

# USER MANUAL

DIALOG® 20 USB Wireless Mic System



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|                                                                          |                               |  |
|                                                                          |                               |  |
|                                                                          |                               |  |
|                                                                          |                               |  |

#### Quick Start Guide Dialog 20 USB Microphone System Remote Software

**Quick Start Guide** 

#### User Manual Dialog 20 USB Microphone System Remote Software

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## About the Dialog 20 USB

### **DIALOG 20 USB - 2 CHANNEL WIRELESS MICROPHONE SYSTEM**

The Dialog 20 USB is a flexible, high quality, 2- channel wireless microphone solution with less than 4 milliseconds of audio latency that enables hybrid meetings with simultaneous local sound reinforcement. Connects to a PC via a single USB Type C cable for audio, power, and control. No external power source or additional audio cables required. The Dialog 20 USB system can be connected directly to a lap-top or desk-top PC via a USB (type C) connection.

## WS800 and DIALOG 20 USB Remote Software

This software is used to configure the Dialog 20 USB wireless microphone system.

This manual explains the software in greater details in the following sections.

### **PC REQUIREMENTS**

The minimum requirements for the Windows version of WS800 & DIALOG 20 USB software are:

- Operating System: Microsoft Windows 7, 8, 10 (32 and 64 bit)
- CPU: 1.6 GHz processor or greater
- Memory: 2 GB or more
- Network Connection: 100/1000 MB

## DOWNLOAD AND INSTALL THE SOFTWARE

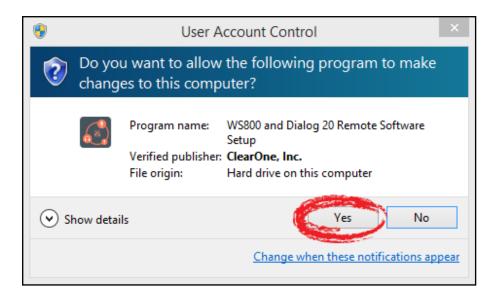
The easiest and most intuitive way to set parameters for ClearOne transmitters and receivers is with the Remote software. The software is available for download at the ClearOne Website:

# www.ClearOne.com / Resources / Resource Library / Professional Microphones / ClearOne Wireless Microphones / Software Downloads.

Install the software by running the executable and following installation prompts.

**Note:** If any previous version of the Remote software is already installed on your PC, make sure to uninstall it before installing more updated versions.

- 1. Click on the executable. A User Account Control window asks you for permission to allow the application to install the software.
- 2. Click [Yes] to proceed with the installation. The Select Location screen displays.



 If you want to install the application somewhere other than to the default location (Program Files\(x86)\ClearOne\WS800 and Dialog 20 USB Remote Software), click [Browse] and choose an alternate location. Once you have chosen your preferred location, click [Next]. The Select Start Menu screen displays.

| Setup - WS800 and Dialog 20 Remote Software – 🗆 🗙                                             |
|-----------------------------------------------------------------------------------------------|
| Select Destination Location<br>Where should WS800 and Dialog 20 Remote Software be installed? |
| Setup will install WS800 and Dialog 20 Remote Software into the following folder.             |
| To continue, click Next. If you would like to select a different folder, click Browse.        |
| ogram Files (x86)\ClearOne\WS800 and Dialog 20 Remote Software Browse                         |
|                                                                                               |
| At least 130.1 MB of free disk space is required.                                             |
| Next > Cancel                                                                                 |

 If you want to store program shortcuts somewhere other than the default location (ClearOne\ WS800 and Dialog 20 USB Remote Software), click [Browse] and choose an alternate location. Once you have chosen your preferred location, click [Next]. The Additional Tasks screen displays.

| C | Setup - WS800 and Dialog 20 Remote Software 🛛 🗖                                        | x |
|---|----------------------------------------------------------------------------------------|---|
|   | Select Start Menu Folder<br>Where should Setup place the program's shortcuts?          | B |
|   | Setup will create the program's shortcuts in the following Start Menu folder.          |   |
|   | To continue, click Next. If you would like to select a different folder, click Browse. |   |
|   | ClearOne WS800 and Dialog 20 Remote Software Browse                                    |   |
|   | Don't create a Start Menu folder                                                       |   |
|   | < Back Next > Cancel                                                                   |   |

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5. If you do not want an additional task to be completed, uncheck it, and click [Next]. The application is ready to install.

| Setup - WS800 and Dialog 20 Remote Software – 🗆 🗙                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------|
| Select Additional Tasks<br>Which additional tasks should be performed?                                                               |
| Select the additional tasks you would like Setup to perform while installing WS800 and<br>Dialog 20 Remote Software, then dick Next. |
| Additional shortcuts:                                                                                                                |
| <ul> <li>Create a desktop shortcut</li> </ul>                                                                                        |
|                                                                                                                                      |
|                                                                                                                                      |
|                                                                                                                                      |
|                                                                                                                                      |
|                                                                                                                                      |
|                                                                                                                                      |
|                                                                                                                                      |
| < Back Next > Cancel                                                                                                                 |

6. Click [Install]. The Installing screen displays, and the application begins installing the software.

| Ø | Setup - WS800 and Dialog 20 Remote Software -                                                                                                                                                                                                 |            | x |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---|
|   | Ready to Install<br>Setup is now ready to begin installing WS800 and Dialog 20 Remote Software on<br>your computer.                                                                                                                           | <b>2</b> 7 | B |
|   | Click Install to continue with the installation, or click Back if you want to review or<br>change any settings.                                                                                                                               |            |   |
|   | Destination location:<br>C:\Program Files (x86)\ClearOne\WS800 and Dialog 20 Remote Software<br>Start Menu folder:<br>ClearOne\WS800 and Dialog 20 Remote Software<br>Additional tasks:<br>Additional shortcuts:<br>Create a desktop shortcut | ^          |   |
|   | <                                                                                                                                                                                                                                             | ~          |   |
|   | < Back Install                                                                                                                                                                                                                                | Cancel     |   |

| Setup - WS800 and Dialog 20 Remote Software –                                                           | ×    |
|---------------------------------------------------------------------------------------------------------|------|
| Installing<br>Please wait while Setup installs WS800 and Dialog 20 Remote Software on your<br>computer. |      |
| Extracting files<br>C:\\ClearOne\WS800 and Dialog 20 Remote Software\microphone remote.exe              |      |
|                                                                                                         |      |
|                                                                                                         |      |
|                                                                                                         |      |
|                                                                                                         |      |
| Car                                                                                                     | ncel |

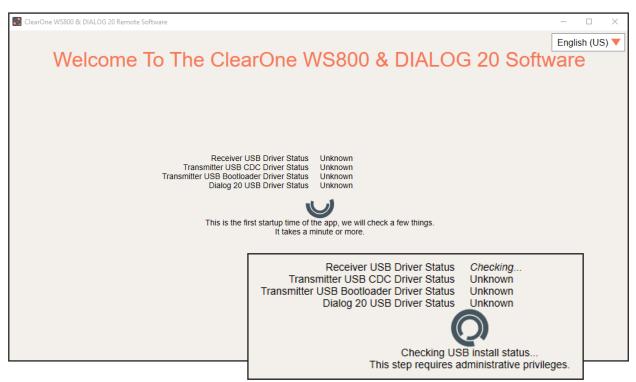
When the program finishes installing, the WS800 and DIALOG 20 USB Remote Software Setup Wizard completion screen displays.

7. If you want to launch the software upon completion, leave Launch WS800 and DIALOG 20 Remote Software checked, and click [Finish].



 The software launches and starts to initialize. Upon startup, the software attempts to install and checks the status of the Receiver USB, Transmitter USB CDC (Communication Device 7 DOC-0581-001 User Manual Dialog 20 USB Microphone System Remote Software Class), Transmitter USB Boot loader, and DIALOG 20 USB drivers. This requires administrative privileges.

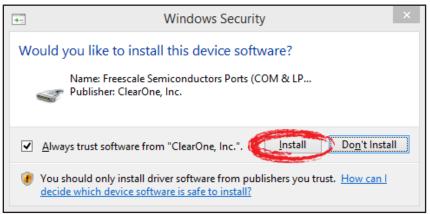
9. You are prompted to restart the software as an administrator. Click [RESTART AS ADMINISTRATOR].

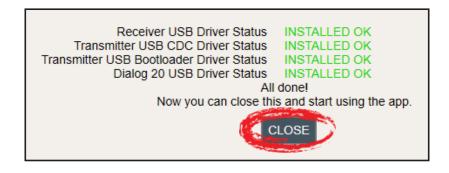


10. A Windows Security window asks you for permission to install the drivers, if they have not been installed previously. Click [Install].



