

Wireless Headset Series

UHW-Series Under the Helmet
FHW-Series Over the Head

Operation Manual



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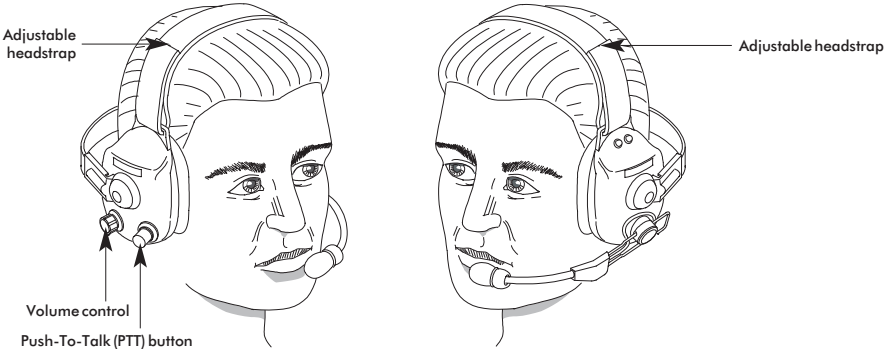


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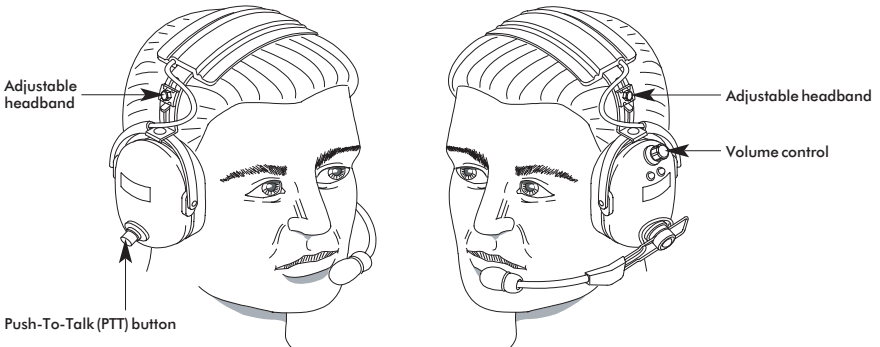
Introduction

The UHW/FHW series are highly reliable wireless communication headsets for fire and emergency truck operator applications. The UHW/FHW series provides secured, digitally encoded interference free communications. When operated as part of a wireless system, up to 50 headsets can operate interference free in close proximity to each other.

UH Under-the-Helmet Headsets



FH Over-the-Head Headsets



Proper Fit

When worn properly, this headset will provide significant hearing protection. If it is not worn properly, the headset's effectiveness in reducing harmful noise is severely compromised.

- The length or vertical fit of the headset ear dome is adjusted by the headband or head-strap. Adjust as necessary to achieve a fit that ensures the headset ear dome completely covers the ear.
- For maximum comfort, wear the headset as far back on the head as possible, while ensuring the ear dome still completely covers the ear. If discomfort is felt in the jawbone, you are wearing the headset too far forward.

Caution

This Firecom headset provides 24dB noise attenuation when properly fitted to the user and worn as instructed. Any modification to the hearing protector such as drilling holes in the dome, painting or reforming the headband spring, will negatively impact the hearing protector's performance and hearing damage could occur.

Federal law requires the following statements:

"Although hearing protectors can be recommended for protection against the harmful effects of impulsive noise, the Noise Reduction Rating (NRR) is based on the attenuation of continuous noise and may not be an accurate indicator of the protection attainable against impulsive noise such as gunfire."

"The level of noise entering a person's ear, when a hearing protector is worn as directed, is closely approximated by the difference between the A - weighted environmental noise level and the NRR.

Example

1. The environmental noise level as measured at the ear is 92dBA.
2. The NRR is 24dB.
3. The level of noise entering the ear is approximately equal to 92dB (A) – NRR or 68dB.

Caution

For noise environments dominated by frequencies below 500 Hz, the C - weighted environmental noise level should be used.

Always wear a hearing protector in areas that have been identified as high noise locations.

Headset Power Switch and Volume Control

A power switch is provided on the volume control. This control is located on the right ear dome on the UHW headsets, and on the left ear dome on the FHW headset. Volume should be set at a comfortably high audio level to optimize performance but not so high as to cause audio distortion and hearing discomfort.

