attach the audio cable (1b).
2. Turn on the student's PFM transmitter. See **Tips** below.
3. Connect the audio cable to the transmitter audio in jack (or, if using Amigo T30, the mic jack). Straighten the microphone cord (or optional antenna) for Personal FM Transmitters other than Amigo T30/T31. See **Tips** below.
4. Set audio output volume on classroom receiver as recommended in **Tips** below, or as desired by student.
5. If recording, connect a second audio cable from the splitter to the audio in (microphone) jack of a computer. Follow recording software instructions.

**NOTE:** The use of high quality audio cables is recommended to avoid the introduction of interference to the system.



## Tips for Specific PFM Transmitters and Classroom Amplification Receivers:

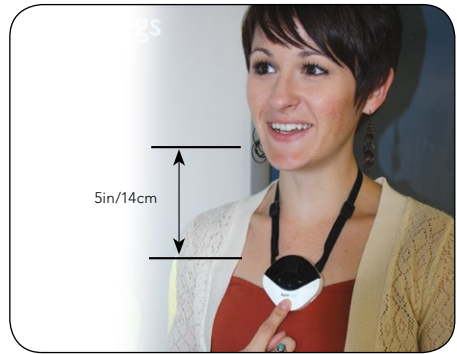
	Oticon Amigo T5	Oticon Amigo T10	Oticon Amigo T30	Phonak Campus S/SX	Phonak Inspiro	Phonak EasyLink (SmartLink+, ZoomLink+, EasyLink+):
On PFM transmitter, connect cable to...	Audio In (3.5mm)	Audio In (3.5mm)	Mic In (2.5mm)	Audio In (3.5mm)	Audio In (3.5mm)	Audio In (3.5mm)
Notes	<ul style="list-style-type: none"><li>• Mute the transmitter</li></ul>	<ul style="list-style-type: none"><li>• Turn the transmitter OFF (don't worry; it will detect the audio signal and transmit)</li></ul>	<ul style="list-style-type: none"><li>• Skip Step 3 – patch cord acts as antenna</li><li>• Note that the Mic in jack is 2.5mm – an adapter may be needed or use 2.5mm to 3.5mm patch cord</li></ul>	<ul style="list-style-type: none"><li>• Turn capsule on MM8 label mic to 'X' to mute the mic</li></ul>	<ul style="list-style-type: none"><li>• Phonak disables "Dynamic FM" when connected to classroom amplification</li><li>• Audio Input setting must be set to "iPod Nano" from "General"</li><li>• Settings &gt; Audio input &gt; iPod nano</li><li>• Mute the transmitter</li></ul>	<ul style="list-style-type: none"><li>• Link+ transmitters require a separate adapter to connect the audio cord (see User Manual)</li><li>• Turn the transmitter on first, then connect for best results</li><li>• Mute the transmitter</li></ul>
<b>Suggested Classroom Audio Output Settings (adjust as needed for student preference)</b>						
FrontRow Juno	8	8	1 / 2.5*	8	7 / 8*	8

\*A higher output setting may be needed if using a splitter cable for recording.

# ITM-02 Pendant Microphone

## Using

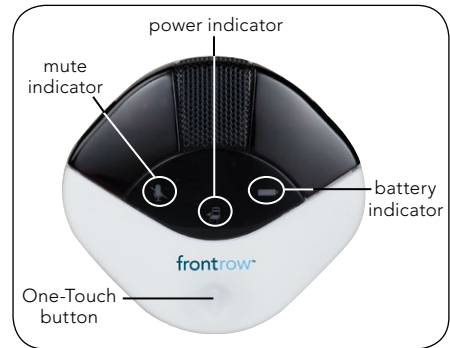
1. Place microphone around neck and connect clasp.
2. Adjust neck straps to position microphone approximately 5in (14cm) from mouth.



3. Press One-Touch button to wake microphone. Power indicator should be green.

**NOTE:** Your microphone will go into standby mode (off) automatically after 10 minutes in mute mode or 10 minutes of silence. Press One-Touch button to wake.

