



# LISTEN

TECHNOLOGIES

## ListenWIFI

### System Manual

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#### **Revision Control:**

Revisi on	By	Date	Approved By	Details
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1.0	CH	2021.10 .05	Cody Hall	Initial Document Created
2.0	CH	2022.12 .28	Cody Hall	Sections and TOC created
3.0	CH	2023.07 .13	Cody Hall	1" draft complete for peer review
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## Introduction to ListenWIFI

ListenWIFI is a state-of-the-art assistive listening system that streams live audio at a venue over an existing Wi-Fi network to personal smartphones and dedicated receivers, enabling guests to hear the audio clearly in real time. The ListenWIFI system has been designed to provide the right audio at the right time and place, even in the right language, seamlessly and automatically. It is used in a variety of applications and environments such as classrooms, courtrooms, houses of worship, theatres and performing arts, stadiums, and arenas, just to name a few. Whether ListenWIFI is being installed to meet accessibility or compliance regulations, or you simply want to ensure your guests can hear the audio at your venue using their own smartphones, ListenWIFI is a flexible and easy to use solution that will ensure that your guests can hear every word and have a memorable experience. We are confident that you will love ListenWIFI. This system manual provides information about ListenWIFI and all its components, including setup, deployment on your network, and ongoing management of the system. Additional support materials and resources, including tech notes, application notes, case studies, and recommendations are available on our website at [www.ListenWiFi.com](http://www.ListenWiFi.com).

### How ListenWIFI Works

The audio server is the main component of ListenWIFI, being connected to live audio sources and the local area network. The server streams the audio it receives over the

local network directly to wireless devices that are attached to the Wi-Fi network. Listeners can use either personal smartphones or receivers to access and hear the live audio.



## Components

The ListenWIFI system consists of the following available components:

### WiFi Audio Servers



The server is the main component of the ListenWIFI system and is connected into the existing network to distribute real-time low latency audio to mobile apps and/or dedicated receivers.

Servers support up to 500 listeners and stream 2, 4, 8, or 16 channels of audio depending on model, however additional servers can be used to support more users and audio channels.

Being designed as a highly scalable solution, additional servers can simply be plugged into the same network allowing additional servers to the same local area network where both the channel and listener counts will simply be added from each server.

### Mobile Apps



The mobile apps are required for end users to stream audio directly to their own smartphone, which are available as free downloads for both iOS and Android devices at the App and Play Stores. Smartphones that have the app installed and running while connected to the Wi-Fi network will be able to discover and access audio channels on the network provided from the Wi-Fi Audio Server(s). Simply plug in wired headphones to listen (recommended) or an inductive neck loop for use with hearing aids equipped with a T-Coil. Audio channels are accessed via one of the available access methods:

1. Manual selection from an available channel list.
  2. Automatic access to a channel when the user enters a certain room/zone. This is accomplished by using Beacons which enable automatic location-based triggering.
  3. Scanning a QR code within the app to access a specific channel.
- Channels can also be password/PIN protected for any of the above access methods.

## **WiFi Audio Receivers**



Dedicated Wi-Fi Audio Receivers are small handheld devices that stream the audio from the Wi-Fi Audio server over the Wi-Fi network. Receivers are often required for venues who want to meet compliance laws that mandate receivers must be made available (ADA/CBC/IBC/DDA/etc.). Receivers are also beneficial for venues who would rather manage and check out dedicated hearing assistance devices, thus avoiding the hassle associated with supporting personal smartphones. Simply plug in wired headphones to listen (recommended) or an inductive neck loop for use with hearing aids equipped with a T-Coil. Audio channels are accessed via one of the available access methods:

1. Manual selection from an available channel list.
2. Automatic access to a channel when the user enters a certain room/zone. This is accomplished by using Beacons which enable automatic location-based triggering. Channels can also be password/PIN protected for either of the above access methods.