Operation

The base station should be installed and powered up prior to operating the headset. If the headset has not been previously paired to the base station, refer to the "Pairing Section" for instructions. Turn the power switch on, the green LED will flash rapidly to indicate that the headset is attempting to link to the base. The link LED on the base station will also be flashing rapidly at this point. After approximately 5 seconds the headset will link to the base and the green LED will turn on steadily to indicate that the headset is linked to the base. The headset will also sound a one time double-beep on connection to the base. Once the connection is established, full duplex communication between the base station and the headset will become possible.

Out-of-Range Warning

All wireless headsets incorporate an out-of-range warning to warn the user against exceeding the coverage range of the headset. The headset will sound a 1 second cautionary beep every 10 seconds when the headset is at the fringes of the coverage range and before the headset goes completely out of range and loses its link to the base. The cautionary beep will stop if the user steps back into range from the base station.

Warning: Firecom recommends that the headset always be operated within the coverage range to ensure consistent and clear communications to ensure the safety of the crew and help them perform their duties in the safest and most effective manner.



Reconnect Feature

Should the headset go out of range and lose its link to the base station, the headset is capable of automatically reestablishing its link to the base within 10-15 seconds of the headset's coming back into range. However, if the headset is not able to reconnect to the base station within 5 minutes of losing its link, the headset will be timed out and powered down automatically. The user will then have to cycle power to the headset in order to reestablish the link to the base station.

LED Indicators

All headsets have one green and one red externally viewable LED indicator located on the left ear dome (same side as boom microphone).

These two LEDs operate as follow:

Unit Off, Charging:	Steady ON	Flashing Slow
Green LED	Fully Charged	
Red LED		Charging

Unit On:	Steady ON	Flashing Slow	Flashing Fast	3 Beeps Every 10 Minutes	6 Beeps Every Minute
Green LED	Connected to Base		Not Connected to Base		
Red LED		Low Battery	Very Low Battery		
Audible				Low Battery	Very Low Battery

Microphone Placement

Place the microphone in front of the mouth and no more than 1/8" away from the lips as shown in the diagram below. Placement of the microphone is critical for proper operation of the noise gating feature.

If the microphone is positioned incorrectly, you may experience a reduction or interruption in the audio and or deterioration in clarity of intercom and radio communication.

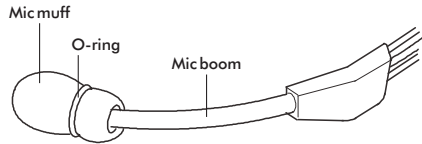


Mic Muffs

The headset microphone is covered with a washable, replaceable foam mic muff. This mic muff helps prevent the “pops” and “hisses” that can occur from speaking into a microphone that is close to the mouth.

To clean or replace the mic muff:

1. Remove the o-ring.
2. Slip the mic muff off the microphone.
3. At this time, you can decide whether to clean or replace the mic muff.



If you clean the mic muff, use a mild detergent, rinse it out well and let it dry completely before re-installing it on the microphone.

4. Slide the mic muff on the microphone.
5. Install the o-ring on the mic muff to secure it.

Replacement mic muffs may be ordered from Firecom.

Intercom Communication

Model-10; has a red momentary PTT button. The microphone is always live for intercom communication. Press and hold PTT to transmit over vehicle radio.

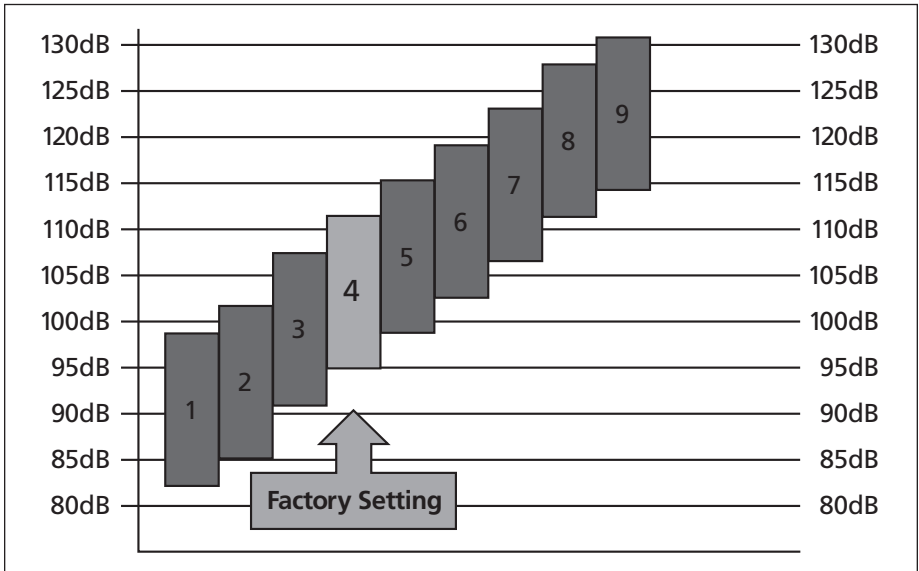
Model-20; has a black momentary PTT button. Press and hold PTT to activate the microphone for intercom communication. Radio transmitting is not possible with the -20 models.