4. Momentarily press One-Touch button to mute as needed for private conversations. Mute indicator light will turn red.
5. Press and hold One-Touch button to issue a voice command. For detailed instructions on using Voice Command see page 19.
6. When the battery in your microphone gets low, the battery indicator will flash red.
7. At the end of the day, charge your microphone. (See page 34)





# Battery

## Installing the battery

1. Unscrew battery door on the back of the microphone using the supplied Phillips screwdriver. *See Image 1*
2. Locate the charge contacts on the battery and on the microphone. *See Image 2*
3. Insert battery into compartment - battery contacts first, then push the battery into place. *See Image 3*
4. Replace battery door.
5. For best performance, charge battery overnight before initial use.

**NOTE:** When the battery is removed, it will take 2-3 charge/discharge cycles for the battery to report accurate status to the FrontRow Desktop or Teacher Edition application.

## Battery Safety

Warning: To reduce risk of fire or burns:

- Do not use batteries that have been dropped or otherwise damaged.
- Do not attempt to open, disassemble or service the battery pack.
- Do not crush, puncture or short external contacts or dispose of in fire or water.
- Do not use battery if exposed to moisture. When exposed to moisture, red checked pattern of moisture indicator will disappear. *See Image 2*
- Do not expose to temperatures above 40°C (104°F)
- Replace only with the battery pack designed for this product.
- Batteries shall not be exposed to excessive heat such as sunshine, fire or the like, or excessive cold.

Image 1



Image 2

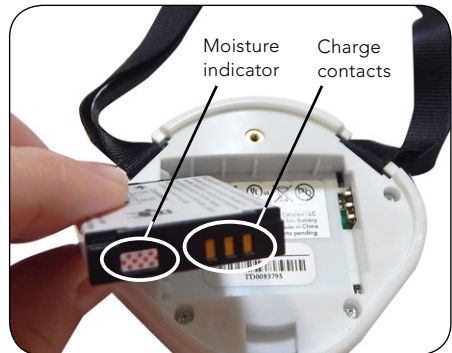


Image 3



## Charging

Charge your battery in one of four ways:

- IMC-01 universal microphone charger (optional). *See Image 1*
- USB cable connected to one of your Juno Tower's charge ports. *See Image 2*
- USB cable connected to your computer's USB port\*. *See Image 3*
- USB cable connected to a USB to AC power adapter. *See Image 4*

**\*NOTE - When charging from a computer USB port:**

If using a laptop on battery power and the battery is low, the ITM-02 microphone will not charge. We recommend that you always have your laptop plugged in to a power source when attempting to charge or program your microphone.

The ITM-02 microphone will not charge from a low-power USB port. If you are having trouble charging from a USB port on a computer that is plugged in to a power source, try using a different USB port on your computer.

The ITM-02 microphone will not charge unless you have first installed the software drivers as part of the FrontRow Desktop, Teacher Edition or Microphone Settings software application. To download the application, visit **gofrontrow.com/guide-resources**.

**IMPORTANT!** To maintain proper charging when using the IMC-01 universal microphone charger, occasionally clean the charge contacts on the bottom of the microphone using a cotton swab dipped in rubbing alcohol.

**IMPORTANT!** To ensure top performance and avoid equipment damage, batteries should be charged at room temperature.

**IMPORTANT!** To ensure top performance, FrontRow recommends replacing rechargeable batteries every three years.

**IMPORTANT!** Store the battery properly if it will be unused for a period of more than 2 weeks.

1. Charge the battery in the microphone for at least 2 hours.
2. Remove battery from microphone, place it in its own bag or envelope and store in a cool dry place.
3. Recharge battery before next use.

Image 1



Image 2



Image 3

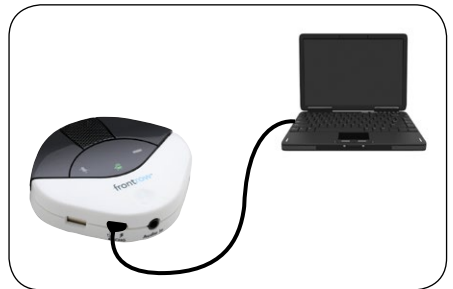


Image 4



# ISM-02 Pass-Around Microphone

## Using

1. Turn microphone on by sliding the Power Switch up. *See Image 1*

2. Note Power Indicator (chair icon).

*See Image 1*

**Green** = On and transmitting

**Off** = Power is off

**NOTE:** In order to conserve battery life, if power switch is left on, your microphone will automatically go into Standby Mode (off) after 10 minutes of silence. Move switch to off position, then back on to reset.

