

Infinium® System Receiver

BA R1 | USER MANUAL



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Safety Warnings and Recycling Instructions

Hearing Safety

CAUTION! Improper use of this device could potentially cause hearing damage.

The Infinium receiver is designed to relay an audio signal and could potentially cause hearing damage if used improperly. To avoid hearing damage:

1. Ensure the receiver is set at the factory default volume level (15) before each use.
2. During use, adjust the volume level to a comfortable setting.
3. Do not allow small children or other unauthorized persons to access this product.

Medical Device Safety

CAUTION! This device has the potential to interfere with an implantable or medical device.

The Infinium receiver is powered by a lithium-ion (li-ion) battery that could potentially interfere with an implantable or other type of medical device. To ensure safety:

1. Consult with your physician or the manufacturer of your implantable or other medical device before using this product.
2. Use this product per the safety guidelines established by your physician or the implantable device manufacturer.

Battery Safety

CAUTION! This device contains a lithium-ion (li-ion) battery, which could potentially cause fire or burns.

To reduce the risk of fire or burns:



1. Do not attempt to open, disassemble, or service the battery pack.
2. Do not crush or puncture the battery, short the battery's contacts, or dispose of the battery in fire or water.
3. Do not incinerate or expose the battery to temperatures above 140°F (60°C).
4. Replace only with a battery pack designated for this product (BAT 104).
5. Use only Williams AV chargers.
6. Follow recycling and disposal guidance.

CAUTION! Discontinue use of the device if the battery swells.

Lithium-ion (li-ion) batteries have a limited number of charge and discharge cycles. The batteries may swell if used beyond their expected life cycle, typically two years. If you notice swelling:

1. Discontinue use.
2. Replace the battery. We recommend replacing the battery after two years of use.

Recycling and Disposal Information

	<p>Do not dispose of batteries or equipment in the trash. Please take the time to dispose of your equipment properly.</p>
	<p>Recycle batteries and equipment. Take the batteries to a retail or community collection point for recycling. Take the equipment to an electronics recycling center or return the product to the factory for proper disposal.</p>

System Overview

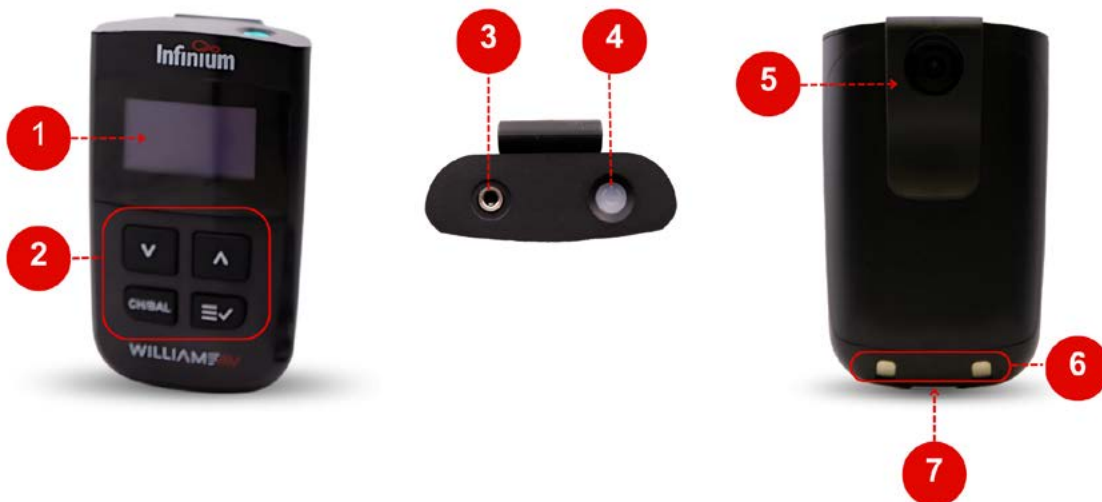
The Infinium™ Receiver is part of the Infinium system, the next-generation broadcast audio solution designed specifically for AV professionals by Williams AV.

