

Wireless Microphone Systems WS800 & DIALOG® 20 Remote Software

# USER MANUAL

DIALOG<sup>®</sup> 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

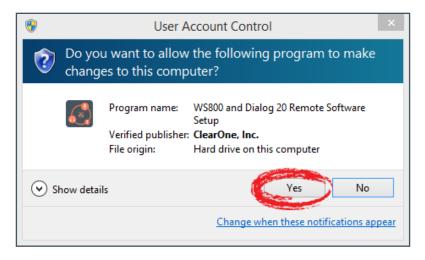
# **DOWNLOAD AND INSTALL THE SOFTWARE**

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.

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

 If you want to 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.

🛃 Setu	p - WS800 and Dialog 20 Remote Software	□ ×
	rt Menu Folder nould Setup place the program's shortcuts?	
	Setup will create the program's shortcuts in the following Start Menu	folder.
To contin	ue, dick Next. If you would like to select a different folder, dick Brow	se.
ClearOn	e\WS800 and Dialog 20 Remote Software Brow	vse
🗌 Don't	create a Start Menu folder	
	< Back Next >	Cancel

- 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.
- 5 WS800 & DIALOG 20 Software Download and Install the Software

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

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

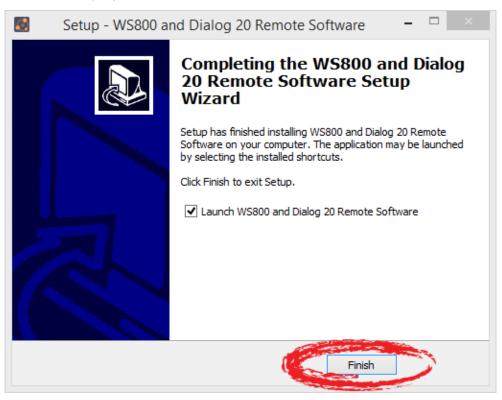
5. If you do not want an additional task to be completed, uncheck it, and click Next. The application is ready to install.

٩	Setup - WS800 and Dialog 20 Remote Software 🛛 – 🗆 🗙
	Ready to Install Setup is now ready to begin installing WS800 and Dialog 20 Remote Software on your computer.
	Click Install to continue with the installation, or click Back if you want to review or change any settings.
	Destination location: C:\Program Files (x86)\ClearOne\WS800 and Dialog 20 Remote Software Start Menu folder: ClearOne\WS800 and Dialog 20 Remote Software
	Additional tasks: Additional shortcuts: Create a desktop shortcut
	<
	< Back Install Cancel

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

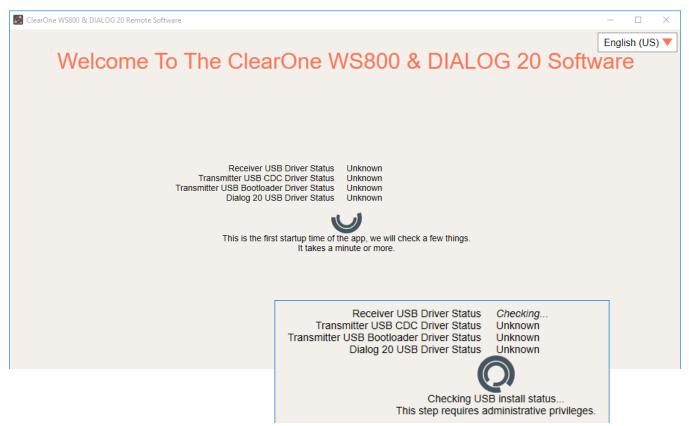
Setup - WS800 and Dialog 20 Remote Software 🛛 🗖	x
Installing Please wait while Setup installs WS800 and Dialog 20 Remote Software on your computer.	B
Extracting files C:\\ClearOne\WS800 and Dialog 20 Remote Software\microphone remote.exe	
Cancel	

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

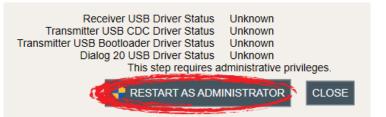


- 7. If you want to launch the software upon completion, leave Launch WS800 and DIALOG20 Remote Software checked, and click Finish.
- 7 WS800 & DIALOG 20 Software Download and Install the Software

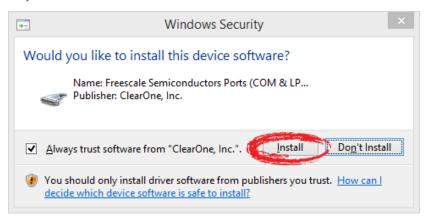
8. The software launches and starts to initialize. Upon startup, the software attempts to install and check statuses of the Receiver USB, Transmitter USB CDC (Communication Device Class), Transmitter USB Bootloader, and DIALOG20 USB drivers. This requires administrative privileges.



9. You are prompted to restart the software as an administrator. Click RESTARTAS 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<sup>1</sup>, configure your receiver(s) online<sup>2</sup>, configure and save receiver settings offline<sup>3</sup>, update software and firmware<sup>4</sup>, or access related user documentation<sup>5</sup>.

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



# 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].

	×		
ONLINE SETUP MODE 😢			
Connection Method			×
	Advanced Options	Connection Method	
	<b>O</b> U	SB/RS232 ETHERNET	
	COM po	com COM3 V	Advanced Options
		CONNECT	

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

	Connecti	on Meth	nod		
С	USB/RS232		● ET	HERNET	Contraction of the second
	IP Ad	dress		Connect?	Advanced Opt
1	192 . 168	. 2	. 250		
2	192 . 168	. 2	. 251	<b></b>	
3	192 . 168	. 2	. 252	<b></b>	
4	192 . 168	. 2	. 253		
5	192 . 168	. 2	. 254	<b>Z</b>	-
6	192 . 168	. 2	. 255		-
7	192 . 168	. 2	. 248		_
8	192 . 168	. 2	. 249	<b></b>	1

#### **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:

📓 ClearOne WS800 & DIALOG 20 Remote Software – 🗆 X									
Home File S	Settings RF Scan			Alert Help					
Receiver 1									
System Status									
,	Channel 1		Channel 2		Channel 3		Channel 4		
Slot Name	SLOT 1		SLOT 2		SLOT 3		SLOT 4		
ACTION	EDIT			EDIT		EDIT		EDIT	
Transmitter Status	On			On		On		On	
Battery Hours	0%	0H 0m	0%	) 0H 0m	0%	) OH Om	0%	0H 0m	
Transmitter Audio Gain	0 dB		0 dB		0 dB		0 dB		
Low Cut	Off		Off		Off		Off		
Transmit RF Power	1 mW		1 mW		1 mW		1 mW		
Power Switch Mode	On/Off		On/Off		On/Off		On/Off		
TX Control Lock	Off		Off		Off		Off		
Button Mode									
Mute Mode	Hard		Hard		Hard		Hard		
Standby Mode	Disabled		Disabled		Disabled		Disabled		
Model	Bodypack		Bodypack		Bodypack		Bodypack		
RF Diversity Strength -	SYNC C			SYNC OK		SYNC OK		SYNC OK	
Output Level Controls	NO ALE			NO ALERT		NO ALERT		DALERT	
	RF T	AUDIO	RF T	AUDIO	RF T	AUDIO	RF	AUDIO	
	ΠΠ	-18	Π Π	-18	ΠŪ		n n		
						36		36	
		54		54		54		54	
		.72		LL72					
	((\O))	•	((())	•	(())	•	((©))	•	
	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	
	•	•	•	•	•	•	•	•	
		-			-			-	
	◄)	◄)	<b>4</b> )	⊲)	(ا	◄))	⊲)	◄)	

## The WS880 receiver screens reflect 8 channels:

🛃 ClearOne WS800 & DIALO	G 20 Remote Software							- 🗆 X
_								
Home File S	ettings RF Sca	<b>n</b> Presets G	PIO Setup Alert	Help				
Receiver 1								
System Status	Status	Offline	Conn	ection Offline		Receiver Name	1	Alert No Alert
	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6	Channel 7	Channel 8
Slot Name	SLOT 1	SLOT 2	SLOT 3	SLOT 4	SLOT 5	SLOT 6	SLOT 7	SLOT 8
ACTION	EDIT	EDIT	EDIT	EDIT	EDIT	EDIT	EDIT	EDIT
Transmitter Status	On	On	On	On	On	On	On	On
Battery Hours	0% 0H 0m	0% 0H 0m	0% 0H 0m	0% 0H 0m	0% 0H 0m	0% 0H 0m	0% 0H 0m	0% 0H 0m
Transmitter Audio Gain	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB	0 dB
Low Cut	Off	Off	Off	Off	Off	Off	Off	Off
Transmit RF Power	1 mW	1 mW	1 mW	1 mW	1 mW	1 mW	1 mW	1 mW
Power Switch Mode	On/Off	On/Off	On/Off	On/Off	On/Off	On/Off	On/Off	On/Off
TX Control Lock	Off	Off	Off	Off	Off	Off	Off	Off
Button Mode								
Mute Mode	Hard	Hard	Hard	Hard	Hard	Hard	Hard	Hard
Standby Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Model	Bodypack	Bodypack	Bodypack	Bodypack	Bodypack	Bodypack	Bodypack	Bodypack
RF Diversity Strength - Output Level Controls	SYNC OK NO ALERT RF AUDIO -18 -36 -54 (CO) 0 dB 0 dB	SYNC OK           NO ALERT           RF         AUDIO						
	<b>4</b> )) <b>4</b> ))	<b>∢</b> )) <b>∢</b> ))	<b>◆</b> ))	<b>◄</b> )) <b>◄</b> ))	<b>4</b> )) <b>4</b> ))	<b>◄</b> )) <b>◄</b> ))	<b>4</b> )) <b>4</b> ))	<b>4</b> )) <b>4</b> ))

