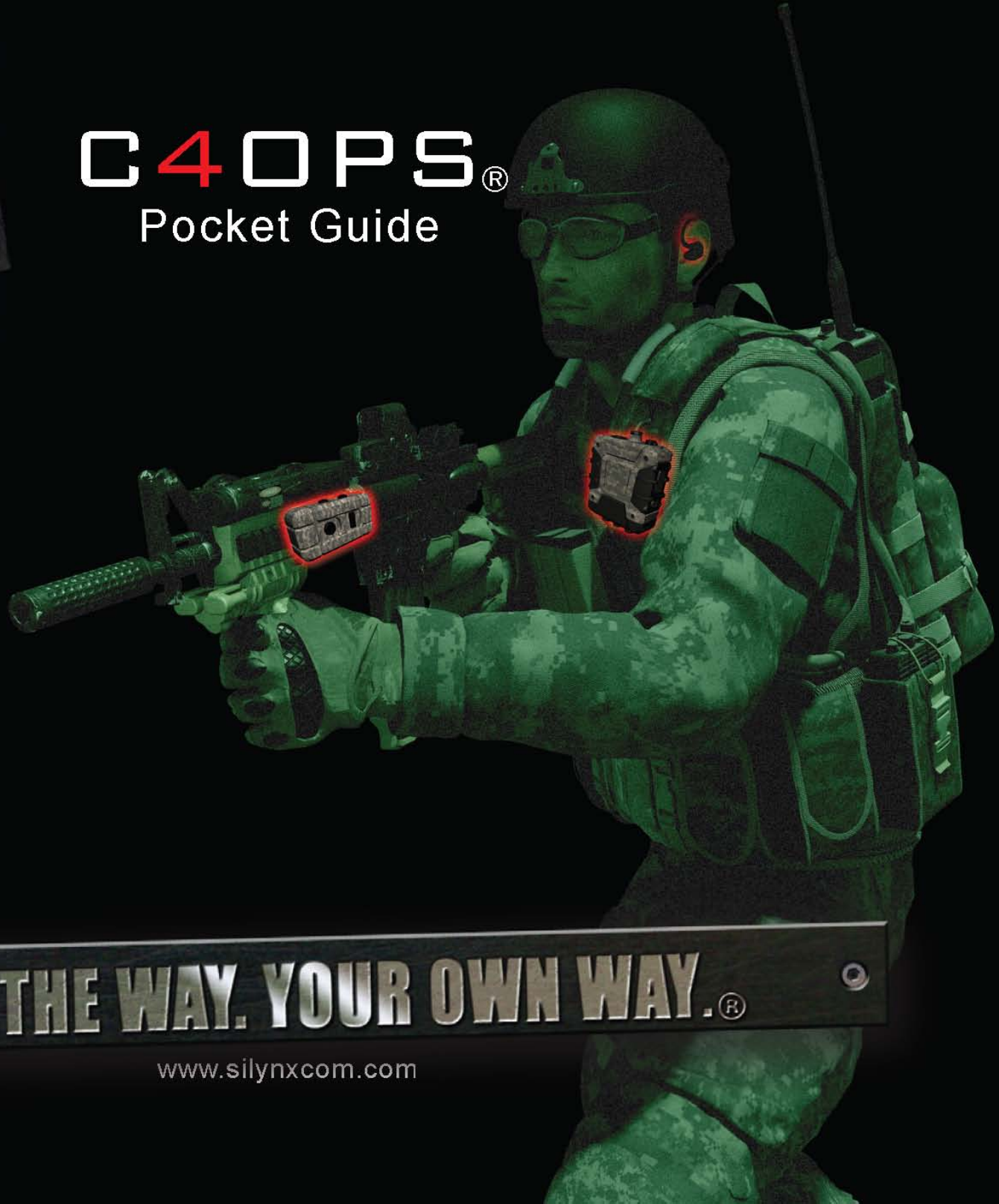
SILYNX®

C4OPS®

Pocket Guide



LEAD THE WAY. YOUR OWN WAY.®

www.silynxcom.com

This next generation headset system allows the soldier to complete an entire mission from pre-briefing to post mission debrief with one system by providing full-spectrum active noise reduction (ANR), multi-platform intercom interoperability, super normal hearing and sound localization for complete situational awareness.

SMART – In-Ear Hearing Protection/Enhancement Headset

VERSATILE – Modular & Software Upgradeable / Interoperable with Majority of Tactical Radios & Intercom Systems

EASY – Tactical MMI/Voice Feedback

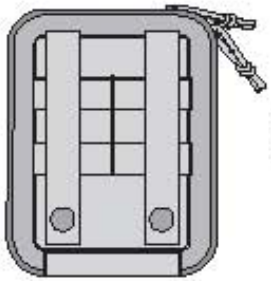
TOUGH – 20M Immersible & HAHO/HALO Operations

GPS – Navigation & Force Tracker

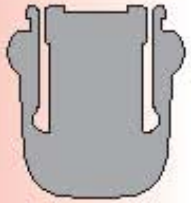
DWPTT™ – With Radio Volume & Channel Control

C4OPS System Components

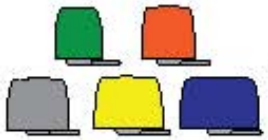
Dual Wireless PTT
(DWPTT™)



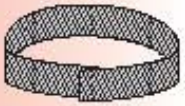
C4OPS
Carrying Case



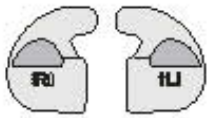
Hand Strap
Adaptor



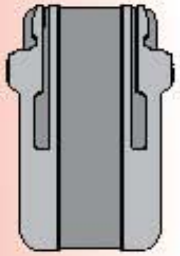
Foam Ear Plugs



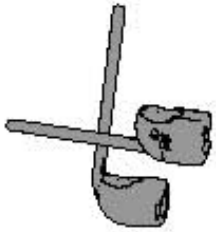
Hand Strap



Ear Retainers -
Shell



Picatinny Rail
Adaptor

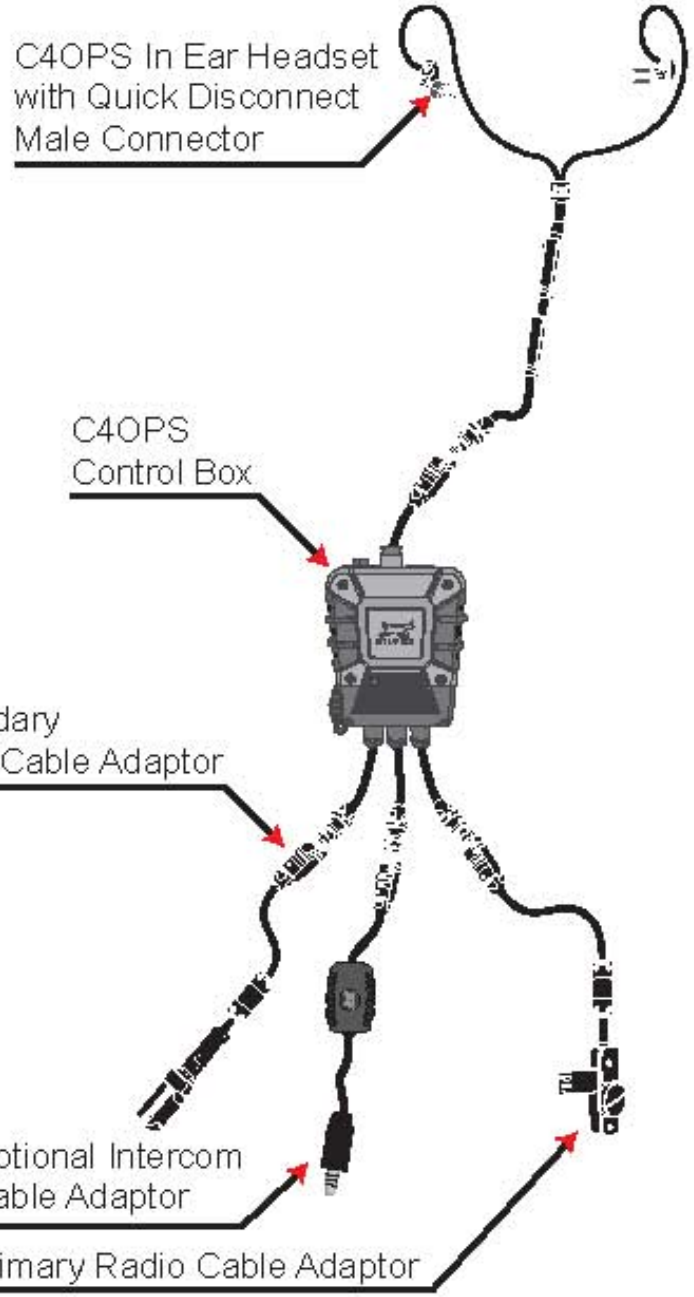


Ear Retainers -
Straight / Bent

C4OPS
Pocket Guide

C4OPS
Fast Guide

C4OPS
Interactive User
Guide (CD)



NOTE: System components may vary based on ordered configuration.

C4OPS MICH Headset Configs

Urban Configuration
1m Immersible for 30 minutes

In Ear

Headset for high noise environments.
See page 10.

Single-Sided In Ear (Left Ear)

Headset for low vis operations.

Covert System

NOTE: NOT immersible

Headset for covert operations.
See page 26.

Peltor/Sordin Adaptor

Headset for high noise environments with C4OPS adaptor.
See page 25.

Maritime Configuration
20m Immersible for 2 hours

20m H20 Divable Config

Headband

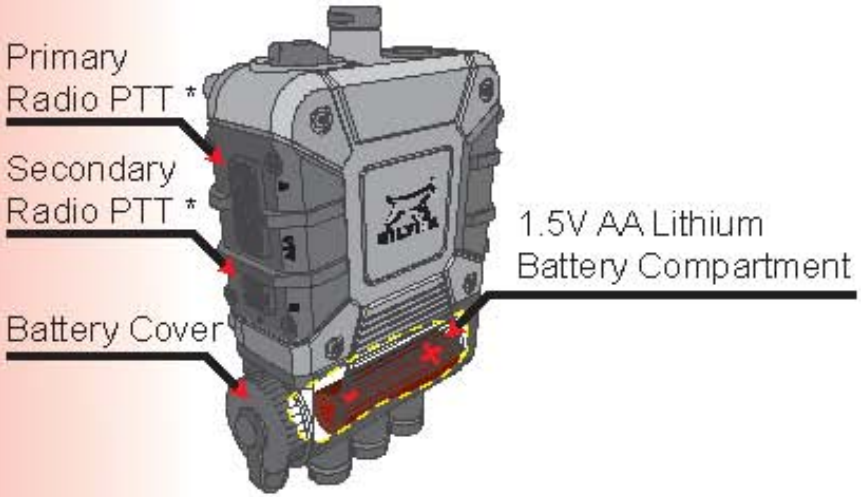
Acoustic Tube

Helmet Clip

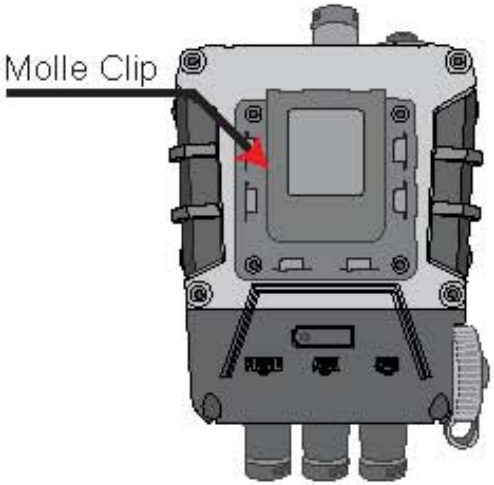
Headset for low noise environment.
See page 31.