11. Once all drivers have been installed, you are prompted to [CLOSE] out of setup, and to start using the application.





**Note:** Before using the software, it is recommended that you update the system firmware (See pg. 28 - 35).

### **HOME SCREEN**

Once installation completes, the home screen displays. From here, you can select your language<sup>1</sup>, configure your receiver(s) online<sup>2</sup>, configure and save receiver settings offline<sup>3</sup>, update software and firmware<sup>4</sup>, or access related user documentation<sup>5</sup>.

The software version is visible in the bottom right-hand corner, for easy reference.



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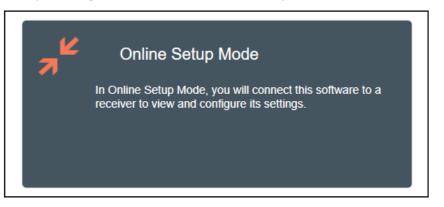
#### **ONLINE SETUP MODE**

Allows you to connect this configuration software to your Dialog 20 USB wireless receiver.

**Note:** The Dialog 20 USB receiver connects to this PC software via USB Type A to USB Type C cable.

If you are using Online Setup Mode,

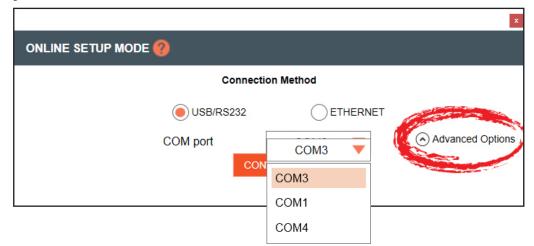
1. Select [Online Setup Mode] to connect the software to your receiver.



2. Select the USB connection method, and click [FIND RECEIVER]. The Ethernet connection is not applicable to the Dialog 20 USB receiver.



If you select [Advanced Options], COM port options populate. Once you select your option, click [CONNECT].



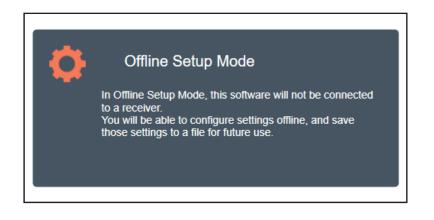
**Note:** When you connect to the Dialog 20 USB Receiver in Online Setup Mode, the GUI opens and the "Edit Transmitter Parameters" window is visible. You are now in Online Setup Mode.

#### **OFFLINE SETUP MODE**

Allows you to configure and save settings for future application.

If you are using Offline Setup Mode,

1. Select [Offline Setup Mode] to connect the software to your receiver.



2. Select the type of receiver you want to save settings for.

|                              | ×                          |
|------------------------------|----------------------------|
| Offline Setup Mode           |                            |
| Select the receiver you want | to set up in offline mode. |
| WS880 (8 Channels)           | WS840 (4 Channels)         |
| DIALOG 20 (2 Channels)       | DIALOG 10 (1 Channel)      |
|                              | CLOSE                      |

**Note:** When you connect to the Dialog 20 USB Receiver in Offline Setup Mode, the GUI opens and the "Edit Transmitter Parameters" window is visible. Any changes will be applied the next time you connect in Online Setup Mode.

**Note:** When you are in Offline Setup Mode, the RF Scan function is only a simulation.

#### **EDITING TRANSMITTER PARAMETERS**

The Dialog 20 USB receiver screen reflects 1 channel:

1. Click [EDIT] to edit the channel's parameters.

| 🛃 ClearOne WS800 & DIA                  | ALOG 20 Remote S | Software |                |            |       |               |            |                     |                            | - 0      | × |
|-----------------------------------------|------------------|----------|----------------|------------|-------|---------------|------------|---------------------|----------------------------|----------|---|
| Home File                               | Settings         | RF Scan  | Presets        | GPIO Setup | Alert | Help          |            |                     |                            |          |   |
| Receiver 1                              |                  |          |                |            |       |               |            |                     |                            |          |   |
| System Status                           |                  |          | Status Offline | 2          |       | Connectio     | on Offline | Receiver Name       | Alert                      | No Alert |   |
| o jotom o tatuo                         |                  |          | change change  | -          | (     | Channel 1     |            |                     | 7 1011                     |          |   |
| Slot Name                               |                  |          |                |            |       | SLOT 1        |            |                     |                            |          |   |
| Action                                  |                  |          |                |            |       |               |            | EDIT                |                            |          |   |
| Transmitter Status                      |                  |          |                |            |       |               |            | On                  |                            |          |   |
| Battery Hours                           |                  |          |                |            |       |               |            | 0%                  |                            |          |   |
| Transmitter Audio                       | Gain             |          |                |            |       | -20 dB        |            |                     |                            |          |   |
| Low Cut                                 |                  |          |                |            |       | Off           |            |                     |                            |          |   |
| Transmit RF Power                       |                  |          |                |            |       | 1 mW          |            |                     |                            |          |   |
| Power Switch Mod<br>TX Control Lock     | e                |          |                |            |       | On/Off<br>Off |            |                     |                            |          |   |
| Mute Mode                               |                  |          |                |            |       | Hard          |            |                     |                            |          |   |
| Standby Mode                            |                  |          |                |            |       | Disabled      |            |                     |                            |          |   |
| Model                                   |                  |          |                |            |       | Bodypack      |            |                     |                            |          |   |
| RF Diversity Stren<br>Output Level Cont |                  |          |                |            |       |               |            | SYNC OK<br>NO ALERT |                            |          |   |
|                                         |                  |          |                |            |       |               | _RF        |                     | AUDIO                      |          |   |
|                                         |                  |          |                |            |       |               | Ī          |                     | 0<br>18<br>36<br>54<br>-72 |          |   |

2. An EDIT TRANSMITTER window displays. Choose the parameter(s) you wish to edit and enter new value(s). Click [APPLY] to save changes and close out of this window.

| <b>Common TX Parameters</b> |                                 |                       |             |
|-----------------------------|---------------------------------|-----------------------|-------------|
| Slot Name                   | SLOT 1                          | Transmit RF Power     | 1 mW        |
| Channel# (*)                | 1 🔻                             | Power Switch Mode     | On/Off      |
| Transmitter Audio Gain      | 0 dB 🔻                          | Mute Mode             | Hard Mute   |
| RF Standby Mode             | Disabled                        | Low Cut               | OFF         |
|                             |                                 | LED Mode              | Normal      |
| ake sure there are no other | r transmitters on Channel 1, or | sync will not work    |             |
| Beltpack/Handheld Para      | meters                          | Tabletop/Podium Param | ieters      |
| TX Controls Lock            | Off                             | Button Mode           | Toggle Mode |
| Transmitter Type            | Boundary 🔻                      |                       |             |
| Apply above setting to slot | s 🗹 1                           |                       |             |
|                             |                                 |                       |             |

#### TRANSMITTER CHANNEL PARAMETERS

**Channel/Slot Name:** Assign a name to each transmitter / receiver pair. The Slot Name has up to ten alphanumeric characters that show on the OLED displays in the applicable Transmitters and ClearOne Remote software.

Channel Number: Manually set the channel number of the transmitter and receiver pair.

**Transmitter (TX) Audio Gain:** The transmitter has analog input gain from -20 db to +30 db.

**TX Gain Lock:** When a transmitter has Gain Lock enabled, it ignores gain changes sent from the receiver and keeps its current gain setting. This is useful if different types of transmitters are used with a particular receiver slot and they need to have different audio gains set for optimal performance.

Transmit RF Power: This function controls the output power of the transmitter.

- 1 mW: Use for most conference room applications with antennas about 50 feet from the transmitter.
- **10 mW:** Use when the antennas are 50 to 100 feet from the transmitters, or when you hear dropouts at 1 mW.

**Note:** Using higher power than necessary, especially when there is a high channel count, increases IMD (Inter Modulation Distortion) and can cause dropouts. It may seem counterintuitive, but you should first try lowering the output power to solve dropouts.

Power Switch Mode: This function controls the transmitter's power switch.

- **ON/OFF:** Use this setting to save battery life in the off position. It takes several seconds to reconnect after the transmitter is turned on.
- **ON/Mute:** Use this setting when you want to be able to turn the transmitter on without a delay.
- **ON/ON:** Use this setting to prevent the user from inadvertently turning the transmitter off.

Low Cut: Toggles a 75 Hz low-cut audio filter.

- **75:** Reduces low-frequency rumble, handling noise and background noise. This setting is recommended for most spoken-word applications.
- Off: This setting is recommended for most musical programs.

**RF Standby Mode:** When RF Standby Mode is enabled, the transmitter turns off the RF output when the transmitter is muted. This greatly reduces the power consumption and allows a much longer battery life.