## **RF SCAN**

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

		Clea	rOne WS800 &	k DIALOG 20 Remote Software	- 🗆 🗡
Home File	Setting RF Scan	Presets GPIO S	etup Alert	t Help	
Receiver 1				×	
System Status	RF Scan (This Is Simu	lated) 🕜			Alert
Slot Name Action	Assign receiver slot for scan	1	•	Scan on receiver	
Transmitter Status	Channel range	from 1	to	32 V	
Battery Hours Transmitter Audio	RF Level in dBm				0H 0m
Low Cut	-40				
Transmit RF Powe	-45				
Power Switch Mo	-50				
Button Mode	-55				
Mute Mode	-60				
Standby Mode	-65				
Model	-70				
RF Diversity Strer Output Level Con	-75 -80 1 2 3 4 5	6 7 8 9 10 1	1 12 13 14	4 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	
				ClearOne Channel	18
	Select a channel for details Channel#	1		Green Lines indicate ClearOne transmitters There are 2 lines for each transmitter: one showing the left antenna signal and one	36
	Frequency	902.40625 MHz		showing the right antenna signal Red Lines indicate potential interference	-72
	Max RF	0		**	0 dB
	Min RF	0		e small horizontal bars are peak hold indicators. They show the highest RF energy level since e scan started	•
		SAVE SCAN	RECALL SCAP	N PRINT SCAN CANCEL	

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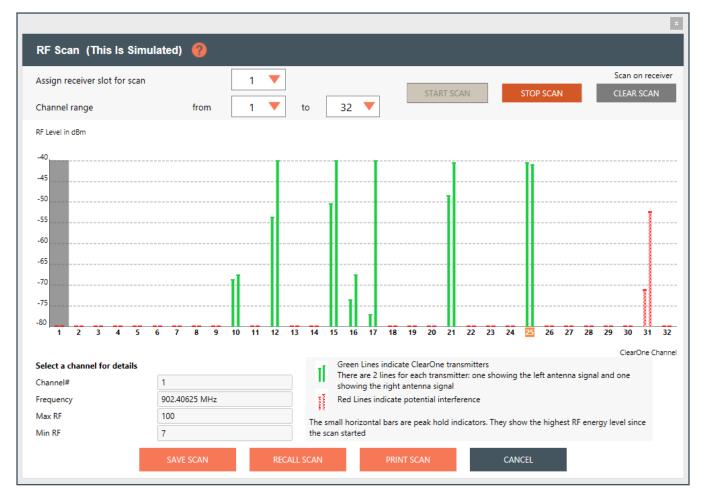
The RF Scanner scans for outside interference, intermodulation distortion (IMD), and to test the antennas. For greater detail on the RF Scan function and its application, select the question mark icon in the window. Another window displays with the details.

				x	
			RF Scan Details		×
RF	Scan (This Is Simul	ated	Use the ClearOne Remote scanner to scan for outside interference, intermodulation distortion (IMD), and to test the antennas.		
Assig	gn receiver slot for scan		Test for Outside Interference:		n on receiver
Char	nnel range	from	Select RF SCAN to open the scanner. Press START to run the scan. The scan reads the RF level of the selected module. A red line indicates RF interference typically		AR SCAN
RF Lev	vel in dBm		generated by an outside device. Outside interference does not typically cause hits or dropouts unless it is within about 20 dB of the transmitter power level.		
-40			Test the Antennas:		
-45			ClearOne receivers employ a true diversity antenna scheme, so each receiver module has an independent RF section connected to each antenna. The system automatically switches to the RF section that has the strongest antenna signal.		
-50			When scanning, ClearOne transmitters are indicated with two green lines on a single channel number.		
-55			Each line represents the power level received from each RF section. If you only see one green line, or if one of the green lines is much lower than the other, your system probably has a defective antenna cable or one antenna is being blocked.		
-65			Your system operates most reliably when both green lines are in the -40 to -55 dBm range on the		
-70			graph.		
			ClearOne engineers are on standby to help you with your antenna design.		
-75			IMD: Intermodulation distortion, or IMD, is the most difficult interference to control because it is		
-80	1 2 3 4 5	6789	intermittent. IMD occurs whenever two or more transmitters operate at the same time in close proximity. For a demonstration, set two transmitters to 50 mW and set them to channels 4 and 5.		0 31 32
			Place the transmitters close to an antenna and run the scan. IMD will show as red lines on channels 3 and 6. When you turn off one of the transmitters, both red		earOne Channel
Selec	t a channel for details		lines go away. The IMD could interfere with transmitters operating on channels 3 or 6, especially if they		e
Chan		1	are operating at 1 mW and placed far from the antenna.		
Frequ Max	-	902.40625 MHz	Many installers are diligent about solving outside interference problems, but IMD problems are more difficult. For example, the installer may not be able to test for a large number of transmitters moving		
Min F		0	around on a stage to simulate a playhouse performance.		since
		•	One of the major advantages of ClearOne digital systems is that they are much less susceptible to IMD		
		SAVE SCAN	than analog systems. In addition, ClearOne engineers are on standby to help you design your antenna system to minimize IMD, preferably before the installation crew arrives at the jobsite.		
			The goal is to adjust the antenna placement to keep the IMD interference at least 20 dB below the transmitter's weakest power level.	~	-
		1	CLOSE		
	⊲0)	⊲•)			b)

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

						×
RF SCAN						
Assign receiver slot for scan Channel range	from	3 🔻	to 32	START SCAN	STOP SCAN	Scan on receiver New Name CLEAR SCAN
Channel range		I •	10 52			

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.

Presets G	PIO Setup Alert	t Help	
.ink Ok	Con	nection COM3	Receiver N
Channel 4	Channel 6	Channel 8	Channel 10
TEST	SLOT 3	State	SLOT 5
EDIT	EDIT	EDIT	EDIT
Off	Off	Milto	Off
0%) 0H 0m	0%] 0H 0m	100%] 0H 15m	0%) 0H 0m
-20 dB	-20 dB	-20 dB	+20 dB
75 Hz	75 Hz	75 Hz	75 Hz

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.

IT TRANSMITTER	)		
Common TX Parameters			
Slot Name	SLOT 4	Transmit RF Power	10 mW 🔻
Channel# (*)	8 🔻	Power Switch Mode	On/Off 🛛 🔻
Transmitter Audio Gain	+10 dB 🔻	Low Cut	75 Hz
	Disable TX Gain Changes	Mute Mode	Logic Mute
		RF Standby Mode	Disabled
lake sure there are no othe	r transmitters on Channel 8, or syn	c will not work	
Beltpack/Handheld Para	meters	Tabletop/Gooseneck Pa	rameters
TX Controls Lock	On	Button Mode	Toggle Mode 🛛 🔻
Transmitter Type	Boundary 🔍 🔻		
Apply above setting to slot	s All Slots 1 2	3 🗹 4 🗌 5 🗌 6	7 8

#### 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.
- 15 Setup WS800 4 to 32 CHANNEL WIRELESS MIC SYSTEM

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.

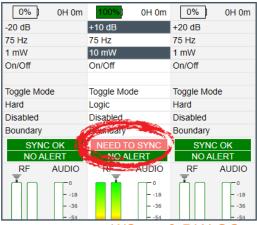
**Tx Controls Lock:** This function locks the control buttons on beltpacks and hand-held transmitters so that end users cannot change parameters

- **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.

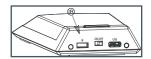
**Podium** / **Boundary Button Mode:** This function controls how the mute button affects podium gooseneck and boundary microphones.

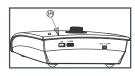
- Toggle Mute: Push the button to toggle the mute on or off
- Push to Talk: Push and hold the button to talk. Otherwise the mic is muted.
- Push to Mute: Push and hold the button to mute. Otherwise, the mic is open.
- 3. The [NEED TO SYNC] alert is lit, indicating one or more parameters in queue ready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



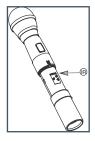
#### HOW TO SYNC TRANSMITTERS WITH THE RECEIVER

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

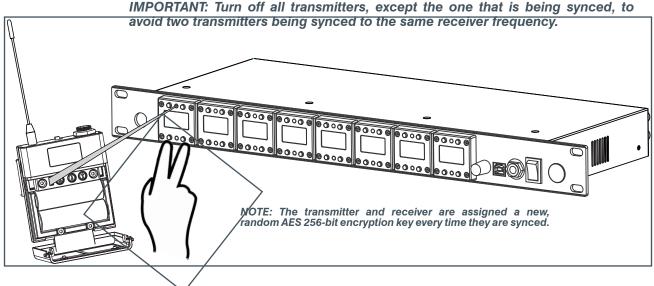








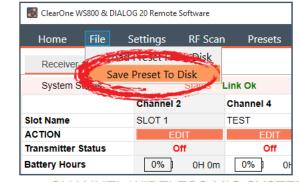
- 2. Power on the transmitter.
- 3. Hold transmitter about 6 inches from the corresponding receiver module with the IR sensor aimed at the receiver module.
- 4. Simultaneously press the two buttons on the bottom of the corresponding receiver module to start sending the IR signal. "SYNCING" shows on the 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.



#### FILE TAB

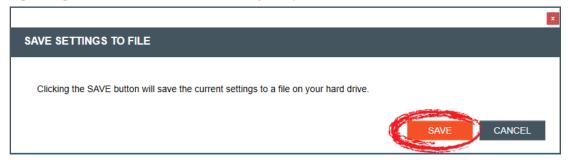
#### SAVE PRESET TO DISK

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.



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

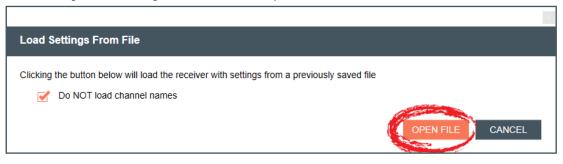


#### LOAD PRESET FROM DISK

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

🛃 ClearOne WS800 & DIALOG 20 Remote Software				
Home File	lettings RF Sca	n Presets		
Receive Load	Preset From Disk			
System Status Status Link Ok				
	Channel 2	Channel 4		
Slot Name	SLOT 1	TEST		
ACTION	EDIT	EDIT		
Transmitter Status	Off	Off		
Battery Hours	0%) 0H 0m	0%) OH		

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**

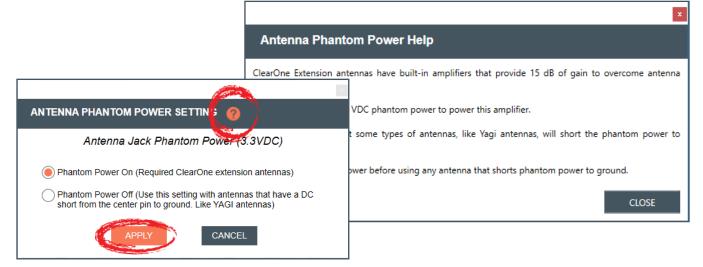
#### **ANTENNA PHANTOM POWER**

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].

