WILLIAMS SOUND ®

DIGI-WAVE™ DLT 100 / DLR 50

MANUAL

INDEX

SAFETY INFORMATION

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.
4. Do not allow children or other unauthorized persons to have access to this product.

BATTERY SAFETY

⚠ CAUTION!

DLR 50 may be supplied with alkaline batteries. Do not attempt to recharge alkaline batteries, which may explode, release dangerous chemicals, cause burns, or other serious harm to the user or product. Rechargeable batteries may be used with DLR 50 with external battery charger.

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.

RECYCLING INSTRUCTIONS

🗑 Battery Safety and Disposal

Help Williams Sound 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 Sound equipment in the household trash. Please take the equipment to an electronics recycling center or return the product to the factory for proper disposal.

SYSTEM OVERVIEW

The new Digi-Wave™ (digital spread spectrum – DSS) is a simultaneous, two-way wireless listening system in the 2.4 GHz band. Slim, lightweight, simple to set up and use. With the push of a button, users can access 2-way communication for easy group leader/group member participation.

· Portable DLT 100 transceivers for 1 or 2-way operation
· DLR 50 receivers for listen only applications in simultaneous interpretation and 2-way modes
· Patented, frequency-hopping technology minimizes interference from other devices
· Global, turn-key solution: 2.4 GHz operation harmonized for use in most countries; FCC, CE, Industrie Canada and C-Tick approved
· Range: Up to 100 ft outdoors and up to 200 ft* indoors (line of sight) * Depending on environmental conditions

2-WAY

· 4-simultaneous groups available in 2-way operation
· Full duplex operation
· Maximum two speakers at any time
· Built-in microphone and speaker (DLT 100)
· Assigned speaker priority as follows:

1st priority — Chairman Master (CM)
2nd priority — Chairman Slave (CS)
3rd priority — Slave (SLV)

· Applications include Tour Guide, Team Teach, Wireless Intercomm, Portable Discussion and Personal Communication systems

SIMULTANEOUS INTERPRETATION
· Can accommodate floor (or common) language, plus up to 14 simultaneous languages
· DLT 100 has repeater function for increased range in interpretation mode

DLT 100

BUTTON FUNCTIONS

POWER / MENU BUTTON
° Press and hold for power On/Off
° Press once to change section when in setup menu

VOTING / SETTING BUTTON
° Press No -Yes button together to enter or exit setup menu

° Use [YES],[NO], or [ABS] in voting mode
° Use these buttons to select channels in simultaneous interpretation mode
° Press and hold [ABS] button to enter voting mode. Master unit controls voting function. All votes viewable only on Chairman Master and Chairman Slave unit. Must have address assigned between 1 — 99 to allow voting or attendance function

MICROPHONE LEVEL ADJUSTMENT
° Hold [NO] button for two seconds to enter mic level adjustment. For level adjustment use [-] or [+]

VOLUME CONTROL / SELECT BUTTON

° Control / Volume
° Use to navigate selection in setup menu.

TALK BUTTON

° Press button once to activate the microphone. Press button once more to turn off the microphone
° Press and hold the button for approximately 2 seconds to mute other DLT 100 slave units. Only the CM and CS

have this function. ([TALK] LED will blink on all units when in mute mode).

Internal Speaker
LCD display
LED Indicator
Talk Button
Volume / Select Up
Volume / Select Down
Power / Menu
Ext. Headphone Jack 3.5mm
Ext. Mic Jack 3.5mm
Int. Microphone
30-pin Connector

BATTERY CHARGING

1. This Product uses a rechargeable Lithium Polymer battery

2. Use the 30 Pin connector, located on the bottom of DLT 100 to charge the battery. Full charging time: approx. 5 hours Red LED flashes while charging. Green LED on steady when battery is charged.