## **Beacons**



Beacons are small wall mounted units that allow for a fully automated experience at a venue. Beacons transmit a constant signal with information that the mobile apps and receivers can use to determine its relative location or proximity to an area or zone. By locating beacons throughout a venue, the correct audio channel can be delivered automatically to listeners based on their physical location, eliminating the need for users to select a channel from a list or scan a QR code to obtain access. Beacons allow venues to seamlessly provide the right audio at the right time and place, even in the users preferred language. Beacons are an ideal accessory for any application that has 2 or more channels, or for single channel applications where audio should only be accessible in a specific area.

### **ListenWIFI Manager**



The ListenWIFI Manager is a free Windows based software installation that is required for configuration of ListenWIFI system components, including servers, mobile apps, receivers, and beacons. The Manager provides an easy way to access, configure, deploy, and manage all ListenWIFI equipment at a venue including network configuration, channel names and gain, channel visibility and access controls, channel

routing, mobile app customizations, beacon automations, QR codes, firmware updates, inventory management, etc. The Manager software supports a full access administrator/owner account, as well as limited capability operator accounts to support day-to-day administration. The Manager software is not required to be running persistently and is optional once the ListenWIFI system has been configured and deployed.

## **Accessories**



Many accessories are available for the ListenWIFI audio line, including docking/charging stations for receivers, venue signage, ear speakers, headphones, neck loops, etc. More information can be found on our website at [www.listenwifi.com](http://www.listenwifi.com).

## **System Requirements**

To support The following is required for installing ListenWIFI at your venue:

- a. A local area network with Wi-Fi. 5 GHz band with Quality of Service is recommended.
- b. Enterprise Grade Router(s)
- c. Enterprise Grade Wireless Access Point(s) (WAP) – with WMM (wireless multimedia)

## **Quick Setup**

It is recommended that the IT staff at your venue be involved during the set-up and deployment of the ListenWIFI system. Network and firewall settings may block the required traffic on the network, requiring the involvement of IT to ensure the proper network configurations have been implemented.

See the Network Requirements section for more details.

## 1. Install Wi-Fi Audio Servers on the Network



- a. Place the server where it can easily be connected to power, audio source, and a network connection. The server can be rack mounted using the LW-327 ListenWIFI 2 Channel Server Rack Mount, or by using the rack ears provided (LW-210 only).
- b. Connect the server to a power outlet using the provided power supply. Once plugged into power, the server will automatically turn on and the front power LED will flash blue until a valid network connection is established (next step).
- c. Connect the server to the local area network, or router, using a Cat 6 ethernet cable (6' cable provided). The front power LED will stop flashing and turn solid blue indicating a successful connection to the network with a valid IP address. Note that IP settings of the server can be managed via your router or using the ListenWIFI Manager Software.
- d. Connect the audio sources to the server using any available audio inputs. See the Wi-Fi Audio Servers section for details about audio input connections and wiring configurations.

## 2. Log in to ListenWIFI Manager Software

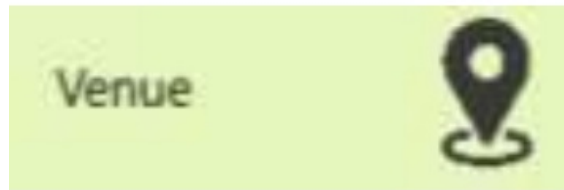


- a. Download and install the ListenWIFI Manager Software for Windows® located on the ListenWIFI support page. The Manager software should be installed on a computer that is kept local to the venue and can be accessed by system owners/administrators as needed. Please note that one login with full administrative access is allowed per ListenWIFI system, known as an Owner account.
- b. Create the Owner account by specifying a username and password as well as security questions for password recovery. This account will be the owner of the venue with full administrative access. Please note that limited-access Operator accounts can later be created under the Owner account, providing operators with access to basic functionality of the ListenWIFI system such as inventory management and check-out mode.



For specific details on the ListenWIFI Manager, see the ListenWIFI Manager section.

### 3. Assign Venue Wi-Fi Network



a. From the Venue page, assign the Wi-Fi network that the ListenWIFI system will be deployed on. This should be the same network or VLAN that the servers were connected to in Step

1c. The Wi-Fi network can be assigned by selecting an available Wi-Fi network from the list and typing in the password, or by manually typing in the network SSID and credentials. This Wi-Fi network will be programmed into all Wi-Fi Audio Receivers added to your venue. If not using Wi-Fi Audio Receivers, this step is not required.

