

Digi-Wave™ 400 Series

Digital Transceiver and Receiver

USER MANUAL

System Overview

The Digi-Wave communication system allows users to listen and talk to one another wirelessly in a variety of scenarios. A Digi-Wave system consists of at least one transceiver (DLT 400) and various combinations of transceivers and receivers (DLR 400).

The DLT 400 is a two-way transceiver, meaning that it can transmit and receive audio simultaneously.

The DLR 400 is a receiver only. Users of DLR 400 receivers can only hear what is being broadcast by DLT(s); they cannot create any audio. There are two models of DLR: the DLR 400 ALK and the DLT 400 RCH.

Safety Warnings and Recycling Instructions

HEARING SAFETY

CAUTION!

This product is designed to amplify sounds to a high volume level which could potentially cause hearing damage if used improperly. To protect your hearing and the hearing of others:

1. Turn the volume down before putting on the earphone or headphone, and then adjust the volume to a comfortable level,
2. Set the volume level at the minimum setting that you need to hear,
3. If you experience feedback (a squealing or howling sound), reduce the volume setting and move the microphone away from the earphone or headphone, and (4) Do not allow children or other unauthorized persons to have access to this product

MEDICAL DEVICE SAFETY

CAUTION!

1. Before using this product with an implantable or other medical device, consult your physician or the manufacturer of your implantable or other medical device.
2. If you have a pacemaker or other medical device, make sure that you are using this product in accordance with safety guidelines established by your physician or the implantable device manufacturer.

BATTERY SAFETY

CAUTION!

DLT 400 and DLR 400 RCH internal battery pack.

To reduce the risk of fire or burns, do not attempt to open, disassemble, or service the battery pack. Do not crush, puncture, short contacts or dispose of in fire or water. Do not incinerate or expose to temperatures above 140°F (60°C). Replace only with battery pack designated for this product: a rechargeable Lithium-polymer battery. Recycle or dispose of properly.

CAUTION!

The lithium batteries used in the DLT 400 and DLR 400 RCH provide great performance and long life. But, like all lithium batteries, they do have a limited number of charge/discharge cycles. Lithium batteries may experience swelling if used

beyond their expected lifecycle (2 years). If you notice swelling of the battery, please discontinue use and have the battery replaced. We recommend battery replacement after 2 years of use. For more information about replacing the battery, please visit our website at: <http://www.williamsav.com/digiwave-battery-replacement>.

RECYCLING INSTRUCTIONS

Battery Safety and Disposal



Help Williams AV protect the environment! Please take time to dispose of your equipment properly. Please do NOT dispose of batteries in the household trash. Please take the batteries to a retail or community collection point for recycling.

Product Recycling:



Please do NOT dispose of your Williams AV equipment in the household trash. Please take the equipment to an electronics recycling center or return the product to the factory for proper disposal.

General Operation

Button Functions

Power Button

- Press and hold for power On/Off

Volume Control Buttons (on side)

- Adjust the headset's volume.

Talk Button

- The talk button will need to be used in order to talk or stop talking. There are two modes for the Talk button. For more details, see "Talk Mode: Push-to-Talk and Push-n-Latch" on page 5.
- This button is only on the DLT Transceivers.
- Devices with a Master 1 or Master 2 Speaking Priority can override any speaking Guests by holding down talk button.

Up and Down Buttons

- Navigate through menu items.
- Adjust settings
- In Bilingual Mode, toggle which language is spoken.

Menu/Select Button

- Hold the menu button down for a few seconds to enter the settings menu.
- In the settings menu, press the menu button to select the highlighted option and move onto the next step.
- Press once to view additional Digi-Wave Information, including number of connected devices and firmware version.

DLT Lock

Lock enables the Administrator to prevent unauthorized changes to the system set-up.

NOTE: Each DLT has to be locked and unlocked individually.

- To enable or disable the lock, hold down the volume up button and hold the menu button at the same time for 2 seconds. The lock icon will appear
- When lock is enabled, the menu system will have most features unavailable with a lock icon displayed next to it.