3. Keep top of microphone approximately 3 - 4in. (7.5 - 10cm) from mouth when using as a hand-held microphone. *See Image 2*

4. Do not block emitter diodes. *See Image 1*

5. To allow hands-free use (for example, when reading aloud and turning pages), attach the lavalier clip and neck strap. Adjust neck strap to position microphone approximately 4 - 5in (10 - 13cm) from mouth. *See Image 3*

6. When needed, you can simply push and hold the Power Switch while talking rather than sliding it into the "on" position. This makes transitions when passing the microphone between students easier (e.g., no need to take time from the conversation to turn the mic on and off during transition). For best results, when using the push-to-talk function, be sure to press on the lower section of the switch. *See Image 1*

7. When the battery in your microphone gets low (approximately 1/2 hour of use time left) the battery indicator will flash red. *See Image 1*

8. Turn off microphone and charge at the end of the day. (See page 38)

**NOTE:** The ISM-02 is factory set on Channel

B. Each microphone must be on a separate channel. *See Programming and Switching the Microphone Channels on page 44.*

Image 1

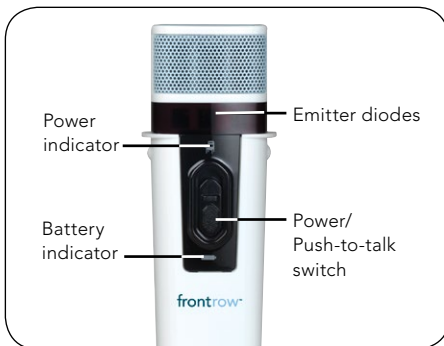


Image 2

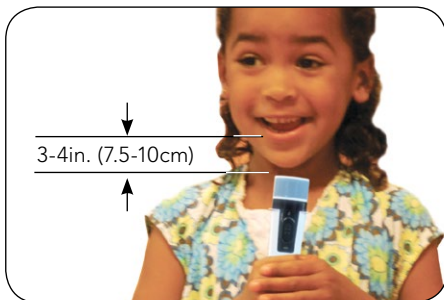
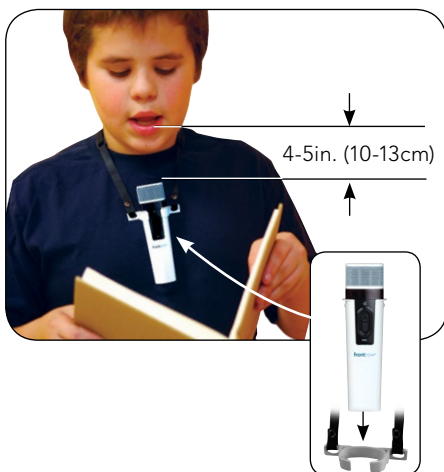


Image 3



## Labeling

Your Pass-Around Microphone includes a location for adding a name or room number for easy identification.

1. Place the microphone on a stable surface with the battery door facing up.
2. Remove the battery door using the supplied Phillips screwdriver.
3. Slide the clear window out of the battery door.
4. Write the name of the microphone on a blank label that came with your microphone.
5. Place the name in the battery door.
6. Slide the clear window back into the battery door.
7. Replace the battery door and tighten the screw.



# Battery

## Installing the battery

1. Unscrew battery door on the back of the microphone using the supplied Phillips head screwdriver. *See Image 1*
2. Locate the charge contacts on the battery and on the microphone. *See Image 2*
3. Insert battery into compartment - battery contacts first, then push the battery into place. *See Image 3*
4. Replace battery door.
5. For best performance, charge battery overnight before initial use.

**NOTE:** When the battery is removed, it will take 2-3 charge/discharge cycles for the battery to report accurate status to the FrontRow Desktop or Teacher Edition application.