C4OPS Control Box Versions

(1) C4OPS With Battery Compartment

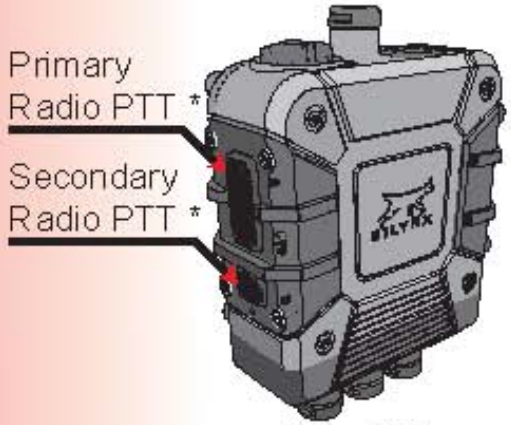


Front View

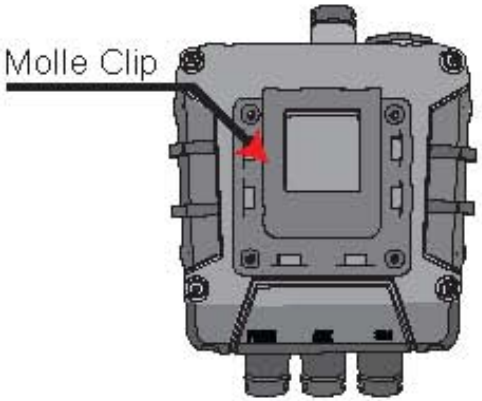


Back View

(2) C4OPS Without Battery Compartment

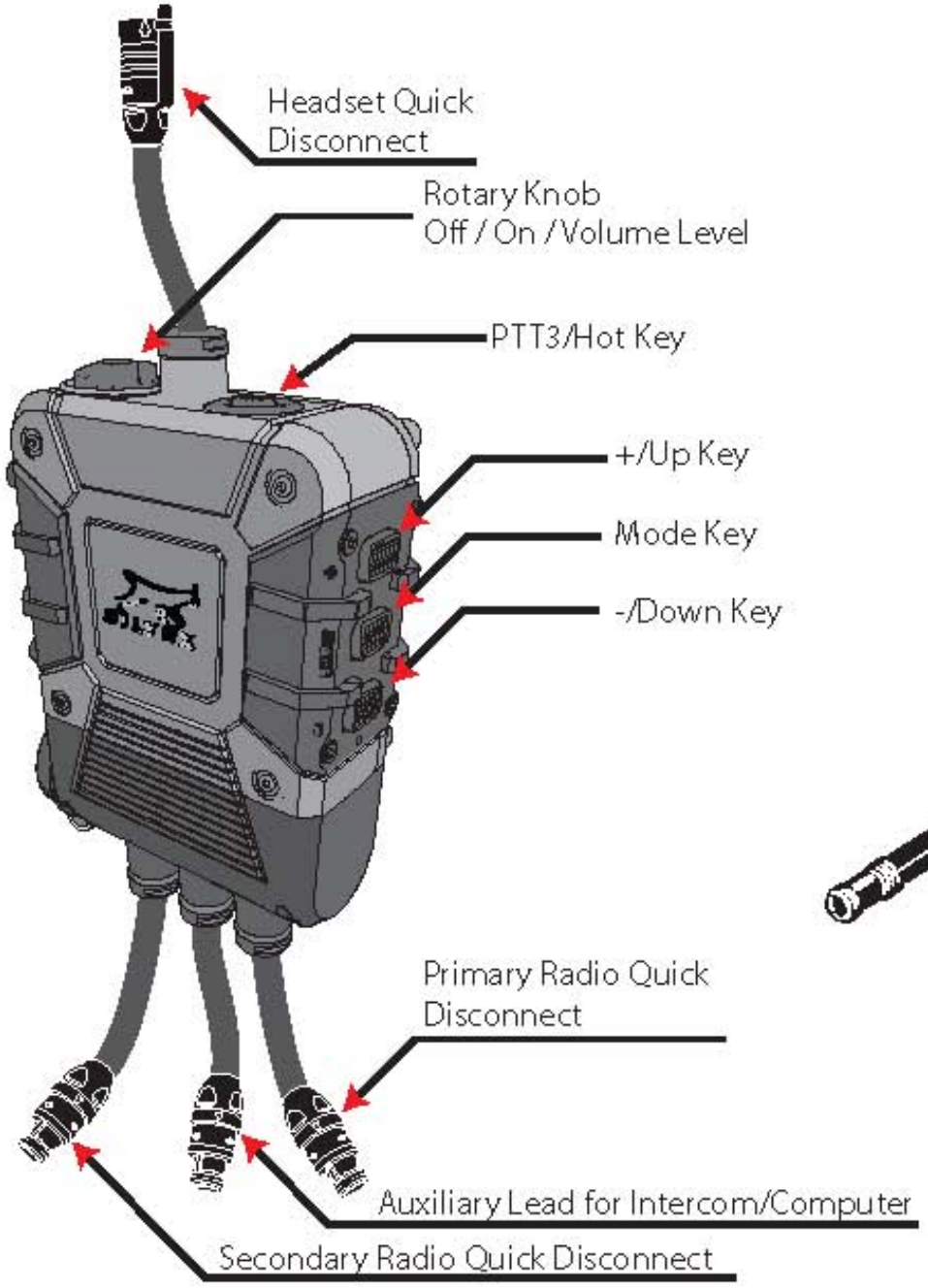


Front View

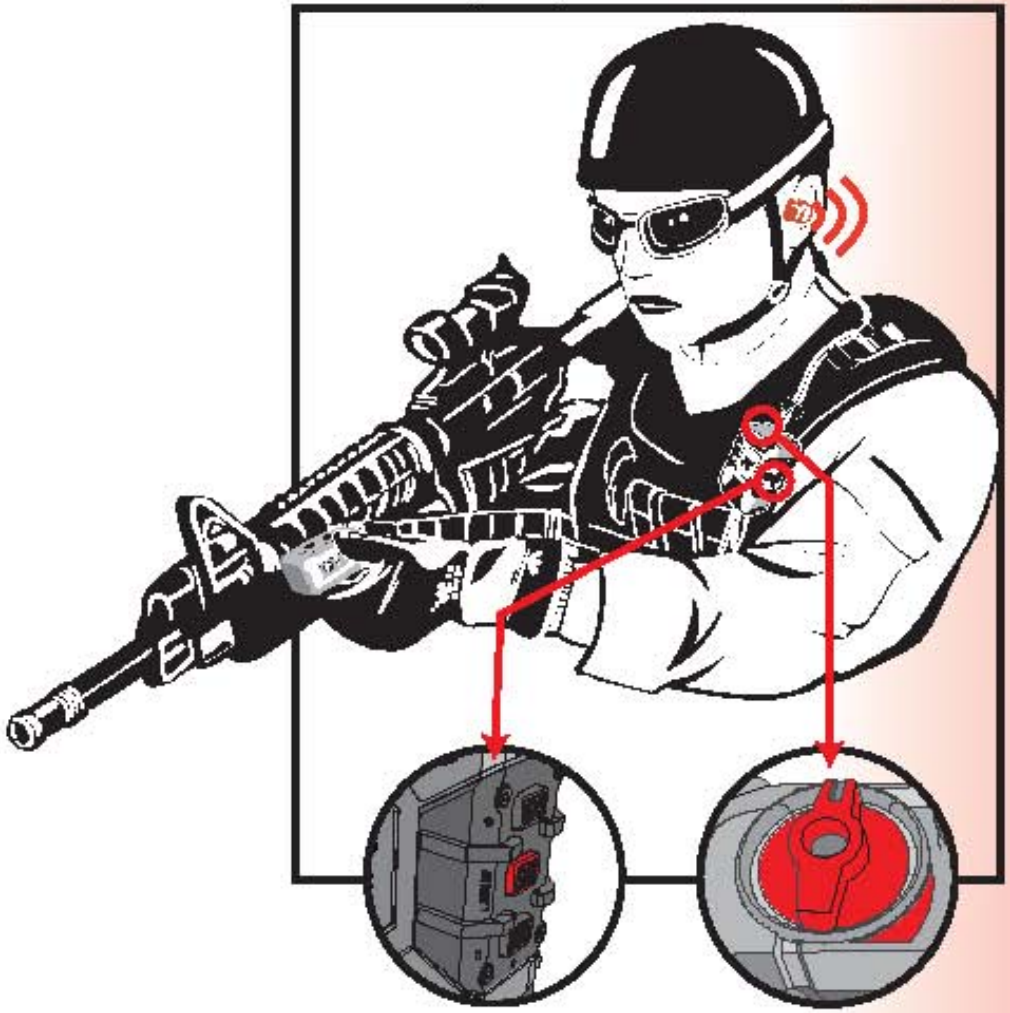


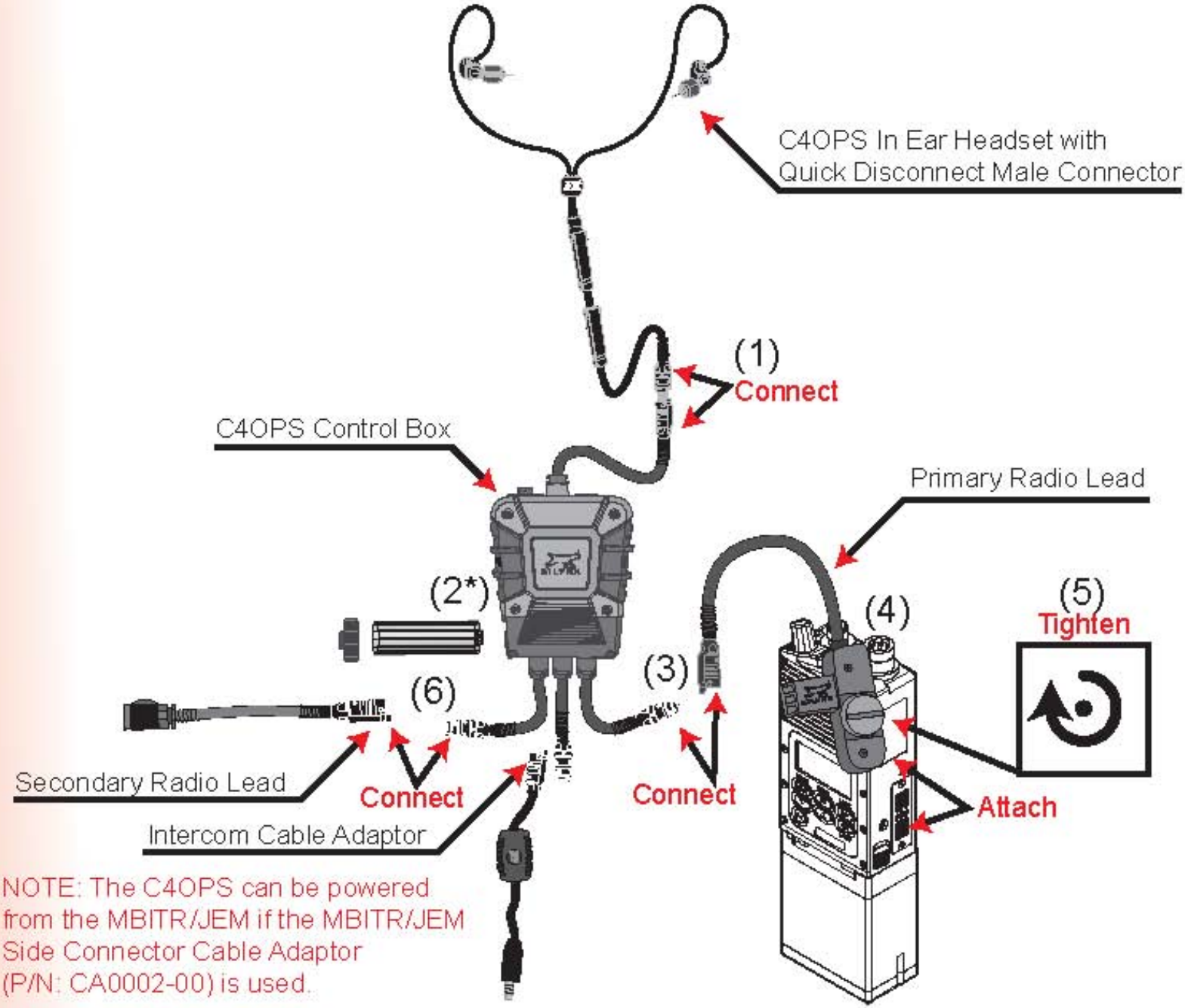
Back View

NOTE: Smaller form factor and weight. Powered from MBITR/JEM side connector.



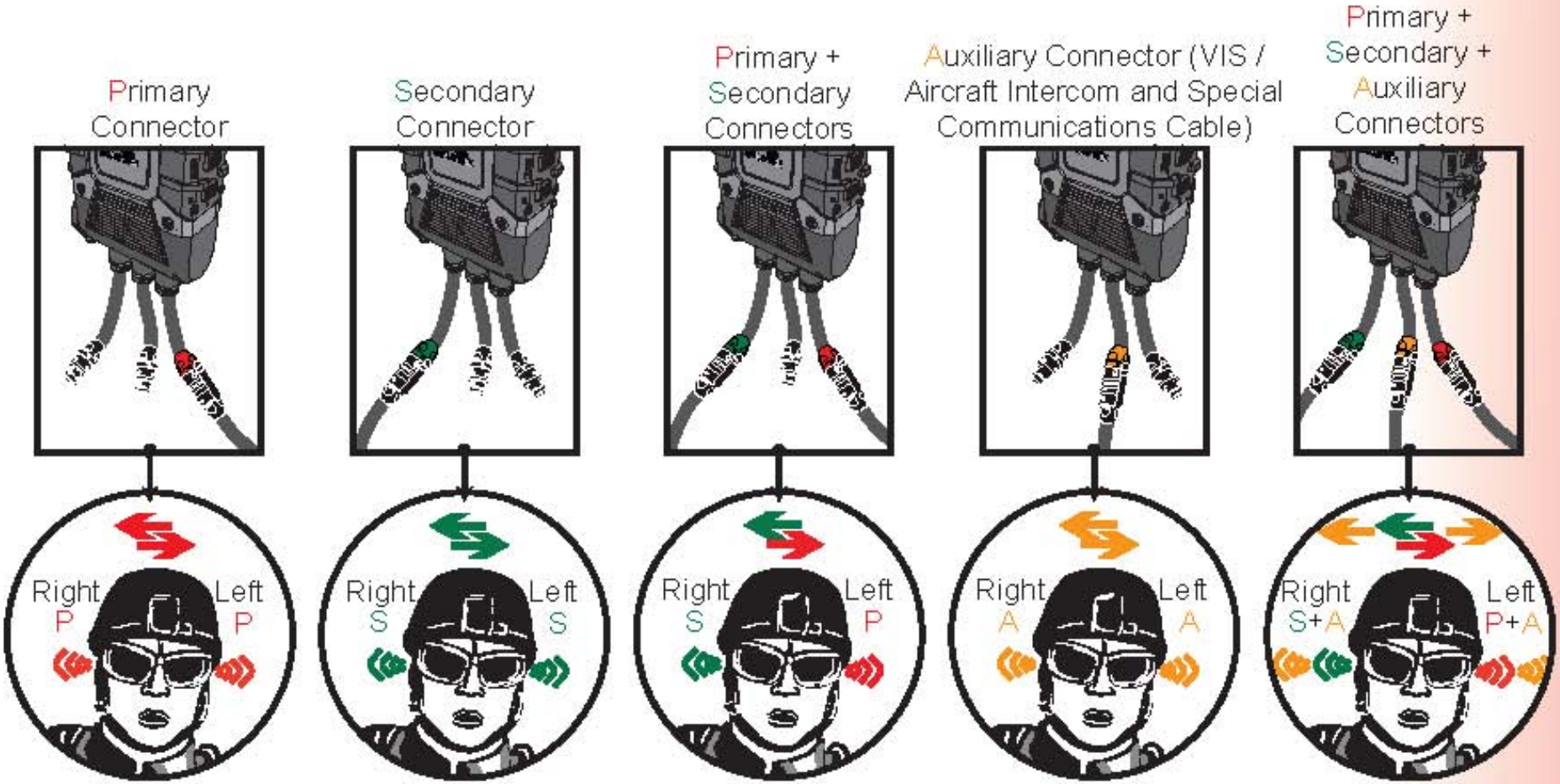
C4OPS intuitive man machine interface (MMI) includes voice prompts





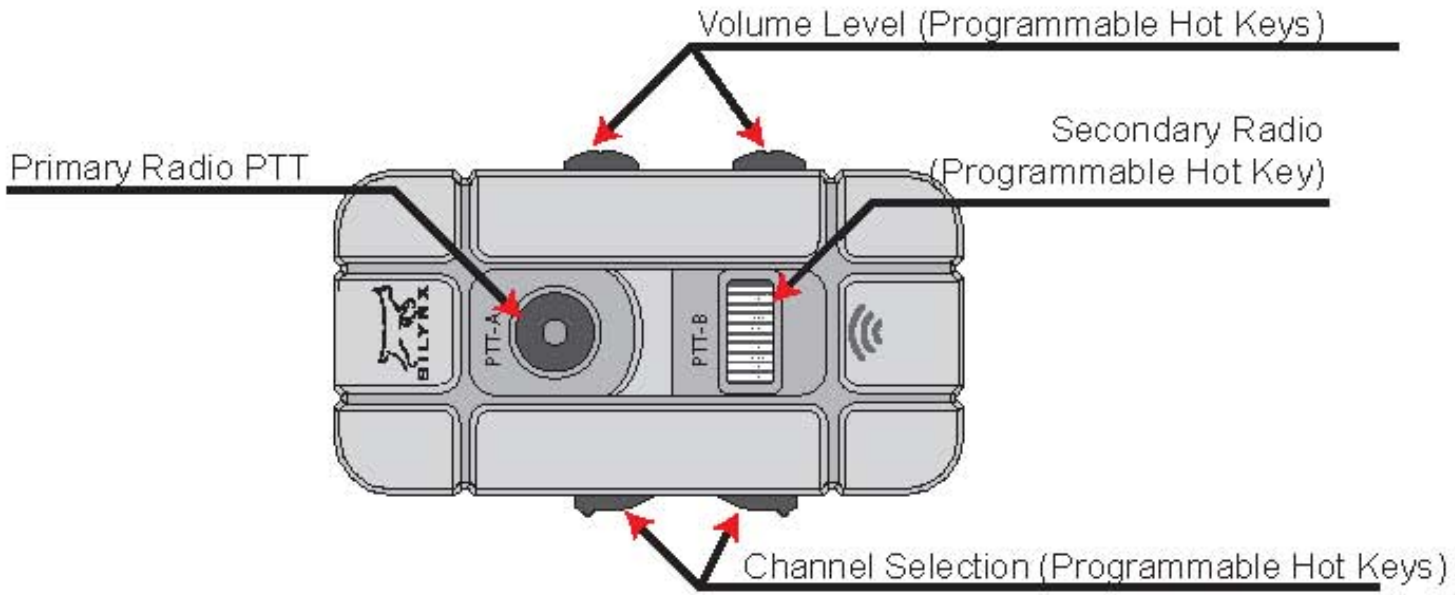
NOTE: The C4OPS can be powered from the MBITR/JEM if the MBITR/JEM Side Connector Cable Adaptor (P/N: CA0002-00) is used.

C4OPS Radio/Net Monitoring is automatic.

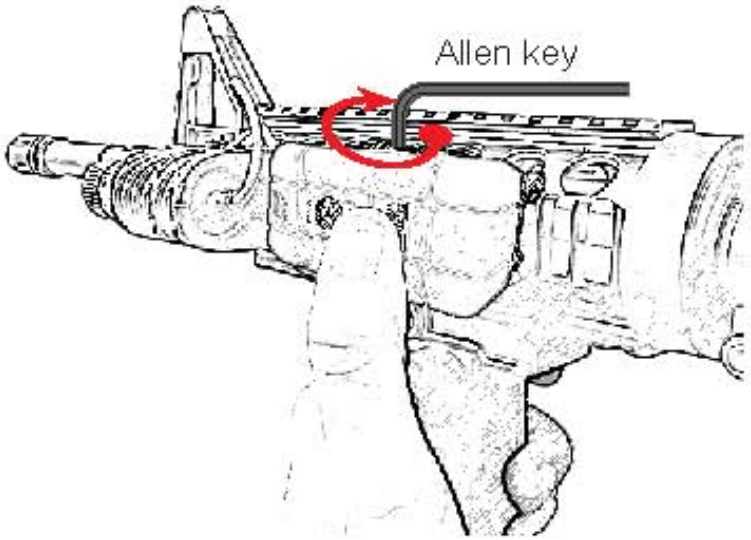


NOTE: Using the PC Programmer, the operator can set additional settings:
Primary right/Secondary left or Primary + Secondary both ears.

