



## FL Series V2 Headsets DECT7, Bluetooth, and Electronic Headsets

Manual



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## Overview

The Flightcom FL Series Electronic Headset protects you from dangerous noise while keeping other audio at a comfortable listening level. It protects your hearing without sacrificing your safety or situational awareness. You can hear alarms, music, or even have a face-to-face conversation while still being protected. Simultaneous integration with two-way radios, cell phones, and MP3 players is available via wired and optional Bluetooth inputs. DECT7 models extend conference-call-like team communication up to 1,600 feet (line of sight). The rugged and comfortable design ensures this headset is ready for tough work environments.

## Model Matrix

	FL651C	FL652C	FL653DL FL653H	FL657C	FL659C FL659AM
<b>Listen Through</b>	✓	✓	✓	✓	✓
<b>Wired AUX</b>	✓	✓	✓	✓	✓
<b>Wireless Bluetooth</b>	✗	✗	✗	✗	✓
<b>Wireless DECT7</b>	✓	✓	✓	✓	✓

✓ = Included

✗ = Not Available

## Replacement Parts

*Silicone Ruggedizers*

*Earseals*

*Mic Muffs*

*Head Bands and Head Straps*

*Batteries*

*Speaker Covers*

## Accessories (not included)

*Hard Hat Adaptors*

*Auxiliary PR Radio Interface* - Connect to any portable two-way radio and many other devices

*Silicone Ruggedizers* in a variety of colors to meet your team's needs

*Earseals* to enhance comfort

*Worldwide Power Adaptor*

*Heavy Duty DC Charging Cable*

## Features

### Common Features, All Models

#### Adjustable Volume Control

The Headset has a user adjustable volume control. For convenience, the Headset will remember the last setting each time it is turned on.

#### Automatic Loud Noise Suppression

The Headset will limit high impulse sounds, such as gun shots, from being transmitted to the user when using the Stereo Listen Through.

#### Convertible Headband

The Headset is user configurable for overhead, behind-head, or hard hat (with hard hat accessory). This gives the user the ability to change the way they use the Headset over time without needing to invest in a new one.

#### Multi-Color Ruggedizers

The ruggedizers offer additional abrasion and impact protection. They are available in many colors (sold separately) to give the user the ability to define teams, roles, or enhance safety.

#### Extreme Environmental Design

The Headset has an IP-66 dust and water egress rating. Even when worn in heavy rain, the Headset will still be useable. Operation has been verified to -22F / -30C for extreme cold weather environments.

### Flexible Charging

An AC adaptor and DC automotive charging cable are included to allow charging in most environments.

### Hearing Protection

The Headset conforms to many hearing protection standards, keeping the user safe from harmful noise.

### In Headset Charging

The Headset has charging circuitry built in allowing it to be charged from multiple sources. These include the supplied AC wall adaptor and multiple DC charging options from a variety of sources including most cars, trucks, and aircraft. Refer to specification for charging voltages and power requirements.

### Light Weight

Through the use of the latest weight saving technologies, Flightcom is able to deliver a wireless headset that is lighter than many wired headsets.

### Listen Through Situational Awareness

The Headset has two listen through microphones to give the user stereo situational awareness. The microphones are placed on the forward edge of the headset to give the user the perception of sounds in the front versus from the rear. The listen through has a programmable volume level and limits all sounds the user hears to 82dB.

### Long Battery Life

With over 24 hours of battery life on DECT7 Headsets, and 44 hours of battery life on those without, the Headset works whenever the user needs it.

### Multimode Auto Shutdown

To extend the life of the batteries, the Headset will automatically shut down.

**Bluetooth and DECT7 Wireless Shutdown:** If a DECT wireless connection has been established, the Headset will power down after 5 minutes if the connection is lost.

**Non-Activity Shutdown:** Headsets shut down after 1 hour if not used.

The headset will announce when it is about to shut down. Shutdown may be cancelled by pressing any button.

### Two Stage Low Battery Alert

The Electronic Headset has a two-stage low battery alert system to notify the user of a depleted battery before communications are lost.

### USB Programmable

Using their USB port, Headsets can be configured using a Windows PC. Many of the features may be customized and saved. Refer to the Sonetics Headset Software for details.

### User Replaceable Battery

The Electronic Headset uses a replaceable battery. This allows the user to replace the battery at end-of-life and have spares in the field for extended operation times. Only Sonetics batteries should be used.

### Voice Prompts

Voice prompts allows the user to make all adjustments without removing the headset. There is no need to look for lights, text, or knob positions. The voice prompts automatically adjust volume to ensure intelligibility in changing environments.

### Wired Line-in

The wired line-in is used to interface with cell phones and hand held radios. This gives the user more flexibility in their communication needs. The wired connection features a mono input and mono PTT output. See your Flightcom dealer for accessories to match your equipment.

## Common Features, Communication Headsets

*Not available on the FL652C headset.*

### Auto-Leveling Microphone

The Headset automatically detects the voice of the user against noise in the background. This gives the headset an automatic VOX (noise gate or squelch) that needs no adjustment when transitioning from areas of differing noise levels.

### Noise Cancelling Microphone

Noise cancelling microphones remove background noise right at the mic element. This lets listeners hear the person talking and not the background noise.

### Radio PTT

The Headset interfaces with any two-way portable radio using the wired AUX input or wireless DECT connection. When there is a wireless DECT connection, the PTT signal is passed to the wireless DECT7 Wireless Base Station and onto the Digital Intercom. Otherwise, the PTT signal is passed to the wired AUX input.

## Wireless Bluetooth® Technology

Available on the FL659C & FL659AM headsets.

Bluetooth enabled Wireless Headsets can connect with other wireless Bluetooth enabled devices. This lets you connect an additional audio or communications device. Cell phones, mp3 players, mobile radios, computers, etc. expand your communications potential.

### A2DP Audio Streaming

The Headset features integrated A2DP streaming audio functionality, so you can listen to music or podcasts, and hear turn-by-turn direction information from a GPS application on your phone. You can also use this feature to stream audio from a Bluetooth-enabled computer to the headset.

## Wireless DECT7 Communications

The Flightcom Wireless DECT7 Headsets enable full duplex, conference-call-like communications to others on the same channel. The Headsets will connect to stand alone Flightcom Wireless Base Stations or Flightcom IP-DECT7 wireless systems. A DECT7 network gives up to 1600ft of range (line of sight) from its wireless base with interference free, digitally encrypted communications.

### Backwards Compatibility

Flightcom Wireless Headsets are backwards compatible with Flightcom first generation wireless DECT, and DECT6 Wireless Base Stations with minimal loss in functionality.