3. Battery Maintenance
   ° Charge the battery at room temperature
   ° Not recommended to charge the battery more than 12 hours continuously

(Optional CHG 102 - 2-bay charger available)

2-WAY MODE OPERATION GUIDE

POWER ON/OFF
Press and hold the Power/Menu button for 2 seconds. LED's will flash and the LCD will turn on.

Press and hold the Power/Menu button for 2 seconds to turn the unit off.

FULL DUPLEX (TWO WAY) COMMUNICATION
Any two people can talk in a group at any given time. The CM will have first priority, CS has second priority and Slave units have third priority. The CM or CS will have to turn off their talk access to allow the Slave units to talk. When two people are talking in a group the participants can hear both voices in the DLT's or DLR's.

The CM and CS 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.

ELECTRONIC VOTING
The CM must press and hold the ABS button until the LED turns on. This will activate the voting feature in the system. Participants with DLT 100's can press the NO or YES button and the count will be displayed on the CM unit LCD. Participants can change their vote and the count will change on the CM unit, but they cannot vote more than once. No votes will show on the left side of the LCD and YES votes on the right side. ABS will not be counted. The CM must press and hold the ABS button again to exit the voting mode. When in voting mode, only the CM can talk in the system. Addresses 0 - 99 must be used for voting feature. Addresses over 99 will not be registered. **NOTE**: IF CM is turned off every DLT that is synched will automatically turn off in 5 seconds.

ATTENDEE CHECKING
When the Master Chairman presses the MENU button once, the number of SLAVE devices connected to the system will be displayed for two seconds. Addresses 0 - 99 must be used for attendee checking feature. Addresses over 99 will not be registered. ie: C 12 = 12 DLT's synched with CM

ADDRESS CONFIRMATION
Press the MENU button twice for the CM and CS, once for SLVs. The address for the DLT 100 will be displayed for two seconds. **NOTE**: Every DLT 100 MUST have its own address and all must be assigned to the same group.

TIMER FUNCTION
The CM has the ability to set a talk timer from 0 to 60 minutes. The factory default is 0. This timer will allow the TALK feature on SLAVE units to have only a selected amount of time to talk. 0 means there is no talk time limit and speak time is unlimited.

steps	DLT chairman master (CM)	DLT chairman slave (CS)	DLT's slave (SLV)
roles	CM works as a master device to control everyone in a group. Guide has 1st priority to speak all the time and controls operation of other features	Assists CM in a group. Has 2nd priority to speak	2-way communication with all DLT's in group. Have 3rd priority.
display	MAS CHAIRMAN	SLV CHAIRMAN	SLV
1. Tour guide / conference	Press No - Yes buttons together for 2 Sec to enter setup menu. Then set to 2-way mode . Press + or – button to select.		
2. Master Chairman / Slave Chairman / Slave setting	Press menu button once, then press + or – button to set select Master Chairman / Slave Chairman / Slave		
3. Address setting	Press menu button once, then press + or – button to select between 0-1023. Every DLT must have its own address.		
4. Group setting	Press menu button once, then press + or – to select 0-1023. (Default is 12) Multi-groups must use consecutive numbers, ie (12,13,14,15)		
5. Time setting (CM only)	Press menu button once, then press + or – button to set current time		
6. Speaking time setting	Press menu button once, then press + or – button to set speaking time between 0 - 60 min. (Default is 0 min)		
7. Save and exit setup mode	When setup is complete, press No - Yes buttons together to save and exit		

2-way setup

1

Press and hold POWER button for 2 seconds to turn DLT 100 on
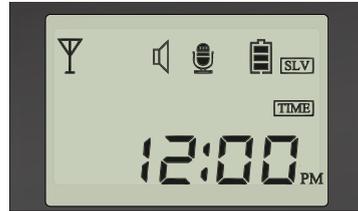
2