Model-40; has a white momentary PTT button. Press and release PTT to activate the microphone for intercom communication. Radio transmitting is not possible with the -40 models.

Pairing Procedure

1. Press and hold the pairing button on the front panel of the base station for approximately 5-7 seconds until the yellow LED(s) on the front panel of the base station start flashing, indicating that the base station has entered pairing mode. Once the base station is placed in pairing mode, the user has approximately 15 seconds to place the headset in pairing mode.
2. Press and hold the PTT button, turn on power to the headset. After approximately 5 seconds, the green and red LEDs on the outside of the left ear dome will start flashing in a relatively fast alternating pattern. Release the PTT button.
3. Monitor the green and red LEDs on the left ear dome of the headset. After about 5-7 seconds, the alternating flashing pattern ends, the green LED will flash rapidly for two seconds and then the green and red LEDs resume normal operation (as stated in the section titled “LED Indicators”) to indicate that the headset is paired and linked to the base station. The respective LINK LED on the base station will illuminate steadily after flashing rapidly for two seconds to indicate that a link to the headset has been established.

Mic Gain Range



Headset Microphone Volume & Noise Gate Threshold Adjustment Procedure:

1. With the headset power off, hold down the PTT button.
2. Turn power on to the headset, release the PTT button within 3 seconds after the red LED turns off; the red LED will flash 3 consecutive times to indicate microphone adjustment mode is active.
3. Wait until the headset connects to its host base station.
4. Press the PTT button momentarily then release; the number of times the red LED flashes indicates the level of microphone volume and Noise Gate Threshold settings combination. The higher the number of flashes, the lower the microphone volume and the higher the Noise Gate Threshold. There are nine settings available depending on the average ambient noise levels as indicated in the graph above.
5. To test the selected setting, without exiting microphone adjustment mode, turn power off momentarily (a few seconds) to the headset, then turn it back on.
6. Test the microphone to see if you have chosen the desired microphone sensitivity/Noise Gate Threshold combination. If not, repeat steps 4-6.
7. To save the desired setting and exit adjustment mode, turn headset power off, wait until the headset disconnects from the base station.
8. Turn headset power on without holding the PTT button, the headset will enter normal operating mode and connect to the base station.

Charging

Ensure that the headset is fully charged prior to operating for the first time.

Wireless headsets have a charger jack located on the right ear dome. A charger cable assembly is provided with the headset. The unterminated end of the charger cable shall be wired to a fused slot in the vehicle's fuse box using the fuse holder assembly and 500mA fuse supplied. Plug the terminated end of the charger cable into the headset charger jack (refer to the "LED Indicators" section for proper operation of the battery charging red LED indicator).

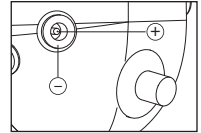
NOTICE: FUSE ASSEMBLY INSTALLATION

Firecom fuse holder is to be installed within 18" from the battery source in-line with your charging cable assembly when power from a vehicle is used for recharging your wireless product.

Only use a 500mA fuse (supplied) with the charging cable assembly.

NOTES:

1. **Observe correct polarity when connecting the charger cable to 12V from the vehicle. Connect the white striped black wire to +12V and the solid black wire to GND. This will result in a positive center terminal of the 2.1mm charger jack as shown in the illustration.**



2. **Firecom does not recommend operating the headset while the headset is being charged. It is recommended that the headset be charged only when it's not being operated and with the power switch on the headset turned off.**

Firecom recommends charging the wireless headset using the supplied 9VDC regulated wall adapter, when possible.



WARNING! The use of an unregulated wall adapter will damage the charging circuit and components and will void the warranty.

Reset

In rare cases, resetting the headset may become necessary.

With the power switch turned on, plug the charger plug into the charger jack on the right ear dome. The system will reset, both red and green LEDs will illuminate for approximately two seconds after which the headset will resume normal operation.