- **Disabled:** Pressing the mute button mutes the receiver. The transmitter continues to send RF signals. Unmuting is instantaneous.
- **Enabled:** Muting turns off the transmitter RF power. Unmutting reestablishes the transmitter RF link to the receiver. There is a slight delay when unmuted, it takes about a half second to pass audio.

**Tx Controls Lock:** This function locks the control buttons on beltpacks and hand-held transmitters so that end users cannot change parameters

- **On:** Disables the buttons on the transmitter and receiver. Parameters can only be changed with ClearOne Remote software.
- **OFF:** Allows the transmitter control buttons to operate.

**Transmitter Type Defaults:** This function only works in Off-Line mode. It allows you to preset the default parameters for the various microphone types that are sync'ed to a particular channel. For example, you can select Receiver Slot 3 --> Click to Edit --> Transmitter Type - "BeltPack" and set button-lock to off. Then, any beltpack sync'ed to Receiver Slot 3 has unlocked buttons.

**Podium / Boundary Button Mode:** This function controls how the mute button affects podium gooseneck and boundary microphones.

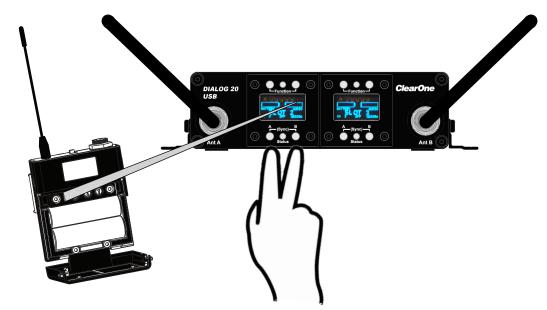
- Toggle Mute: Push the button to toggle the mute on or off
- **Push to Talk:** Push and hold the button to talk. Otherwise the mic is muted.
- **Push to Mute:** Push and hold the button to mute. Otherwise, the mic is open.
- 3. When the [NEED TO SYNC] alert is lit, it indicates that one or more parameters in queue is ready to be downloaded and implemented with the next transmitter sync to the receiver channel.

| 0            | %      |
|--------------|--------|
| +10 dB       |        |
| 75 Hz        |        |
| 1 mW         |        |
| On/Off       |        |
| Push To Talk |        |
| Logic        |        |
| Podium       |        |
| NEED T       | O SYNC |
| NÜÂ          | LERI   |
| RF           | AUDIO  |

#### SYNCING A DIALOG® 20 TRANSMITTER WITH A Dialog 20 USB RECEIVER

- 1. Power on the receiver.
- 2. Simultaneously press the two buttons on the bottom of the corresponding receiver module.
- If the AUTO-SCAN feature has been enabled, [Settings>Auto Scan>Enabled] "SCANNING" shows on the receiver OLED briefly. Then, "SYNCING" will appear when it is ok to sync the transmitter.
- 4. If the AUTO-SCAN feature has been disabled, [Settings>Auto Scan>Disabled] "SYNCING" will appear when it is ok to sync the transmitter.
- 5. When "SYNCING" shows on the receiver OLED, you can sync the transmitter.
- 6. Repeat the procedure if the receiver display shows "SYNC FAIL" or "BAD KEY".
  - **To sync a Boundary Mic or Podium Mic:** Press and hold the "Mute" button, power on the transmitter and then release the "Mute" button.
  - **To sync a Handheld or Beltpack:** Press and hold the "S" button, power on the transmitter and then release the "S" button.

**Note:** Both the transmitter and receiver OLED read "SYNC GOOD" when the sync is successful.



**Note:** The transmitter and receiver are assigned a new, random AES 128-bit encryption key every time they are synced.

#### FILE TAB

#### SAVE PRESET TO DISK

1. The configuration file of the system is referred to as "Preset". Save a preset by selecting the [File] tab, then [Save Preset To Disk]. You can save the configuration file (preset) onto your computer and then you can reuse the preset. Presets can be renamed at any time.

| 🛃 ClearOne WS800 & DIALOG 20 Remote Software |           |                |            |         |  |  |
|----------------------------------------------|-----------|----------------|------------|---------|--|--|
| Home                                         | File      | Settings       | RF Scan    | Presets |  |  |
| Receiver                                     | Lo        | oad Preset Fro | om Disk    |         |  |  |
| Receiver                                     | Sa        | ave Preset To  | Disk       | •       |  |  |
| System St                                    | dius      |                | - Jaitis O | ffline  |  |  |
|                                              | Channel 1 |                |            |         |  |  |
| Slot Nam                                     | e         |                |            | SLOT 1  |  |  |
| ACTION                                       | ACTION    |                |            |         |  |  |
| Transmitter Status                           |           |                |            |         |  |  |
| Battery Hours                                |           |                |            |         |  |  |
| Transmitt                                    | er Auto   | o Gain         |            | +10 dB  |  |  |

2. Select [SAVE] in the next window to save your preset.

|                                                                                       | × |
|---------------------------------------------------------------------------------------|---|
| SAVE SETTINGS TO FILE                                                                 |   |
|                                                                                       |   |
| Clicking the SAVE button will save the current settings to a file on your hard drive. |   |
|                                                                                       |   |

#### LOAD PRESET FROM DISK

1. Load a saved preset by selecting the [File] tab, then [Load Preset From Disk].

| 🛃 ClearOne WS800 & DIALOG 20 Remote Software |           |               |                  |         |  |  |
|----------------------------------------------|-----------|---------------|------------------|---------|--|--|
| Home                                         | File      | Settinas      | RF Scan          | Presets |  |  |
| Receiver                                     |           | ad Preset Fro |                  |         |  |  |
| System St                                    |           | ve Preset To  | Disk<br>Status O | ffline  |  |  |
|                                              |           |               | Chan             | nel 1   |  |  |
| Slot Nam                                     | e         |               |                  | SLOT 1  |  |  |
| ACTION                                       |           |               |                  |         |  |  |
| Transmit                                     | ter Statu | IS            |                  |         |  |  |
| Battery H                                    | lours     |               |                  |         |  |  |
| Transmit                                     | ter Auto  | Gain          |                  | +10 dB  |  |  |

- 2. Leave [Do NOT load channel names] checked if you do not want to load different channel names.
- 3. Select [OPEN FILE] to load a saved preset.



#### SETTINGS

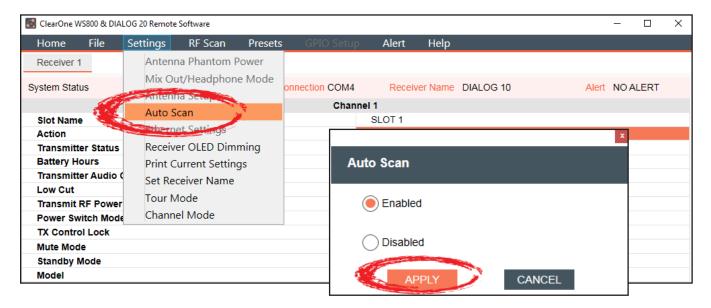
#### Note: Settings that are "greyed-out" are not aplicable to the Dialog 20 USB System

#### AUTO SCAN

When enabled, the Auto Scan function will scan and choose the best frequencies before a transmitter is synced.

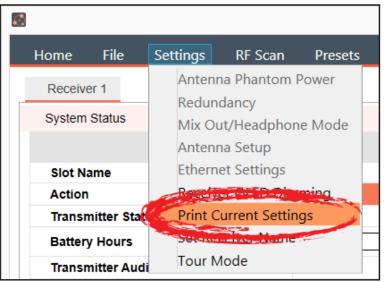
1. The Auto Scan function can be enabled or disabled. Select the [Settings] tab and click Auto Scan. In the pop-up window, choose "Enabled" or "Disabled" then Click [APPLY] and [X] to close.

#### Note: Auto Scan is enabled by default



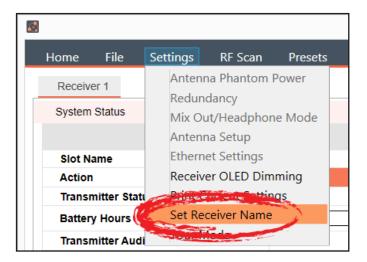
#### PRINT CURRENT SETTINGS

- 1. To print your current settings, select the [Settings] tab, then [Print Current Settings].
- 2. Your system window to print displays. Choose the printer you want to print to, and click [Print].



