ClearOne®

Wireless Microphone Systems
WS800 & DIALOG® 20 Remote Software

User Manual

DIALOG® 20 Wireless Mic System

WS800 Wireless Mic System

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WS800 & DIALOG 20 Software User Manual

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About the WS800 & DIALOG 20

WS800 - 4 TO 32 CHANNEL WIRELESS MIC SYSTEM

ClearOne's WS800 wireless microphone system uses multiple band RF technology, 24-bit digital audio, and strong encryption for security that fits any application. The WS800 system includes receivers with either 4 or 8 channels, which connect to professional audio mixers through balanced audio connections, and four models of wireless microphones/transmitters: wireless tabletop, gooseneck, hand-held, and belt-pack lavalier & headset options and docking station.

The WS800 can be used with any industry audio DSP product, but is optimized to work with existing CONVERGE Pro, INTERACT Pro, and new CONVERGE Pro 2 devices, giving integrators full, one-stop ClearOne sourcing, support and guaranteed performance for the heart of an installed professional audio system.

The receiver comes with or without a built-in Dante port, used for digital audio networking.

The system can be used for projects with 4 channels and up to 32 channels in each RF band. WS800 comes with 7 different RF ranges in different MHz range of frequency.

RF Range:	M915: 902 MHz to 928 MHz	M715: 710 MHz to 740 MHz
	M610: 603 MHz to 630 MHz	M500: 486 MHz to 512 MHz
	M586: 573 MHz to 599 MHz	M800: 793 MHz to 819 MHz
	M930: 917 MHz to 943 MHz	

DAISY-CHAIN MULTIPLE WS800 RECEIVERS

Four 8-channel WS800 receivers can be daisy-chained together, allowing up to 32 channels in an antenna network that shares two antennas. This eliminates the need for external antenna distribution amps. Receivers can be connected to form an Ethernet network that monitor and control the system via a computer.

Units in a daisy-chained system do not need to be configured individually. You can configure an entire daisy-chained system in the WS800 & DIALOG20 Remote Software. To configure a daisy-chained system, connect the primary receiver via Ethernet IP. All replica receivers in the daisy-chain are then automatically detected.

DIALOG 20 - 2 CHANNEL WIRELESS MIC SYSTEM

DIALOG 20 is a compact, feature-rich and complete 2 channel wireless microphone system that consists of a receiver with built-in antenna, and all types of transmitters – boundary tabletop, gooseneck podium, handheld, beltpack and docking station.

It uses 2.4 GHz univeral RF band and has robust adaptive frequency hopping spread spectrum technology. DIALOG 20 system can be directly and natively connected with CONVERGE Pro 2 DSP mixer units and Beamforming Mic Array 2 units through its proprietary (P-Link) connection. It can also work with any 3rd party DSP mixer products, and existing CONVERGE Pro and INTERACT products through balanced audio connections.

The DIALOG 20 system is not compatible with the WS800 system, as they use different RF ranges.

WS800 & DIALOG 20 Software

The new software is used to configure both WS800 and DIALOG 20 wireless microphone system. It has an option to choose which system to be configured.

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

PC REQUIREMENTS

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

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

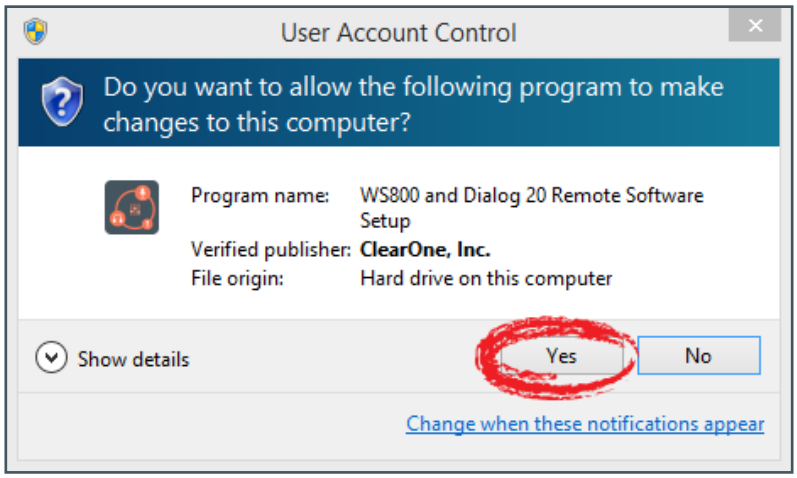
DOWNLOAD AND INSTALL THE SOFTWARE

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:

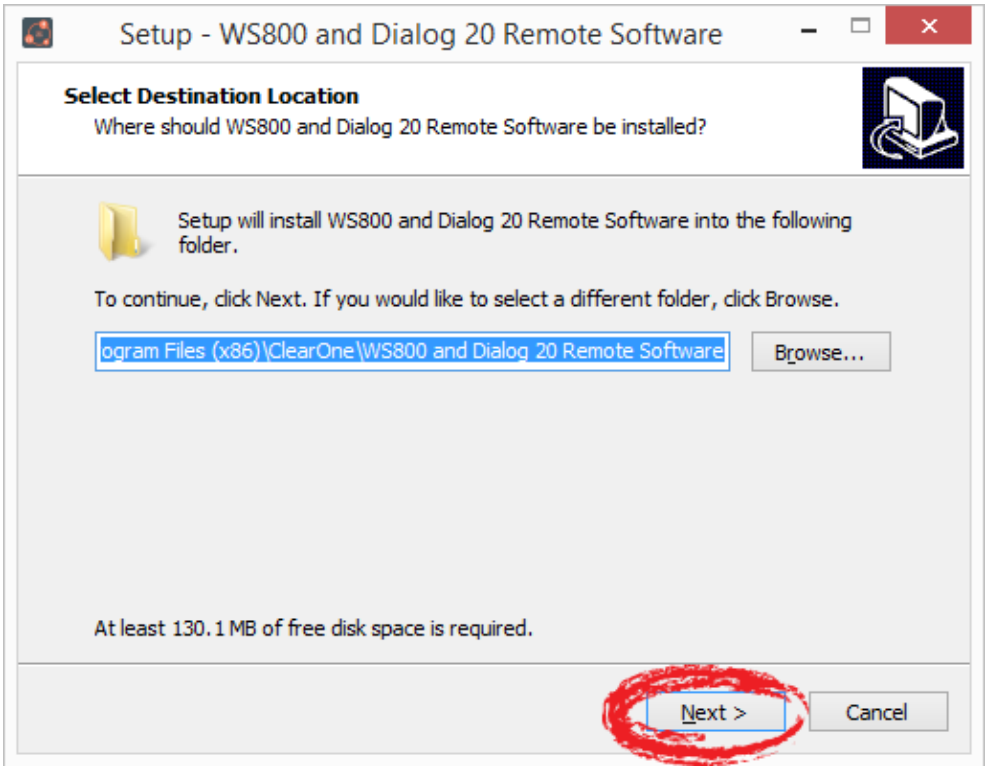
www.ClearOne.com / Resources / Resource Library / Professional Microphones / ClearOne Wireless Microphones / Software Downloads.

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

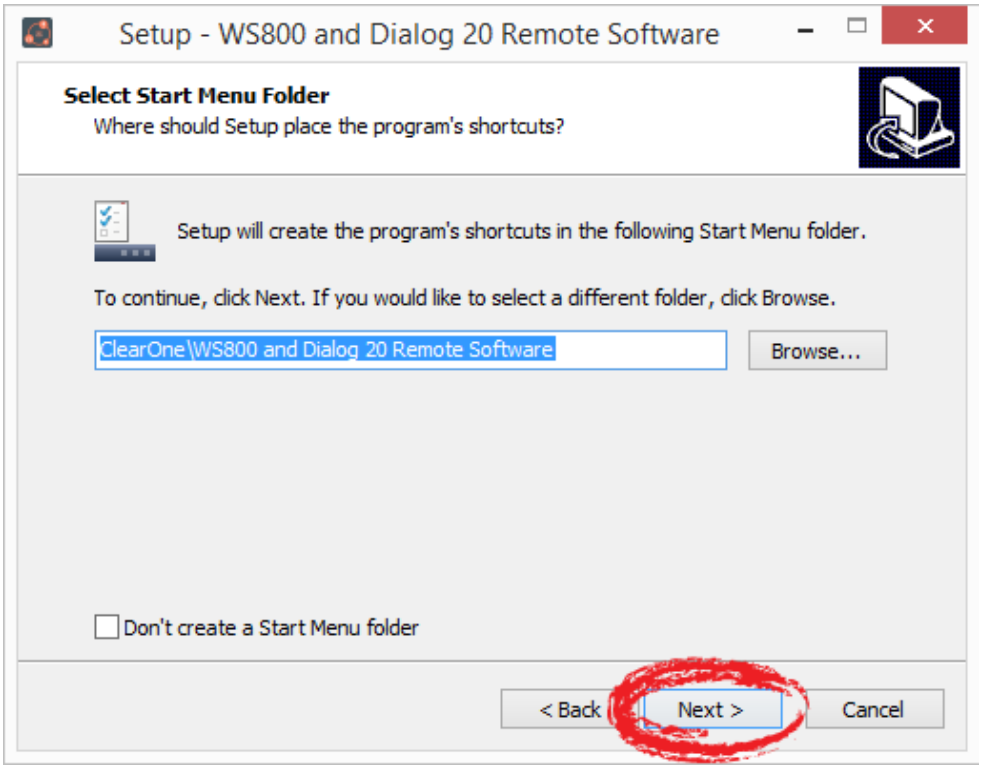
Note: If any previous version of the Remote software is already installed on your PC, make sure to uninstall it before installing more updated versions.



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.

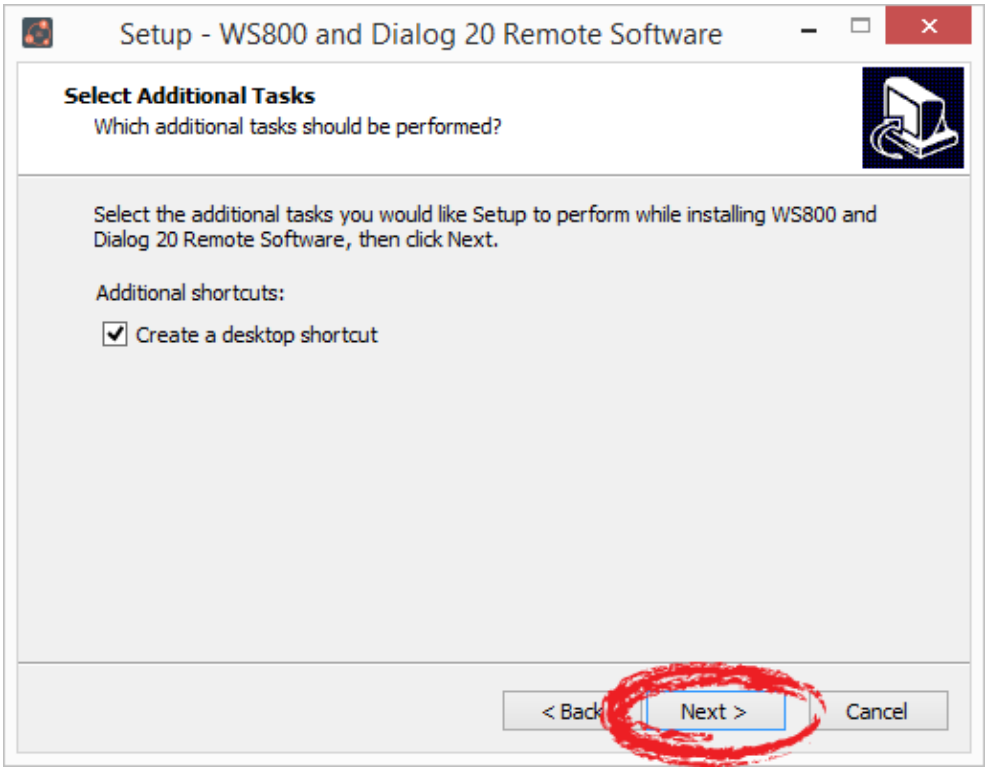


3. If you want to install the application somewhere other than to the default location (Program Files\(x86)\ClearOne\WS800 and Dialog 20 Remote Software), click Browse and choose an alternate location. Once you have chosen your preferred location, click Next. The Select Start Menu screen displays.

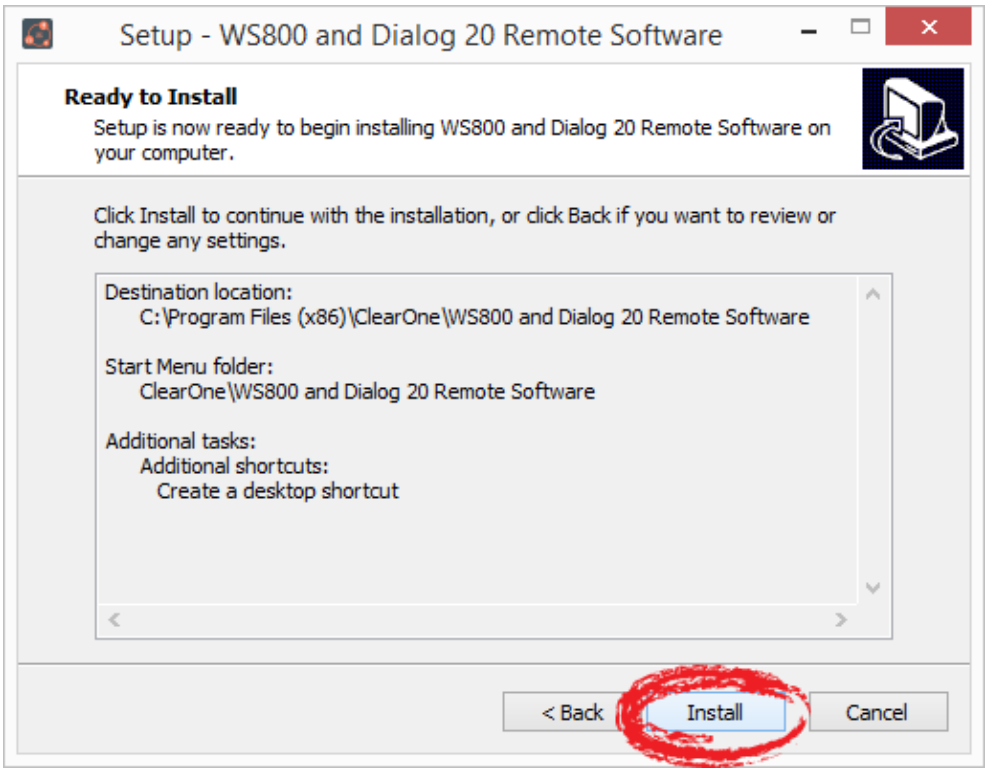


4. If you want to store program shortcuts somewhere other than the default location (ClearOne\ WS800 and Dialog 20 Remote Software), click Browse and choose an alternate location.

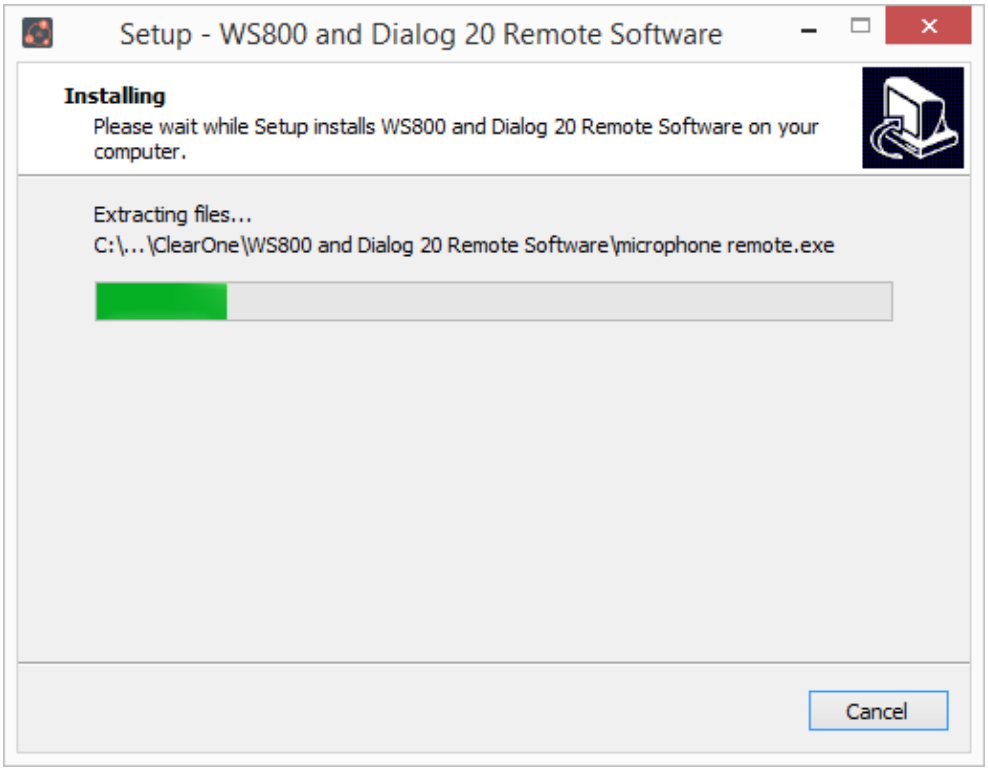
Once you have chosen your preferred location, click Next. The Additional Tasks screen displays.



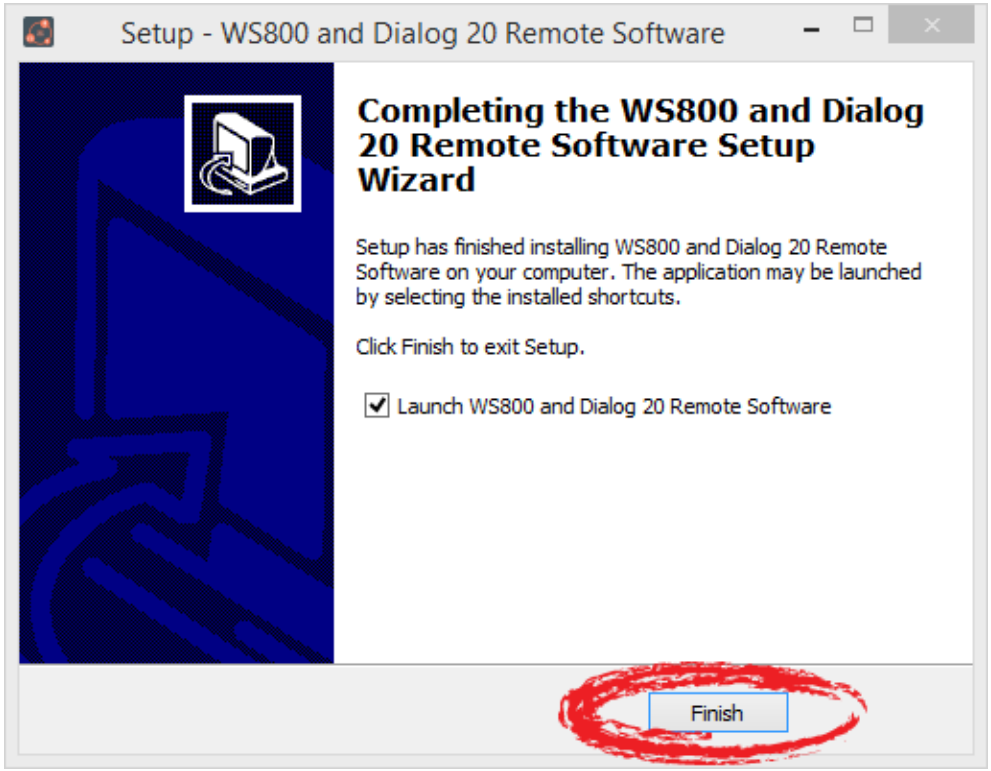
5. If you do not want an additional task to be completed, uncheck it, and click Next. The application is ready to install.



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

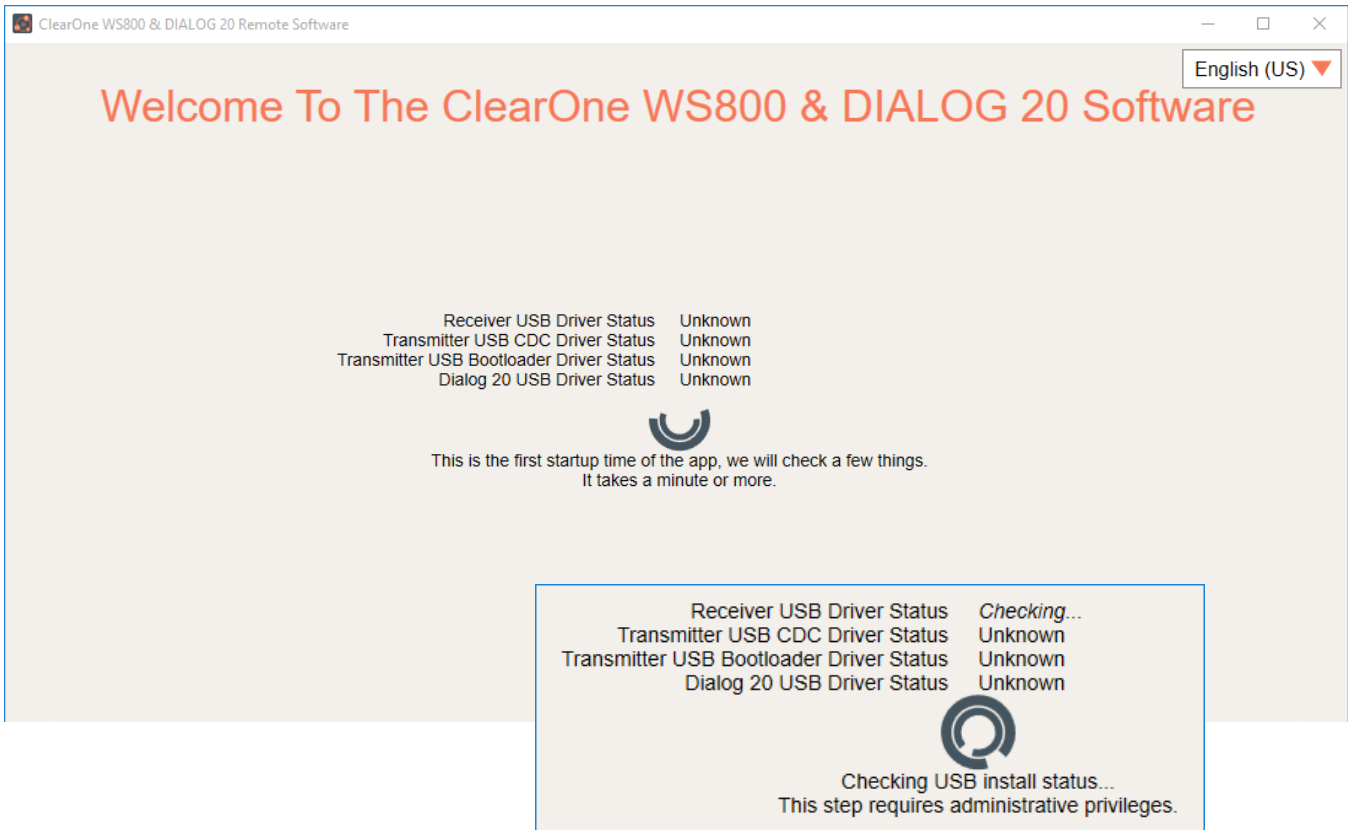


When the program finishes installing, the WS800 and DIALOG20 Remote Software Setup Wizard completion screen displays:

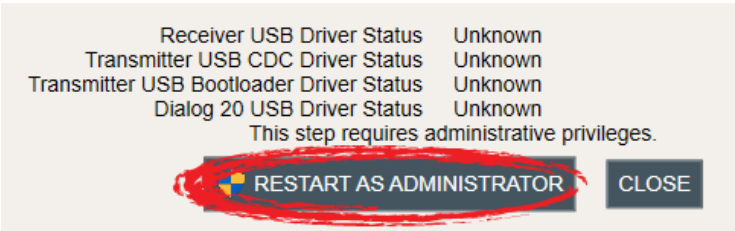


7. If you want to launch the software upon completion, leave Launch WS800 and DIALOG20 Remote Software checked, and click Finish.

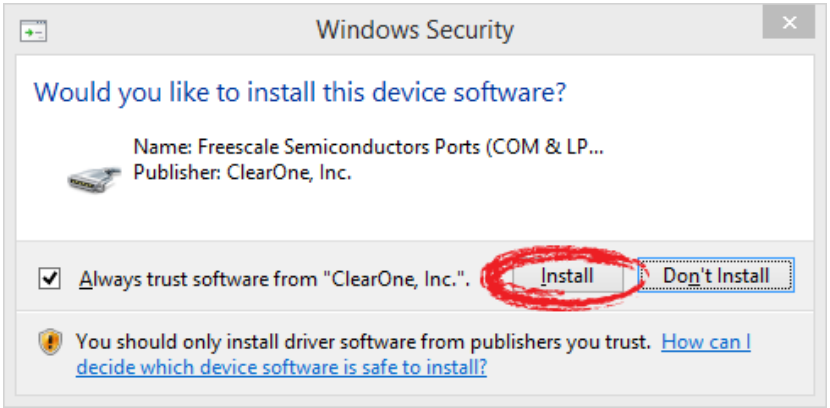
8. The software launches and starts to initialize. Upon startup, the software attempts to install and check statuses of the Receiver USB, Transmitter USB CDC (Communication Device Class), Transmitter USB Bootloader, and DIALOG20 USB drivers. This requires administrative privileges.



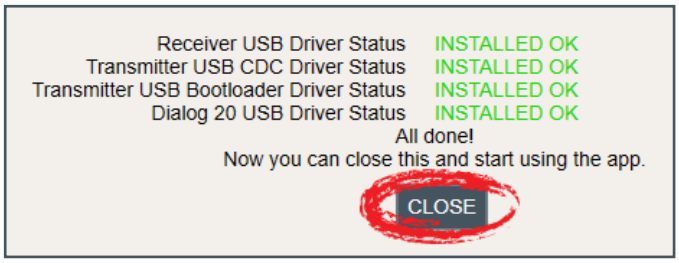
9. You are prompted to restart the software as an administrator. Click RESTART AS ADMINISTRATOR.



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



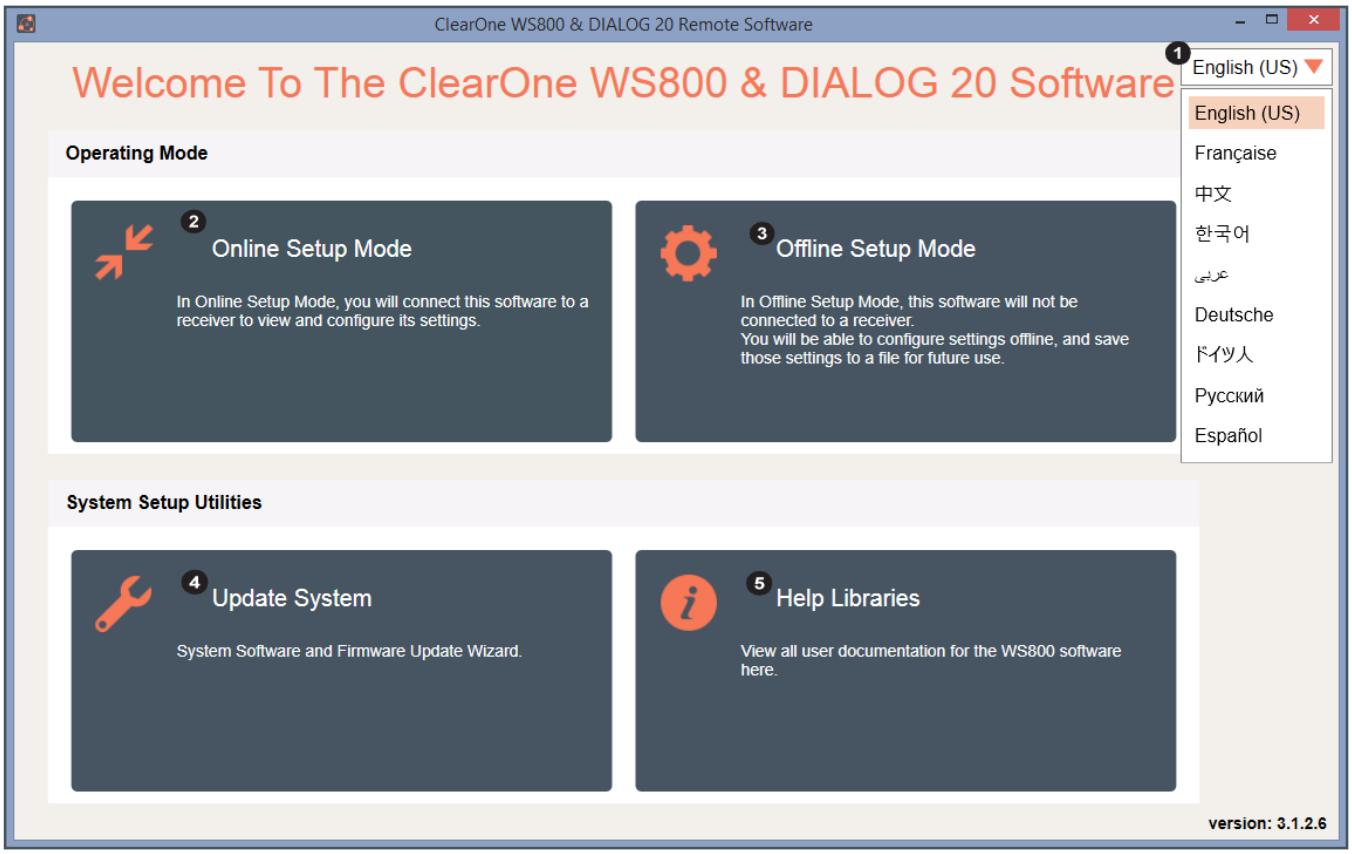
11. Once all drivers have been installed, you are prompted to [CLOSE] out of setup, and to start using the application.



HOME SCREEN

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

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



Setup

WS800 - 4 TO 32 CHANNEL WIRELESS MIC SYSTEM

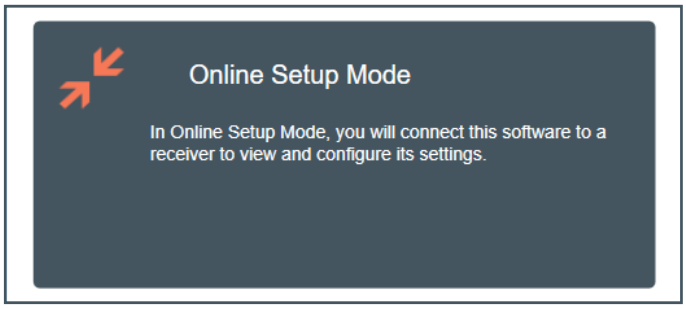
ONLINE SETUP MODE

Allows you to connect this configuration software to your WS800 wireless receiver(s) via RS232 or IP, or to DIALOG 20 receivers via USB.

Note: The WS800 connects to this PC software via RS232 or IP.

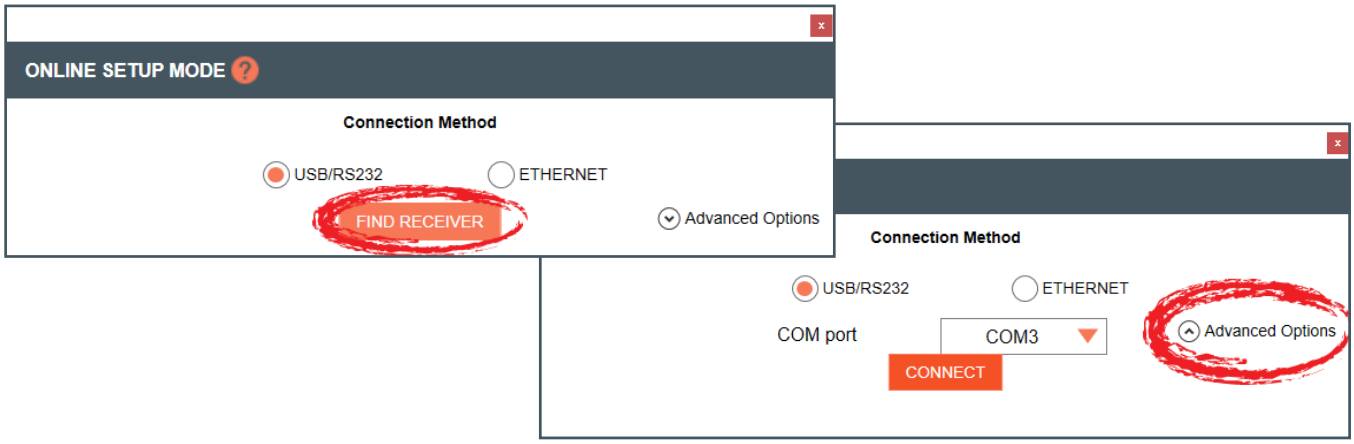
If you are using Online Setup Mode,

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

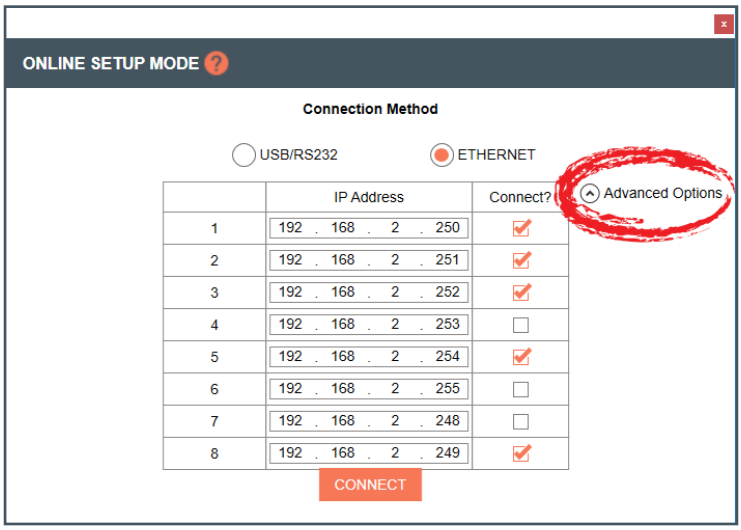


2. Select your Connection Method and click [FIND RECEIVER].

If you select [Advanced Options], COM port or Ethernet IP Address options populate. Once you select your option(s), click [CONNECT].



Note: To configure a daisy-chained system, you must connect the WS800 receiver via Ethernet IP.

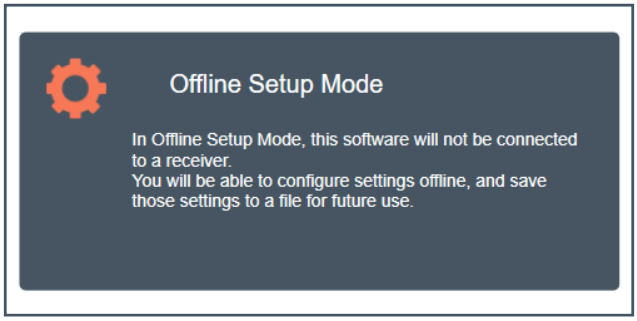


OFFLINE SETUP MODE

Allows you to configure and save settings for future application.