## Battery Safety

**WARNING:** To reduce risk of fire or burns:

- Do not use batteries that have been dropped or otherwise damaged.
- Do not attempt to open, disassemble or service the battery pack.
- Do not crush, puncture or short external contacts or dispose of in fire or water.
- Do not use battery if exposed to moisture. When exposed to moisture, red checked pattern of moisture indicator will disappear. *See Image 2*
- Do not expose to temperatures above 40°C (104°F).
- Replace only with the battery pack designed for this product.
- Batteries shall not be exposed to excessive heat such as sunshine, fire or the like, or to excessive cold.

Image 1



Image 2

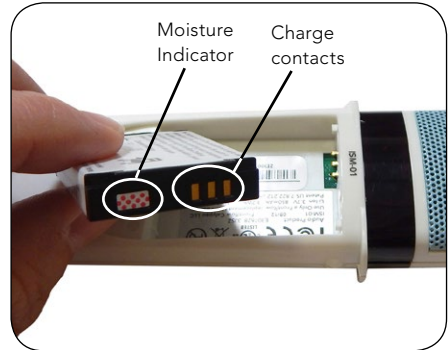


Image 3



## Charging

Charge your microphone in one of four ways:

- IMC-01 universal microphone charger (optional). *See Image 1*
- USB cable connected to one of your Juno Tower's charge ports. *See Image 2*
- USB cable connected to your computer's USB port\*. *See Image 3*
- USB cable connected to a USB to AC power adapter. *See Image 4*

**\*NOTE - When charging from a computer USB port:**

If using a laptop on battery power and the battery is low, the ISM-02 microphone will not charge.

We recommend that you always have your laptop plugged in to a power source when attempting to charge or program your microphone.

The ISM-02 microphone will not charge from a low-power USB port. If you are having trouble charging from a USB port on a computer that is plugged in to a power source, try using a different USB port on your computer.

The ISM-02 microphone will not charge unless you have first installed the software drivers as part of the FrontRow Desktop, Teacher Edition or Microphone Settings software application.

To download the application, visit **gofrontrow.com/guides-resources**.

**IMPORTANT!** To maintain proper charging when using the IMC-01 universal microphone charger, occasionally clean the charge contacts on the bottom of the microphone using a cotton swab dipped in rubbing alcohol.

**IMPORTANT!** To ensure top performance and avoid equipment damage, batteries should be charged at room temperature.

**IMPORTANT!** To ensure top performance, FrontRow recommends replacing rechargeable batteries every three years.

**IMPORTANT!** Store the battery properly if it will be unused for a period of more than 2 weeks.

1. Charge the battery in the microphone for at least 2 hours.
2. Remove battery from microphone, place it in its own bag or envelope and store in a cool dry place.
3. Recharge battery before next use.

Image 1



Image 2

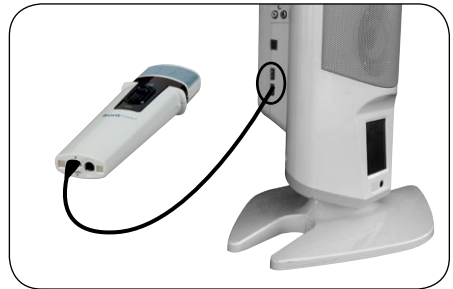


Image 3

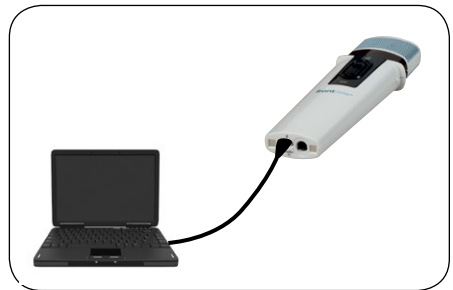


Image 4



# Microphone Configuration

Your microphones can be configured using the FrontRow Microphone Settings application\*.