NOTES:

1. **In case the battery is deeply discharged, no LED indication will be possible until the battery is partly charged to an operable voltage level.**
2. **Plugging the charger plug into the headset at anytime will cause the headset to reset even when the headset is linked to a base station. Resetting a connected headset will result in losing the link for about 10-12 second**

Care and Maintenance

To ensure hearing protection and user safety, repairs or replacement of the headset should be immediately sought if you see any defect such as holes or cracks in the ear domes, ear seals or headband.

Body oils, perspiration and hair care products will, over time, affect the ear seals. Inspect the ear seals frequently for signs of wear and replace at approximate 6 month intervals along with the mic muff (cover).

Do not remove the foam speaker cover



Never remove the charging cable from the headset by pulling on the cord. The headset should be unplugged at the jack location by pulling the charger plug from the jack.

Wipe headset and ear seals with a mild soap and water mixture only. **NEVER IMMERSE ANY PART OF THE HEADSET IN WATER.** Although the microphone is water resistant, to ensure a longer life, keep the microphone away from moisture, when possible.

Do not store in direct sunlight or in areas of high temperature.

Specifications

Headset

Sensitivity	104dB re 20 uPa @ 1000 Hz, 1 mW
Frequency Response	300Hz - 3.4 KHz, +/- 3dB
Impedance	32 ohms nominal per speaker
Weight (FHW-Series)	19.50z
Weight (UHW-Series)	17.80z

Microphone

Frequency Response	Optimized for speech clarity and noise reduction
Max. Amb. Noise Level	125dB SPL re 20 uPa
MIC Sensitivity	-44 +/- 5db, 0dB=1v/Pa
DC Bias	Internally biased
Frequency range	300Hz - 3.4KHz
Noise Canceling	approx. 6.25 db/octave from 3.4 KHz down to 300 Hz
S/N ratio	60db minimum
Impedance	Internally matched

RF

- Range: 1500' open field.
- Digital encoding for secured communications.
- Interference free communications for up to 50 headsets operating in close proximity.
- Immunity to interference from other communications devices operating in the entire frequency spectrum from 30 MHz - 18 GHz.

Power

- 3.7V rechargeable lithium polymer battery
- >10 hour battery life when operating
- Over voltage, under voltage, over current and over temperature protection
- Charge source: 12V nominal (9V-16V), 150mA minimum
- Charge time: 5 hours at 9V

Environmental

- Operating temperature -10 to +70°C
- Storage temperature -25 to +85°C
- Meets standards SAE J1455 and J1113
- Chemical resistance to corrosion and humidity per MIL-STD-810

FCC/IC Compliance

This device complies with FCC Part 15 Rules and IC RSS-213 Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference that may be received, including interference that may cause undesired operation.

FCC/IC RF Exposure Warning

- This product complies with FCC radiation exposure limits set forth for an uncontrolled environment.
- This product may not be collocated or operated in conjunction with any other antenna or transmitter.
- This headset has been tested and meets the FCC RF exposure guidelines. Max. SAR is 0.003 W/kg.

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

Warranty

Two-Year Limited Warranty to the Original Purchaser

Sonetics Corporation warrants to the original purchaser of its products, that they will be free from defects in materials and workmanship, under normal and proper use, for the period of two years from date of purchase. Sonetics Corporation will repair or replace, at its option, any parts showing factory defects during this warranty period, subject to the following provisions. This warranty applies only to a new product which has been sold through authorized channels of distribution. All work under warranty must be performed by Sonetics Corporation. All returned products must be shipped to our address, freight prepaid, accompanied by a dated proof of purchase. The purchaser voids this warranty if he, she or others attempt to repair, service or alter the product in any way. This warranty does not apply in the event of accident, abuse, improper installation, unauthorized repair, tampering, modification, fire, flood, collision, or other damage from external sources, including damage which is caused by user replaceable parts (leaking batteries, etc.). This warranty does not extend to any other equipment or apparatus to which this product may be attached or connected. The foregoing is your sole remedy for failure in service or defects. Sonetics Corporation shall not be liable under this or any implied warranty for incidental or consequential damages, nor for any installation or removal costs or other service fees. This warranty is in lieu of all other warranties, express or implied, including the warranty of merchantability or fitness of use, which are hereby excluded. To the extent that this exclusion is not legally enforceable, the duration of such implied warranties shall be limited to two years from date of purchase. No suit for breach of express or implied warranty may be brought after two years from date of purchase.



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This document is part number 600-0074-00 RevD.