



Installation and Maintenance Manual HyperSpike® HS-10



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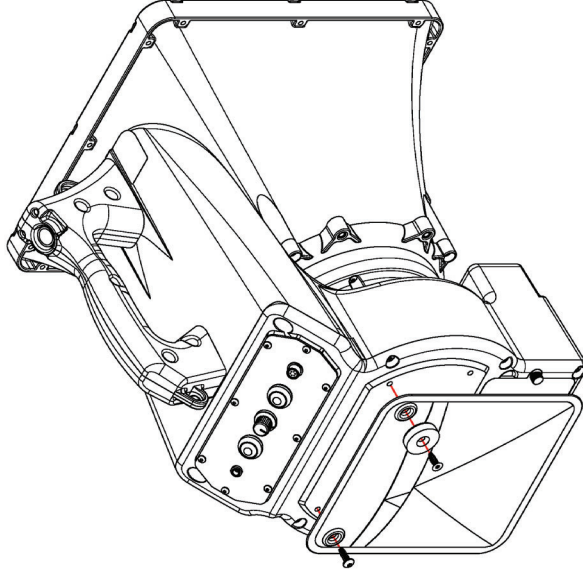
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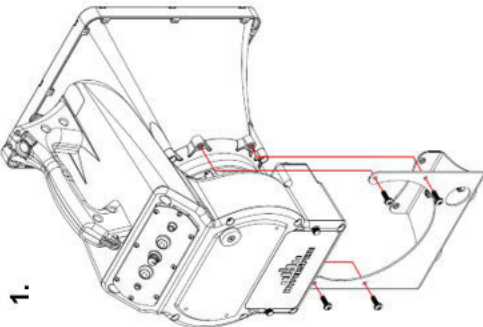


APPENDIX B – ACCESSORY POCKET (92064A-801) INSTALLATION

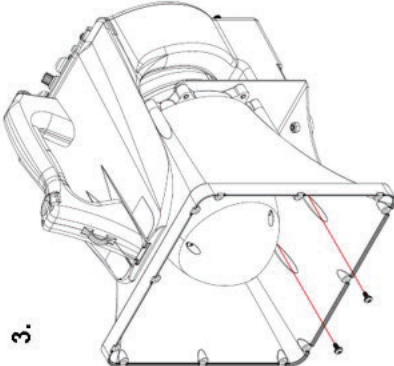
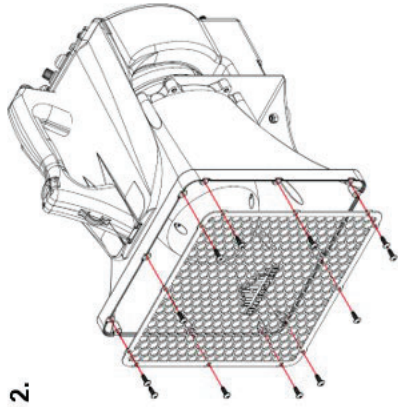




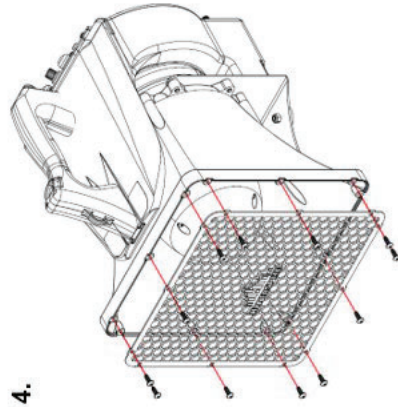
APPENDIX A – UNIVERSAL MOUNT KIT (72349B-801) INSTALLATION



2.



4.



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SAFETY PRECAUTIONS

The HyperSpike® HS-10 produces high sound levels. The primary safety risk is hearing damage or loss. Only properly trained personnel should operate the HS-10.

The safety warnings identified in this manual should be enforced to prevent injury during operation.

WARNING:

TEMPORARY OR PERMANENT HEARING DAMAGE MAY OCCUR
HIGH LEVELS OF SOUND CAN BE EMITTED

Always wear hearing protection according to OSHA's hearing conservation program.
Operators must remain behind the HS-10 during operation.

WARNING:

THE HS-10 MODEL R CONTAINS 44.4V 3.2Ah LITHIUM ION BATTERY.
THE HS-10 MODEL C CONTAINS 22.2V 3.2Ah LITHIUM ION BATTERY.