#### SET RECEIVER NAME

1. To set a new name for a receiver, select the [Settings] tab, then [Set Receiver Name].



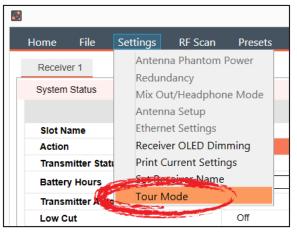
2. Select the receiver you want to name, enter the new name, and click [SEND].

|                                |                       |        | x |
|--------------------------------|-----------------------|--------|---|
| Set Receiver Name              |                       |        |   |
|                                |                       |        |   |
| Select receiver to name:       | Receiver 1 (DIALOG 10 | ) 🔻    |   |
| Enter a name for this receiver | DIALOG 10             |        |   |
|                                | Up to 26 characters   |        |   |
|                                | SEND                  | CANCEL |   |

#### TOUR MODE

**Note:** This function is not available in OFFLINE SETUP MODE for the Dialog 20 USB receiver.

1. Tour Mode enables multiple receivers to receive audio from a single transmitter. To enable Tour Mode, select the [Settings] tab, then [Tour Mode]. Repeat the next steps for each receiver you want to connect to the transmitter



- 2. Click the [On]/[Off] toggle button for the appropriate slot(s) to enable or disable Tour Mode.
- 3. Type key(s) into applicable box(es). A key can be from 1-32 alphanumeric characters.

**Note:** All receivers must use the same AES key as the transmitter to receiver audio. The Tour Mode function allows you to manually assign a key so that it can be shared between multiple receivers and a transmitter. When the AES key does not match, the audio is muted until there is a re-sync.

| <i>i</i>               | Tour Mode                                                                                                                                                                                                                                                   |              | ×  |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----|
| Tour Mode              |                                                                                                                                                                                                                                                             |              |    |
| All receive            | e allows multiple receivers to receive audio from a single transmitter.<br>rs must use the same AES key as the transmitter to receive audio. The Tour mode function allows you to manually assign a key so<br>between multiple receivers and a transmitter. | o that it ca | าก |
| 1. Click th            | e 'ON-OFF' toggle button on the selected slot to enable tour mode.                                                                                                                                                                                          |              |    |
| 2. Type a              | key in the box. The key can be from 1-16 alphanumeric characters.                                                                                                                                                                                           |              |    |
| 3. Click th            | e 'Update' button to send the key to the receiver.                                                                                                                                                                                                          |              |    |
| 4. Sync th             | e transmitter to the slot on the receiver. The key will then be stored in the transmitter and the receiver card.                                                                                                                                            |              |    |
| 5. To allow selected s | other receivers to connect to the transmitter, repeat steps 1-3 above, and then use the sync buttons on the receiver to set the key lot.                                                                                                                    | y in the     |    |
| Make sure              | the slot is on the same channel as the transmitter.                                                                                                                                                                                                         |              |    |
| Slot                   | 1 2                                                                                                                                                                                                                                                         |              |    |
| Tour Mod               | e On III Off                                                                                                                                                                                                                                                |              |    |
| Key                    | Key 1                                                                                                                                                                                                                                                       |              |    |
|                        | UPDATE                                                                                                                                                                                                                                                      |              |    |
|                        |                                                                                                                                                                                                                                                             | CANCEL       |    |

4. Click [UPDATE] to send the key(s) to the receiver(s). When the [UPDATE] button greys out, you can close the window.



#### CHANNEL MODE

1. To change bandwidth for your channels, select the [Settings] tab, then [Channel Mode]. There are two modes to choose from. The default mode is Wide Band mode.

| 8                                   |                |                                      |         | ClearOne W       |  |
|-------------------------------------|----------------|--------------------------------------|---------|------------------|--|
| Home File                           | Settings       | RF Scan                              | Presets | GPIO Setup       |  |
| Receiver 1                          | Anter          | nna Phantom                          | Power   |                  |  |
| System Status                       |                | n <mark>dancy</mark><br>)ut/Headphor | ie Mode | (                |  |
|                                     |                | na Setup                             |         |                  |  |
| Slot Name<br>Action                 |                | net Settings                         |         | EDIT             |  |
| Transmitter Status<br>Battery Hours |                | ver OLED Dim<br>Current Settin       |         | <b>Off</b><br>0% |  |
| Transmitter Audio G                 |                | eceiver Name                         |         |                  |  |
| Low Cut<br>Transmit RF Power        | And the second | nel Mode                             |         |                  |  |
| Power Switch Mode                   | Sec. Sec. a    |                                      | On/Off  |                  |  |



#### Wide Band Mode:

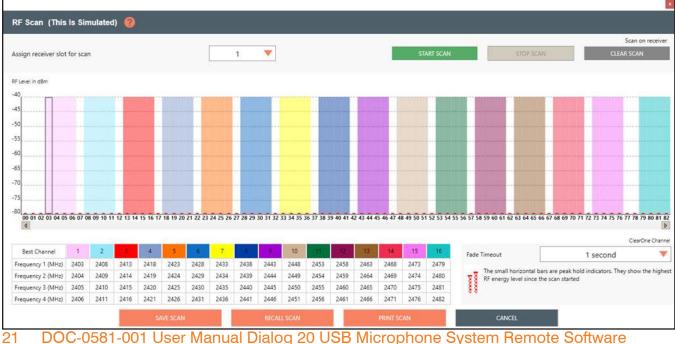
Wide Band 8ch mode: Uses 4 frequencies spaced widely across the RF band. Pros: Can cause less interference to WiFi devices that are occupying the same frequencies.

RF Scan 🔞 • Assign receiver slot for scan 1 CLEAR SCAN RELevel in dBr 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 Best Channel 1 second Frequency 1 (MHz) 2406 2409 2412 2415 2418 2421 2424 2403 rs. They show the highest RF energy level since the Frequency 2 (MHz) 2427 2430 2433 2436 2439 2442 2445 2448 [and a Frequency 3 (MHz) 2451 2454 2457 2460 2463 2466 2469 2472 2480 2477 2478 2479 2481 2482 Frequency 4 (MHz)

Cons: Does not always take advantage of white spaces between WiFi devices.

#### **Narrow Band Mode:**

Narrow Band 16ch mode: Uses 4 frequencies spaced closely together in the RF band. Pros: Can allow the use of more narrow white spaces between WiFi devices. Cons: Can cause more interference to WiFi devices that are occupying the same frequencies.



DOC-0581-001 User Manual Dialog 20 USB Microphone System Remote Software

#### **RF SCAN**

1. To utilize the Radio Frequency (RF) Scanner, select [RF Scan].

The RF Scanner scans for outside interference, intermodulation distortion (IMD), and tests the antennas. For greater detail on the RF Scan function and its application, select the question mark icon in the window. Another window displays with the details.

| 🛃 ClearOne WS800 & DIALOG        | i 20 Remote Soft                       |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              | - 🗆 X                                                                                                               |
|----------------------------------|----------------------------------------|-----------|-----------|--------------|--------------|----------|--------------|----------|--------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|---------------------------------------------------------------------------------------------------------------------|
| Home File Se                     | ettings RF Scar                        | n F       | Presets   | GP           | iO Setu      | p A      | lert         | Help     |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| Receiver 1                       | all and a                              |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| 0                                |                                        |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| System Status                    |                                        |           |           |              | Status       | Link     | DK           |          |              |              |              |              |           |              | Conr         | nection (    | COM4         | Receiver Name DIALOG 10 Alert NO ALERT                                                                              |
|                                  |                                        |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| Slot Name<br>Action              | RF Scan 🕜                              |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| Transmitter Status               |                                        |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              | Scan on receiver DIALOG 10                                                                                          |
| Battery Hours                    |                                        |           |           |              |              |          | ſ            |          |              | _            |              |              |           |              |              |              |              |                                                                                                                     |
| Transmitter Audio Gai            | Assign receiver slot                   | t for sca | n         |              |              |          |              |          | 1            | •            |              |              |           |              |              | ST           | ART SCAN     | N STOP SCAN CLEAR SCAN                                                                                              |
| Low Cut                          |                                        |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| Transmit RF Power                | RF Level in dBm                        |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| Power Switch Mode<br>Button Mode |                                        |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| Mute Mode                        | -40                                    |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| Standby Mode                     | -45                                    |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| Model                            | -50                                    |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| RF Diversity Strength            | -55                                    |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
| Output Level Controls            |                                        |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
|                                  | -60                                    |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
|                                  | -65                                    |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
|                                  | -70                                    |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
|                                  | -75                                    |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
|                                  |                                        |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
|                                  | -80                                    | 5 06 07 0 | 8 09 10 1 | 1 12 13 14   | 15 16 17     | 18 19 20 | 21 22 23     | 24 25 26 | 27 28 29     | 30 31 32     | 33 34 35     | 36 37 38 3   | 9 40 41 4 | 2 43 44 4    | 5 46 47 4    | 8 49 50 51   | 52 53 54     | 4 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82                               |
|                                  |                                        |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |
|                                  | Best Channel                           | 1         | 2         | 3            | 4            | 5        | 6            | 7        | 8            | 9            | 10           | 11           | 12        | 13           | 14           | 15           | 16           | ClearOne Channel                                                                                                    |
|                                  |                                        | 2403      | 2408      |              |              | 2423     |              | 2433     |              |              |              |              | 2458      |              |              |              | <u> </u>     | Fade Timeout 1 second 🔻                                                                                             |
|                                  | Frequency 1 (MHz)<br>Frequency 2 (MHz) | 2403      | 2408      | 2413<br>2414 | 2418<br>2419 | 2423     | 2428<br>2429 | 2433     | 2438<br>2439 | 2443<br>2444 | 2448<br>2449 | 2453<br>2454 | 2458      | 2463<br>2464 | 2468<br>2469 | 2473<br>2474 | 2479<br>2480 | F The small horizontal bars are peak hold indicators. They show the highest                                         |
|                                  |                                        | 2404      | 2409      | 2414         | 2419         | 2424     | 2429         | 2434     | 2439         | 2444         | 2449         | 2454         | 2459      | 2464         | 2469         | 24/4         | 2480         | I he small horzontal bars are peak hold indicators. They show the highest<br>RF energy level since the scan started |
|                                  | Frequency 3 (MHz)                      | 2405      | 2410      | 2415         | 2420         | 2425     | 2430         | 2435     | 2440         | 2445         | 2450         | 2455         | 2460      | 2465         | 2470         | 24/5         | 2481         | 88                                                                                                                  |
|                                  | Frequency 4 (MHz)                      | 2406      | 2411      | 2416         | 2421         | 2420     | 2431         | 2430     | 2441         | 2440         | 2451         | 2450         | 2401      | 2400         | 24/1         | 24/6         | 2482         |                                                                                                                     |
|                                  |                                        |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              | CANCEL                                                                                                              |
|                                  |                                        |           |           |              |              |          |              |          |              |              |              |              |           |              |              |              |              |                                                                                                                     |