ClearOne WS800 & DIALOG 20 Remote Software					
Home File	Setring	Scan Prose	ts Gl	PIO Setup	
Receiver 1		hantom Power			
System Status	Mix Out/H	v eadphone Mode			
	Antenna Se			Channel 6	
Slot Name	Ethernet Se	ettings		SLOT 3	
ACTION	Receiver O	LED Dimming		ED	
Transmitter Status		-		0	
Battery Hours	Print Curre	5	0H 0m	0%	
Transmitter Audio Gair	Set Receive	Set Receiver Name		-20 dB	
Low Cut	Tour Mode			75 Hz	
Transmit RF Power	1 mW	1 mW		1 mW	

- 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.

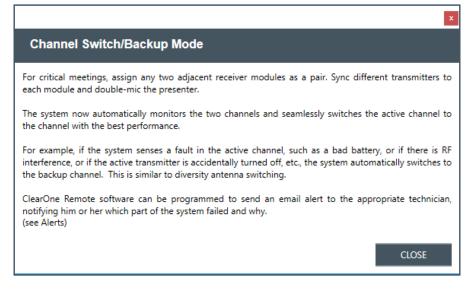
🐻 ClearOne WS800 & DIALOG 20 Remote Software					
Home File	Settings	RF Scan	Presets	G	PIO Setup
Receiver 1 System Status	Redund	1			
Slot Name ACTION Transmitter Status Battery Hours	Antenn Etherne Receive Print C	a Setup et Settings er OLED Dim urrent Settin ceiver Name	ming	0H 0m	Channel 6 SLOT 3 EDIT Off 0%
Transmitter Audio Gair Low Cut Transmit RF Power	Tour M	ode	mW		-20 dB 75 Hz 1 mW

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.

	and the second s			
CHANNEL SWITCH/BACKUP		$\mathbf{)}$		
Channel Switch/Backup Mode				
When channel switch/backup is The audio is selected from the c For example, if receiver 1 and 2	hannel with the best	audio signal and outpo	ut on the odd numbere	d channel.
	Slot 1 and 2	Slot 3 and 4	Slot 5 and 6	Slot 7 and 8
Channel Switch/Backup Mode	Off	On	Off	Off
		Output on Channel 3		
			APPLY	CANCEL
			the second second	

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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.

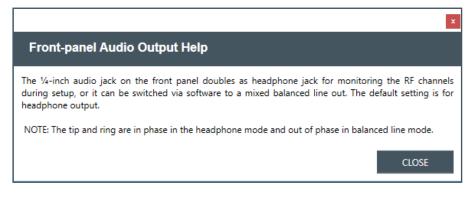
1. To change to Headphone or back to Balanced Output Mode, select the [Settings] tab, then [Mix Out/Headphone Mode]. Selecting Headphone Mode ensures Left and Right channels are in phase, whereas selecting/leaving Balanced Output Mode as the default mode ensures channels are out of phase.

ClearOne WS800 & DIALOG 20 Remote Software					
łome File	Settings	RF Scan	Presets	GI	PIO Setup
Receiver 1	Anter	na Phantom	Power		
System Status 🧃	Mix Out/Headphone Mode				
	141.44	Setup			Channel 6
Name	Ether	net Settings			SLOT 3
ION		2	na in a		EDI
smitter Status		ver OLED Dim	<u> </u>		Mut
ery Hours		Print Current Settings     0H 0m     100%       Set Receiver Name     +10 dB       Tour Mode     75 Hz			
mitter Audio Gain	Set Re				
Cut	Tour I				
smit RF Power	1 mW 1 mW 1 mW				1 mW

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.

	×
	UT/HEADPHONE OUTPUT MODE
$\bigcirc$	Headphone Mode (Left and Right channels are in phase) Use this setting if you are plugging headphones into the front panel 1/4" output
۲	Balanced Output Mode (Left and Right channels are out of phase) Use this setting if you are connecting a mixer or power amp input to the front panel 1/4" output
	APPLY CANCEL

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.



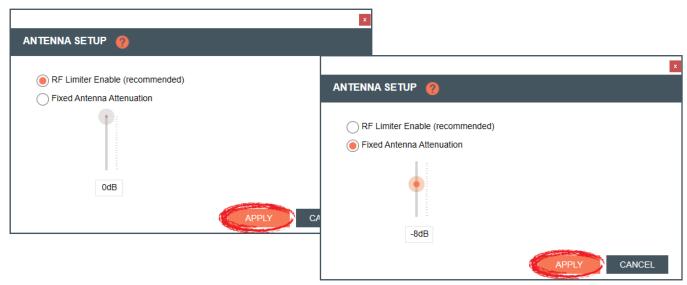
#### ANTENNA SETUP

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].

🛃 ClearOne WS800 & DIA	LOG 20 Remo	te Software			
Home File	Settings	RF Scan	Presets	GI	PIO Setup
Receiver 1		nna Phanton ndancy	n Power		
System Status		induncy Million John	ne Mode		
	Anter	nna Setup	3		Channel
Slot Name		tet Settings			SLOT 3
ACTION Transmitter Status	Recei	ver OLED Di	<u> </u>		E
Battery Hours		Current Sett	5	0H 0m	100%]
Transmitter Audio Gair	Set R	eceiver Nam	e		+10 dB
Low Cut	Tour	Mode			75 Hz
Transmit RF Power	1 mW		1 mW		1 mW

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.

RF Limiter Enable (recommended)	× Antenna Setup Help
Fixed Antenna Attenuation	In most installations, the antenna gain should be left at the default setting, RF Limiter Enabled. With this setting, the RF gain is automatically adjusted for optimum performance. In some installations, particularly areas with outside RF interference, it can be helpful to set the attenuation at a fixed level to reduce sensitivity to the interference and then increase the RF output power of the transmitters to overcome the loss of RF gain.
OdB	APPLY CANCEL

#### **ETHERNET SETTINGS**

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

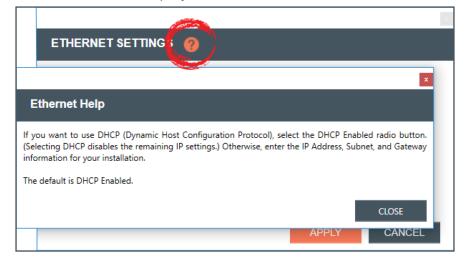
1. To adjust ethernet settings, select the [Settings] tab, then [Ethernet Settings].

🛃 ClearOne WS800 & DIAL	OG 20 Remote S	Software			
Home File	Settings	RF Scan	Presets	GI	PIO Setup
Receiver 1 System Status	Redund	a Phantom F lancy t/Headphon			
		2 Sector	e mode		Channel 6
Slot Name ACTION	-	t Settings			SLOT 3 EDIT
Transmitter Status		CLED DIM			Mute
Battery Hours		irrent Settin	gs	0H Om	92%] 1
Transmitter Audio Gair		eiver Name			+10 dB
Low Cut	Tour Mo	ode			75 Hz
Transmit RF Power	1 mW	11	mW		1 mW

- 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.

ETHERNET SETTIN	x IGS 🥐	
Receiver Ethernet Set	tings	×
MAC address	AC-DE-48-00-17-CC	
Manually assig	n IP address	Set Ethernet Success. Please Reboot Device
IP Address	123 . 255 . 255 . 255	
Subnet mas	k 123 . 255 . 255 . 255	ок
Gateway	255 . 123 . 123 . 123	
O DHCP Enable		
	APPLY CANCEL	

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**

23

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

🛃 ClearOne WS800 & DIAI	LOG 20 Remo	te Software		
Home File	Settings	RF Scan	Presets	GF
Receiver 1		nna Phantor	n Power	
System Status		ndancy )ut/Headph	one Mode	
Slot Name	Anter	nna Setup		
ACTION Transmitter Status	Recei	ver OLED Di	and the second sec	
Battery Hours	Set R	eceiver Nam		0H 0m
Transmitter Audio Gair Low Cut	Tour			
Transmit RF Power	1 mW		1 mW	,

- 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.

				x
	RECEIVER OLED	CONTROL		
	0	y transmitter is on,		after all transmitters are turned off and timer expires
	Bright when sy Timer Value	ncing transmitter, o	lims a	After timer expires Minutes
	Always bright	3		
		4		APPLY CANCEL
		5		
		6		
Setup — WS8	800 - 4 to 32 C	HANNEL	WI	RELESS MIC SYSTEM

#### **PRINT CURRENT SETTINGS**

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

🛃 ClearOne WS800 & DIAI	.OG 20 Remot	e Software		
Home File	Settings	RF Scan	Presets	GI
Receiver 1		na Phantom ndancy	Power	
System Status		ut/Headphor	ne Mode	
		na Setup		
Slot Name	Etherr	net Settings		
ACTION Transmitter Status	Recei	er OLED Din	nming	
Battery Hours	Print (	Current Settir	ngs	0H 0m
Transmitter Audio Gair	Seena	ceiver ivame		
Low Cut	Tour N	Лode		
Transmit RF Power	1 mW	1	mW	

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].

🛃 ClearOne WS800 & DIA	LOG 20 Remo	te Software		
Home File	Settings	RF Scan	Presets	GI
Receiver 1		nna Phantom I	Power	
System Status		ndancy )ut/Headphon	e Mode	
	Anter	nna Setup		
Slot Name	Ether	net Settings		
ACTION		ver OLED Dim	mina	
Transmitter Status				
Battery Hours	A state	Compart Settin	gs	0H 0m
Transmitter Audio Gai	Set R	eceiver Name		
Low Cut	Tour	WIDAR		
Transmit RF Power	1 mW	1	mW	,

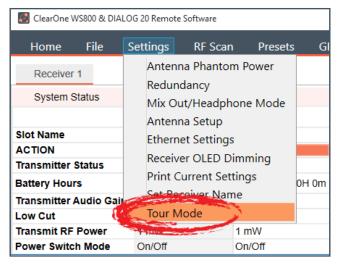
2. Select the receiver you want to name, enter the new name, and click [SEND].

		x
SET RECEIVER NAME		
Select receiver to name:	Receiver 1 (725MHz 8CH) 🔻	
Enter a name for this receiver	Enter New Name Here	
	Up to 26 characters	
	SEND	CANCEL

#### 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.

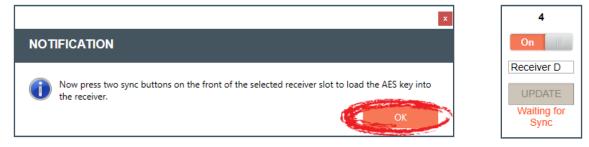


- 2. Click the [On]/[Off] toggle button for the appropriate slot(s) to enable or disable Tour Mode.
- 3. Type key(s) into applicable box(es). A key can be from 1-32 alphanumeric characters.