LITHIUM ION BATTERIES INCLUDE HAZARDOUS CHEMICALS,
WHICH MAY BE RELEASED IF THE BATTERIES ARE DAMAGED.

THE BATTERY IS NOT USER REPLACEABLE.

If the battery is tampered with, all warranty will be void.

WARNING:

BATTERY MAY CATCH ON FIRE OR
EXPLODE IF DAMAGED OR MISHANDLED.

DO NOT STORE IN TEMPERATURES
THAT EXCEED 60°C.

CHARGE USING ONLY THE APPROVED
CHARGER.

CAUTION!



LITHIUM ION BATTERY



7. WARRANTY

Ultra Electronics – USSI warrants that its products shall conform to the published specifications as of the date of order and shall be free from defects in material and workmanship.

Upon receipt of the returned product(s), Ultra Electronics – USSI will repair or replace any and all product(s) at its discretion. Ultra Electronics – USSI will not issue a credit for product(s) returned through the Return Authorization process. This warranty is extended to the original purchaser and all subsequent owners, provided a copy of the original dated bill of sale is presented when service is requested under warranty.

HyperSpike® Warranty Period

Such warranty shall extend for a period of one (1) year from the date of shipment from USSI's facility.

How to obtain service under this warranty

If your product(s) should require service, please write, phone, fax, or email us at:

Ultra Electronics – USSI
4868 East Park 30 Drive
Columbia City, Indiana, USA 46725
Phone: 260-248-3665
Email: ServiceDepartment@ultra-ussi.com

Ultra Electronics – USSI will provide a Return Material Authorization (RMA) number so that you can ship the product(s) to our factory. Do not ship the product(s) to us without first obtaining an RMA number. Place the RMA number on all boxes returned to the factory. You are responsible for transporting your product(s) to our factory. We will pay the return shipping charges on all product(s) repaired under warranty.

Failures not covered by this warranty

This warranty covers defects in manufacture only. It does not cover:

1. damage caused by accident, misuse, abuse, product modification, or neglect;
2. damage incurred during shipment (you must claim these damages from the carrier);
3. damage resulting from failure to operate the product in accordance with the instruction manual; or
4. damage resulting from attempted repairs by unauthorized personnel.

Exclusion of certain damages

Ultra Electronics – USSI's liability is limited to the repair or replacement, at our option, of any defective product(s) and shall in no event include indirect, consequential, incidental, punitive, or special commercial damages of any kind. Some states do not allow the exclusion or limitation of indirect, consequential, incidental, punitive, or special damages so the preceding limitation or exclusion may not apply to you.

Warranty after repairs

An additional warranty of ninety (90) days will be extended to any parts that were repaired or replaced. The original standard warranty or any extended warranty that was purchased at the original time of sale of the product(s) is still in effect for the remainder of the warranty term.



6. HYPERSPIKE® APP

Quick Reference Guide and download links for Apple and

Android devices can be found at: <https://www.ultra-hyperspike.com/>

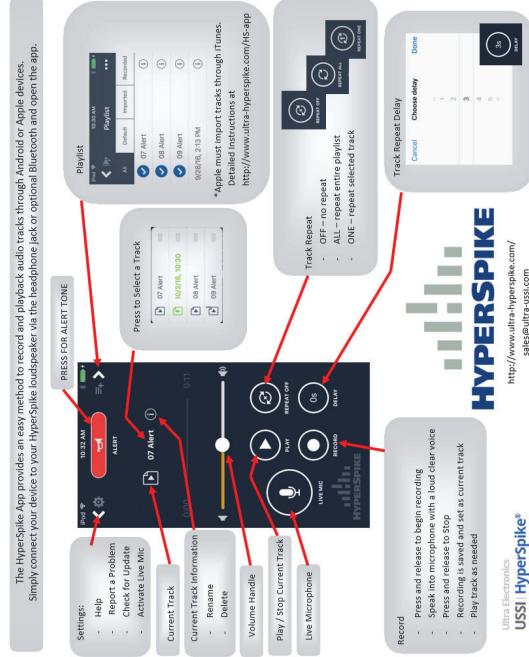


Figure 5: App Quick Reference Guide



Additional Electrical Safety Measures

Following these basic safety measures will prevent dangerous or potentially deadly situations from arising:

- Inspect the unit and all cables for damage before each use.
- Never override any of the HS-10 safety features.
- Always plug the charger into properly grounded electrical outlets.
- Never allow any part of the system to sit in pooled water, or to be immersed in water.