C4OPS Dual Wireless PTT (DWPTT)



Hand Strap Adaptor

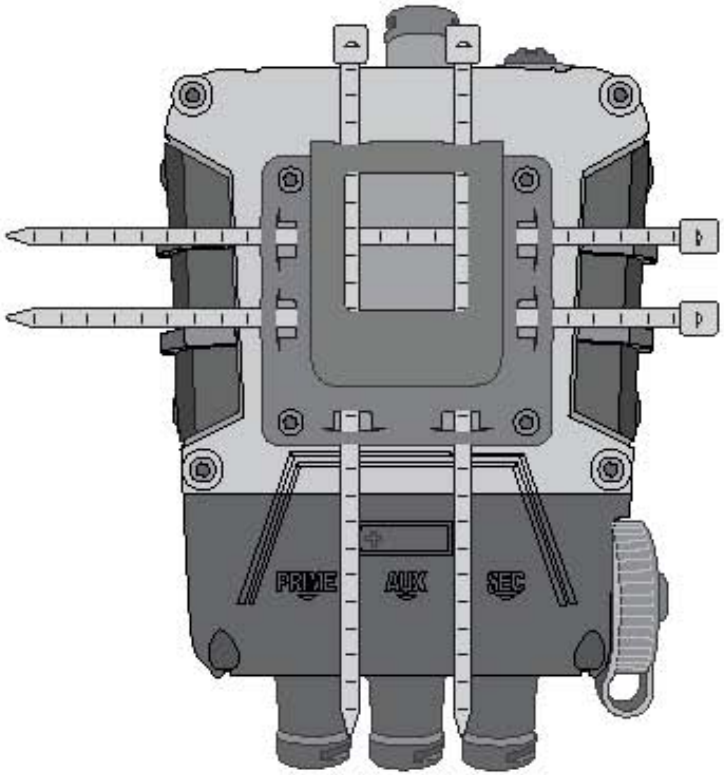


Picatinny Rail Adaptor

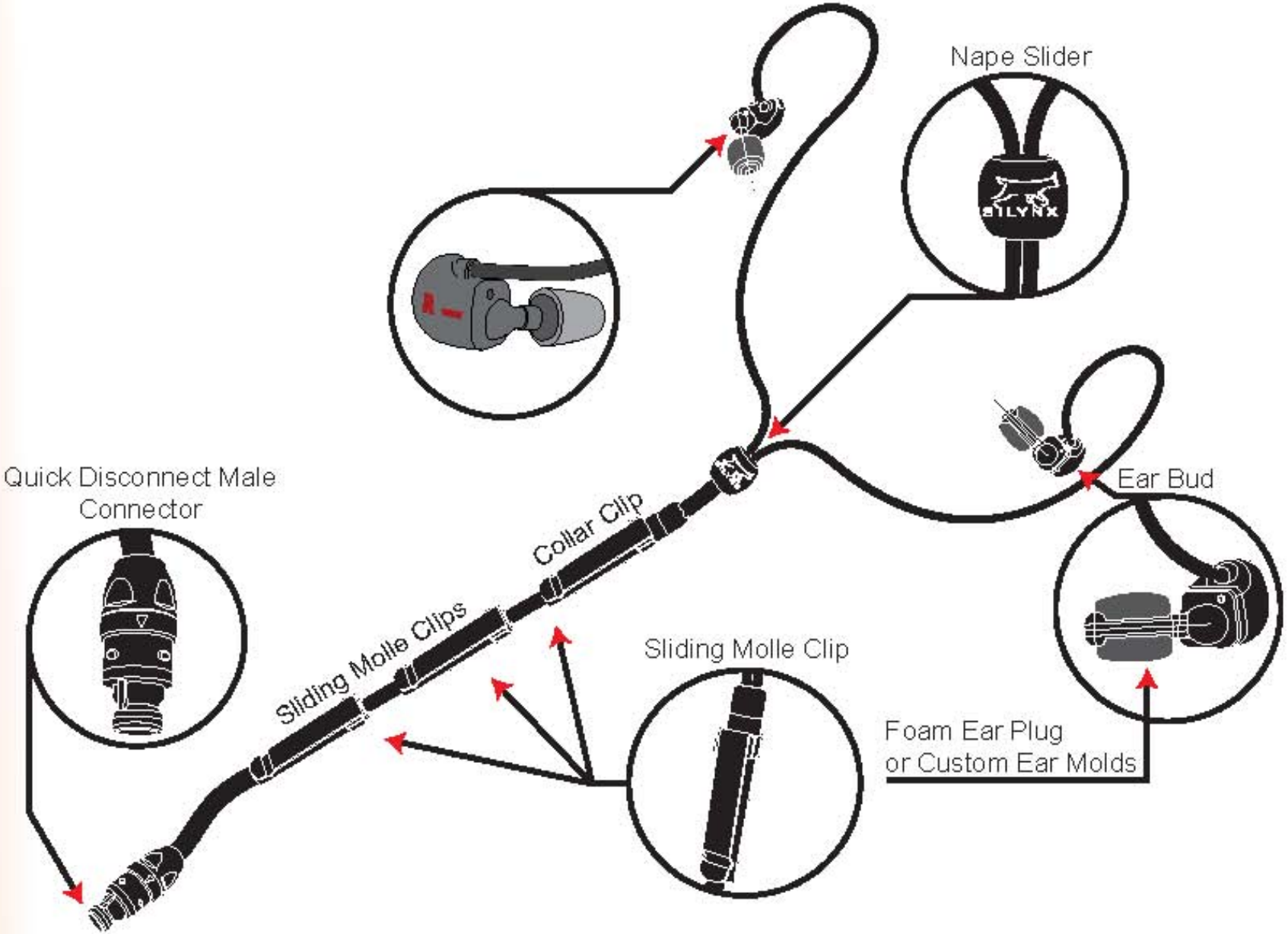
Attach the Control Box to the right or left of your vest.

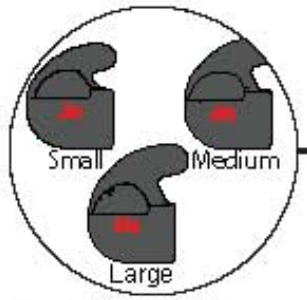
Molle Clip

Control Box can also be attached using Zipties.

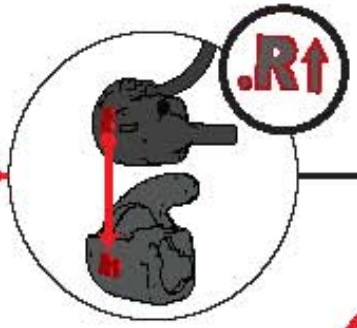


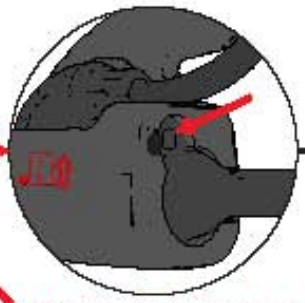
C4OPS In Ear Headset Config





Shell Ear Retainers

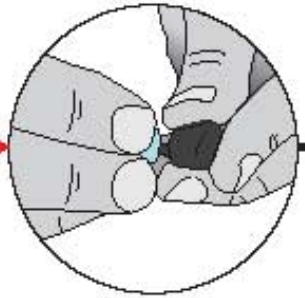




Keep mic exposed

Attach collar clip.

Hang In Ear Headset on your ear.



Squash foam ear plug.

Pull upper ear up and back and push the ear bud firmly into ear canal.

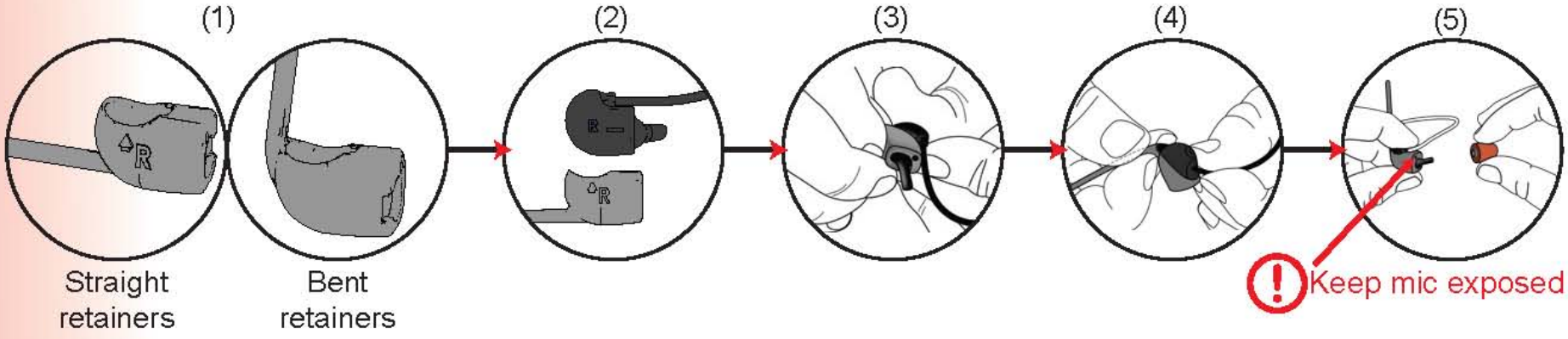
Press ear bud until foam ear plug expands.

Tighten nape slider.

Position ear retainer.

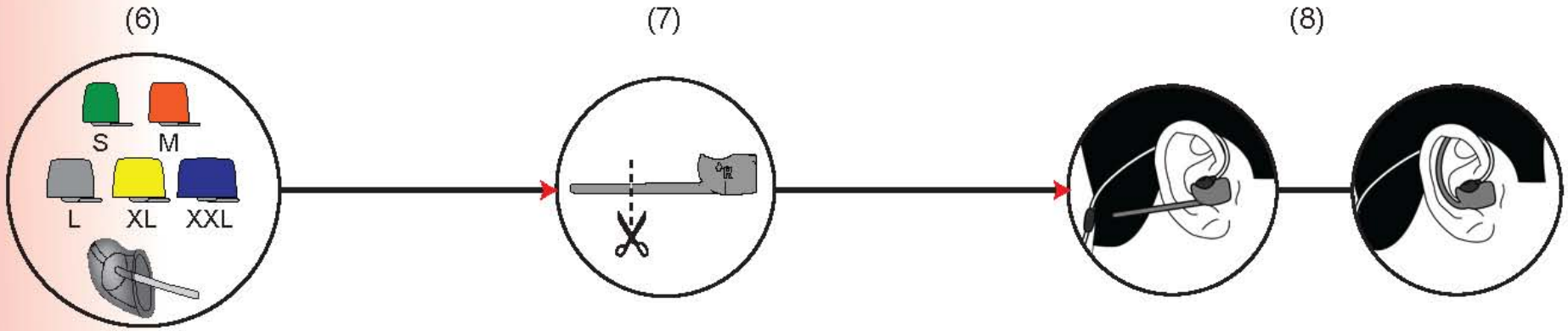
Foam Ear Plugs or Custom Ear Molds

C40PS Optional Bent/Straight Ear Retainers



Straight retainers

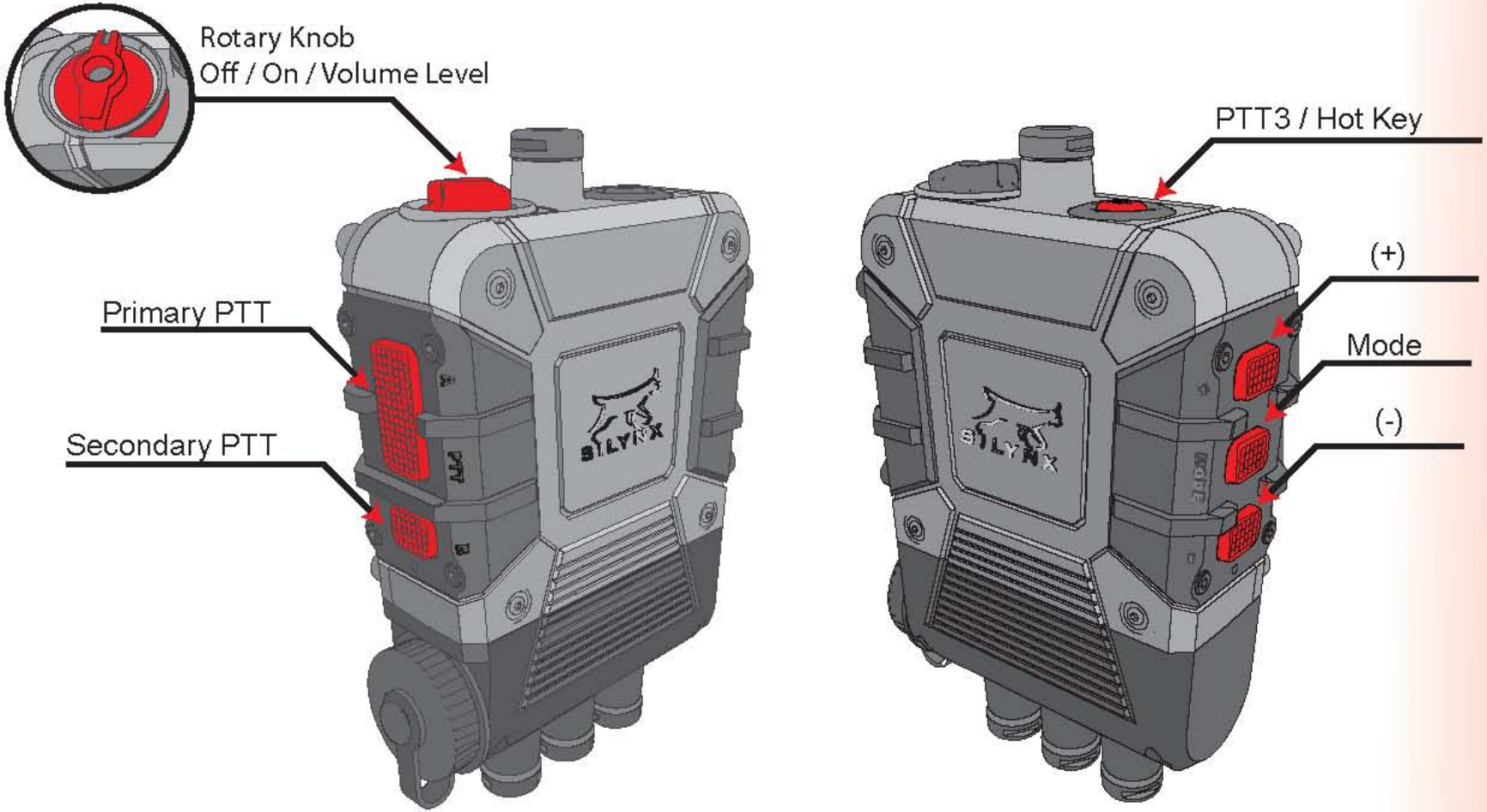
Bent retainers



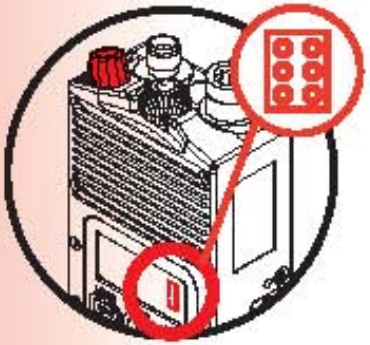
Foam Ear Plugs or Custom Ear Molds

If necessary, trim the retention rod.