Press NO and YES button together for 2 seconds

3

Mode icon will blink on the LCD screen

4
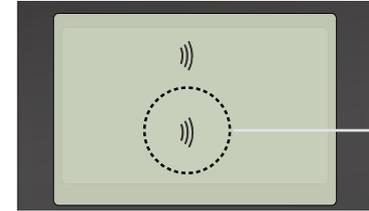
Press (-) or (+) button to select mode

5
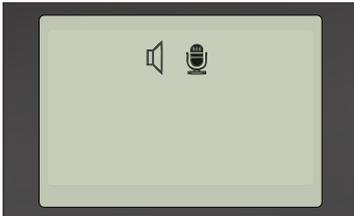
Select Tour Guide and Press POWER / MENU button to enter selected Tour Guide mode.

6

When mode selection is made CHAIRMAN SLV will blink

7
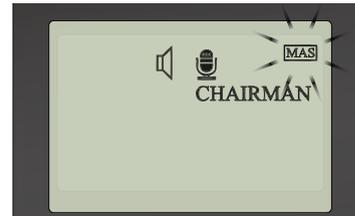
Press (+) or (-) button to select CHAIRMAN MAS / CHAIRMAN SLV / SLV.

8
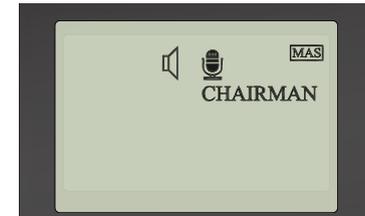
Press POWER / MENU button to enter CHAIRMAN MAS / CHAIRMAN SLV / SLV.
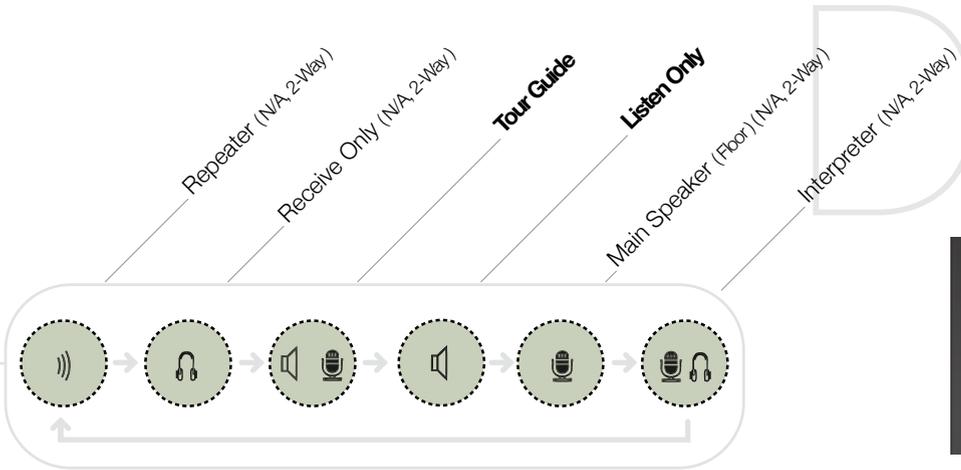
Repeater (N/A, 2-Way) Receive Only (N/A, 2-Way) **Tour Guide** **Listen Only** Main Speaker (Floor) (N/A, 2-Way) Interpreter (N/A, 2-Way)

Press (+) button, the mode will change in sequence above. Press (-) button for reverse sequence

Note: In 2-Way Mode, 2 different applications can be used as listed below. Each has a different role but they both can be used in 2-Way Mode.

2-Way Modes

Tour Guide
Listen Only

9

Address (ADD) icon will now begin to blink Press (+) or (-) button to select a Address number (0 – 1023). Use (0- 99) for voting feature.