Sound Safety Measures

Threshold of Pain

The National Institute for Occupational Safety and Health (NIOSH) recognizes 120 dB as the threshold of pain for unprotected hearing. Operators should wear hearing protection and ensure that personnel are not directly in front of the device, at close range, when the power is ON.

General Warnings

The HS-10 is not fully charged out of the box. Before using the device, read the safety instructions below, and then follow charging procedures outlined in **Section 3.6**.

- Do not charge the HS-10 in explosive environments, such as in the presence of flammable liquids, gases, or dust.
- Recharge the HS-10 with the charger provided by the manufacturer. Failure to do so may result in fire.
- Do not immerse in water or other liquids.
- Do not store or use the HS-10 in locations where the temperature may reach or exceed 140°F (60°C). For best life, store the HS-10 in a cool, dry location.
- **WARNING: FIRE HAZARD.** Never attempt to open the battery door for any reason. If the battery pack is exposed or damaged, do not attempt to charge. Do not crush, drop, or damage the HS-10/battery pack. Do not use a battery pack or charger that has received a sharp blow, been dropped, been run over, or been damaged in any way. Damaged battery packs should be recycled.
- Do not burn the HS-10, even if it is severely damaged or worn out. The internal battery pack can explode or give off toxic gas fumes in a fire.
- Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts the eyes, seek medical help. Liquid ejected from the battery may cause irritations or burns.

- Batteries used in the HS-10 have a charging range of 0-40°C. The charger will not charge the HS-10 if it detects a temperature range that is outside 0-40°C. The charger will wait until the battery is between 0-40°C to charge.
- The HS-10 has internal battery fault detection. In the event of a **RED** fault light, the unit should be returned to an authorized service facility.
- In the event of battery damage, proper PPE (Personal Protective Equipment) should be worn to handle/dispose of the battery.

Charger Warnings

- **WARNING: SHOCK HAZARD.** Do not allow any liquid to get inside the wall charger. Electric shock may result.
- DO NOT attempt to charge any other product with the charger supplied with the HS-10. The charger and battery pack are specifically designed to work together.
- Do not expose the charger to rain or snow.
- Warning: Do not try to force the charger into the charger port. The charger connector is keyed and will only fit in one direction. Forcing the connection could result in damage to the HS-10 and battery.
- When disconnecting the charger, pull by the plug not the cord.
- Charge the unit in a dry location where damage will not occur.
- Do not use an extension cord unless it is absolutely necessary. The user is responsible for proper extension cord selection according to local electrical code. Use of improper extension cord could result in risk of fire, electric shock, or electrocution.
- Do not operate the charger if there is damage to the cord or plug.
- **WARNING: SHOCK HAZARD.** Do not use the charger if it has incurred damage in any way.
- **WARNING: SHOCK HAZARD.** Do not disassemble the charger.
- **WARNING: SHOCK HAZARD.** Disconnect the charger from the outlet before attempting any cleaning.
- The charger provided is designed to operate on 90-264VAC 47-63Hz and draws a maximum of 1.5A RMS
- The charger should be removed from the HS-10 when the Status / Power LED shows a charged battery.
- Partially charged batteries will continue to function but will not have the same run time.

Table 7: Charging Troubleshooting Guide

Observed Effect	Possible Cause	Troubleshooting Steps	Reference
Power/Status LED flashes Red during charging	Battery Error	Un-plug wall power supply and power on HS-10: If HS-10 powers on with no error, continue to operate HS-10 until batteries need to be recharged. Plug in wall charger and allow HS-10 to complete a full charge cycle. Refer to Section 3.6 for proper/complete charging procedure. (Note: This may take multiple charge/discharge cycles to fully resolve)	B01
		If HS-10 powers on with solid Red LED, contact service center	
	Battery out of temperature range	Ensure battery is within rated charging temperature range of 32° - 104° F (0° - 40° C)	B02
No Power/Status LED during charging	Wall power supply not functioning	Verify LED on wall power supply is illuminated when plugged in.	B03
	Faulty unit	If LED is illuminated on wall power supply, contact service center.	B04
No LED on wall power supply	No AC voltage present at wall plug	Verify that AC voltage is present and try another outlet if necessary.	B05
	Faulty wall power supply	Contact service center.	B06