Bend the retention rod on the ear retainer back and insert it into the upper curve of your outer ear.


Rotary Knob
Off / On / Volume Level
Primary PTT
Secondary PTT
PTT3 / Hot Key
(+)
Mode
(-)

(1)
Turn MBITR On.
Enable MBITR side connector.



(2)
Turn C4OPS On.

(3)
MBITR is auto set to external audio and keypad locked.

(4)
Ear plug sealing test will begin.

VP "C4OPS 2X Beep"

No VP = Pass

(5)

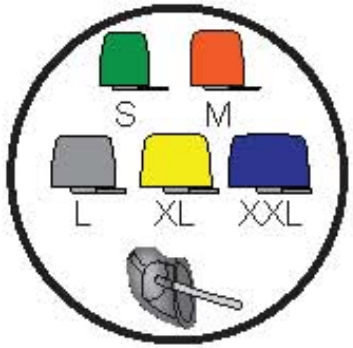
OR

VP "Leak Both"

VP "Leak Right"

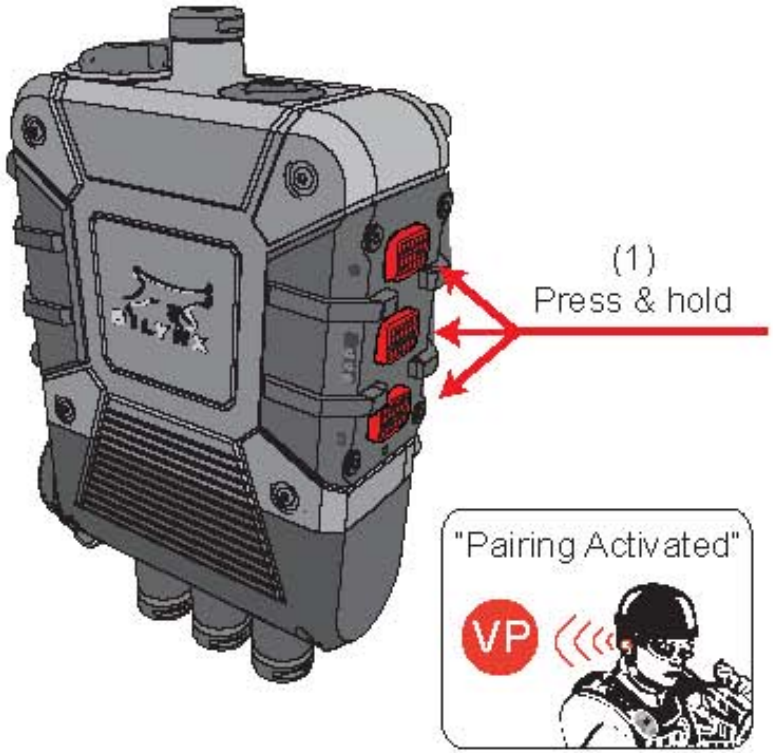
VP "Leak Left"

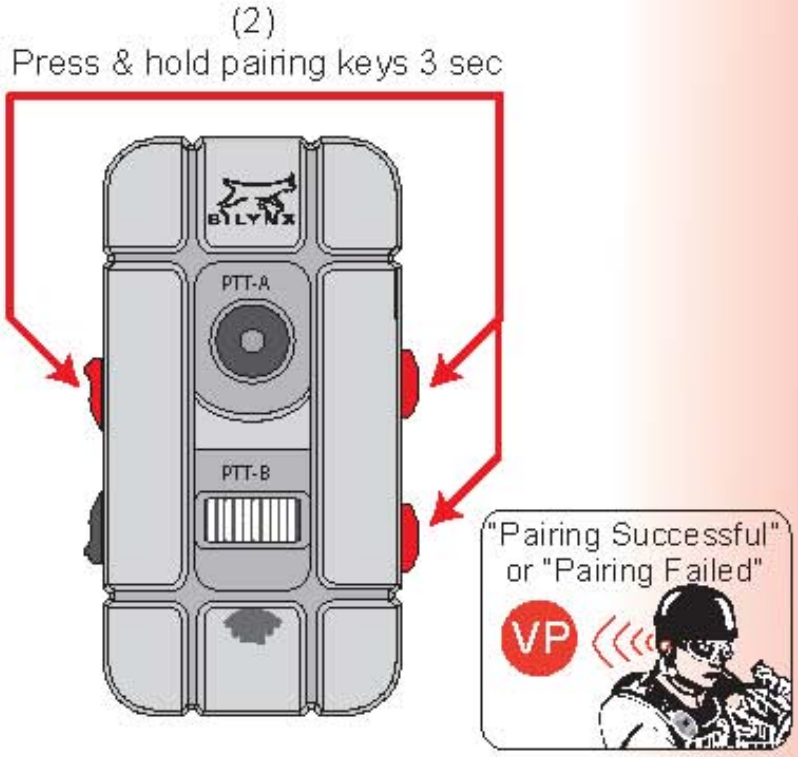
Leak = Reinsert ear plugs / replace ear plug size



If failed again, choose different size ear plug.

VP = Voice Prompts / Feedback

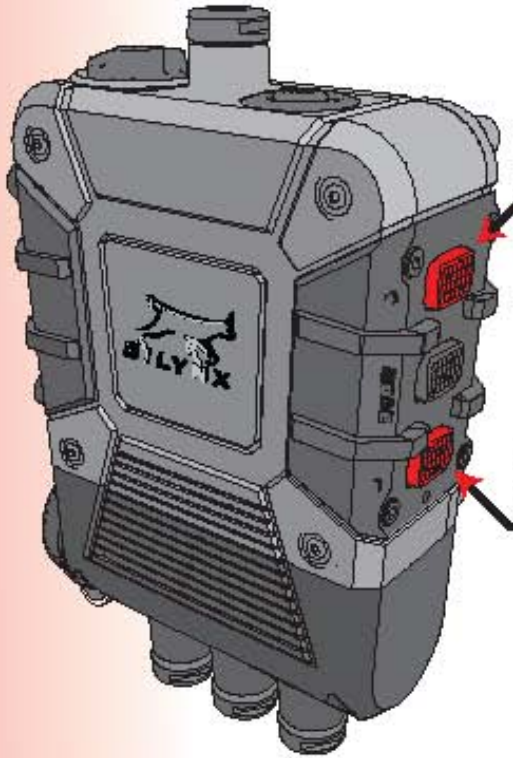




NOTE: If VP "Pairing Failed" repeat the steps above.

* One or more DWPTT can be paired with one C4OPS unit. Repeat steps 1 and 2 for secondary DWPTT.

Hear Thru



(+) High Sensitivity / Super Normal Hearing

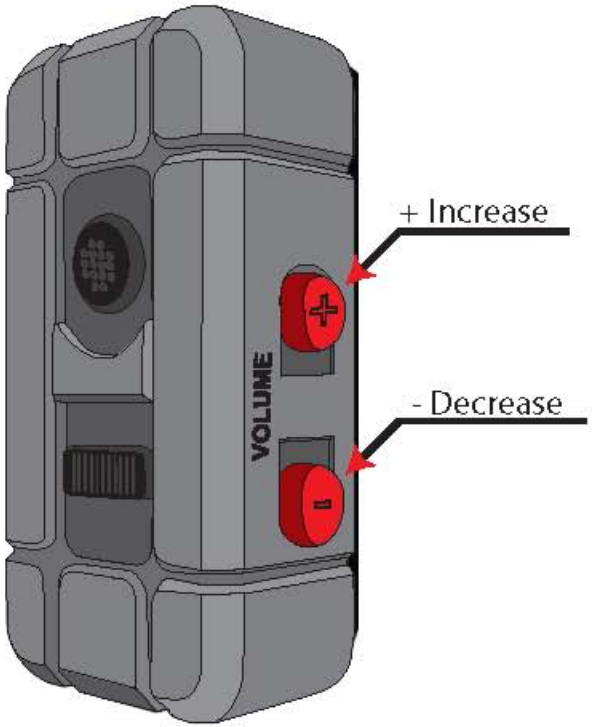
(-) Low Sensitivity / Hear Thru Off

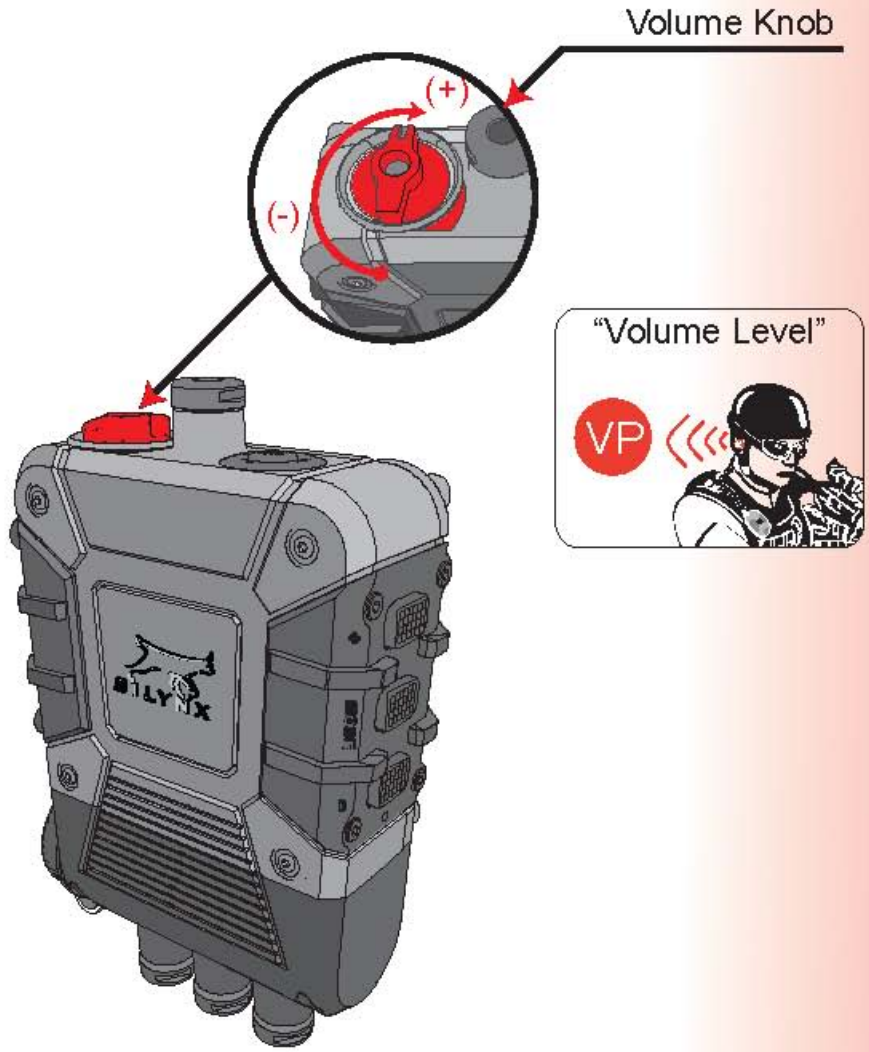
For Super Normal Hearing, press and hold (+) for 3 sec after "High Sensitivity" is heard.

Warning: Prolonged use of Super Normal Hearing (levels above the "High Sensitivity" prompt) could damage your hearing.

NOTE: In HAHO/HALO and strong wind environments, it is recommended to decrease the Hear Thru to the lowest level.

NOTE: When in high noise environments like helicopters, ANR is turned on and Hear Thru can not be adjusted.

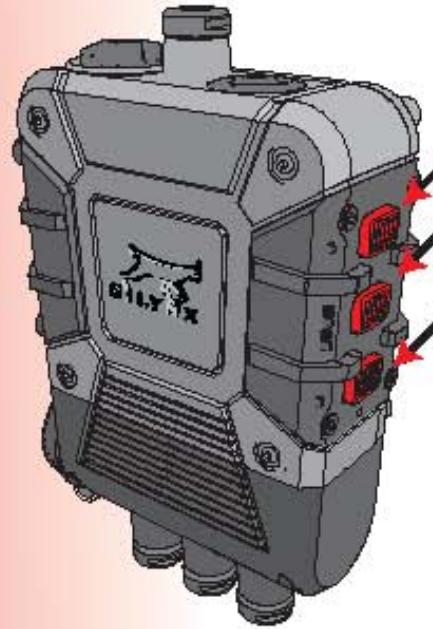




NOTE: C4OPS only controls the volume of the primary radio. The secondary or auxiliary device/intercom are controlled independently.

C4OPS Control Box Channel Selection

C4OPS can remote control radio channel selection using smart radio cable adaptors. Channel control is done by C4OPS Control Box or DWPTT.



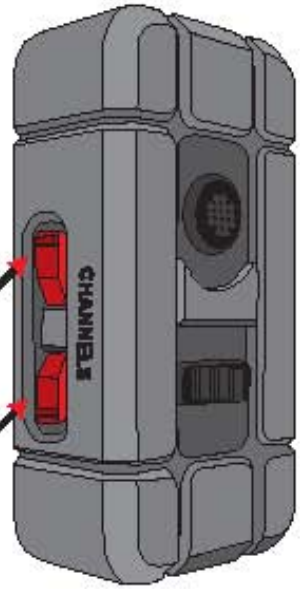
(2) Press (+) Key for channel up and hold 3 sec to select and confirm channel selection

(1) Press Mode Key until you hear "Channel Selection"

(2) Press (-) Key for channel down and hold 3 sec to select and confirm channel selection

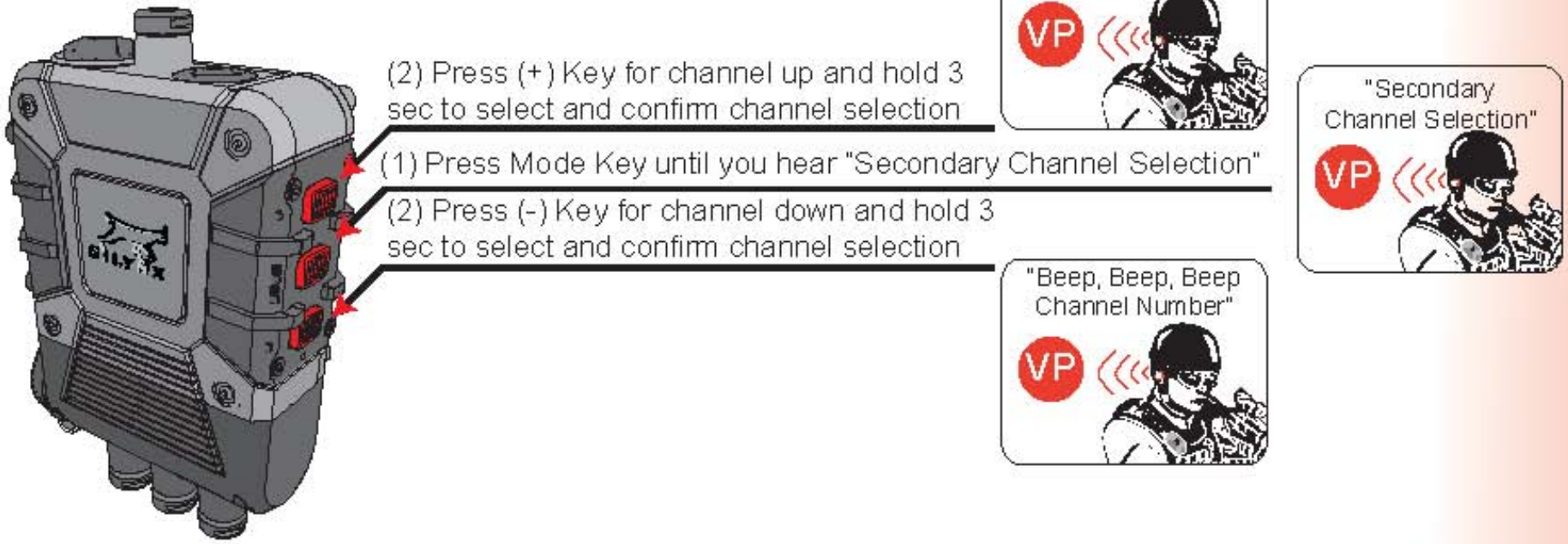
Press (+) Key for channel up and hold 3 sec to select and confirm channel selection

Press (-) Key for channel down and hold 3 sec to select and confirm channel selection



NOTE: Radio channel control is radio cable adaptor dependent. Currently supported radios are MBITR (using P/N: CA0002-00 MBITR/JEM Side Connector Cable Adaptor), XTS5000 (P/N: CA0004-01 Motorola XTS 5000 Smart Cable (FBI only)), and AN/PRC-152 (coming soon).