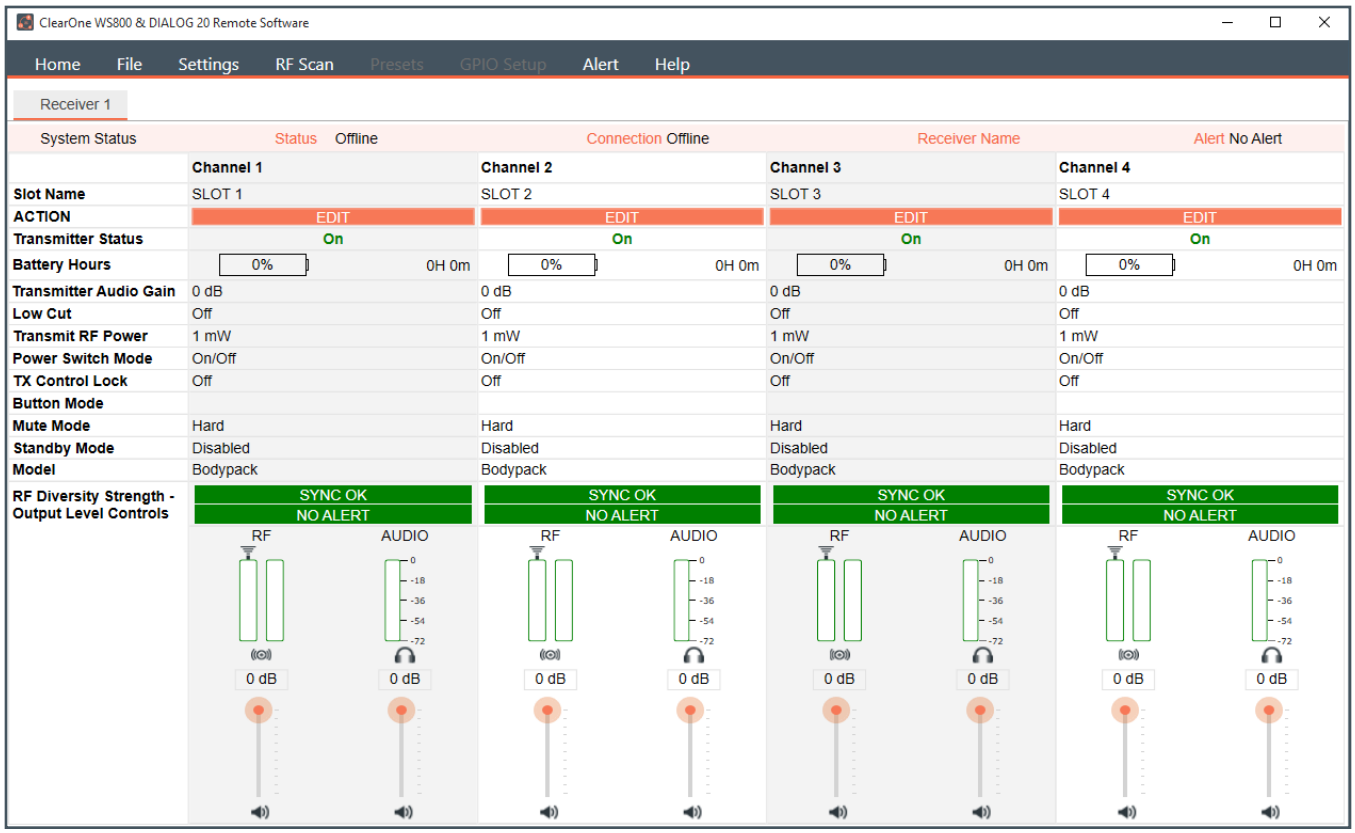
If you are using Offline Setup Mode,

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

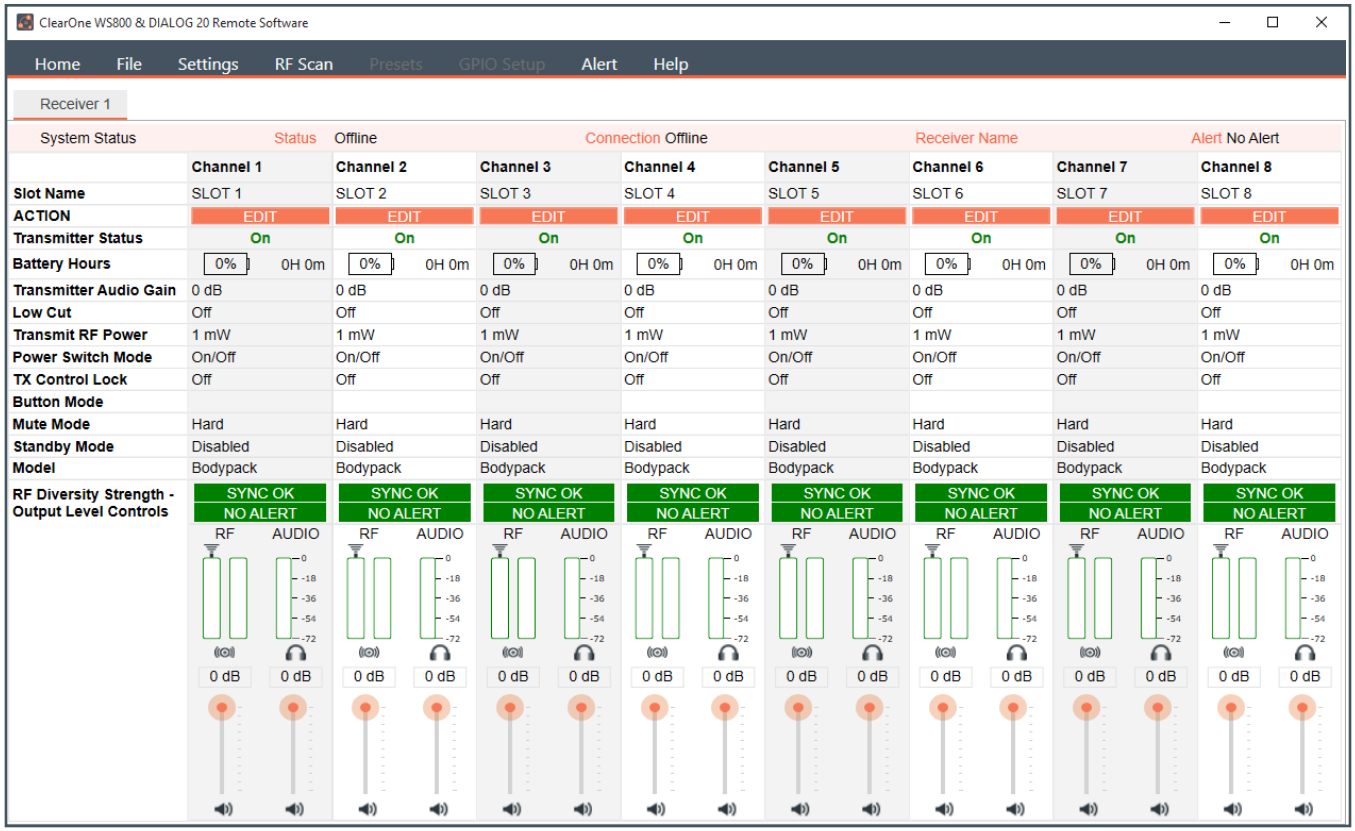


2. Select the type of receiver you want to save settings for.

The WS840 receiver screens reflect 4 channels:

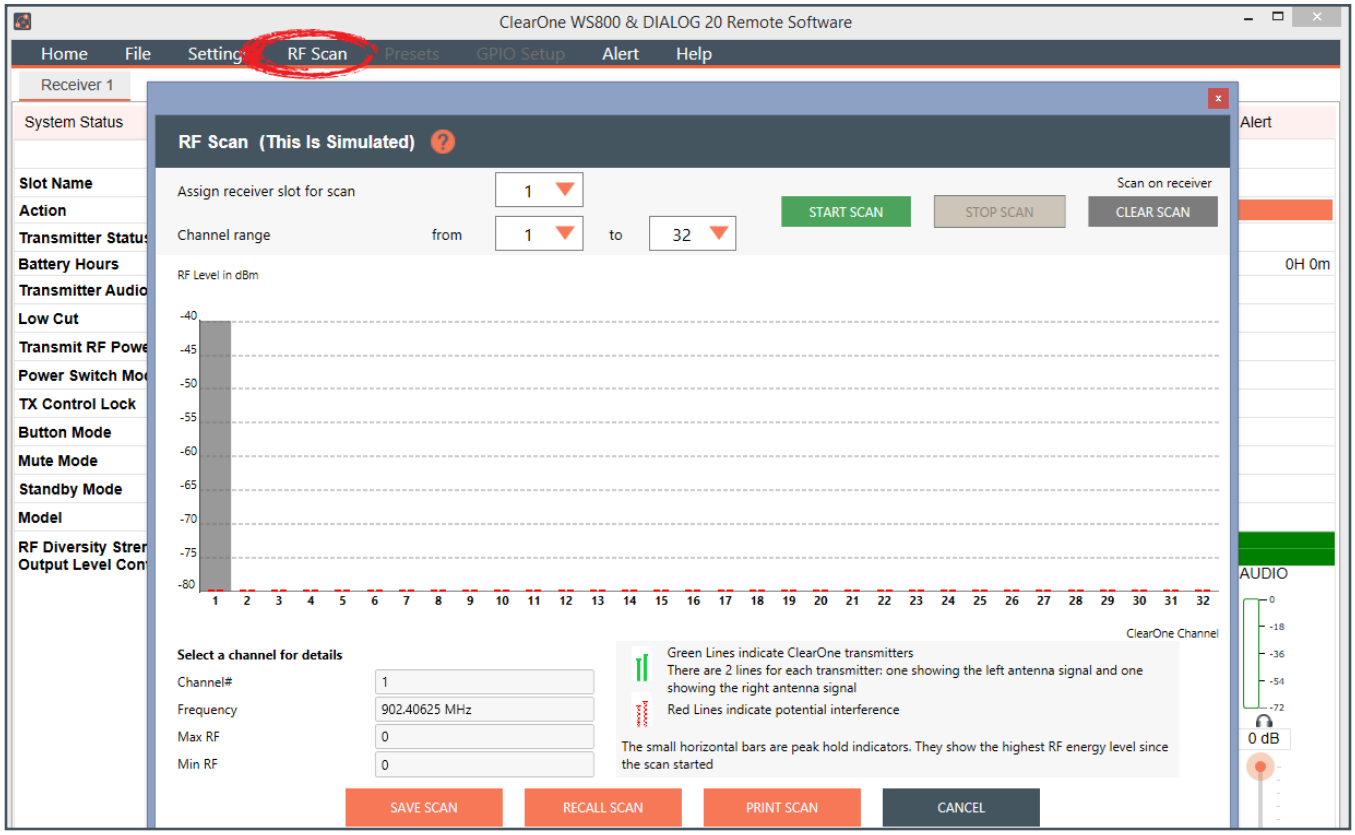


The WS880 receiver screens reflect 8 channels:

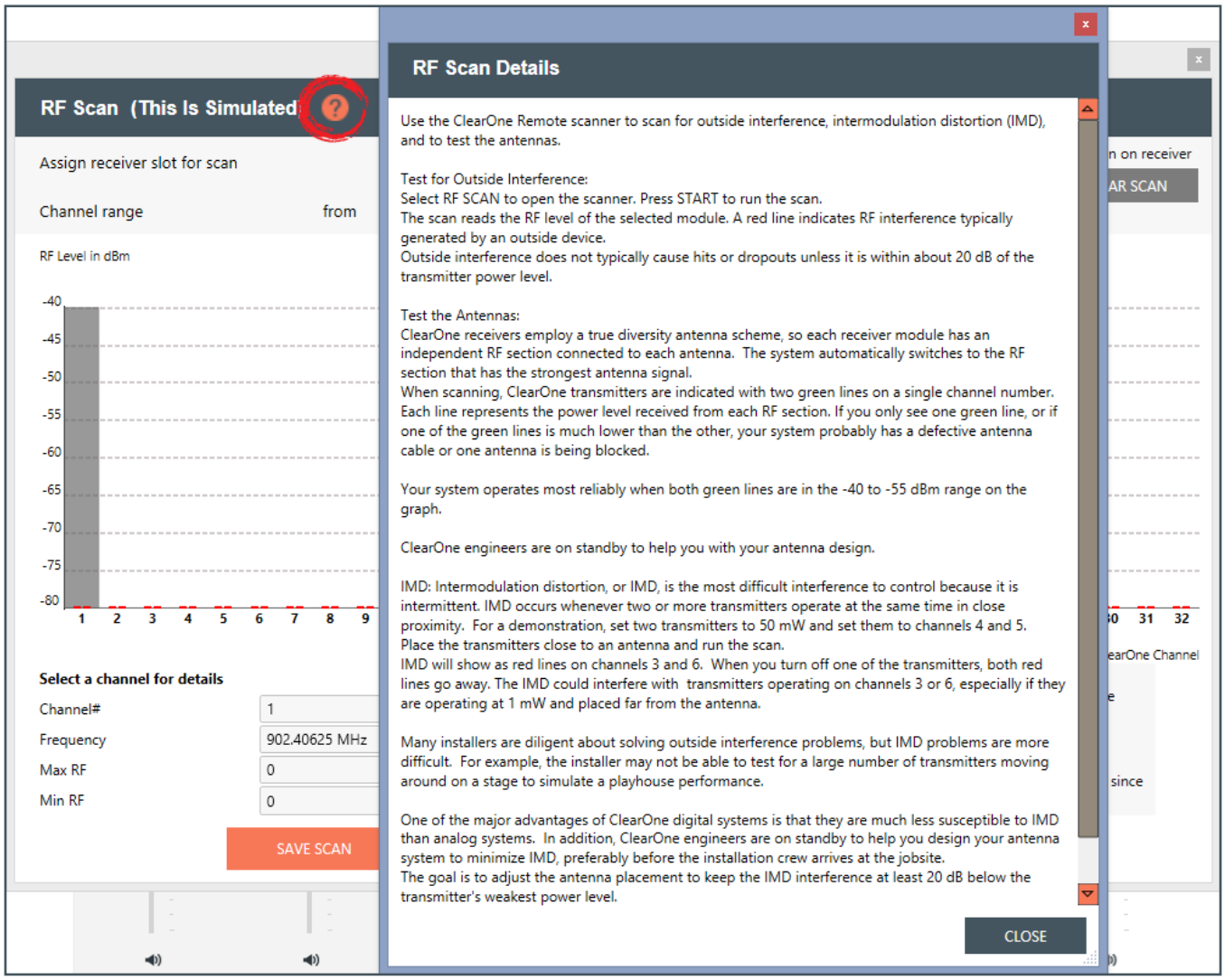


RF SCAN

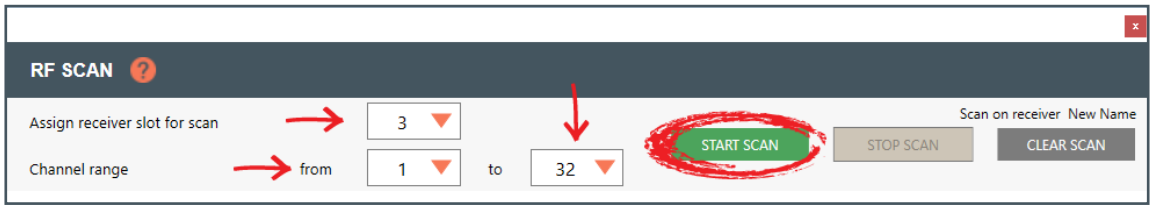
1. To utilize the Radio Frequency (RF) Scanner, select [RF Scan].



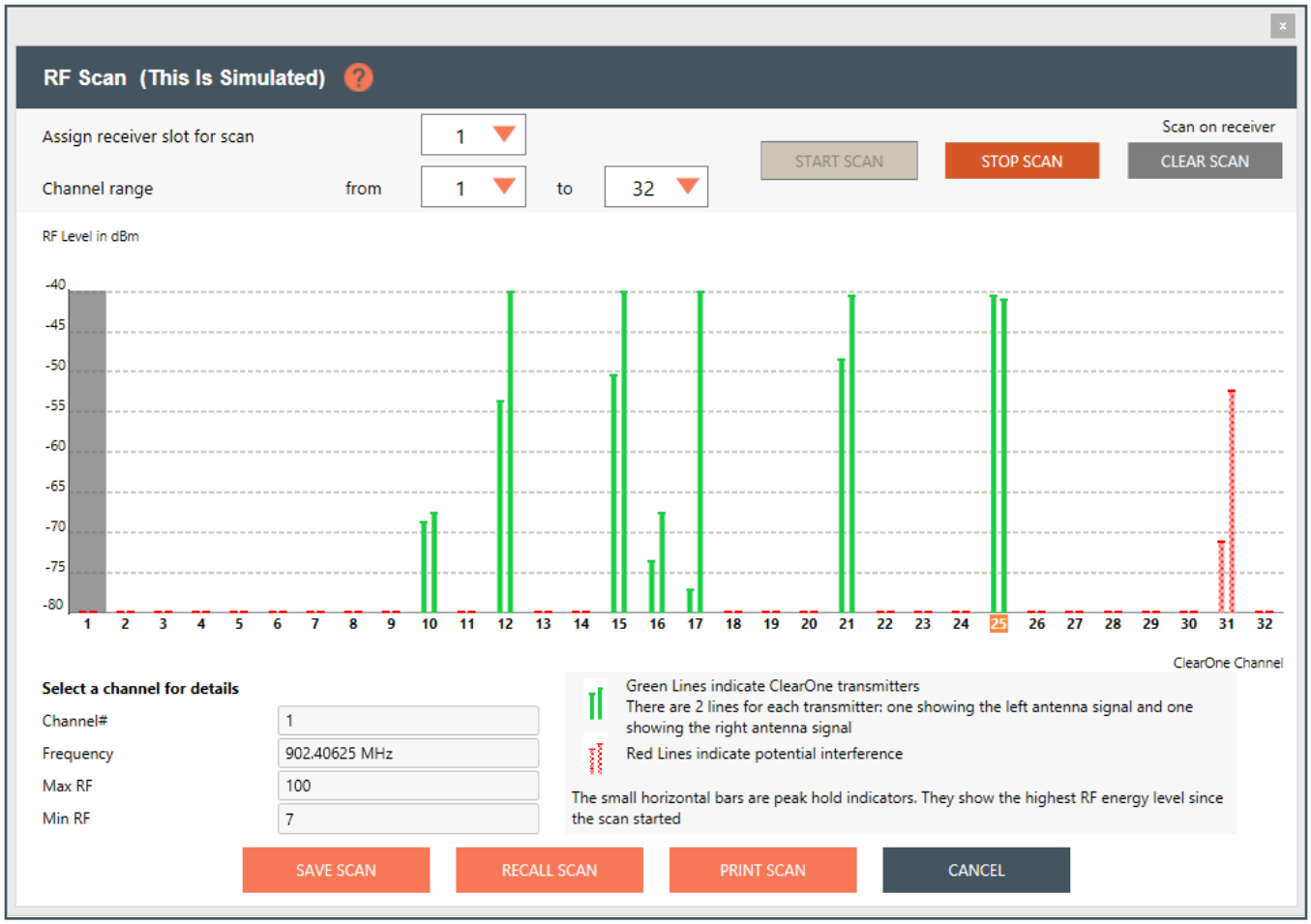
The RF Scanner scans for outside interference, intermodulation distortion (IMD), and to test the antennas. For greater detail on the RF Scan function and its application, select the question mark icon in the window. Another window displays with the details.



2. Select receiver slot for scan, and adjust the channel range as necessary.
3. Click [START SCAN] to start the RF Scan.



Green lines indicate ClearOne transmitters. There are two lines for each transmitter; one showing the left antenna signal, and one showing the right antenna signal.
Red lines indicate potential interference.

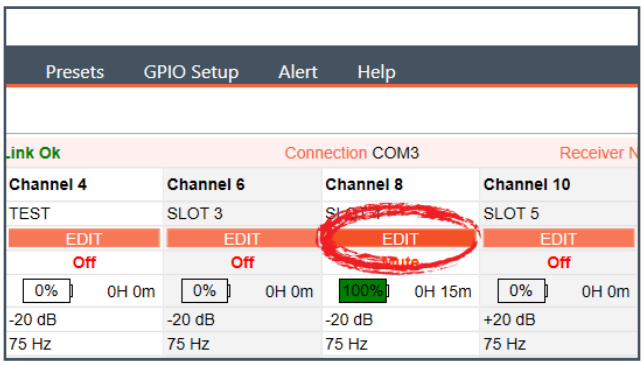


Note: Tips on Setting the RF channel.

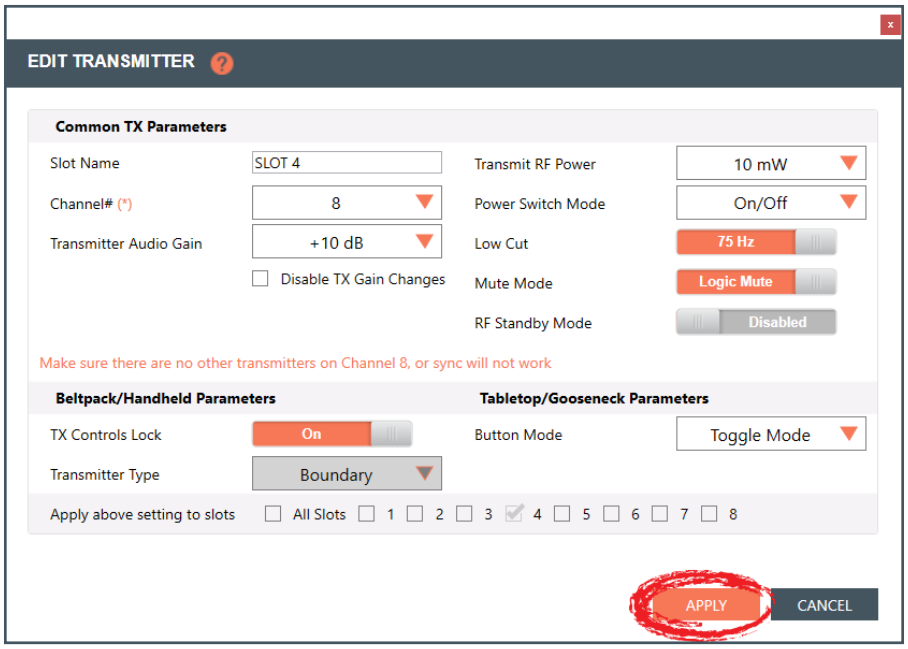
1. Identify the RF channels with the least amount of RF interference using the receivers RF scan feature.
2. Set the RF channel of the Tx/Rx pair based on the RF scan results.

EDITING TRANSMITTER PARAMETERS

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



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



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 -20db to +30 db.

TX Gain Lock: When a transmitter has GainLock enabled, it ignores gain changes sent from the receiver and keep 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 where the antennas are within about 50 feet of the transmitter.
- **10 mW:** Use when the antennas are 50 to 100 feet from the transmitters, or when you hear dropouts at 1 mW or 50 to 100 feet.
- **25 mW:** Use when the antennas are 100 to 200 feet away from the transmitters, or to overcome antenna cable losses.
- **50 mW:** Use when there are dropouts with the 25 mW power setting or for very long distances between antennas and transmitters or to overcome antenna cable losses.

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 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 talent 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 is recommended for most spoken-word applications.
- **Off:** For most musical programs, especially when mic'ing guitars and basses.

Mute Mode: This function controls the action of the mute button.

- **Hard Mute:** Pressing the mute button mutes the receiver output
- **Logic Mute:** When Logic Mute is enabled, the audio output is NOT muted when the transmitter's mute switch is enabled. This is used in combination with the GPIO outputs so that echo cancellers can use the audio as an input and mute the audio downstream.

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. When un-muted, it takes about a half second to pass audio.

- **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.

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

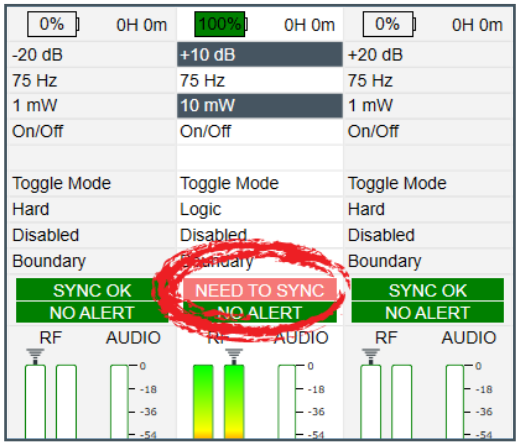
- **On:** Disables the buttons on the transmitter and receiver. Parameters can only be changed with ClearOne Remote software.
- **OFF:** Allows the transmitter control buttons to operate.

Transmitter Type Defaults: This function only works in Off-Line mode. It allows you to preset the default parameters for the various microphones types that are sync'ed to a particular channel. For example, you can slect 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.

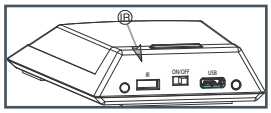
- **Toggle Mute:** Push the button to toggle the mute on or off
- **Push to Talk:** Push and hold the button to talk. Otherwise the mic is muted.
- **Push to Mute:** Push and hold the button to mute. Otherwise, the mic is open.

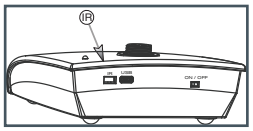
3. The [NEED TO SYNC] alert is lit, indicating one or more parameters in queue ready to be downloaded and implemented with the next transmitter Sync to the receiver channel.

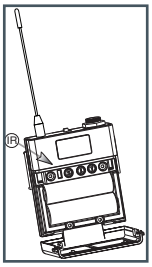


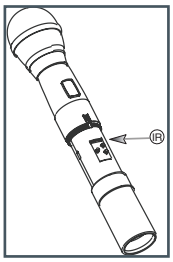
HOW TO SYNC TRANSMITTERS WITH THE RECEIVER

1. Locate the IR (infrared) Sensor on the transmitter.







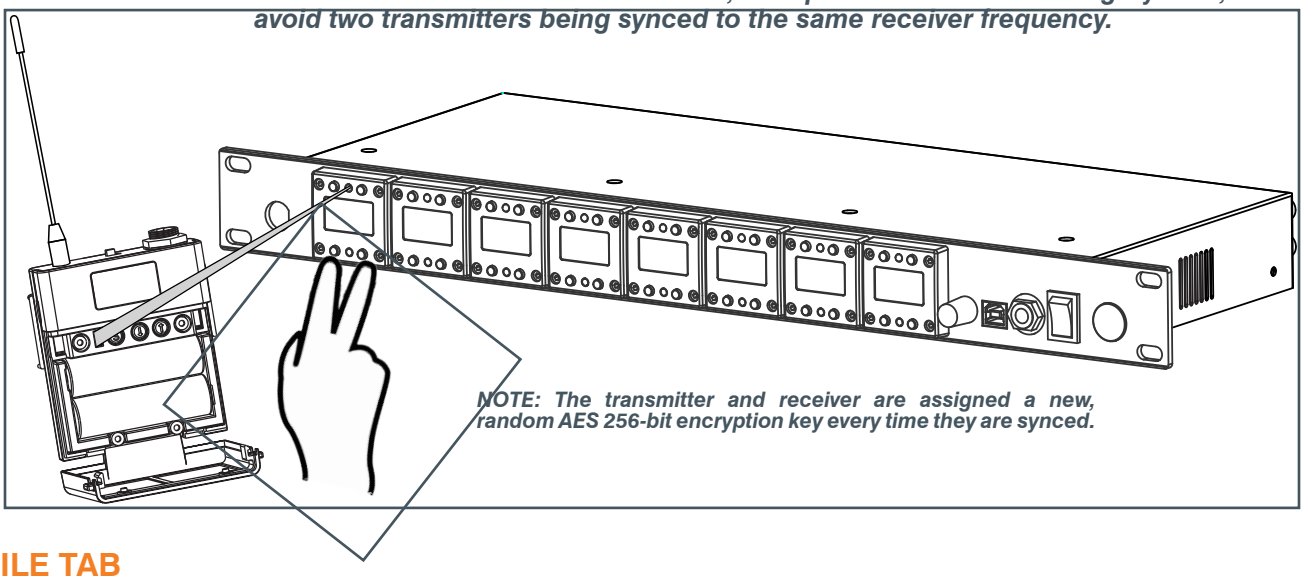


2. Power on the transmitter.

3. Hold transmitter about 6 inches from the corresponding receiver module with the IR sensor aimed at the receiver module.

4. Simultaneously press the two buttons on the bottom of the corresponding receiver module to start sending the IR signal. “SYNCING” shows on the receiver OLED when the IR signal starts. “SYNC OK” shows when the sync is successful. Repeat the procedure if the receiver display shows “SEARCHING”. It is not necessary to press any buttons on the transmitter during the procedure. Note: You may get a “SEARCHING” message if the receiver antennas are not in the same room as the receiver. In this case verify that either the transmitter display shows “Sync Pass” OR the green LED on the transmitter flashes. Also, make sure to dock each transmitter after syncing to avoid 2 transmitters being synced to the same receiver frequency.

IMPORTANT: Turn off all transmitters, except the one that is being synced, to avoid two transmitters being synced to the same receiver frequency.

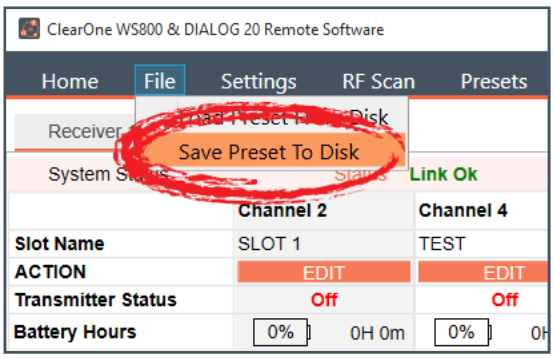


NOTE: The transmitter and receiver are assigned a new, random AES 256-bit encryption key every time they are synced.

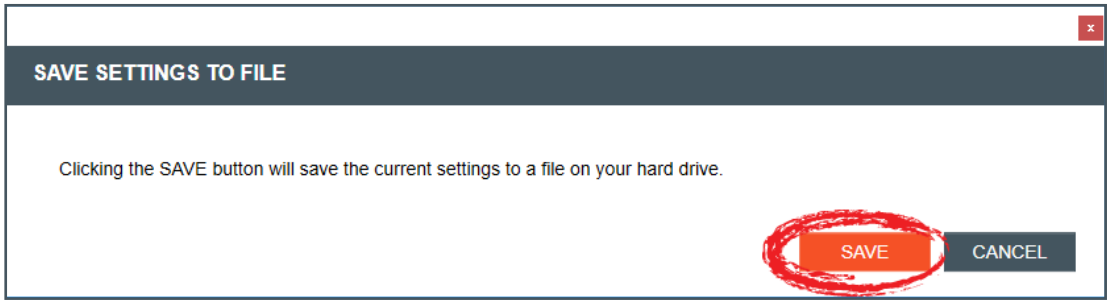
FILE TAB

Save Preset To Disk

1. Save a preset by selecting the [File] tab, then [Save Preset To Disk]. Configuration file of the system is referred here as “Preset”. You can save the configuration file (preset) into your computer and then you can reuse the preset.

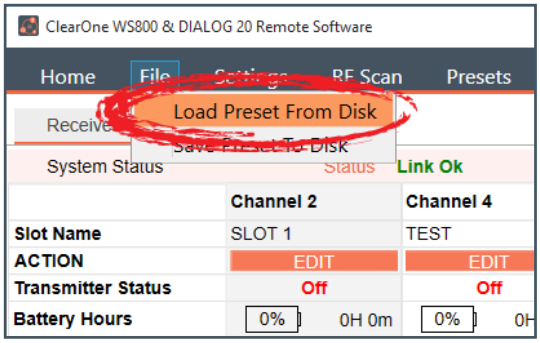


2. Select [SAVE] in the next window to save your preset.

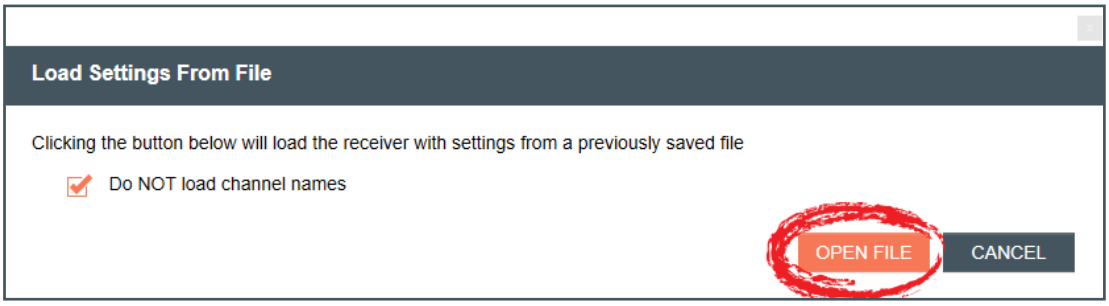


Load Preset From Disk

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



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

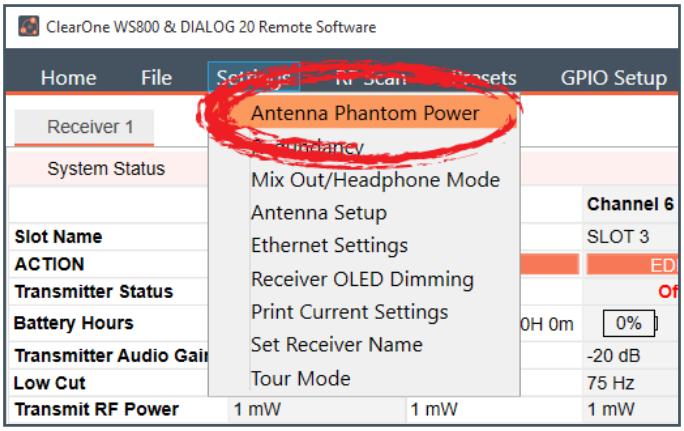


SETTINGS TAB

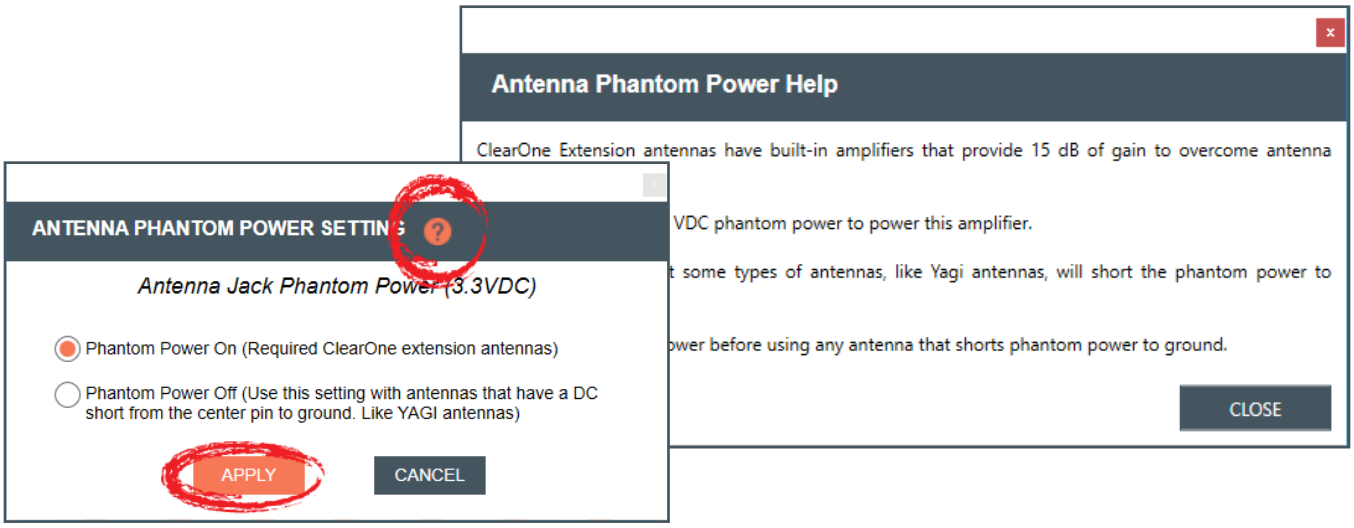
Antenna Phantom Power

Note: This function is not available in OFFLINE SETUP MODE.

1. To turn Phantom Power Off/On, select the [Settings] tab, then [Antenna Phantom Power].



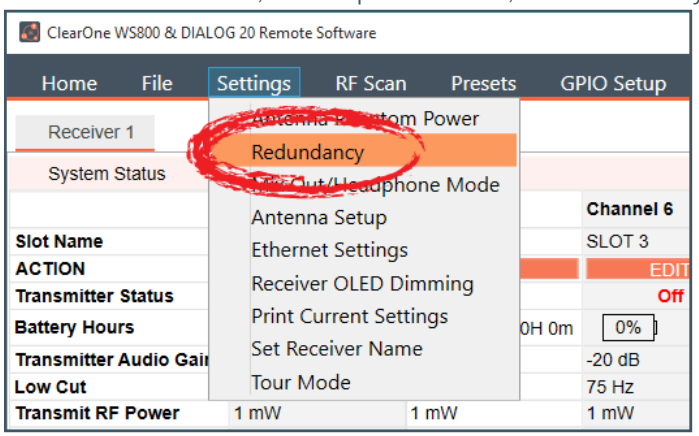
2. The ANTENNA PHANTOM POWER SETTINGS window appears. Select [Phantom Power On] or [Phantom Power Off] per your needs, then select [APPLY] in the window to apply changes.
3. For details on Antenna Phantom Power technology and its application, select the question mark icon in the window. Another window displays with the details.



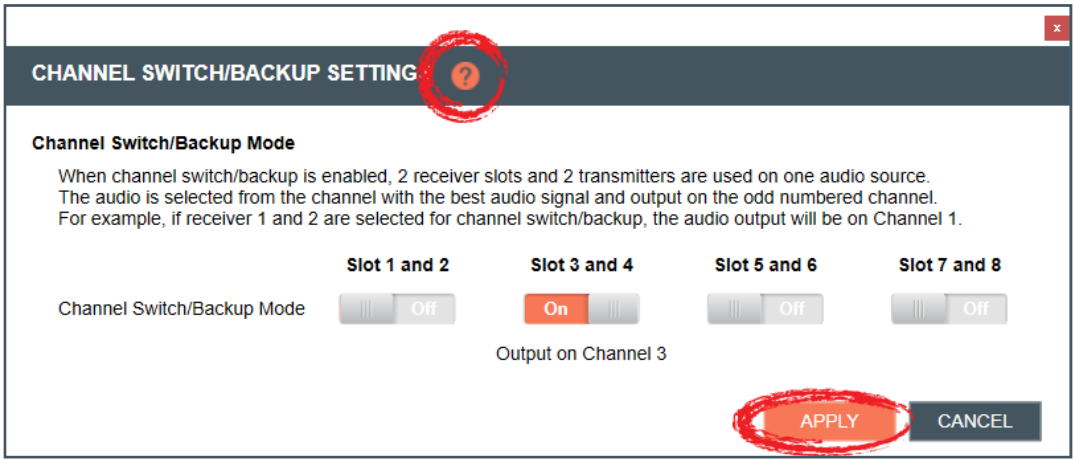
Redundancy

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

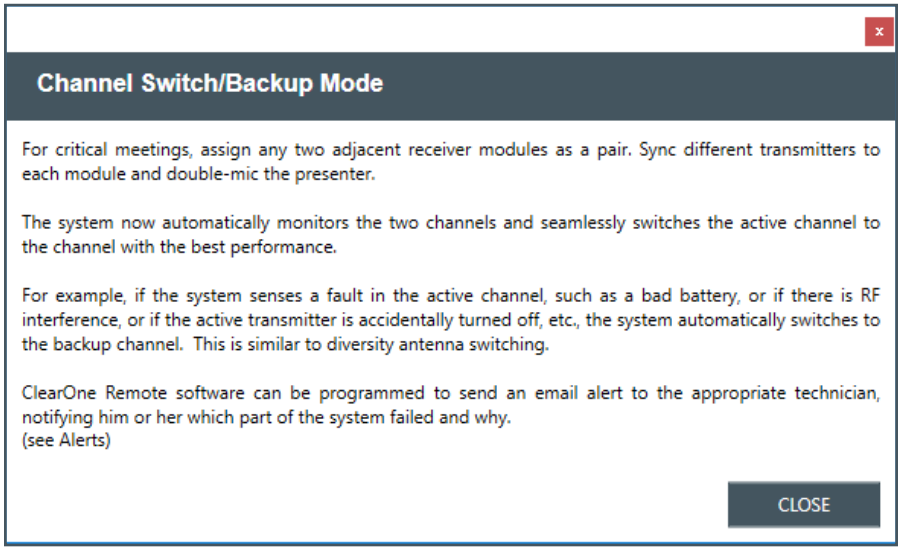
1. To turn Channel Switch/Backup Mode Off/On, select the [Settings] tab, then [Redundancy]. Redundancy enables you to run redundant, backup channels, in case the system senses a fault in the active channel.



2. The CHANNEL SWITCH/BACKUP SETTINGS window appears. Turn Channel Switch/Backup Mode Off/On for slot pairs as needed, then click [APPLY] in the window to apply changes.



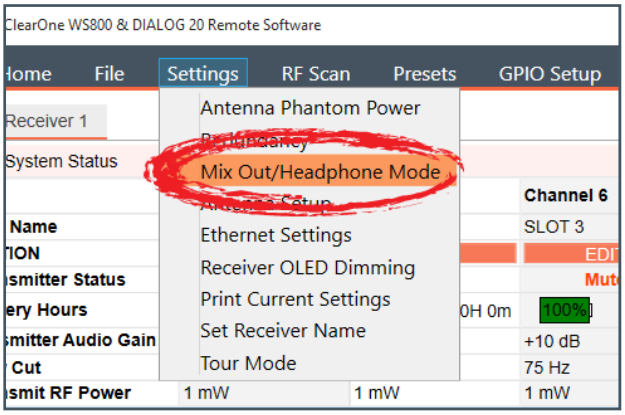
3. For details on the Channel Switch/Backup Mode function and its application, select the question mark icon in the window. Another window displays with the details.



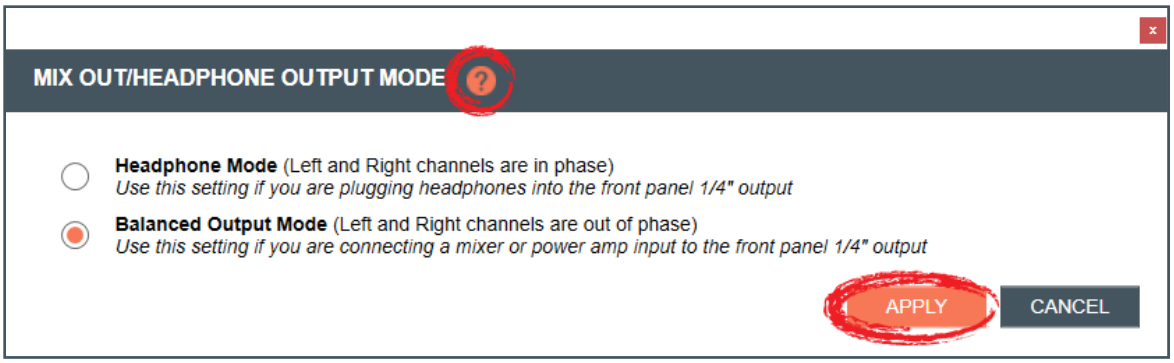
Mix Out/Headphone Mode

Note: This function is not available in OFFLINE SETUP MODE.