### 4. Add Audio Server(s)

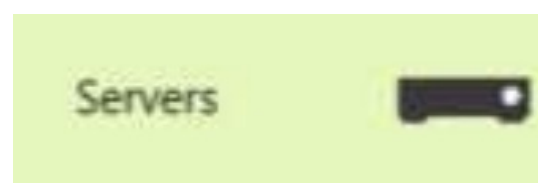


a. From the Servers page, discover and add Wi-Fi Audio Server(s) to your venue by clicking on the blue add icon. Make sure your computer is on the same local area network as your server(s) to facilitate discovery. If your server(s) are not automatically discovered, it is possible that your network may block the automatic discovery protocol (mDNS), in which case you will need to manually add the server(s) using their IPv4 address.

b. Provide a friendly name for each added server. The default name of each server will show up as 'Audio Server XXXX' with the last 4 digits of the Server ID being represented, which is printed on the server's label located on the bottom of the unit.

**NOTE:** Once servers are added, the Manager will display 'Connected' towards the top, indicating that the Manager has an active connection to all server(s) added to your venue. A 'Connected' status is required to edit many of the venue components throughout the Manager software, including servers, receivers, and mobile apps.

### 5. Configure Server Channels



a. Select a server from the Servers page.

b. Configure each server to stream either Mono (default) or Stereo channels by clicking on the Mono/Stereo switch in the center status panel. Note that stereo operation will reduce the total number of channels by 50%.

c. Click on the Mixer tab to access channel configuration options:

i. Name each channel as desired for display on listening devices.

ii. Choose if you want to Password/PIN protect each channel by clicking on the padlock icon and specifying an alphanumeric value, and specifying if the protection applies to mobile apps only, or to both mobile apps and receivers. This Password/PIN will need to be communicated to ListenWIFI users to access the channel(s).

iii. Choose if you want to set channels as Visible (default) or Hidden, by clicking on the eye icon. When a channel is set to Hidden, it will not be displayed on listening devices for manual selection. Hidden channels require a trigger to access the channel using either beacons (automated access) or QR codes (manual access).

iv. Choose if you want to specify a Public Address (PA) channel by clicking on the announcement icon. When a PA channel is set, any audio detected on that input will temporarily be routed to all other channels for the duration of the audio presence.

Note that only one PA channel can be set per venue across all servers.

v. Adjust the gain of each input as needed for proper level control. Gain can be applied on each input in 6dB increments, up to a maximum of 24 dB of gain.

vi. Adjust the delay of each input as needed for proper alignment of audio to other sources, such as ambient sound, loudspeakers, video displays, etc. Delay can be applied to each input up to a maximum of 3 seconds of delay.

vii. If you have extra channels that will not be used, simply drag and drop the associated inputs to the bottom of the screen to the “Unused Inputs” section.

**NOTE:** Multiple inputs can be bundled into a single channel to support multi-lingual listening applications. Simply drag and drop inputs onto a channel and specify a unique language for each input. This allows users access to any of the specified languages when they have access to the channel. Additionally, users will automatically hear the channel in their preferred language based on the current language setting on the mobile app or receiver.

For specific details on server configuration options, see the Servers section.

## 6. Add and Configure Beacons



a. From the Beacons page, discover and add optional Beacons to your venue. This can be done using one of two available methods:

- i. Connect each beacon to the computer via USB cable. The beacon will automatically be added to your venue.
- ii. Discover each beacon wirelessly using the “Scan for Beacons” feature. Make sure the beacon is powered on and Bluetooth (BT) is enabled on the computer. Discovered beacons can then be added to the venue by simply clicking on the blue add icon.

b. Configure each beacon by selecting a beacon in the left panel. Beacons can be configured directly over USB or via a Bluetooth connection. If the Manager does not have an active USB connection with the beacon when selected, it will attempt to connect over Bluetooth in which case you want to make sure that the beacon is powered and within range.

For specific details on beacon configuration options, see the Beacons section.