**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.

3	TOUR MODE								_		$\times$
Т	OUR MODE										
	Tour mode allows mu All receivers must use be shared between m	e the same AES key	as the transmi			de function allo	ows you to man	ually assign a ke	ey so th	iat it ca	n
	1. Click the 'Enabled'	radio button on the	selected slot to	enable tour m	ode.						
	2. Type a key in the b	ox. The key can be	from 1-32 alpha	anumeric chara	acters.						
	3. Click the 'Update K	(ey' button to send t	he key to the re	ceiver.							
	4. Sync the transmitte	er to the slot on the	receiver. The ke	ey will then be	stored in the transm	nitter and the re	eceiver card.				
	5. To allow other rece selected slot.	ivers to connect to	he transmitter,	repeat steps 1-	-3 above, and then	use the sync b	uttons on the re	ceiver to set the	e key in	the	
	Make sure the slot is	on the same chann	el as the transm	nitter.							
	Slot	1	2	3	4	5	6	7		8	
	Tour Mode	On	On	Off	On	Off	Off	On	On		
	Key	Key 1	Key 2		Key 4			Key 7	Key	8	
		UPDATE	UPDATE		UPDATE			UPDATE	UF	PDATE	5
									- Stature	-	
									_		
									CA	NCEL	
	Catura 14	10000 4 4									

- 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.

Slot	1	2	3	4	5	6	7	8	
Tour Mode	On	On	Off	On	Off	Off	On	On	
Key	Receiver A	Receiver B		Receiver D			Receiver G	Receiver H	
	UPDATE	UPDATE		UPDATE			UPDATE	UPDATE	
				Key Loaded					
								CANCEL	1

## 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.

Home File S	Settings	RF Scan	C	Presets	GPIO Setup	Alert
Receiver 1					ory Presets	
System Status		Status I	Link		CONF 1-15	Con
	Channel 2		Cha		CONF 2-16	
Slot Name	SLOT 1		TES		CONF 17-31	[
ACTION	EDI	т		Load	CONF 18-32	ЛТ
Transmitter Status	Off			User	Presets	ff
Battery Hours	0%	0H 0m	Г	Load	Custom 1	0H 0m
Transmitter Audio Gain	-20 dB	STEEN	-20	Load	Custom 2	or on
Low Cut	-20 db 75 Hz		-20 75 H	Load	Custom 3	
Transmit RF Power	1 mW		1 m'	Load	TourMode	
Power Switch Mode	On/Off		On/	Load	USER 5	
TX Control Lock					Current	
Button Mode	Toggle Mod	е	Tog			de
Mute Mode	Hard		Har		USER 7	
Standby Mode	Disabled		Disa		room test	
Model	Boundary		Bou	Load	USER 9	
RF Diversity Strength -	SYNC			Load	ultimate	C OK
Output Level Controls	NO AL			Save	Custom 1	LERT
	RF Ŧ	AUDIO	Ţ	Save	Custom 2	AUDIO
	Π		ľ	Save	Custom 3	18
		36			TourMode	
		54				54
		72		Save	USER 5	-72

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].

	ClearOne W	
	Presets GPIO Setup	
	Factory Presets	
	o Load CONF 1-15	
	Load CONF 2-16	
	Load CONF 17-31	
	Load CONF 18-32	
	User Presets	
	Load TourMode	
	Load USER 2	x
	Load USER 3	
	Load USER 4	Preset Name
	Load USER 5	
	Load USER 6	Enter a name for Preset 3
	Load USER 7	USER 3
	Load USER 8	Up to 10 characters
	Load USER 9	
	Load USER 10	
	Save TourMode	
	T Save USER 2	
	Save USER 3	
	Save USER 4	
	Save USER 5	
	Save USER 6	
	Save USER 7	
	Save USER 8	
	Save USER 9	
	Save USER 10	
l		

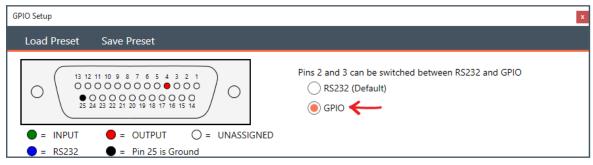
## **GPIO SETUP**

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

- 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.
- 27 Setup WS800 4 to 32 CHANNEL WIRELESS MIC SYSTEM

RF Scan	Presets GPIO Setup	Alert	Help		
Setup					
oad Preset	Save Preset				
	11 10 9 8 7 6 5 4 3 2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 123 22 21 20 19 18 17 16 15 14	С	Pins 2 and 3 can be		ed between RS232 and GPIO
= INPUT	= OUTPUT () = UN	ASSIGNE	D		
= RS232	Pin 25 is Ground DIRECTION		SIGNAL		SLOT RESOURCE
				_	
1	Unassigned 🔻		Logic Mute		Slot 1
2	RS232 TX 🔍				▼
3	RS232 RX 🔍			▼	▼
4	Output 🔻		Logic Mute	▼	Slot 4
5	Unassigned 🛛 🔻		Logic Mute	▼	Slot 5
6	Unassigned 🛛 🔻		Logic Mute	•	Slot 6
7	Unassigned 🛛 🔻		Logic Mute	▼	Slot 7 🔻
8	Unassigned 🛛 🔻		Logic Mute	•	Slot 8
9	Unassigned 🛛 🔻		Logic Mute	•	Slot 1 🔻
10	Unassigned 🛛 🔻		Logic Mute	•	Slot 2
11	Unassigned 🛛 🔻		Logic Mute	•	Slot 3 🔻
12	Unassigned 🗸		Logic Mute		Slot 4

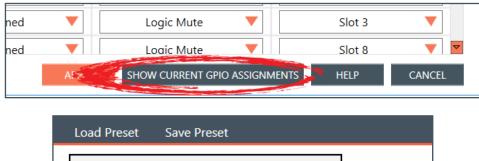
If not using RS232, select GPIO.

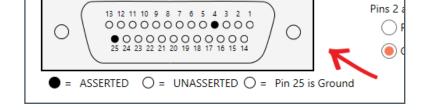


2. Adjust Direction, Signal, and Slot Resource for PINs as necessary.

PIN	DIRECTION	SIGNAL	SLOT RESOURCE
1	Unassigned 🛛 🔻	Logic Mute 🔻	Slot 1 🔻
2	Unassigned 🛛 🔻	Logic Mute 🔻	Slot 1
3	Unassigned 🗸 🔻	Logic Mute 🔻	Slot 2
4	Output 🔻	Logic Mute 🔻	Slot 3
5	Unassigned 🛛 🔻	Logic Mute 🔻	Slot 4
6	Unassigned 🛛 🔻	Logic Mute 🛛 🔻	Slot 5
7	Unassigned 🛛 🔻	Logic Mute 🔻	Slot 6
8	Unassigned 🛛 🔻	Logic Mute 🛛 🔻	Slot 7
9 [	Unassigned 🛛 🔻	Logic Mute 🔻	Slot 8
10	Unassigned 🛛 🔻	Logic Mute 🛛 🔻	Slot 2 🔻

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.

<ul> <li>= INPUT</li> <li>= RS232</li> </ul>	GPIO Help	
<b>PIN</b> 1	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.	
2	Pin 25 is ground, and pins 2 and 3 can be assigned as either RS232 or GPIO.	
3	The rest of the pins are GPIO only. If you select RS232, pin 2 is TX & vbCrLf, and pin 3 is RX. RS232 is used to control and monitor the receiver from a PC with this remote software, or from a third party controller. When using a third party controller, the RS232 settings are 115,200 baud, 8-N-1. The serial protocol can be	
4	found under the main help menu.	
5	Pins set for GPIO Outputs are either ground (asserted), or floating (unasserted).	<b>•</b>
6	There are 3 available GPIO presets. Two are factory set and not editable, and the third is a user defined preset. Using the Load Preset and Save Preset menus, these presets can be recalled, and the user preset can be saved and recalled.	
7	Note that these are presets for configuring the GPIO. These are not used to trigger any other system	
8	preset.	
9	CLOSE	<b>•</b>
10	Upassigned V Logic Mute V Slot 1	<b>_</b>
	APPLY SHOW CURRENT GPIO PIN STATES HELP	CANCEL

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

4	Unassigned V Logic Mute Slot 2 V
5	
6	Confirm Disable RS232 Port
7	You are disabling the RS232 connection on the DB25 port. If you are currently connecting via
8	RS232 you will be disconnected.
9	Click cancel if you don't want to make this change or click OK if you want to disable the RS232 port.
10	
11	Unassigned V Logic Mute V Slot 1
12	Unassianed Loaic Mute Slot 8 🔻 🗹
	APPLY SHOW CURRENT GPIO PIN STATES HELP CANCEL

### 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.

& DIAL	.OG 20 Remote	e Software										
е	Settings	RF Scan	Presets	GPIO Setup	Alert	Help						
		Status Li	ink Ok		Conne	ection COM	3		Receiver Nam	e New Na	me	ŀ
	Channel	17 0	Channel 19	Channel 21		Channel 23		Channel	25 Ch	annel 27	Chann	nel 29
	SLOT											x
5		ALERT 🥑										DIT
	0%											0H Om
Gain	+31 di 75 Hz		lialog to set up ale	erts. Use the chec	kboxes t	o select whe	ere the Ale	ert informa	tion will be disp	layed and	sent when	
r	1 mW	the Alert of	condition is met.									
le	On/Of	Alert Co	ndition					Aler	t Method			
	Toggle Hard	Low Batt	ery			Email 1	Ē	Email 2	Email 3	3	GUI Screen	ode
	Disabl	Battery R	Runtime Hours >	1 🔻		Email 1	🗹 E	Email 2	Email 3		GUI Screen	
gth - rols	N	Low RF \$	Signal			Email 1	E	Email 2	🗹 Email 3		GUI Screen	
	RF	TX Turne	d Off			Email 1	E	Email 2	Email 3	3 🗹	GUI Screen	AUDIO
						APPLY	SETUP	EMAILA	DDRESS AND	SERVER	CANCEL	54
		0 dR			0 dB		0 dB		0 dR			

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".

mail Alert Setup 🛛 🥝	•					
Enter email addresse	s separated by	semicol	on			
Sender Email						
Email Address List 1				 	 	
Email Address List 2				 	 	
Email Address List 3				 	 	
Email Server Name						
Email Username					 	
Email Password						
Authentication Option	None 🔻	Port 2	5			

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.