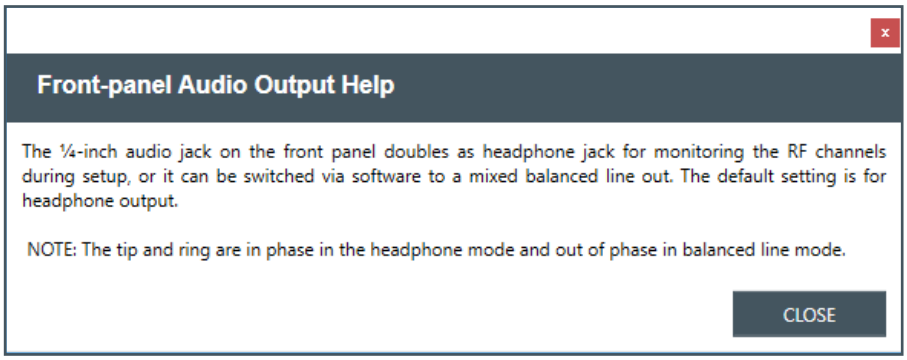
1. To change to Headphone or back to Balanced Output Mode, select the [Settings] tab, then [Mix Out/Headphone Mode]. Selecting Headphone Mode ensures Left and Right channels are in phase, whereas selecting/leaving Balanced Output Mode as the default mode ensures channels are out of phase.



2. The MIX OUT/HEADPHONE OUTPUT MODE window appears. Select [Headphone Mode] or [Balanced Output Mode] per your needs, then click [APPLY] in the window to apply changes.



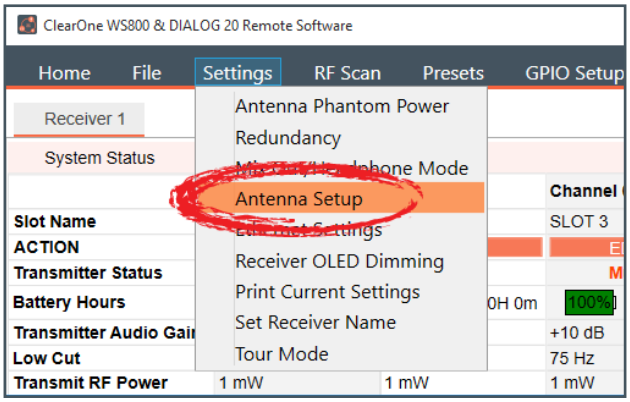
3. For details on the Mix Out/Headphone Mode function and its application, select the question mark icon in the window. Another window displays with the details.



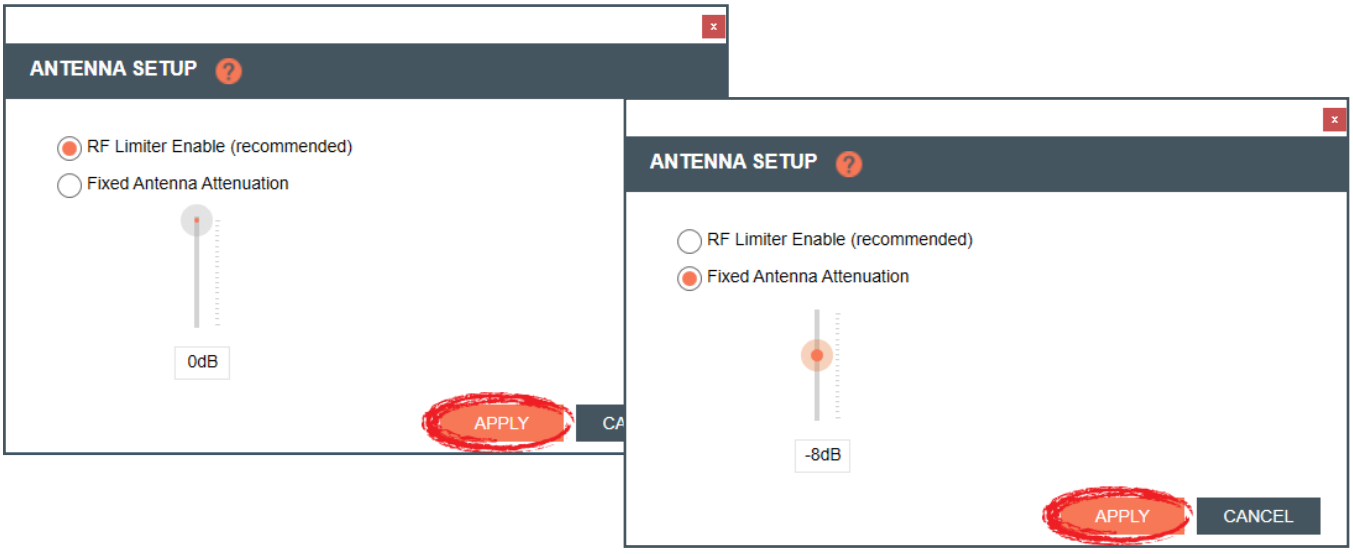
Antenna Setup

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

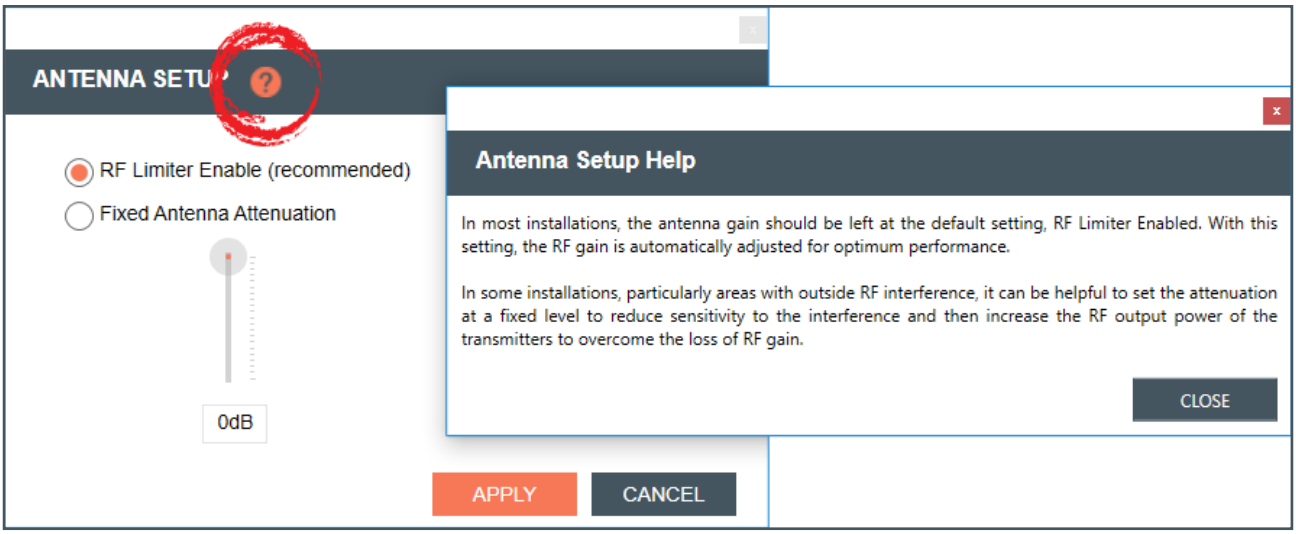
1. To adjust antenna gain, select the [Settings] tab, then [Antenna Setup].



2. The ANTENNA SETUP window appears. Leave antenna gain at default setting [RF Limiter Enable] as recommended, or set [Fixed Antenna Attenuation]. Click [APPLY] in the window to apply changes.



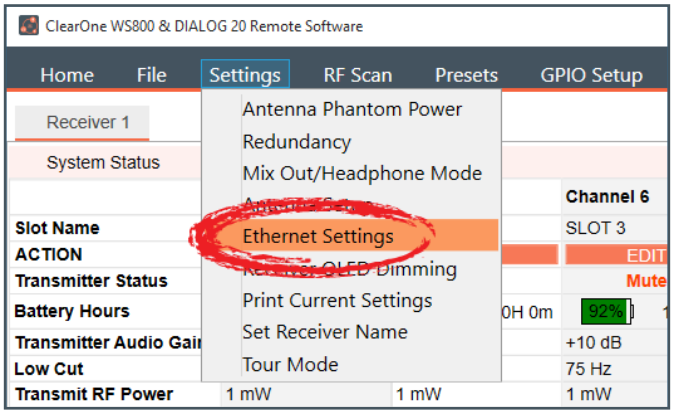
3. For details on the Antenna Setup function and its application, select the question mark icon in the window. Another window displays with the details.



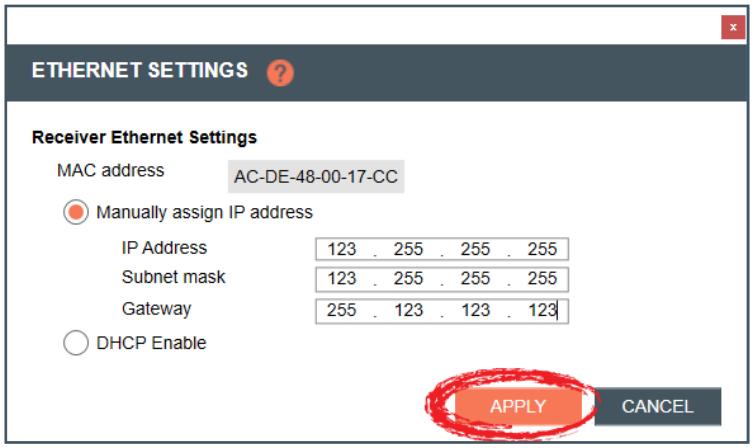
Ethernet Settings

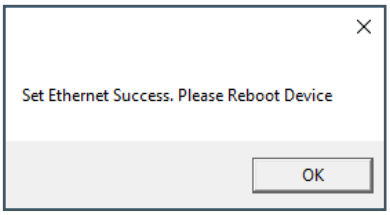
Note: This function is not available in OFFLINE SETUP MODE for the DIALOG 20 receiver.

1. To adjust ethernet settings, select the [Settings] tab, then [Ethernet Settings].

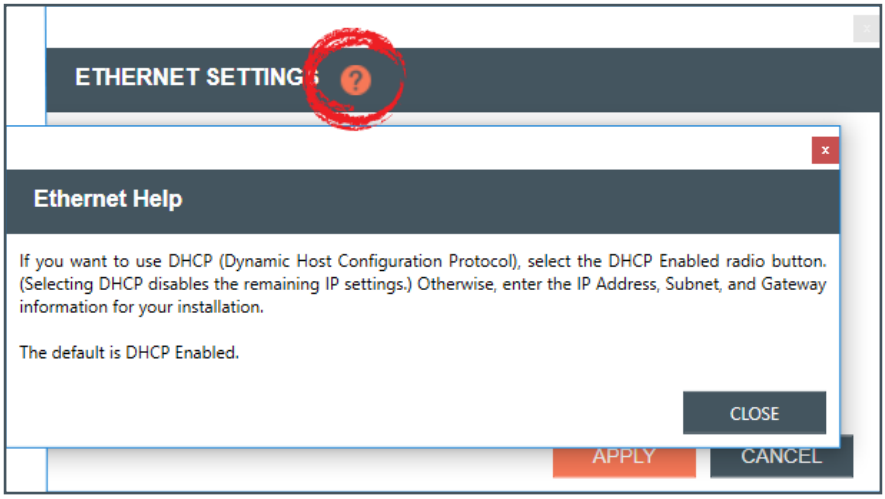


2. The [ETHERNET SETTINGS] window appears. Select [Manually assign IP address], and enter in appropriate IP Address, Subnet mask, and Gateway, or
3. Select [DHCP], then click [APPLY] in the window to apply changes.



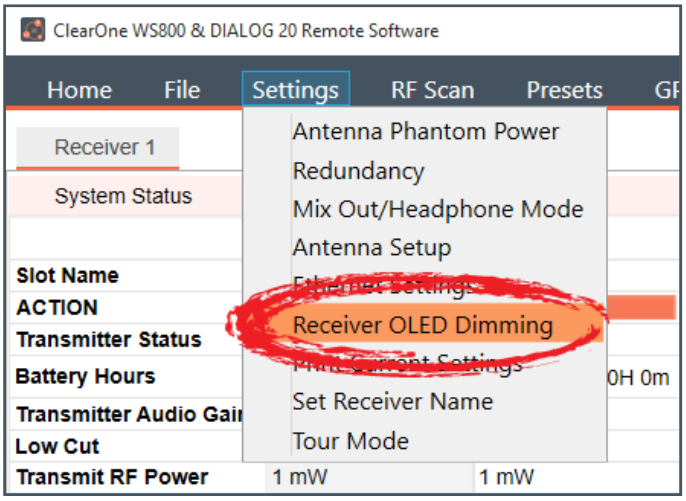


4. For details on the Ethernet Settings function and its application, select the question mark icon in the window. Another window displays with the details.

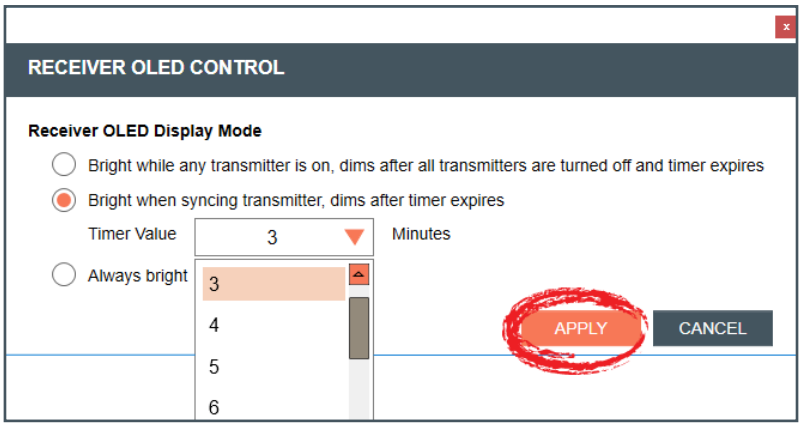


Receiver OLED Dimming

1. To set receiver OLED dimming settings, select the [Settings] tab, then [Receiver OLED Dimming].

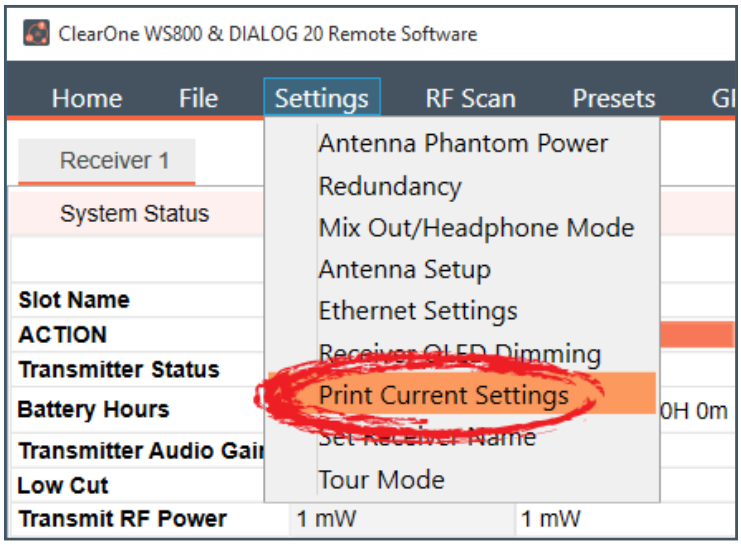


2. The RECEIVER OLED CONTROL window appears. Select [Bright while any transmitter is on, dims after all transmitters are turned off and timer expires], or
3. [Bright when syncing transmitter, dims after timer expires], and set timer, or
4. [Always bright], then click [APPLY] in the window to apply changes.



Print Current Settings

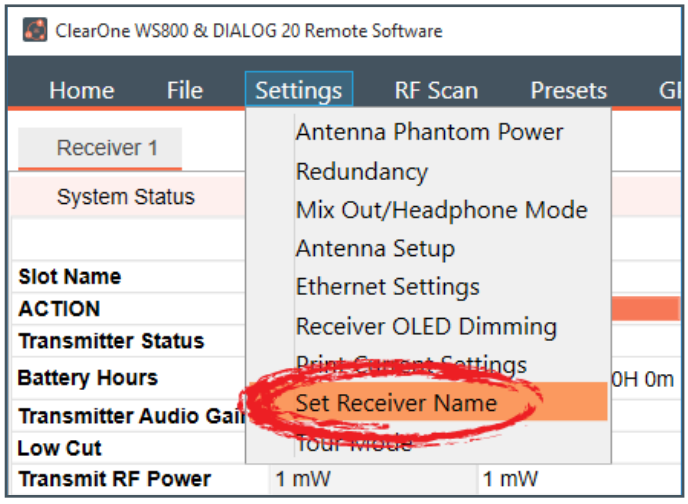
1. To print your current settings, select the [Settings] tab, then [Print Current Settings].



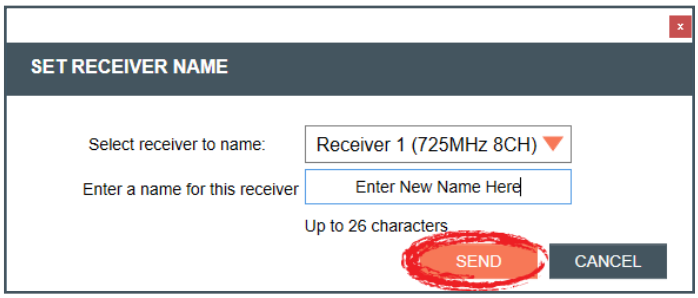
2. Your system window to print appears. Choose the printer you want to print to, and click [Print].

Set Receiver Name

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



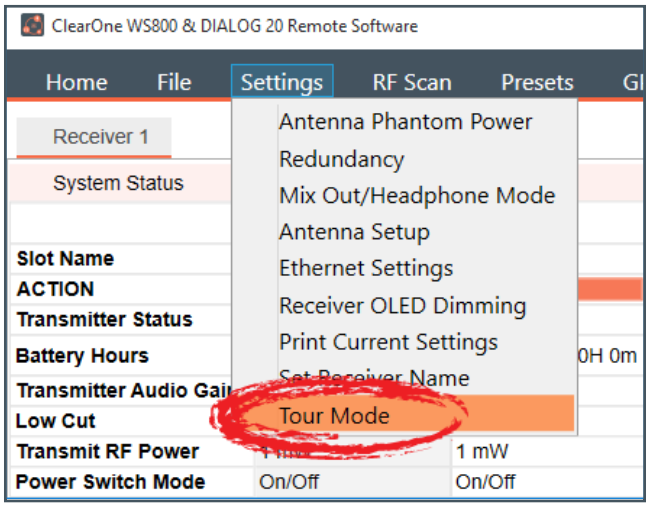
2. Select the receiver you want to name, enter the new name, and click [SEND].



Tour Mode

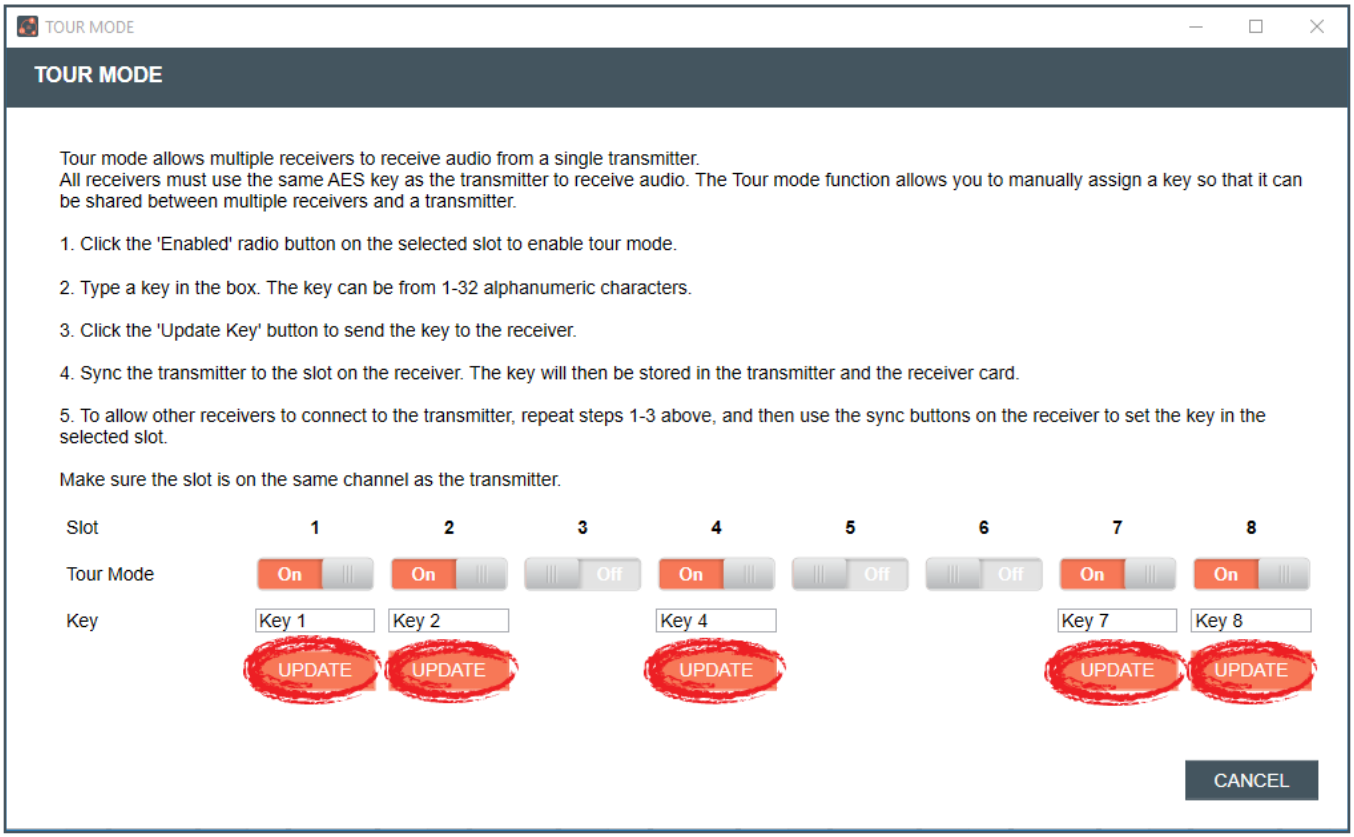
Note: This function is not available in OFFLINE SETUP MODE for the DIALOG 20 receiver.

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.

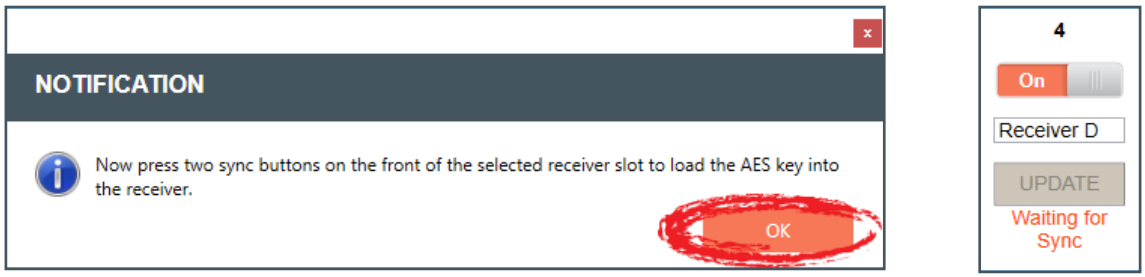


2. Click the [On]/[Off] toggle button for the appropriate slot(s) to enable or disable Tour Mode.
3. Type key(s) into applicable box(es). A key can be from 1-32 alphanumeric characters.

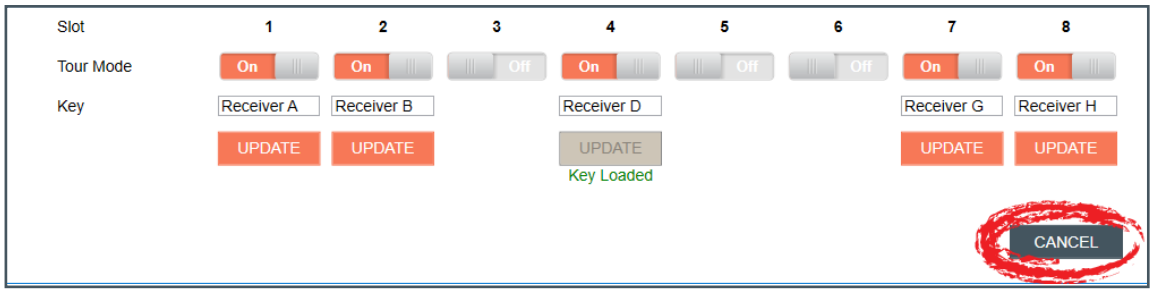
Note: All receivers must use the same AES key as the transmitter to receiver audio. Tour Mode allows you to manually assign a key so it can be shared between multiple receivers and a transmitter. When the AES key does not match, the audio is muted until there is a re-sync.



4. Click [UPDATE] to send the key(s) to the receiver(s).
5. A notification window to sync the transmitter to each slot appears as each slot is updated. An alert flashes “Waiting for Sync” until this is completed. Once synced, the key is stored in the transmitter and the receiver card(s).



6. Alerts change to indicate when a key has been loaded.
7. Click [CANCEL] to close out of the Tour Mode window.

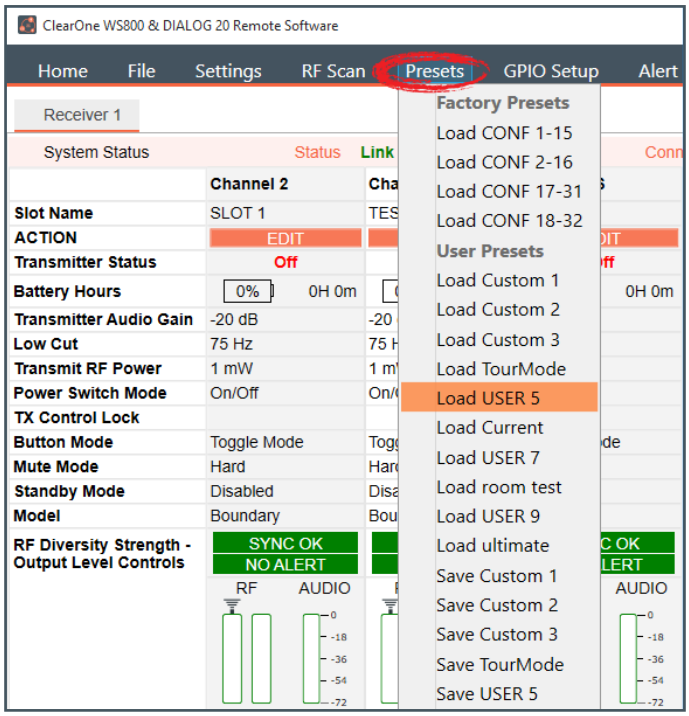


PRESETS

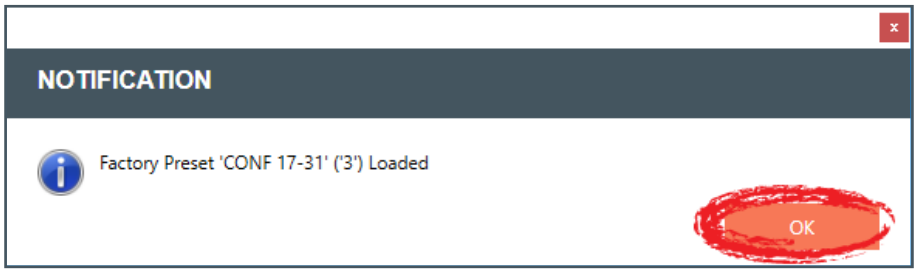
Presets allow you to save settings to receiver memory or recalls settings from receiver memory.

Note: This function is not available in OFFLINE SETUP MODE.

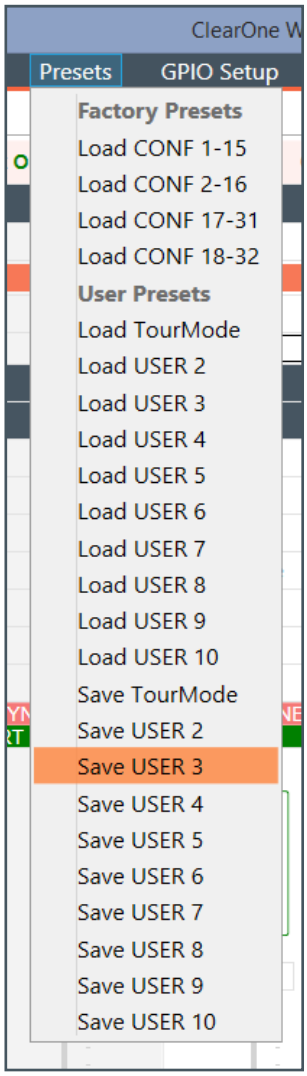
1. To load a preset, select [Presets], and select a preset to Load. Load “PRESET 1” for factory default settings.

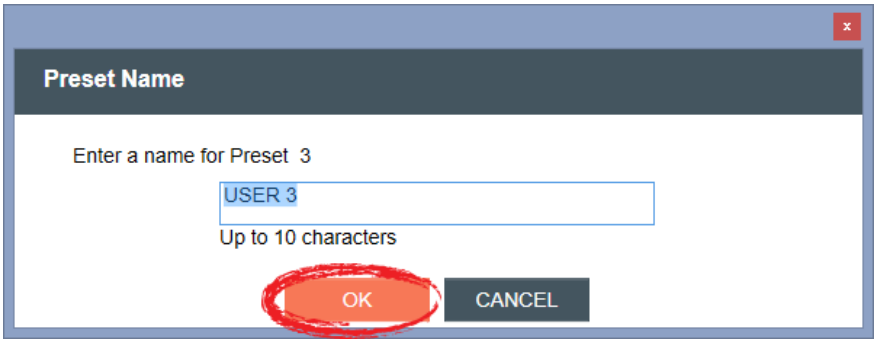


2. A notification window indicates if the preset has been loaded.



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].

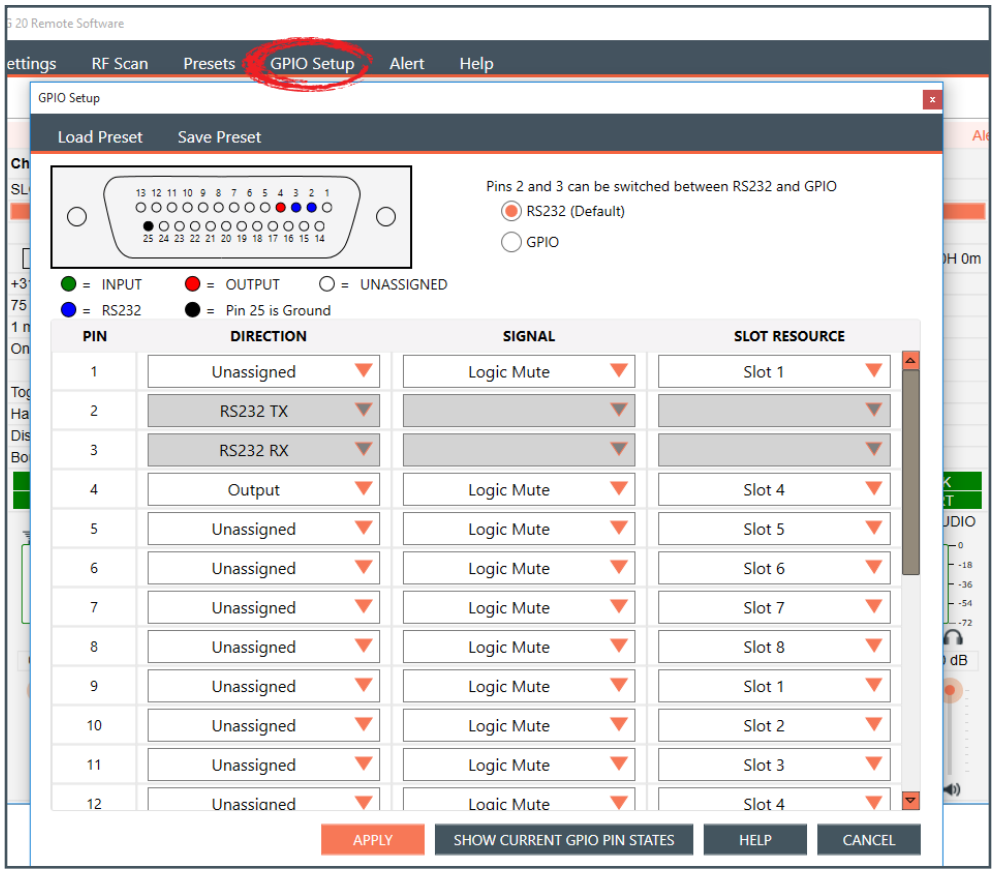




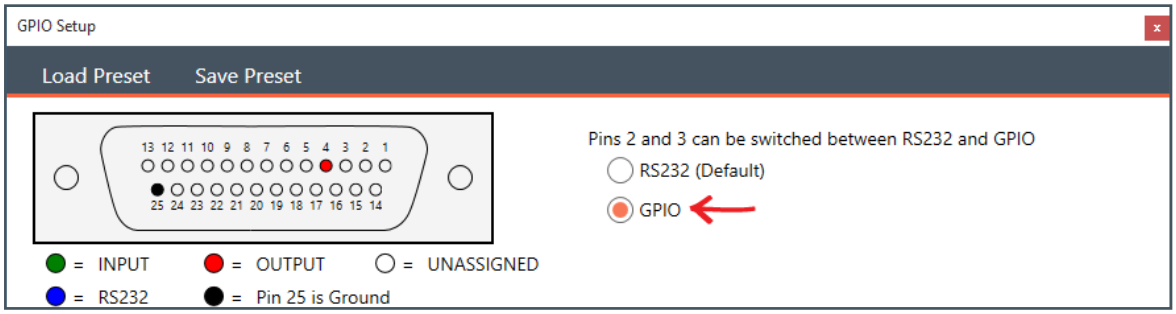
GPIO SETUP

Note: This function is not available in OFFLINE SETUP MODE.

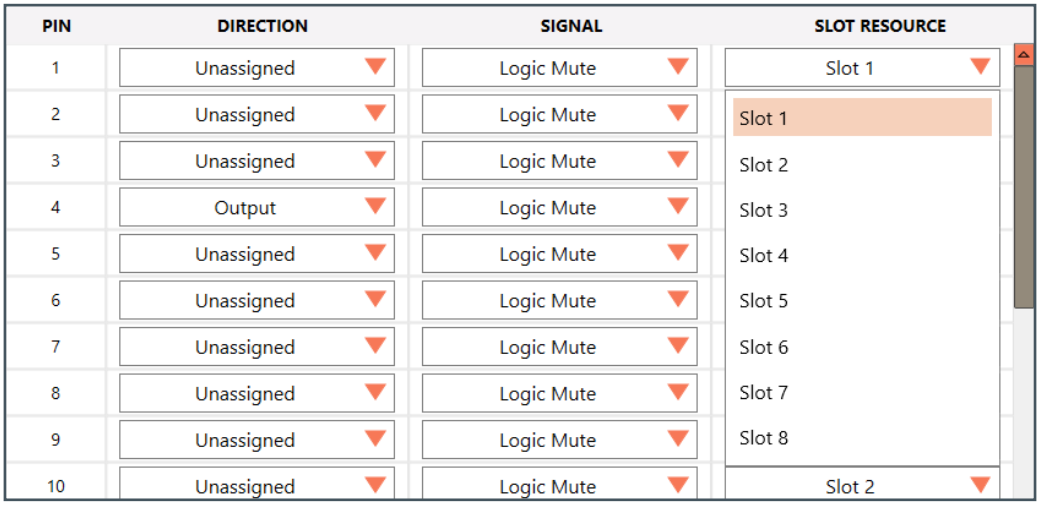
1. To configure the GPIO, select [GPIO Setup]. RS232 is the default.
   The General Purpose Input / Output (GPIO) contact closures provide another way to control the audio system. Use this window to set the pin assignments of the bottom DB25 connector located on the back panel of the receiver.



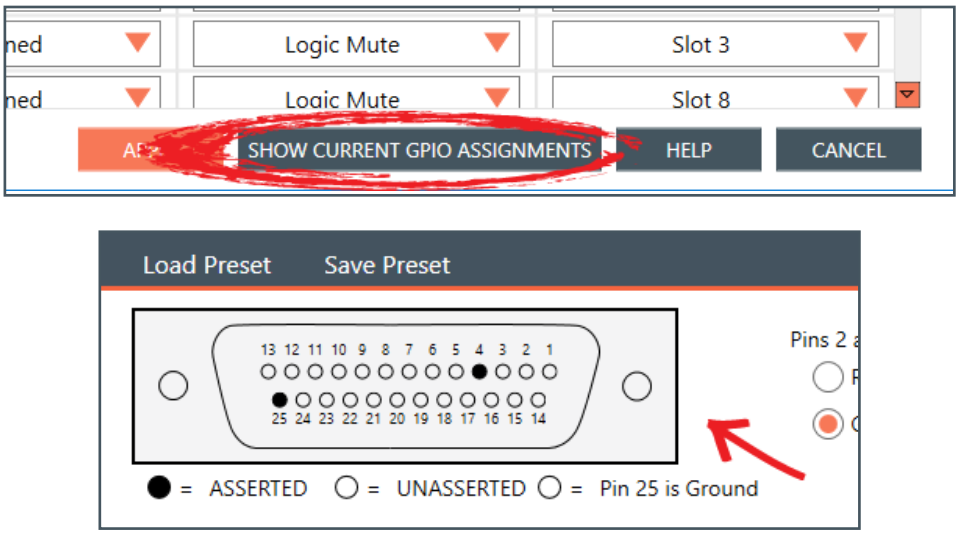
If not using RS232, select GPIO.