## 7. Add and Configure Receivers



a. From the Receivers page, add receivers to your venue by simply plugging them in directly via USB or through a Docking Station connected to the computer. Receivers are automatically added and assigned to the Venue Default profile.

b. To configure receivers, click on the Venue Default profile which will highlight all receivers assigned to the profile and opens a profile editor to the left.

- i. Under the Settings tab, configure the receivers preferred listening language, default volume, display brightness, and power saving modes as desired.
- ii. Under the Beacons tab, select the audio channel to be automatically played when the receiver enters the range of an assigned beacon (if using beacons).

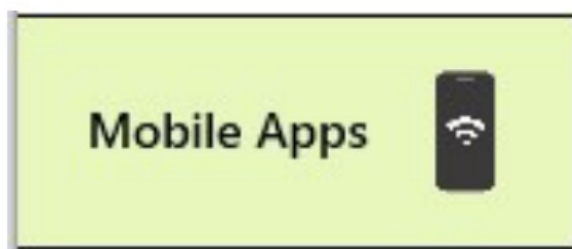
Note that beacons must first be added to the venue before you can assign channels to be automatically played.

**Tip:** Profiles are simply a saved configuration or group of settings that can be applied to one or more receivers. Additional profiles can be created by clicking on the + icon

towards the top of the screen. Profiles can easily and quickly be assigned by dragging and dropping the profile onto a receiver.

For additional details on receiver configuration options, see the Receivers section.

## 8. **Configure Mobile Apps**



a. From the Mobile Apps page, access individual customization options and configuration settings for guests choosing to connect to the audio with their own smartphones.

b. Configure the mobile app appearance by clicking on the following sections:

i. Welcome screen (logo, video, or image)

ii. Define app theme colors

iii. Upload banner images

iv. Upload channel images

v. Upload documents

vi. Upload offers

c. Under the Beacons section, select the audio channel to be automatically played when the receiver enters the range of an assigned beacon (if using beacons). Note that beacons must first be added to the venue before you can assign channels to be automatically played.

d. Create and print Channel QR codes by clicking on each channel and tapping the QR code icon. Note that these QR codes are only needed if Beacons will not be used to automatically connect listeners to the proper audio channel.

For additional details on mobile app configuration options, see the Mobile Apps section.

## 9. **Functional Testing**

a. Using a smartphone:

i. Connect to the Wi-Fi network.

ii. Open the ListenWIFI mobile app.

iii. Verify that the mobile app successfully connects to servers and displays channels for manual selection, or alternatively shows the “Ready for Audio” screen when all channels have been hidden.

iv. Access the audio channel(s) and verify good audio quality and latency. Channel access will be dependent on setup:

1. Manual selection – tap on a channel or scan QR code.
2. Automated selection – simply enter beacon zones and verify the app automatically connects to the channel when in range of the beacon.

b. Using LWR-1050 Wi-Fi Audio Receiver

- i. Power on the receiver and connect an ear speaker or headphone.
- ii. Verify that the receiver successfully connects to the Wi-Fi network.
- iii. Verify that the receiver successfully connects to servers and displays channels for manual selection, or alternatively shows the “Ready for Audio” screen when all channels have been hidden.

iv. Access the audio channel(s) and verify good audio quality and latency. Channel access will be dependent on setup:

1. Manual selection – tap on a channel or scan QR code.
2. Automated selection – simply enter beacon zones and verify the app automatically connects to the channel when in range of the beacon.

For additional setup and configuration options, see the ListenWIFI Manager section. In case of issues, please refer to the Troubleshooting section.

## **WiFi Audio Servers**

a. Server Front and Rear Views, with callouts: repurposed from Existing manuals\LE-User- Manual-LW-100-200\_K\_WEB4.pdf

b. Audio Input Connections: repurposed from Existing manuals\LE-User-Manual-LW-100- 200\_K\_WEB4.pdf

c. Configuration (using new software)

i. Channel Configuration

ii. Network Settings: repurposed from: Existing manuals\Listen-Everywhere- Server-Admin-Interface-Manual\_ENG\_K\_WEB5-compr.pdf)

d. Stacking Servers on the network – channels add and all display on the mobile app, capacity increases, etc. How does the load work, etc.