10

Press POWER / MENU button to enter Address number

11

GROUP icon will now blink. Press (+) or (-) button to select a Group number. Must have one Master in a group. MAS and SLV units must have same group number

12

Press POWER / MENU button to enter Group number. For 4 simultaneous groups, numbers must be consecutive. ie (11, 12, 13, 14). Can use (0 - 1023) for group numbers

2-way setup

13

The hour number (TIME) will now blink. Press (+) or (-) button to select Hour number (If unit is set as SLV or SLV CHAIRMAN, skip to step 19) **NOTE: Only CM sets time, SLV units auto-sync**

14

Press POWER / MENU button to enter Hour number

15

The minute number (TIME) will now blink. Press (+) or (-) button to select Minute number

16

Press POWER / MENU button to enter Minute number

17

TALK icon will now blink (speech time) Press (+) or (-) button to select a speech time (0 — 60 min)

18

Press POWER / MENU button to enter speech time. If you wish to not set a speech time, set speech time to :0.

19
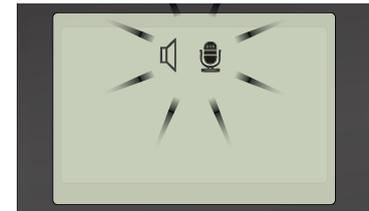
You are now at the beginning of the setup mode. To save and exit setup, hold NO and YES buttons together for 2 seconds

SIMULTANEOUS INTERPRETATION MODE OPERATION GUIDE

Power ON/OFF

Press and hold the Power/Menu button for two seconds. The LED's will flash and the LCD will turn on.

Press and hold the Power/Menu button for two seconds to turn the unit off.

Main (floor) speaker

Main speaker will use channel 0
Press the TALK button to activate the microphone

Simultaneous Interpreter

Each Interpreter unit will need to be assigned a channel number (1-14). The TALK button must be activated to send the translation to the attendees.

Repeater function

An additional DLT 100 can be set-up as a repeater to increase the range of each channel.

Connecting to external devices

The 30 pin charging connector on the bottom of the DLT 100 will also connect to many i-Pod compatible chargers / speaker stations.

The 3.5mm stereo microphone jack can accept a headphone level or a line level output from audio sources when using the Williams Sound, LLC WCA 094 attenuated cable.

SIMULTANEOUS INTERPRETATION SETUP

steps	main speaker (floor) master	interpreter (SLV)	repeater	attendees (DLT or DLR) receive only
roles	Main speaker's speech will be transmitted through channel 0	Interpreters can be set as many as needed. (1-14 channels: Max 14)	1 repeater per channel. (0-14 channels; max 15)	Within a group, capable of selecting one preferable interpretation channel (0-14 channels: Max 15)
display	🎙	🎙🎧	)))	🎧
1. Interpretation Mode Setup	Press No - Yes buttons together for 2 Sec to enter setup menu. Then set to interpretation mode 🎙 . Press + or – button to select.			
2. Master / Slave Setting	Press menu button once, then press + or - button to set Master or slave (MAS or SLV) NOTE: Master set to main speaker except when repeater is used. The first repeater must be set to Master, then all other repeaters should be set to Slave.			
3. Transmitting Channel Setting	Channel 0 is assigned automatically	Press mode button once, then press + or - button to select transmitting channels of interpreters (Interpreters: 1-14 Ch / Repeater: 0-14 Ch)		
4. Group Setting	Press menu button once, then press + or - button to select group number between (0-1023). NOTE: Only one group possible in SI mode.			
5. Time Setting	Press menu button once, then press + or - button to set current time (only Master / main speaker has the ability to control time setting)			
6. Save and exit setup	When setup is complete, press No - Yes buttons together to save and exit			

1

Press and hold POWER button for 2 seconds to turn DLT 100 on

2

Press NO and YES button together for 2 seconds

3

Mode icon will blink on the LCD screen

4

Press (-) or (+) button to select mode

Repeater

Receive Only

Tour Guide (N/A Int. Mode)

Listen Only (N/A Int. Mode)

Main Speaker

Interpreter

Press (+) button, the mode will change in sequence above. Press (-) button for reverse sequence

Note: In Interpretation Mode, 4 different applications can be used as listed below. Each has a different role but they all can be used in Interpretation Mode.