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

#### 31 Setup — WS800 - 4 to 32 CHANNEL WIRELESS MIC SYSTEM

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.

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

#### HELP

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

SlearOne WS800 & DIALOG 20 Remote Software										
Home File :	Settings RF Scar	n Presets Gl	PIO Setup Alert	Help						
Receiver 1 System Status	Status	Link Ok	Conr	necti	rt GUI hannel Parameters Placement Guide	New N				
	Channel 17	Channel 19	Channel 21	Chi Serial Cor	ntrol Protocol	nnel 27				
Slot Name ACTION	SLOT 1 EDIT	TEST EDIT	SLOT 3 EDIT	SLC Help With	n Presets Frequency Assignme	T 6 EDI				
Transmitter Status Battery Hours	Off 0%) 0H 0m	Off 0% 0H 0m	Off 0%] 0H 0m	About	requency Assignme	off				
Transmitter Audio Gain	+31 dB	0 dB	0 dB	+31 dB	0 dB	0 dB				
Low Cut	75 Hz	75 Hz								
Transmit RF Power	1 mW	1 mW								
Power Switch Mode	On/Off	On/Off	On/Off	On/Off	On/Off	On/Off				
TX Control Lock										
Button Mode	Toggle Mode	Toggle Mode	Toggle Mode	Toggle Mode	Toggle Mode	Toggle Mod				
Mute Mode	Hard	Hard	Hard	Hard	Hard	Hard				
Standby Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled				
Model	Boundary	Boundary	Boundary	Boundary	Boundary	Boundary				
RF Diversity Strength - Output Level Controls	SYNC OK NO ALERT	SYNC NO AL								

# **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].

	x
Connect	on Method
USB/RS232	ETHERNET
COM port	COM3  COM3  COM3
COM	INECT

#### **OFFLINE SETUP MODE**

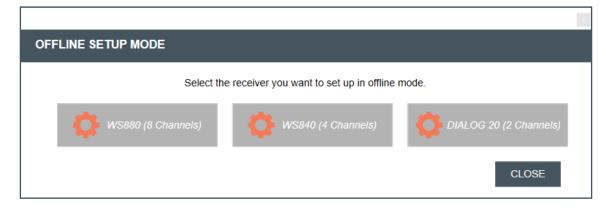
Allows you to configure and save settings for future application.

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:

8	ClearOne WS800 & DIA	ALOG 20 Remote Software	- 🗆 🗙
Home File Settings RF Sca	an Presets GPIO Setup Alert	Help	
Receiver 1			
System Status Status	Offline Connection	Offline Receiver Nan	ne Alert No Alert
Cha	annel 1	Cha	annel 2
Slot Name	SLOT 1	Slot Name	SLOT 2
Action	EDIT	Action	EDIT
Transmitter Status	On	Transmitter Status	On
Battery Hours	0%	Battery Hours	0%
Transmitter Audio Gain	-20 dB	Transmitter Audio Gain	-20 dB
Low Cut	Off	Low Cut	Off
Transmit RF Power	1 mW	Transmit RF Power	1 mW
Power Switch Mode	On/Off	Power Switch Mode	On/Off
TX Control Lock	Off	TX Control Lock	Off
Mute Mode	Hard	Mute Mode	Hard
Standby Mode	Disabled	Standby Mode	Disabled
Model	Bodypack	Model	Bodypack
RF Diversity Strength - Output Level Controls	SYNC OK NO ALERT	RF Diversity Strength - Output Level Controls	SYNC OK NO ALERT
	RF AUDIO	<b>■</b>	RF AUDIO
	1B 36 54 -72		
	③         ●           0 dB         0 dB           ●         ●		③         ③           0 dB         0 dB           •         •

## **RF SCAN**

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

ne File	Settine RF	Scan	Presets	GFIO	Setup	Alert	Help				
eceiver 1											
stem Status	Sta	atus Lin	KOK			Connec	tion COM6	5	Re	ceiver Name DIALOG 20	Alert NO ALERT
		Chann	al 1							Channel 9	×
lot Name											
ction	RF Scan										
ransmitter {				_						Scan on recei	ver DIALOG 20
attery Hour	Assign receiver slot	t for scan			1 🔻				START SCA	N STOP SCAN CL	EAR SCAN
ransmitter /	RF Level in dBm										
ow Cut	Ki Leverin dom										
ransmit RF	-40										
ower Switcl	-45										
utton Mode	-50										
lute Mode	-55										
tandby Moc	-60										
lodel	-65										
F Diversity output Level	-75	5 06 07 08 0	9 10 11 12 13	14 15 16 17	18 19 20 21	22 23 24 25	26 27 28 29	30 31 32 33	34 35 36 37 3	8 39 40 41 42 43 44 45 46 47 48 49 50 51 52 9	3 54 55 56 57 5 AUDIO
	Best Channel	8	7	1	6	5	2	3	4	Fade Timeout 7 minut	ClearOne Channel
	Frequency 1 (MHz)	2424	2421	2403	2418	2415	2406	2409	2412		36
	Frequency 2 (MHz)	2448	2445	2427	2442	2439	2430	2422	2436	The small horizontal bars are peak They show the highest RF energy I	evel since the
	Frequency 3 (MHz)	2472	2469	2451	2466	2463	2454	2457	2460	scan started	((©)
	Frequency 4 (MHz)	2482	2481	2475	2480	2479	2476	2477	2478		0 dB
						CALL SCAN					

WS800 & DIALOG 20 Software User Manual 36

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.

		X	
		RF Scan Details	
RF Score	for scan	Use the ClearOne Remote scanner to scan for outside interference, intermodulation distortion (IMD), and to test the antennas. Test for Outside Interference: Select RF SCAN to open the scanner. Press START to run the scan. The scan reads the RF level of the selected module. A red line indicates RF interference typically generated by an outside device. Outside interference does not typically cause hits or dropouts unless it is within about 20 dB of the	Scan on receiver DIALOG 20
RF Level in dBm	06 07 08 0	transmitter power level. Test the Antennas: ClearOne receivers employ a true diversity antenna scheme, so each receiver module has an independent RF section connected to each antenna. The system automatically switches to the RF section that has the strongest antenna signal. When scanning, ClearOne transmitters are indicated with two green lines on a single channel number. Each line represents the power level received from each RF section. If you only see one green line, or if one of the green lines is much lower than the other, your system probably has a defective antenna cable or one antenna is being blocked. Your system operates most reliably when both green lines are in the -40 to -55 dBm range on the graph. ClearOne engineers are on standby to help you with your antenna design. IMD: Intermodulation distortion, or IMD, is the most difficult interference to control because it is intermittent. IMD occurs whenever two or more transmitters operate at the same time in close proximity. For a demonstration, set two transmitters to 50 mW and set them to channels 4 and 5. Place the transmitters close to an antenna and run the scan. IMD will show as red lines on channels 3 and 6. When you turn off one of the transmitters, both red lines go away. The IMD could interfere with transmitters operating on channels 3 or 6, especially if they are operating at 1 mW and placed far from the antenna.	47 48 49 50 51 52 53 54 55 56 57 5
Best Channel Frequency 1 (MHz) Frequency 2 (MHz) Frequency 3 (MHz) Frequency 4 (MHz)	8 2424 2448 2472 2482	Many installers are diligent about solving outside interference problems, but IMD problems are more difficult. For example, the installer may not be able to test for a large number of transmitters moving around on a stage to simulate a playhouse performance. One of the major advantages of ClearOne digital systems is that they are much less susceptible to IMD than analog systems. In addition, ClearOne engineers are on standby to help you design your antenna system to minimize IMD, preferably before the installation crew arrives at the jobsite. The goal is to adjust the antenna placement to keep the IMD interference at least 20 dB below the transmitter's weakest power level.	ClearOne Channel 7 minutes  ontal bars are peak hold indicators. highest RF energy level since the
		CLOSE	

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

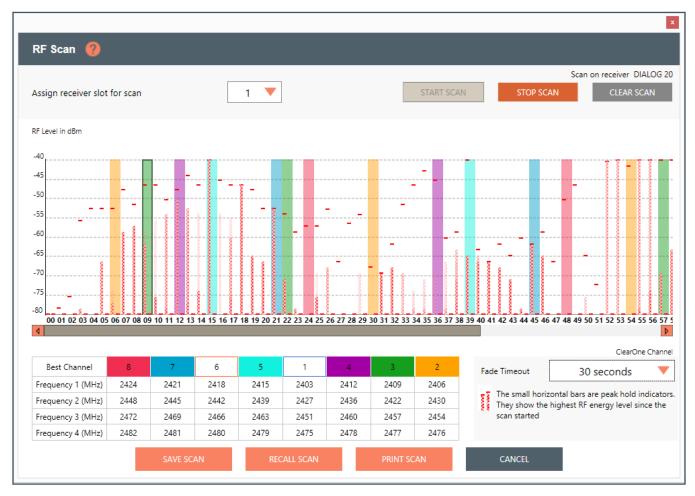
				×
RF Scan  ?				
Assign receiver slot for scan	1 🔻	START SCAN	STOP SCAN	Scan on receiver CLEAR SCAN

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 **select** 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.