### Broadcast Mode

The Headset may be paired into a listen only mode of operation, reducing power consumption considerably. This also allows many more headsets to be connected to a Wireless Base Station simultaneously. Pressing the Radio PTT button allows the headset to momentarily talk on any available slot. A tone will let the user know when they can talk. After talking, there will be a slight delay when other users cannot be heard. Refer to the Wireless Base Station manual for details.

### Dual Dome Antenna Design

Each dome has a separate DECT7 antenna using diversity switching to lock onto the best signal. The user never needs to worry about head position relative to the wireless base. The best possible connection is delivered at all times.

### Radio PTT or Intercom Only Selection

The Headset may be configured to send a transmit signal to radios connected via a DECT7 Wireless Base Station or Intercom. The user can transmit over multiple radios depending on the configuration.

### Multi-Channel System

Depending on the wireless DECT7 Wireless Base Station or IP-DECT7 system, the user may have access to multiple channels. This allows large teams to have separate channels for different activities and enables users to change channels and become one communication team. Refer to the Wireless Base Station manual for configuration details.

### Out of Range Warning

The user is notified when DECT7 signal is weak, or when it goes out of range.

### Proximity Pairing

To enhance security, the Wireless Base Station will only pair to wireless DECT7 units in close proximity. This adds another layer of protection for users.

### Signal Strength Reporting

The Headset may be placed into a field diagnostic mode to detect signal strength at The Headset. This can be used to optimize placement of ComHubs or Base Stations.

### Wide Band Audio

Wireless DECT7 communications are transmitted in a high definition wide band audio format. This gives better sound quality, greater intelligibility, and improves with voice activated control systems. The Headset can also be used in narrow band if necessary.

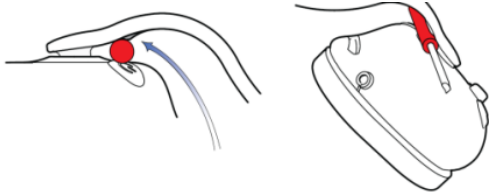
## Configuring the Headset

The Flightcom Electronic Headset may be set up for use in overhead, under-helmet, or hard hat (sold separately) configurations. Different headbands are attached through a secure snap joint on the side of the ear domes. It keeps the ear dome correctly oriented while providing full freedom of movement, allowing the dome to seat comfortably against the users head.

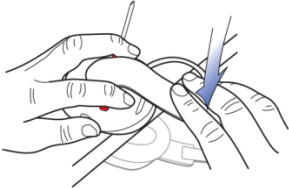
### Headband Removal

Tools Required: Sonetics Screwdriver

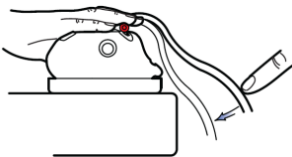
1. Place the handle of your Sonetics Screwdriver between the headband and the dome. Make sure the handle is behind the notch on the inside of the headband.



2. Use one hand to hold the dome on a flat surface



3. Gently push with the headband with the other hand.



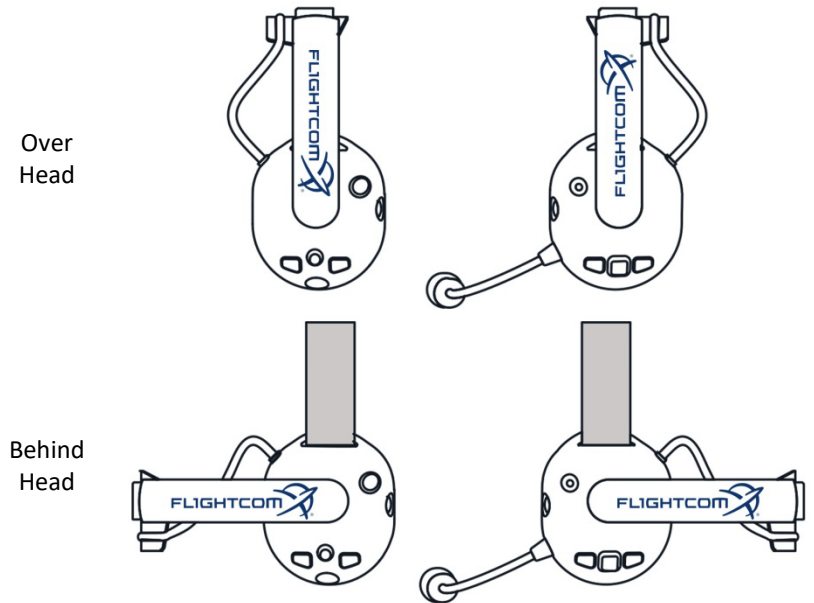
4. Route the headband cable through the headband as shown.



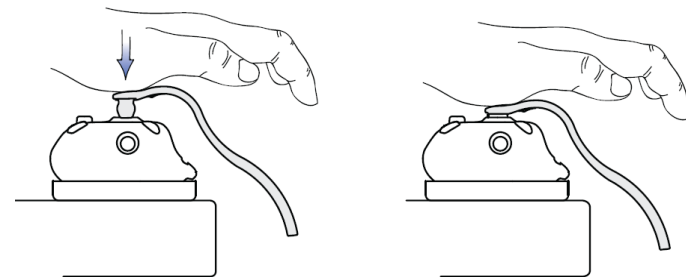
## Headband Installation

✂ Tools Required: None

1. Align the headband with the domes as shown.



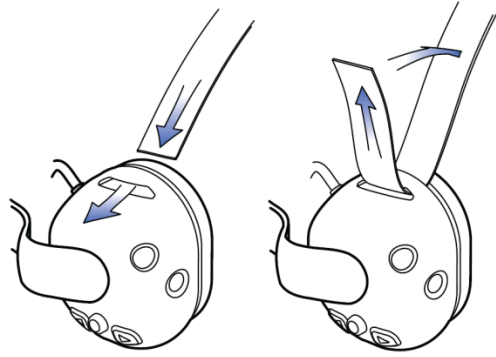
2. Place the Dome onto a flat surface.
3. Press Down on the headband until the ball joint snaps into place.



## Behind Head Headstrap Installation

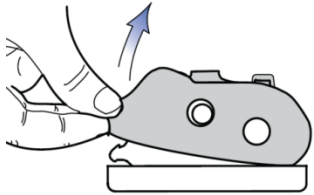
✘ Tools Required: None

1. Insert the strap at dome opening.
2. Affix the strap using the hook and loop.

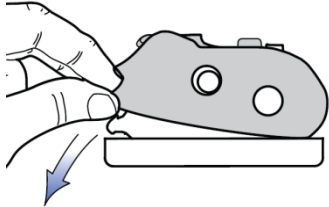


## Replacing the Ruggedizer

1. [Remove the headband](#)
2. Peel back the ruggedizer



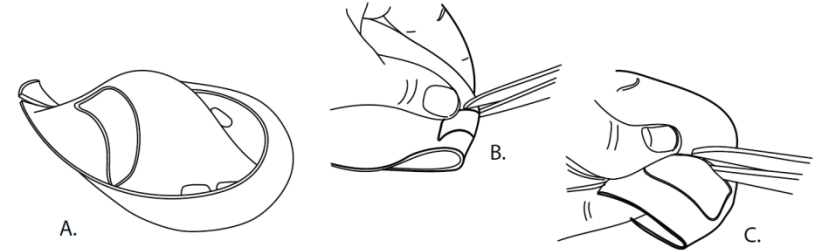
3. Replace the ruggedizer. Note the left and right.