Table 6: Operational Troubleshooting Guide

Observed Effect	Possible Cause	Troubleshooting Steps	Reference
HS-10 Fails to Power On	Batteries are depleted	Plug in wall charger and allow HS-10 to complete a full charge cycle. Refer to Section 3.6 for proper/complete charging procedure.	A01
Power/Status LED illuminates solid Red when powered on	Battery error	Plug in wall charger and allow HS-10 to complete a full charge cycle. Refer to Section 3.6 for proper/complete charging procedure.	A02
Power/Status LED slowly blinks Red when powered on	Internal communication error	HS-10 needs service.	A03
No sound output when using line input	HS-10 volume set too low	Turn up HS-10 volume knob until the desired output level is achieved.	A04
	Audio source volume level too low	Turn up volume of audio source (i.e. iPod, MP3 player, smart phone, etc.)	A05
	Line input cable not fully inserted	Ensure line input cable is fully inserted into HS-10 and playback device.	A06
	Defective line input cable	Replace line input cable.	A07
	Microphone PTT is depressed	Ensure microphone PTT is not depressed.	A08
	HS-10 volume set too low	Turn up HS-10 volume knob until the desired output level is achieved.	A09
	PTT not depressed while speaking	Ensure PTT is fully depressed while speaking into the microphone.	A10
No sound output when using microphone	Not speaking loud enough into microphone	Ensure you are speaking firmly into the microphone.	A11
	Microphone connector not fully seated or connector with bent pins	Disconnect microphone from HS-10 and inspect pins to ensure all six pins are present and straight. Align connector correctly and fully seat the locking connector.	A12
No sound output when pressing alert button	Defective microphone assembly	Replace microphone assembly.	A13
	HS-10 volume set too low	Turn up HS-10 volume knob until the desired output level is achieved.	A14

Disposal of Lithium Ion Batteries

Operators should follow their own corporate policies and/or the policies of a local recycle center for the proper disposal of lithium ion batteries.

Transportation of Lithium Ion Batteries

The HS-10 has been certified to IATA Dangerous Goods Regulations. Refer to IATA standards for correct shipping method.

Ultra Electronics – USSI certifies that the HS-10 has been evaluated to meet all requirements as defined by the UN standard, “UN38.3, Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Fifth Revised Edition, Amendment 2, Effective January 1,2015”.

Battery Part Number: 54053A-1

Description: Rechargeable Li-Ion Battery, 22.2 VDC, 3.2Ah, 71Wh

Storage Recommendations

The best storage place is one that is cool and dry, away from direct sunlight and excess heat or cold.

When storing the HS-10 for extended periods of time, ensure that the unit is placed in a cool, dry place.

Do not store the device in an area where the temperature will exceed 60°C.

Note: Batteries should not be stored completely depleted of charge. The HS-10 will need to be recharged before use.



1. OVERVIEW

1.1 Model Numbers

The following HS-10 model numbers are covered in this manual:

- 90199A-801-XX Commercial Model C
- 90199A-802-XX Commercial Model R
- 90199A-803-XX Mli-Spec Model C
- 90199A-804-XX Mli-Spec Model R

1.2 Description

The HyperSpike® HS-10 is designed for ease of use and maximum transportability. It is suitable for both static and mobile applications. The HS-10 is designed with built in record play microphone capability, Audio Gain Control and Digital Signal Processing for maximum acoustic performance. The HS-10 can be configured for a variety of applications and customized with optional accessories including, but not limited to, wireless transmit/receive system, a universal tripod/magnetic mount, or a transit case.

1.3 Standard Equipment / Optional Accessories

Table 1: Commercial HS-10 Standard Accessories (-801 & -802)

Part Number	Description	Quantity
11018A-1	Microphone	1.00
42217A-1	Wall Plug Power Supply	1.00
92013A-1	Accessory Bag	1.00
FE-3MM-06-90	Audio Line Input Cable	1.00

Table 2: Mli-Spec HS-10 Standard Accessories (-803 & -804)

Part Number	Description	Quantity
42020A-801	Mli-Spec Audio Line Input Cable	1.00
42217A-1	Wall Plug Power Supply	1.00
92012A-802	Mli-Spec Dynamic Microphone	1.00
92013A-1	Accessory Bag	1.00



3.6 Charge Internal Battery

1. Plug charger into Charge Port ensuring that the keying feature of the charger connector is facing up.

Warning: Do not try to force the charger into the charger port. Doing so could result in damage.