C4OPS can remote control radio channel selection using smart radio cable adaptors. Channel control is done by C4OPS Control Box or DWPTT.



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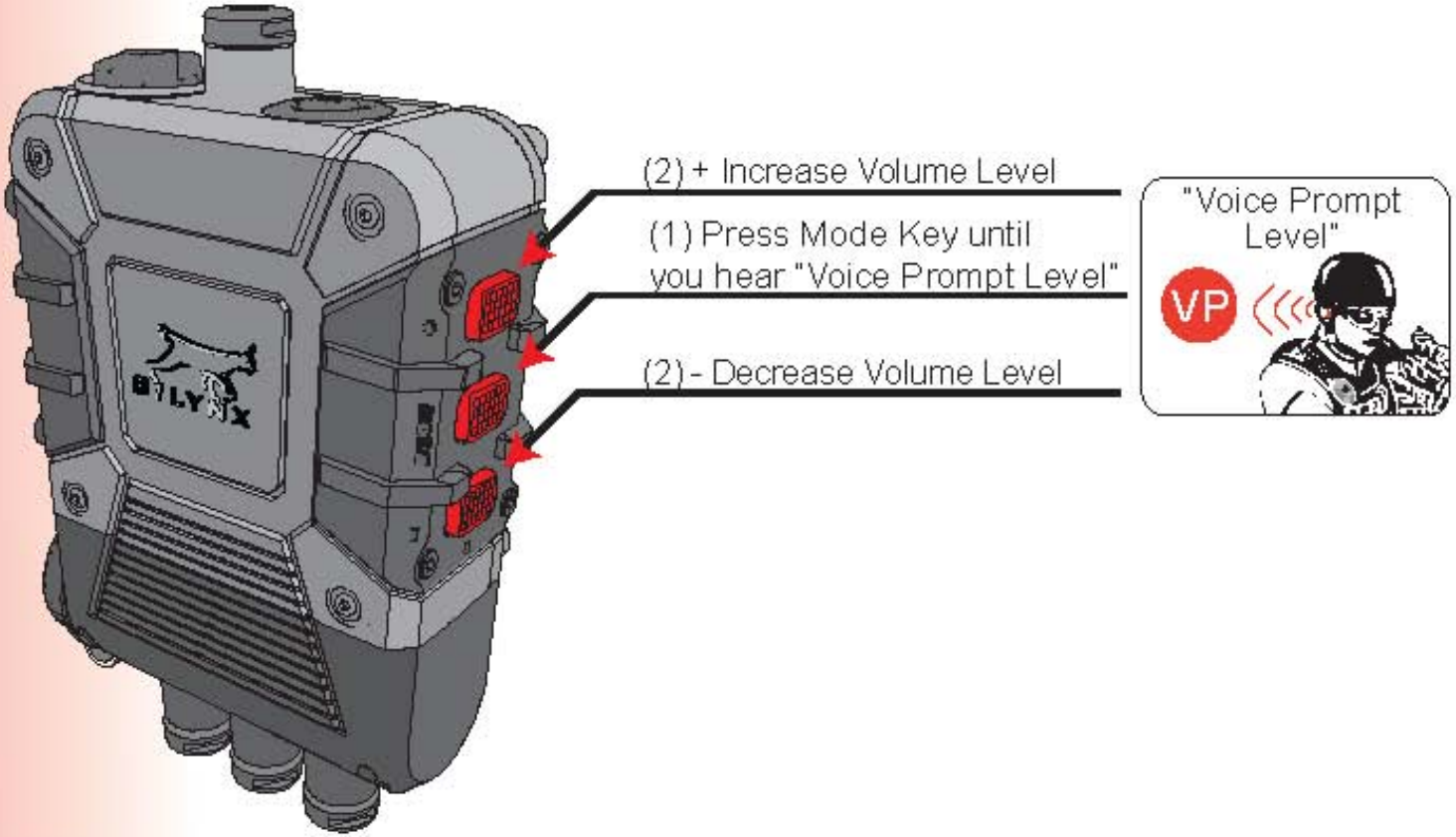
C4OPS Voice Prompt Volume Level

C4OPS Voice Prompt Volume Level defines the volume level of the system's man machine interface (MMI).



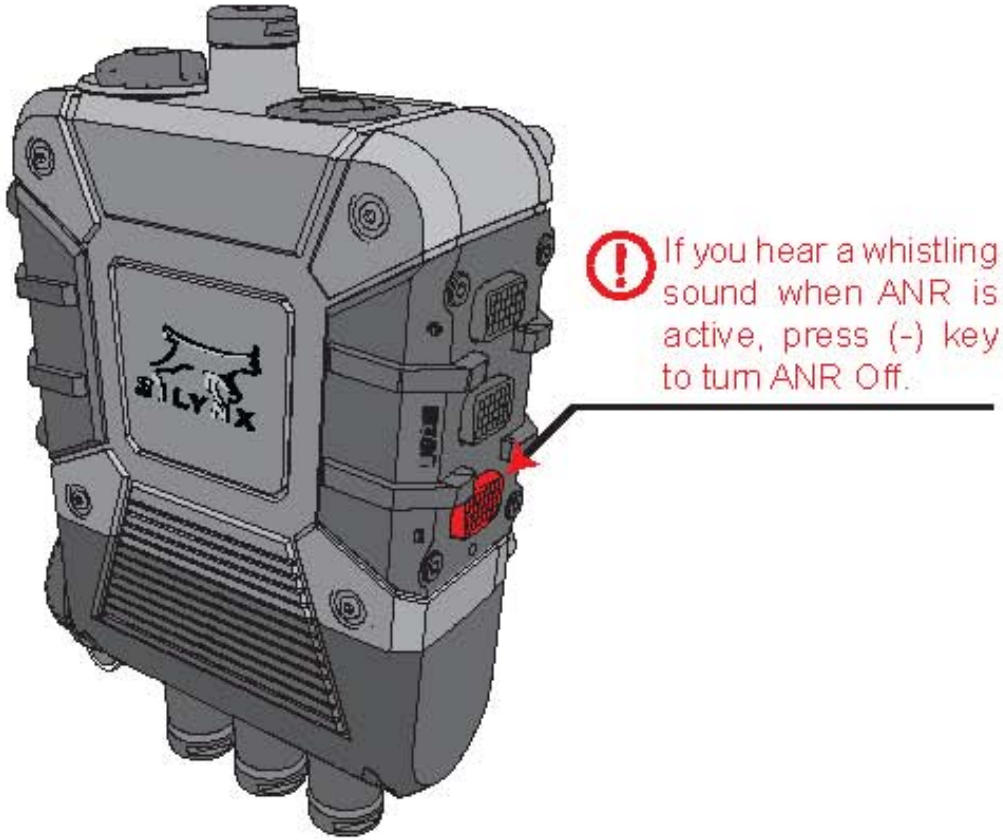
NOTE: Prior to boarding noisy platforms, it is recommended to increase voice prompt volume level to the highest volume.

Automatic ANR

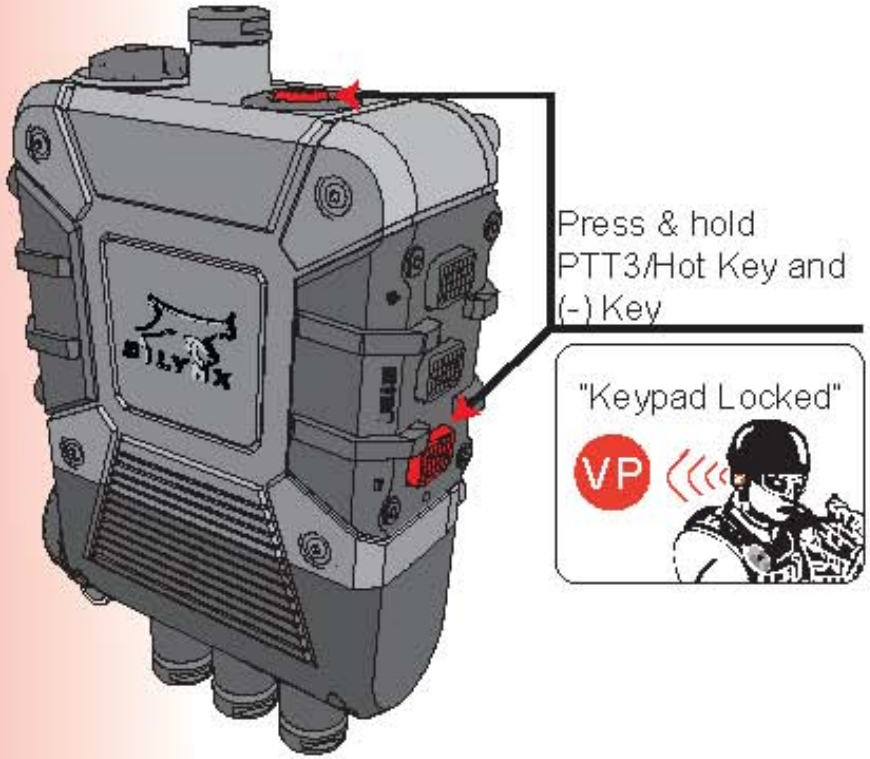
Active Noise Reduction (ANR) is activated automatically when exposed to high noise environments such as aircraft, vehicles and RIBs.

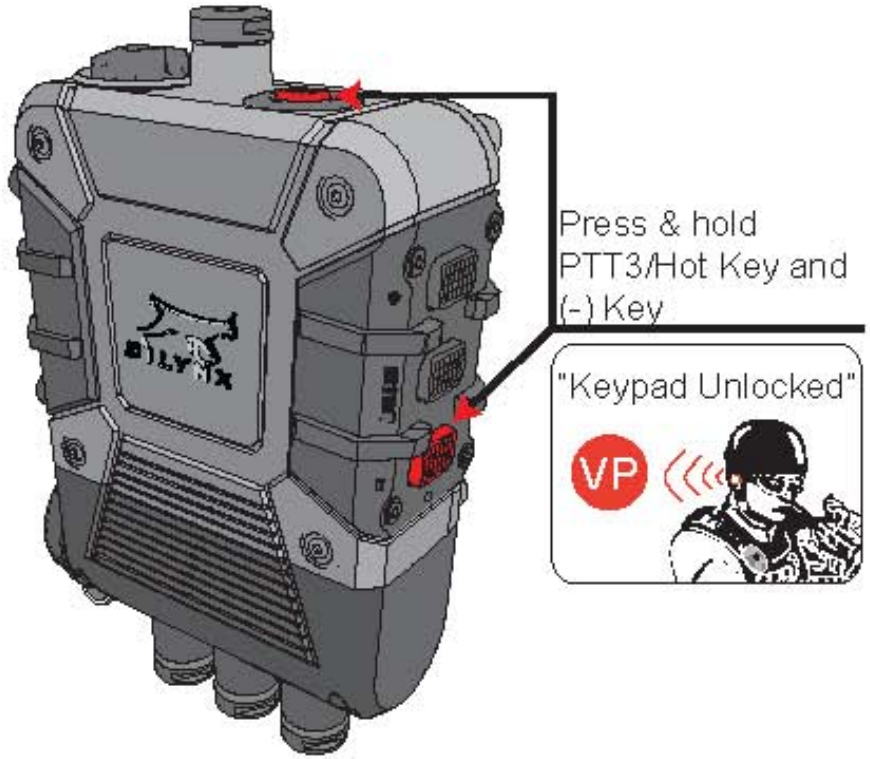
Note: Hearing protection is still maintained when ANR is off.