## **Mobile Apps**

a. Using the Mobile App

b. App Permissions

c. Customizing the Mobile App: repurpose from Existing manuals\Listen-Everywhere-App-

User-Manual\_K\_WEB10-compressed.pdf

d. Programming – ListenWIFI Manager

## WiFi Audio Receivers

### Quick Reference:



1. **OLED Display Area:** Displays status including channel playing, available channels, volume level, Wi-Fi strength, connection status, language selection, profile name, battery level with time remaining, charge status, and unit ID.
2. **Soft Buttons:** Use the left and right soft keys to navigate channel and language selections.
3. **Volume Buttons:** Momentarily press to adjust listening volume up or down.
4. **Power Button:** Press power button for 1 second to turn on receiver, 3 seconds to turn off receiver.
5. **LED:** Indicates status. Flashing green = charging, Solid green = charged, Flashing red = requires software configuration, Flashing blue = receiver is booting up.
6. **Headset:** Headphone jack to connect wired ear speaker, headphone, neck loop, or any 3.5mm CTIA compliant listening device.
7. **Lanyard Clip:** Attach a lanyard to the receiver to hang the device from the neck (LA-445 sold separately).
8. **Belt Clip:** Clip to attach the receiver to a belt or pocket. Removable and reversible.

9. **Battery Access.** Press the button and slide down back panel to access the battery for removal and/or replacement.
10. **Micro USB.** Supports charging and configuration via micro-USB when not using the Listen Docking Stations (sold separately).

### **Charging:**

Fully charge the receivers battery using one of the following options:

1. Place the receiver in an available Listen Docking Station:
  - a. LA-480 – Docking Station 16
  - b. LA-481 – Docking Station Case 16
  - c. LA-482 – Docking Station 4
2. Connect a USB charger to the micro-USB port on the side of the receiver.

The receiver will typically charge in about 2-3 hours. For completely dead batteries, it may be required to leave the receiver connected to a charger for up to 4 hours.

Note that the receiver can be used while charging but will extend charging time.

### **Operational Instructions:**

Prior to use, receivers must first be added and configured via the ListenWIFI Manager software. This step is required for the receivers to establish communication with the Wi-Fi network and communication with the Wi-Fi Audio Servers on the network. Once added, the receivers will connect and begin streaming real time audio. See Setup or ListenWIFI Manager sections.

1. Remove the receiver from the charger and turn the receiver on.
2. Plug in wired headphones to listen, or an inductive neck loop for use with hearing aids equipped with a T-Coil.
3. Allow receiver to connect to the specified Wi-Fi network. The display will indicate a successful connection, and the Wi-Fi icon will indicate signal strength.
4. Allow the receiver to connect to all Wi-Fi Audio Servers on the network.
5. Audio channels are then accessed depending on channel configuration:
  - a. Visible Channels: Channels are always visible on the receiver and accessible to the user. Channels are manually selected from the available channel list. Simply use the soft buttons to navigate the channel list up and down to select the channel and the

audio will begin playing immediately.

b. **Hidden Channels:** Channels are hidden from view on the receiver and require the user to be in a specific location, using Listen beacons. Channels are made available on the receiver when in range of a beacon and then become unavailable when the receiver leaves the range of the beacon. The receiver will only have access to 1 hidden channel at a time. When a user enters a specific room or zone, the channel will automatically appear on the receiver display and begin playing. When the user leaves the area or enters another beacon zone, that channel can also be removed from the display (configurable).

c. **Hidden and Visible Combination:** Some channels are always visible and available for selection, while others require that the user be in proximity to a beacon for access. Channel configuration is available in the Servers Mixer section of the Manager software.

When using Hidden channels and beacons with the receiver, subscription to those beacons is required, which can be configured in the Receivers beacon section of the Manager software.

6. Adjust the volume to a comfortable listening level using the side volume buttons.
7. The language can also be changed (when available) by pressing the right soft button for 3 seconds, navigating the list using the up/down side buttons, and confirming with the right soft button.
8. Once done listening, turn off the receiver by pressing the power button for 3 seconds.
9. Return receiver to the charger.

## **Receiver Settings:**

The following receiver settings are available using ListenWIFI Manager software.