Interpretation Modes

Repeater - *Extends the range for each channel*
Receive Only - *For listening to selected interpretation channel*
Main Speaker
(Floor)
Interpreter
Listens to main speaker and transmits interpretation to receive only units

SIMULTANEOUS INTERPRETATION SETUP

5

Press POWER / MENU button to enter selected interpretation mode.

6

When mode selection is made SLV or MAS icon will blink. (Receive only will not have this option. Skip to step 9)

7

Press (+) or (-) button to select SLV (Slave) or MAS (Master). NOTE: When 🎤 is used, it must be defined as Master, except when repeater is used. Repeater must be set to Master

8

Press POWER / MENU button to enter SLV or MAS.

9
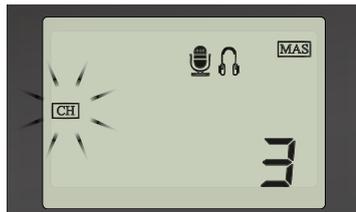
Channel icon will now begin to blink Press (+) or (-) button to select a Channel number 1 – 14. Transmitting Channel must be set different. (N/A with Main Speaker unit. Set to CH 0)

10
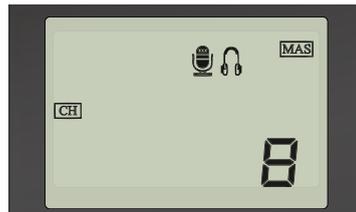
Press POWER / MENU button to enter Channel number

11

Group icon will now blink. Press (+) or (-) button to select a Group number. Master and Slave units must have same group number.

12

Press POWER / MENU button to enter Group number

13

The hour number (TIME) will now blink. Press (+) or (-) button to select Hour number (Master will only have this option. All other units skip to step 17)

14

Press POWER / MENU button to enter Hour number

15

The Minute number will now blink Press (+) or (-) button to select Minute number

16

Press POWER / MENU button to enter Minute number

17

You are now at the beginning of the setup mode. To save and exit setup, hold NO and YES buttons together for 2 seconds

I M P O R T A N T

There can only be one master (floor) per group

REPEATER MODE

Main Speaker (Floor) DLT

Must be set to *Main Speaker, CH 0* and *SLV*

Main Speaker (Floor) DLT Repeater

Must be set to *Repeater, CH 0 and MAS.* NOTE: For more than one repeater, repeaters on additional channels must be SLV

Interpreter DLT's


Must be set to *Interpreter, CH 1 - 14*, and *SLV*

Interpreter Repeater DLT's

Must be set to *Repeater, CH 1-14* and *SLV*

DLT 100's FOR FLOOR AND INTERPRETERS

CH 0 — **Main speaker** (floor)