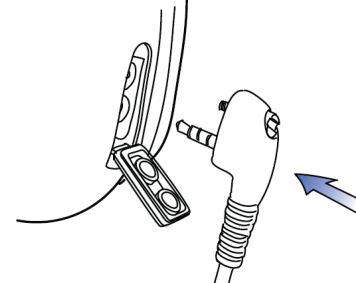
## Connecting a Two-Way Radio

✘ Tools Required: Scissors, Sonetics screwdriver

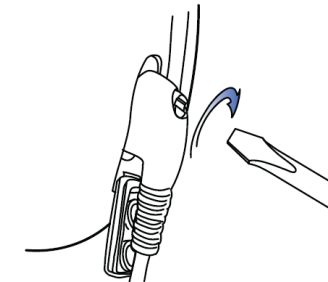
1. [Remove the left dome ruggedizer](#). (with the microphone boom attached)
2. Cut the along the groove on the underside of the ruggedizer.



3. [Replace the ruggedizer](#).
4. Open the Radio Cover and plug in the Sonetics PR Radio Adaptor.



5. Screw the adaptor into place.



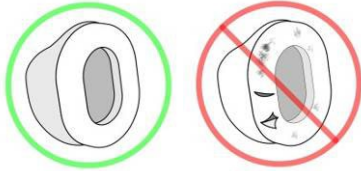
6. Connect the Sonetics PR Radio Adaptor to the Radio.

## Fitting

Proper fitment is required to achieve the rated hearing protection levels.

### Overhead Fitment

1. Inspect



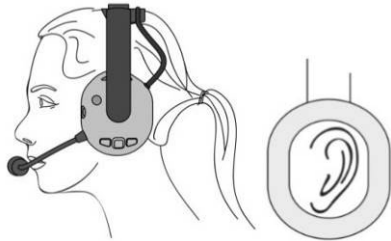
Ensure no damage to the earseals or the Headset

2. Expand



Open headband to full width

3. Place



Place cups over ears, without sitting on any part of the ear

Position microphone no more than 1/8" from lips

4. Adjust



Adjust headband to sit gently on top of your head

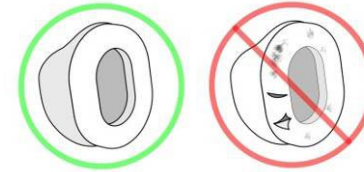
5. Seal



Test seal by pressing against your head and listening for a change in sound level

### Behind Head Fitment

1. Inspect



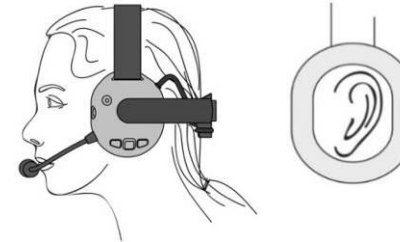
Ensure no damage to the earseals or the Headset

2. Expand



Open headband to full width

3. Place



Place cups over ears, without sitting on any part of the ear

Position microphone no more than 1/8" from lips

4. Adjust



Adjust headband to sit gently behind your head

5. Seal



Test seal by pressing against your head and listening for a change in sound level



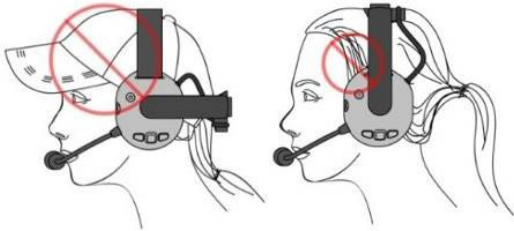
## Fitment Warnings

### Improper Placement and Adjustment



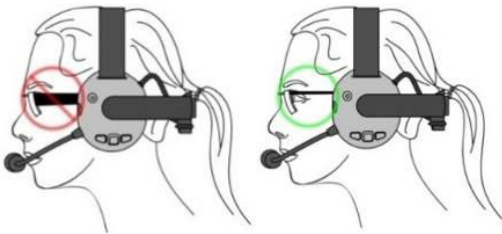
### Obstructions

Ensure headwear and hair does not cause gap in the earseal.



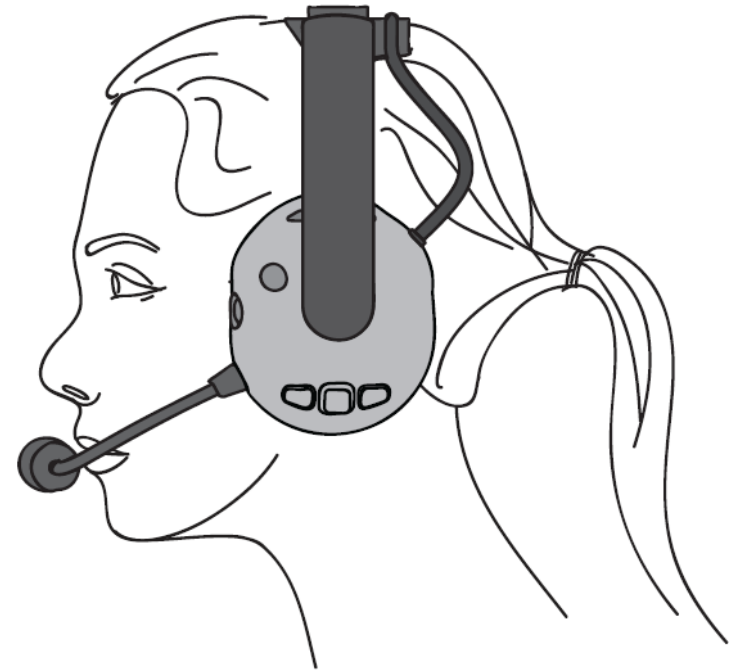
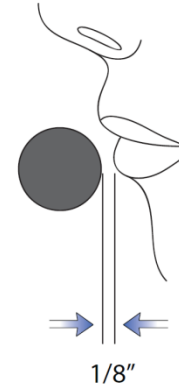
### Glasses

Ensure Glasses do not cause a gap in the earseal.