| 🛃 ClearOne WS800 & DIALOG    | 20 Remote Software  |            |            |          |        | - • ×                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------|---------------------|------------|------------|----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Home File Se                 | ttings RF Sca       | an F       | resets     | GPI      | O Seti | ιρ Alert Help                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Receiver 1                   |                     |            |            |          |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                              |                     |            |            |          |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| System Status                |                     |            |            |          | Statu  | RF Scan Details Receiver Name DIALOG 10 Alert NO ALERT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                              |                     |            |            |          |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Slot Name                    | RF Scale 🖉          |            |            |          |        | Use the ClearOne Remote scanner to scan for outside interference, intermodulation distortion (IMD), and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Action<br>Transmitter Status |                     |            |            |          |        | to test the antennas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Battery Hours                |                     |            |            |          |        | Test for Outside Interference:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Transmitter Audio Gai        | Assign receiver slo | ot for sca | n          |          |        | Select RF SCAN to open the scanner. Press START to run the scan. AN STOP SCAN CLEAR SCAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Low Cut                      |                     |            |            |          |        | The scan reads the RF level of the selected module. A red line indicates RF interference typically<br>generated by an outside device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Transmit RF Power            | RF Level in dBm     |            |            |          |        | Outside interference does not typically cause hits or dropouts unless it is within about 20 dB of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Power Switch Mode            |                     |            |            |          |        | transmitter power level.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Button Mode                  | -40                 |            |            |          |        | Test the Antennas:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mute Mode<br>Standby Mode    | -45                 |            |            |          |        | ClearOne receivers employ a true diversity antenna scheme, so each receiver module has an<br>independent RF section connected to each antenna. The system automatically switches to the RF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Model                        | -50                 |            |            |          |        | section that has the strongest antenna signal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| RF Diversity Strength        |                     |            |            |          |        | When scanning, ClearOne transmitters are indicated with two green lines on a single channel number.<br>Each line represents the power level received from each RF section. If you only see one green number of the section |
| Output Level Controls        | -55                 |            |            |          |        | one of the green lines is much lower than the other, your system probably has a defective antenna cable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                              | -60                 |            |            |          |        | or one antenna is being blocked.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                              | -65                 |            |            |          |        | Your system operates most reliably when both green lines are in the -40 to -55 dBm range on the graph.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                              |                     |            |            |          |        | ClearOne engineers are on standby to help you with your antenna design.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                              | -70                 |            |            |          |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                              | -75                 |            |            |          |        | IMD: Intermodulation distortion, or IMD, is the most difficult interference to control because it is<br>intermittent. IMD occurs whenever two or more transmitters operate at the same time in close proximity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                              | -80                 |            |            |          |        | For a demonstration, set two transmitters to 50 mW and set them to channels 4 and 5. Place the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                              | 00 01 02 03 04      | 05 06 07 0 | 8 09 10 11 | 12 13 14 | 15 16  | transmitters close to an antenna and run the scan.<br>MDD will show ser all incs on channels 3 and 6. When you turn off one of the transmitters, both red                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                              |                     |            |            |          |        | lines go away. The IMD could interfere with transmitters operating on channels 3 or 6, especially if they ClearOne Channel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                              | Best Channel        | 1          | 2          | 3        | 4      | are operating at 1 mW and placed far from the antenna. Fade Timeout 1 second                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                              | Frequency 1 (MHz)   | 2403       | 2408       | 2413     | 2418   | Many installers are diligent about solving outside interference problems, but IMD problems are more                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                              | Frequency 2 (MHz)   | 2404       | 2409       | 2414     | 2419   | difficult. For example, the installer may not be able to test for alrege number of transmitters moving a round on a stage to simulate a behowing endformance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                              | Frequency 3 (MHz)   | 2405       | 2410       | 2415     | 2420   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                              | Frequency 4 (MHz)   | 2406       | 2411       | 2416     | 2421   | One of the major advantages of ClearOne digital systems is that they are much less susceptible to IMD than analog systems. In addition, ClearOne engineers are on standby to help you deging your antenna than analog systems. In addition, ClearOne engineers are on standby to help you deging your antenna than analog systems. In addition, ClearOne engineers are on standby to help you deging your antenna than additional to the systems are standby your antenna than analog systems. In addition, the system is the help you deging your antenna than a systems are standby the systems are standby your attenna than a system is the system of the system o   |
|                              |                     |            |            |          |        | system to minimize IMD, preferably before the installation crew arrives at the jobsite.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                              |                     |            |            |          |        | The goal is to adjust the antenna placement to keep the IMD interference at least 20 dB below the CANCEL CANCEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                              |                     |            |            |          |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                              |                     |            |            |          |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                              |                     |            |            |          |        | CLOSE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                              |                     |            |            |          |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                              |                     |            |            |          |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

#### 2. Select receiver slot for scan.

#### 3. Click [START SCAN] to start the RF Scan.

| RF Scan 🥝                     |     |                      |                  |
|-------------------------------|-----|----------------------|------------------|
| Assign receiver slot for scan | 1 🔻 | START SCAN STOP SCAN | Scan on receiver |

Red lines indicate potential interference, and the small horizontal bars are peak hold indicators. They show the highest RF energy level since the scan started.

The colored bars are the "Frequency Markers", and represent where the Dialog 10 USB RF channel (Each channel is made up of 4 discrete frequencies) is allowed to hop during run time.

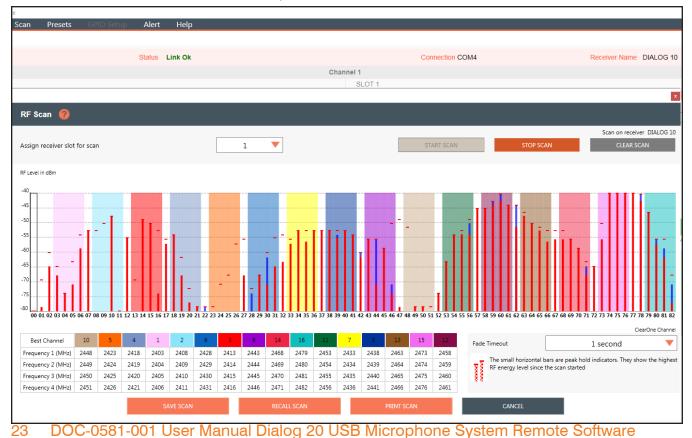
For example, if you want to use RF channel 10 (tan), select the <sup>10</sup> icon in the row labeled "Best Channel", and the system hops on the tan frequencies only.

The scan shows where each of the 4 frequencies are so you can see which channel is best overall. Channels are also ranked from best to worst based on interference.