1. **Default Language:** For multi-lingual venues a default language can be set. The receiver will stream this language whenever that language is available for a specific channel. If there is not more than one language, then the receiver will simply play the available channel in its floor language. In the case where alternate languages are available, but not the language specified by the receiver, it will fall back to the language at the top of the channel list as specified under Server channels in the Manager. The language can also be temporarily changed directly on the device by



accessing the language menu using the right soft button. The receiver will return to its programmed default language upon a power cycle or insertion into the docking station.

2. **Default Volume:** The default listening volume can be adjusted from 0 to 100%, allowing venues to properly set the default volume based on the application, channel levels, ambient noise levels, listening audience, etc.
3. **Brightness:** The brightness of the OLED display can be adjusted as follows:
  - a. Off – the display will not illuminate at all unless the status button is pressed.
  - b. Dim – the display will be dimmer for dark environments.
  - c. Bright – the display will be bright for brighter environments.
  - d. Auto (default) – the display will adjust itself based on the ambient lighting conditions.
4. **Auto Off:** This power saving mode is enabled by default, where the receiver will automatically power off after a duration of audio silence. The power off interval can be adjusted from 10-30 minutes or disabled. This feature is set to 30 minutes by default.
5. **Jack Sense:** The receiver will automatically power on when headphones or ear speakers are plugged into the headphone jack. Also, the receiver will turn off after 60 seconds of headphone removal. This feature is enabled by default and can be disabled.
6. **Auto Power:** The receiver will automatically turn on when removed from the charger and turn off when connected to a charger. This feature is enabled by default but can be disabled.

## Security and Privacy

Security is of utmost importance for any device that resides on your network. A single vulnerable device can compromise the security of your entire network, leading to data breaches, malware infections, and other cybersecurity threats. The ListenWIFI products, including Wi-Fi audio servers, receivers, mobile apps, and management software have been hardened against security threats and vulnerabilities to ensure that the risk of unauthorized access is minimized, and your network remains protected. Maintaining network security is an ongoing process that requires regular monitoring, updates, and proactive measures to stay ahead of evolving threats. We are continually monitoring and

identifying

potential threats and vulnerabilities, subsequently pushing out software updates and patches to address those that could impact ListenWIFI. Therefore, we highly recommend keeping your software up to date on your ListenWIFI servers and products deployed on your network.

System hardening is a continuous effort on ListenWIFI to reduce the attack surface of system components, providing significantly improved security, functionality, and product performance. The following highlights some of the system hardening efforts that have been implemented on the ListenWIFI product platform to ensure our system remains both secure and reliable:

Software and Operating systems are updated and patched when vulnerabilities are discovered.

- Encryption of all data at all times, regardless of configuration.
- User data transmission is contained to the Local Area Network (LAN), and never sent over the internet.
- Only very low-sensitivity data is stored on the ListenWIFI servers and is encrypted.
- HTTPS endpoint communications between servers and listening devices is limited to basic data transmittal to start/stop UDP audio streams and exchange basic visual assets.
- Access Controls implemented allowing only authorized accounts access to management software and controls.
- 3rd party security audits are completed to ensure threats are addressed.

The security of ListenWIFI will also be dependent on your network architecture and implementation. For the best security and performance on your network, we do recommend that you place your Wi-Fi audio server on the same network that your listening devices will connect to, and simply whitelist communication to the server with client isolation implemented as applicable. This deployment will typically allow the required communication to occur between devices without having to modify your router or firewall rules and prohibits any unnecessary communications between client devices. Alternatively, the server and listening devices can be placed on separate networks, however the proper ports must be opened and the ListenWIFI traffic must be routable which can increase network vulnerabilities. Please reference our Network Configuration Guide for more details. If you have questions or would like to review your deployment of

ListenWIFI on your network, please reach out to one of our team members at Listen Technologies Corporation.

## Troubleshooting/Support

- a. Technical Services Information
- b. Audio Quality Issues (Hum, Buzz, Level)
- c. Latency Issues (using BT classic vs BLE)
- d. FAQ's
- e. Warranty Information for all components
- f. LE Support Tools
- i. ExXaminer
- ii. Stream Capture and Analyzer

## Compliance

LWR-1050 Wi-Fi Audio Receiver

LW-110 Wi-Fi Audio Server

LW-160 Wi-Fi Audio Server

LW-210 Wi-Fi Audio Server

- FCC Regulation Statements:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B 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. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the

following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications made to this device that are not expressly approved by Listen Technologies may void the user's authority to operate the equipment.