## Microphone Placement

To optimize speech, a noise cancelling microphone is used. This type of microphone is designed to enhance sounds from very close, while reducing sounds from afar. Ensure proper placement for best results.



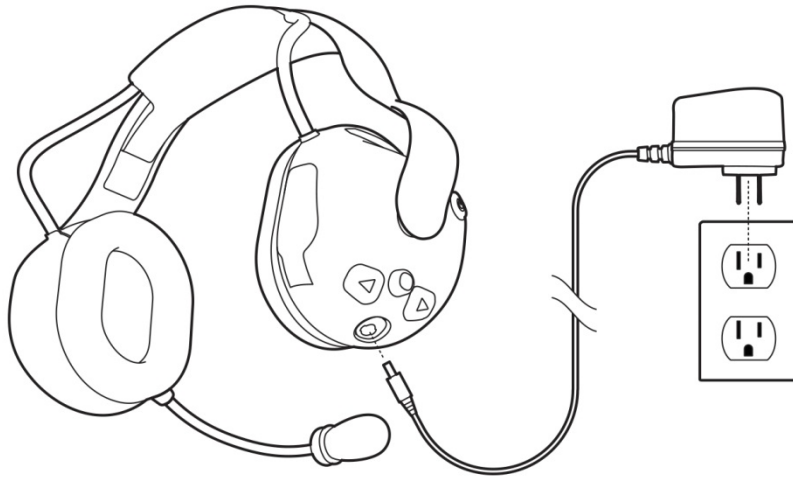
## Charging

The Flightcom Electronic Headsets use a barrel charging jack with the connections shown below.

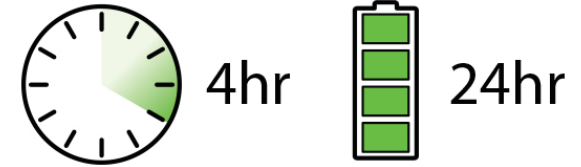


### Wall Adapter Charging

Only charge the Headset using the supplied 12VDC regulated wall adapter.



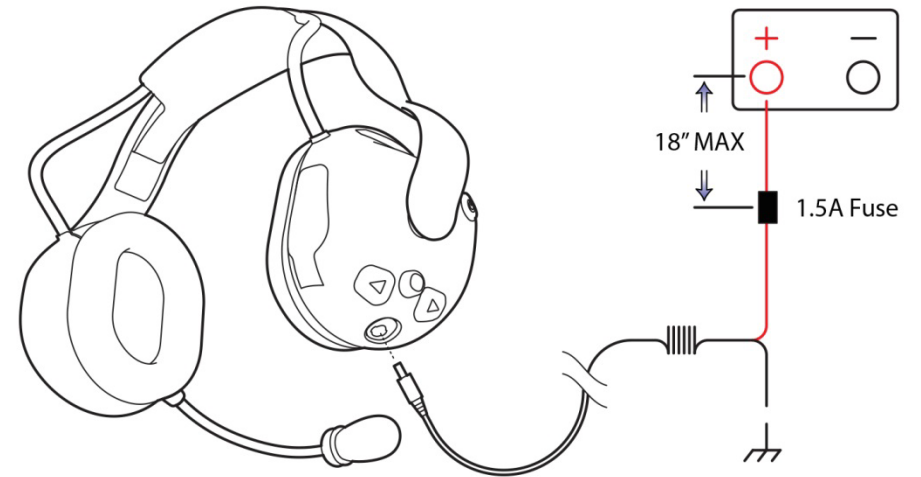
**⚠ WARNING: Using unregulated wall adapters will damage the Headset and void the warranty.**



### Vehicle Charging

Connect the **RED** wire to +12VDC and the **BLACK** wire to battery chassis ground.

Install the fuse no further than 18" from the battery.



**⚠ WARNING: Only replace fuse with the same type, 1.5A AGU.**  
**⚠ WARNING: Voltages exceeding the Headset charging specification will damage the Headset. Verify the Headset voltage specification to the vehicle battery and charging system specifications.**

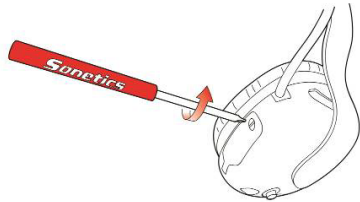
## Battery Replacement

Sonetics Electronic Headsets use a Lithium Ion battery. Sonetics batteries are the only batteries that have been tested and verified to operate correctly with the Headset. Use only Sonetics approved batteries (Sonetics part #320-0070-00). Use of batteries from other sources will void your warranty.

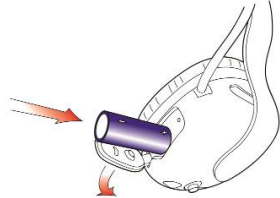
**⚠ WARNING: Use only Sonetics approved batteries.**

✂ Tools Required: Sonetics Screwdriver (Flat Head Screwdriver)

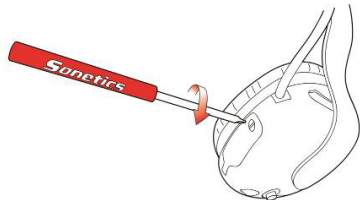
1. Pull back the right ruggedizer if the Headset has one installed.
2. Open the battery door on the right dome using the screwdriver.



3. Remove the battery, and recycle or discard per local laws. Refer to [Rechargeable Battery Information](#).
4. Insert the replacement battery, positive end first.



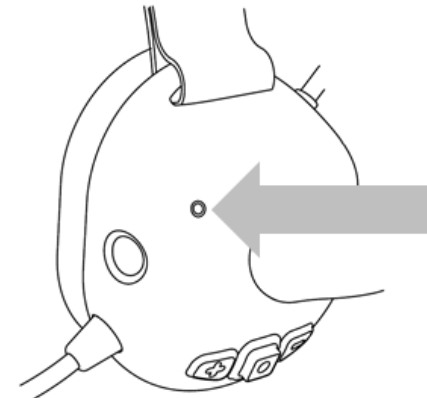
5. Close the battery door and tighten the screw.



6. Replace the ruggedizer if installed.

## LED Indications

The Flightcom Electronic Headset uses a multicolor LED indicator to give additional information on the exterior of the Headset. The table below describes the behavior while charging or in use.