CH 1   CH 2   CH 3...   CH 14

SLAVE

MASTER   SLAVE REPEATERS

DLT 100 [LISTEN ONLY] OR DLR 50
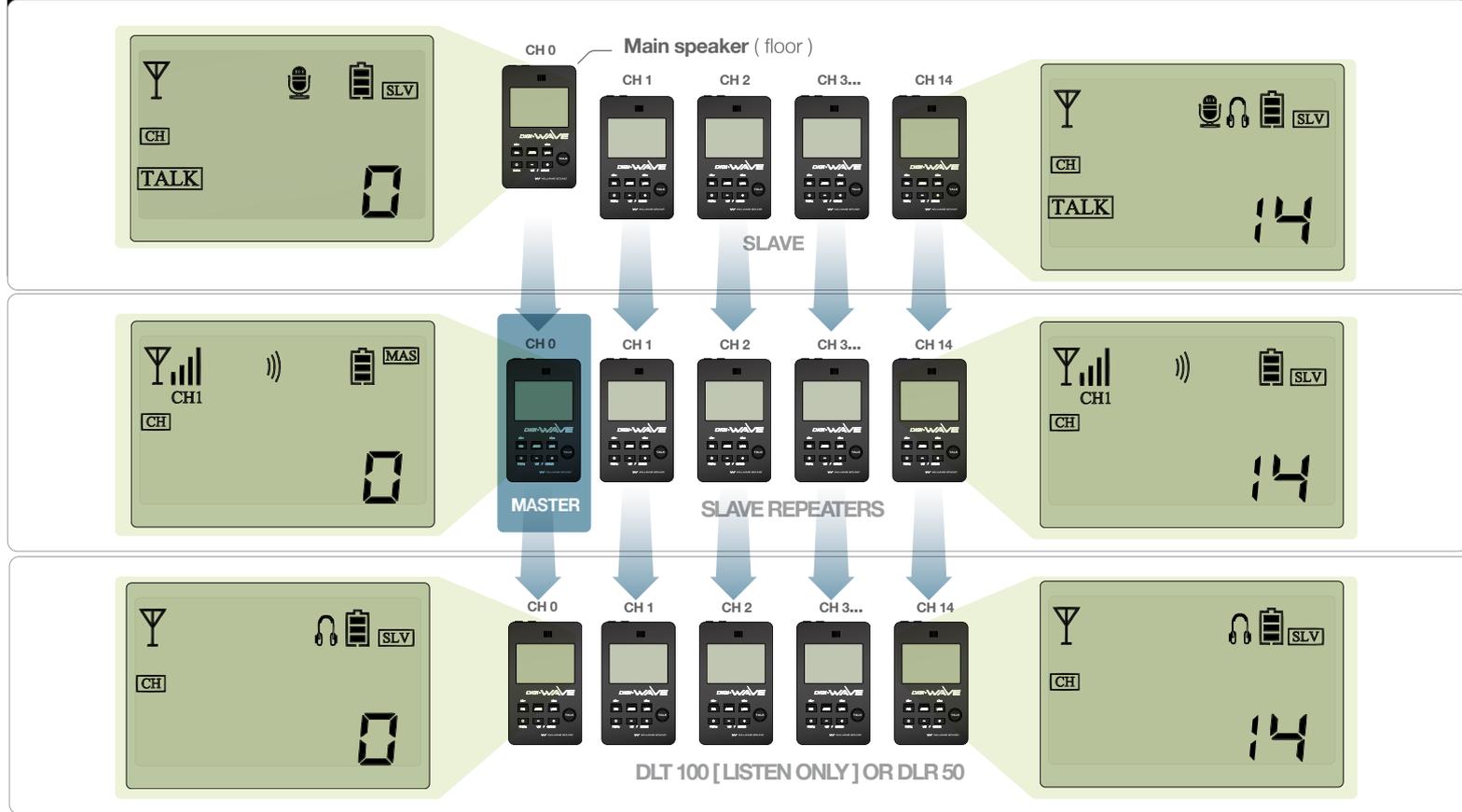
DLT 100 [LISTEN ONLY] OR DLR 50 MUST BE ON THE SAME GROUP. EACH LISTENER WOULD SELECT A DESIRED CHANNEL / LANGUAGE.
NOTE: WHEN REPEATERS ARE NOT REQUIRED, THE MAIN SPEAKER (CH 0) WILL BE THE MASTER.