Battery Charging

Use the USB-C located on the bottom of DLT Transmitter or the DLR 400 RCH Receiver, to charge the battery.

Full charging time is approximately 5 hours. The Red LED flashes while charging. The Green LED will be on steady when the battery is charged. Charge the battery at room temperature.

NOTE: The DLR 400 ALK receiver uses alkaline batteries and is NOT rechargeable.

⚠ CAUTION!

All lithium batteries have a limited number of charge/discharge cycles. Lithium batteries may experience swelling if used beyond their expected lifecycle (~2 years with casual usage. Heavy usage will reduce the lifecycle). If you notice swelling of the battery, please discontinue use and have the battery replaced. We recommend battery replacement after 2 years of use.

DLR 400 ALK Differences

The DLR 400 ALK uses 2 AAA alkaline batteries rather than a rechargeable battery like the DLR 400 RCH.

The AAA alkaline batteries can be placed by removing the panel on the back of the device and inserting the batteries with the correct polarity. When changing batteries, always change both batteries at the same time.

Other Differences

The DLR 400 ALK allows you to select a group via the up and down arrows on the front of the device. The volume may be adjusted using the vol buttons. There is no menu system otherwise.

The battery and signal strength indicators on the screen work similarly to the DLR 400 RCH, but are located on the far left of the screen.

When discussing DLR Receivers, this manual is usually referring to the DLR 400 RCH.

Before Programming the Digi-Wave™ System

Depending upon the mode chosen, up to six people can talk in a group at any given time.

Modes

The Digi-Wave 400 system has been designed for ease and flexibility. Many of the settings are automatically configured for common use cases.

Tour

Tour mode is best suited when one or two people are leading a large group. The group can be configured to only listen to the leader(s) of the group, or allows people with a transmitter to speak.

Intercom

Intercom mode is appropriate when a group of up to 6 people all need to talk to and hear one another.

Hearing Assistance

Hearing Assistance mode is appropriate when using the device to amplify spoken communication between users. The Tone Control in Hearing Assistance mode is automatically elevated, allowing the user to hear more clearly.

Interpretation

Interpretation mode is best suited when dealing with multiple, simultaneous audio feeds. Up to 14 languages and the floor may be broadcast on the Digi-Wave system at one time.

Speaking Priority

There are 3 levels of priority.

- Master 1 has first priority, and also sets up a majority of the settings for the Digi-Wave system.
- Master 2 has second priority when speaking, but does not declare any settings for the Digi-Wave system, only for their personal device. **This is not available in Interpretation mode.**
- Guest units have third priority, and can only declare settings for their personal devices.

The Master 1 and Master 2 have the ability to lock out other talkers by holding down the Talk button for three seconds. All system Talk LEDs will continuously flash while other participants are locked out of the Talk feature. The Master 1 or Master 2 must have their talk button deactivated to allow the Guest units to talk.

Groups and Channels

Groups are used in every mode. A group is a selection of people communicating with one another.

Channels are used in Interpretation mode. Users configure their device to listen to a certain channel based on what they need to hear.

Each set of people who want to talk and/or listen to each other must be in the same group. Up to 4 Groups can operate simultaneously within range of each other. Up to 15 channels can be used simultaneously.

Group numbers and channels are selected via the settings menu. Holding down the up or down button will seek for available groups/channels. Pressing the up or down button will allow you to manually select the group or channel number.

General Rules of Operation

The following rules must be followed. Failure to adhere to these rules will result in unpredictable, unsupported operation.

- There must be only one Master 1 per group.
- Master 2 is optional, and there can only be one per group.
- Any other unit must be a Guest unit.
- Each group must be assigned its own group number.
- When using four simultaneous groups, group numbers must be sequential. i.e. 11, 12, 13, 14. Any numbers 0-1023 can be used (only 0-99 if DLR 360 and DLT 400 ALK receivers are being used).

The Main Screen



Display Settings

The mode will be displayed at the top of the screen, between the signal strength indicator and the battery level indicator.