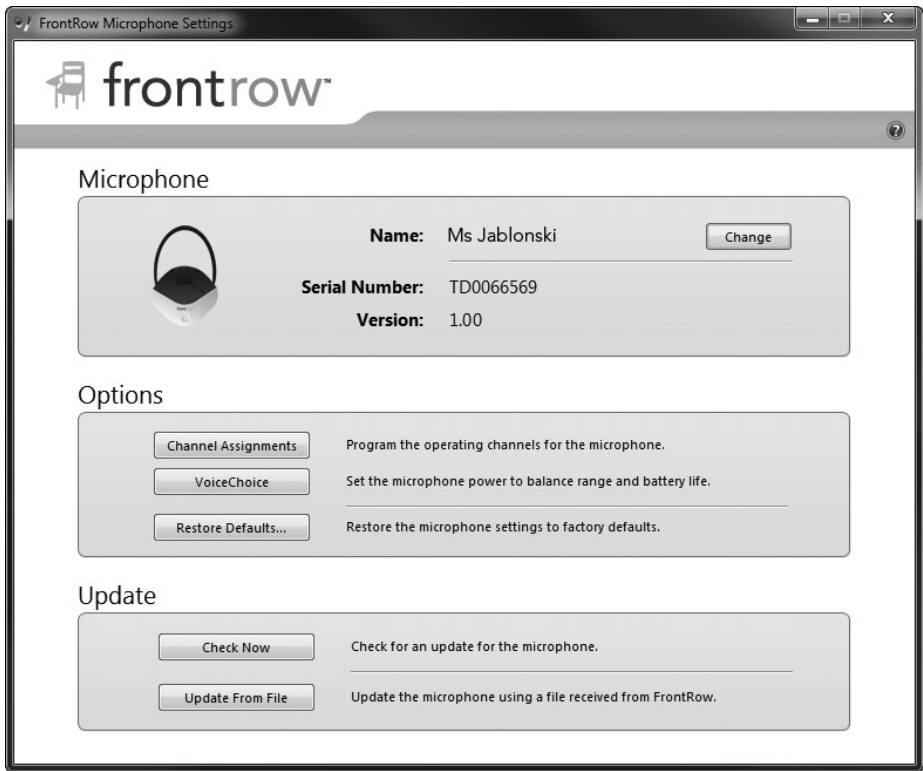
**Microphone name** – You can name your microphone for display on the Juno Tower LCD screen, making it easier to identify when changing volume.

**Channel assignment** – Assign the operating channels for your microphone.

**VoiceChoice** – Set the balance of microphone range and battery life that's right for you. Increase range when you need it for use in large or odd shaped rooms. Increase battery life when you need more talk time from your microphone.

**Restore defaults** – Restore the microphone settings to factory defaults.

**Firmware updates** – From time to time, FrontRow may make improvements or enhancements to your microphone's firmware. Use this function to periodically check for updates.



\* The Microphone Settings application is available at [gofrontrow.com/guides-resources](http://gofrontrow.com/guides-resources).

# Using Multiple Microphones

Your Juno system is designed to receive up to 5 microphone signals at once\*. Any combination of Pass-Around and Pendant Microphones is possible. For example, use two Pendant Microphones (one for a teacher and one for a teacher’s aide) and three Pass-Around Microphones for students, or one Pendant Microphone for a teacher and four Pass-Around Microphones for students.

**Microphones must be on different channels or interference will occur. You can quickly program them to properly operate on different channels.**

**NOTE:** If you are using the ITM-02 Pendant Microphone with just one ISM-02 Pass-Around Microphone, you probably don't need to program or set anything. The ITM-02 Pendant Microphone is factory set to transmit on Juno channel A and the ISM-02 Pass-Around Microphone is factory set to transmit on Juno channel B.

If you have the Channel Expansion Module installed in your Juno Tower and are using multiple microphones, you must assign channels using the Microphone Settings software and set mic switch positions so that each ITM-02 Pendant and ISM-02 Pass-Around Microphone transmits on a unique channel. Use the Recommended Channel Setting guide below to program channels and choose switch positions for your microphones.

## Programming and switching the microphone channels

- 1. Use a USB cable to connect the microphone to a computer with the FrontRow Microphone Settings software application\*\* installed.
- 2. Open the Microphone Settings software application.
- 3. Click the Microphone Settings button.
- 4. Click the Channel Assignments button.
- 5. Using the dropdown choices on the right, assign the desired channels to the switch positions (see guide below) and click OK.