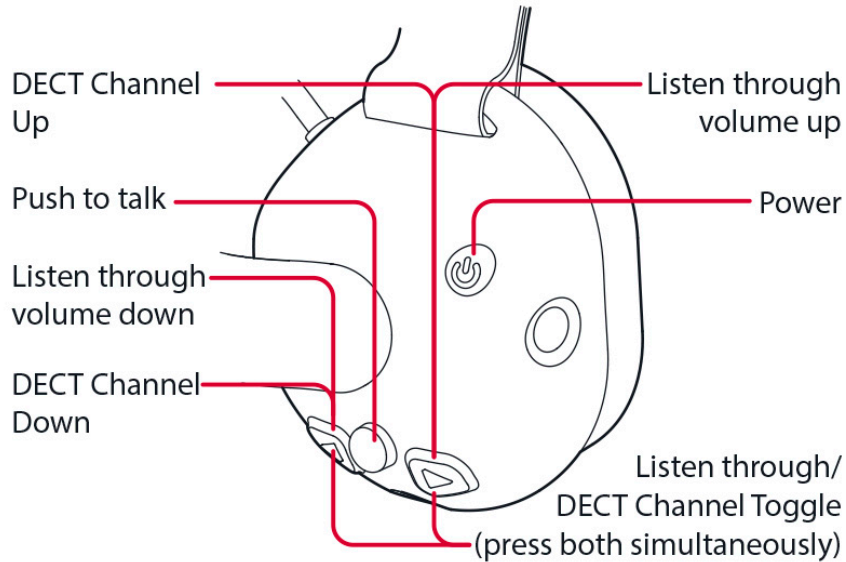


Charging	Non-Charging	Function
	<b>Red Flash</b> ● ● ● ●	Headset On
	<b>Blue Flash</b> ● ● ● ●	Bluetooth® Connection Established and in progress
	<b>Red/Green</b> ● ● ● ●	Headset in DECT pairing mode
	<b>Green Flash</b> ● ● ● ●	DECT Connection Established and in progress
	<b>Blue/Green</b> ● ● ● ● ● ● ● ●	Both Bluetooth and DECT connections Established and in progress
	<b>Flash</b> ● ● ● ● Led color will vary Depending on connection type	<b>Battery Level</b> ● ● ● ● = Battery >75% ● ● ● = Battery 50-75% ● ● = Battery 25-50% ● = Battery <25%
<b>Red Solid</b>		Charging
<b>Green Solid</b>		Fully Charged

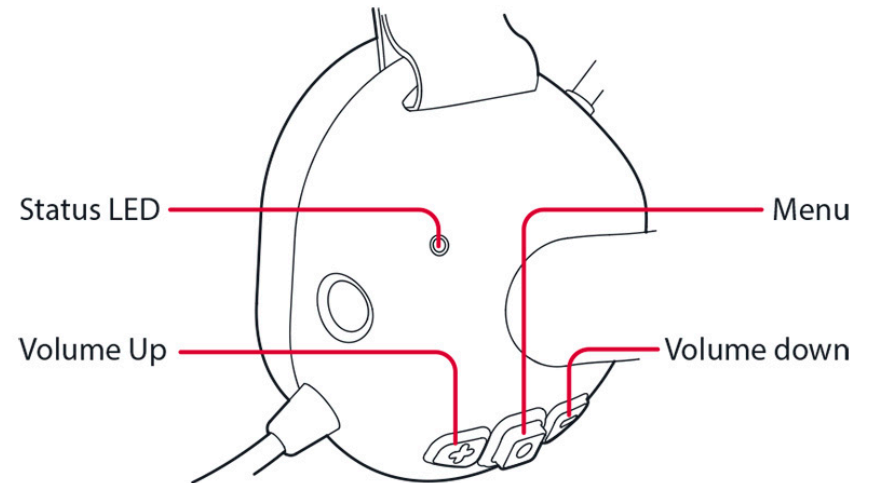
# Settings & Operation

## Buttons


### Right Side




### Left Side





### Turn On

Press and briefly hold the power  button. You will hear the welcome message and the LED on the right hand side of the unit will begin to flash periodically.



### Turn Off



Press and briefly hold the power  button. You will hear the Headset powering down message and the LED will turn off.

### Adjusting the Main Volume

Press the plus  or minus  buttons on the left-hand side of the Headset.

### Adjusting the Listen Through Volume / DECT7 Channel Select

Press the forward  or back  button on the right-hand side of the Headset.

Pressing the forward  and back  buttons simultaneously will toggle between listen through and DECT7 Channel (if the Headset has a DECT7 connection).

## Advanced Menu

The Advanced Menu is to set-up and configure the Headset for use. Caution must be taken with these adjustments, as they change the operational characteristics of the Headset. When in the menu system, all functions except PTT and Power are locked out.

### To Enter the Advanced Menu

1. Turn the headset off.
2. Simultaneously press and hold the forward ►, back ◀, and Power 🔌 buttons until you hear *“Advanced Menu”*.

### To Adjust Advanced Menu settings

1. Enter the Advanced Menu.
2. Repeatedly press the menu ◻ button until you hear your setting.
3. Press either the plus + or minus – to cycle through the options.

### To Exit the Advanced Menu

1. Press the forward ►, PTT ○, or back ◀ button or wait 30 seconds to automatically exit.

## Radio & Intercom Function

Sets the function of the PTT and Intercom.

**Radio Transmit:** For Radio PTT, when the Headset has a DECT connection, the PTT will activate only the DECT Radio wireless connection. When the Headset does not have a DECT connection, the PTT will activate the AUX Radio wired connection.

**Intercom:** This configures how the PTT and Noise Gate interact with each other while a person is talking with their local wireless team. If you can hear yourself through the side tone, others can hear you.

Factory Setting	Options:
<b>“Radio VOX”: Radio Transmit on PTT ○, Hands Free Intercom</b>	<ul style="list-style-type: none"> <li>• <i>“Radio VOX”</i>: Radio Transmit on PTT ○, Hands Free Intercom</li> <li>• <i>“Radio PTT”</i>: Radio Transmit on PTT ○, Push to Talk Intercom</li> <li>• <i>“Intercom VOX”</i>: Hands Free Intercom only</li> <li>• <i>“Intercom PTT”</i>: ○ Push to Talk Intercom only</li> <li>• <i>“Intercom Toggle”</i>: ○ Toggle to Talk Intercom only</li> </ul>

## Version Number (“Version 6”)

Indicates what firmware version your headset is running.

## DECT Bandwidth (“DECT Wide”)

Factory Setting	Options:
<i>“DECT Wide”</i>	<ul style="list-style-type: none"> <li>• <i>“DECT Wide”</i> – Better sound quality.</li> <li>• <i>“DECT Narrow”</i> – Better resistance to interference.</li> </ul>

## “Radio On” or “Radio Off”

Enabling this setting makes the headset read out RSSI (Received Signal Strength Indicator) numbers that tell you how strong the connection to The Base Station or ComHub is. This can be used to improve system installations.

## Mic Sensitivity

The Mic sensitivity may be configured into multiple modes of operation to tailor to the user’s application. To access Mic settings, use the Advanced Menu, or press the Forward Arrow and the Plus Arrow simultaneously.