Enabling ANR - see page 24

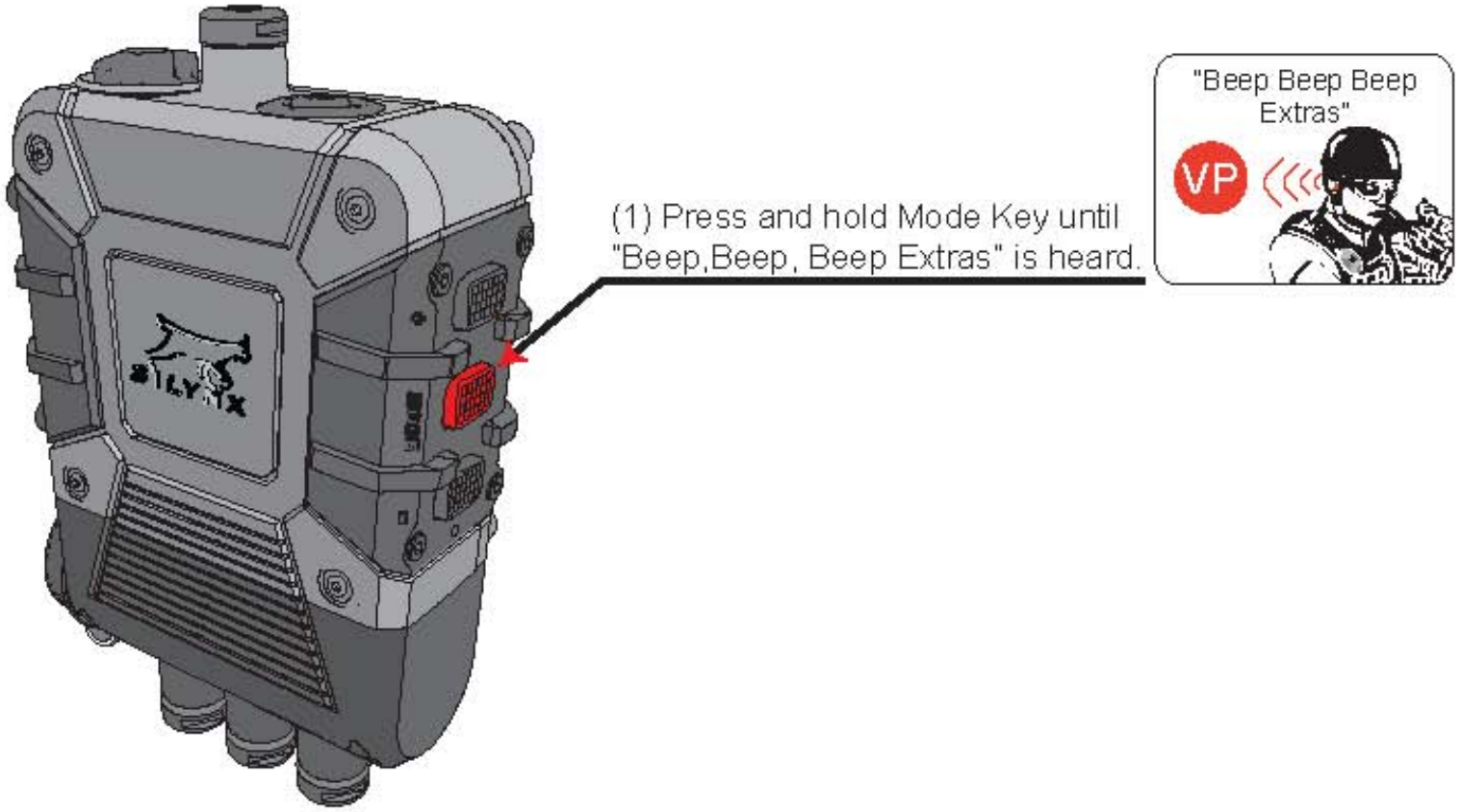


Locking/Unlocking the C4OPS Keypad

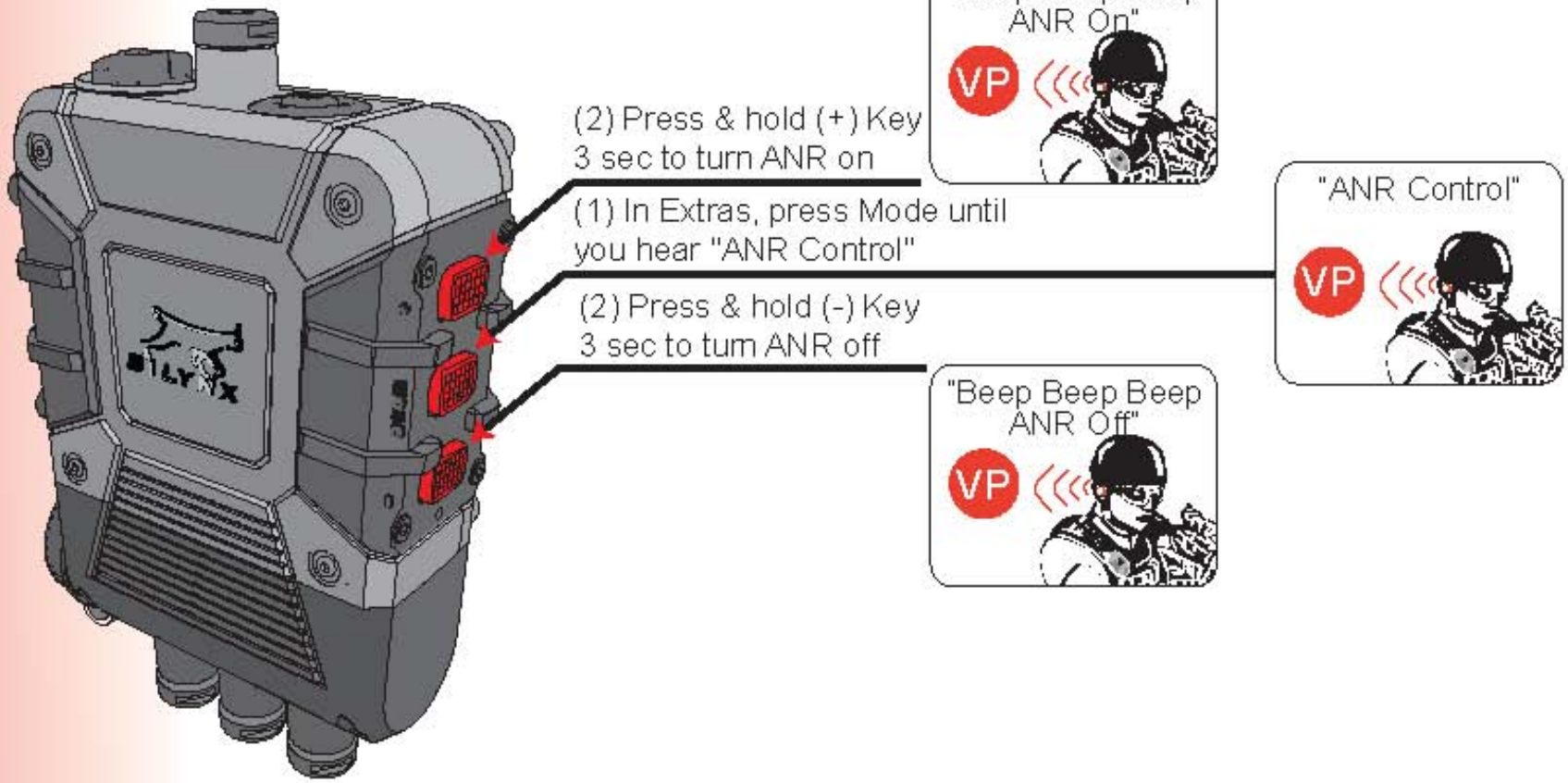




The Extras menu allows access to additional C4OPS features.



In Extras (press and hold Mode Key for 3 sec to enter Extras), immediately press Mode Key until you hear "ANR Control".



NOTE: After VP "ANR Off", keep holding (-) key for 3 sec to confirm ANR Off Selection. VP "Beep Beep Beep ANR Off"
After VP "ANR On", keep holding (+) key for 3 sec to confirm ANR On Selection. VP "Beep Beep Beep ANR On"

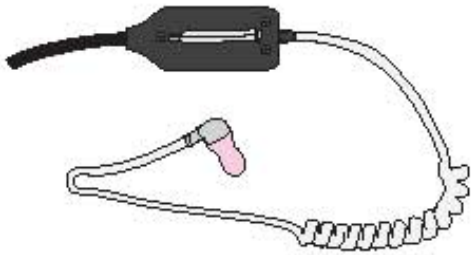
C4OPS Control Box

Peltor/Sordin Headset Adaptor
P/N: CA0015-01

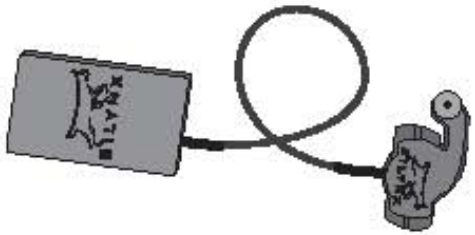
Earmuff

Optional Covert Headset Config

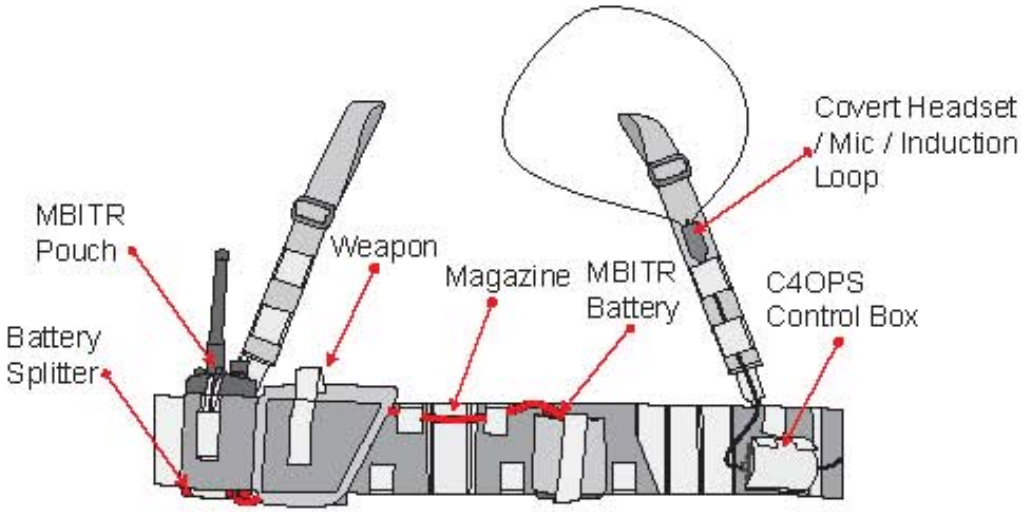
Covert Wireless Earpiece



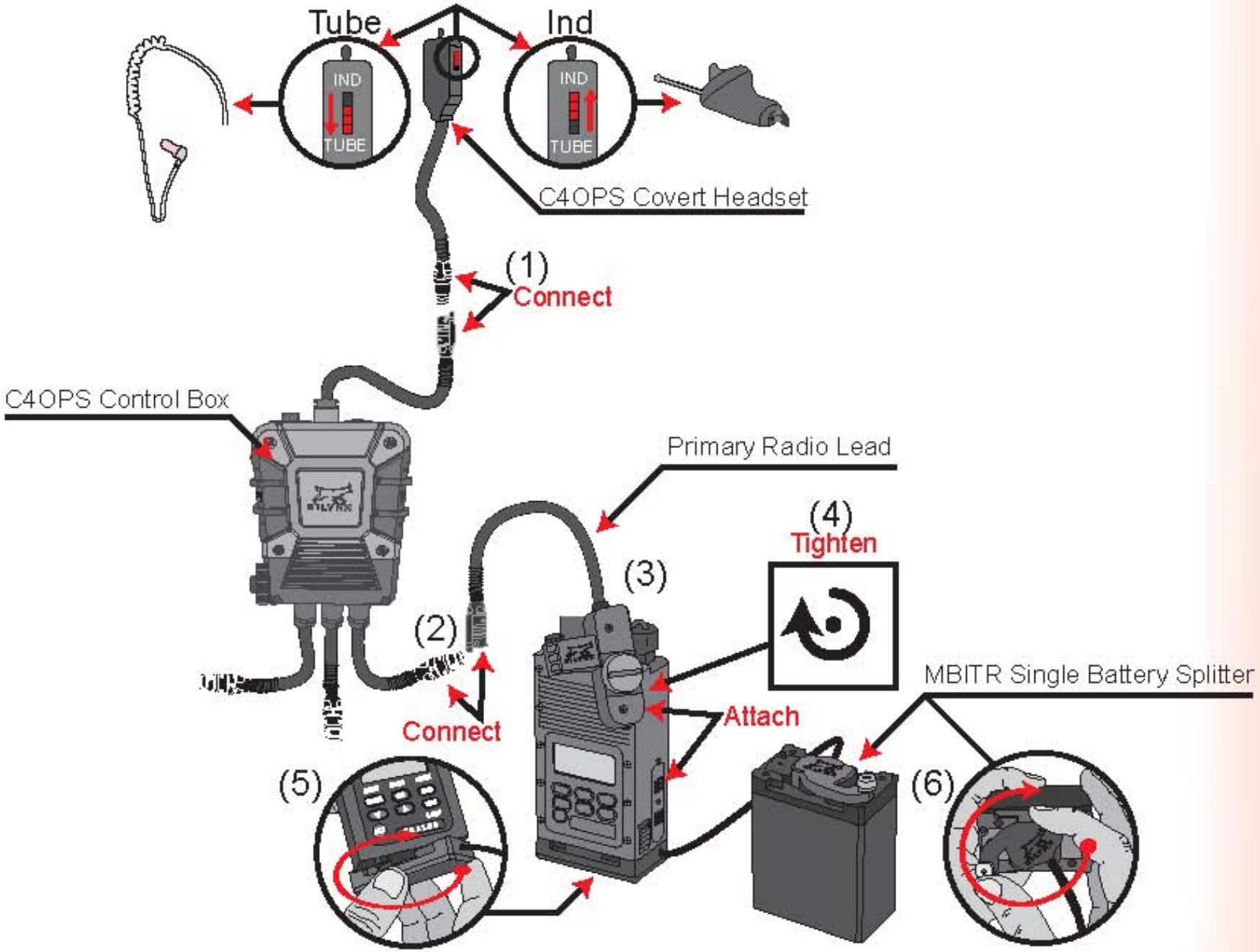
Acoustic Tube (semi-covert)

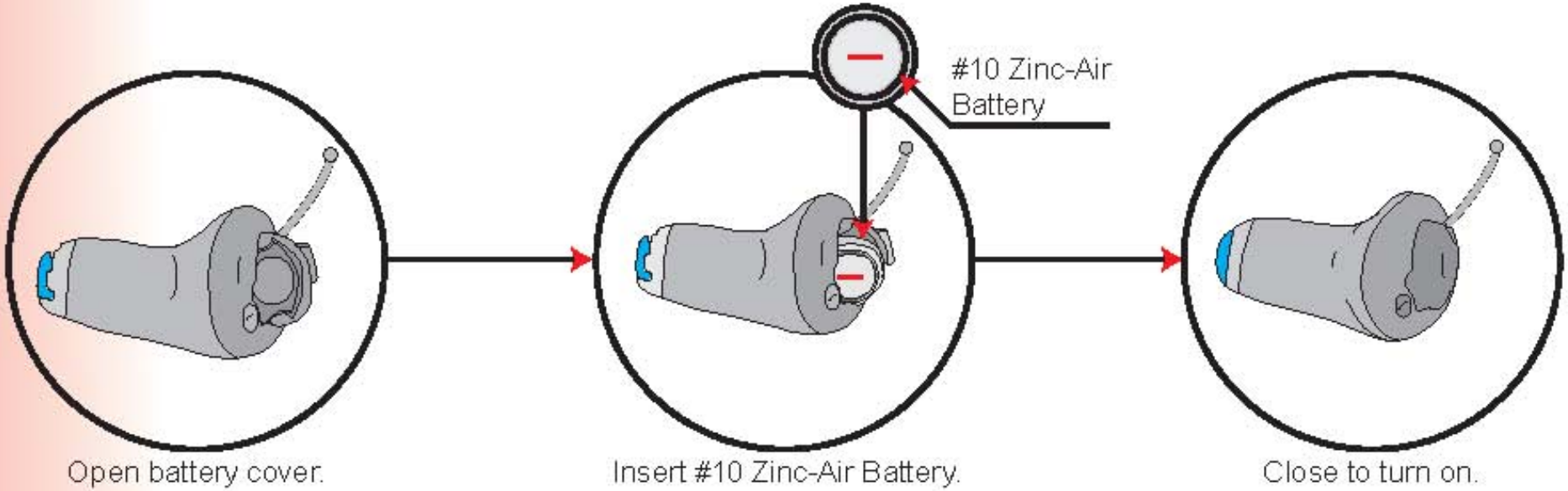


MBITR Single Battery Splitter - splits the MBITR and its battery to reduce the form factor



Covert Carrying Belt provides compartments to hold the MBITR radio, MBITR battery, C4OPS Control Box, a weapon, and a spare magazine.

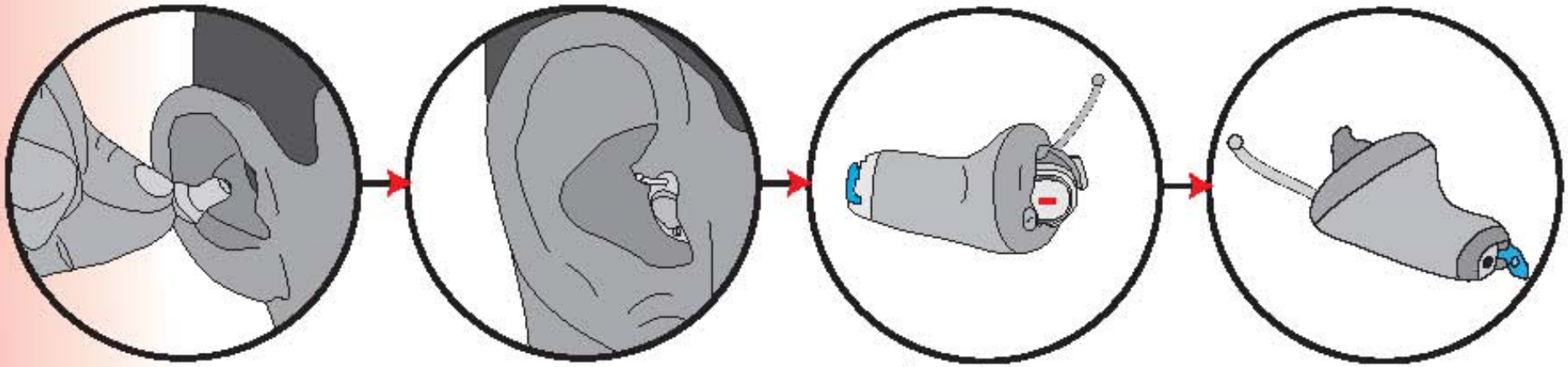

Tube
Ind
IND
TUBE
IND
TUBE
C4OPS Covert Headset
(1)
Connect
C4OPS Control Box
Primary Radio Lead
(4)
Tighten
(3)
(2)
Connect
Attach
MBITR Single Battery Splitter
(5)
(6)



Open battery cover.

Insert #10 Zinc-Air Battery.