- **ISED Regulation Statement:**

This device complies with Innovation, Science and Economic Development Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

- In Canada, the LWR-1050 is restricted to indoor use only when it operates in 5170-5250 MHz.

## **LA-490 Bluetooth/IR Beacon**

- **For Users in the US and Canada**

### **FCC Regulation Statements**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) These devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesirable operation.

**Note:** This equipment has been tested and found to comply with the limits for a class B 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. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help. For body worn operation, this transmitter model has been tested and meets the FCC RF exposure guidelines when used with the Listen Technologies's accessories supplied or designated for this product. Use of other accessories may not ensure compliance with FCC RF exposure guidelines. Contact Listen Technologies if you have any questions or need more information about RF exposure using this product. This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This device should be installed and operated so that its antenna(s) are not colocated or operating in conjunction with any other antenna or transmitter.

The information in this guide may change without notice. The manufacturer assumes no responsibility for any errors that may appear in this guide.

Changes or modification to this device not expressly approved by Listen Technologies for compliance could void the user's authority to operate this device.

Industry Canada Statement

CAN ICES-3 (B)/NMB-3 (B)

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

## **ISED**

Radiation Exposure Statement: This equipment complies with the IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This device should be installed and operated so that its antenna(s) are not colocated or operating in conjunction with any other antenna or transmitter.

- For Users in the European Union

This device is a proximity Beacon operating in the 2.4 GHz frequency band from 2.400GHz to 2.482 GHz at a maximum power of 2.5 dBm. The usage of this device is generally allowed in all EU countries, Australia, New Zealand, Singapore, and Hong

Kong. Product labeling information such as serial number, manufacturer, and additional regulatory information is found on the product label on the back of the device or in the battery compartment. To view, remove device from the mounting bracket.

In compliance with the following requirements

WEEE Directive (2012/19/EU)

Battery Directive (2006/66/EC & 2013/56/EU)

If you wish to discard electrical and electronic equipment (EEE), please contact your dealer or supplier for further information.

### **Notes on Disposal**

The symbol of the crossed-out wheeled bin on the product, the batteries and/or the packaging indicates that these products must be disposed of separately at the end of their operational lifetime in accordance with the national legislation. For packaging disposal, please observe the legal regulations on waste segregation applicable in your country.

The separate collection of waste electrical and electronic equipment, batteries and packaging's is used to promote the reuse and recycling and to prevent negative effects caused by e.g., potentially hazardous substances contained in these products. Herewith you make an important contribution to the protection of the environment and public health.

### **EU Declaration of Conformity**

Radio Equipment Directive 2014/53/EU

RoHS 3 Directive EU 2015/863

Hereby, Listen Technologies declares that the radio equipment type Listen Bluetooth/IR Beacon LA- 490 is in compliance with:

Radio Equipment Directive 2014/53/EU RoHS 3 Directive EU 2015/863

The full text of the EU declaration of conformity is available at the following internet address: [www.listentech.com/support/declaration-conformity-documents/](http://www.listentech.com/support/declaration-conformity-documents/)

LA-480 Docking Station 16

LA-481 Docking Station Case 16

LA-482 Docking Station 4

FCC Regulation Statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following

two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

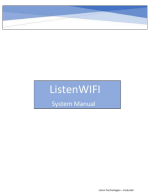
ISED Regulation Statement:

This device complies with Innovation, Science and Economic Development Canada’s licence- exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.



## Documents / Resources

	<a href="#">Listen Technologies OMD1050 WIFI System [pdf]</a> User Manual 1050, OMD1050, OMD1050 WIFI System, OMD1050, WIFI System, System
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## References

- [User Manual](#)

LISTEN  
TECHNOLOGIES

1050, LISTEN TECHNOLOGIES, OMD1050, OMD1050 WIFI System, System, Wifi

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