- To turn on the microphone, use “Mic ON”. This disables the Mic noise gate completely. A whisper will be heard by all.
- “Mic Auto” settings are automatic noise gates with increasing sensitivities.
- “Mic XX” settings are for stable SPL environments of increasing volume.


Factory Setting	Options:
<i>“Mic Auto 1”</i>	<ul style="list-style-type: none"> <li>• <i>“Mic On”</i> (No Noise Gate)</li> <li>• <i>“Mic Auto 1”</i> (Highest Sensitivity Automatic Noise Gate)</li> <li>• <i>“Mic Auto 2”</i></li> <li>• <i>“Mic Auto 3”</i> (Lowest Sensitivity Automatic Noise Gate)</li> <li>• <i>“Mic 80”</i> (Noise Gate set to 80dB Environment)</li> <li>• <i>“Mic 90”</i> (Noise Gate set to 90dB Environment)</li> <li>• <i>“Mic 95”</i> (Noise Gate set to 90dB Environment)</li> <li>• <i>“Mic 100”</i> (Noise Gate set to 100dB Environment)</li> <li>• <i>“Mic 110”</i> (Noise Gate set to 110dB Environment)</li> </ul>

## Wireless Bluetooth®

### To create a new Bluetooth pairing

1. Turn off the Headset, and then turn it back on.
2. The Headset will enter Bluetooth pairing mode for 10 minutes.
3. Enter connectivity options on your Bluetooth device and search for new devices. Once the search is complete select Sonetics-HS##. If prompted for a password, enter four zeros (0000).

### To answer or hang up a call

Quickly press and release the menu  button.








## Wireless DECT7

DECT7 headsets have the ability to use the Flightcom DECT, DECT6, DECT7 and IP-DECT7 wireless bases for communication. Protected regional frequencies in each region ensure interference free operation.

### Pairing a DECT7 Headset

DECT7 Wireless Headsets use a semi-permanent link to a DECT7 Base Station or IP-DECT7 system. No additional steps are required once a Headset has been paired. Each time thereafter, the Headset will remember the Wireless Base Station and automatically reconnect.

### To Create a New DECT Pairing



1. Turn off the Headset.
2. Put the Wireless Base Station into Pairing Mode.
3. Hold down the PTT  and power  buttons to turn on the Headset.
4. Keep holding the PTT  and Power  buttons until the LED begins to flash Red/Green .
5. Release the PTT .
6. If successful, the LED will begin to flash Green .
7. If not, repeat all steps.

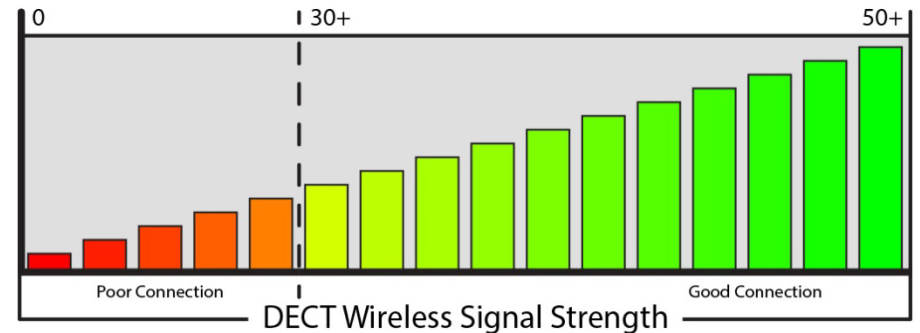
To erase a DECT pairing, follow the pairing sequence above without putting the Wireless Base Station into pairing mode.

## DECT Signal Strength

### To use signal strength reporting

1. Make sure your headset has a DECT wireless connection.
2. Enter the Advanced Menu

3. Use the menu button to scroll through settings until you hear "Radio Off".
4. Use the  or minus  buttons to change the setting to "Radio On".
5. If the headset has a DECT connection, it will announce the signal strength every 10 seconds. If no DECT connection is present, there will be no announcement.



To exit, turn off the Headset.

## Quick Launch

Most menu items are available directly via a series of buttons. Two buttons in the same row requires both buttons to be pressed.

Action	Button						
	⏻	-	□	+	◀	○	▶
Power On/Off	●						
Volume Up				●			
Volume Down		●					
Radio PTT						●	
Listen Through / DECT7 Channel Select Toggle					●		●
Listen Through Up							●
Listen Through Down					●		
DECT7 Channel Up							●
DECT7 Channel Down					●		
Bluetooth Answer			Short				
Bluetooth Hang-up			Short				
Advanced Menu (available at startup only)	Long				Long		Long
DECT Pairing	Long					Long	
Mic level				●			●

● = Press & Release

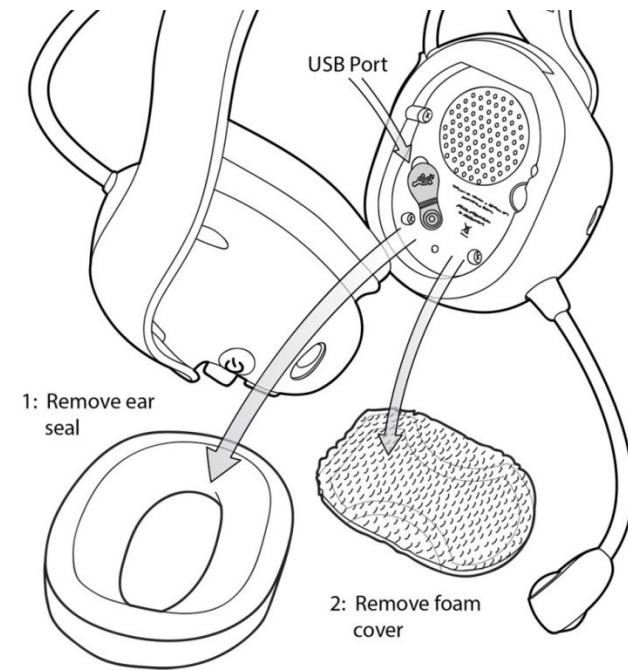
Short = Short Press & Release, <3 seconds

Long = Long Press, >3 seconds

## PC Programming

All Headsets have a USB port located inside the left dome. A Windows PC with the Sonetics Configurator software installed is required to adjust headset features. Refer to the software for additional information.

### Locating the USB Port



### Installation of Sonetics Configurator Software for Windows

1. Go to [flightcom.net/firmware](http://flightcom.net/firmware).
2. Download and install the software for the Headset.
3. Plug in the USB cable from the Headset to the computer.
4. Open the software.
5. Follow the directions of the configurator software.