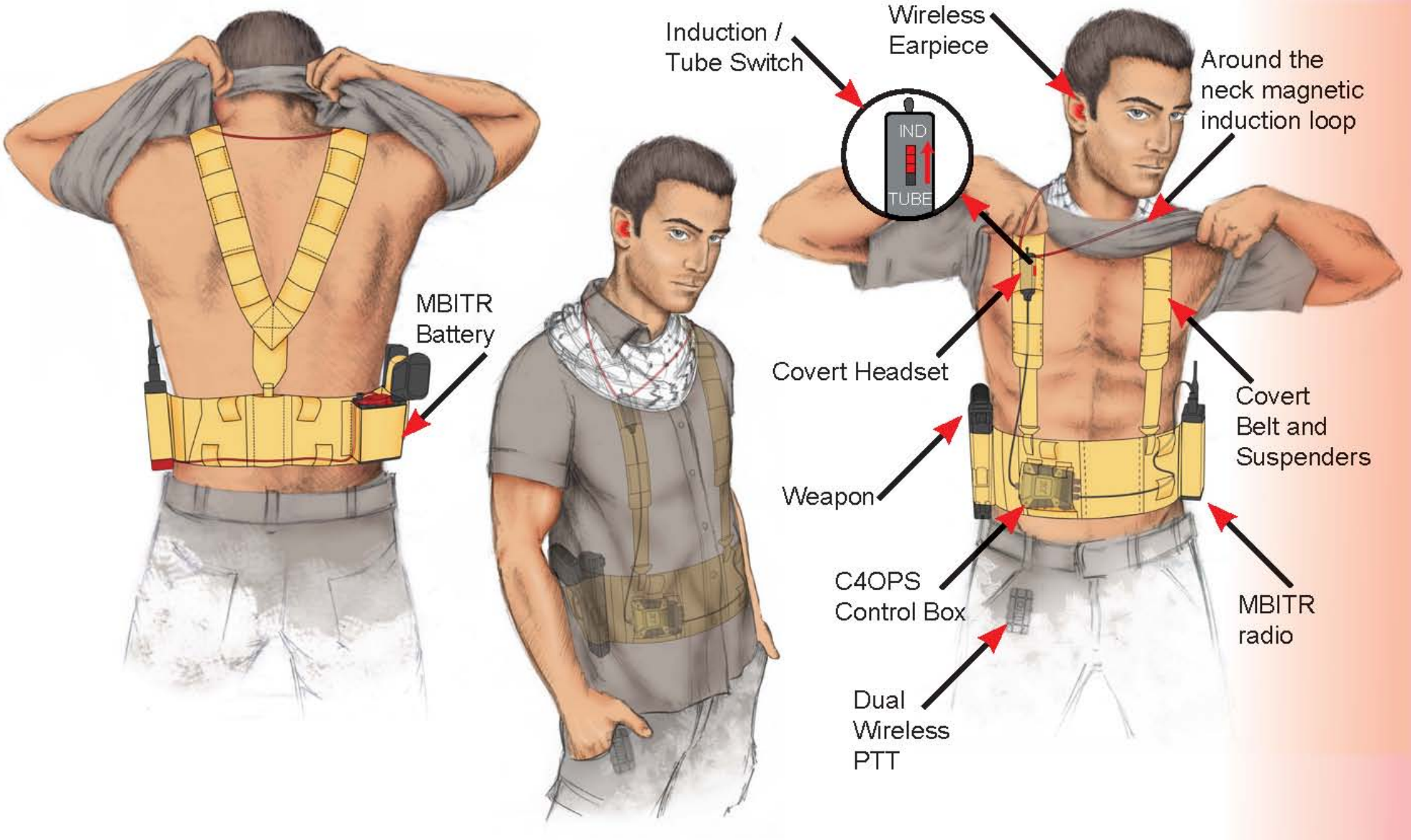
Close to turn on.



Open battery
cover to turn earpiece off.

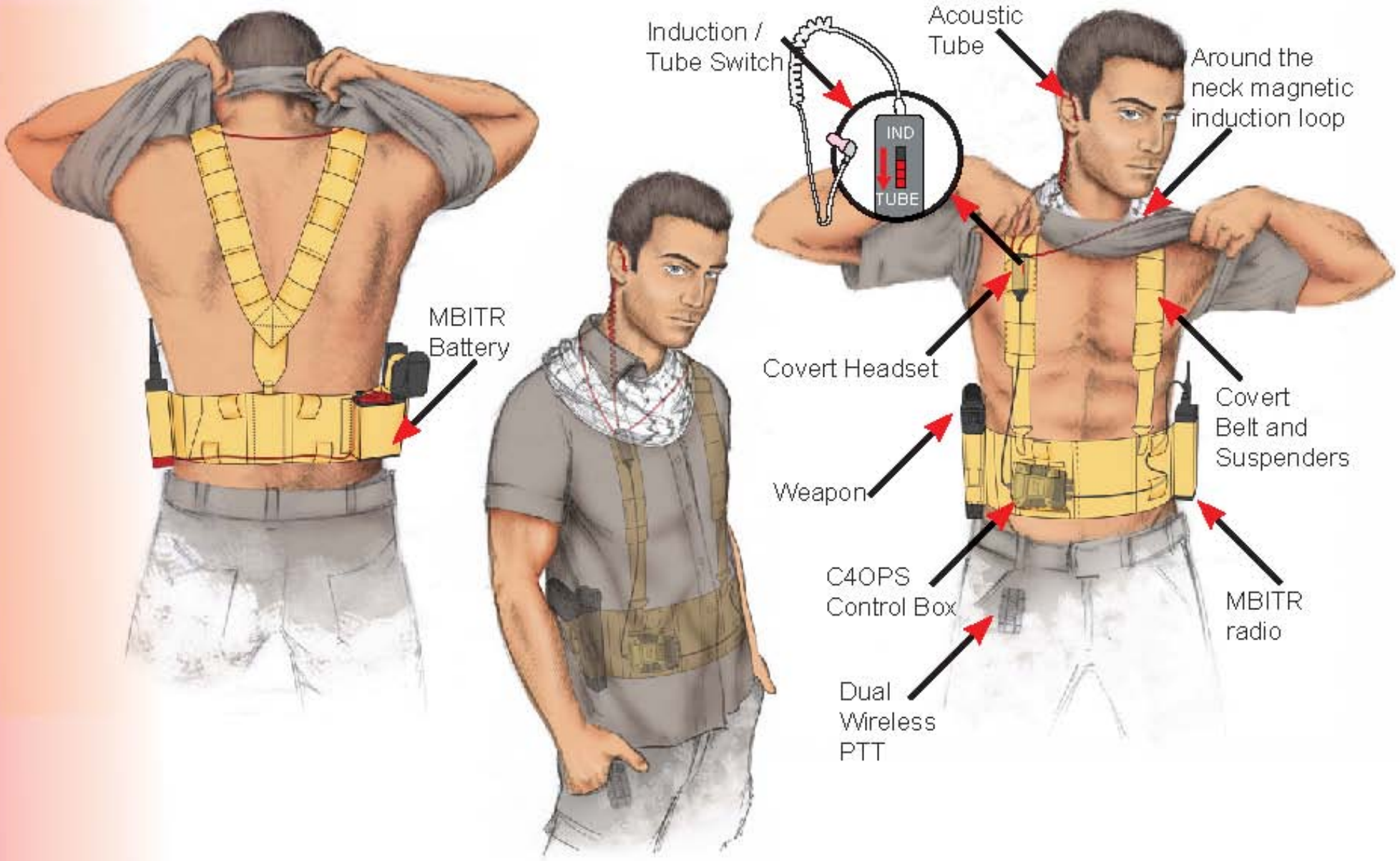
Open blue cover
to clean wax.

Covert Set Up with Wireless Earpiece



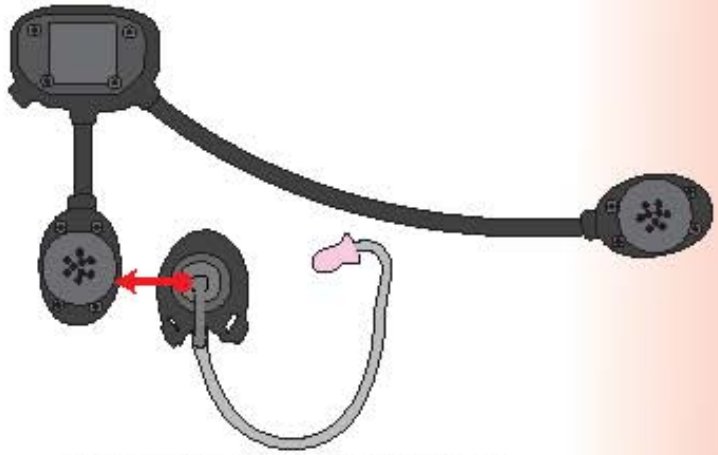
NOTE: See Tone Signaling page 33

Semi-Covert Set Up with Acoustic Tube



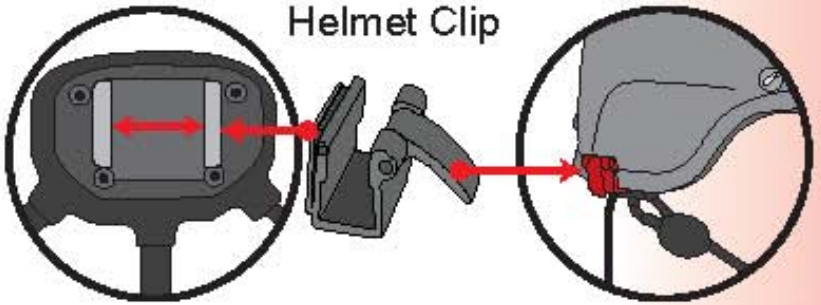
C4OPS 20m Immersible Maritime Headset Config

Acoustic Tube for Covert Monitoring



Attach to the speaker part of the low noise headset.

Helmet Clip

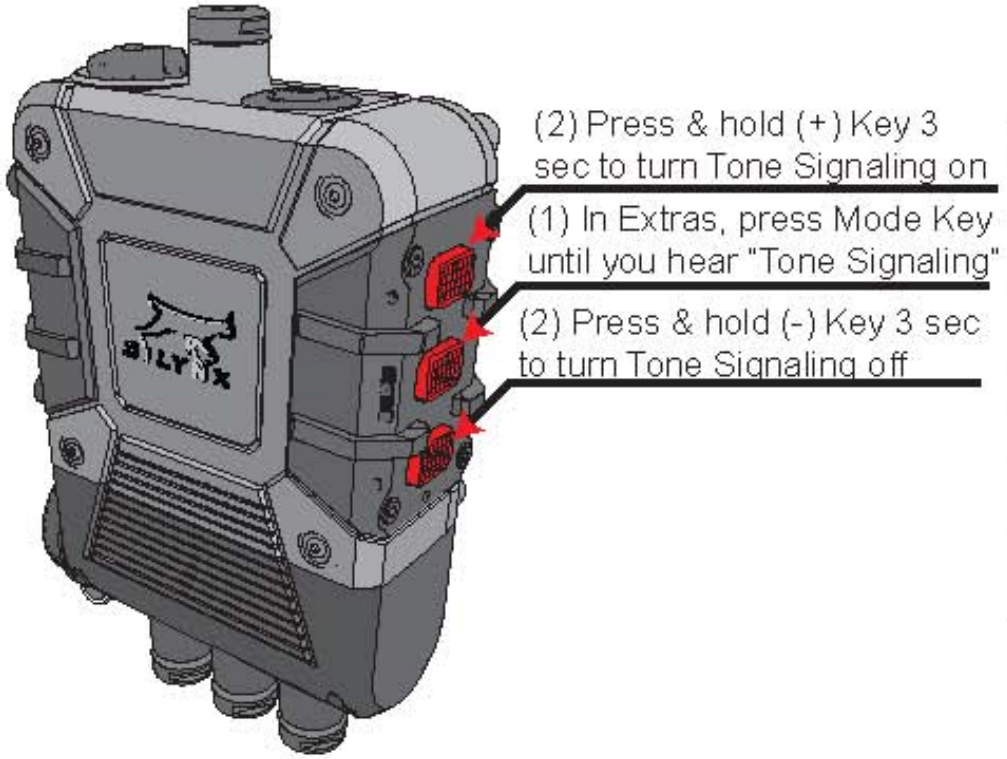


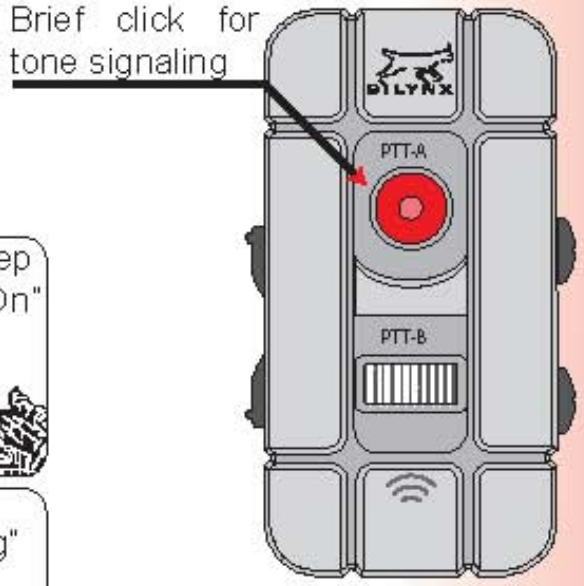
NOTE: C4OPS System is immersible to 20m only when: 20m Immersible Maritime Headset Config is attached to C4OPS Control Box. MBITR/JEM (Maritime 10 pin Impulse) Cable Adaptor attached. **Battery cover is fully tightened.**

These features and modes are normally disabled but can be enabled via optional C4OPS PC Programmer:

- Tone Signaling (for covert communication)
- VOX (voice activation)
- C4OPS and DWPTT Programmable Hot Keys

Tone Signaling allows the operator to transmit tones in situations where verbal communication can compromise the mission.
In Extras (press & hold Mode Key for 3 sec to enter Extras), immediately press Mode Key until you hear "Tone Signaling".





1xClick = "Beep"

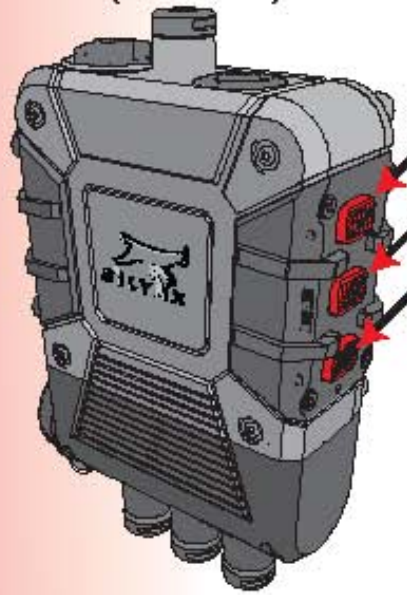
2xClick = "Beep Beep"

3xClick = "Beep Beep Beep"

4xClick or more = Higher pitch "Beep"

VOX Sensitivity menu appears only when there is a primary radio and the operator has turned VOX on via Extras menu. In Extras (press and hold Mode Key for 3 sec to enter Extras), press Mode Key until you hear the "VOX Mode" voice prompt.