2. Plug charger into electrical outlet.
3. Status / Power LED should start flashing **YELLOW**.
4. Once charging is complete, the Status / Power LED will be solid **YELLOW**.

Warning: Charging will take approximately 4.5 hours from full discharge. If a full charge is not acquired in 5 hours, disconnect the unit from the charger and consult an authorized service facility.

Note: The HS-10 is not operational while the battery is charging.

4. RECOMMENDED MAINTENANCE

There is no scheduled maintenance required for the HS-10, but the following is recommended.

- Inspect the unit and all cables for damage before and after each use.
- Inspect the unit around the battery door for noticeable damage to the battery.
- Wipe down the unit with a clean, damp cloth after each use.
- Store in a clean and dry environment.

5. TROUBLESHOOTING

If you are experiencing problems with your HS-10 hailing device, refer to the following tables to diagnose any problems. If your problem is not listed below or persists after following the instructions listed below, contact your dealer or service center.

For accurate and expedient customer service, please have the following information readily available when contacting HyperSpike: Model Number, Serial Number, Purchase Date, and Troubleshooting Guide Reference Code.

3.5 Microphone Operation

For best performance and to minimize risk of feedback, position the microphone directly in front of mouth.

Record/Playback Mode

1. Set **Mode** to **Record / Playback** (**GREEN** Mode LED)
 - Press and release **Mode** button to toggle between Live Voice and Record/Playback.
2. Set Volume to desired level.
3. Press and hold button on microphone to begin recording.
 - Mode LED will change to **BLUE** while recording.
4. Speak loudly and clearly into microphone.
5. Release button on microphone.
6. Unit will automatically playback recorded audio.
 - Mode LED will return to **GREEN** after playback.

Note: To Stop playback, press and release button on microphone rapidly.

Note: R/P message length is limited to 30 seconds.

Live Voice Mode

1. Set **Mode** to **Live** (**RED** Mode LED).
 - Press and release **Mode** button to toggle between Live Voice and Record/Playback.
2. Set Volume to desired level.
3. Press and hold button on microphone.
4. Speak loudly and clearly into microphone.
5. Release button on microphone.

Note: If the Live Voice audio feeds back or “squeals” choose Record/Playback Mode, reduce volume, or move microphone further away from the unit.



CAUTION

Equipment damage may occur. Audio feedback may occur when using a live microphone. Always operate the microphone directly behind the HS-10

Table 3: Commercial Optional Accessories

Part Number	Description
11018A-1	Standard Microphone
11019A-1	Headset Microphone
33653A-1	Shoulder Strap
42217A-1	Wall Plug Power Supply
42263A-1	Car Plug, Power Supply
54053A-1	Single Battery Replacement
72349B-801	Universal Mount Kit
72354B-801	Tripod and Case
92012A-803	Dynamic Microphone
92013A-1	Accessory Bag
92063A-801	Soft Case
92064A-801	Accessory Pocket
92065A-1	Power Supply Adapter Plug – North America
92065A-2	Power Supply Adapter Plug – Australia
92065A-3	Power Supply Adapter Plug – Brazil
92065A-4	Power Supply Adapter Plug – China
92065A-6	Power Supply Adapter Plug – Europe
92065A-6	Power Supply Adapter Plug – India / S. Africa
92065A-7	Power Supply Adapter Plug – United Kingdom
99088A-1	Hard Transit Case
FE-3MM-06-90	Audio Line Input Cable

Table 4: Mil-Spec Optional Accessories

Part Number	Description
33653A-1	Shoulder Strap
42020A-801	Mil-Spec Audio Line Input Cable
42217A-1	Wall Plug Power Supply
42263A-1	Car Plug, Power Supply
54053A-1	Single Battery Replacement
72349B-801	Universal Mount Kit
72354B-801	Tripod and Case
92012A-802	Mil-Spec Dynamic Microphone
92013A-1	Accessory Bag
92063A-801	Soft Case
92064A-801	Accessory Pocket
92065A-1	Power Supply Adapter Plug – North America
92065A-2	Power Supply Adapter Plug – Australia
92065A-3	Power Supply Adapter Plug – Brazil
92065A-4	Power Supply Adapter Plug – China
92065A-6	Power Supply Adapter Plug – Europe
92065A-6	Power Supply Adapter Plug – India / S. Africa
92065A-7	Power Supply Adapter Plug – United Kingdom
99088A-1	Hard Transit Case

1.4 Identification

To aid future troubleshooting and support, please record the following specifics about your HS-10:

HS-10 Model Number:

HS-10 Serial Number:

HS-10 Purchase Date:

1.5 Features

The HyperSpike® HS-10 is designed for ease of use and maximum transportability. It is suitable for both static and mobile applications. The HS-10 can be configured for a variety of applications and customized with optional accessories including, but not limited to, wireless transmit/receive system, a universal tripod/magnetic mount, or a transit case.