## Care and Maintenance

- Inspect your ear seals and mic muff frequently for wear. If you see any defect such as holes or cracks in the ear domes, ear seals, or headband, the Headset should be immediately repaired or replaced.
- Wipe Headset and ear seals with a mild soap and water mixture only. The foam mic muff may be removed and cleaned using a mild detergent, or replaced by ordering from Flightcom.

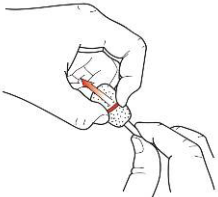
**⚠ WARNING: Do not store the Headset in high temperature environments or direct sunlight.**

### Mic Muff Replacement

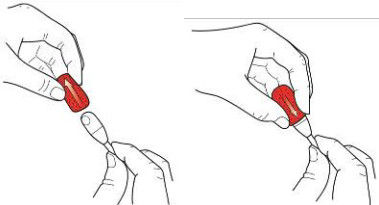
Replace the microphone windscreen every 3 months for optimal performance.

To replace the Mic Muff:

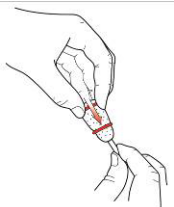
1. Remove the old mic muff and O-ring holding the mic muff in place.



2. Place the new mic muff over the microphone.



3. Slide the O-ring over the mic muff to hold it in place on the microphone as shown.



### Ear Seal Replacement

Replace the ear seals every 6 months for optimal performance and to maintain the headset NRR.

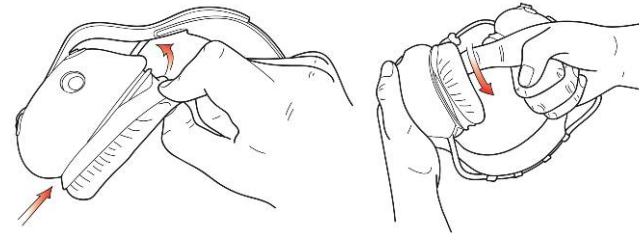
**⚠ WARNING: Worn ear seals will degrade the Headset's ability to reduce noise and protect the user's hearing.**

To replace the ear seals:

1. Remove the old ear seal by pulling on the edge and peeling it over the lip of the ear dome.



2. Starting at the bottom, place the new ear seal on the dome. Pull over the lip of the ear dome using your finger. Do not use any sharp tool as it may damage the ear seal and reduce hearing protection.





## Troubleshooting

If you are experiencing symptoms not covered here, or are having difficulty troubleshooting, call us or visit our website. We're here to help.

### Service Contact:

Phone: 800-432-4342  
[service@flightcom.net](mailto:service@flightcom.net)

### General Connection Issues

1. Verify the Headset is turned on.
2. Verify the battery is charged and within its useable life.

### Wired Auxiliary

1. Verify the connection to the 2-way radio.
2. Verify the programming in the radio.
3. Verify the PR adaptor to the make and model of the radio.
4. Verify the headset radio settings.

### Wireless Bluetooth

**Disconnects, intermittent connectivity, or difficulty finding, pairing, or connecting.**

1. Verify your device and Headset model are Bluetooth compatible.
2. Check that you are in range of the Bluetooth accessory with which you are trying to pair your device.
3. Turn on Bluetooth on your device.
4. Turn on discoverable mode on your device.
5. Make sure no previously paired devices are turned on.
6. Cycle the power on the Headset and/or the device being connected to.
7. On your device, find the Headset in the list. If your device says Not Connected, tap the name of your Headset to attempt to connect it.
8. Fully charge both Headset and the device.
9. Delete the Headset from your device and create a new pairing.
10. Update your device to the latest Bluetooth firmware.

### Wireless DECT

**Disconnects, intermittent connectivity, or difficulty finding, pairing, or connecting.**

1. Verify the Headset is a Wireless DECT model.
2. Check that you are in range of the DECT Wireless Base Station.
3. Verify the Wireless Base Station and the Headset are in pairing mode.

4. The Flightcom DECT7 Wireless Headset will only pair with Flightcom DECT7 Wireless Base Stations.
5. Cycle the power on the Headset and/or the Wireless Base Station.
6. Fully charge both the Headset and the Wireless Base Station (if applicable).
7. Check location of the Wireless Base Station and external antenna location. The Wireless Base Station should not be installed inside metal enclosures or any other location closer than 4 inches to a metal object or surface.

### No audio communication and/or PTT from or to the base.

1. Ensure that power is turned on to the Wireless Headset and it is connected.
2. Ensure that the modular communication cable is connected between the Wireless Base Station and Intercom.
3. Check the modular communication cable between the Wireless Base Station and Intercom for continuity.
4. Ensure correct polarity of the modular plug on both ends of the modular cable.
5. Verify the Headset radio settings.

### Poor quality audio, low or distorted received or transmitted audio.

1. Verify the 'talk' text is facing the user's mouth on the microphone and located within ¼" of the user's mouth.
2. Make sure that the volume level is properly adjusted on the Intercom. For Digital Intercoms, set the volume level as high as possible on the Intercom without causing distorted audio on the Headset, and then adjust the volume control on the Headset for comfortable listening.
3. Ensure that the proper Wireless Base Station model for your Intercom is used.
4. Poor quality audio can be caused by a defective Headset. Confirm operation with a Headset known to be functioning properly.

### Audible interference from portable and mobile radios.

The wireless system is tested and proven to be immune to interferences from portable and mobile communication equipment operated anywhere in the frequency spectrum from 30MHz to 18GHz. However, care should be taken with installation of communication cables between the Intercom and the Wireless Base Station. These cables should be routed away from portable and mobile radios and antenna cabling in order to prevent RF interference from such devices.

*If a problem persists contact Flightcom Service for additional help.*

## Glossary

### Wireless Base Station

Wireless DECT7 base unit through which Wireless DECT7 Headsets pair and link for voice communications.

### Bluetooth

Wireless standard in the 2.4GHz wireless range.

### dBa

A-Weighted SPL (Sound Pressure Level) unit of measure.

### DECT

Digital Enhanced Cordless Telecommunications. A wireless standard in the 1.9GHz wireless range.

### DECT7

DECT7 has all of the benefits of DECT with wider audio bandwidth and added features such as multiple channels and broadcast mode.

### Link(ing)

When a paired device re-connects to a paired device.

### Pair(ing)

To create a semi-permanent wireless connection to a Base Station

### PTT

Push to Talk. Typically used to describe radio transmitting.

### SPL

Sound Pressure Level. Measurement of sound loudness. Measured in dBA.