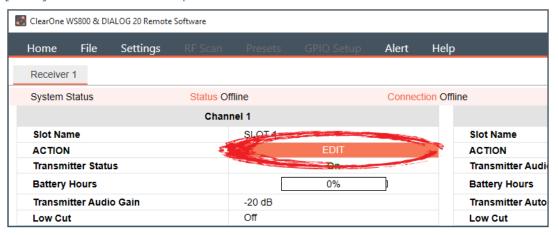
The Fade Timeout function shows the most recent data as a solid bar. As data ages, it fades out based on the time setting. This allows you to distinguish between current potential interference and interference that has happened in the past. This enables you to see which channels are best over and extended 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.

			X
Edit Transmitter 🛛 🔞			
Common TX Parameters			
Slot Name	SLOT 1	Transmit RF Power	1 mW 🔻
Channel# (*)	2	Power Switch Mode	On/Off 🔻
Transmitter Audio Gain	+10 dB 🔻	Low Cut	75 Hz
RF Standby Mode	Disabled	Mute Mode	Logic Mute
Make sure there are no other t	transmitters on Channel 2, or sy	nc will not work	
Beltpack/Handheld Param	eters	Tabletop/Gooseneck Paran	neters
TX Controls Lock	On	Button Mode	Push To Talk
Transmitter Type	Podium 🔻		
Apply above setting to slots	2 1 🗌 2		
			APPLY CANCEL

#### 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.

#### 39 Setup — DIALOG 20 - 2 Channel Wireless Mic System

**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.

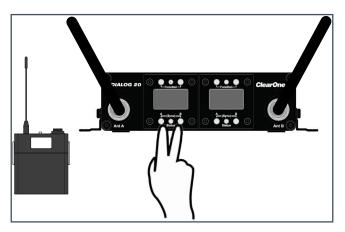
	0%
+10 dB	
75 Hz	
1 mW	
On/Off	
Push To Ta	alk
Logic	
Podium	
2	NEED TO SYNC
	NUALERI
RF	AUDIO

## 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.

🛃 ClearOne WS	🛃 ClearOne WS800 & DIALOG 20 Remote Software					
Home	File	Settings	RF Scan	Presets		
Receiver	L	oad Preset Fro	om Disk			
	and the second s	ave Preset To				
System St	dius		- Jaitis O	πine		
			Chan	nel 1		
Slot Nam	e			SLOT 1		
ACTION	ACTION					
Transmitt	Transmitter Status					
Battery H	Battery Hours					

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

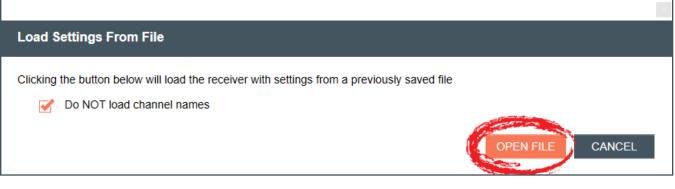
	x
SAVE SETTINGS TO FILE	
Clicking the SAVE button will save the current settings to a file on your hard drive.	
	CANCEL

#### LOAD PRESET FROM DISK

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

🛃 ClearOne WS800 & DIALOG 20 Remote Software				
Home	File	Settinas	RF Scan	Presets
Receiver		oad Preset Fro ave Preset To		19 - C
System St		ave Preset to	Status C	Offline
			Chai	nnel 1
Slot Nam	e			SLOT 1
ACTION				
Transmitt	ter Stat	us		
Battery H	ours			
Transmitt	ter Auto	o Gain		+10 dB

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.

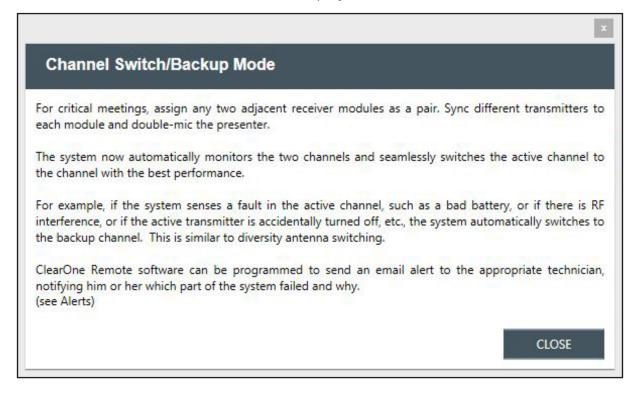
1. To turn Channel Switch/Backup Mode Off/On, select the [Settings] tab, then [Redundancy]. Redundancy enables you to run redundant, backup channels, in case the system senses a fault in the active channel.

8				ClearOne	e WS80
Home File	Settings	RF Scan	Presets	GPIO Setup	A
Receiver 1	Ante	na Phantom	Power		
System Status		ndancy	ne Mode		Con
Slot Name		nna Setup		FOIT	
Action Transmitter Status		net Settings ver OLED Dir	nming	EDIT Off	
Battery Hours	Print	Current Setti		0%	þ
Transmitter Audio G Low Cut	Set R	eceiver Nam	e		
Transmit RF Power	Tour	Mode			
Power Switch Mode	Chan	nel Mode			
Button Mode			Toggle Mo	de	

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.

Channel Switch/Backup Settings	
Channel Switch/Backup Mode	
The audio is selected from the channel with the bes	r slots and 2 transmitters are used on one audio source. st audio signal and output on the odd numbered channel. nannel switch/backup, the audio output will be on Channel 1.
	Slot 1 and 2
Channel Switch/Backup Mode	On
	Output on Channel 1
	APPLY CANCEL
	CITIZE .

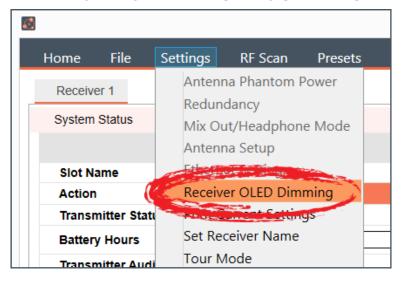
3. For details on the Channel Switch/Backup Mode function and its application, select the question mark icon in the window. Another window displays with the details.



## SETTINGS

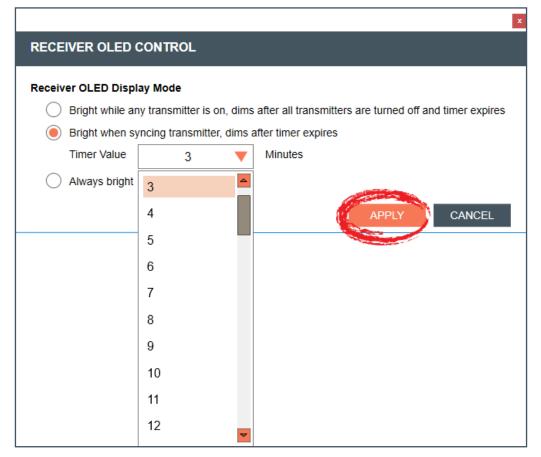
#### **RECEIVER OLED DIMMING**

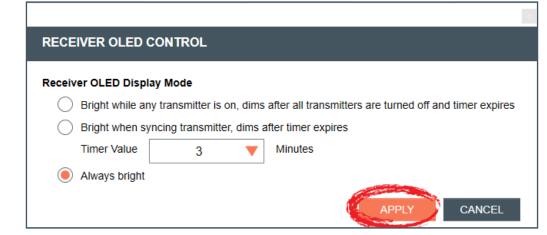
1. To set receiver OLED dimming settings, select the [Settings] tab, then [Receiver OLED Dimming].



- 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.

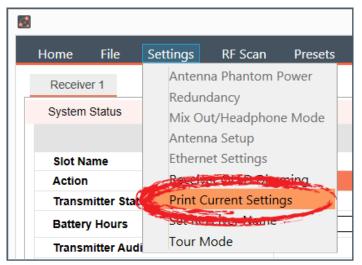
RECEIVER OLED CONTROL
Receiver OLED Display Mode
Bright while any transmitter is on, dims after all transmitters are turned off and timer expires
<ul> <li>Bright when syncing transmitter, dims after timer expires</li> </ul>
Timer Value 1 Vinutes
Always bright
APPLY CANCEL





#### **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].

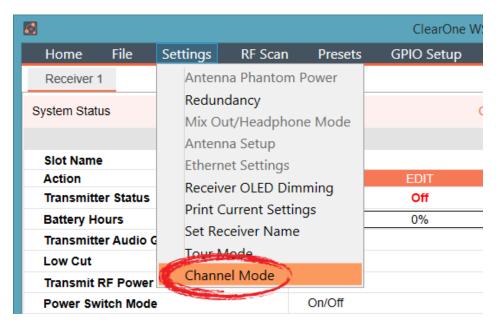
<b>2</b>					
Home File	Settings RF Scan Presets				
Receiver 1	Antenna Phantom Power				
System Status	Redundancy Mix Out/Headphone Mode				
	Antenna Setup				
Slot Name	Ethernet Settings				
Action	Receiver OLED Dimming				
Transmitter State	Print of A Pattings				
Battery Hours	Set Receiver Name				
Transmitter Audi	Contraction of the second				

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

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

#### 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.



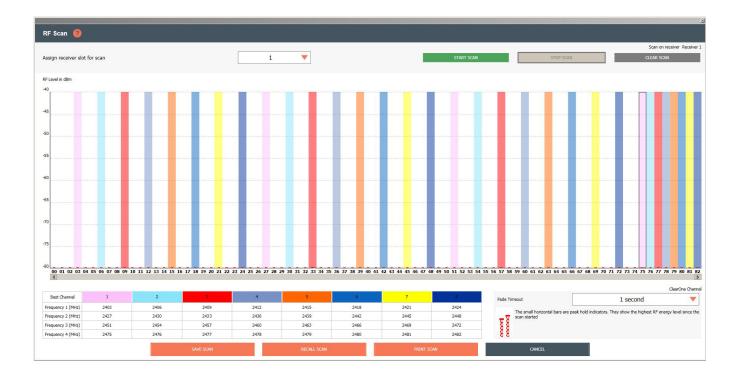
	x
Channel Mode	
) Wide	
Narrow	
APPLY	CANCEL

• 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.