Designed for commercial AV environments, the Infinium system empowers AV integrators to design and deploy seamless, high-quality audio experiences across diverse settings. The system delivers low-latency, high-fidelity audio to unlimited Bluetooth Auracast™-supported devices, including hearing aids, cochlear implants, headphones, earphones, and Infinium receivers.

The Infinium system includes three components: the controller, transmitter, and receiver. The configurable controller sends audio signals via an Ethernet connection to the transmitter, which integrators can place in a central location. The transmitter streams audio signals to any number of compatible receivers.

The receiver has several uses, including assistive or augmented listening, language interpretation, and audio description. It comes with a lithium-ion rechargeable battery and a removable belt clip.

Receiver Components



1. **Display screen:** View channel name, device status, and audio settings.
2. **Control buttons:** Control the volume, find and select channels, adjust audio settings and balance, and modify settings.
3. **Headphone jack:** Insert 3.5 mm headphones or neck loop connection.
4. **On/off button:** Turn the device on and off or view the receiver's status.
 - a. **Solid blue:** Connected to a channel
 - b. **Flashing blue:** Channel not connected
 - c. **Blinking red:** Low battery
 - d. **Solid red:** Charging
 - e. **Solid green:** Fully charged
5. **Belt clip:** Clip the receiver to a belt or other accessory for hands-free listening.
6. **Charging contacts:** Enable charging via a drop-in charger.
7. **USB-C connector:** Insert a USB-C cord to charge the receiver or update firmware.

Operation

Powering on the Receiver

To power on the receiver, hold the on/off button (1) down for 3 seconds. The receiver's simple design includes four buttons. Each button serves multiple functions.



1. **On/off button:** Power on the device or turn the screen on or off.
2. **Up and down arrows:** Control volume on the home screen, navigate through the menu and channel screens, and adjust balance in the balance screen.
3. **CH/BAL:** Press once to go to the channel screen. Press twice to go to the balance screen.
4. **Menu/Select:** Press to go to the menu screen or to make a selection within the menu and channel screens.

Note: Holding the menu/select button for several seconds returns the device to the home screen.

User Interface Navigation

The home screen is the primary display you see. The home screen features:

1. **Channel status:** Audio channel status. When disconnected, a line appears over the channel icon.
2. **Battery life indicator:** Displays the amount of battery life remaining in the device.
3. **Channel name:** Displays the name of the channel.



Menu Options

Select the menu button to change the display settings, view details about the device, and change the user settings.

Navigate through the options using the arrow buttons, and select an option using the select button on the receiver.

To return to the home screen, use the back arrow (1) or hold the **Menu/Select** button for 3 seconds.



Adjust Display Brightness

To change the brightness of the display:

- Navigate to **Menu > Brightness**.
- Select **Low**, **Medium**, or **High**.
- The check mark (1) displays next to the current selection.
- Navigate to the return arrow (2) to return to the main menu or press the **Menu/Select** button for 3 seconds.



View Device Details

To view device details:

- Navigate to **Menu > About**.
- The screen will display:

1. Product name (Infinium Receiver)
2. Company name (Williams AV)
3. Firmware version
4. Hardware version



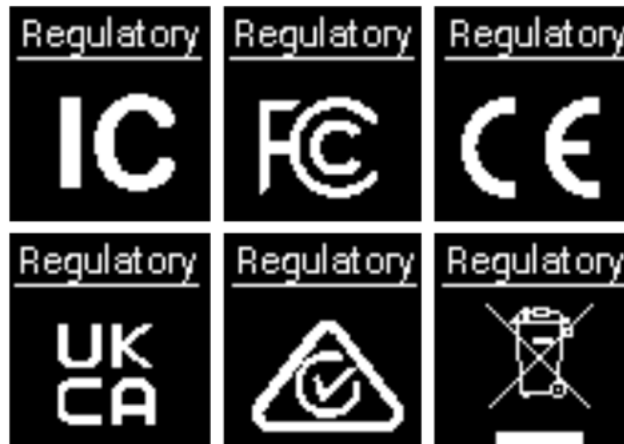
- Firmware will require periodic updates. Access the latest firmware updates and update instructions on the [Williams AV website](#).
- Press any button to exit.