Recommended Channel Setting									
Microphone 1		Microphone 2		Microphone 3		Microphone 4		Microphone 5	
Switch Position 1	Switch Position 2	Switch Position 1	Switch Position 2	Switch Position 1	Switch Position 2	Switch Position 1	Switch Position 2	Switch Position 1	Switch Position 2
A	B	A	B	C	D	C	D	E	C

\*The Juno Tower comes standard with 2 channels. Add 3 additional channels with the optional Channel Expansion Module.

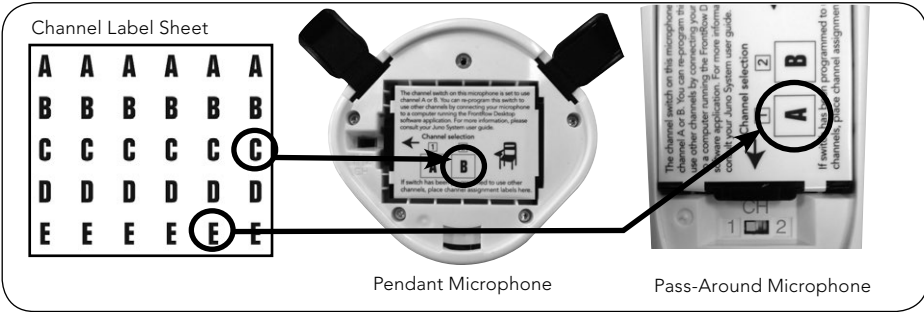
\*\*The Microphone Settings application is available at [gofrontrow.com/guides-resources](http://gofrontrow.com/guides-resources).



6. Unscrew battery door using the supplied Phillips screwdriver.



7. Using the channel indicator labels included with your microphones, label the switch positions you've just reprogrammed.



8. Move the selection switch to the channel you want to use – ideally, the one indicated in the shaded column in the table on page 44.

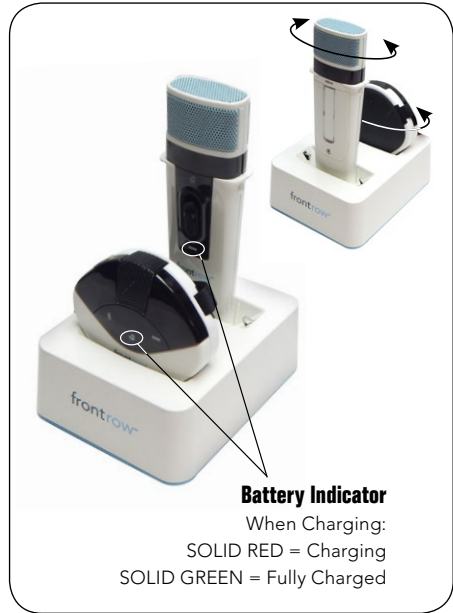


9. Close and screw down battery door.

# IMC-01 Microphone Charger

## Charger setup

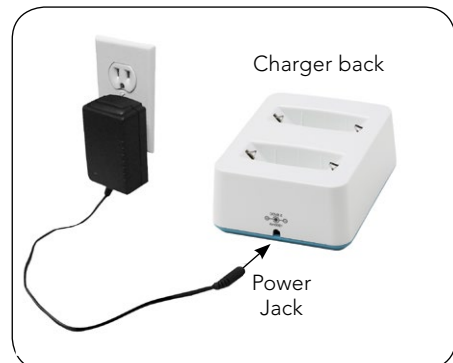
1. Insert microphones in either of the two charge pockets.



2. Find the power plug that is appropriate for the power outlet style in your country.



3. Slide power plug onto the power supply.
4. Plug the power supply into the power outlet and into the back of the charging base.



# Troubleshooting

## Microphone will not charge from the USB jack on my computer

- Verify that you have the Juno microphone drivers installed. To install the drivers, you will need to install the FrontRow Microphone Settings application, the FrontRow Desktop or Teacher Edition application. You may need to reconnect your microphone after installation.
- If using a laptop computer, verify that it is plugged into a power outlet.
- If using a computer (desktop or laptop) that is plugged into a power outlet, you may be using a low power USB jack. Try other USB jacks on the computer.