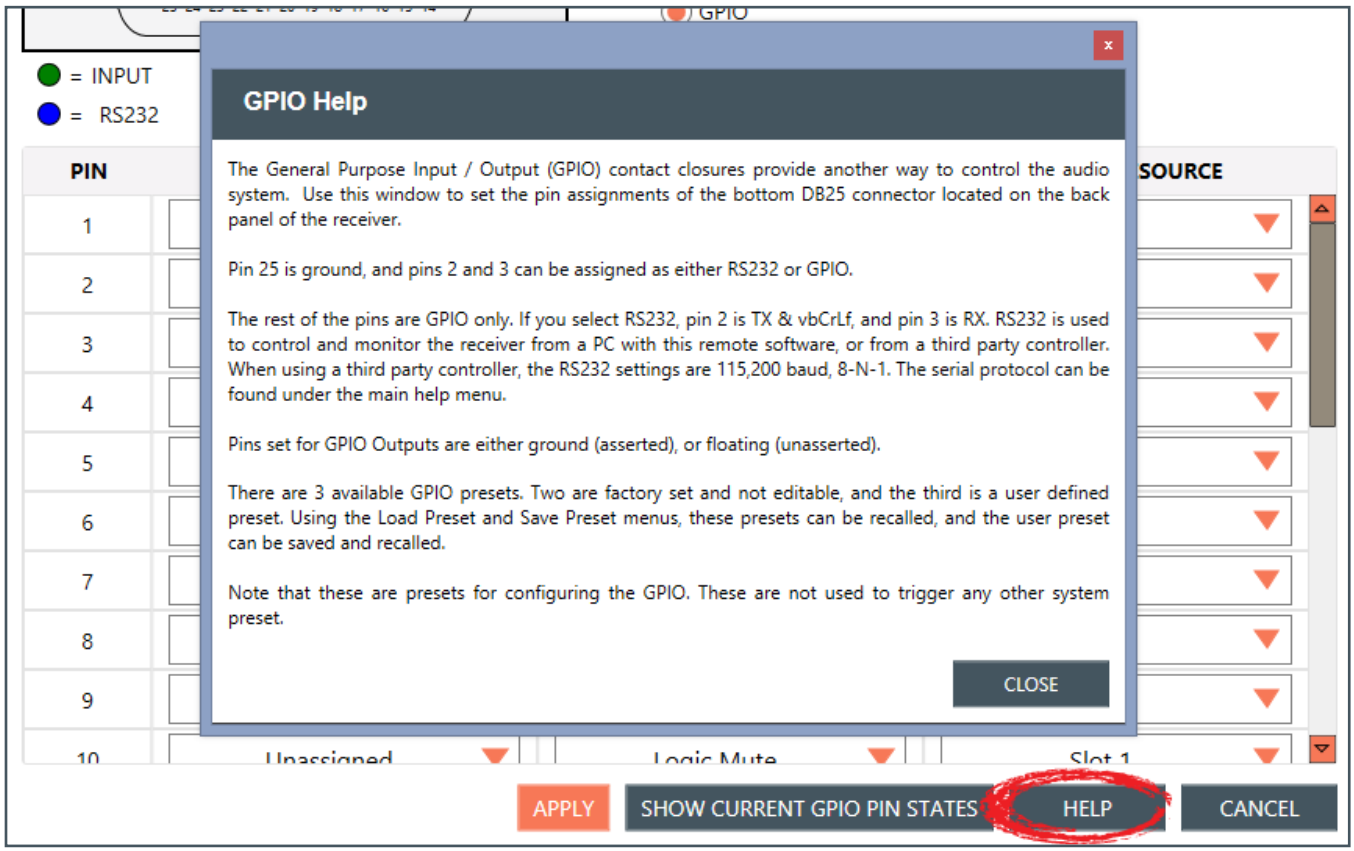
2. Adjust Direction, Signal, and Slot Resource for PINs as necessary.



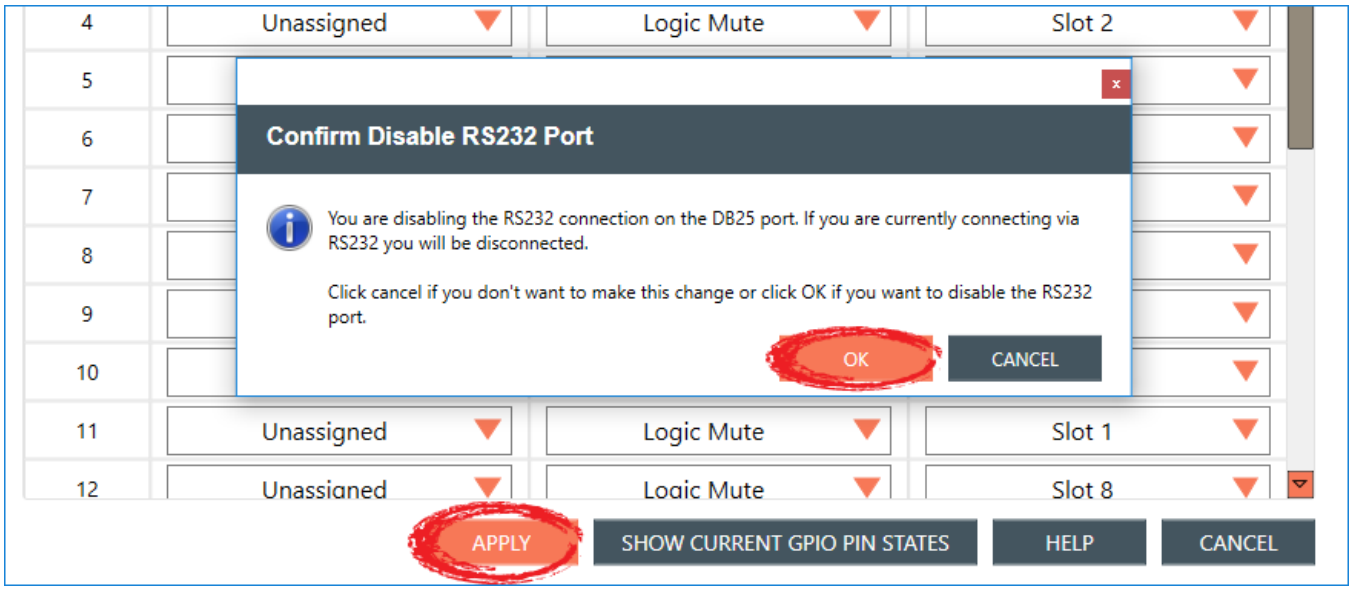
3. Click [SHOW CURRENT GPIO ASSIGNMENTS] to view current GPIO pin assignments.



4. For greater detail on the GPIO Setup function and its application, select [HELP]. Another window displays with the details.

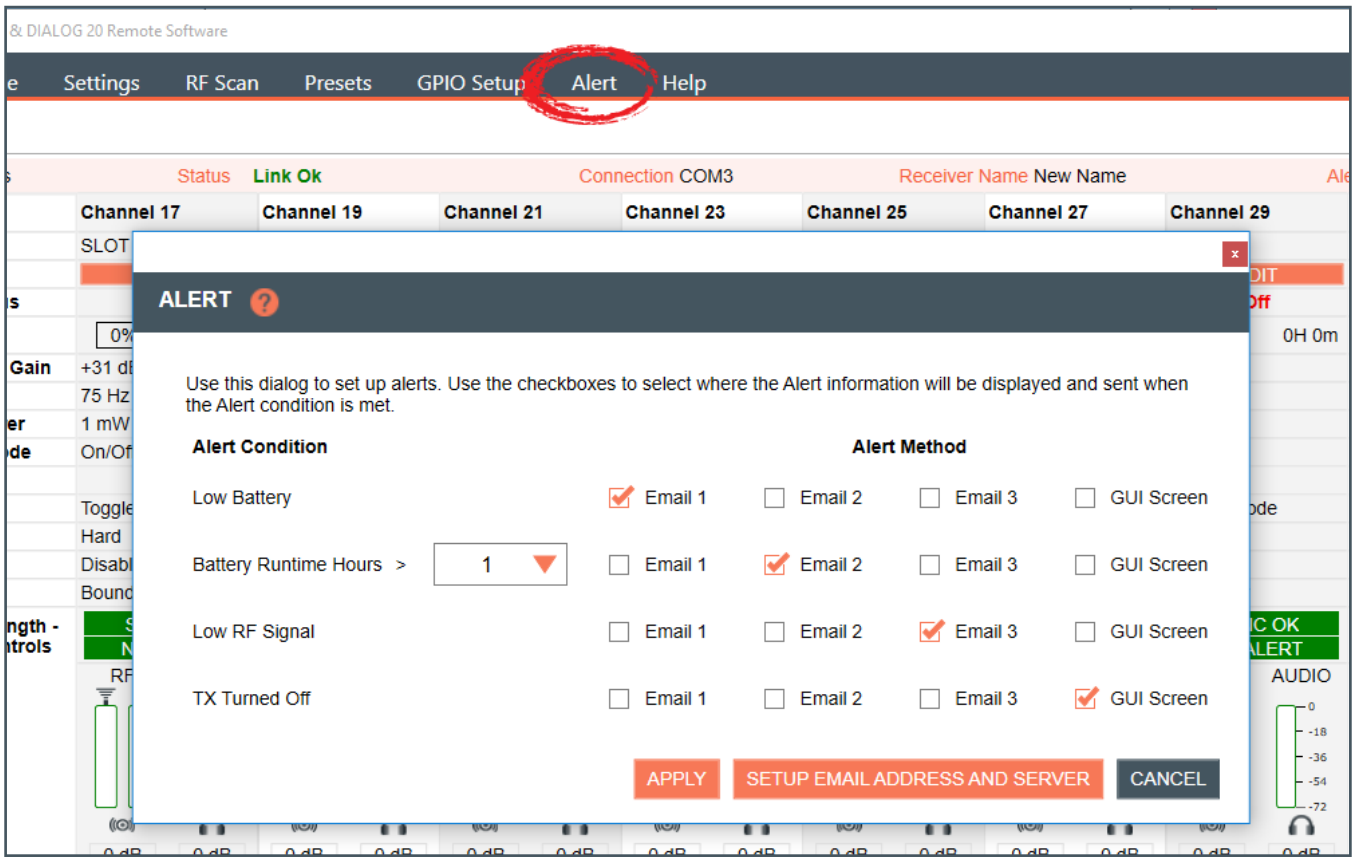


5. Click [APPLY] in the window to apply changes, and click [OK] to confirm switching from RS232 to GPIO.

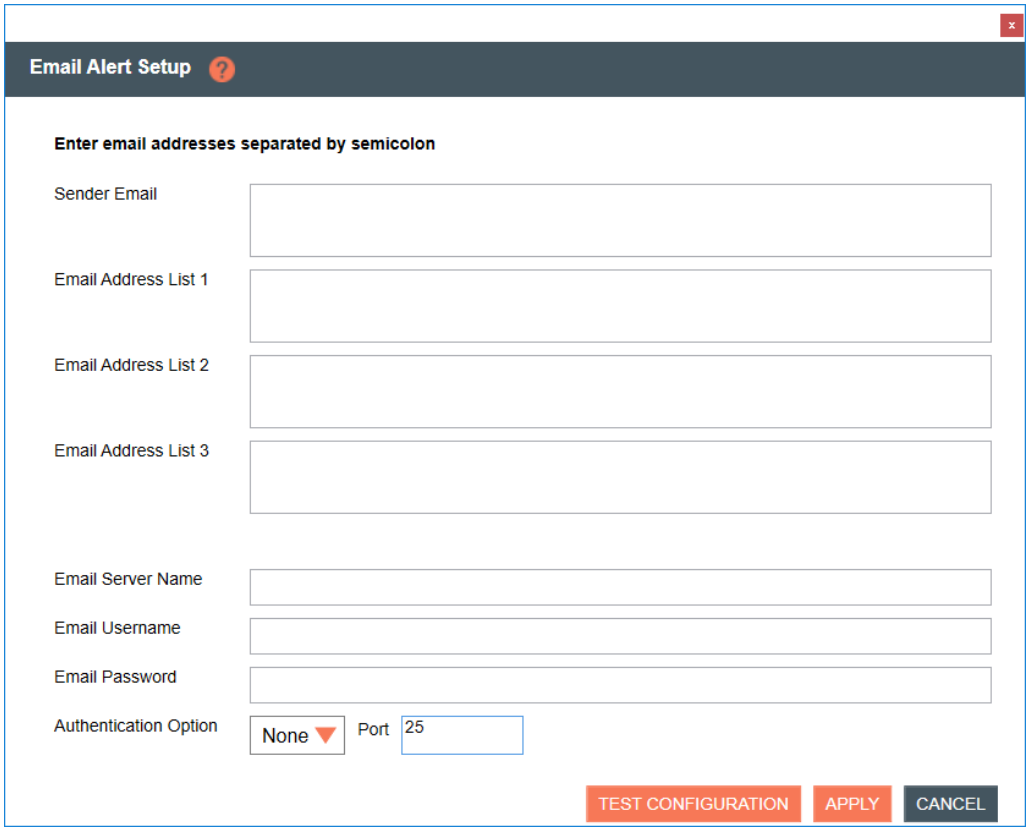


ALERT

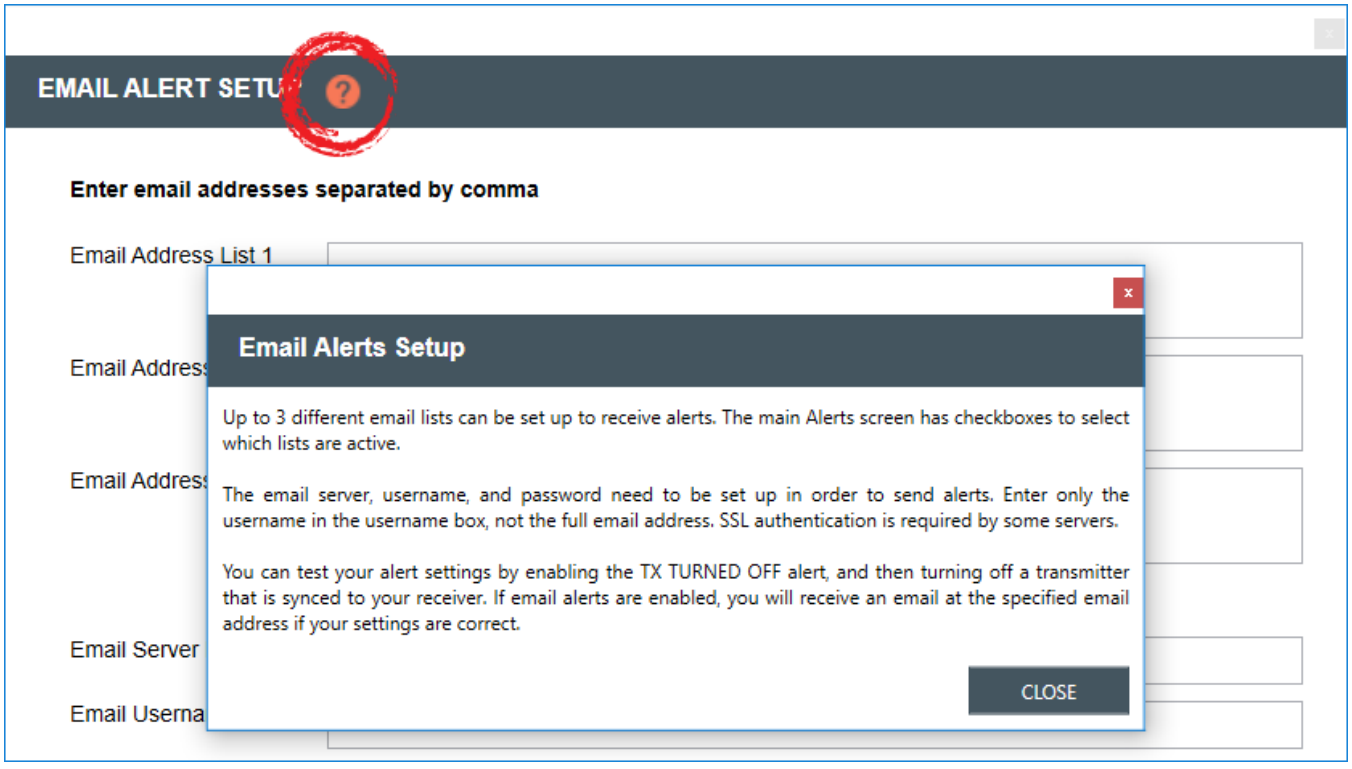
1. To set up automatic system monitoring alerts, select [Alert]. An alert can either be shown on the GUI screen, or it can be emailed to one or more email lists. The Alerts screen lets you select which conditons trigger an alert.



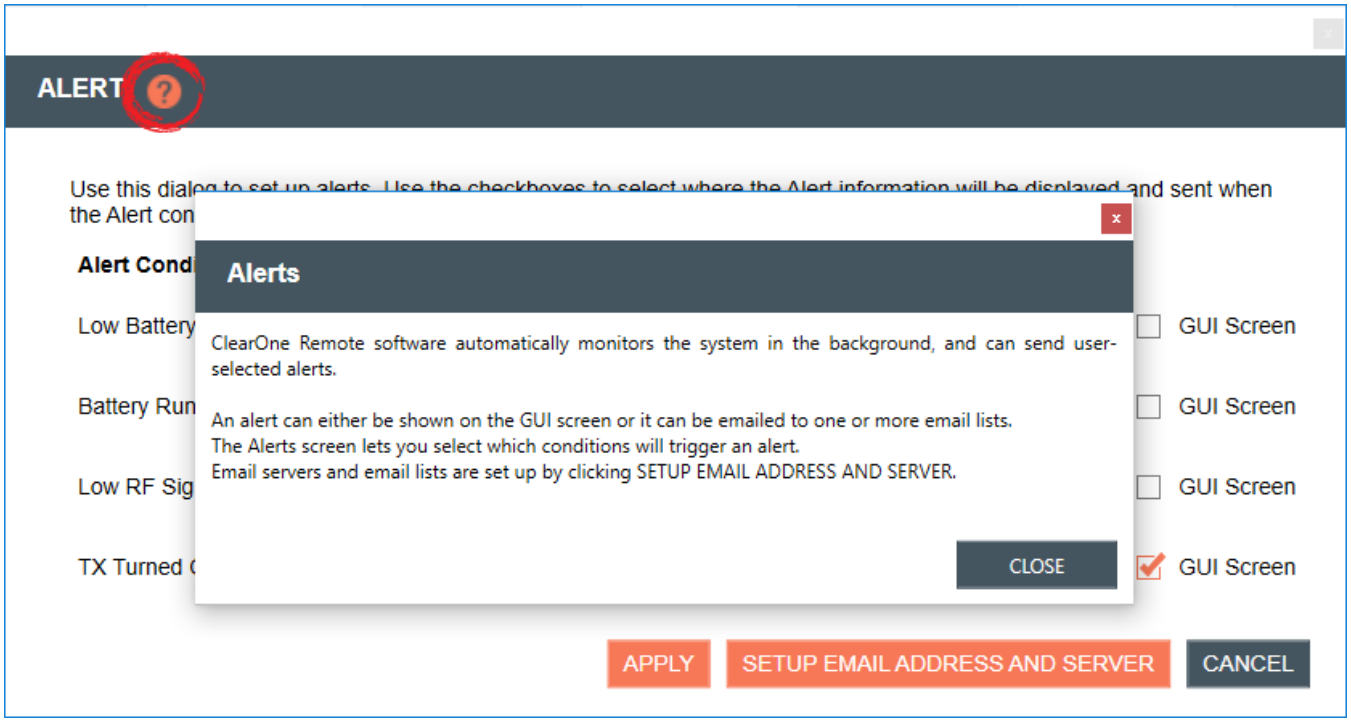
2. Email servers and lists are set up by clicking SETUP EMAIL ADDRESS AND SERVER. Enter or update new details, test the configuration of your new details, and then select “APPLY”.



3. 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.

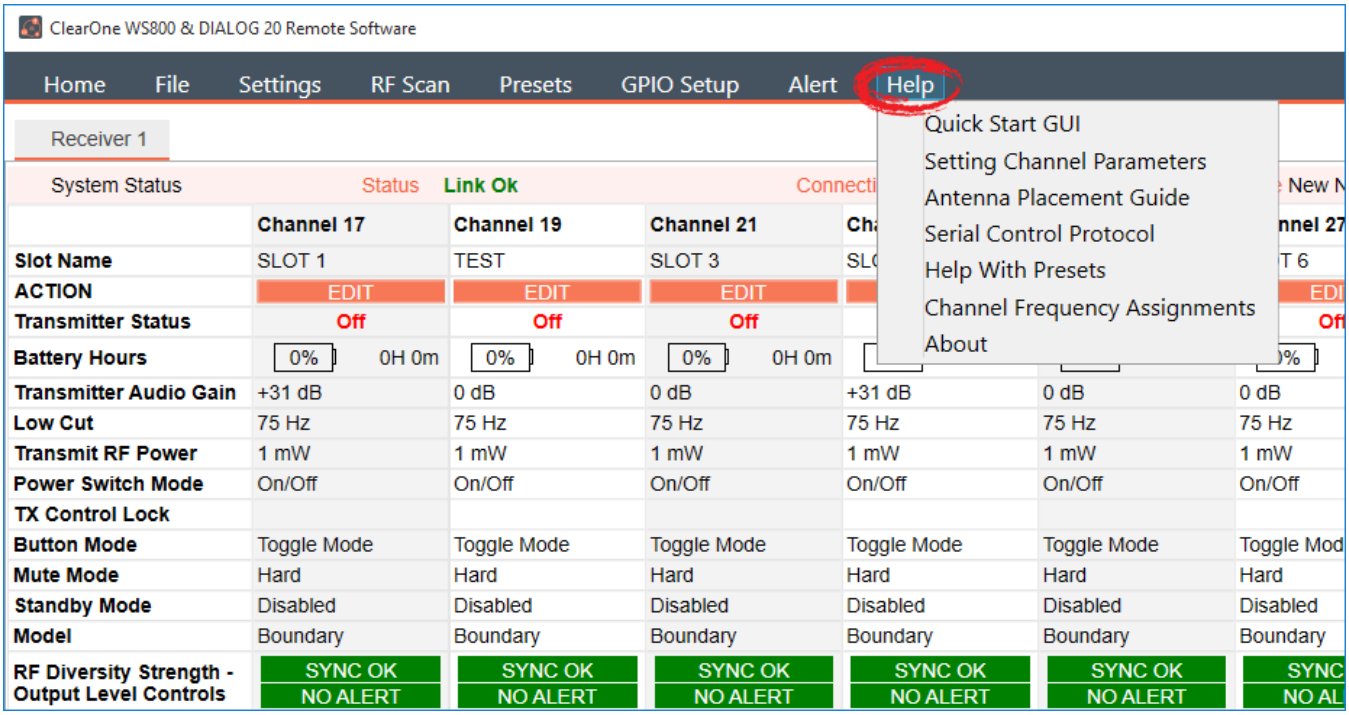


4. For greater detail on the Alerts function and its application, select the question mark icon in the window. Another window displays with the details.



HELP

1. For more software and equipment reference material and software properties, select [Help].



DIALOG 20 - 2 CHANNEL WIRELESS MIC SYSTEM

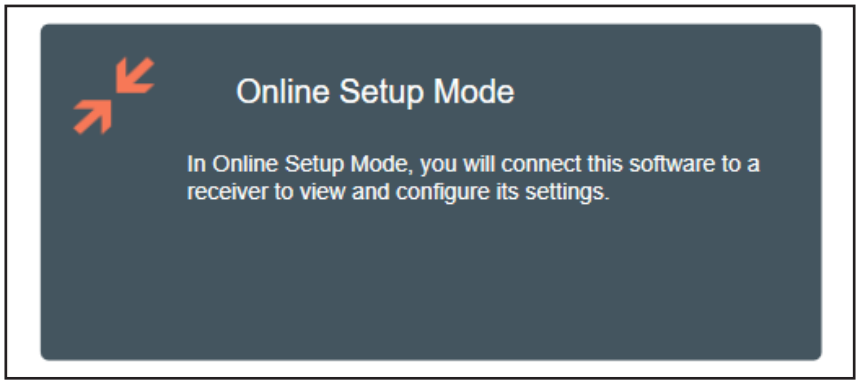
ONLINE SETUP MODE

Allows you to connect this configuration software to your WS800 wireless receiver(s) via RS232 or IP, or to DIALOG 20 receivers via USB.

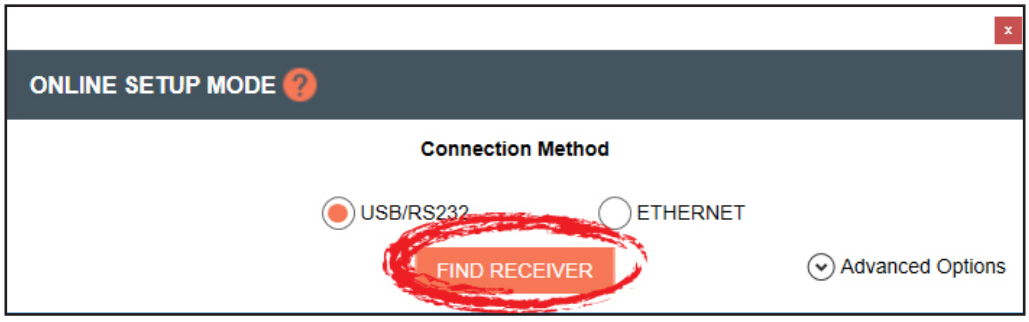
Note: The DIALOG 20 receiver connects to this PC software via micro USB.

If you are using Online Setup Mode,

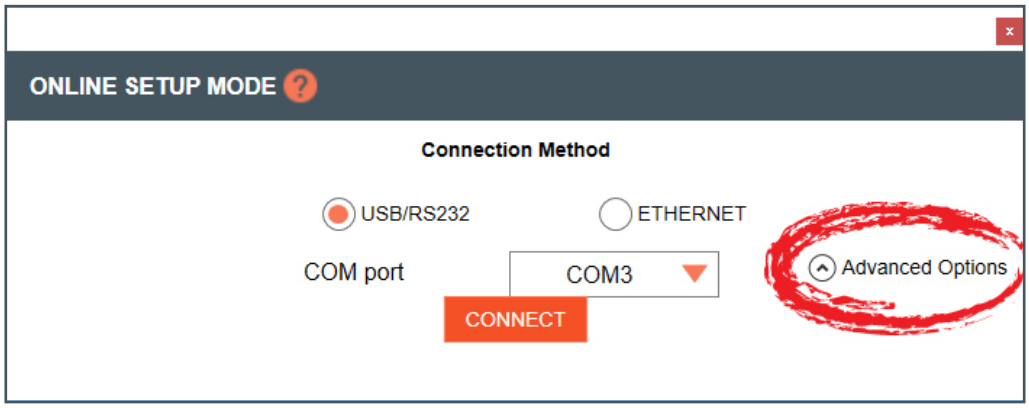
1. Select [Online Setup Mode] to connect the software to your receiver.



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



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

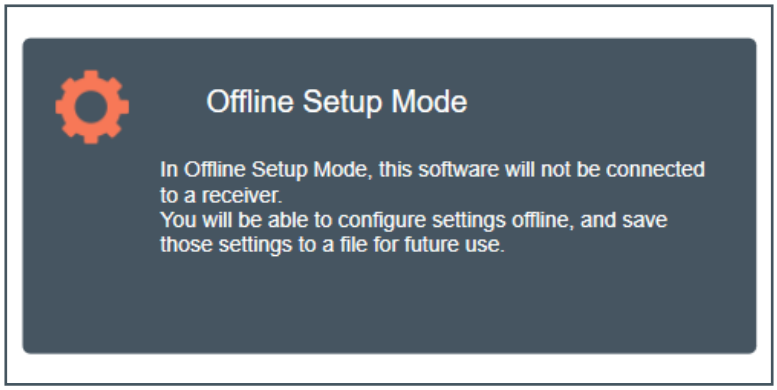


OFFLINE SETUP MODE

Allows you to configure and save settings for future application.

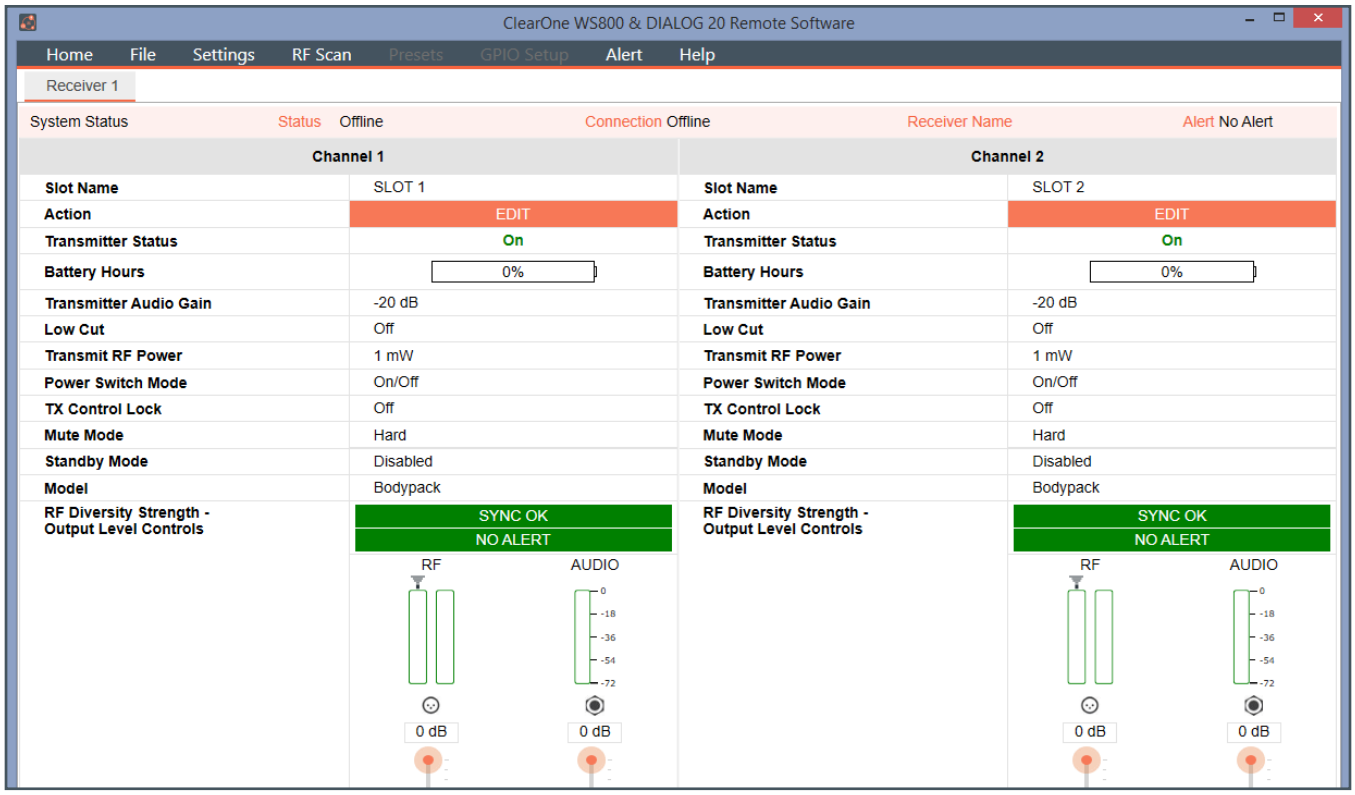
If you are using Offline Setup Mode,

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



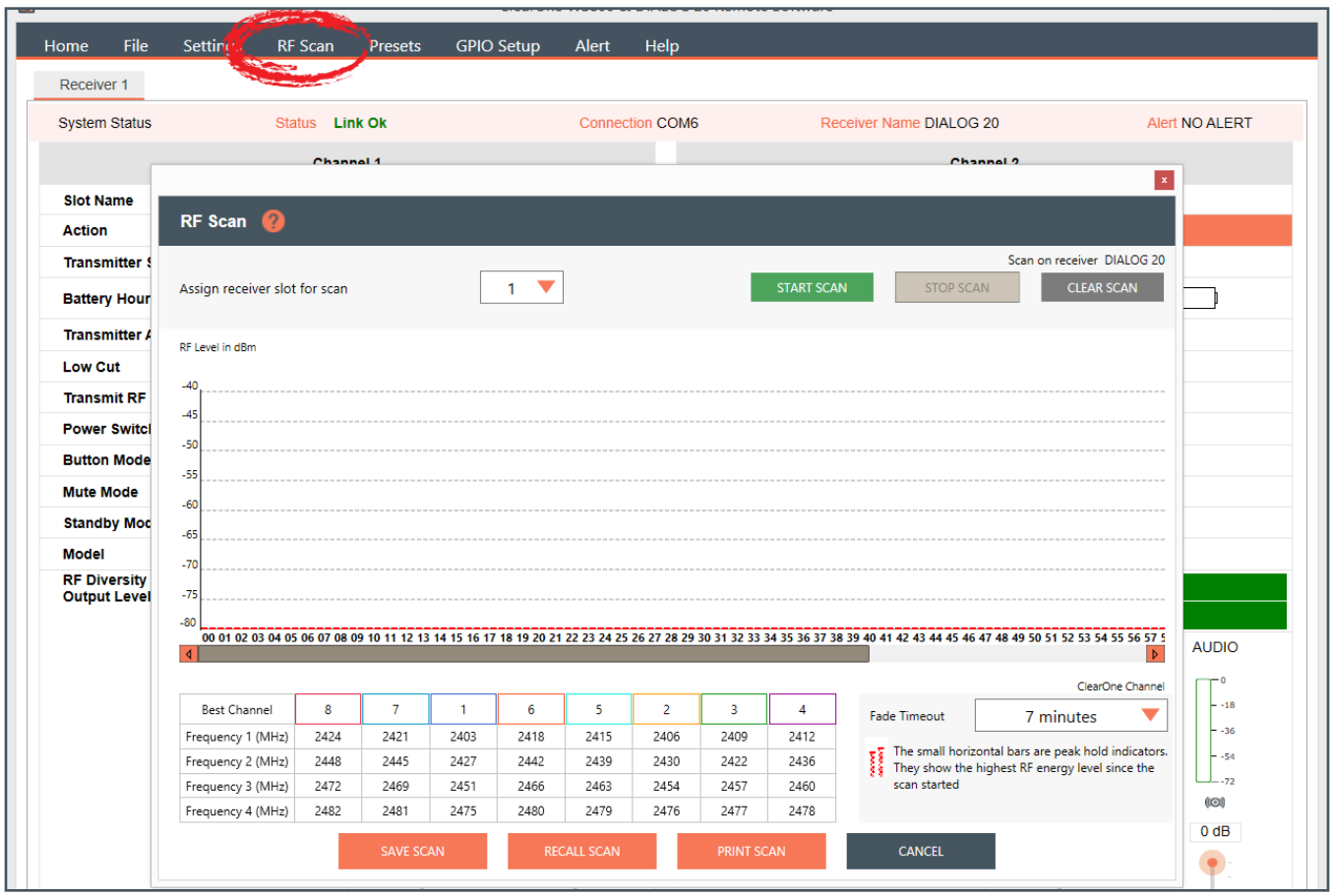
2. Select the type of receiver you want to save settings for.

The DIALOG 20 receiver screen reflects 2 channels:

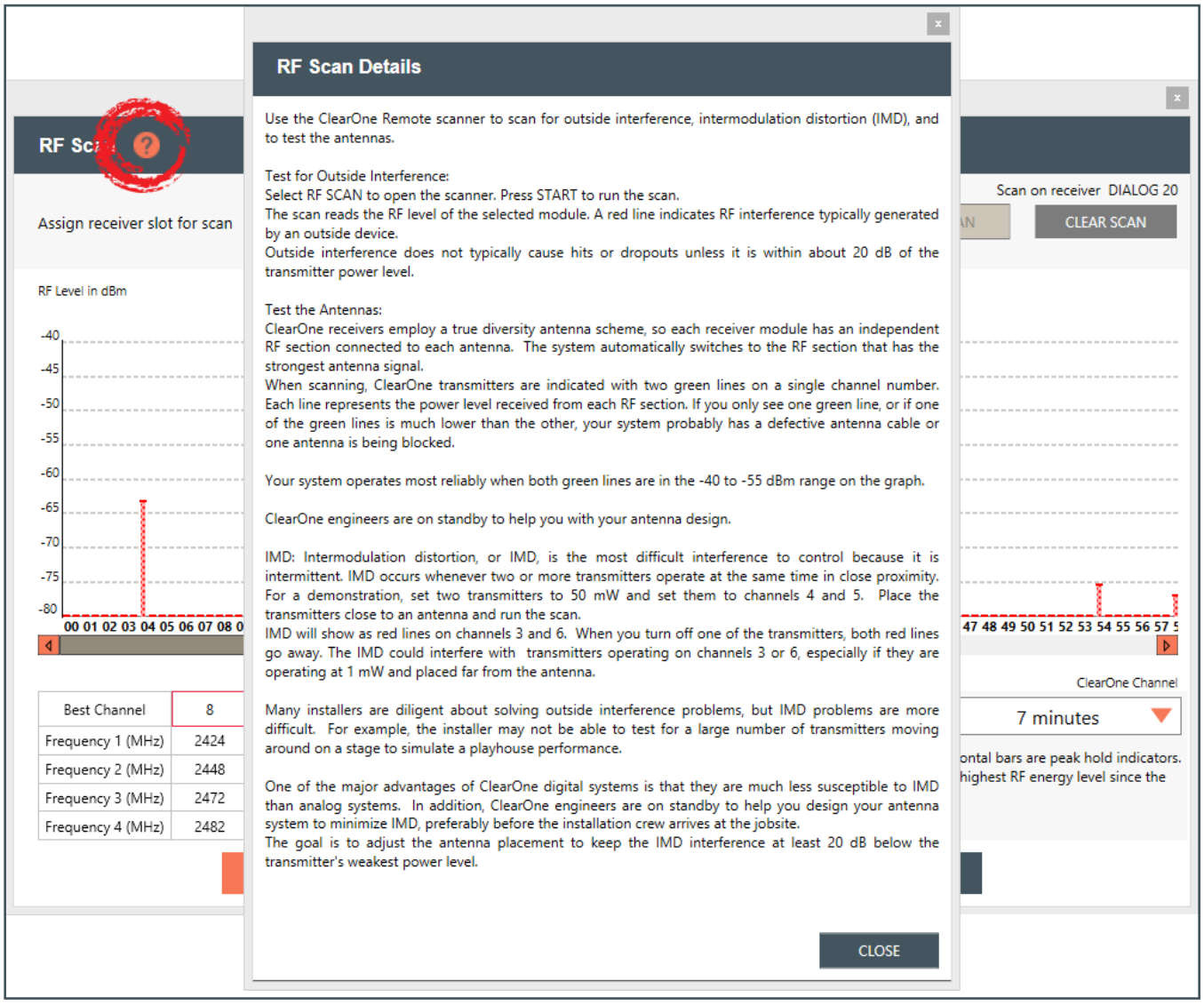


RF SCAN

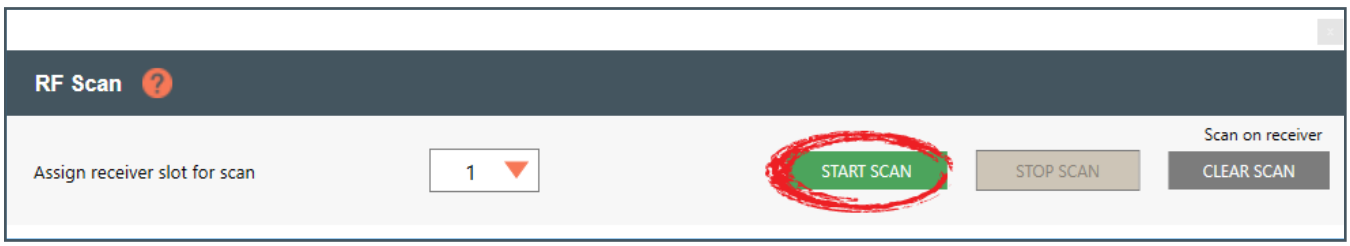
1. To utilize the Radio Frequency (RF) Scanner, select [RF Scan].



The RF Scanner scans for outside interference, intermodulation distortion (IMD), and to test 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.