View Regulatory Approvals

Select **Regulatory** to view the approvals that the device aligns with and disposal information.

To view approvals:

- Use arrow buttons to navigate between screens.
- Press the **Menu/Select** button to exit.



Access Advanced Menu

Select the **Advanced Menu** for additional functions.



Advanced Menu Options

The **Advanced Menu** includes the following options:

- **Device Lock:** Prohibit end user access to settings.
- **Screen Timeout:** Select the time the display remains illuminated without any interaction from the user.
- **Idle Shutdown:** Select the time the device is powered on when there is no interaction from the user and the receiver is not connected to a channel.
- **LED Enable:** Turn the LED light at the top of the receiver on or off.
- **Default Volume:** Change the default volume setting.
- **Signal Display Mode:** Toggle between signal strength icon and numerical dB value.

- **Volume Mode:** Enables the user to boost the volume for use with a neckloop.
- **WAV Only Mode:** WAV mode enables the receiver to only works with Williams AV transmitters. When disabled, the receiver works with other transmitters following the Auracast standard.
- **Factory Reset:** Select to change all settings back to default.

Device Lock

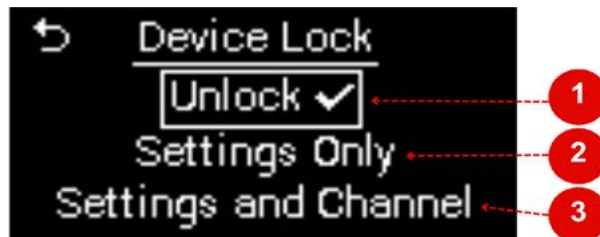
When the device is unlocked, users can change the device settings and channel. Locking the device ensures users cannot accidentally reset the device during operation.

Locking the channel ensures users cannot choose a different channel, in addition to being unable to change the device settings. Users will still have access to volume, brightness, device information, and approval information.



To lock the device before giving it to a user:

- Navigate to **Menu > Advanced Menu > Device Lock**.
- If the device is unlocked, **Unlock** will have the check mark next to it (1).
- Choose to lock the **Settings Only** (2) or lock the **Settings and Channel** (3).



To unlock the device:

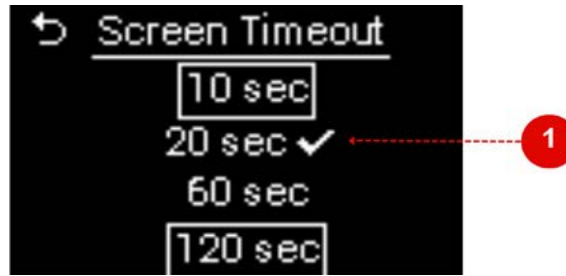
- Navigate back to the menu.
- Hold the **CH/BAL** and **Menu/Select** buttons down simultaneously for 3 seconds. This will open up the settings again.
- Navigate to **Menu > Advanced Menu > Device Lock**, and select **Unlock**.

Screen Timeout

The receiver is designed for use in a variety of venues. The screen timeout feature allows the user to set how long the screen illuminates, which is helpful in low-light settings, such as theaters.

To set the time period for the screen to illuminate:

- Navigate to **Menu > Advanced Menu > Screen Timeout**.
- Select a time between 10 seconds and 2 minutes (120 seconds).
- A check mark will appear next to the currently selected timeout length (1) for reference.



Idle Shutdown

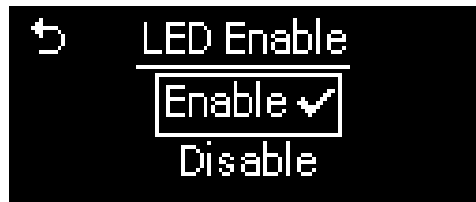
The idle shutdown feature is helpful to save battery life and to avoid having to turn off receivers manually. This setting determines how long the device is powered on when there is no interaction from the user and the receiver is not connected to a channel.

- Navigate to **Menu > Advanced Menu > Idle Shutdown**
- Select from **Disabled, 5 min, 30 min** or **1 hour**.