## Microphone is not recognized by my computer

- Verify that you have the Juno microphone drivers installed. To install the drivers, you will need to install the FrontRow Microphone Settings application, the FrontRow Desktop or Teacher Edition application\*. You may need to reconnect your microphone after installation.

## Microphone is connected to a Tower charge jack but it will not charge

- Disconnect and reconnect the microphone to the Tower.
- If the Tower is connected to a computer via a USB cable, disconnect the Tower from the computer.

## All the lights are flashing on my Pendant or Pass-Around Microphone

- If all lights are flashing after attempting a firmware update, open the Microphone Settings application and connect the microphone to the computer with the USB cable. After a short time, a message will be displayed that the microphone needs to be updated. If this message is not displayed, disconnect the USB cable and

remove the battery (see page 37).

After about 15 seconds, replace the battery and battery door and then reconnect the USB cable to the computer and microphone. The following message should now be displayed: **Click Start Update to proceed**. The microphone will have the original version of the firmware installed. After this completes, click **Check Now** to update the microphone to the current version of the firmware.

## The Battery Indicator on the Pendant or Pass-Around Microphone is flashing green/red

- Make sure the unit is not excessively hot or cold.
- Remove microphone from charger for 5 minutes and then try again.
- The battery needs to be replaced

## The Push-to-Talk function is not working on the Pass-Around Microphone

- Verify you are pressing on the lower section of the switch (see page 39).
- Verify the battery is charged.

## No signal reception (display indicates inactive channel)

- Check that the microphone is on (see pages 36, 39).
- Check that the microphone is not muted (see page 36) (ITM-02 only).
- Verify that you are not blocking either the emitters on the microphone or the sensor at the top of the Juno Tower (see pages 6, 8 & 9).
- If reception is interrupted when facing a certain direction, install an additional sensor in that area of the room (see *Installer Guide*) or adjust VoiceChoice settings.
- If using more than one microphone, verify that they are not on the same channel (see page 44).

## Tower will not 'wake up' from standby mode

- Volume level on auxiliary audio device is set too low.
- Make sure microphone is on and working correctly.

\*Available at [www.gofrontrow.com/guides-resources](http://www.gofrontrow.com/guides-resources)

### **Tower is not recognized by my computer**

- Verify that you have the Juno Tower drivers installed. To install the drivers, you will need to install the FrontRow Desktop or the Teacher Edition application\*. You may need to reconnect your Tower after installation.
- Verify the Tower is turned on.
- Verify the Tower is connected to the computer via the USB cable.
- If using a HUB or USB extension cable, verify that it is USB 2.0 compliant.
- Disconnect and reconnect the USB cable.

### **When I turn the Tower on, all I get is a white screen on the LCD**

- Turn the power off, wait 60 seconds and turn it back on.

### **Tower won't turn on (LCD does not turn on)**

- Verify that the power supply is plugged into both the receiver and a working wall outlet.
- Verify the Tower power switch is on (see page 6)
- Test with another power supply.

### **'Dead spots' or microphone crackling/noise**

- Verify that you are not blocking either the emitters on the microphone or the sensor at the top of the Juno Tower (see pages 6, 8 & 9).
- If reception is interrupted or noisy when facing a certain direction, install an additional sensor in that area of the room (see *Installer Guide*) or adjust VoiceChoice settings.
- If using more than one microphone, verify that they are not on the same channel (see page 44).
- There may be "noisy" electrical wiring. Install an AC line filter (see *Installer Guide*).

### **Feedback (squealing)**

- Lower the Microphone Volume control(s) on the Tower (see page 13).
- Position the microphone closer to mouth.
- Verify that the Music Audio In option is not checked in the Microphone Volume screen (see page 13).

### **Weak or no output from speaker(s)**

- Increase the Master, Device or Microphone Volume control(s) on the Tower (see pages 12, 13).
- Position the microphone closer to mouth.
- Verify that the microphone is on and not muted.