DLR 50

BUTTON FUNCTIONS

- Volume up
- Channel up
- Channel down
- Power On / Off
- Volume down
- Internal Speaker
- External Headphone Jack (3.5mm mono or stereo)
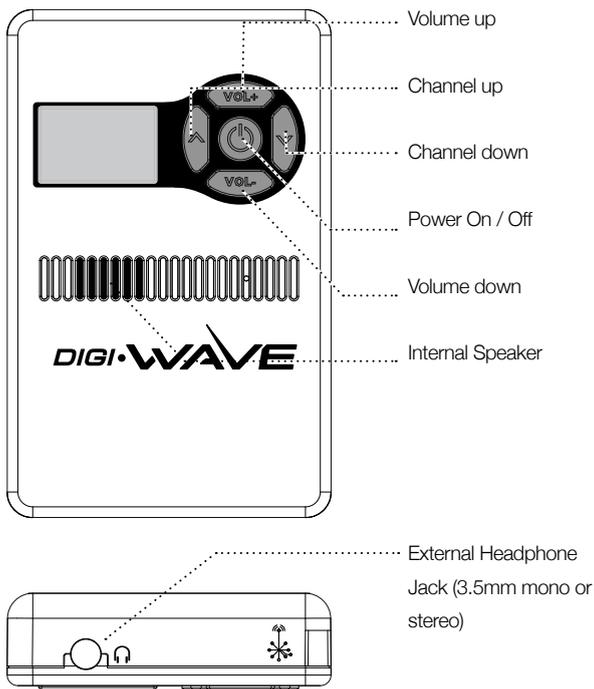
OPERATION GUIDE

Two AAA batteries must be inserted into the DLR. Be sure to observe correct polarity.

Power on/off by holding the power button for 3 seconds.

In interpretation mode, DLR will seek active DLT's. Press channel button up or down to seek next active DLT. In two-way mode, group must be selected.

Display will flash 88 if not synched with DLT 100.

If the units are synched, briefly push the power button to show group assigned, 0 to 99.

To change group, hold the up and down channel buttons for 3 secs until "Gr" and number is flashing.

Use volume up/down buttons to select group number.

Hold up and down channel buttons for 3 secs again to store change.

To change volume level press up or down volume buttons, display will show L0 through L9. (Default at turn on is L6)

User can listen using the speaker on the front of the DLR or by plugging in stereo or mono earphones into the jack (which defeats the speaker operation).

Low battery indicator will show as LO on the display.

The DLR will automatically power down after 2 minutes if not synched with the DLT.

DLT 100 SPECIFICATIONS

Dimensions
103 x 62 x 11mm (4.1 x 2.4 x 0.4 inches)

Weight
80g (2.8oz) including battery

Color
Black and silver

Enclosure
Shatter resistant PC/ABS plastic

Battery type
Li Polymer with smart charge built into transceiver

Battery life
Up to 14hrs talk time per charge

Charge time
5hrs. TFP 045 with cable and international adapters
Optional two-bay charger CHG 102

Channels
Up to 15 simultaneous channels (Interpretation mode)
Up to 4 simultaneous groups (two-way mode) must be
consecutive; ie: 11, 12, 13, 14

Operating frequencies
2.4GHz (ISM band) 2.402 – 2.476GHz FHSS

Frequency response
150 – 11KHz

S/N ratio
69dB (A weighted)

THD
0.33 %

*Depending on environmental conditions

Microphone input
Internal microphone (disabled when MIC jack engaged)
and 3.5mm stereo jack (tip/sleeve) with electret
microphone bias, adjustable gain with 63dB range.

Audio output
Max SSPL 90 111.8dB (EAR 013), 116.8dB (EAR 041)
Internal speaker (disabled when ear jack engaged) 16mW
@ 33Ω

Range
Up to 100ft outdoors and 200ft indoors*

Modulation
GFSK, binary CDMA

RF output
14dBm Max

Security code
87 bit encryption

Controls
Front panel push buttons for volume up/down, group
select, menu access and selection, voting, timer, time,
MIC on/off and power on/off. System reset button
(rear panel)

Output
3.5mm stereo/mono jack
30 pin charging jack with audio out to base stations

Side tone
-12dB below volume

Speaker
Internal speaker (disabled when ear jack is engaged)

Indicators
LCD (Group, channel, volume level, battery status, mode,
signal strength)
LED's (charge status, voting)
Red LED around talk button when enabled
Amber LED signifying voting feature activated.