LED Enable

The **LED Enable** option allows users to choose whether the LED on the on/off button illuminates. The LED light should be disabled in settings where the light would cause a distraction, such as a movie theater.

To change the current setting:



- Navigate to **Menu > Advanced Menu > LED Enable**.
- Select **Enable** to turn the light on or **Disable** to turn it off.

Default Volume

The factory-set default volume is 15. To change the default volume setting for the receiver:

- Navigate to **Menu > Advanced Menu > Default Volume**.
- Increase or decrease the volume.

Signal Display Mode

The signal display can be altered to fit the needs of the user. Choose between **Icon** for a bar graph representation and **Value** (dB) for the numerical value of signal strength.



Facility users may prefer the bar graph (1), whereas engineers setting up the system may prefer to see the value (2). Values typically range from -80 dB (weak signal) to -40 dB (excellent signal).



Volume Mode

Volume mode enables the user to boost the volume for use with a neckloop.

Warning: Do not use neckloop mode with headphones as the volume can be very loud.

- Navigate to Menu > Advanced Menu > Volume Mode
- Select **Headset** if the device is to be used with a headset or if it is unknown what type of output the receiver will be connected to.
- Select **Neckloop** if the receiver is to be used with a neckloop and T-coil. When the receiver is in neckloop mode, a T-coil symbol will be displayed on the home screen of the device.

WAV Only Mode

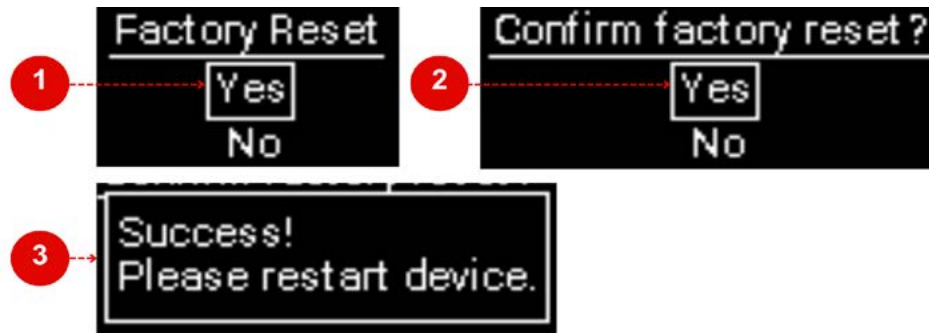
WAV (Williams AV) mode signifies that the receiver only works with Williams AV transmitters. When disabled, the receiver also works with other transmitters following the Auracast standard. This can help avoid seeing irrelevant and potentially confusing Auracast streams from nearby sources.

- Navigate to Menu > Advanced Menu > WAV Only Mode
- Select **Enable** in order to only connect with WAV transmitters.
- Select **Disable** for the receiver to function with other transmitters following the Auracast standard.

Factory Reset

To reset your device to its factory settings:

- Navigate to Menu > Advanced Menu > Factory Reset.
- Select **Yes** to initiate the reset (1).
- Select **Yes** to confirm the reset (2).
- A pop-up screen will appear once the device is reset (3).

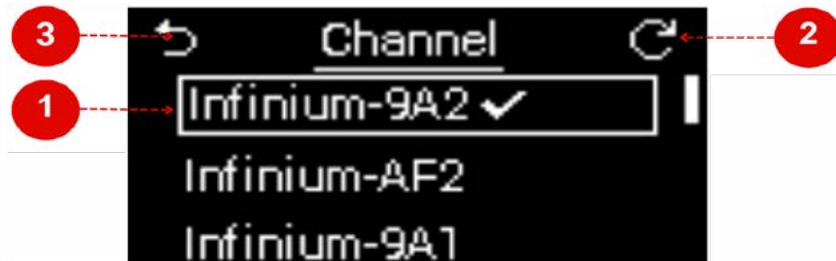


- Press the on/off button for 3 seconds to turn the device off. The screen will darken.
- Hold the on/off button for 3 seconds to turn the device back on again.