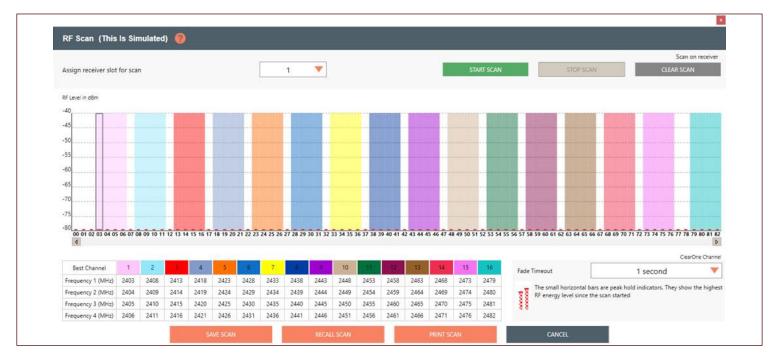
Cons: Does not always take advantage of white spaces between WiFi devices.

 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:



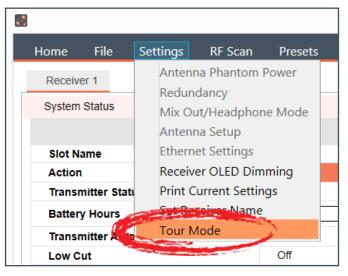
#### **Narrow Band Mode:**



## 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.

2	Tour Mode	>	x							
Tour Mode										
All receivers must use the same be shared between multiple recei	vers and a transmitter.	Tour mode function allows you to manually assign a key so that it can								
	1. Click the 'ON-OFF' toggle button on the selected slot to enable tour mode.									
	can be from 1-16 alphanumeric characters.									
3. Click the 'Update' button to ser	id the key to the receiver.									
4. Sync the transmitter to the slot	on the receiver. The key will then be stored in th	e transmitter and the receiver card.								
5. To allow other receivers to con selected slot.	nect to the transmitter, repeat steps 1-3 above, a	and then use the sync buttons on the receiver to set the key in the								
Make sure the slot is on the same	channel as the transmitter.									
Slot	1	2								
Tour Mode	On	Off								
Key 1										
	UPDATE									
		CANCEL								

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.

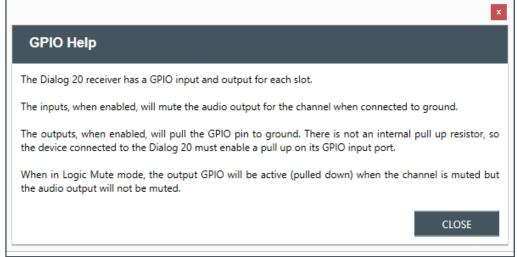
1. To configure the GPIO, select [GPIO Setup].

🛃 ClearOne V	VS800 & D	IALOG 20 Remote	Software					
Home	File	Settings	RF Scan	Presets	GPIO Setup	Alert	Help	

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

DIRECTION		Inj	put
SLOT RESOURCE		1	2
	Ground	Mute	Disabled
STATUS	3V	Disabled	Mute
SLOT RESOURCE		1	2
DIRECTION		Out	put

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



#### ALERT

Г

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.

mote	Software						
js	RF Scan Presets GPIO Setup	Alert Help					
					×		
A	LERT 👩						
	Use this dialog to set up alerts. Use the checkbox the Alert condition is met.	xes to select whe	ere the Alert informa	tion will be displaye	ed and sent when		
Alert Condition Alert Method							
	Low Battery	Email 1	Email 2	Email 3	GUI Screen		
	Battery Runtime Hours > 1	Email 1	Email 2	Email 3	GUI Screen		
	Low RF Signal	Email 1	Email 2	Email 3	GUI Screen		
	TX Turned Off	Email 1	Email 2	Email 3	GUI Screen		
		APPLY	SETUP EMAIL AI	DDRESS AND SEF	RVER CANCEL		

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

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

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

						x
Email Alert Setup 🛛 💡						
Enter email addresses	separated by sen	nicolon				
Sender Email						
Email Address List 1						
Email Address List 2						
Email Address List 3						
Email Server Name						
Email Username						
Email Password						
Authentication Option	None V Po	rt 25				
			TE	EST CONFIGURATION	APPLY	CANCEL

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

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

## HELP

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

8	ClearOne	WS800 & DIA	LOG 20 Remote Software		- 🗆 🗙		
Home File Settings RF Scan	Presets GPIO Setup	Alert	Help				
Receiver 1			Quick Start GUI				
System Status Status Lin	ık Ok	Connection (		ΓΟΝΑ	Alert NO ALERT		
Chan	nel 1		Help With Presets	Channel 6			
Slot Name	SLOT 1		Channel Frequency Assignments About	SLOT 2			
Action	EDIT		Action		EDIT		
Transmitter Status	Off		Transmitter Status		Off		
Battery Hours	0%	7	Battery Hours	Γ	0%		
Transmitter Audio Gain	+20 dB		Transmitter Audio Gain	0 dB			
Low Cut	Off		Low Cut	Off			
Transmit RF Power	1 mW		Transmit RF Power	1 mW			
Power Switch Mode	On/Off		Power Switch Mode	On/Off			
Button Mode	Toggle Mode		Button Mode	Toggle M	ode		
Mute Mode	Hard		Mute Mode	Hard	Hard		
Standby Mode	Disabled		Standby Mode	Disabled			
Model	Boundary		Model	Boundary	1		
RF Diversity Strength - Output Level Controls	SYNC OK NO ALERT		RF Diversity Strength - Output Level Controls		SYNC OK NO ALERT		
	RF © 0 dB	AUDIO 0 18 36 54 72 © 0 dB 0 dB 		RF © 0 d •	• • • • • • • • • • • • • • • • • • •		

# **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.
- 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.

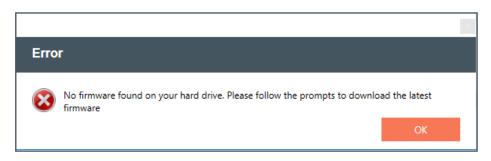


# **REMOTE SOFTWARE UPDATE**

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

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

- 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).

ownlo	ad software and firmware - ClearOne WS800 & I	DIALOG 20 Remote Sof	tware			
Firm	ware And Software Version Infor	mation				
		On Hard Drive	Latest Available		Progress	Release Notes
WS8	00 Firmware					
	RECEIVER MAINFRAME					
	HUB	N/A	6.0			
	MUX	N/A	3.0			RELEASE NOTES
	TRANSMITTERS					
	HUB	N/A	5.7			
	RF (Uncompressed Model)	N/A	4.1			
	RF (Compressed Model)	N/A	4.1			
	EE (Uncompressed Model)	N/A	4.0			
	EE (Compressed Model)	N/A	4.1			RELEASE NOTES
	RECEIVER CARD					
	RF (Uncompressed Model)	N/A	3.1			
	RF (Compressed Model)	N/A	3.4			
	EE	N/A	2.7			RELEASE NOTES
	REMOTE SOFTWARE					
	Software Version	3.1.1.1	2.5.0.0			RELEASE NOTES
	FIRMWARE RELEASE DATE	N/A	8-22-2016			
	USB DRIVERS					
	Receiver USB Driver Status	INSTA	LLED OK			
	Transmitter USB CDC Driver Status	INSTA	LLED OK			
	Transmitter USB Bootloader Driver Status	INSTA	LLED OK			
Dialo	og 20 Firmware					
	RECEIVER					
	Master Radio	N/A	0.7.1			
	Slave Radio	N/A	0.7.1			
	FPGA	N/A	1.0			RELEASE NOTES
	TRANSMITTERS					RELEASE NOTES
	Radio	N/A	0.6.11			
	FIRMWARE RELEASE DATE	N/A	1-5-2017			
	USB DRIVERS					
	Dialog 20 USB Driver Status	INSTA	LLED OK			
			PROXY CO	ONFIGURATION	CHECK FOR UPDATE	DOWNLOAD SELECTED

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.

	mation			
]	On Hard Drive	Latest Available	Progress	Release Note
S800 Firmware				
RECEIVER MAINFRAME				
HUB	6.0	6.0		
MUX	3.0	3.0		RELEASE NOT
TRANSMITTERS				
HUB	5.7	5.7		
RF (Uncompressed Model)	4.1	4.1		
RF (Compressed Model)	4.1	4.1		
EE (Uncompressed Model)	4.0	4.0		
EE (Compressed Model)	4.1	4.1		RELEASE NOT
RECEIVER CARD				
RF (Uncompressed Model)	3.1	3.1		
RF (Compressed Model)	3.4	3.4		
	2.7	2.7		RELEASE NOT
REMOTE SOFTWARE				
Software Version	3.1.1.1	2.5.0.0		RELEASE NOT
FIRMWARE RELEASE DATE	8-22-2016	8-22-2016		
USB DRIVERS				
Receiver USB Driver Status	INSTA	LLED OK		
Transmitter USB CDC Driver Status	INSTA	LLED OK		
Transmitter USB Bootloader Driver Status	INSTA	LLED OK		
alog 20 Firmware				
RECEIVER				
Master Radio	0.7.1	0.7.1		
Slave Radio	0.7.1	0.7.1		
FPGA	1.0	1.0		
TRANSMITTERS	1.0			RELEASE NOT
Radio	0.6.11	0.6.11		
FIRMWARE RELEASE DATE	1-5-2017	1-5-2017		
USB DRIVERS				
Dialog 20 USB Driver Status	INSTA	LLED OK		

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

				×
Proxy Configura	ation			
Use proxy				
Host				
Port				
Username				
Password				
		SAVE	CANCEL	

# **RECEIVER FIRMWARE UPDATE**

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

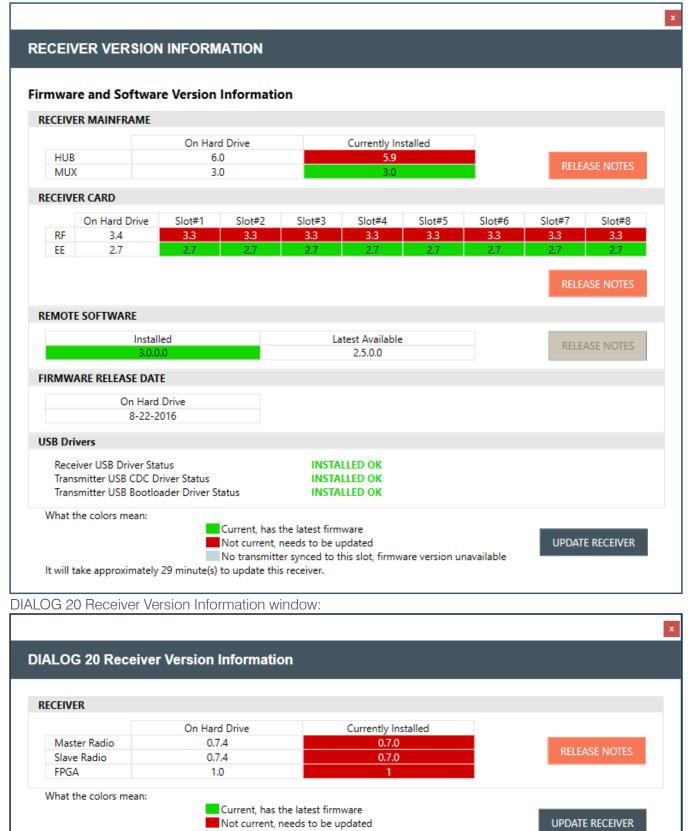
UPDATE WIZARD
OVERVIEW: New features and improvements in ClearOne software and firmware are free for the life of the products. This wizard outlines the process of updating your system.
Step 1 Download the latest versions of software and firmware from ClearOne onto your computer. This can be done in your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

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

	x
CONNECT YOUR RECEIVER	
Found COM8, checking for receiver connection	
	BACK

#### 3. Click [UPDATE RECEIVER].

WS800 Receiver Version Information window:



No transmitter synced to this slot, firmware version unavailable

It will take approximately 3 minute(s) to update this receiver.