The Fade Timeout function shows the most recent data as a solid bar. As data ages, it fades out based on the time setting. This allows you to distinguish between current potential interference and interference that has happened in the past. This enables you to see which channel is the best over an extended period of time, not only for 1 or 2 second periods.

#### Notes: Tips on Setting the RF channel.

1. Identify the RF channel with the least amount of RF interference using the receivers RF scan feature.

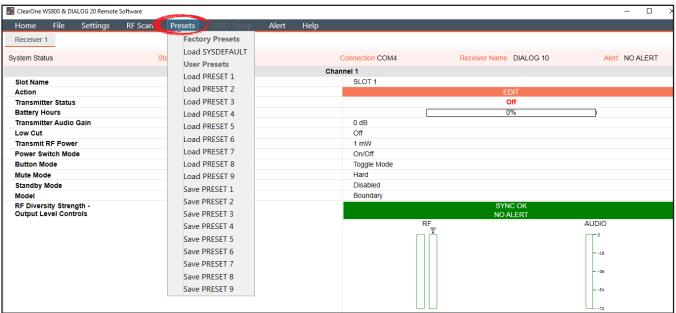


2. Set the RF channel of the Tx/Rx pair based on the RF scan results.

#### PRESETS

Presets allow you to save settings to receiver memory or recall settings from receiver memory. **Note:** This function is not available in OFFLINE SETUP MODE

1. To load a preset, select [Presets], and select a preset to Load. Load "PRESET 1" for factory default settings.



2. Confirm that you want to load the preset by clicking OK

| Confirm Load Preset                   | x |
|---------------------------------------|---|
| Do you want to load the "SYSDEFAULT"? |   |

- 3. To rename a preset, select [Presets], and select a preset to save.
- 4. The preset name prompt displays. Rename the preset and click [OK].

|   | Presets GPIO Setup |
|---|--------------------|
| I | Factory Presets    |
|   | Load SYSDEFAULT    |
|   | User Presets       |
| I | Load PRESET 1      |
| I | Load PRESET 2      |
|   | Load PRESET 3      |
| I | Load PRESET 4      |
| I | Load PRESET 5      |
| I | Load PRESET 6      |
| I | Load PRESET 7      |
| I | Load PRESET 8      |
| l | Load PRESET 9      |
|   | Save PRESET 1      |
| I | Save PRESET 2      |
|   | Save PRESET 3      |
| I | Save PRESET 4      |
| I | Save PRESET 5      |
| I | Save PRESET 6      |
| I | Save PRESET 7      |
| I | Save PRESET 8      |
| l | Save PRESET 9      |

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#### ALERT

1. To set up automatic system monitoring alerts, select [Alert]. An alert can either be shown on the GUI screen, or it can be emailed to one or more email lists. The Alerts screen lets you select which conditions trigger an alert.

| mote Software                                                                |                    |                       |                       |                  |
|------------------------------------------------------------------------------|--------------------|-----------------------|-----------------------|------------------|
| <b>js</b> RF Scan Presets GPIO Setup                                         | Alert Help         |                       |                       |                  |
|                                                                              |                    |                       |                       |                  |
|                                                                              |                    |                       |                       | x                |
| ALERT 👩                                                                      |                    |                       |                       |                  |
| Use this dialog to set up alerts. Use the checkb the Alert condition is met. | oxes to select whe | ere the Alert informa | tion will be displaye | ed and sent when |
| Alert Condition                                                              |                    | Aler                  | t Method              |                  |
| Low Battery                                                                  | Email 1            | Email 2               | Email 3               | GUI Screen       |
| Battery Runtime Hours > 1                                                    | Email 1            | Email 2               | Email 3               | GUI Screen       |
| Low RF Signal                                                                | Email 1            | Email 2               | Email 3               | GUI Screen       |
| TX Turned Off                                                                | Email 1            | Email 2               | Email 3               | GUI Screen       |
|                                                                              | APPLY              | SETUP EMAIL A         | DDRESS AND SEF        | CANCEL           |

2. For greater detail on the Alert function and its application, select the question mark icon in the window. Another window displays with the details.

| Use this diale<br>the Alert con | to set up alerts. Use the checkboyes to select where the Alert information will be displayed and sent when                                                                |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alert Condi                     | Alerts                                                                                                                                                                    |
| Low Battery                     | ClearOne Remote software automatically monitors the system in the background, and can send user-<br>selected alerts.                                                      |
| Battery Run                     | An alert can either be shown on the GUI screen or it can be emailed to one or more email lists. The Alerts screen lets you select which conditions will trigger an alert. |
| Low RF Sig                      | Email servers and email lists are set up by clicking SETUP EMAIL ADDRESS AND SERVER.                                                                                      |
| TX Turned (                     | CLOSE 🗹 GUI Screen                                                                                                                                                        |
|                                 | APPLY SETUP EMAIL ADDRESS AND SERVER CANCEL                                                                                                                               |

3. Email servers and lists are set up by clicking [SETUP EMAIL ADDRESS AND SERVER].

|                       |              |        |      |                    |       | x      |
|-----------------------|--------------|--------|------|--------------------|-------|--------|
| Email Alert Setup     |              |        |      |                    |       |        |
| Enter email addresses | separated by | semico | olon |                    |       |        |
| Sender Email          |              |        |      |                    |       |        |
| Email Address List 1  |              |        |      |                    |       |        |
| Email Address List 2  |              |        |      |                    |       |        |
| Email Address List 3  |              |        |      |                    |       |        |
| Email Server Name     |              |        |      |                    |       |        |
| Email Username        |              |        |      |                    |       |        |
| Email Password        |              |        |      |                    |       |        |
| Authentication Option | None 🔻       | Port   | 25   |                    |       |        |
|                       |              |        |      | TEST CONFIGURATION | APPLY | CANCEL |

4. For greater detail on the Email Alerts Setup function and its application, select the question mark icon in the window. Another window displays with the details.

| EMAIL ALERT   | SETU 📀                                                                                                                                                                                                                                                              |  |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|               |                                                                                                                                                                                                                                                                     |  |
| Enter email a | ddresses separated by comma                                                                                                                                                                                                                                         |  |
| Email Address | s List 1                                                                                                                                                                                                                                                            |  |
|               | ×                                                                                                                                                                                                                                                                   |  |
| Email Address | Email Alerts Setup                                                                                                                                                                                                                                                  |  |
|               | Up to 3 different email lists can be set up to receive alerts. The main Alerts screen has checkboxes to select which lists are active.                                                                                                                              |  |
| Email Addres: | The email server, username, and password need to be set up in order to send alerts. Enter only the<br>username in the username box, not the full email address. SSL authentication is required by some servers.                                                     |  |
|               | You can test your alert settings by enabling the TX TURNED OFF alert, and then turning off a transmitter<br>that is synced to your receiver. If email alerts are enabled, you will receive an email at the specified email<br>address if your settings are correct. |  |
| Email Server  |                                                                                                                                                                                                                                                                     |  |
| Email Userna  | CLOSE                                                                                                                                                                                                                                                               |  |

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### HELP

1. For related software and equipment documentation, and software properties, select [Help].

| 📓 ClearOne WS800 & DIALOG 20 Remote Software        |           |                       |                         | >                    | × |
|-----------------------------------------------------|-----------|-----------------------|-------------------------|----------------------|---|
| Home File Settings RF Scan Presets GPIO Setup Alert | Help      |                       |                         |                      |   |
| Receiver 1                                          | Quick Sta | art GUI               |                         |                      |   |
|                                                     |           | Placement Guide       |                         |                      | _ |
| System Status Status Link Ok                        |           |                       | Receiver Name DIALOG 10 | Alert NO ALERT       |   |
|                                                     |           | h Presets             |                         |                      |   |
| Slot Name                                           |           | Frequency Assignments |                         |                      |   |
| Action                                              | About     |                       | EDIT                    |                      |   |
| Transmitter Status                                  | -         |                       | Off                     |                      |   |
| Battery Hours                                       |           |                       | 0%                      | P                    |   |
| Transmitter Audio Gain                              |           | -20 dB                |                         |                      |   |
| Low Cut                                             |           | Off                   |                         |                      |   |
| Transmit RF Power                                   |           | 1 mW                  |                         |                      |   |
| Power Switch Mode                                   |           | On/Off                |                         |                      |   |
| Button Mode                                         |           | Toggle Mode           |                         |                      |   |
| Mute Mode                                           |           | Hard                  |                         |                      |   |
| Standby Mode                                        |           | Disabled              |                         |                      | _ |
| Model<br>RF Diversity Strength -                    |           | Boundary              | SYNC OK                 |                      | _ |
| Output Level Controls                               |           | RF                    | NO ALERT                | AUDIO                |   |
|                                                     |           |                       |                         | 18<br>36<br>54<br>72 |   |

## **Update Wizard**

Allows you to update this PC software and firmware, and the latest firmware for your ClearOne receivers and transmitters.