Channels

Select **CH/BAL** to access the channel screen. This screen displays all available channels.

Use the up/down arrows on the receiver to view the channels. Signal strength for each channel will appear across from its name. The currently selected channel will display a check mark (1).



To select a channel:

- Select **CH/BAL**.
- Navigate to the channel you wish to connect to. If the channel name is not shown, navigate through all of the options (either up or down) to reach the refresh icon (2). Select this icon to refresh the available options.
- Press the **Menu/Select** button to select a channel.
- A check mark by the channel name indicates that the receiver has connected to that channel. It may take several seconds to connect to a channel.
- Navigate to the return arrow to return to the main menu (3) or press the **Menu/Select** button for 3 seconds.

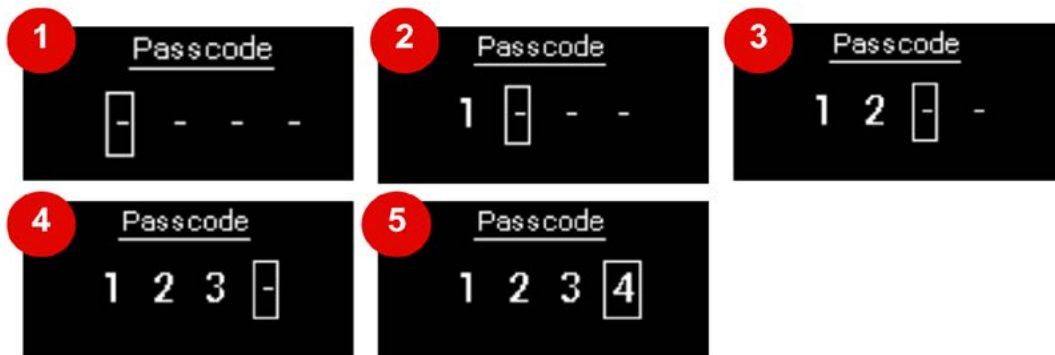
The Infinium controller provides users with the option to control channel access via a password.

Once the channel is selected and the passcode is entered, it will not require the passcode again if the device is powered on and off.

If the device disconnects from the channel, someone changes the passcode, or the device's factory settings are restored, then the passcode prompt will reappear.

To access a password-protected channel:

- Select the channel.
- Enter the four-digit passcode into the pop-up box.
 - Use the up/down arrows on the receiver to select a number.
 - Confirm each number using the **Menu/Select** button. The pop-up screen will close when the final number is confirmed.



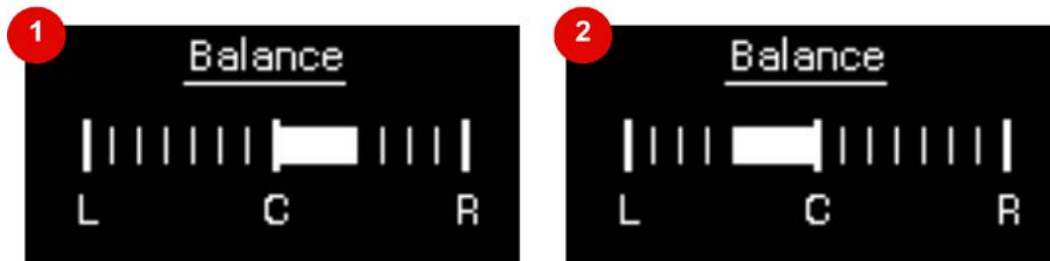
- Entering the wrong passcode will cause the screen to shake.
- Press the **CH/BAL** button to exit the passcode screen.

Balance

The balance screen allows the user to adjust the audio balance (left, right, centered).

To adjust the balance of the receiver:

- Select **CH/BAL** twice to open the balance screen.



- Use the up/down arrows to change the balance.
 - The up arrow moves the balance right (1).
 - The down arrow moves the balance left (2).

Charging, Maintenance, and Troubleshooting

Charging Instructions

When the receiver indicates a low battery (1), charge it in a drop-in charger or connect it to a USB-C cable and power source. The LED indicator built into the on/off button will turn red while charging. When the battery is fully charged, the LED will turn green.