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:

	×
UPGRADE RECEIVER HUB	
It will take approximately 1 minute(s) to update this receiver.	
	ОК
	x
UPGRADE RECEIVER CARD RF PROCESSOR	
START	
Press button to start upgrade process	
	_
	x
Upgrade Receiver EEPROM	
PROGRAM EEPROM	

DIALOG 20 software and firmware upgrade example windows:

UPGRADE MASTER HUB		
	START	

	x
UPGRADE SLAVE HUB	
	START
Upgrade Receiver MUX	
	START

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

	×
Upgrade Receiver Card RF Processor	
START Erasing FPGA on receiver slot 1	

	x
UPGRADE MASTER HUB	
START	
Sending start packet	





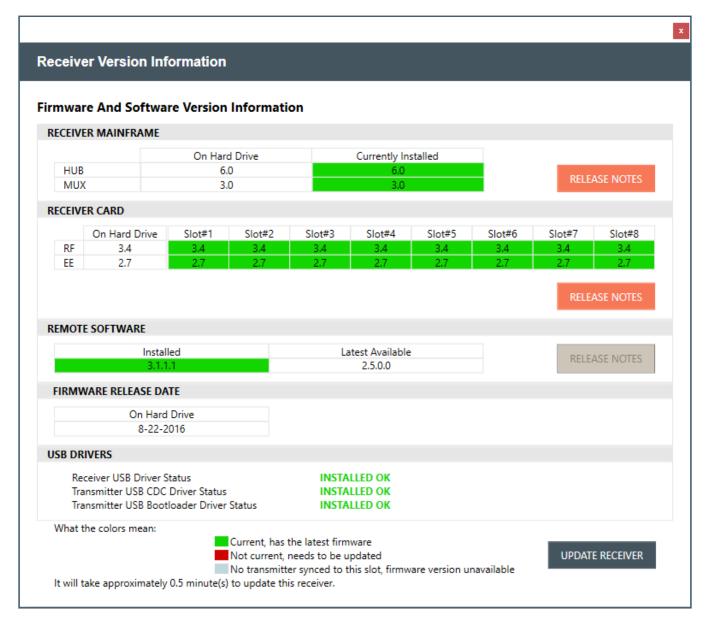
3
Upgrade Receiver EEPROM
CLOSE
Programing EEPROM is completed.
8192/8192 Bytes

		×
UPGRADE MASTER HUB		
	CLOSE	
	Updating is done!	

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

	2
UPGRADE SLAVE HUB	
	CLOSE
	Updating is done!

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].

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

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

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

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.

ansmitter ty	pe: Boundary		
	On Hard Drive	On Transmitter	and the second
HUB	5.7	5.0	and the second s
RF	4.1	4.0	RELEASE NOTES
EE	4.1	4.0	

4. Click [UPDATE TRANSMITTER].



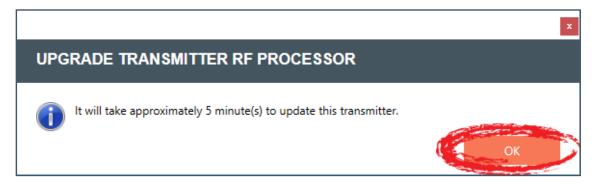
5. Follow prompts for the first update.

Upgrade Transmitter HUB
<ul> <li>Follow these steps to upgrade the Hub processor in the Transmitter: <ol> <li>Unplug USB cable from transmitter</li> <li>Slide transmitter power switch to OFF position.</li> <li>Hold down button SELECT</li> <li>Connect USB cable to transmitter</li> <li>When properly connected, button below will be enabled START (The OLED Display will NOT turn on in this mode)</li> <li>Release button SELECT</li> <li>Click the button START</li> </ol> </li> <li>Transmitter is now connected. Click START to begin update</li> <li>CLOSE</li> <li>HUB Programming Complete!</li> </ul>
0xfa00Erasing Done Programing 0xfffe

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

nsmitter ty	pe: Boundary		
	On Hard Drive	On Transmitter	
HUB	5.7	5.7	
RF	4.1	0.0	RELEASE NOTES
EE	4.1	4.0	

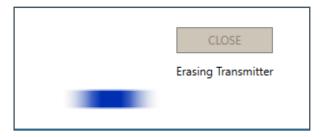
7. A window notifying you of the update time for the second update (may be RF Processor Upgrade) displays. Click [OK].



8. Click [START].



9. Wait for the update to complete.

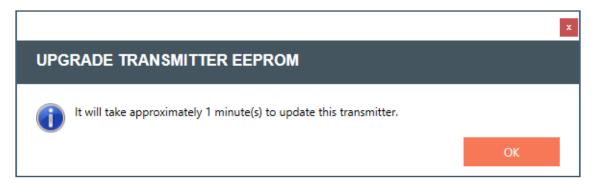


	CLOSE Programming Transmitter	
	4940/239621 Bytes	
	CLOSE	]
	Verifying Transmitter Programming	
Upgrade 1	Transmitter RF Processor	
	CLOSE Transmitter RF firmware update complete	

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

nsmitter ty	vpe: Boundary		
	On Hard Drive	On Transmitter	
HUB	5.7	5.7	
RF	4.1	4.1	RELEASE NOTES
EE	4.1	4.0	
hat the col	ors mean:		

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].

×
UPGRADE TRANSMITTER EEPROM
PROGRAM EEPROM
Transmitter info loaded. Click button to start PROGRAM EEPROM

13. Wait for the programming to complete.

x
UPGRADE TRANSMITTER EEPROM
PROGRAM EEPROM Programming, please wait
3040/8192 Bytes
UPGRADE TRANSMITTER EEPROM
CLOSE
EEPROM Programming complete
8192/8192 Bytes

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

	x
INFO	
Your transmitter firmware is up to date	ОК

The following are DIALOG 20 Transmitter update windows.

	Version Information		
landheld			
	On Hard Drive	On Transmitter	
HUB	0.7.2	0.6.11	RELEASE NOTES

	x
START	
	START

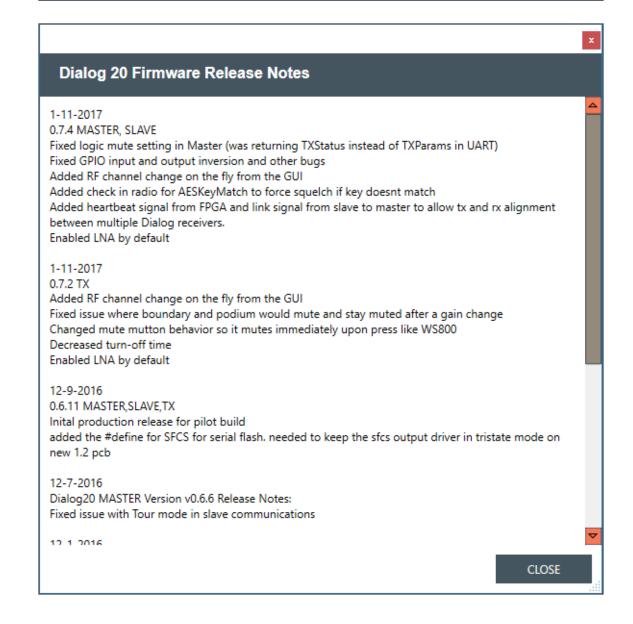
	x
UPGRADE TX HUB	
START	
Putting device to DFU mode	

	x
UPGRADE TX HUB	
START	
Sending start packet	

	x.
UPGRADE TX HUB	
	START
	Sending firmware image
9216/32336 bytes	

	×
UPGRADE TX HUB	
	CLOSE
	Updating is done!

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



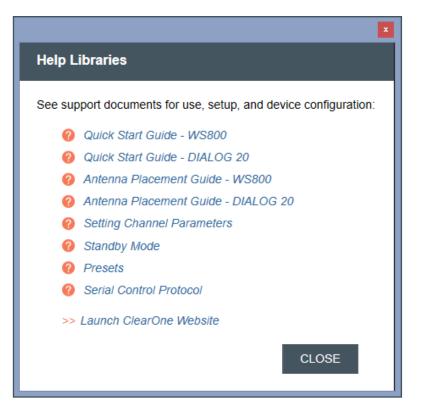
# **Help Libraries**

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

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



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



# **Exposure and Compliance**

#### **RF Exposure Information**

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

#### **RF** Compliance Information

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

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

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

Certified under FCC Part 74 and FCC Part 15. Certified by IC in Canada under RSS-123, RSS-102 and RSS-210.				
Receiver:	Transmitters:			
Receiver FCC ID: FBI-DIALOG20RX IC: 1970A-DIALOG20RX	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]

#### **CLEARONE CONTACTS**

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Sales Tel: 801.975.7200 e-mail: sales@clearone.com TechSupport Tel: 801.974.3760 e-mail: tech.support@clearone. com

Antenna Design Tel: 386.361.8134 e-mail: antenna.design@ clearone.com