2. Select receiver slot for scan.
3. Click [START SCAN] to start the RF Scan.



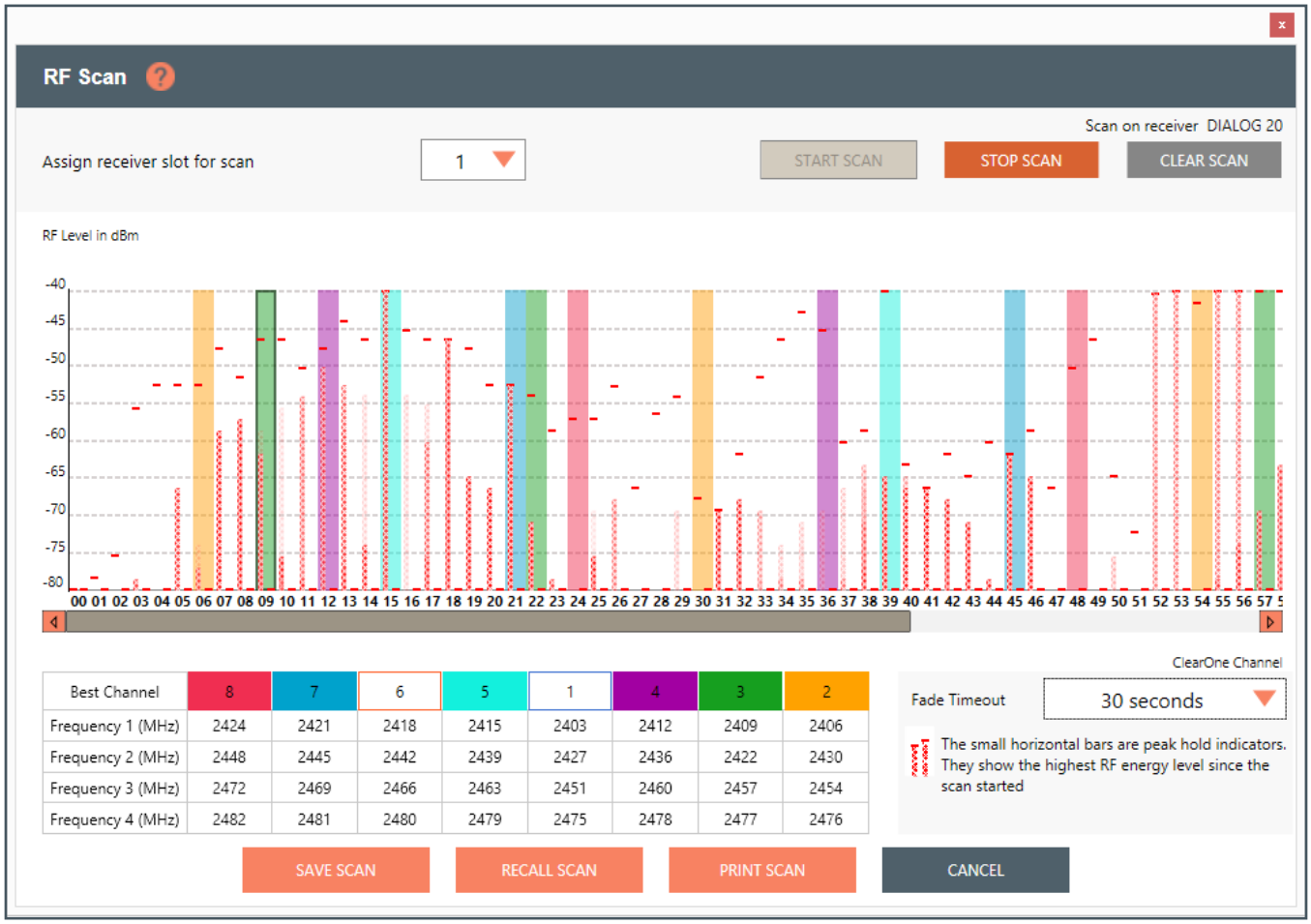
Red lines indicate potential interference, and the small horizontal bars are peak hold indicators. They show the highest RF energy level since the scan started.

The colored bars are the “Frequency Markers”, and represent where the Dialog20 RF channels (1 to 8, with each channel made up of 4 discrete frequencies) are allowed to hop on during run time.

For example, if you want to use RF channel 4 (purple), select the

icon in the row labeled “Frequence Marker”, and the system hops on the purple frequencies only.

The scan shows where each of the 4 frequencies are so you can see which of the 8 channels are best overall. Channels are also ranked from best to worst based on interference.



Best Channel	8	7	6	5	1	4	3	2
Frequency 1 (MHz)	2424	2421	2418	2415	2403	2412	2409	2406
Frequency 2 (MHz)	2448	2445	2442	2439	2427	2436	2422	2430
Frequency 3 (MHz)	2472	2469	2466	2463	2451	2460	2457	2454
Frequency 4 (MHz)	2482	2481	2480	2479	2475	2478	2477	2476

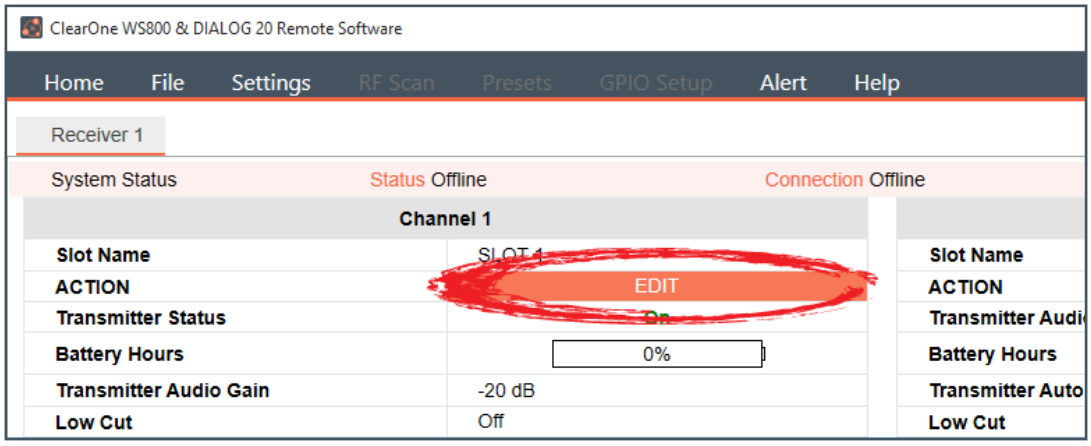
The Fade Timeout function shows the most recent data as a solid bar. As data ages, it fades out based on the time setting. This allows you to distinguish between current potential interference and interference that has happened in the past. This enables you to see which channels are best over and extended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

Notes: Tips on Setting the RF channel.

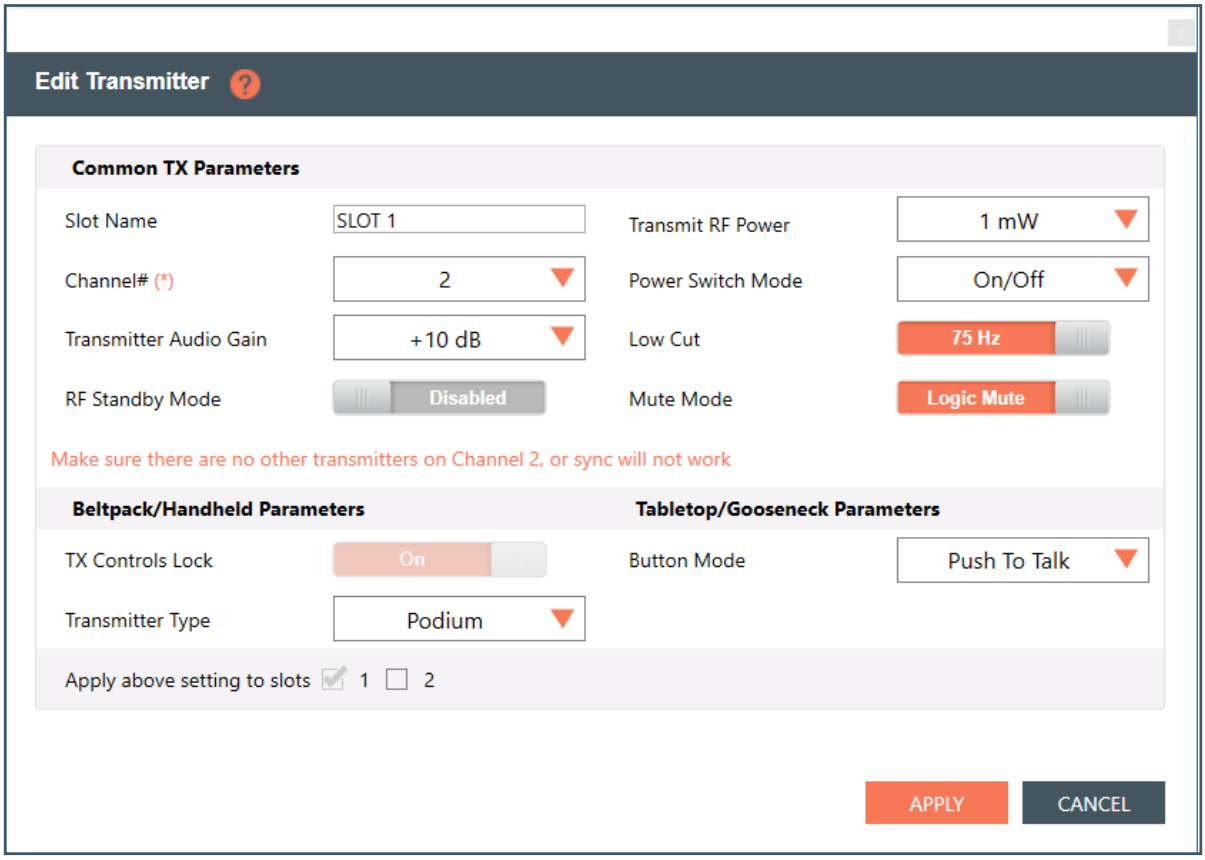
1. Identify the RF channels with the least amount of RF interference using the receivers RF scan feature.
2. Set the RF channel of the Tx/Rx pair based on the RF scan results.

EDITING TRANSMITTER PARAMETERS

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



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.



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 -20db to +30 db.

TX Gain Lock: When a transmitter has GainLock enabled, it ignores gain changes sent from the receiver and keep 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 or 50 to 100 feet.

  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 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 talent 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 is recommended for most spoken-word applications.
- **Off:** For most musical programs, especially when mic'ing guitars and basses.

Mute Mode: This function controls the action of the mute button.

- **Hard Mute:** Pressing the mute button mutes the receiver output
- **Logic Mute:** When Logic Mute is enabled, the audio output is NOT muted when the transmitter's mute switch is enabled. This is used in combination with the GPIO outputs so that echo cancellers can use the audio as an input and mute the audio downstream.

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. When un-muted, it takes about a half second to pass audio.

- **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.

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

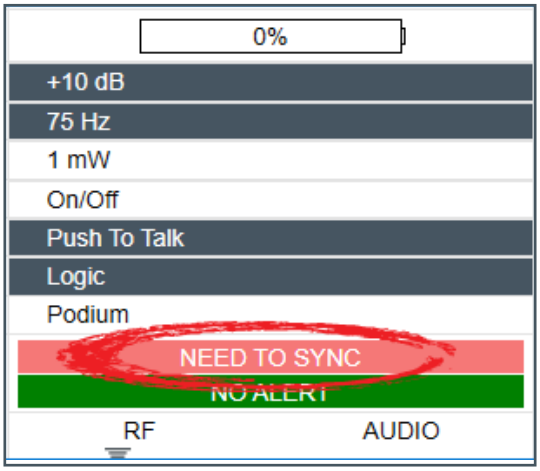
- **On:** Disables the buttons on the transmitter and receiver. Parameters can only be changed with ClearOne Remote software.
- **OFF:** Allows the transmitter control buttons to operate.

Transmitter Type Defaults: This function only works in Off-Line mode. It allows you to preset the default parameters for the various microphones 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.

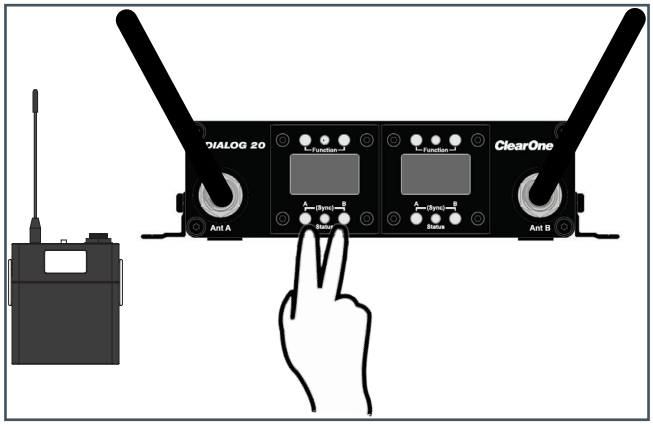
3. The [NEED TO SYNC] alert is lit, indicating one or more parameters in queue ready to be downloaded and implemented with the next transmitter Sync to the receiver channel.



SYNCING DIALOG® 20 TRANSMITTERS WITH RECEIVER

1. Power on the receiver.
2. Simultaneously press the two buttons on the bottom of the corresponding receiver module. ”SYNCING” shows on the receiver OLED.
   - To sync a Boundary Mic or Podium Mic: Press and hold the “Mute” button and then power on the transmitter.
   - To sync a Handheld or Beltpack: Press and hold the “S” button and then power on the transmitter.

   Note: Both the transmitter and receiver OLED read “SYNC GOOD” when the sync is successful.
3. Repeat the procedure if the receiver display shows “SYNC FAIL” or “BAD KEY”.
4. Check audio.

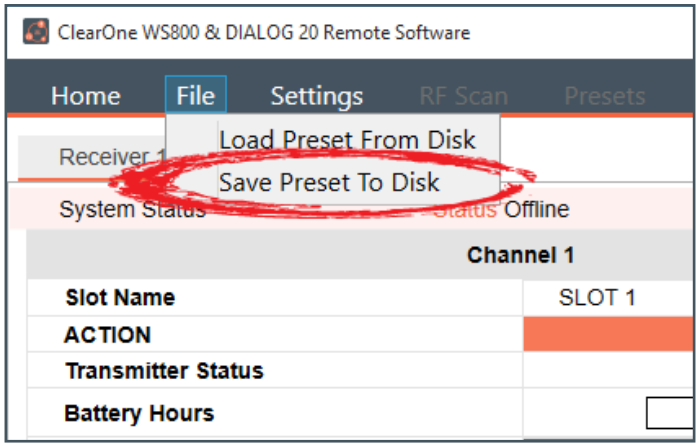


Note: The transmitter and receiver are assigned a new, random AES 128-bit encryption key every time they are synced.

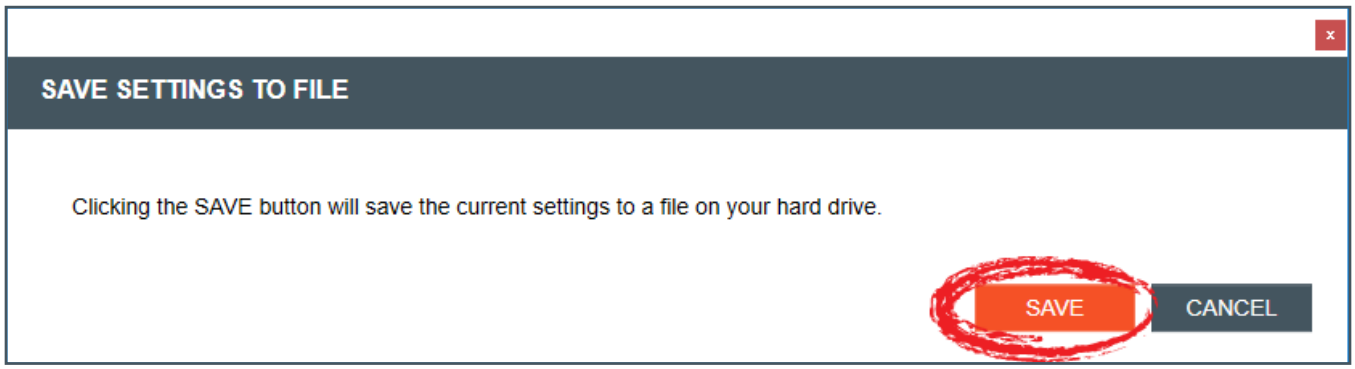
FILE TAB

Save Preset To Disk

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

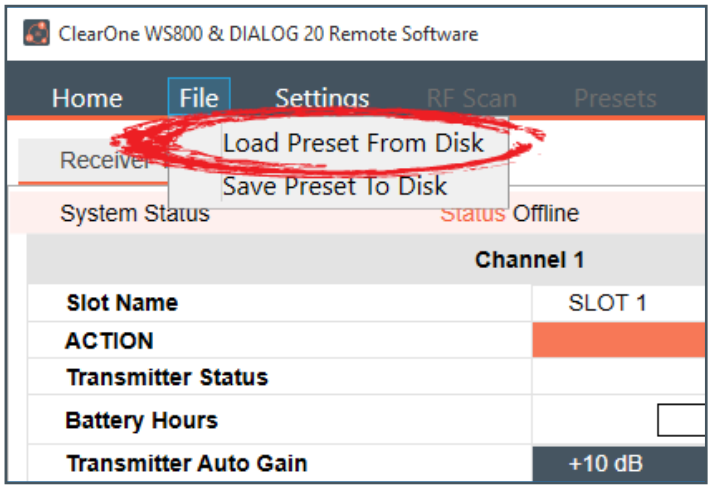


2. Select [SAVE] in the next window to save your preset.

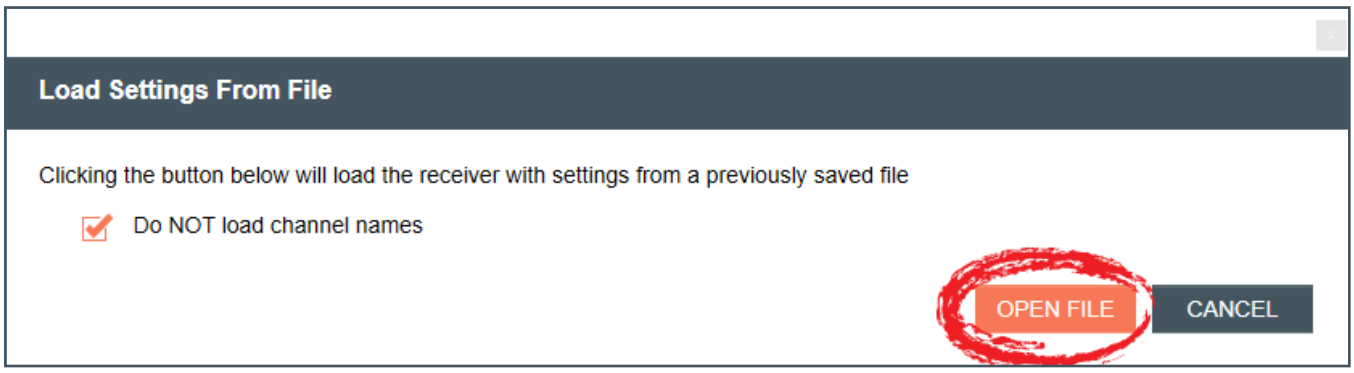


Load Preset From Disk

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



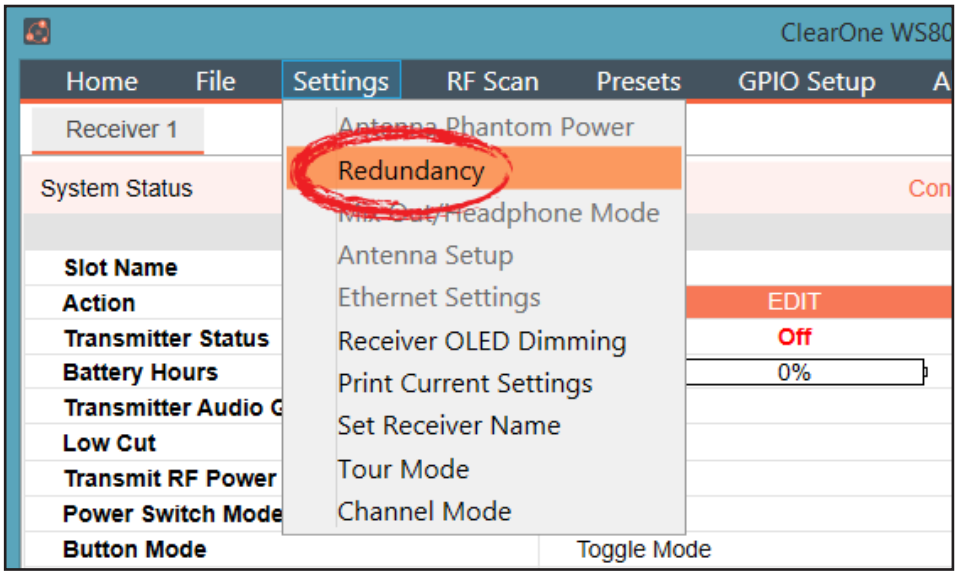
2. Leave [Do NOT load channel names] checked if you do not want to load different channel names. Select [OPEN FILE] to load a saved preset.



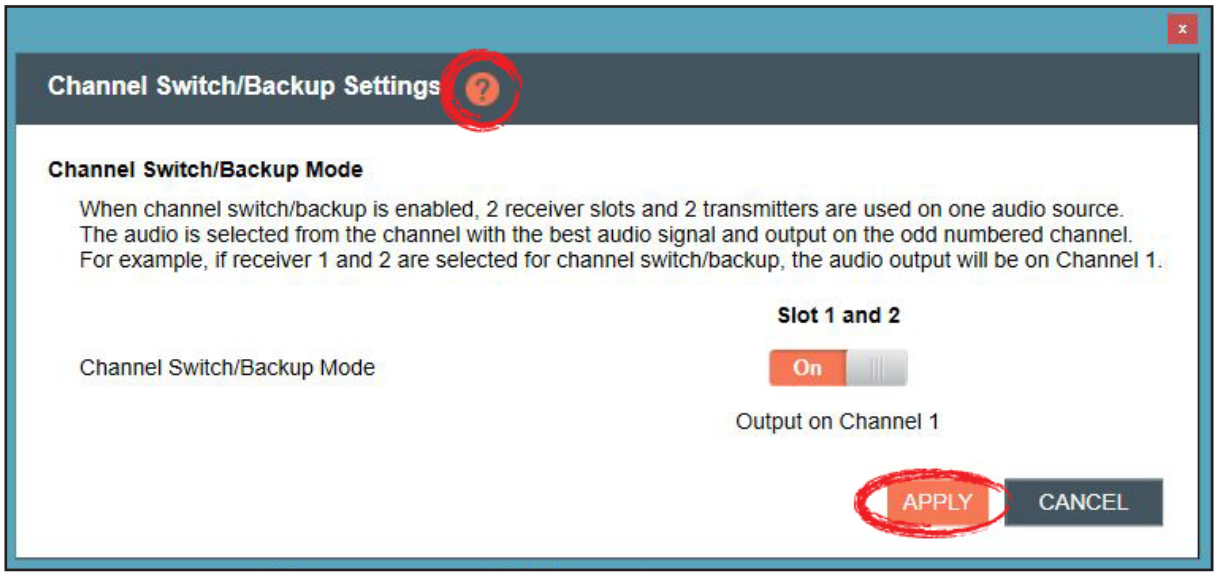
REDUNDANCY

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

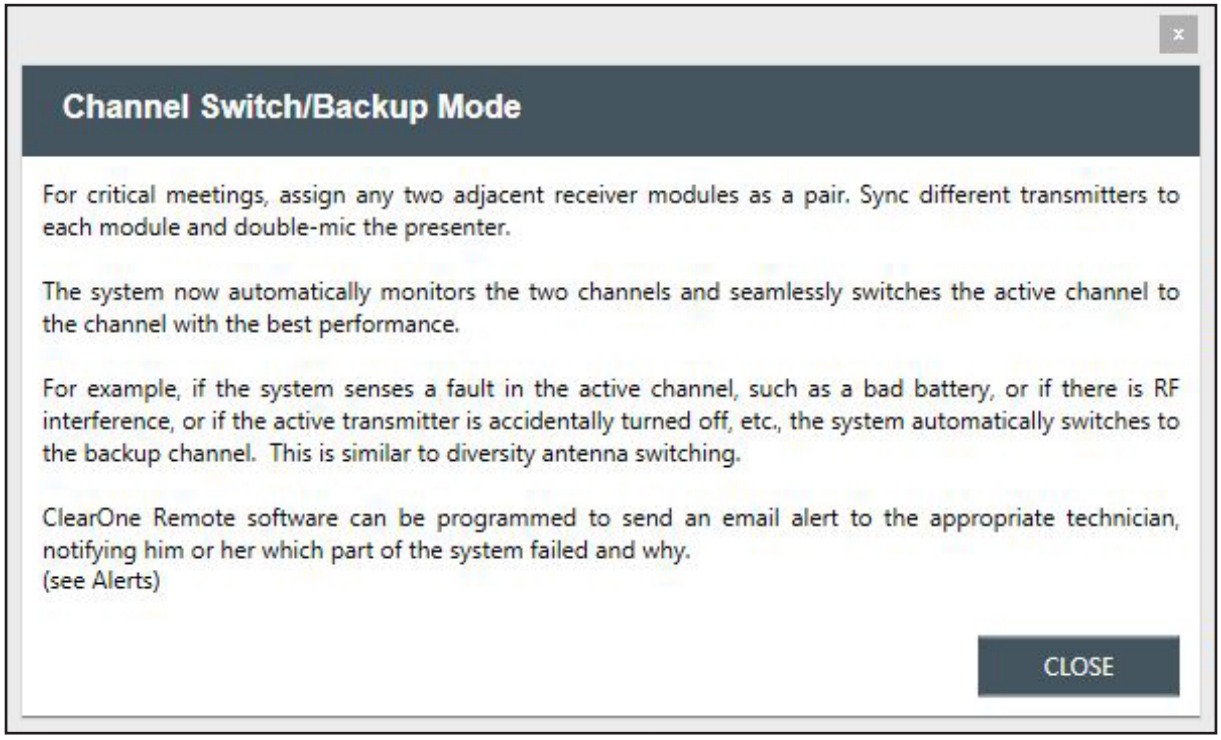
1. To turn Channel Switch/Backup Mode Off/On, select the [Settings] tab, then [Redundancy]. Redundancy enables you to run redundant, backup channels, in case the system senses a fault in the active channel.



2. The CHANNEL SWITCH/BACKUP SETTINGS window displays. Turn Channel Switch/Backup Mode Off/On for slot pairs as needed, then click [APPLY] in the window to apply changes.



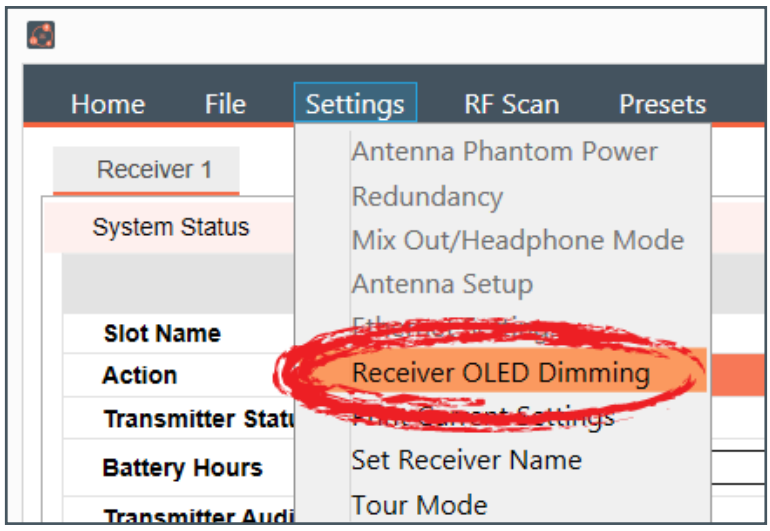
3. For details on the Channel Switch/Backup Mode function and its application, select the question mark icon in the window. Another window displays with the details.



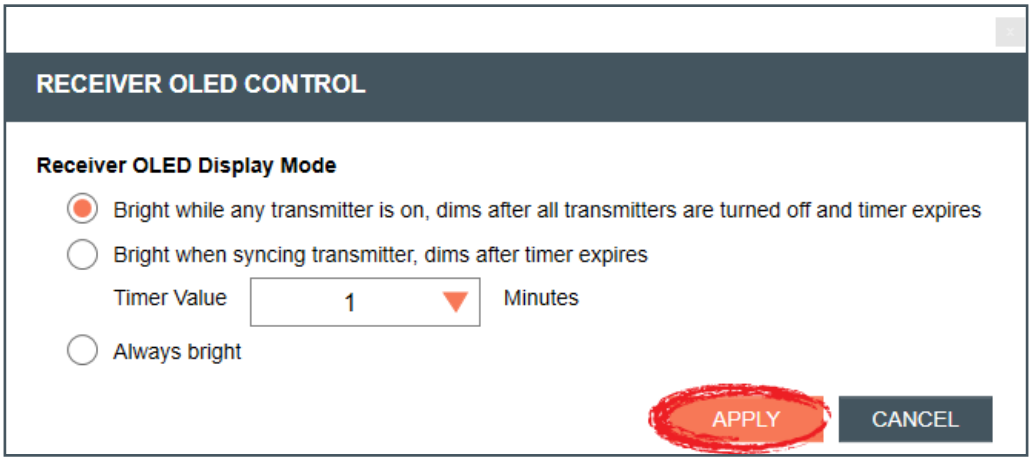
SETTINGS

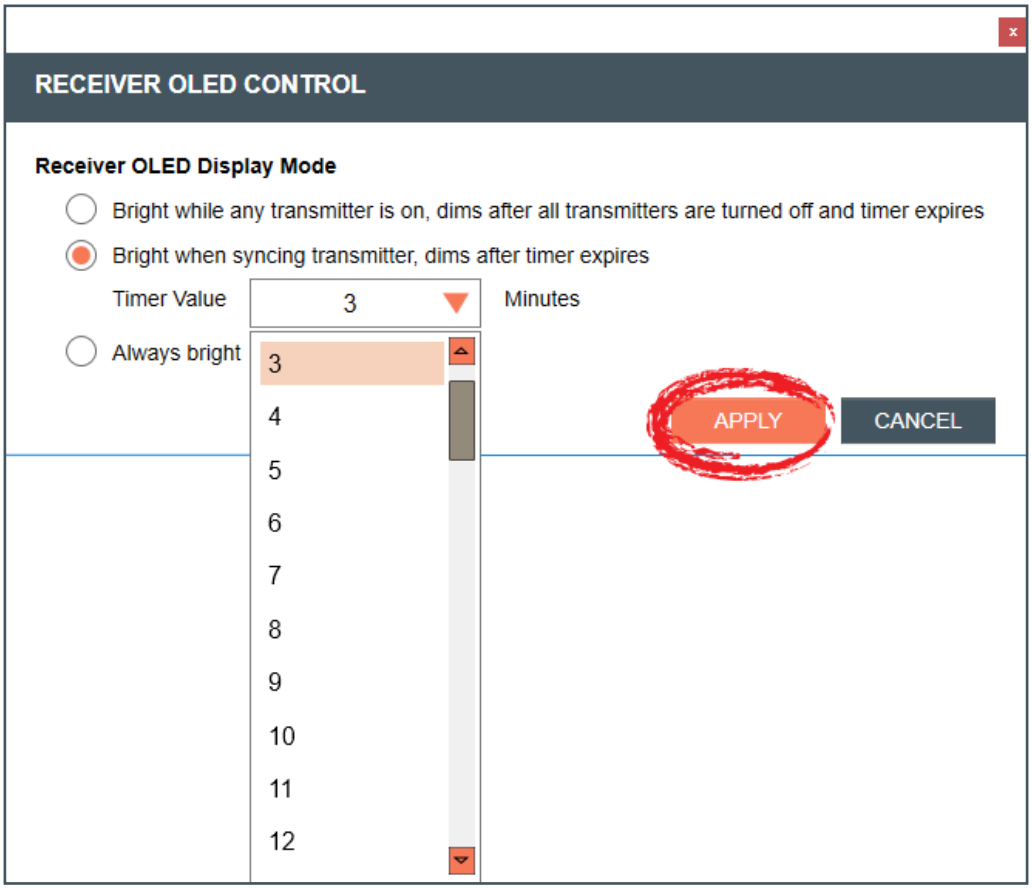
Receiver OLED Dimming

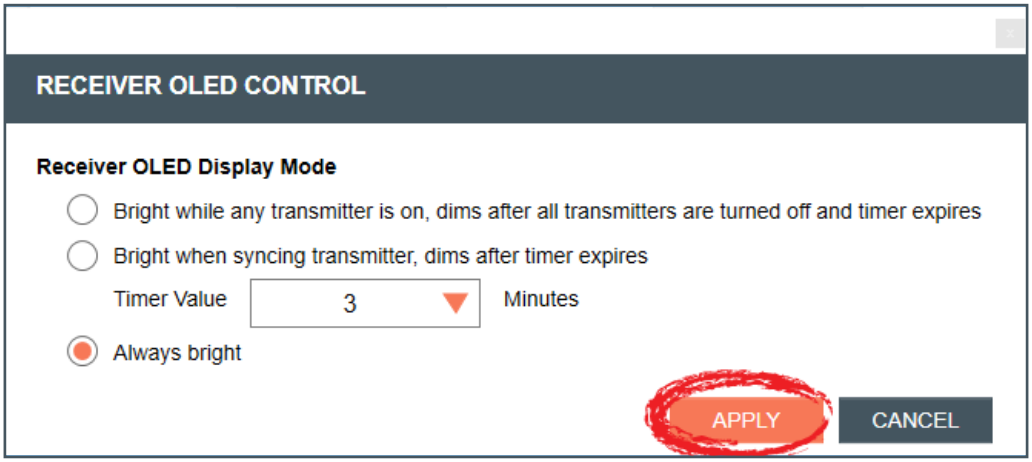
1. To set receiver OLED dimming settings, select the [Settings] tab, then [Receiver OLED Dimming].



2. The RECEIVER OLED CONTROL window appears. Select [Bright while any transmitter is on, dims after all transmitters are turned off and timer expires], or
3. [Bright when syncing transmitter, dims after timer expires], and set timer, or
4. [Always bright], then click [APPLY] in the window to apply changes.

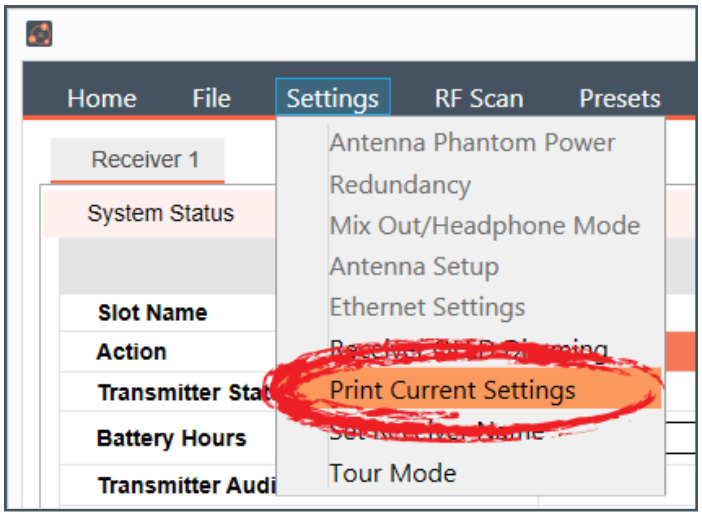

RECEIVER OLED CONTROL
Receiver OLED Display Mode
Bright while any transmitter is on, dims after all transmitters are turned off and timer expires
Bright when syncing transmitter, dims after timer expires
Timer Value
1
Minutes
Always bright
APPLY
CANCEL


RECEIVER OLED CONTROL
Receiver OLED Display Mode
Bright while any transmitter is on, dims after all transmitters are turned off and timer expires
Bright when syncing transmitter, dims after timer expires
Timer Value
3
Minutes
Always bright
3
4
5
6
7
8
9
10
11
12
APPLY
CANCEL


RECEIVER OLED CONTROL
Receiver OLED Display Mode
Bright while any transmitter is on, dims after all transmitters are turned off and timer expires
Bright when syncing transmitter, dims after timer expires
Timer Value
3
Minutes
Always bright
APPLY
CANCEL

Print Current Settings

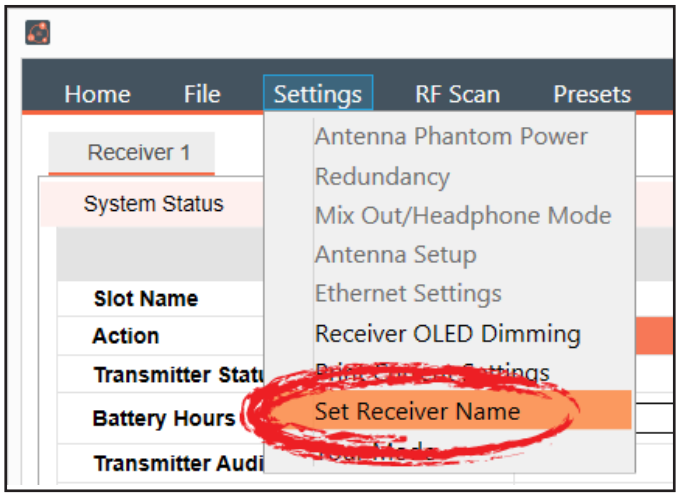
1. To print your current settings, select the [Settings] tab, then [Print Current Settings].



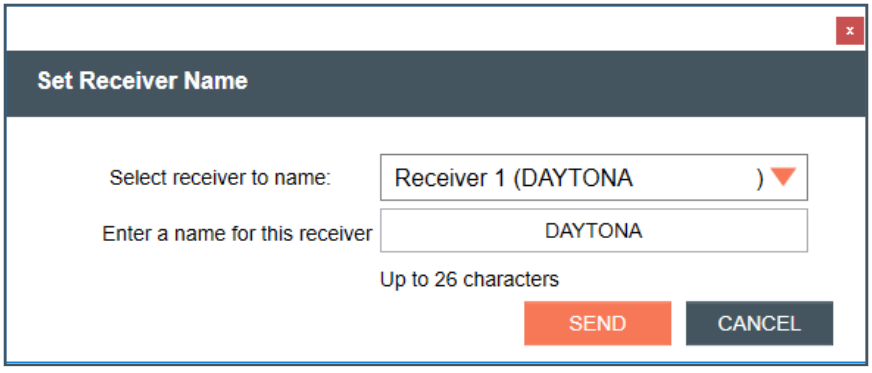
2. Your system window to print displays. Choose the printer you want to print to, and click [Print].