### **High- or low-pitched whine or hum coming through Tower speakers**

- There may be a ground loop with the system. Install a ground loop isolator (see *Installer Guide*).
- There may be "noisy" electrical wiring. Install an AC line filter (see *Installer Guide*).

### **Charging light won't come on**

- Check that the charger is connected to a working power outlet.

### **When playing audio from an audio device such as an iPhone™ or other MP3 player, I can hear background noise through the speakers**

- Your device may be emitting a low level hum that is amplified by the Juno Tower. Use a filtering cable such as a ground loop isolation transformer cable to eliminate or reduce the noise.

### **My voice commands are not being recognized**

- Make sure there is not excessive background noise while issuing command
- Make sure the microphone is not being moved around, brushing on clothing, buttons or jewelry.
- Make sure you are following the correct sequence when issuing command (see page 19).

### **PrioriTeach not working**


- Verify that the "Music Audio In" check box in the Teacher Microphone's volume screen (see page 13) is not checked.
- Adjust the drop down level from the FrontRow Desktop or Teacher Edition software application.
- Verify that PrioriTeach is turned on (see page 15).
- Increase the volume level for the Pendant Microphone (see page 13).

# Regulatory

## receiver: part 15, subpart A

FrontRow Juno Receiver  
FrontRow Juno Transmitter  
FrontRow Juno Transmitter

ITR-02  
ITM-02  
ISM-02



Tested to comply with  
FCC Standards


FOR HOME OR OFFICE USE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. This product conforms to the essential requirements of European Union Directive / EU Directive 2004/108/EC EMC Directive and 2002/95 ROHS Directive. This product can be subject to interference at our operational frequency bands of 2.1, 2.4, 2.8, 3.3, and 3.6 MHz.


### FCC notes

The Juno system is approved by the FCC (Federal Communications commission). The use of the system may be governed by specific FCC rules and FCC licensing or notifications may be required. Consult your local FCC office for detailed information. FrontRow Calypso LLC receivers and transmitters, when required, are approved by the Federal Communications Commission (FCC) in the U.S. and Industry Canada. Other government approvals are available upon request. (Other international regulations may also apply.) Any changes or modifications made to any government-approved element of this instrument,

without the express approval of FrontRow Calypso LLC in writing, could void the user's authority to operate those elements of the system.



This product conforms with the essential requirements of European Union Directive /EU Directive 2004/108/EC EMC Directive and 2002/95 ROHS Directive. This product can be subject to interference at our operational frequency bands of 2.1, 2.4, 2.8, 3.3, and 3.6 MHz.

Electrical and electronic equipment (EEE) contains materials, components and substances that could be dangerous or detrimental to human health and the environment if waste electrical and electronic equipment (WEEE) is not disposed of correctly. Products marked with the crossed-out  dustbin shown here are electrical and electronic equipment. The crossed-out dustbin indicates that waste electrical and electronic equipment may not be disposed of with unsorted household waste and that it must be collected separately. In developing and manufacturing your FrontRow Calypso LLC product, we used high-quality materials and components that can be reused. Thus, when disposing of your waste electrical and electronic equipment, you must use a collection system designated for this purpose, regardless of whether you dispose of your waste at your local waste site or it is collected from your home. Please contact your local authority for further information.

### IC notes

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

The term "IC:" before the radio certification number only signifies that Industry of Canada technical specifications were met.

## **Declaration of Conformity**

Hereby, FrontRow Calypso, LLC declares that the radio equipment type, Juno Tower receiver with Bluetooth, model number ITR-02 is in compliance with Directive 2014/53/EU.

Click [here](#) for the full text of the EU Declaration of Conformity.

## **Batteries**

Batteries contain substances that can be harmful to human health and the environment if not handled correctly.

Batteries are marked with the WEEE symbol. This symbolises that exhausted batteries must not be disposed of together with unsorted rubbish, but are to be collected separately.

Some batteries are also marked with the chemical symbol Hg (mercury), Cd (cadmium) or Pb (lead). These substances are particularly harmful, so it is important that they are collected and disposed of via an established recycling scheme. This ensures that your batteries are reused in compliance with regulations and do not damage the environment. Therefore, when disposing of exhausted batteries, make sure that you use

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