1. Select [Update System] to see system update options.



## REMOTE SOFTWARE UPDATE

2. The following window displays. To download the latest versions of software for your PC, click [DOWNLOAD].

| Update Wizard                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OVERVIEW: New features and improvements in ClearOne software and firmware are free for the life of the products. This wizard outlines the process of updating your system.               |
| Step 1 Download the latest versions of software and firmware from ClearOne onto your computer. This can be done in your office before going to the jobsite. You will need the following: |
| A PC running Windows 10 or later (32 or 64 bit)     Internet connection                                                                                                                  |
| Step 2 Install the latest firmware on the ClearOne receivers and transmitters. You will need the following (a connection to the internet is NOT required):                               |
| <ul> <li>Access to the transmitters and receivers</li> <li>The PC from Step 1</li> </ul>                                                                                                 |
| • A USB Type A to Type C connector for updating the receivers (supplied with every receiver)                                                                                             |
| USB Type A to Type C UPDATE A RECEIVER                                                                                                                                                   |
| A USB Type A to Micro USB connector, for updating the transmitters (supplied with every receiver)                                                                                        |

- 3. The software first checks for proper installation of USB Drivers and firmware.
  - An error window appears for the Dialog 20 USB, instructing you to download the most recent software and firmware versions.



4. Place a check next to each update you want to make, or select the check box at the very top to automatically select all updates. Click [DOWNLOAD SELECTED] to proceed with download(s).

| irmware And Softwa       |                        |                  |          |         |       |
|--------------------------|------------------------|------------------|----------|---------|-------|
| innware And Soltwa       | re Version Information |                  |          |         |       |
|                          |                        |                  |          |         |       |
|                          | On Hard Drive          | Latest Available | Progress | Release | Notes |
|                          |                        |                  |          |         |       |
| Dialog 20 Firmware       |                        |                  |          |         |       |
| RECEIVER                 |                        |                  |          |         |       |
| Master Radio             | N/A                    | 2.1.4            |          |         |       |
| Slave Radio              | N/A                    | 1.5.6            |          |         |       |
| FPGA                     | N/A                    | 3.4              |          |         |       |
| Mondo                    | N/A                    | 2.4.1.0          |          |         |       |
| TRANSMITTERS             |                        |                  |          | DELEAGE | NOTES |
| 🖌 Radio                  | N/A                    | 1.3.5            |          | RELEASE | NOTES |
| BOOTLOADER               |                        |                  |          |         |       |
| Master Bootloader        | N/A                    | 1.2              |          |         |       |
| Slave Bootloader         | N/A                    | 1.3              |          |         |       |
| FIRMWARE RELEASE         | DATE N/A               | 10-21-2021       |          |         |       |
| USB DRIVERS              |                        |                  |          |         |       |
| Dialog 20 USB Driver S   | Status NOT             | INSTALLED        |          |         |       |
| Dialog 10 Firmware       |                        |                  |          |         |       |
| RECEIVER                 |                        |                  |          |         |       |
| 🖌 🛛 Dialog 10 Master R   | Radio N/A              | 3.2.4            |          |         |       |
| Dialog 10 USB Mic        | roController N/A       | 1.0.0            |          | RELEASE | NOTES |
| FIRMWARE RELEASE         | DATE N/A               | 10-21-2021       |          |         |       |
| USB DRIVERS              |                        |                  |          |         |       |
| Dialog 10 USB Driver Sta | itus NOT               | INSTALLED        |          |         |       |
|                          |                        |                  |          |         |       |

5. All successful downloads have full progress bars, green out in the "On Hard Drive" column, and each check box automatically unchecks as an update completes.

**Note:** In addition to updating the software and firmware, the latest release notes for the software also become available.

| mw       | are And Software Version      | Information   |                  |          |               |
|----------|-------------------------------|---------------|------------------|----------|---------------|
|          |                               | On Hard Drive | Latest Available | Progress | Release Notes |
| ialog i  | 20 Firmware                   |               |                  |          |               |
| F        | RECEIVER                      |               | _                |          |               |
|          | Master Radio                  | 2.1.4         | 2.1.4            |          |               |
|          | Slave Radio                   | 1.5.6         | 1.5.6            |          |               |
|          | FPGA                          | 3.4           | 3.4              |          |               |
|          | Mondo                         | 2.4.1.0       | 2.4.1.0          |          |               |
| T        | RANSMITTERS                   |               |                  |          |               |
|          | Radio                         | 1.3.5         | 1.3.5            |          | RELEASE NOTES |
| E        | BOOTLOADER                    |               |                  |          |               |
|          | Master Bootloader             | 1.2           | 1.2              |          |               |
|          | Slave Bootloader              | 1.3           | 1.3              |          |               |
| F        | FIRMWARE RELEASE DATE         | 10-21-2021    | 10-21-2021       |          |               |
| ι        | JSB DRIVERS                   |               |                  |          |               |
|          | Dialog 20 USB Driver Status   | NOT I         | NSTALLED         |          |               |
| )ialog : | 10 Firmware                   |               |                  |          |               |
| F        | RECEIVER                      |               |                  |          |               |
|          | Dialog 10 Master Radio        | 3.2.4         | 3.2.4            |          |               |
|          | Dialog 10 USB MicroController | 1.0.0         | 1.0.0            |          | RELEASE NOTES |
| F        | FIRMWARE RELEASE DATE         | 10-21-2021    | 10-21-2021       |          |               |
| ι        | JSB DRIVERS                   |               |                  |          |               |
| Di       | ialog 10 USB Driver Status    | NOT I         | NSTALLED         |          |               |

6. To configure the proxy, select [PROXY CONFIGURATION]. Enter your proxy information, place a check next to the "Use proxy" check mark, and select [SAVE].

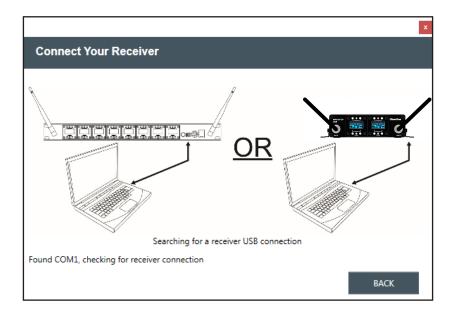
| Use proxy |  |  |
|-----------|--|--|
| Host      |  |  |
| Port      |  |  |
| Username  |  |  |
| Password  |  |  |

### **RECEIVER FIRMWARE UPDATE**

1. To start the process of updating your receiver firmware, click [UPDATE A RECEIVER].

| Update Wizard                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OVERVIEW: New features and improvements in ClearOne software and firmware are free for the life of the products. This wizard outlines the process of updating your system.                   |
| Step 1 Download the latest versions of software and firmware from ClearOne onto your computer. This can be done in your office before going to the jobsite. You will need the following:     |
| A PC running Windows 10 or later (32 or 64 bit)     DOWNLOAD     DOWNLOAD                                                                                                                    |
| Step 2 Install the latest firmware on the ClearOne receivers and transmitters. You will need the following (a connection to the internet is NOT required):                                   |
| <ul> <li>Access to the transmitters and receivers</li> <li>The PC from Step 1</li> <li>A USP Type A to Type C connector for updating the receivers (cupplied with eveny receiver)</li> </ul> |
| A USB Type A to Type C connector for updating the receivers (supplied with every receiver)                                                                                                   |
| A USB Type A to Micro USB connector, for updating the transmitters (supplied with every receiver)                                                                                            |

2. Once the receiver is detected and connected to by the software, the RECEIVER VERSION INFORMATION window appears.



- 3. Click [UPDATE RECEIVER].
- 4. Once all updates are complete, click [X] to close the window.