Enabling VOX Mode (in Extras)

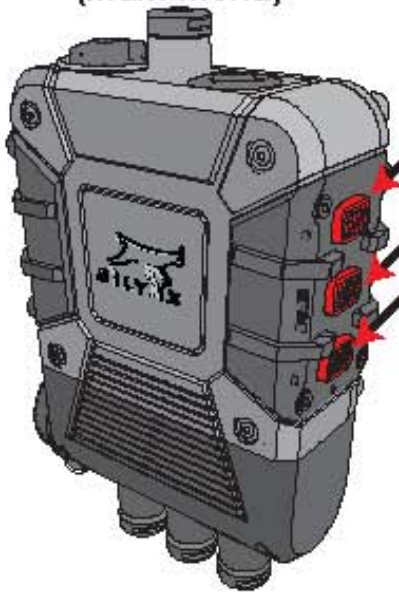


(2) Press & hold (+) Key for 3 sec to turn VOX on

(1) In Extras, press Mode Key until you hear "VOX Mode"

(2) Press & hold (-) Key for 3 sec to turn VOX off

VOX Sensitivity (main menu)



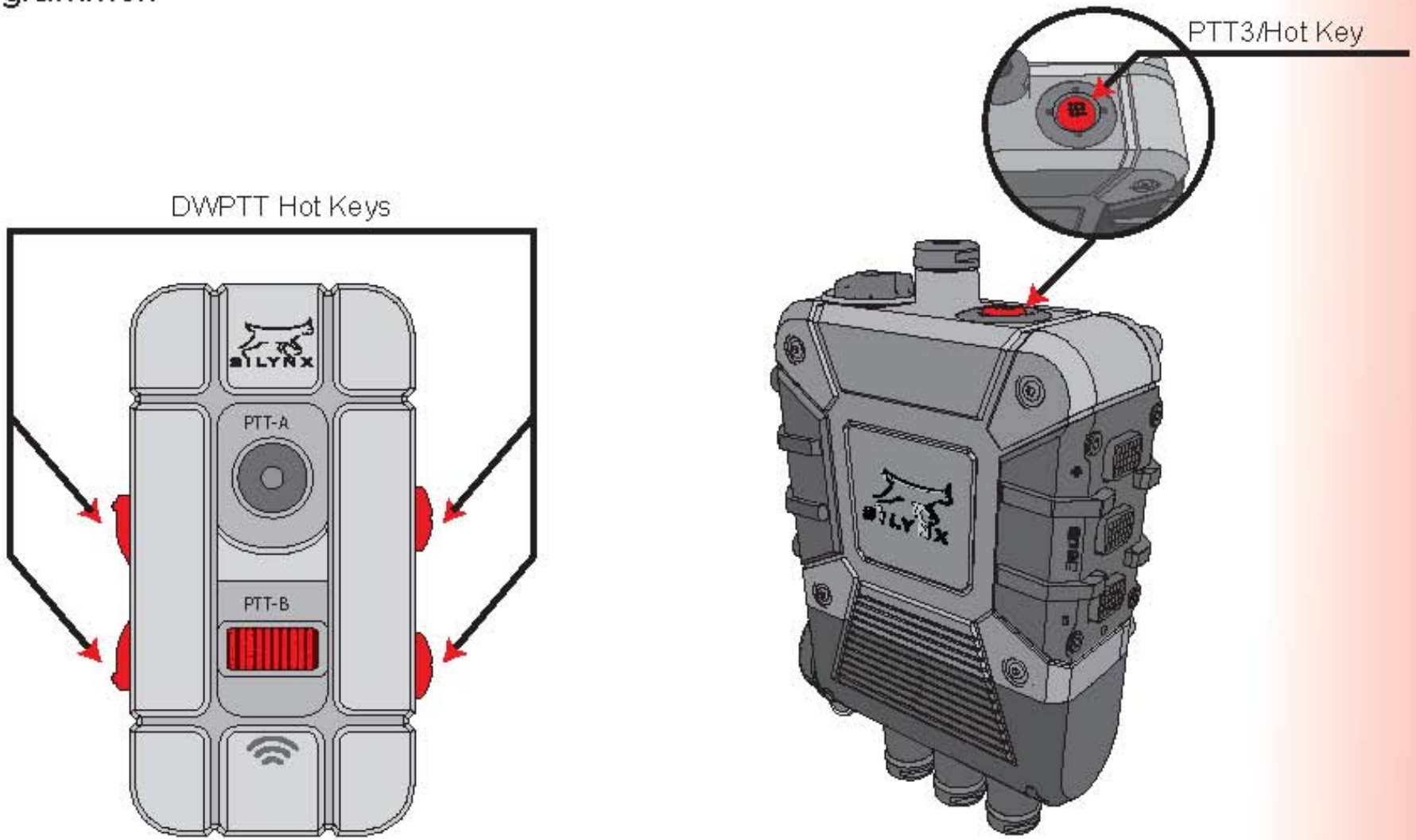
(2) Press (+) to increase sensitivity

(1) Press Mode Key until you hear the "VOX Sensitivity" voice prompt

(2) Press (-) to decrease sensitivity

NOTE: Silynx recommends using the C4OPS Control Box and DWPTT in tactical operations and refrain from using VOX.

The C4OPS Control Box and DWPTT hot keys can be programmed via the PC Programmer.



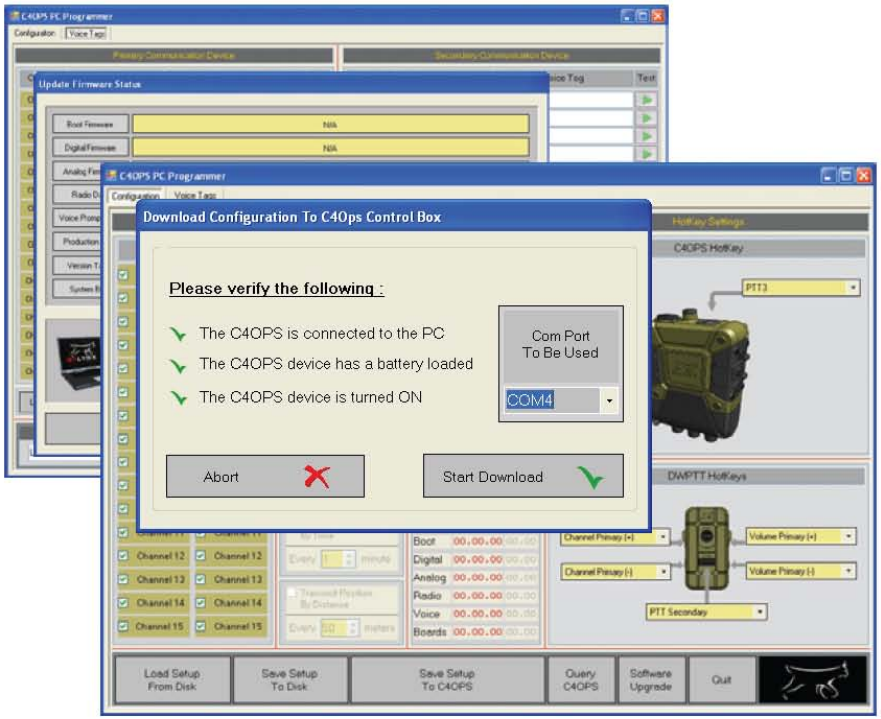
(Ex. Hear Thru Level control (or other functions) can be set in the DWPTT hot keys instead of channel selection.)
NOTE: See PC Programmer for instructions.

The optional PC programmer software allows the operator to customize the C4OPS settings using a PC.

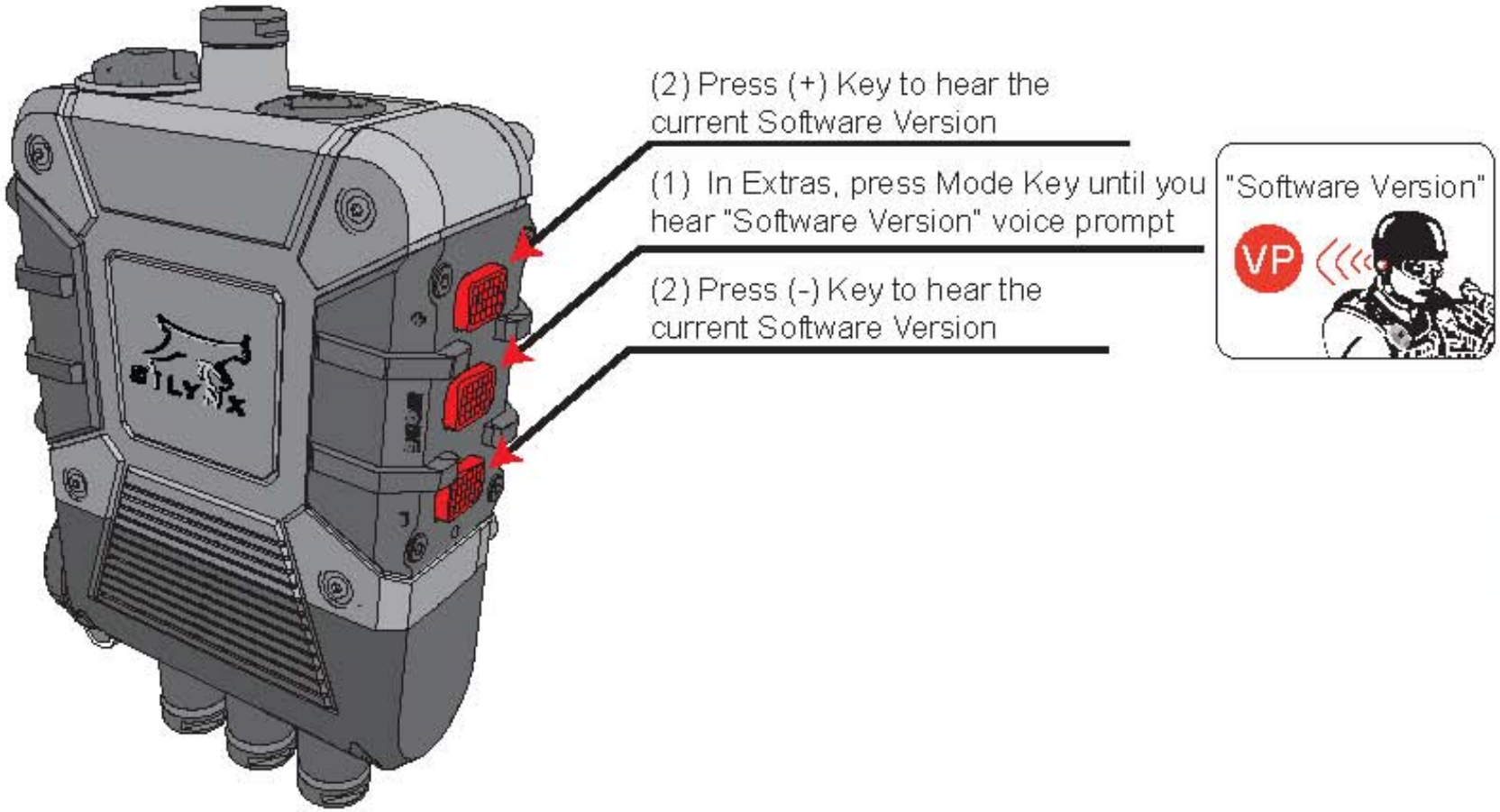
Operators can customize menus and modes to fit operational and individual needs.
For example:

- ► Define hot keys for quick access to desired modes.
- ► Enable/Disable Modes.

For further information please refer to the PC Programmer manual.



Please provide the C4OPS software version when calling customer support (1-866-572-6950). The software version can be found:



Safety Summary

The following are general safety precautions that are not related to any specific procedure. It is recommended that all personnel understand and apply these precautions during any given phase of operation and maintenance.

Keep Away From Live Circuits

Do not replace or make adjustments to internal components of the C4OPS when the power is turned on. Dangerous voltages may exist when the C4OPS is turned to the off position due to charges retained by capacitors. Always remove power and discharge and ground a circuit before touching it to avoid injury.

Lithium/Lithium Ion Batteries

Lithium and Lithium Ion batteries have a very high energy density. Use caution when testing or handling. Do not heat, incinerate, crush, puncture, disassemble, mutilate, penetrate, or apply reverse polarity. Altering the battery in any way can cause high case temperature and result in physical injury.

Operational Warnings

The following operational warnings should be followed to ensure safe operation of the C4OPS system.

- **Make sure all C4OPS radio leads are capped.**
- **C4OPS System is immersible to 20m only when:**
  - **C4OPS 20m Immersible Maritime Headset Config (P/N: SHS0003-17) is attached to the C4OPS Control Box.**
  - **MBITR/JEM (Maritime 10 pin Impulse) Cable Adaptor is attached.**
  - **Battery cover is fully tightened.**
- This system is designed to work with 1.5V AA Lithium batteries.
- Inserting the battery incorrectly will prevent the C4OPS from operating on battery power and will discharge the battery. Insert the battery as shown on the back cover of the C4OPS Control Box.
- Do not open/unscrew the system outside of an approved repair facility. Unauthorized opening of the system negates the unit's ability to withstand the environmental and operational requirements.
- Do not use solvents/corrosives to clean the system or submerge the system in solvents/corrosive solutions.
- Health and hygiene – Ear plugs should not be shared among individual users. Silynx recommends replacing ear plugs every 7 days.

NOTE: This manual contains information that is current as of the date shown on back cover. Additional functionality is being developed and the overall appearance of system is subject to change from that shown within this manual.

Acoustical Response

Speaker Frequency Spectrum:	60 Hz to 14000 Hz
System Input Impedance:	> 10KΩ
Sound Pressure Level Capabilities:	> 115dB
Max Audio Input Level:	3Vp-p
Microphone Frequency Range:	60 Hz to 9000 Hz
Audio Output Type:	Single-ended
Audio Output Level:	3mVrms, 600Ω

Hear-Thru System

Sound Localization:	360° hear-thru ±18° error for continuous duration sound ±41° error for short duration sound
Noise Reduction Ratio (NRR):	22
Impulse Noise Threshold:	95 dB
Impulse Noise Attack Time:	< 0.1 ms
Active Noise Reduction Frequency Range:	20-500 Hz

Weight

Control Box with Battery Compartment:	9.9 oz
Control Box without Battery Compartment:	8.96 oz

Battery Life Expectancy

Control Box:	36 hours for 1.5V AA Lithium
Dual Wireless PTT:	1 year for 3.6V ½ AA Lithium disposable

Environmental

Operating Temperature:	-40°C to +75°C
Storage Temperature:	-40°C to +85°C
Humidity:	95% at an ambient temperature range +30°C to +60°C
Altitude:	40,000 ft
Immersion:	20 m (Control Box)

Dimensions

Control Box with Battery Compartment:	7.4 cm (2.91 in.) W X 9.5 cm (3.74 in.) L X 2.8 cm (1.10 in.) H
Control Box without Battery Compartment:	7.4 cm (2.91 in.) W X 7.7 cm (3.03 in.) L X 2.8 cm (1.10 in.) H
Dual Wireless PTT:	3.8 cm (1.50 in.) W X 7.4 cm (2.91 in.) L X 2.8 cm (1.10 in.) H

Scale	1 Inch = 's	1 Centimeter = 's
1:5,000	416.67 feet 127.00 meters	164.00 feet 50.00 meters
1:10,000	833.33 feet 254.00 meters	328.10 feet 100.00 meters
1:12,500	1,041.66 feet 317.0 meters	410.10 feet 125.00 meters
1:20,000	1,666.70 feet 508.00 meters	656.20 feet 200.00 meters
1:25,000	2,083.30 feet 635.00 meters	820.20 feet 250.00 meters
1:50,000	4,166.70 feet 1,270.00 meters	1,640.40 feet 500.00 meters
1:63,360	5,280.00 feet 1,609.30 meters	2,078.70 feet 633.60 meters
1:100,000	8,333.30 feet 2,540.00 meters	3,280.80 feet 1,000.00 meters
1:250,000	20,833.00 feet 6,350.00 meters	8,202.00 feet 2,500.00 meters
1:500,000	41,667.00 feet 12,700.00 meters	16,404.00 feet 5,000.00 meters

Metric System Of Linear Measure

1 millimeter	=	millimeter	=	0.0393 inches
10 millimeters	=	centimeter	=	0.3937 inches
10 centimeters	=	decimeter	=	3.937 inches
10 decimeters	=	meter	=	39.37 inches
10 meters	=	decameter	=	32.81 feet
10 decameters	=	hectometer	=	328.1 feet
10 hectometers	=	kilometer	=	0.62 mile
10 kilometers	=	1.0 myriameter	=	6.21 miles

English System Of Linear Measure

12 Inches	=	1 foot
36 inches	=	1 yard
3 feet	=	1 yard
1,760 yards	=	1 mile statute
2,026.8 yards	=	1 mile nautical
5,280 feet	=	1 mile statute
6,080.4 feet	=	1 mile nautical
63,360 inches	=	1 mile statute
72,963 inches	=	1 mile nautical

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C4OPS **Pocket Guide - DOC-USM000010 Rev-03**