Battery Replacement Procedure

Williams AV recommends replacing the battery every 2 years.

Do not dispose of the battery in the trash or recycling. Instead, take it to a collection center.

To replace the battery:

- Power down the receiver.
- Loosen the battery door screw (1) with a 2 mm hex wrench (2).




- Remove the battery door (3).
- Remove the battery (4).
- Place a new battery in the battery cavity.
- Replace the battery door.
- Replace the battery door screw and tighten it using the hex key wrench.

Maintenance Best Practices

Follow similar rules to working with any Li-ion battery-powered devices when using the receiver. To keep the device in good condition:

- Wipe down the device with a clean, dry cloth.
- Store the device within its temperature specifications (-4° F to 122°F [-20°C to 50°C]).

Do not attempt to open the device for maintenance and troubleshooting. Instead, contact a Williams AV representative for support.

	<p>CAUTION! Do not attempt to service the receiver. Contact your Williams AV representative at 1-800-843-3544 (U.S.A.) or +1 952 943 2252 (outside the U.S.A.) for support.</p>
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Recommendations for Lengthening Battery Life

- Maintain the battery charge between 15% and 85%.
- If the device is not in regular use:
 - Store the device at 50% battery life.
 - Fully dissipate and charge the battery once every 3 months.
- If possible, power off the device while charging.
- Do not operate the device while charging.
- Do not leave the device on the charger for longer than 24 hours after the device is fully charged.

Solutions to Audio Dropping

If no audio is reaching the listener, try the options listed in the table below.

Cause	Solution
The headphones or neckloop may have become disconnected	Unplug and re-plug headphones or neck loop into the receiver
The headphone or neckloop plug may be twisted	Unplug and re-plug headphones or neck loop into the receiver
The volume is too low	Turn up the volume to a comfortable level
The receiver is not connected to the channel	Re-scan the channel list and reconnect to the desired channel
The receiver is too far away from the Infinium transmitter	Move to the area recommended for the transmitter
Problem with the Infinium transmitter or controller	Verify that the controller and transmitter are working properly

Specifications

Infinium Receiver - BA R1	
Wireless connection	Bluetooth Auracast™
Bluetooth version	5.4 LE
Codec	LC3
Operating frequencies	2400 to 2483.5 MHz
Range	Up to 328 ft (100 m) in an open space
Channels	Mono or stereo
Channel Security	Open or password-protected
Encryption	AES128-CCM with 128 bit key
Audio	
Audio output power	35 mW max
Headphone impedance	32 ohms
Frequency response (+/- 3 dB relative to 1 kHz)	<ul style="list-style-type: none"> • 16 kHz: 100 Hz to 7 kHz • 24 kHz: 100 Hz to 11 kHz • 48 kHz: 100 Hz to 16 Hz
Total harmonic distortion	< 1% at 50% volume with 32 ohm load
Signal-to-noise ratio	75 dB
Receiver sensitivity	-99 dBm
Unit	
Dimensions	3.9 x 2.48 x 0.85" (99 x 63 x 21.6 mm)
Dimensions with belt clip	3.9 x 2.48" x 1.19" (99 x 63 x 30.2 mm)
Weight	3.8 oz (107.7 g)
Battery type	Lithium-ion camera-style rechargeable battery; field replaceable
Battery size	3.7 Vdc, 1200 mAh
Battery life	> 20 hours
Operating temperature range	14°F – 104°F (-10°C – 40°C)
Storage temperature range	-4°F – 122°F (-20°C – 50°C)
Charging temperature range	41°F – 114°F (5°C – 40°C)
Charging connections	Dual contacts for use with Infinium drop-in chargers or USB-C connector
Display	<ul style="list-style-type: none"> • OLED display • 1.38 x 0.69" (35.1 x 17.5 mm) • Diagonal: 1.54" (39.2 mm)
Audio output	3.5 mm stereo jack for wired stereo or mono headphones, earphones, or neck loops

Infinium Receiver - BA R1	
Approvals	FCC, RoHS3, WEEE, Industry Canada/ISED, CE, UKCA, RCM, CB Scheme
Warranty	2-year parts and labor
USB-C connection	<ul style="list-style-type: none"> • Power/charge (5VDC@~500 mA) • Firmware updates
Accessories	
Audio	<ul style="list-style-type: none"> • Headphones, earphones, and neck loops • Stereo and mono supported
Chargers	<ul style="list-style-type: none"> • CHG 003 - 2-bay drop-in charger • CHG 004 - 6-bay drop-in charger • CHG 005 - 12-bay drop-in charger • USB-C single charge kit

FCC Compliance Statement

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 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.