Dialog 20 USB Receiver Version Information window:

| ALOG 10 Receiver Version      | nformation           |                                                |                 |
|-------------------------------|----------------------|------------------------------------------------|-----------------|
|                               |                      |                                                |                 |
| ECEIVER                       |                      |                                                |                 |
|                               | On Hard Drive        | Currently Installed                            |                 |
| Dialog 10 Master Radio        | 3.2.4                | 3.2.4                                          | RELEASE NOTES   |
| Dialog 10 USB MicroController | 1.0.0                | 1.0.0                                          |                 |
| What the colors mean:         |                      |                                                |                 |
|                               | Current, has the lat | est firmware                                   |                 |
|                               | Not current, needs   | to be updated                                  | UPDATE RECEIVER |
|                               | No transmitter syne  | ced to this slot, firmware version unavailable |                 |

### **TRANSMITTER FIRMWARE UPDATE**

1. To start the process of updating your transmitter firmware, click [UPDATE A TRANSMITTER].

| × X                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Update Wizard                                                                                                                                                                            |
| OVERVIEW: New features and improvements in ClearOne software and firmware are free for the life of the products. This wizard outlines the process of updating your system.               |
| Step 1 Download the latest versions of software and firmware from ClearOne onto your computer. This can be done in your office before going to the jobsite. You will need the following: |
| A PC running Windows 10 or later (32 or 64 bit)     Internet connection                                                                                                                  |
| Step 2 Install the latest firmware on the ClearOne receivers and transmitters. You will need the following (a connection to the internet is NOT required):                               |
| Access to the transmitters and receivers     The PC from Step 1                                                                                                                          |
| <ul> <li>The PC from Step 1</li> <li>A USB Type A to Type C connector for updating the receivers (supplied with every receiver)</li> </ul>                                               |
| USB Type A to Type C                                                                                                                                                                     |
| A USB Type A to Micro USB connector, for updating the transmitters (supplied with every receiver)      USB Type A to Micro USB                                                           |

2. A window with specific instructions for connecting your transmitter displays. Follow the instructions in precise and sequential order.

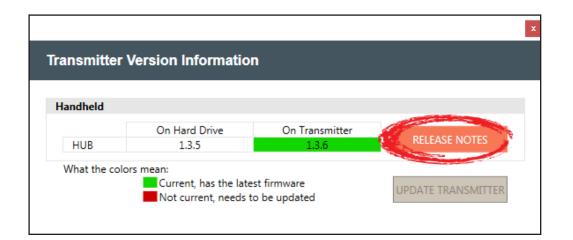
|                                                                                                                                                                                                                                                                                                                | × |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| CONNECT YOUR TRANSMITTER                                                                                                                                                                                                                                                                                       |   |
| Follow these steps to connect your transmitter to your computer:<br>1. Remove batteries from transmitter<br>2. Plug microUSB cable into computer<br>3. Slide transmitter's power switch to ON position<br>4. Connect transmitter to the USB cable while holding down SELECT (MUTE) button<br>5. Release button |   |
| Found COM3, checking for a transmitter                                                                                                                                                                                                                                                                         |   |
| BACK                                                                                                                                                                                                                                                                                                           |   |

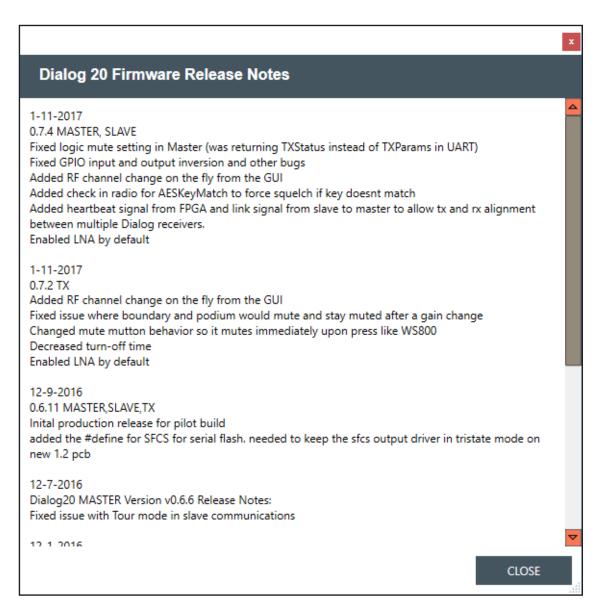
3. Once your transmitter is connected, the TRANSMITTER VERSION INFORMATION window displays.

**Note:** Complete updates, and transmitter firmware Release Notes are available from this window.

- 4. Click [UPDATE TRANSMITTER].
- 5. Follow prompts for the first update.
- 6. Wait for the programming to complete.
- 7. Once your final transmitter update is complete, a window verifying that your firmware is up-todate appears. Click [X] to close the window.

|               |                                                             |                         |               | x |
|---------------|-------------------------------------------------------------|-------------------------|---------------|---|
| Transmitter   | Version Informatior                                         | ı                       |               |   |
| Handheld      |                                                             |                         |               | 1 |
| HUB           | On Hard Drive<br>1.3.5                                      | On Transmitter<br>1.3.6 | RELEASE NOTES |   |
| What the colo | rs mean:<br>Current, has the late:<br>Not current, needs to | UPDATE TRANSMITTER      |               |   |

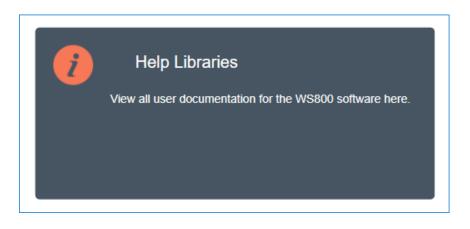




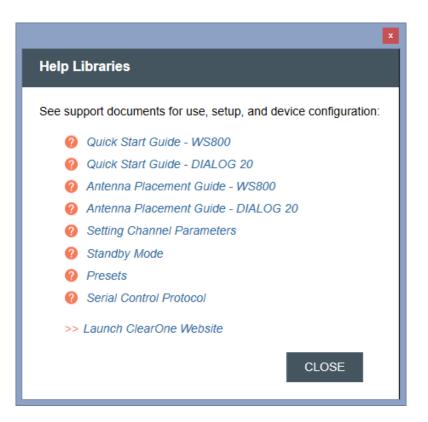
## **Help Libraries**

Gives you direct access to supporting documents, and the ClearOne website.

1. Select [Help Libraries] to see related user documents, or a link to the ClearOne website.



2. Select any of the links to view additional resources in direct PDFs, or to go directly to the ClearOne website.



## **Exposure and Compliance**

#### **RF Exposure Information**

The transmitters have been tested and have been shown to be compliant for localized specific absorption rate (SAR) for uncontrolled environment/general exposure limits specified in ANSI/IEEE Std. C95.1-1992 and have been tested in accordance with the measurement procedures specified in IEEE 1528-2003 and IEC 62209-2.

#### **RF** Compliance Information

The transmitters have been tested and have been shown to meet CE spectral bandwidth requirements at 1 mW and 10 mW output power.

This equipment may be capable of operating at some RF power levels not authorized in your region. Please contact your national authority to obtain information on RF power levels for wireless microphone products in your region.

This product meets the Essential Requirements of all relevant European directives and is eligible for CE marking.

Certified under FCC Part 74 and FCC Part 15. Certified by IC in Canada under RSS-123, RSS-102 and RSS-210.

| Receiver: | Transmitters: |
|-----------|---------------|
| Receiver  | BELTPACK      |

Receiver FCC ID: FBI-DIALOG 10 RX IC: 1970A-DIALOG 10 RX

2 CHANNEL USB FCC ID: FBI-DIALOG 20 RX 1970A-DIALOG 20 RX GOOSENECK FCC ID: FBI-DIALOG 20 PDM IC: 1970A-DIALOG 20 PDM

FCC ID: FBI-DIALOG 20 BLT

IC: 1970A-DIALOG 20 BLT

#### **Tabletop:**

FCC ID: FBI-DIALOG 20 BDM IC: 1970A-DIALOG 20 BDM

HANDHELD FCC ID: FBI-DIALOG 20 HH IC: 1970A-DIALOG 20 HH

#### Modifications (FCC 15.21)

Warning:

Changes or modifications to this equipment not expressly approved by ClearOne may void the user's authority to operate this equipment according to your local radio regulatory authorities.

Clearone Wireless Receivers, Transmitters, and, Antennas are intended for indoor use only.

#### Applies to Beltpack (910-6004-00X):

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotopically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This radio transmitter (910-6004-00X) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Monopole antenna, 0dbi gain, 50 ohm impedance.

Le présent émetteur radio (910-6004-00X) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

This device complies with Industry Canada licence-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.

#### France:

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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement. Electronic Code of Federal Regulations Title 47: Telecommunication PART 15—RADIO FREQUENCY DEVICES Subpart B—Unintentional Radiators

§15.105 Information to the user.

(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference 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 instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

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.

(c) The provisions of paragraphs (a) and (b) of this section do not apply to digital devices exempted from the technical standards under the provisions of §15.103.

(d) For systems incorporating several digital devices, the statement shown in paragraph (a) or (b) of this section needs to be contained only in the instruction manual for the main control unit.

(e) In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet,

the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

[54 FR 17714, Apr. 25, 1989, as amended at 68 FR 68546, Dec. 9, 2003]

#### **CLEARONE CONTACTS**

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