Set Receiver Name

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

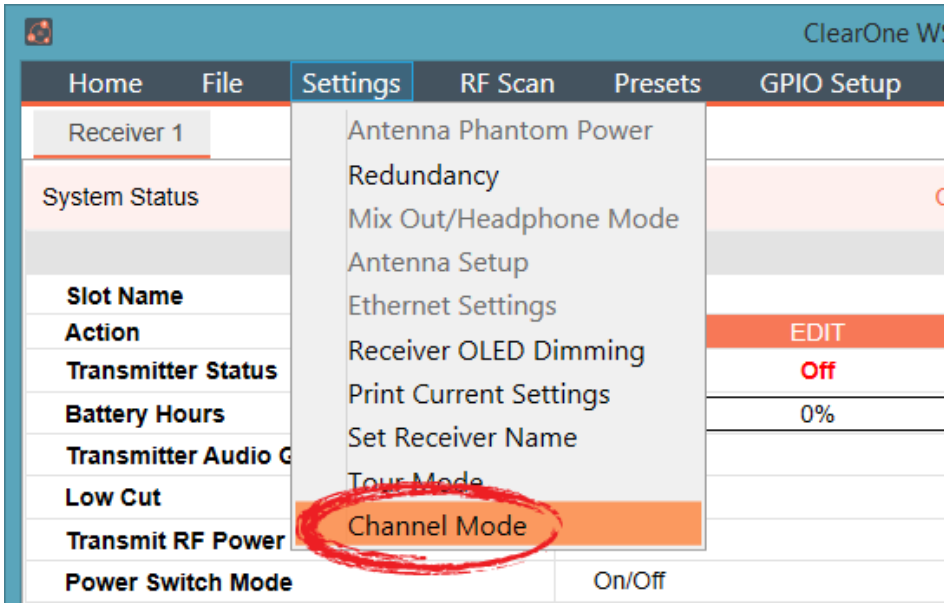


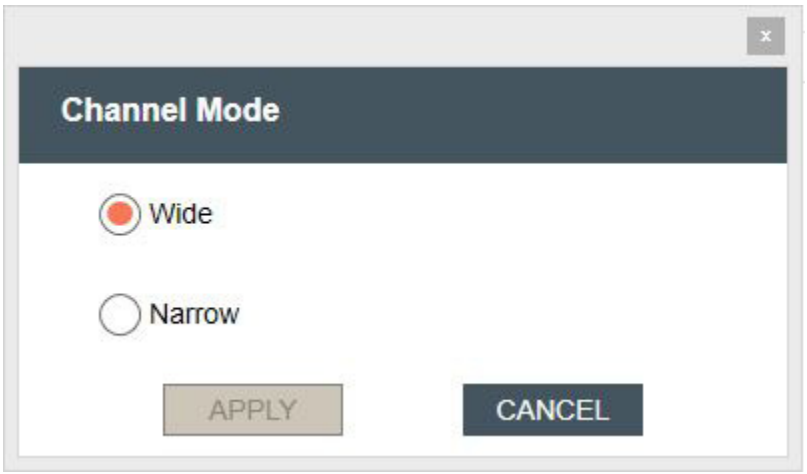
2. Select the receiver you want to name, enter the new name, and click [SEND].



Channel Mode

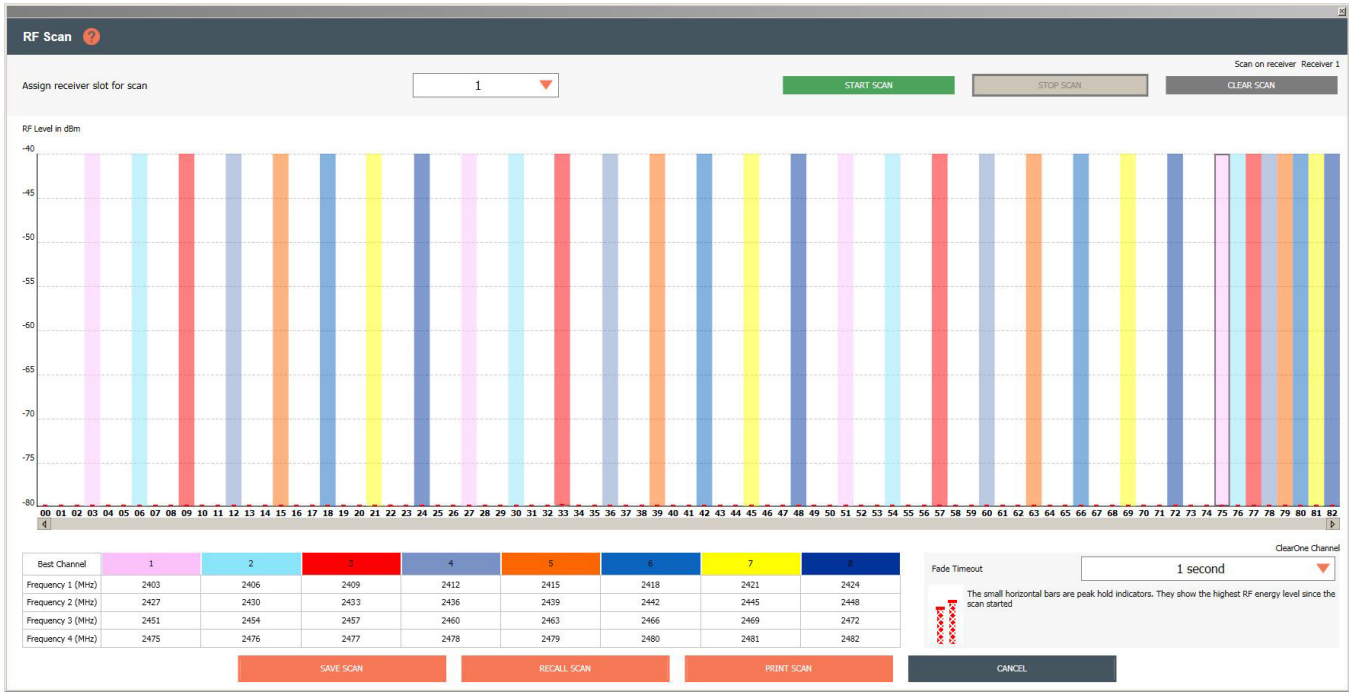
1. To change bandwidth for your channels, select the [Settings] tab, then [Channel Mode]. There are two modes to choose from. The default mode is Wide Band mode.



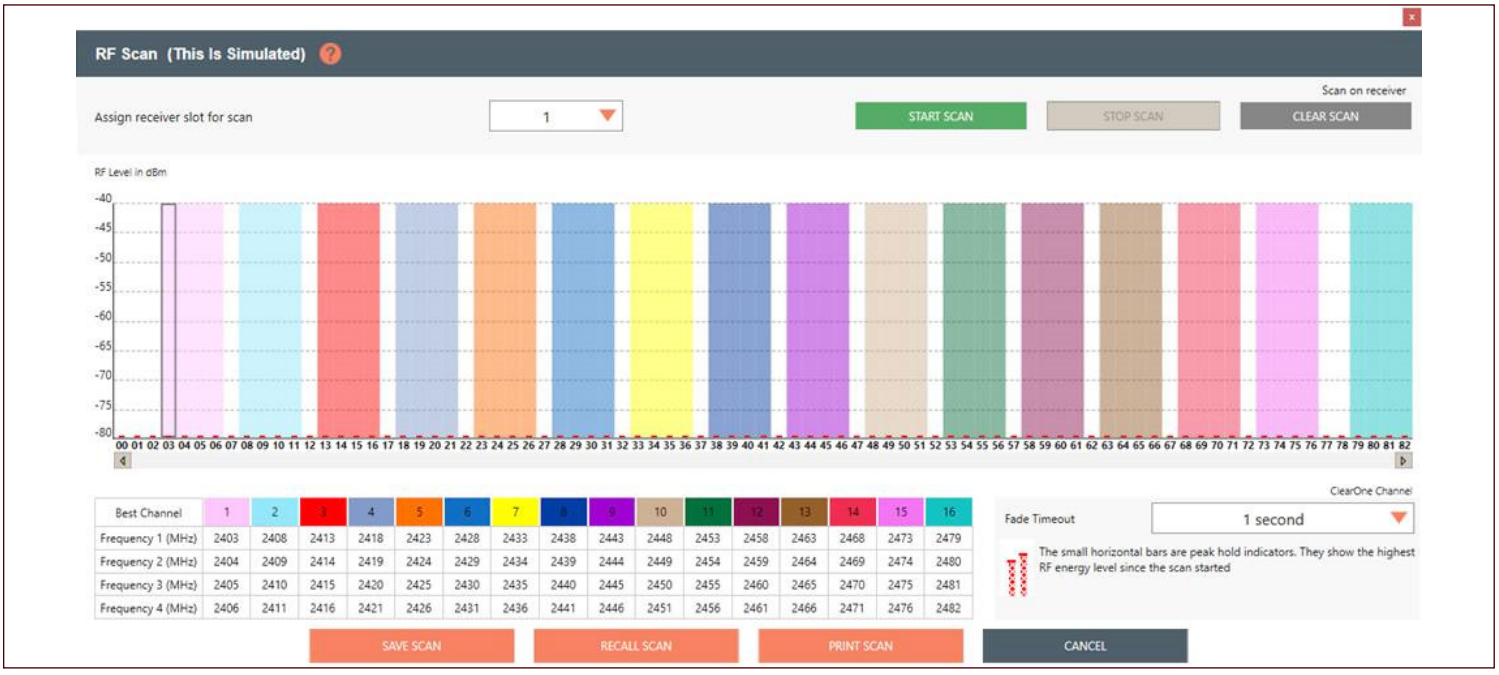


- **Wide Band 8ch mode:** Uses 4 frequencies spaced widely across the RF band.
  Pros: Can cause less interference to WiFi devices that are occupying the same frequencies.
  Cons: Does not always take advantage of white spaces between WiFi devices.
- **Narrow Band 16ch mode:** Uses 4 frequencies spaced 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.

Wide Band Mode:



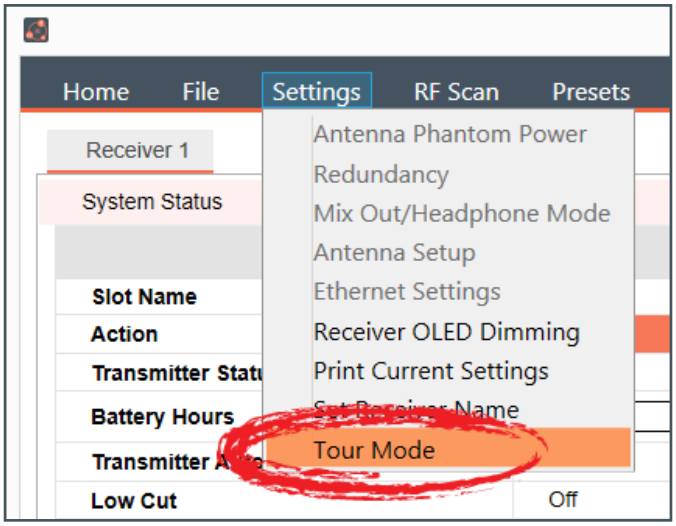
Narrow Band Mode:



Tour Mode

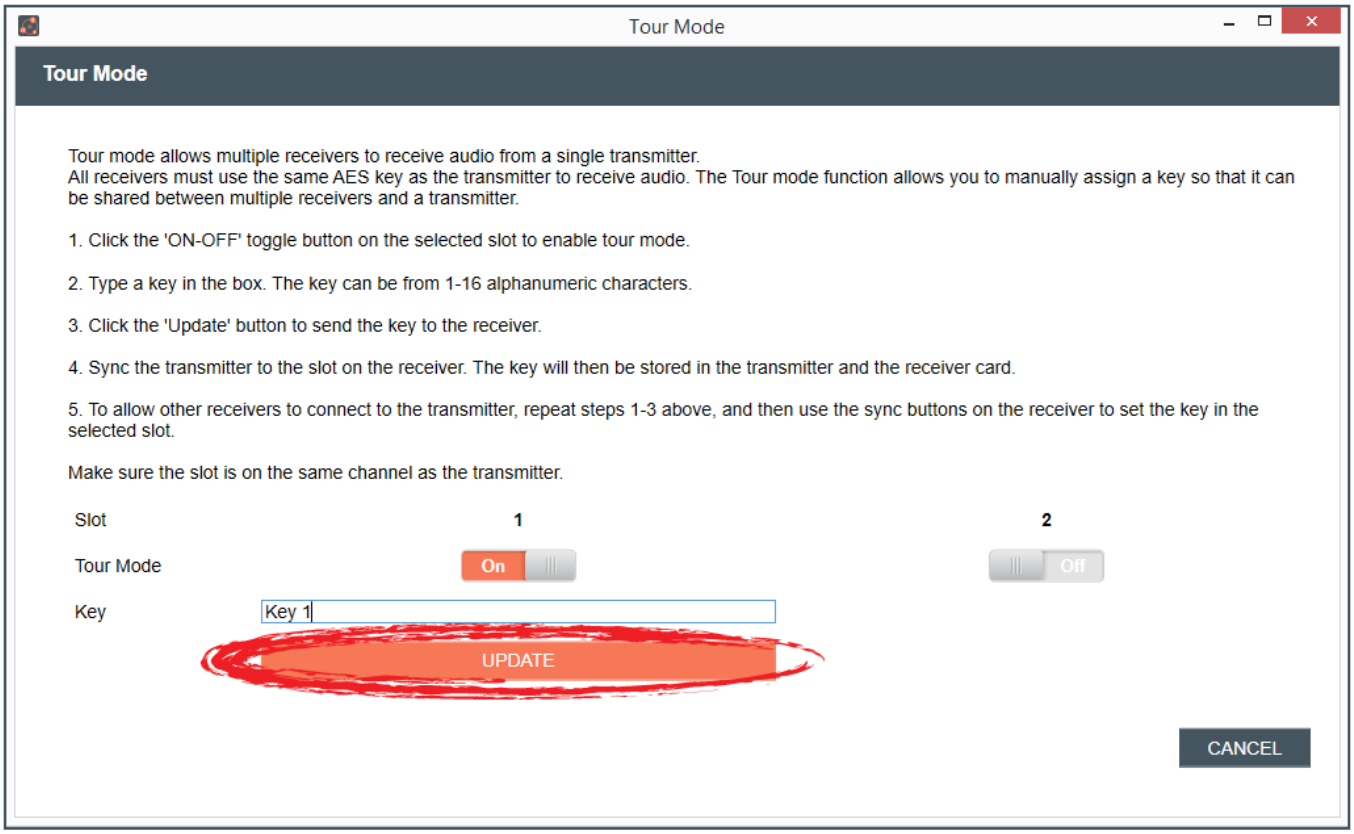
Note: This function is not available in OFFLINE SETUP MODE for the DIALOG 20 receiver.

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.



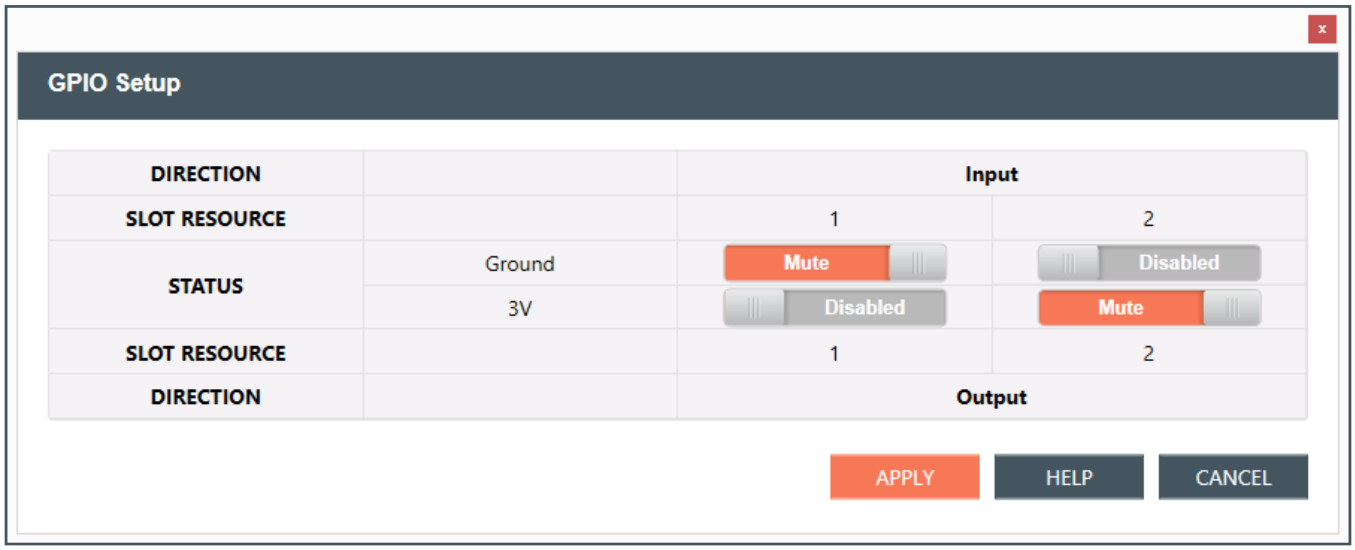
4. Click [UPDATE] to send the key(s) to the receiver(s). When the [UPDATE] button greys out, then you can close the window.

GPIO SETUP

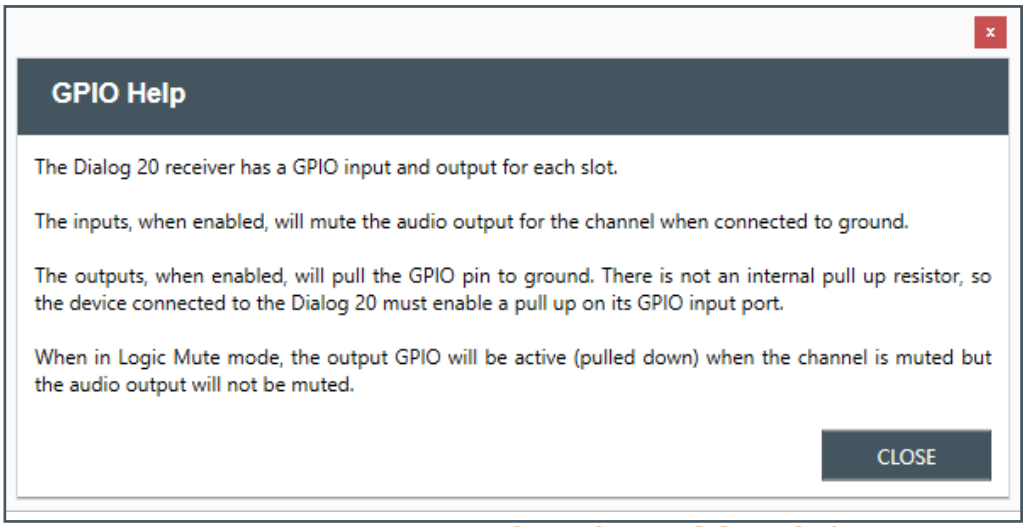
Note: This function is not available in OFFLINE SETUP MODE.

1. To configure the GPIO, select [GPIO Setup].

2. Click the [Enable]/[Disable] toggle button to enable or disable input and/or output pin(s).

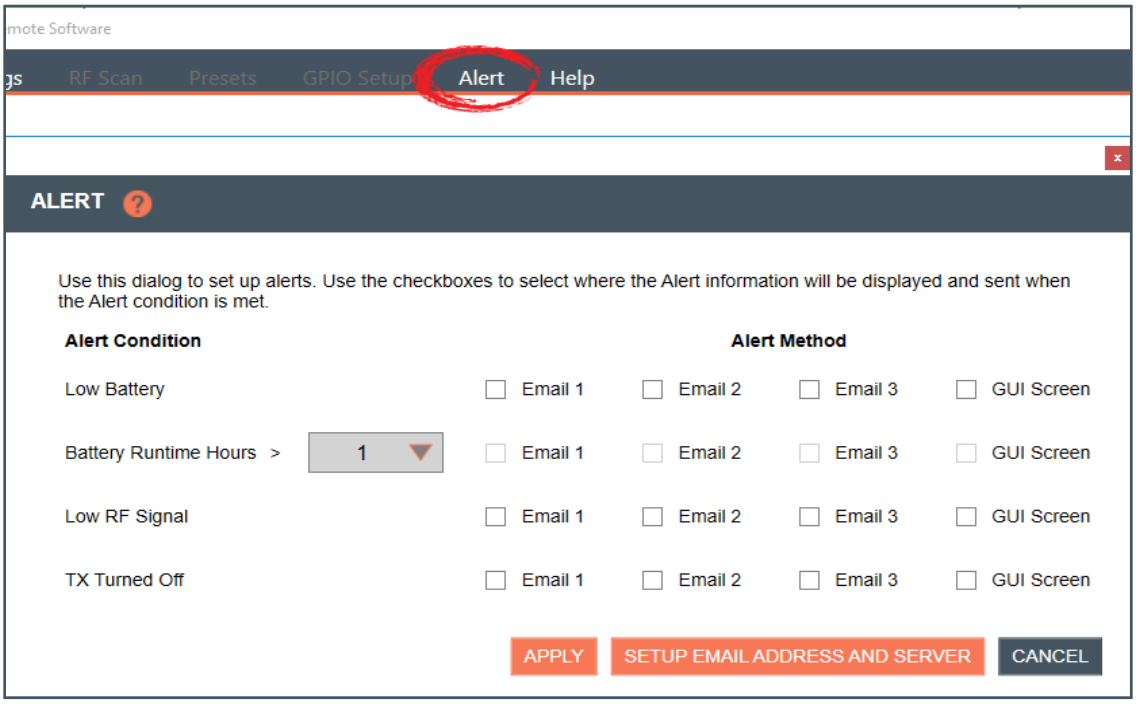


3. For greater detail on the GPIO Setup function and its application, select [HELP]. Another window displays with the details.

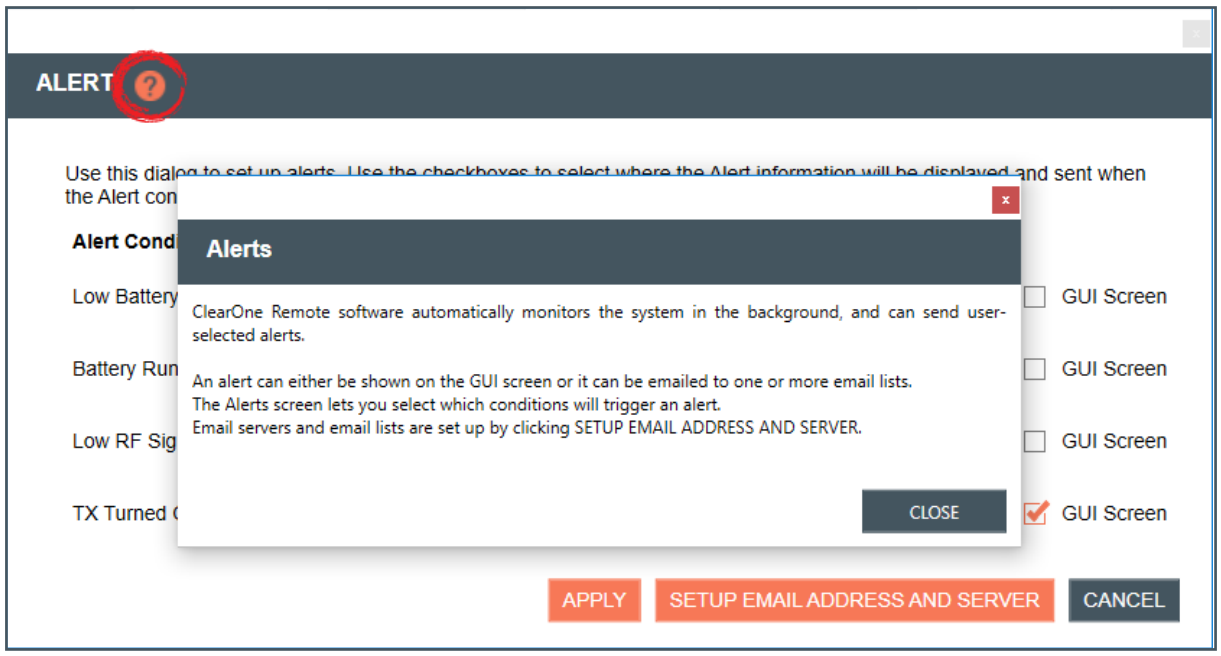


ALERT

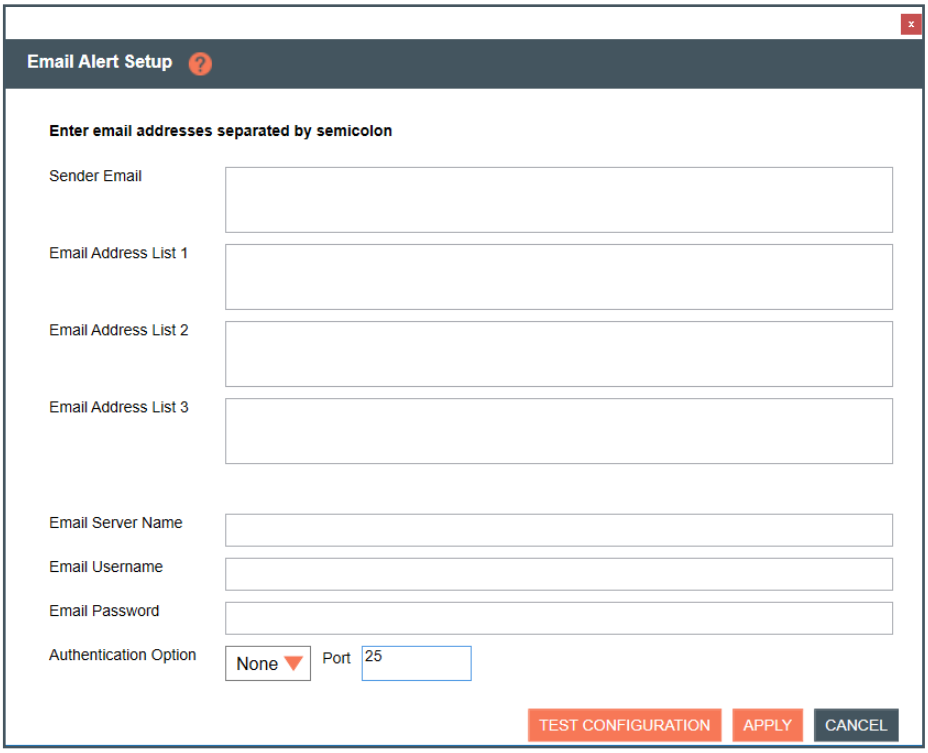
1. To set up automatic system monitoring alerts, select [Alert]. An alert can either be shown on the GUI screen, or it can be emailed to one or more email lists. The Alerts screen lets you select which conditons triggers an alert.



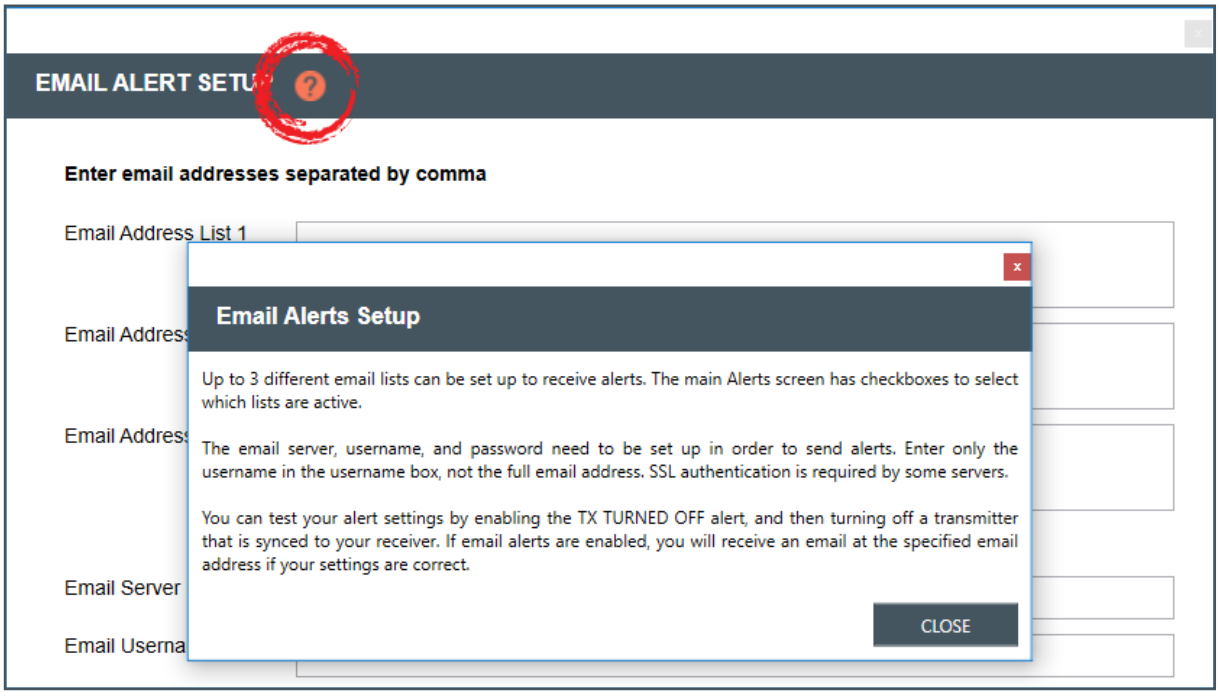
2. For greater detail on the Alert function and its application, select the question mark icon in the window. Another window displays with the details.



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

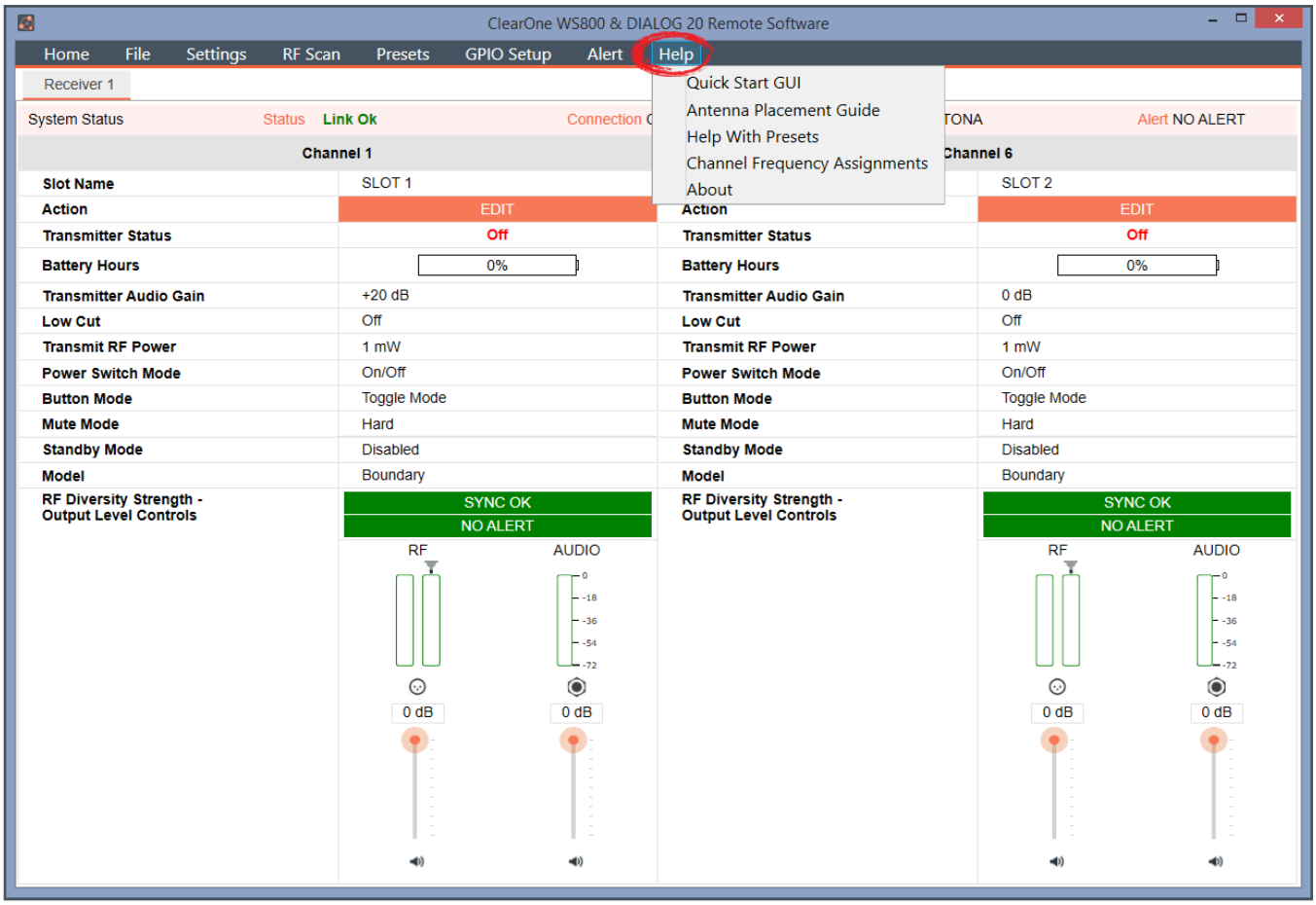


4. For greater detail on the Email Alerts Setup function and its application, select the question mark icon in the window. Another window displays with the details.



HELP

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



Update Wizard

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

SUMMARY

Downloading Software:

1. Using a PC running Windows 7 or later (32 or 64 bit), with internet connection, download and install the DIALOG 20 Software.
2. Go to:
   www.ClearOne.com / Resources / Resource Library / Professional Microphones / ClearOne Wireless Microphones / Software Downloads.

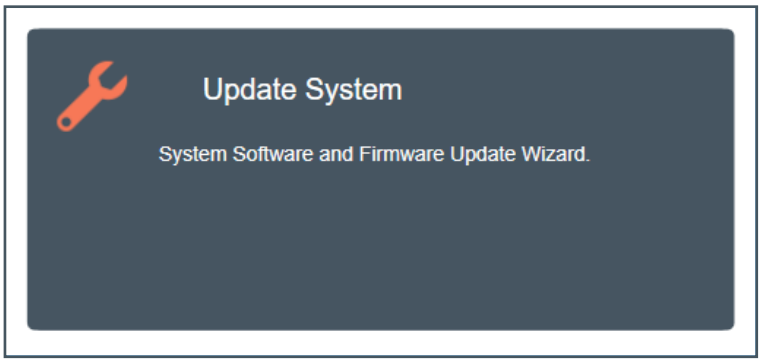
Updating Receiver Firmware:

1. Connect the receiver to a PC using Type A to Micro USB cable (You must have administrator rights).
2. Open the DIALOG 20 Software and Click “Update System”.
3. Click the “Download Button”.
4. The Firmware and Software Version Information Page displays (DIALOG 20 information is at the bottom of the page).
5. Check the boxes that correspond to the firmware updates needed (marked in red).
6. Click “Download Selected” button to start the download.
7. The “On Hard Drive” status bar turns green when the download has completed.
8. Click the “Cancel” button to return to the “Update Wizard” screen.
9. Click “Update a Receiver” to open the “Receiver Version Information” screen.
10. Click the “Update Receiver” button to open the “Upgrade Master Hub” screen.
11. Click the “Start” button and wait for “Updating is Done” confirmation.
12. Repeat the process for the Slave Hub and FPGA (If needed).
13. Confirm the current software is installed. The status bar should be green.
14. Close the window to return to the “Update Wizard” screen.
15. To update a transmitter, click the “Update A Transmitter” button and follow the screen prompts.

Updating Transmitter Firmware:

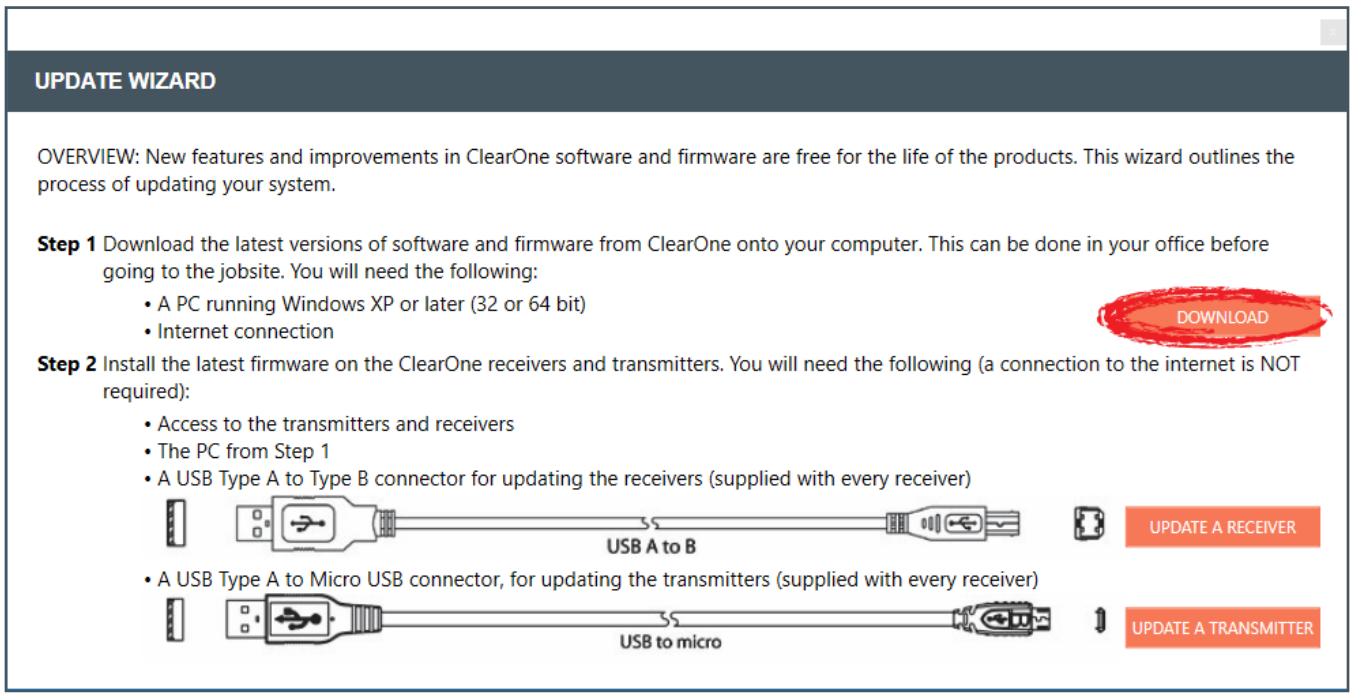
1. Connect the receiver to a PC using Type A to Micro USB cable (You must have administrator rights).
2. Open the DIALOG 20 Software and Click “Update System” to open the “Update Wizard”.
3. Click the “Update A Transmitter” button and follow the screen prompts.

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

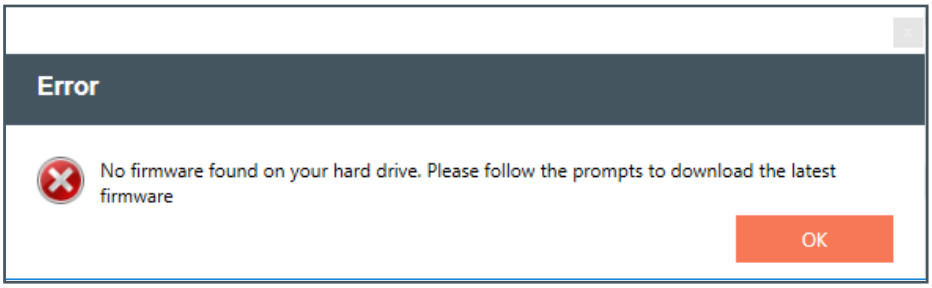


REMOTE SOFTWARE UPDATE

2. The following window displays Start with downloading the latest versions of software and firmware for your PC. Click [DOWNLOAD].