CAUTION! Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Innovation, Science and Economic Development (ISED) Compliance Statement

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment.

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.

Cet équipement est conforme aux limites d'exposition de rayonnement d'IC RSS-102 déterminées pour un environnement non contrôlé.

Son utilisation est soumise aux deux conditions suivantes:

1. Cet appareil ne doit pas causer d'interférences et
2. Il doit accepter toutes interférences reçues, y compris celles susceptibles d'avoir des effets indésirables sur son fonctionnement.

Warranty

Williams AV products are engineered, designed, and manufactured under carefully controlled conditions to provide many years of reliable service. Williams AV warrants the product or system against defects in materials and workmanship for a number of years, depending on the warranty length of the product. From the purchase date, we will promptly repair or replace the product or system within the warranty period.

Microphones, earphones, headphones, batteries, chargers, cables, carry cases, and all other accessory products carry a 90-day warranty.

WILLIAMS AV HAS NO CONTROL OVER THE CONDITIONS UNDER WHICH THIS PRODUCT IS USED. WILLIAMS AV, THEREFORE, DISCLAIMS ALL WARRANTIES NOT SET FORTH ABOVE, BOTH EXPRESS AND IMPLIED, WITH RESPECT TO THE PRODUCT OR SYSTEM, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WILLIAMS AV SHALL NOT BE LIABLE TO ANY PERSON OR ENTITY FOR ANY MEDICAL EXPENSES OR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY ANY USE, DEFECT, FAILURE OR MALFUNCTIONING OF THE PRODUCT, WHETHER A CLAIM FOR SUCH DAMAGES IS BASED UPON WARRANTY, CONTRACT, TORT OR OTHERWISE. THE SOLE REMEDY FOR ANY DEFECT, FAILURE OR MALFUNCTION OF THE PRODUCT IS REPLACEMENT OF THE PRODUCT. NO PERSON HAS ANY AUTHORITY TO BIND WILLIAMS AV TO ANY REPRESENTATION OR WARRANTY WITH RESPECT TO THE PRODUCT OR SYSTEM. UNAUTHORIZED REPAIRS OR MODIFICATIONS WILL VOID THE WARRANTY.

The exclusions and limitations set out above are not intended to, and should not be construed so as to contravene mandatory provisions of applicable law. If any part or term of this Disclaimer of Warranty is held to be illegal, unenforceable, or in conflict with applicable law by a court of competent jurisdiction, the validity of the remaining portions of this Disclaimer of Warranty shall not be affected, and all rights and obligations shall be construed and enforced as if this warranty did not contain the particular part or term held to be invalid.

Williams AV sells and supports our brand of professional and consumer products worldwide through a network of authorized international distributors and dealers. Products sold into non-US markets are customized to comply with local regulations and governmental safety requirements and may include different accessories, manuals, and warranties depending on the country where the product will be used. Purchasing Williams AV products in a country other than the one in which it is intended to be used may automatically void the warranty.

If you experience difficulty with your system, call toll-free for customer assistance: **1-800-843-3544** (U.S.) or **+1 952 943 2252** (outside the U.S.).

If it is necessary to return the system for service, your customer service representative will give you a Return Authorization Number (RA) and shipping instructions.

Do not ship damaged batteries.

Pack the system carefully and send it to:

Williams AV

Attn: Repair Dept.

10300 Valley View Road

Eden Prairie, MN 55344 USA

Your warranty becomes effective the date you purchase your system. If your sales receipt is not available, the date code on the product will determine your warranty status.

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