## Specifications

### Headset

#### Weights

**Over Head:** 15.8oz / 448g | 17.8oz / 504g with Ruggedizers  
**Behind Head:** 16.2oz / 458g | 18.1oz / 514g with Ruggedizers

#### Power

**Battery:** 3.7V rechargeable lithium ion  
**Battery Life:** >24 hours @ 25C  
**Protection:** Over voltage, under voltage, over current and over temperature protection  
**AC Charge source:** Supplied 12VDC, 500mA wall charger  
**DC Charge source:** 5VDC to 16VDC, 1.5A minimum  
**Charge Time:** <4 hours for fully discharged battery

#### Environmental

**Operating temperature:** -22°F to 140°F / -30°C to 60°C  
**Storage temperature:** -4°F to 122°F / -20°C to 50°C  
**Charging Temperature:** 32°F to 113°F / 0°C to 45°C  
**IP-Rating:** IP-66 (Dust tight, Protected from high pressure spray)

### Regulatory

#### FCC

**FCC ID FL659C:** V9N950350000  
**FCC ID FL659AM:** V9N950350000  
**FCC ID FL657C:** V9N950350000  
**FCC ID FL651C:** V9N950350000  
**FCC ID FL653DL:** V9N950350000  
**FCC ID FL652C:** V9N950350000  
**FCC ID FL653H:** V9N950350000  
**FCC Part 15:** All Models

## Industry Canada

IC UPN FL659C:	7895A-950350000
IC UPN FL659AM:	7895A-950350000
IC UPN FL657C:	7895A-950350000
IC UPN FL651C:	7895A-950350000
IC UPN FL653DL:	7895A-950350000
IC UPN FL652C:	7895A-950350000
IC UPN FL653H:	7895A-950350000

## ISO

Conducted Transients:	7637-2
Quality Management System Control:	ISO 9001:2008

## MIL SPEC

**Chemical Exposure:** Intermittent Exposure MIL-STD 810 Method 504: Isopropyl alcohol, [Formula 409®](#), [WD-40®](#), [Windex®](#), Bleach/Water (1:1), Mineral oil, Synthetic Sweat, Jet A Fuel, Kerosene, Gasoline, Deicing (Ethylene or Propylene Glycol mixtures), Potassium-Acetate based solution, Ansolite.

*Not Approved for exposure to [Skydrol®](#).*

<b>Humidity:</b>	MIL-STD 810F and 810G
<b>Temperature Shock:</b>	MIL-STD 810F and 810G

## NFPA

**NFPA1500:** This device meets requirements

## NRR

<b>Behind Head NRR Rating:</b>	24dB
<b>Over Head NRR Rating:</b>	24dB

## SAE

<b>Conducted Immunity:</b>	J1113-11
<b>Electrostatic Discharge:</b>	J1113-13
<b>Radiated Emissions:</b>	CISPR 25
<b>Radiated Immunity:</b>	ISO 11452-2
<b>Salt Spray:</b>	J1455, Sec. 4.3
<b>Vibration:</b>	J1455 Sec. 4.9

## UL

**UL1642** Standard for Lithium Batteries

## UN

**UN38.3** UN Transportation Testing for Lithium Batteries

## Bluetooth® Specifications

<b>Class:</b>	Class 3 Device
<b>Frequency Bandwidth:</b>	2400 MHz to 2485 MHz
<b>Maximum Output Power:</b>	0.0 dBi (peak)
<b>Range:</b>	Up to Bluetooth standard 33 feet (10 meters)
<b>Version:</b>	Bluetooth 3.0 with secure simple pairing

## DECT Specifications

### Common DECT Specifications

<b>Carrier Spacing:</b>	1.724 MHz
<b>Time Slots:</b>	2 x 12 (up and down stream)
<b>Channel Allocation:</b>	Dynamic
<b>Encryption:</b>	DECT Standard Cipher with 35-bit initialization vector
<b>Audio Bandwidth:</b>	300 Hz to 3.4 kHz, Narrow Band, G.726 compression 50 Hz to 7 kHz, Wide Band, G.722 compression

### Region 1 Specific Specifications

<b>Authorized for use in:</b>	Canada, USA
<b>Frequency Bandwidth:</b>	1919.808 MHz to 1930.176 MHz
<b>Number of Carriers:</b>	5
<b>Total Time Slots:</b>	60 in G.726(narrow band) / 30 in G.722(wide band)
<b>Average Output Power:</b>	4 mW
<b>Maximum Output Power:</b>	100 mW
<b>Range (line of sight):</b>	1600 feet maximum

## Flightcom Ground Support Standard Limited Warranty

Flightcom Corporation (“Flightcom”) warrants to the original purchaser of its Ground Support products, that products will be free from defects in materials and workmanship under normal and proper use for the period of **one year** from date of purchase.

Flightcom Corporation will repair or replace, at its option, any products showing factory defects during this warranty period, subject to the following provisions and obligations:

1. This warranty applies only to a new product sold through authorized channels of distribution.
2. All work under warranty must be performed by Flightcom Corporation.
3. All returned products must be shipped to our address, freight prepaid and Flightcom will return products to customer via ground freight. Any expedite fees or additional freight charges will be charged to customer.
4. Any attempt to repair, service, or alter the product in any way voids this warranty.
5. This warranty does not apply in the event of accident, abuse, misuse, liquid contact, improper installation, unauthorized repair, tampering, modification, fire, earthquake, or damage from other external sources – including damage caused by user-replaceable parts.
6. This warranty does not apply: (a) to consumable parts such as batteries, ear seals, intercom bags, cables, external power supplies, parts listed as accessories to a system, or other parts designed to diminish in function over time unless a failure is due to a defect in materials or workmanship; (b) to cosmetic damage or to defects caused by normal wear and tear or aging of the product; (c) to damage caused by use with non-Flightcom products; (d) to damage caused by operating the product outside the permitted or intended uses or environments described by Flightcom; (e) to damage caused by service performed by anyone who is not a representative of Flightcom or an Flightcom Authorized Service Provider; (f) to a product or part that has been modified without the written permission of Flightcom; (g) if any Flightcom serial number has been removed or defaced.

7. This warranty does not extend to any other equipment, apparatus, vehicle, aircraft, or watercraft to which this product may be attached or connected.

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Subject to the terms and limitations of this Flightcom Ground Support Standard Limited Warranty, this warranty covers any new covered product found to be defective within the applicable warranty period. Flightcom reserves the right to examine the alleged defective covered product to determine whether this Flightcom Ground Support Standard Limited Warranty is applicable, and final determination of warranty coverage lies solely with Flightcom. If Flightcom determines that warranty coverage applies, Flightcom reserves the right to either repair or replace a covered product or any part thereof, as determined by Flightcom in its sole discretion. If the product has been subjected to conditions which exclude coverage under the warranty, customer will be so advised. Customer may then authorize paid repair service or other disposition of the product. Notwithstanding any other provision of this warranty, if you sell or otherwise transfer ownership of your covered product, this Flightcom Ground Support Standard Limited Warranty shall automatically terminate.

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