Maximum presenters
Two presenters at any given time

Approvals
FCC, Industrie Canada, CE, C-tick, RoHS, WEEE

Warranty
2 years parts and labor (90 days on accessories).

DLR 50 SPECIFICATIONS

Dimensions
85 x 55 x 16mm (3.35 x 2.16 x 0.63 inches)

Weight
42g (1.5oz) not including batteries

Color
Black

Enclosure
Shatter resistant PC/ABS plastic

Battery type
2 x AAA

Battery life
Up to 24hrs (Alkaline)

Channels
Up to 15 simultaneous channels (Interpretation mode)
Up to 4 simultaneous groups

Operating frequencies
2.4GHz (ISM band) 2.402 – 2.476GHz FHSS

Frequency response
150 – 11KHz

S/N ratio
65dB (A weighted)

THD
0.45 %

Audio output
Max SSPL 90 111.8dB (EAR 013), 116.8dB (EAR 041)

Headphone output
12mW @ 33Ω

Range
Up to 100ft outdoors and 200 ft indoors*

Modulation
GFSK, binary CDMA

Security code
87 bit encryption

Controls
Front panel push buttons for volume up/down, group select and power on/off.

Output
3.5mm stereo/mono jack

Speaker
Internal speaker – disabled when ear jack is engaged

Indicators
LCD (Group, volume level, low battery, channel, mode)

Approvals
FCC, Industrie Canada, CE, C-tick, RoHS, WEEE

Warranty
2 years parts and labor (90 days on accessories).

*Depending on environmental condition

FAQs

What is the range of the system?
Up to 100ft outdoors and up to 200ft indoors. (The range always depends on the environmental conditions).

What is the benefit of this system over the 72MHz systems? DLT's can operate in two way mode. Team teach/guide ability. Voting feature for discussion mode. Relay feature increases range. Harmonized frequencies for international use.

How many simultaneous channels (systems) can be used? Four in two way mode and fifteen in interpretation mode.

How many DLR's can I use?
Unlimited within the range.

What is the battery life for the DLT and DLR?
DLT – up to 14hrs per charge. DLR - up to 24hrs (2 x AAA Alk. batts).

Is this product compatible with any other competitive system?
No.

Where can I buy this product?
Through Williams Sound, LLC dealers.

TROUBLESHOOTING

PROBLEMS	CAUSE	WHAT TO DO
Power does not turn-on	Dead battery	Charge the battery, replace battery
Power turned off automatically	Master device can't be found	Set Master device
Power doesn't turn off	Program Error	Press reset button on the backside of device (DLT only)
No audio in headphone	Disconnection of earphone	Check Earphone Connection
	Master doesn't exist	Set Master
	Different Group Number settings	Set every unit in the same group number
	Out of range	Enter the range of 100 – 200 ft from the master unit
	More than 1 master exists in a group	Set one master per group
	Obstacle exists	Move to another places or move the obstacles
	More than 2 units with Same address exist in a group	Set different address
Error in attendees checking	More than 2 units with Same address exist in a group	Set different address
Error in electronic voting results	More than 2 units with Same address exist in a group	Set different address
	Master unit can count ballots up to 99 only	Up to 99 people can vote
	Invalid address exists	Set address number between 0 ~ 99
Unable to select receiving channel	Transmitting channel is overlapping	Set different transmitting channel
Unable to transmit Interpretation	Please check the mode for simultaneous interpretation mode	Set simultaneous interpretation mode
	More than 2 master units exist	Set one master only

FCC STATEMENTS

Federal Communication Commission

Interference 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 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 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 where the receiver is connected.
  . Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation

exposure limits set forth for an uncontrolled environment. This equipment is a handheld device and should be maintained with a minimum safety distance of 20cm from the antenna. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

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WILLIAMS SOUND ®

HELPING PEOPLE HEAR