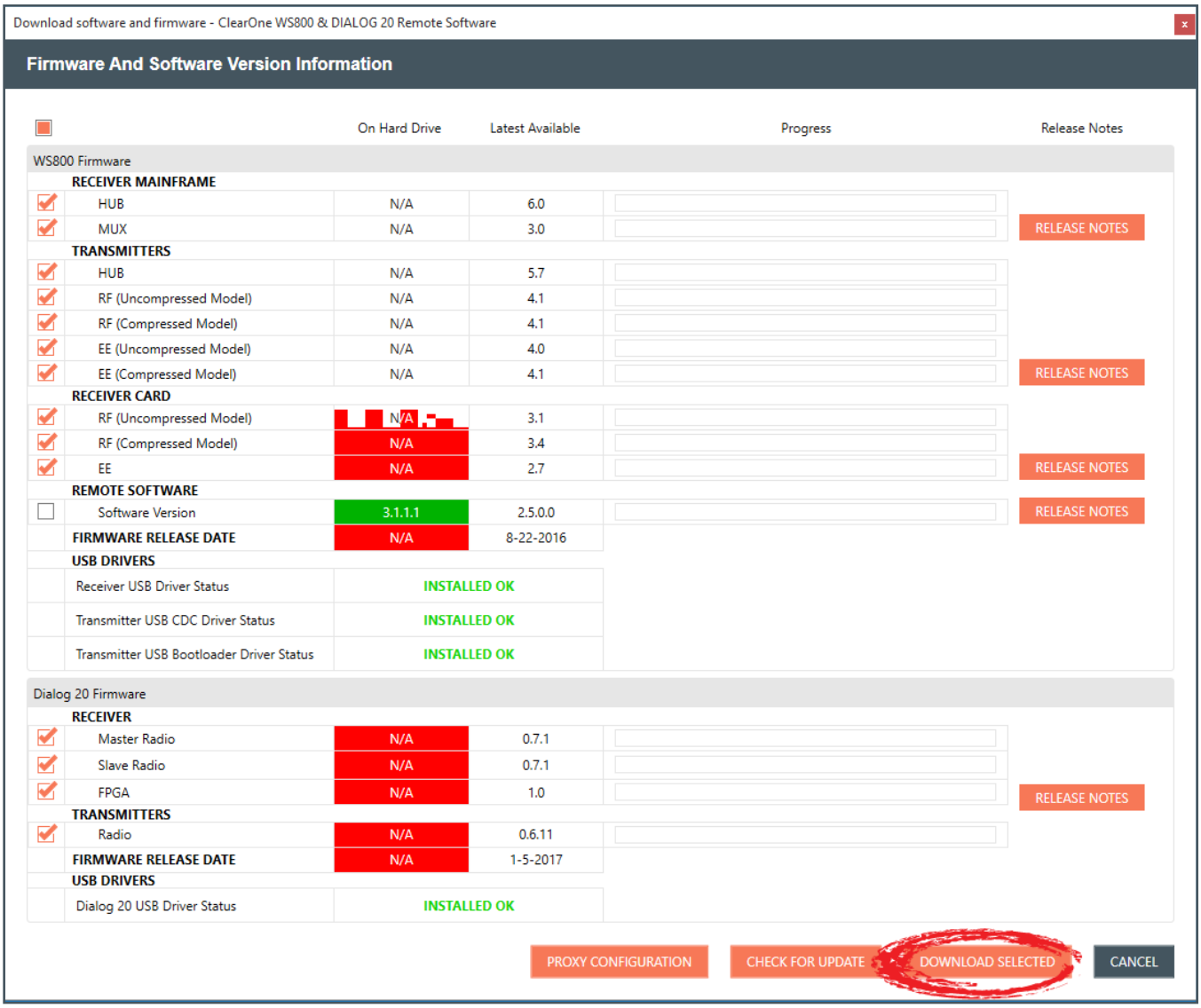


3. The software first checks for proper installation of USB Drivers and firmware.
   - For the WS800, an error window displays, notifying you that no firmware has been found. Click [OK].



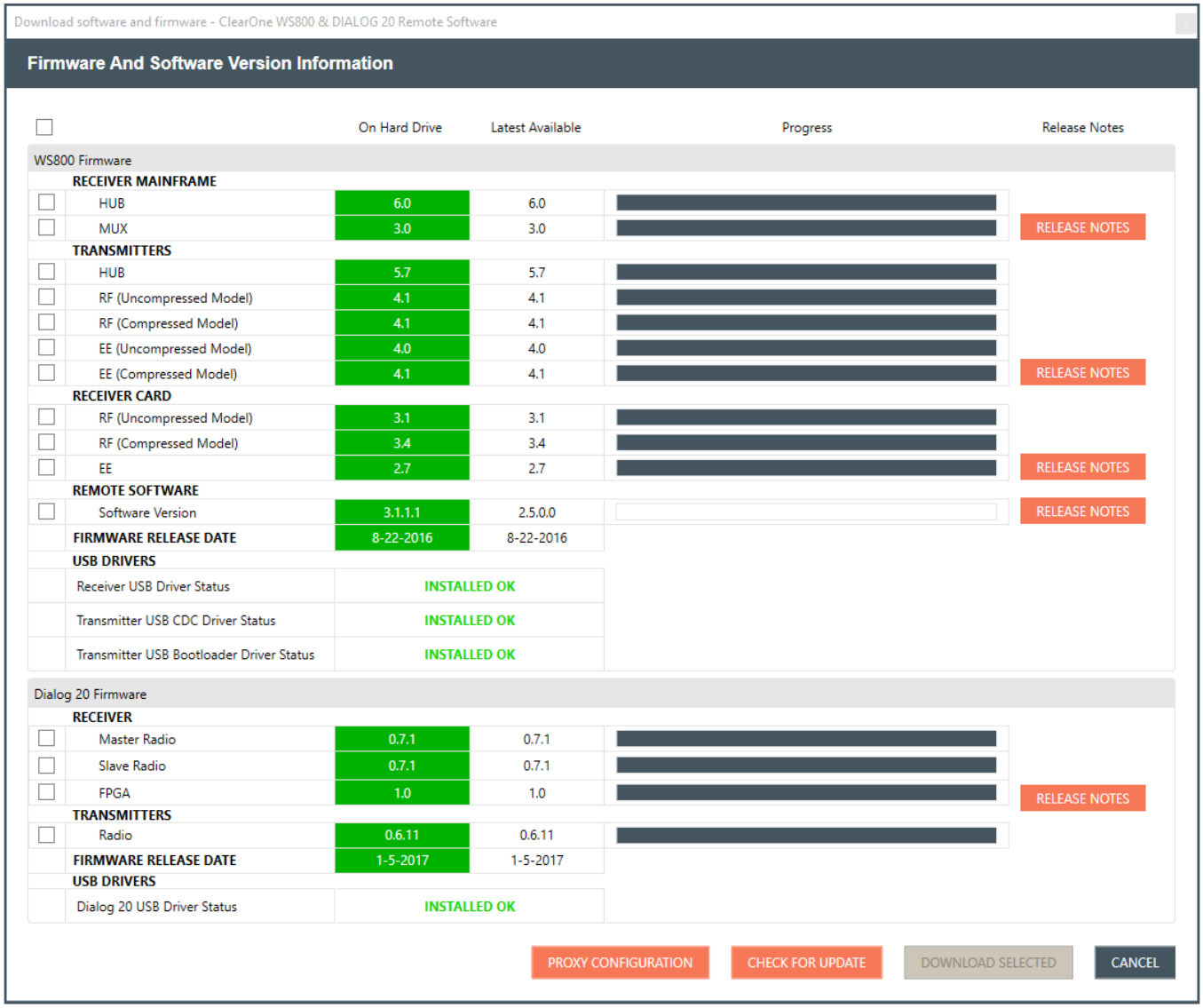
- An error window also appears for the DIALOG 20, instructing you to download the most recent software and firmware versions.

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

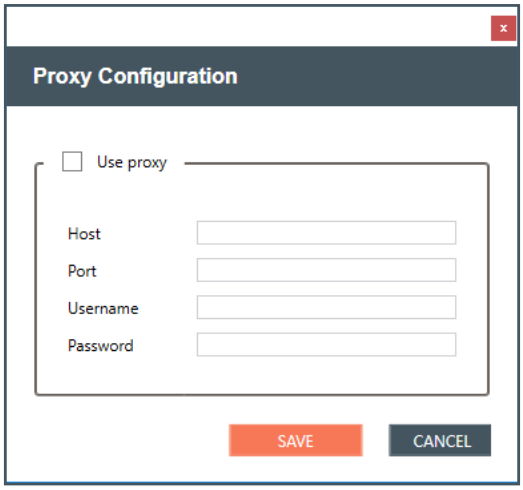


5. All successful downloads have full progress bars, green out in the “On Hard Drive” column, and each check box automatically unchecks as an update completes.

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

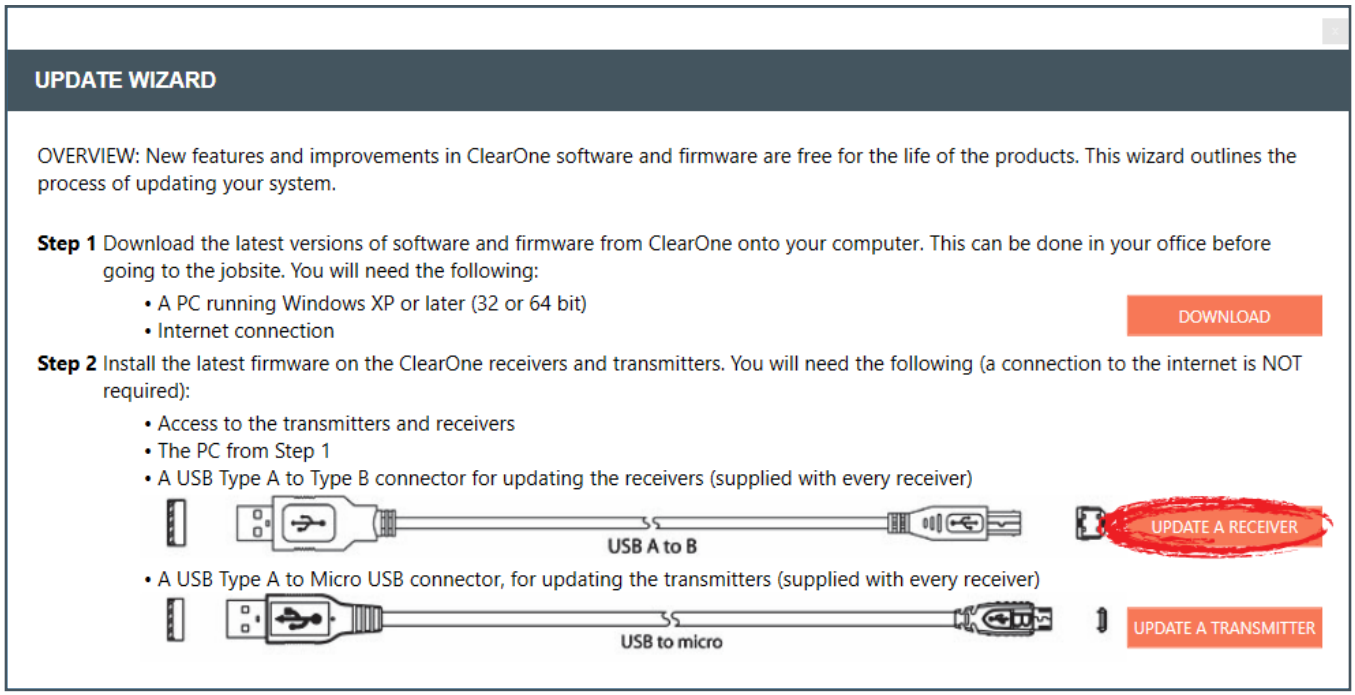


6. To configure the proxy, select [PROXY CONFIGURATION]. Enter your proxy information, place a check next to the "Use proxy" checkmark, and select [SAVE].

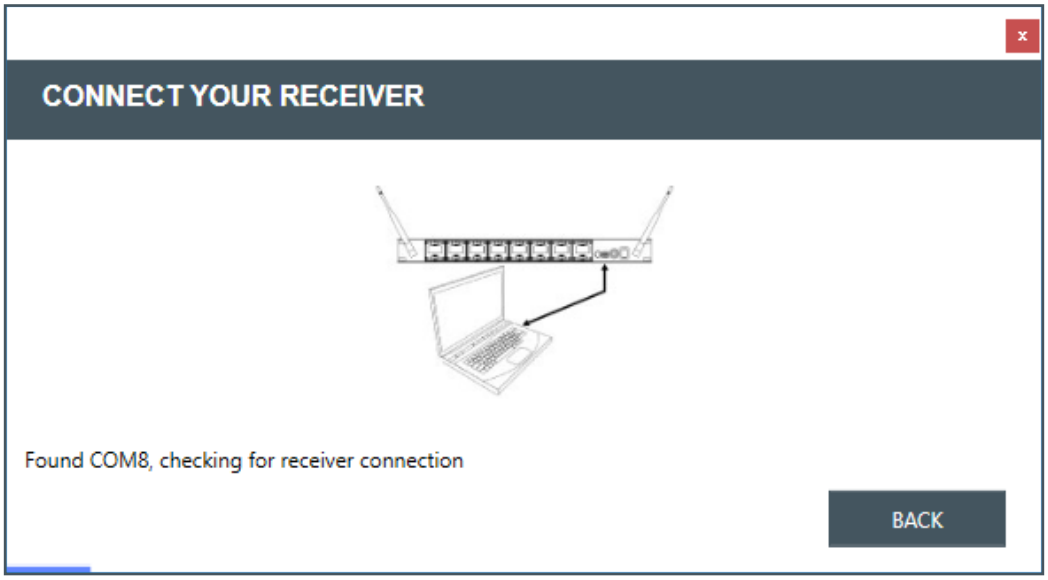


RECEIVER FIRMWARE UPDATE

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

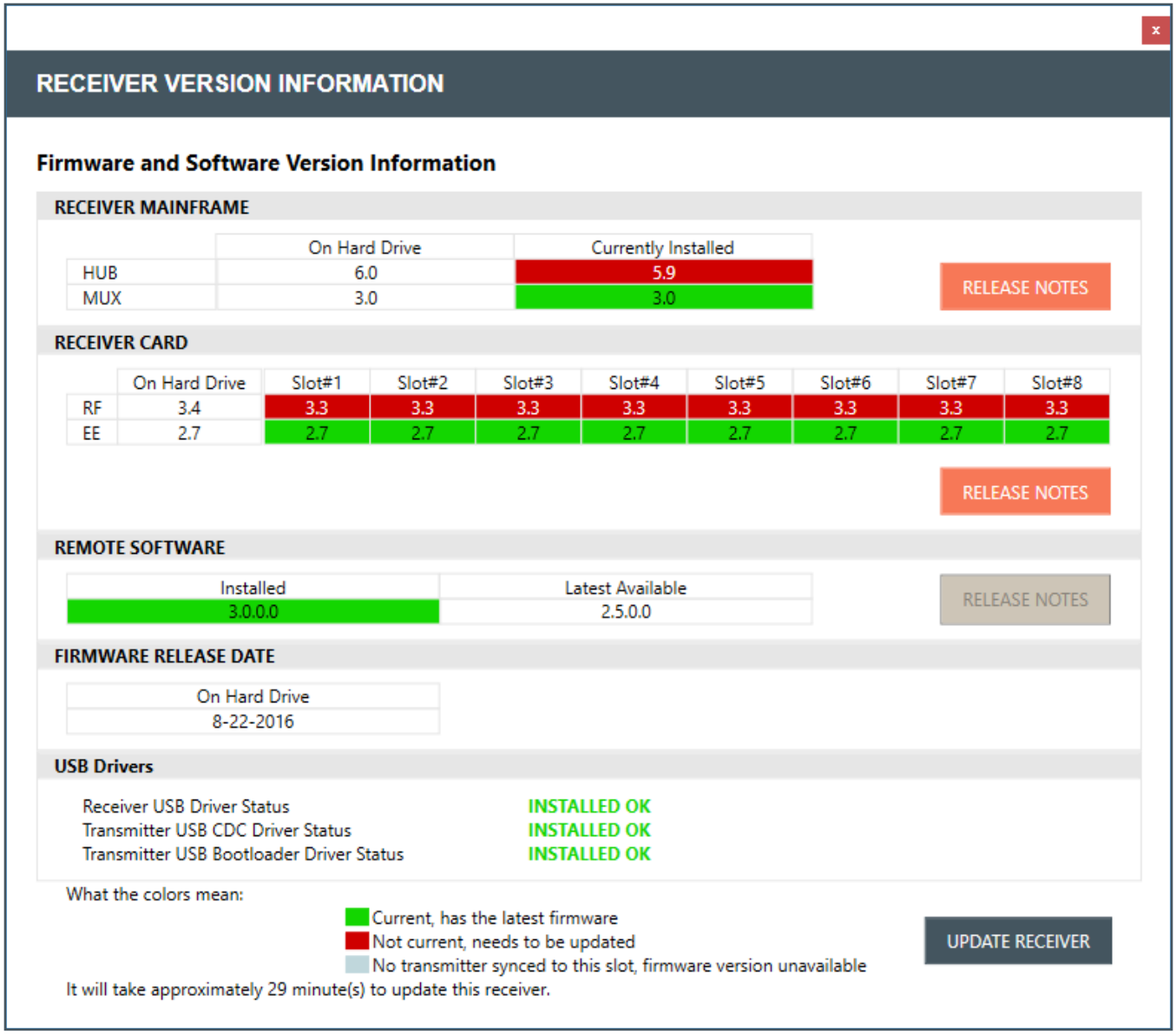


2. Once the receiver is detected and connected to by the software, the RECEIVER VERSION INFORMATION window appears.

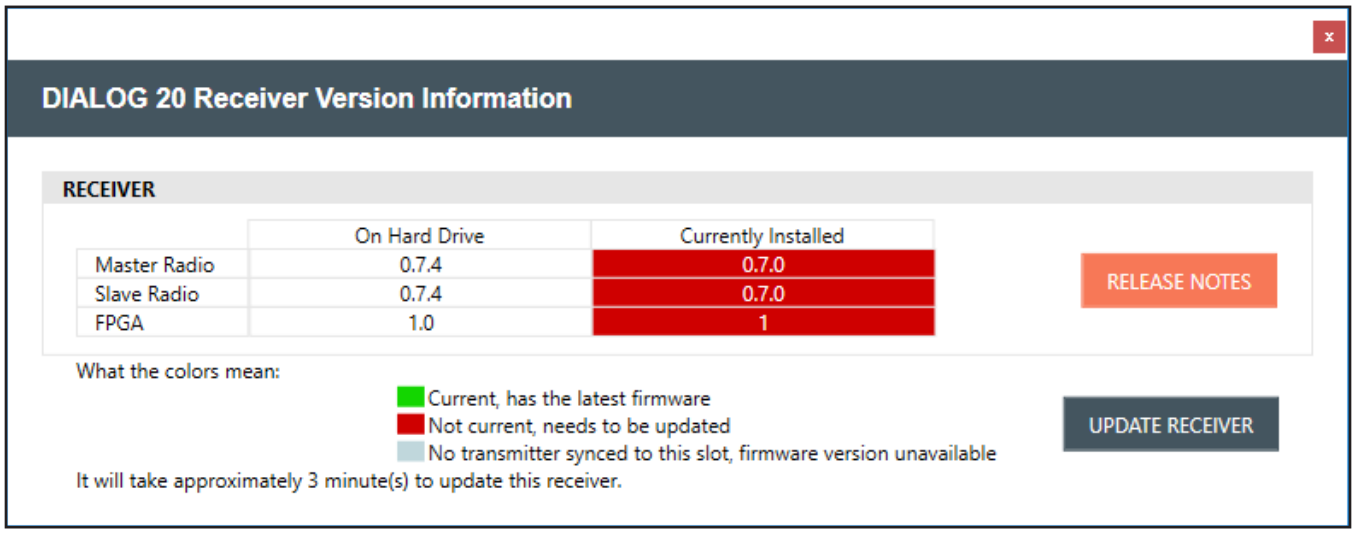


3. Click [UPDATE RECEIVER].

WS800 Receiver Version Information window:



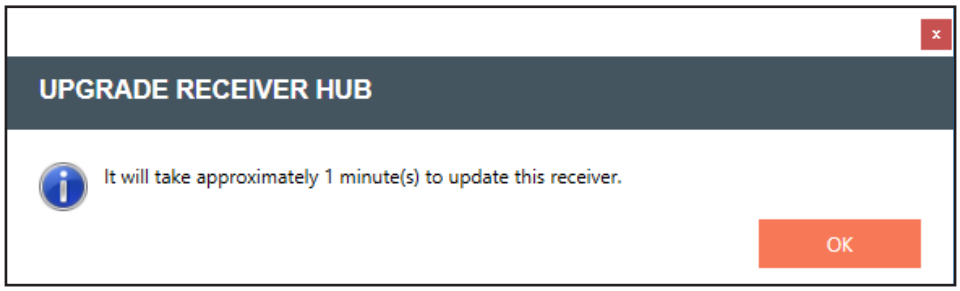
DIALOG 20 Receiver Version Information window:

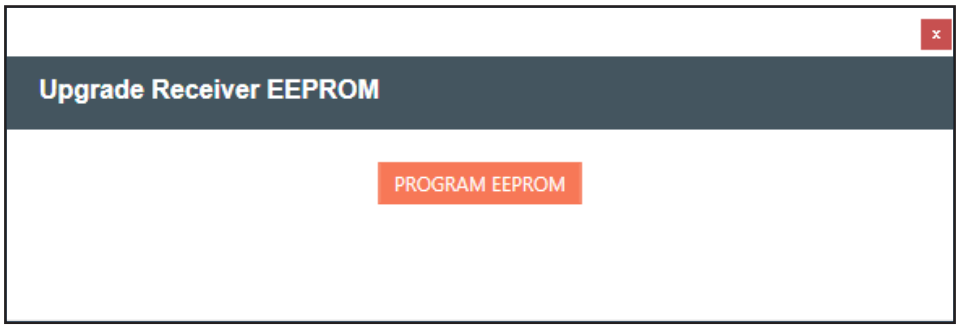


4. A window notifying you of the update time for the first update appears. Follow prompts.

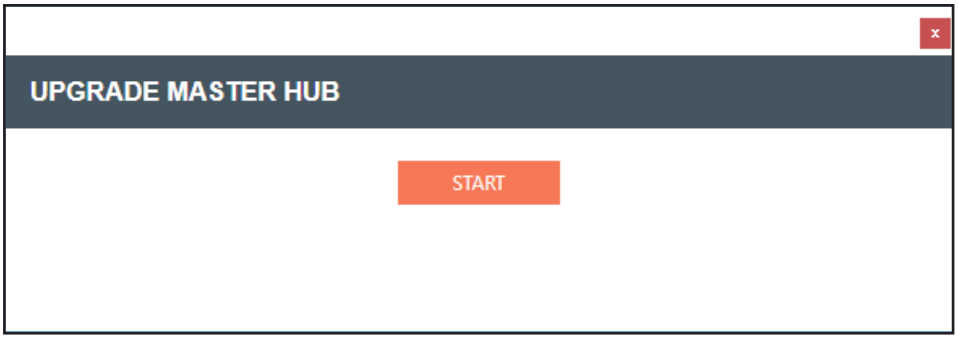
Note: Some updates take longer than other updates.

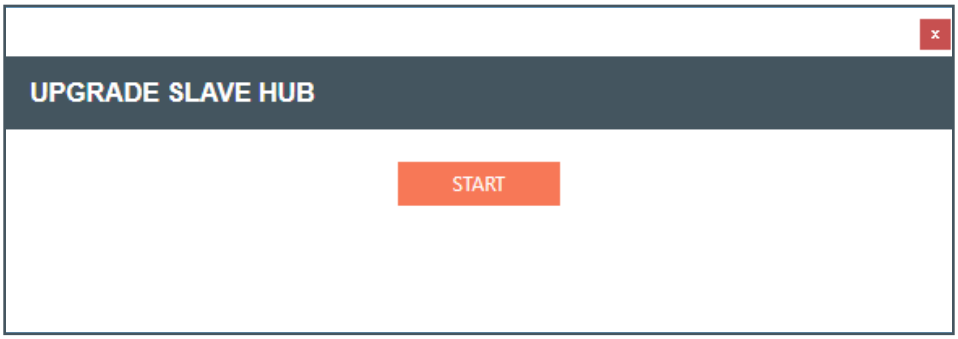
WS800 software and firmware upgrade example windows:

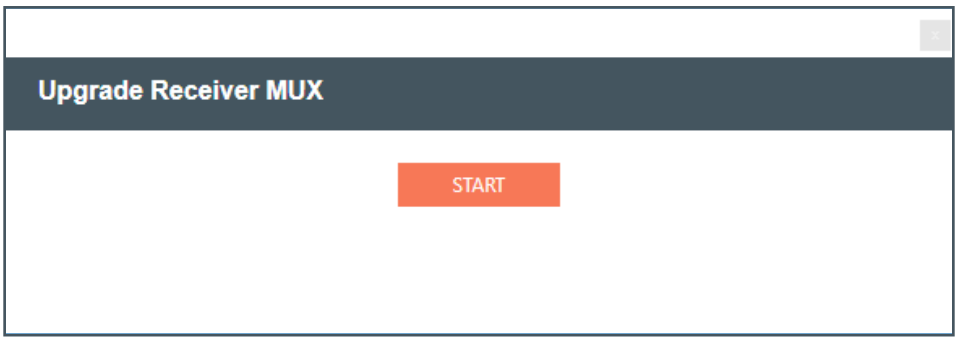




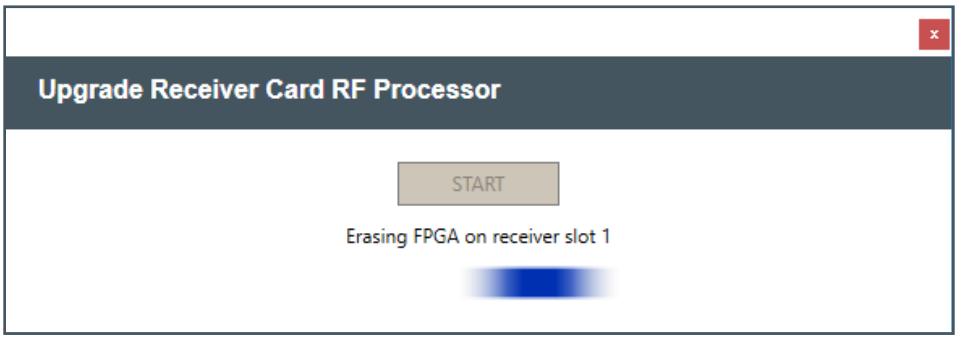
DIALOG 20 software and firmware upgrade example windows:

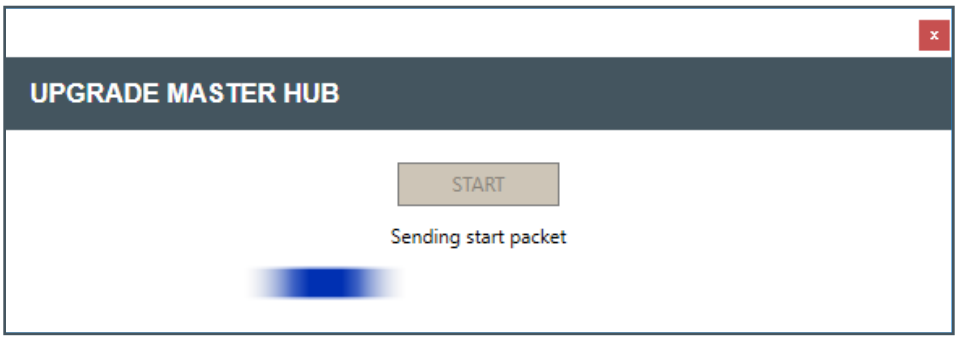




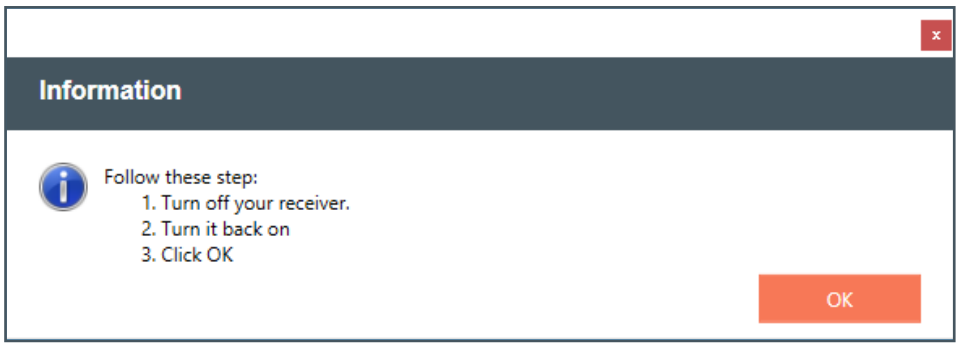


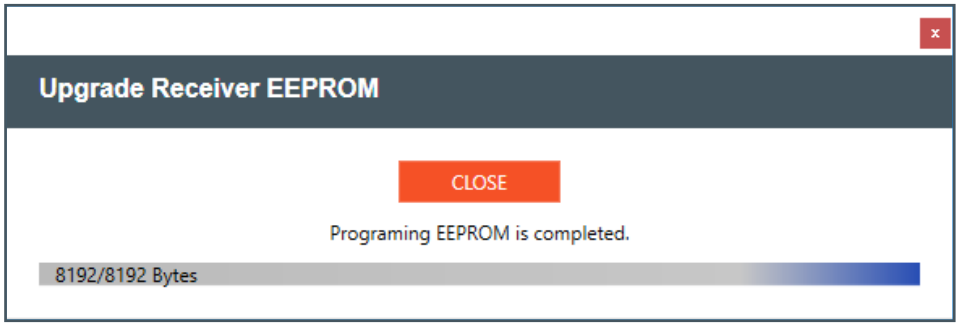
5. Wait for each update to complete. Continue to follow any additional prompts.

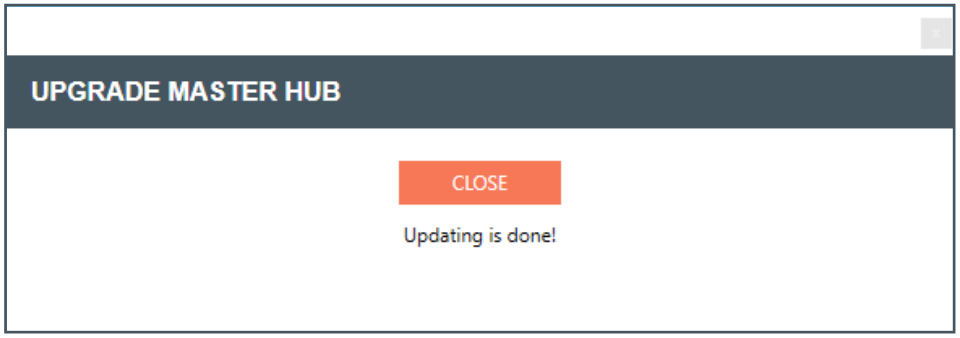


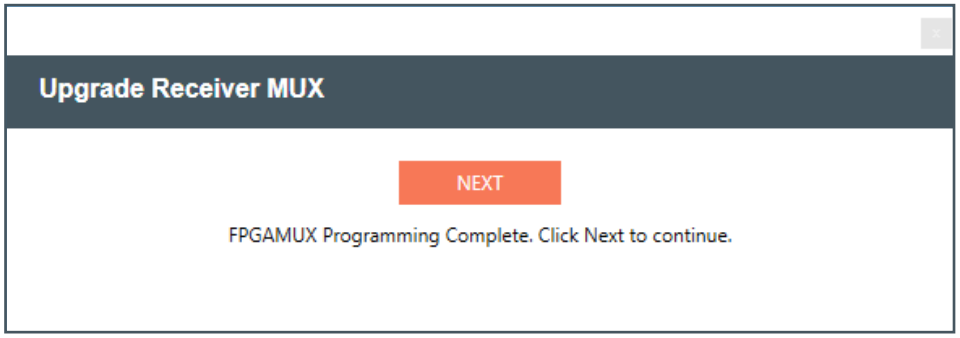


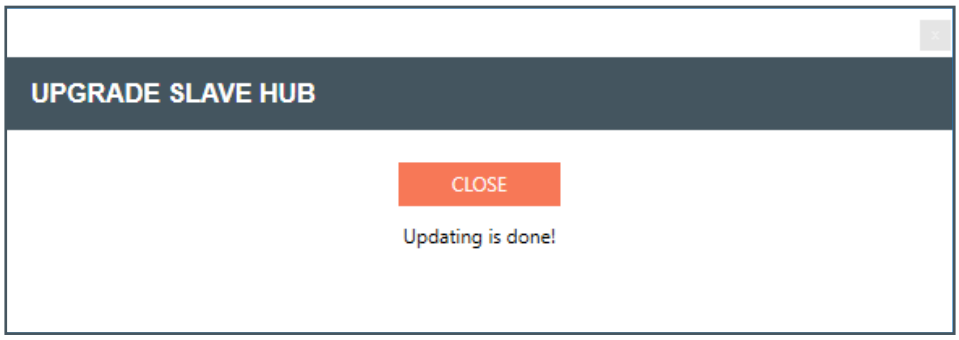
Upgrade Receiver Card RF Processor
START
Verifying FPGA Programming on receiver slot 1
105665/945612 bytes


Information
Follow these step:
1. Turn off your receiver.
2. Turn it back on
3. Click OK
OK

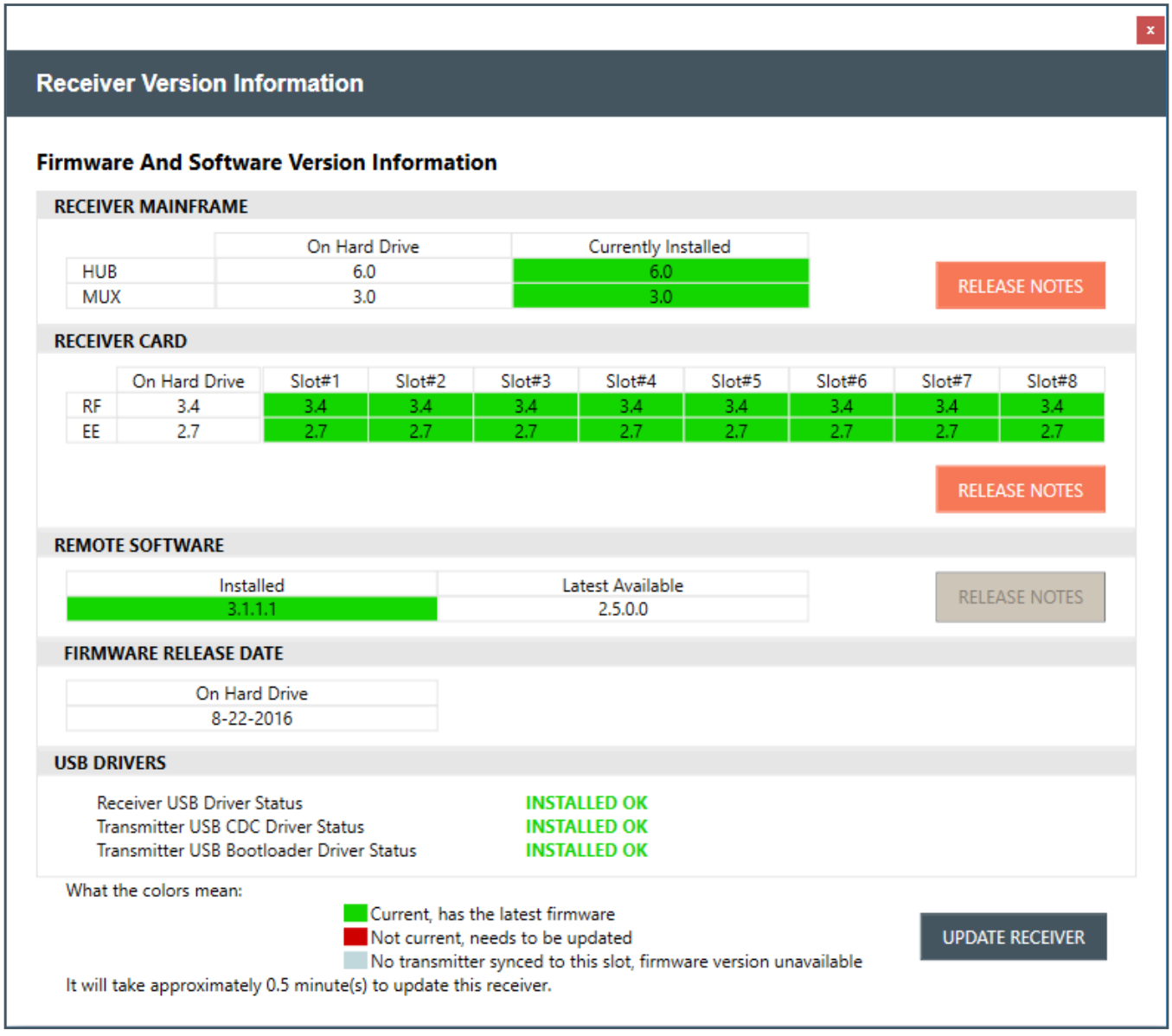

Upgrade Receiver EEPROM
CLOSE
Programing EEPROM is completed.
8192/8192 Bytes


UPGRADE MASTER HUB
CLOSE
Updating is done!


Upgrade Receiver MUX
NEXT
FPGAMUX Programming Complete. Click Next to continue.

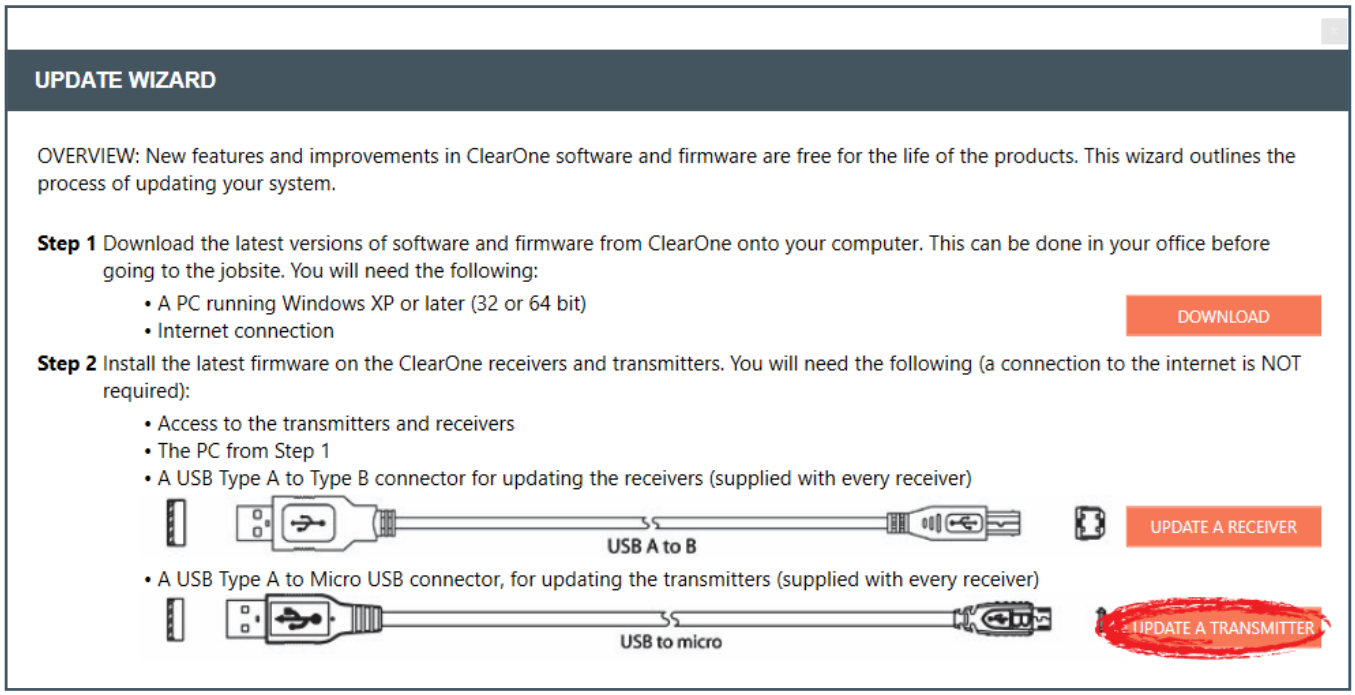


6. Once all updates are complete, you are closed out of the RECEIVER VERSION INFORMATION window. The window continues to reappear as long as there are still updates. If it reappears, click [UPDATE RECEIVER] again to continue updating other components.