Depending on your setting selections, the clock, the channel or the group will be displayed in the center of the screen. Channel or Group is determined by your mode. A large or small clock is determined by the Master 1 settings.

To change any of these settings, hold down the menu button. For instructions on configuring the Digi-Wave system, see “Basic Settings” on page 5.

Signal Strength Indicator

When a Master 1 is available on the group or channel, the signal strength indicator on DLR Receivers and Guests will indicate how strong the signal is.

When a Master 1 is not available **OR** while the Master 1 is changing settings that may affect other devices, the icon will flash. Once the Master 1 has been set up, the DLR Receiver and other DLT Transmitters should rejoin the group or channel automatically (with some exceptions, such as a Security PIN being set).

DLT Attendee Checking

Only on the Master 1 transceiver, the number of DLT Transmitters connected to the system will be displayed in the bottom right corner. It does not count DLR Receivers because they do not have a talk button.

Priority Indicator

A label indicating Master 1, Master 2 or Guest will appear on the lower left of the screen on the main screen.

If the label is blinking, the device has not had its settings configured. Enter the menu system to begin configuring the device.

Setting Up the Digi-Wave™ System

Settings of the Digi-Wave system should be selected based on how the system will be used. A Master 1 device will declare a majority of the settings and pass these settings to devices that connect with it. Since the Master 1 automatically sets most settings, there is little to be set up on Guest devices for basic usage of the Digi-Wave system.

Initial Setup

There are three ways to load settings on a Digi-Wave device:



New Settings

To start from the very beginning with your Digi-Wave settings, select New Settings. This will start you at the beginning of the set-up process where you can set Basic Settings (see “Basic Settings” on page 5).

Load Profile:

To load an existing profile on the device, select this option and then select the profile to load.

Join Group

If a Master 1 is already leading a Group or Channel, Digi-Wave 400 transceivers and receivers can automatically search for the group and join it. The group or channel number could also be manually entered from this screen. Settings will be loaded from the Master 1 device, once a connection is established.

If a group or channel is locked by a PIN, the device will prompt for the PIN at this time. The device will be unable to join the group or channel without this PIN.

Changing Settings

If settings need to be adjusted later, the menu system can be reentered at any time by holding down the menu button for a few seconds. From there, settings can be edited by selecting **New Settings**. You may also load a profile or join a group or channel.

The menu system can be exited at any time by holding the menu button. The unfinished settings will be set to their default.

To go back to a previous setting, use the **Power** button.

Basic Settings

Always start setting the Digi-Wave settings with the DLT Transceiver that will be the Master 1. Other devices can gather their settings from the Master 1 device to ease setup.

1. Select a Mode. This determines what other settings may be available.
2. Select Speaking Priority. If this is the first DLT Transceiver you are setting up, select Master 1. Typically, all other units will be Guest priority.
3. Select the group number. Holding down the up or down button will seek for available groups/channels. Pressing the up or down button will allow you to manually select the group or channel number.
4. If in Interpretation Mode, set the Broadcast Type.
5. If required, manually set the address. **Automatic address selection is recommended.**
6. If Master 1, select whether to display clock or hide it entirely, and select whether the clock is a 24-hour or 12-hour clock.
7. Enter Advanced Settings if needed.

Interpretation Mode: Broadcast Type

When in Interpretation Mode, you will be required to select a broadcast type. The broadcast type helps determine which channel the DLT Transmitter will broadcast on.

Floor will broadcast on channel 0. This is intended to be the main audio for the event that is being translated by interpreters.

Interpreter will broadcast on channel 1-14 depending on what is available. Each channel is able to be used by a dedicated interpreter. All interpreter units can hear the Floor on channel 0, and transmit the Interpreter's voice on channels 1-14. At any time, by changing channels, anyone can listen to the Floor on Ch. 0 or any Interpreter on channels 1-14. The interpretation is broadcast 1-way in up for 14 languages.

Repeater is used to extend the range of the Digi-Wave 400 system and will broadcast on one channel, depending on which channel(s) needs to be extended. This mode does not require a person to be speaking or listening to the transceiver.

Advanced Settings

Some Advanced Settings may be missing from certain modes, or with certain configurations.