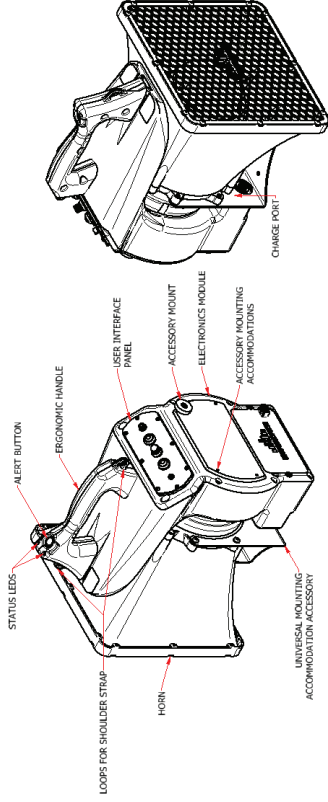


Figure 1: HS-10

3.2 Initial Testing

To confirm the unit is functioning properly, follow these basic steps:

1. Prepare the unit for use as described in **Section 2**.
2. Ensure the area in front of the HS-10 is clear and the operator is wearing proper hearing protection.
3. Ensure **VOLUME** control is set to the lowest setting by turning the knob counter clockwise.
4. Press and hold the **POWER** button for one second to turn the HS-10 **ON**.
5. Press and hold the **ALERT** button.
6. Gradually turn the **VOLUME** control clockwise until alert tone is heard by operator.
7. If the alert tone is not heard, refer to troubleshooting in **Section 5**.
8. Press and hold the **POWER** button for one second to turn the HS-10 **OFF**.

3.3 Alert Tone Feature

Used to quickly gain the attention of an intended target, the embedded alert tone can be initiated by pressing the button. The high frequency alert tone is emitted for as long as the button is depressed.

Note: Alert Tone has priority over Live Voice, Record/Playback, and Line Input.



Equipment damage may occur as a result of mis-use of alert tone function. The alert tone is designed to be used for short periods to gain attention prior to communication. To extend the life of the HS-10 do not use the alert tone for extended continuous durations.

3.4 Line Input

To transmit pre-recorded voice messages and tones, plug auxiliary player (MP3/phone/etc.) into the HS-10 using the supplied Line Input Cable.

NOTE: Ensure the auxiliary player volume is set to maximum output. Failure to do so may result in less than maximum HS-10 acoustic output.

3. NORMAL OPERATIONS













WARNING:

TEMPORARY OR PERMANENT HEARING DAMAGE MAY OCCUR
HIGH LEVELS OF SOUND CAN BE EMITTED

Always wear hearing protection according to OSHA's hearing conservation program.
Operators must remain behind the HS-10 during operation.

3.1 Status LEDs

Status LEDs built into the HS-10 guide the operator of the status and with troubleshooting the device.

STATUS / POWER LED		MODE LED	
Operation		Operation	
	Normal Operation		Record / Play Mic. Mode (Idle)
	Normal Operation (Low Battery)		Record / Play Mic. Mode (Active)
	Battery Error		Live Voice Mic. Mode
	Internal Comm Failure		
Charging			
	Battery Charging		
	Battery Charging (Near Complete)		
	Battery Charging (Complete)		
	Battery Charge Error		
	Battery Charge Error		
	Battery Charge Error		