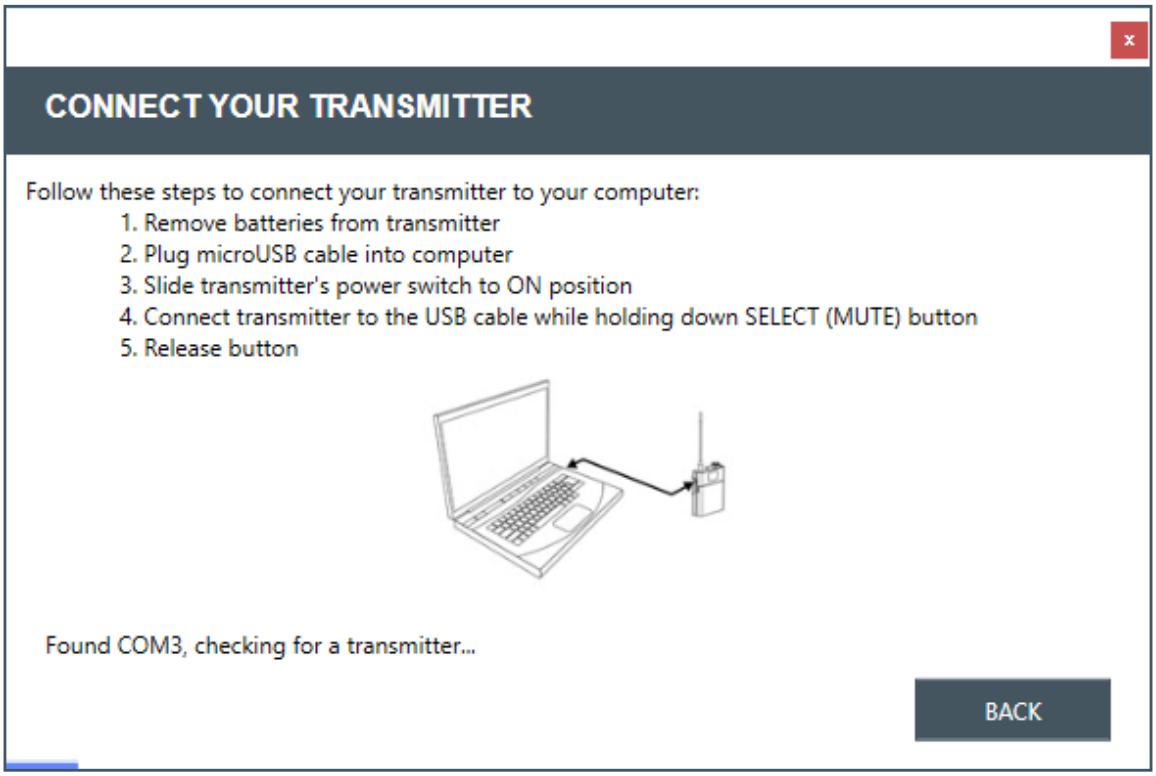


TRANSMITTER FIRMWARE UPDATE

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

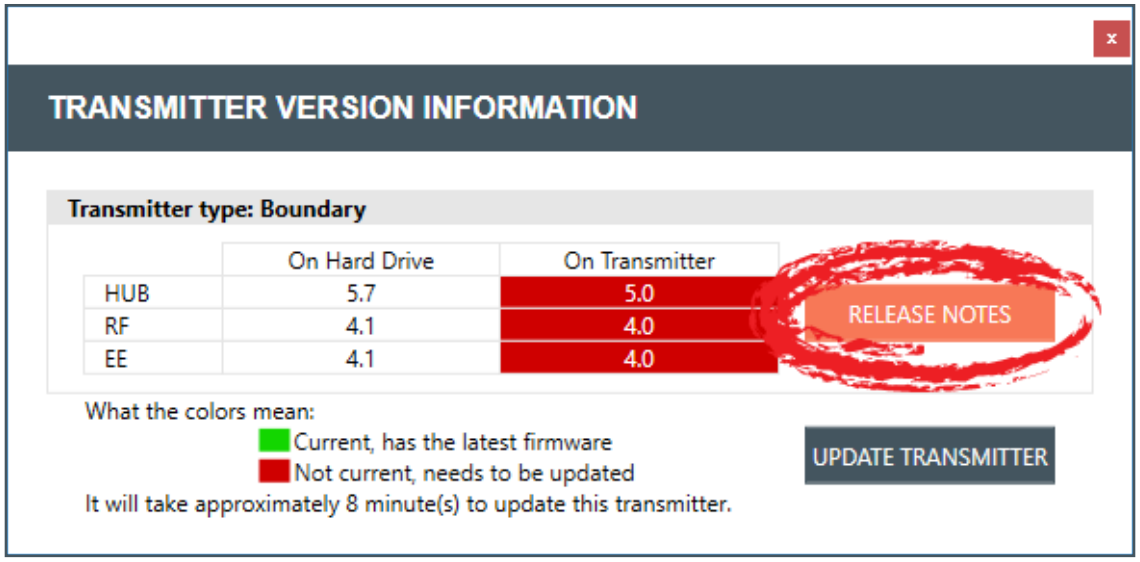


2. A window with specific instructions for connecting your transmitter displays. Follow the instructions in precise and sequential order.



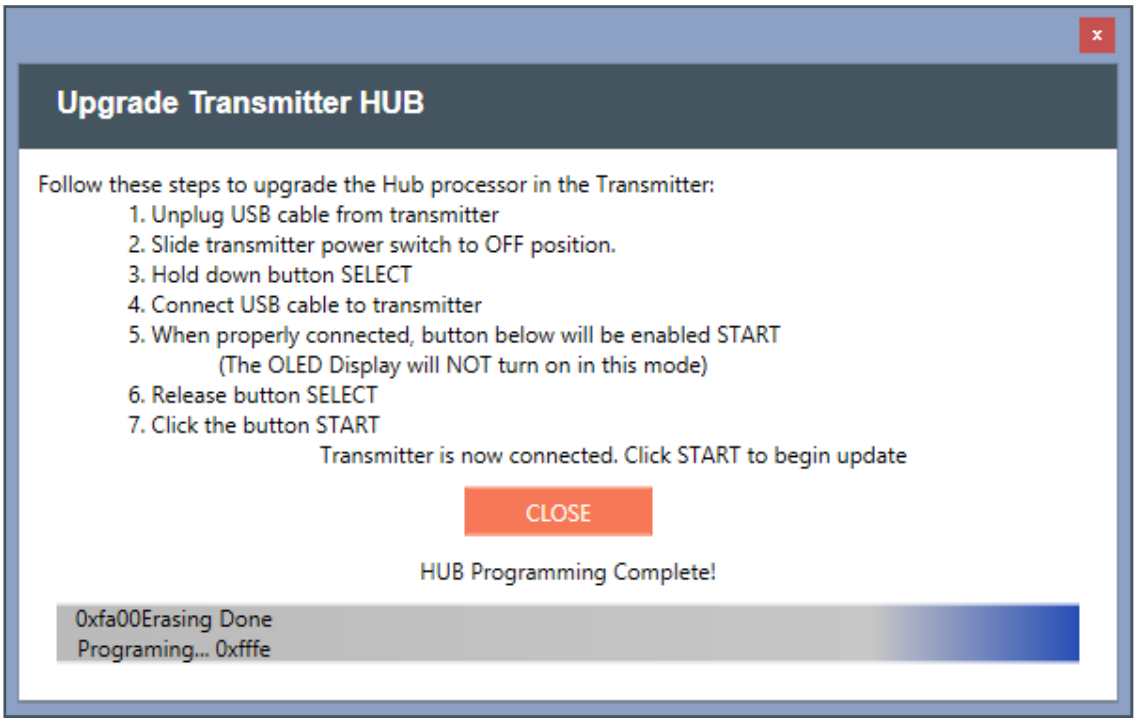
3. Once your transmitter is connected, the TRANSMITTER VERSION INFORMATION window displays. The following are WS800 Transmitter update windows.

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

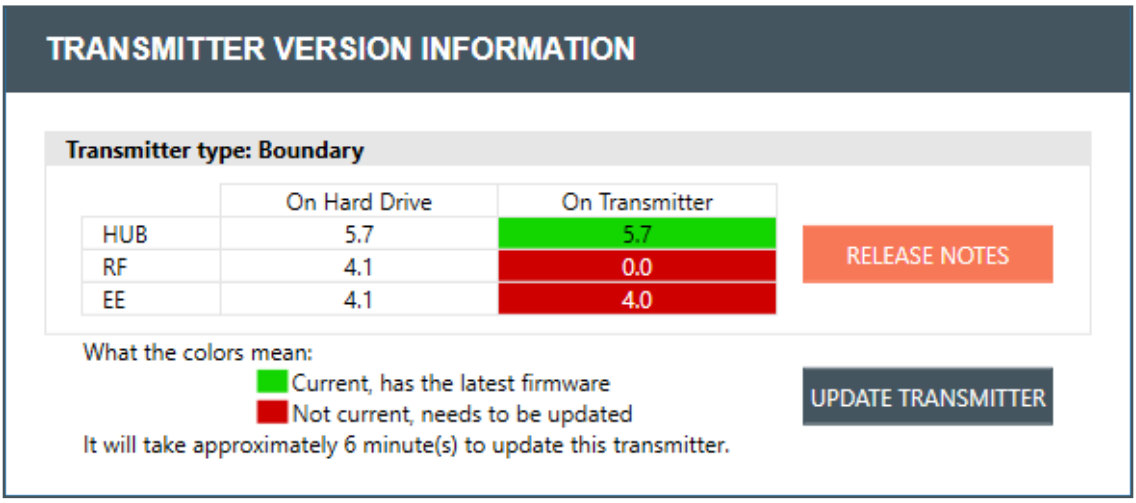


4. Click [UPDATE TRANSMITTER].

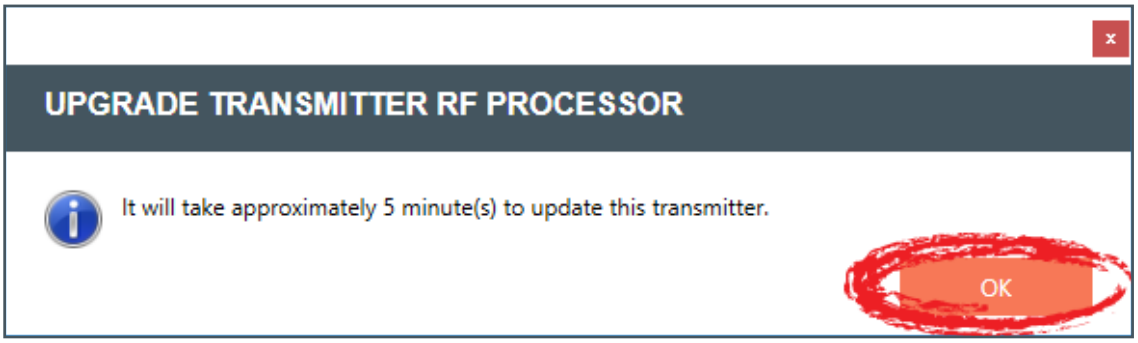
5. Follow prompts for the first update.



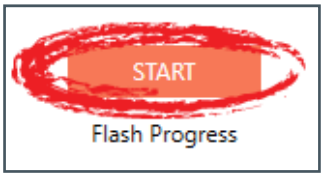
6. Once the first update is complete, if there are still updates, the TRANSMITTER VERSION INFORMATION window reappears. Click [UPDATE TRANSMITTER] again to folllow prompts for continuing updates of components.



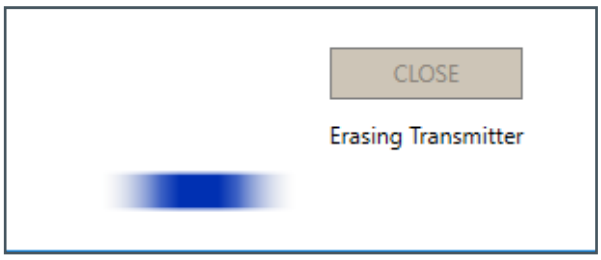
7. A window notifying you of the update time for the second update (may be RF Processor Upgrade) displays. Click [OK].

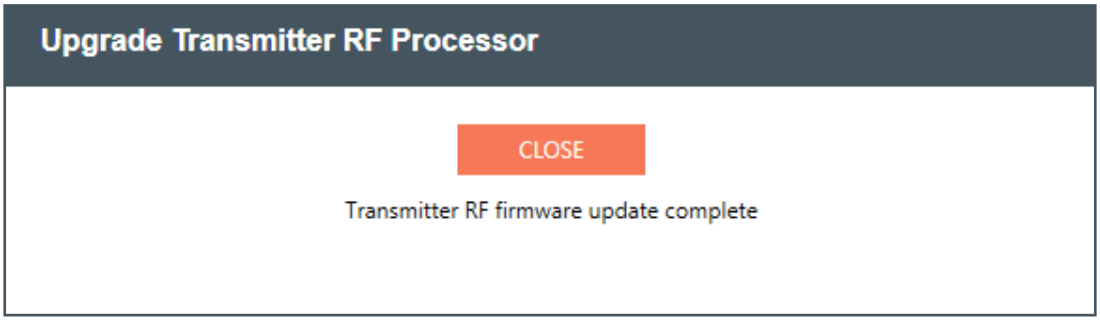


8. Click [START].

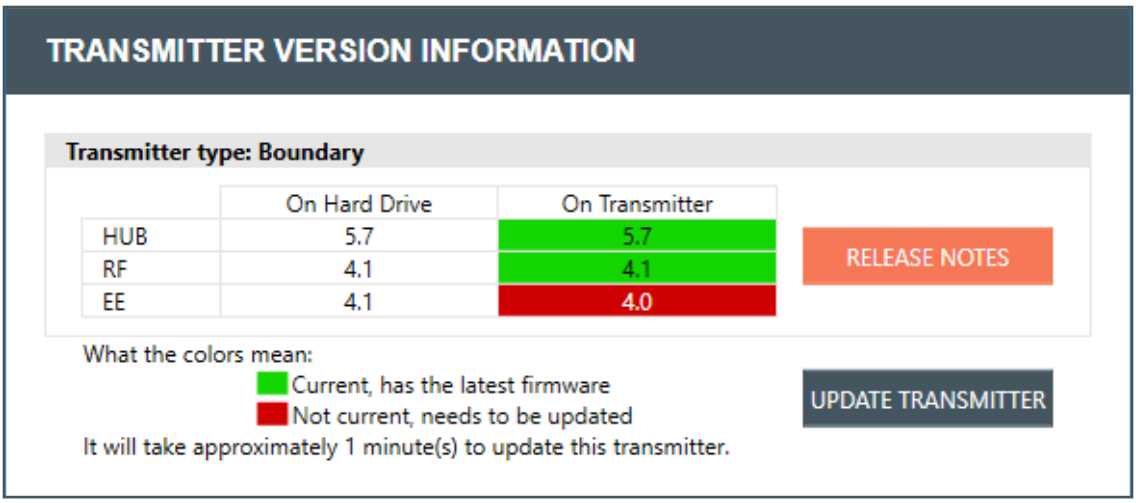


9. Wait for the update to complete.

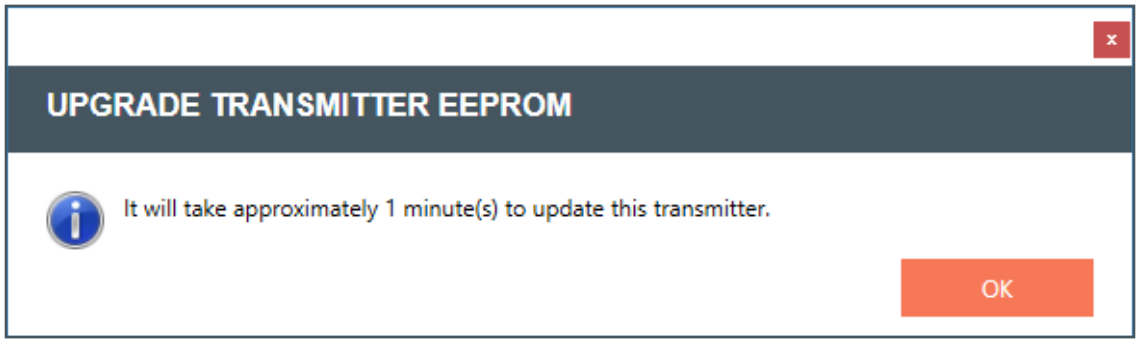




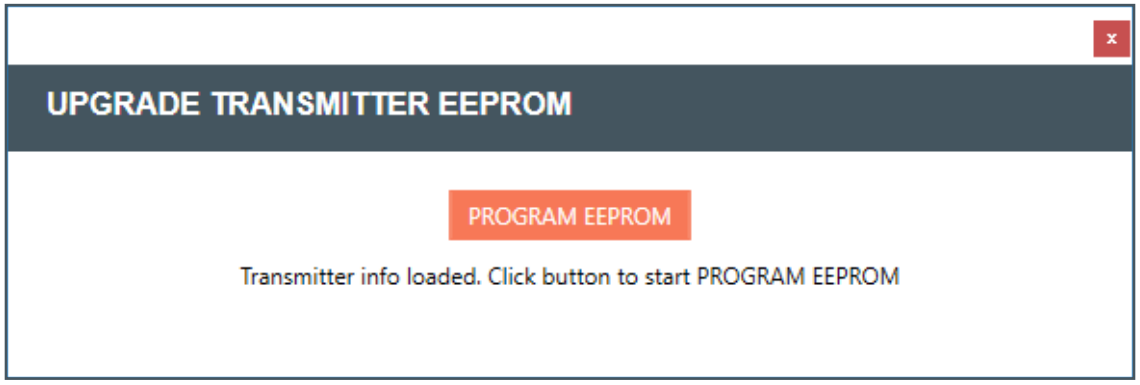
10. Once update is complete, if there are still updates, the TRANSMITTER VERSION INFORMATION window reappears. Click [UPDATE TRANSMITTER] again to folllow prompts for continuing updates of components.



11. A window notifying you of the update time displays. Click [OK].



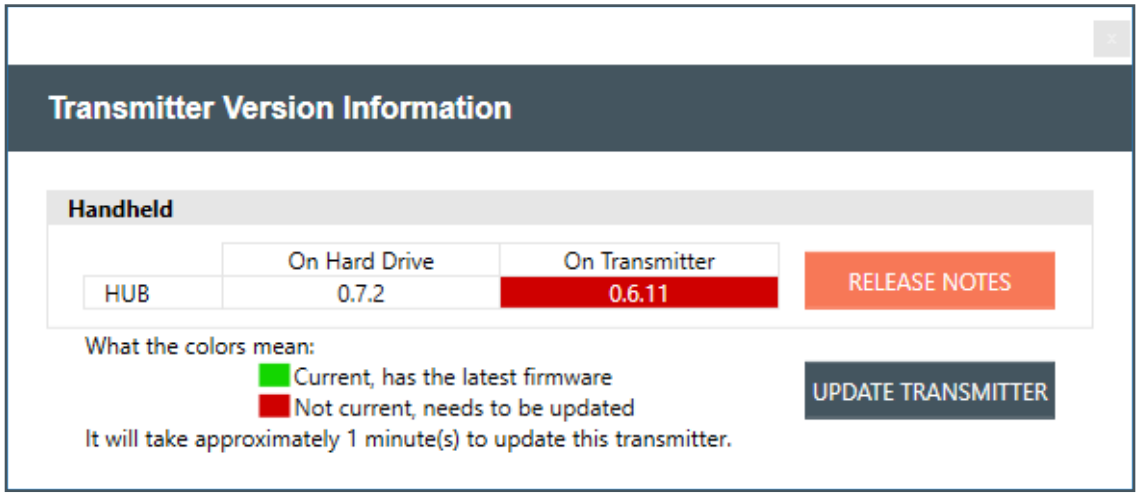
12. For the EEPROM update, a window prompting you to [PROGRAM EEPROM] displays. Click [PROGRAM EEPROM].

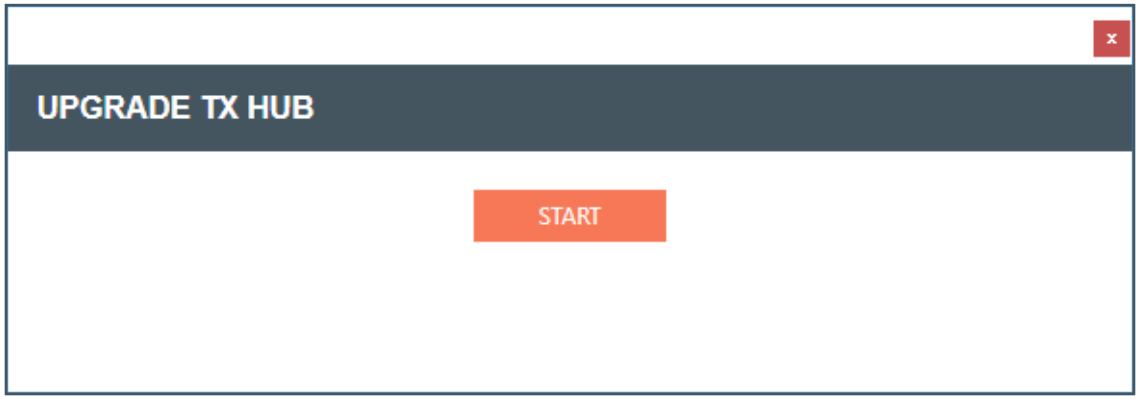


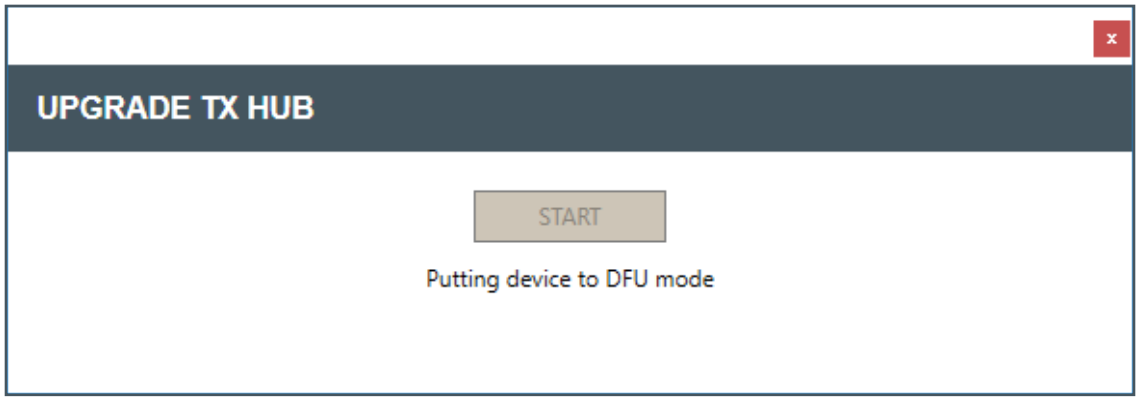
13. Wait for the programming to complete.

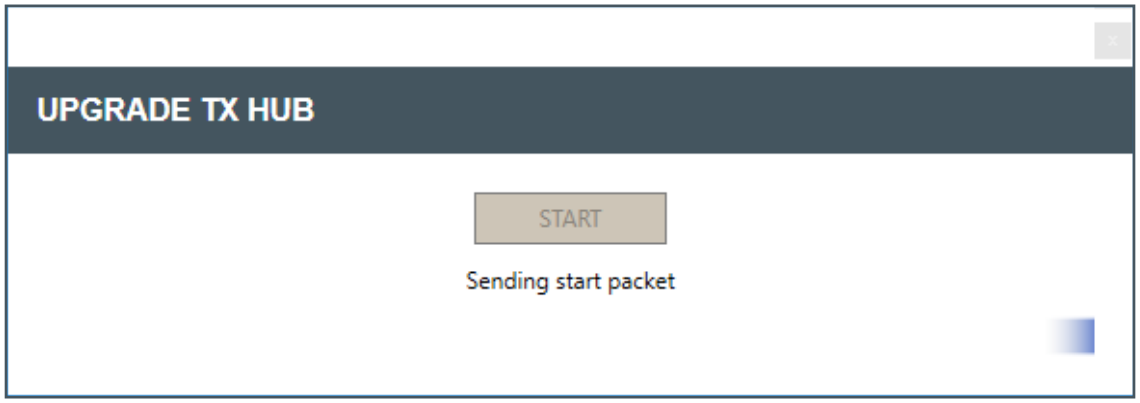
14. Once your final transmitter update is complete, a window verifying that your firmware is up-to-date appears. Click [OK] to close out.

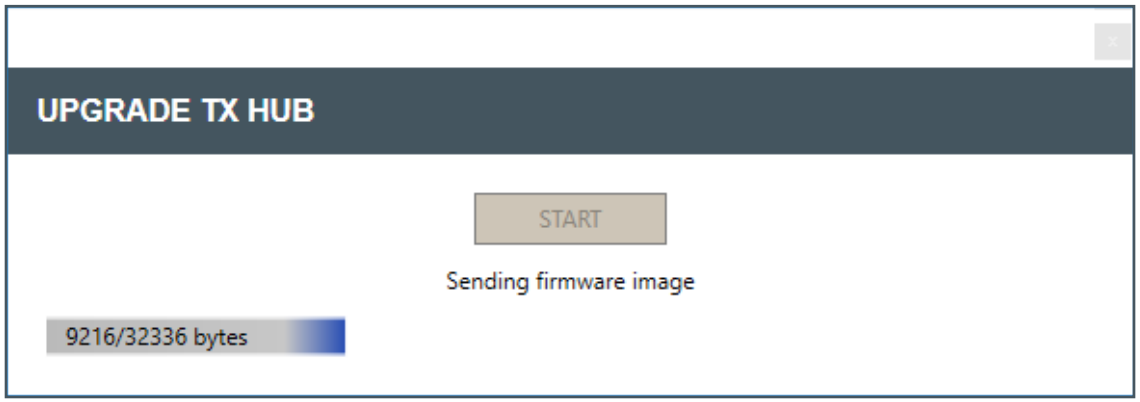
The following are DIALOG 20 Transmitter update windows.

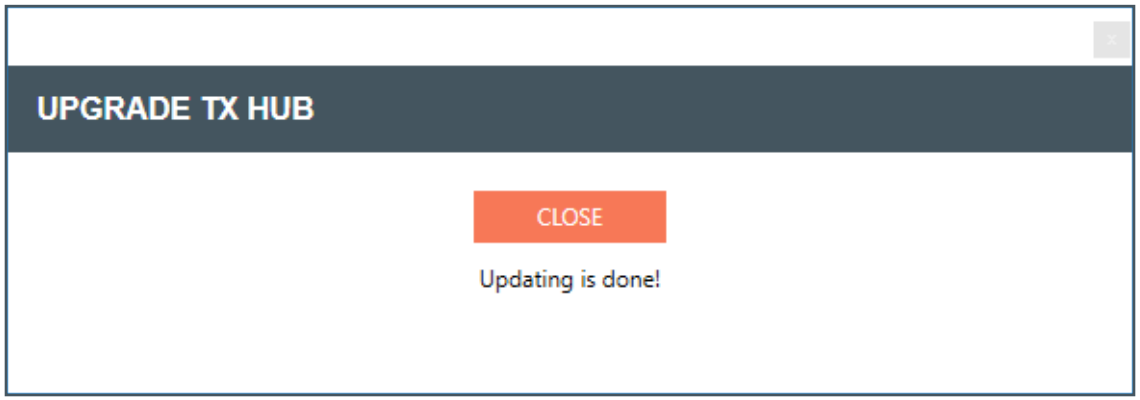


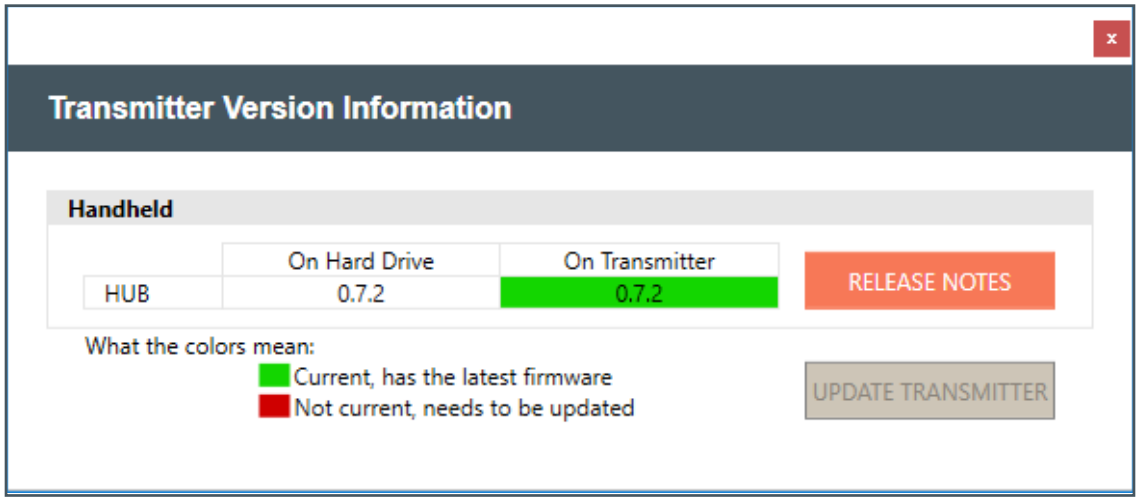


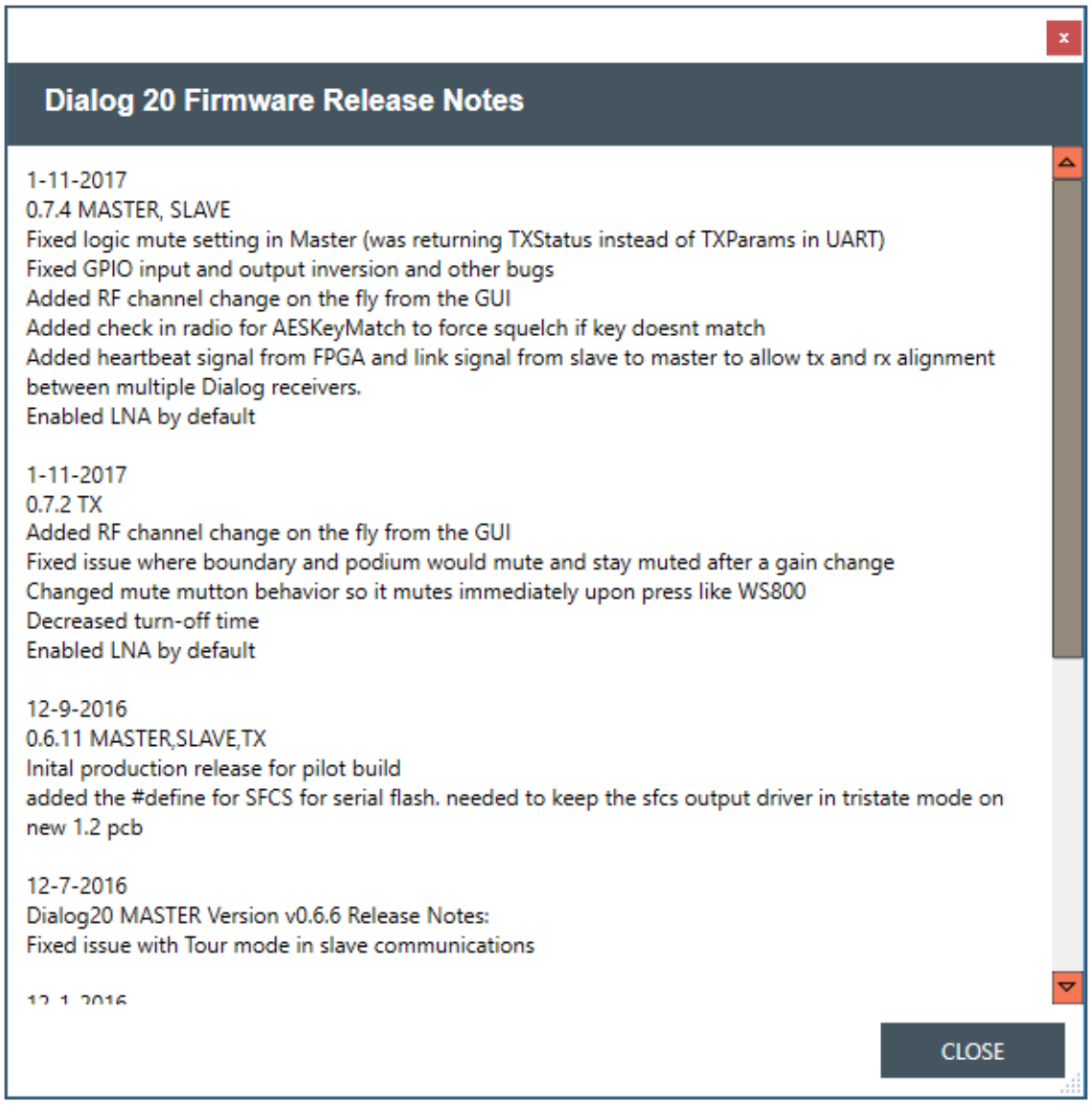

UPGRADE TX HUB
START
Putting device to DFU mode


UPGRADE TX HUB
START
Sending start packet


UPGRADE TX HUB
START
Sending firmware image
9216/32336 bytes


UPGRADE TX HUB
CLOSE
Updating is done!

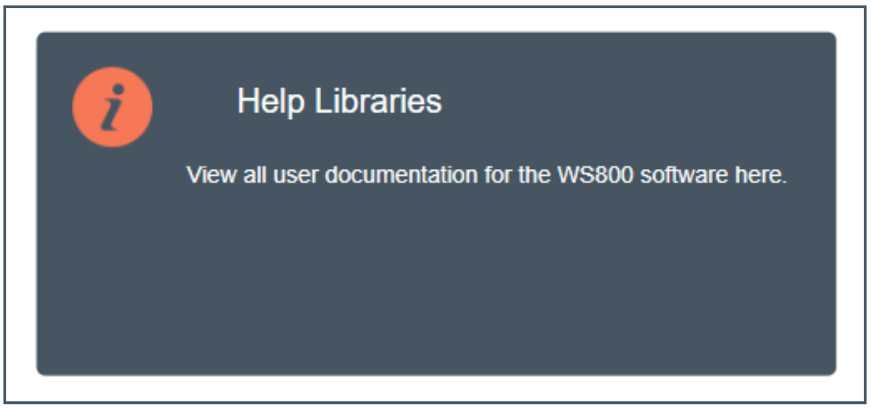

Transmitter Version Information
Handheld
On Hard Drive
On Transmitter
HUB
0.7.2
0.7.2
RELEASE NOTES
What the colors mean:
Current, has the latest firmware
Not current, needs to be updated
UPDATE TRANSMITTER


Dialog 20 Firmware Release Notes
1-11-2017
0.7.4 MASTER, SLAVE
Fixed logic mute setting in Master (was returning TXStatus instead of TXParams in UART)
Fixed GPIO input and output inversion and other bugs
Added RF channel change on the fly from the GUI
Added check in radio for AESKeyMatch to force squelch if key doesnt match
Added heartbeat signal from FPGA and link signal from slave to master to allow tx and rx alignment between multiple Dialog receivers.
Enabled LNA by default
1-11-2017
0.7.2 TX
Added RF channel change on the fly from the GUI
Fixed issue where boundary and podium would mute and stay muted after a gain change
Changed mute mutton behavior so it mutes immediately upon press like WS800
Decreased turn-off time
Enabled LNA by default
12-9-2016
0.6.11 MASTER,SLAVE,TX
Inital production release for pilot build
added the #define for SFCS for serial flash. needed to keep the sfcs output driver in tristate mode on new 1.2 pcb
12-7-2016
Dialog20 MASTER Version v0.6.6 Release Notes:
Fixed issue with Tour mode in slave communications
CLOSE

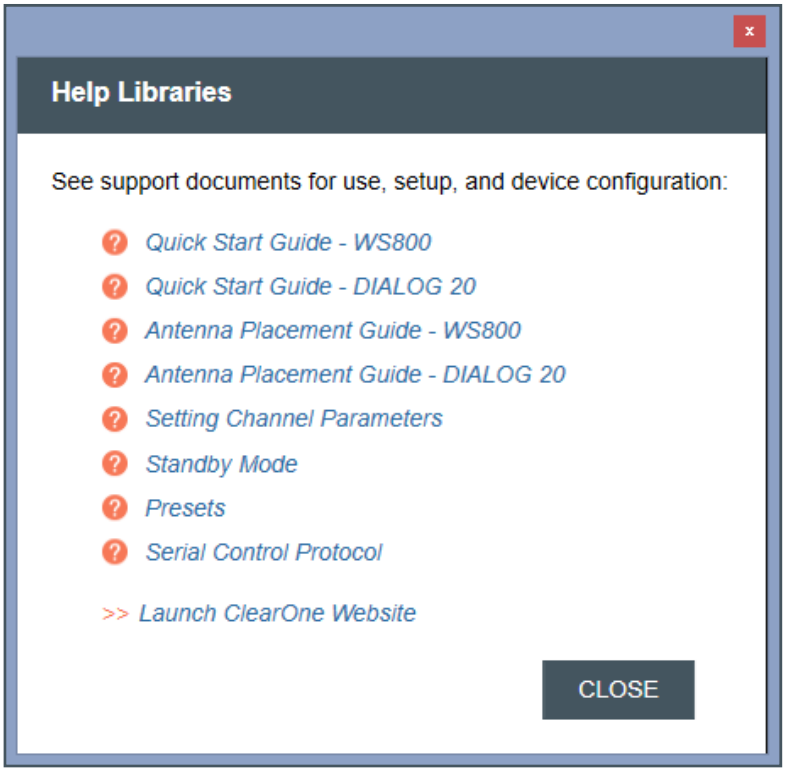
Help Libraries

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:

Receiver
FCC ID: FBI-DIALOG20RX
IC: 1970A-DIALOG20RX

Transmitters:

BELTPACK
FCC ID: FBI-DIALOG20BLT
IC: 1970A-DIALOG20BLT

TABLETOP
FCC ID: FBI-DIALOG20BDM
IC: 1970A-DIALOG20BDM

GOOSENECK
FCC ID: FBI-DIALOG20PDM
IC: 1970A-DIALOG20PDM

HANDHELD
FCC ID: FBI-DIALOG20HH
IC: 1970A-DIALOG20HH

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]

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