Number of Microphones

In modes where multiple speakers are available, the number of speakers at one time can be limited. The maximum number of speakers is 6, the minimum is 2 when this option is available.

Talk Mode: Push-to-Talk and Push-n-Latch

On a DLT Transceiver, the **Guest** Talk Mode can be changed to Push and Latch or Push to Talk. Master 1 and 2 DLT Transmitters are always set to Push-N-Latch mode. This feature is not available on a DLR Receiver as it does not have a microphone or talk button.

In **Push-n-Latch** mode, when the talk button is pressed and released, it stays in talk mode until the talk button is pressed and released again.

In **Push-to-Talk** mode, the talk button must be held down while speaking, and when released, it shuts off.

Tone Control

Using the up and down arrow buttons, adjust the tone up or down to your preference. The number range indicates:

- 1 = Most bass response
- 5 = Flat
- 9 = Most treble response

Side Tone Adjustment

This gives the user the ability to change the volume of their own voice as heard in the headset (side tone). This feature is only available on the DLT Transceiver. Use the up and down arrow buttons to choose between off (0 dB), low (-6 dB), or high (-12 dB).

Microphone Gain and Line Gain

Gain can be used to increase the volume of the microphone or input sound. Use the up and down arrows to adjust the gain to a suitable level.

Encryption

Extra security can be added to the transmitted signal via encryption. An **87-bit** encryption is default, and this level of encryption is backwards compatible with the DLT 300 or DLR 360 from the previous generation.

127 + 87-bit Encryption adds AES-128 encryption on top of the 87-bit encryption. This adds an additional layer of security, but is not backwards compatible and may only be used with Digi-Wave 400 devices.

Encryption can also be turned completely off, if desired, which will leave no security features. This is not recommended.

DLT Secure PIN:

When a group or channel has been set up with a secure PIN, transceivers and receivers without this secure PIN entered cannot listen in on the group. The same four digit code must be programmed into all of the Digi-Wave devices in the group. As the PIN is being entered, individual numbers will be replaced by the * symbol.



Interpretation Modes

Standard Interpretation Mode

Standard interpretation mode allows for each DLT Transceiver to listen to the floor (the main speaker) on channel 0 and broadcast out in one interpreted language on a channel (1-14). Each additional channel or language requires their own DLT Transceiver and interpreter. The audience member then listens to the channel for their specific language.



Bilingual Mode

Bilingual mode allows the interpreter to quickly switch their output channel between Ch. 1 or Ch. 2, depending on which language the audience needs to hear. The DLT transceiver in Bilingual Mode always listens to channel 0, regardless if channel 1 or 2 is chosen as the transmission channel.

Relay Mode

Relay Mode allows the interpreter to quickly switch between listening to the Floor on Channel 0 or the Relay on Channel 1. Channel 1 will automatically listen to Channel 0. Interpreters on other channels (2-14) are able to switch which channel they are listening to.

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FCC Information

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 interface, 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 CLASS B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. 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 correct the interference by one or more of the following measures:

- 1.1. Reorient or relocate the receiving antenna.
- 1.2. Increase the separation between the equipment and receiver.
- 1.3. Connect the equipment into an outlet on a circuit different from that to which receiver is connected.
- 1.4. Consult the dealer or experienced radio/TV technician for help.

WARNING

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

"CAUTION : Exposure to Radio Frequency Radiation.

Antenna shall be mounted in such a manner to minimize the potential for human contact during normal operation. The antenna should not be contacted during operation to avoid the possibility of exceeding the FCC radio frequency exposure limit.

"ATTENTION: L'exposition aux rayonnements à fréquence radioélectrique.

Antenne doit être montée de telle manière à minimiser le risque de contact humain pendant l'utilisation normale. L'antenne ne doit pas être contacté pendant le fonctionnement pour éviter la possibilité de dépasser la limite de l'exposition aux fréquences radio de la FCC.

IC Information

This device complies with Industry Canada license-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- 1) l'appareil ne doit pas produire de brouillage;
- 2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.