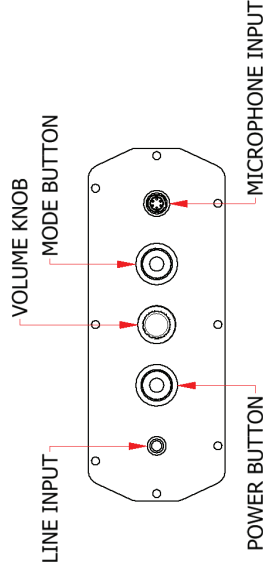


Figure 2: -801 & -802 User Interface Panel

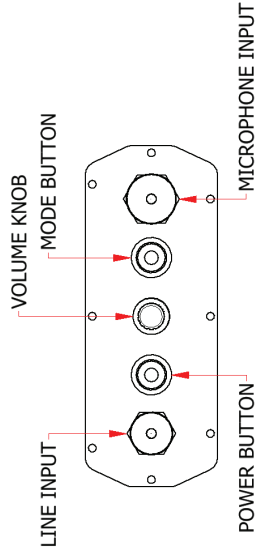


Figure 3: -802 & -804 User Interface Panel

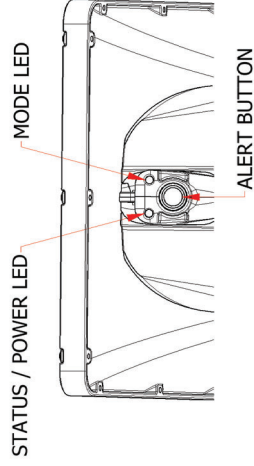


Figure 4: Handle Control and Status LEDs



1.6 Specifications

Model C		Model R
Physical Specifications		
Weight	12lbs (5.4 kg)	15lbs (6.8 kg)
Dimensions	13.5" H x 12.5" L x 10.0" W (34.3 cm H x 31.8 cm L x 25.4 cm W)	
Housing Material	Flame retardant UV Stable Composite	
Colors	Black (01), Gray (04), Red (05), White (06), Camouflage (07)	
Acoustic Performance		
Beam Width	+/-15° @ 2kHz/-3dB	
Communication Range ¹	400+ meters	750+ meters
Frequency Response	400 Hz – 7 kHz	
Sound Pressure Level, Peak A-Weighted	136dB A-weighted @ 1 Meter	144dB A-weighted @ 1 Meter
Speech Transmission Index (STI-Intelligibility)	0.85 out of 1.00	
Power Requirements		
Power	Internal Rechargeable Battery Pack	
Battery Life (25° C)	15 hours @ duty cycle	8 hours @ duty
Battery Charge Time	4.5 hours	
Environmental		
Ingress Protection	IP65, NEMA 3R	
Operating Temp.	-20°C to 60°C	
Humidity Range	0-75% non-condensing	
Hot Operating Temp. ²	MIL-STD-810G, Method 501.5, Procedure II, Design type Hot, 60°C	
Cold Operating Temp. ²	MIL-STD-810G, Method 502.5, Procedure II, Design type Basic Cold, -33°C	
Hot Storage ²	MIL-STD-810G, Method 501.5, Procedure I, 70°C	
Cold Storage ²	MIL-STD-810G, Method 502.5, Procedure I, -40°C	
Operating Humidity ²	MIL-STD 810G, Method 507.5, Procedure II – Aggravated Cycle	
Rain ²	MIL-STD-810G, Method 506.5, Procedure I, Blowing rain	
Salt Fog ²	MIL-STD-810G, Method 509.5	
Shipboard Vibration ²	MIL-STD-167-1A	
Shipboard Shock ²	MIL-S-901D, Class I, Shock grade B	
Random Vibration ²	MIL-STD-810G, Method 516.6, Procedure I, (Functional shock)	
Part Numbers		
90199A-801-XX	HS-10 Commercial Model C	
90199A-802-XX	HS-10 Commercial Model R	
90199A-803-XX	HS-10 Mil-Spec Model C	
90199A-804-XX	HS-10 Mil-Spec Model R	

¹ At Maximum Rated Output, Dependent Upon Ambient Conditions
² Mil-Spec Configurations Only (-803 & -804)

Table 5: Specifications



2. PREPARATION FOR USE

2.1 HS-10 Layout Overview

Before operating the HS-10, become familiar with the HS-10 control panel and review the unit and all included accessories, ensuring no damage has occurred during shipping. If parts are missing or damaged, or become damaged later, refer to the warranty information in **Section 6** to obtain replacement parts or service.

2.2 Control Panel Connections

To prepare the unit for operation, perform the following:

1. Review HS-10 Features in **Section 1.5**.
2. Set **Volume** to **Zero**
3. Connect microphone cable to the Mic connector on User Interface Panel.
4. If using pre-recorded messages, connect MP3 Player or other device to the Line Input connector on the User Interface Panel.

NOTE: Each cable has a different size connector and will only connect to its respective connector on the unit.