OPERATION AND MAINTENANCE MANUAL

HyperSpike® Model HS-10

Ultra ELECTRONICS

HYPERSPIKE
Sound that Moves

IMPORTANT: Please record the following information for expedient customer service when contacting Ultra Electronics – USSI for information or assistance with the HS-10.

Model Number: _____

Serial Number: _____

Purchase Date: _____

TABLE OF CONTENTS

Contents

1. 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 LEVEL 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:

CAUTION!

IF DAMAGED

LITHIUM ION BATTERY

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.

Additional Electrical Safety Measures

Basic safety measures will assist in preventing dangerous or potentially deadly situations:
- 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

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 or 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 4.5.

1. Do not charge the HS-10 in explosive environments, such as in the presence of flammable liquids, gases, or dust.
2. Recharge the HS-10 with the charger provided by the manufacturer. Failure to do so may result in fire.
3. Do not immerse in water or other liquids.
4. Do not store or use the HS-10 in locations where the temperature may reach or exceed 104°F (60°C). For best life, store the HS-10 in a cool, dry location.
5. **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.
6. Do not burn the HS-10, even if it is severely damaged or worn out. The internal battery pack can explode or give off gas toxic fumes in a fire.
7. 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.
8. 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.
9. 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.
10. In the event of battery damage, proper PPE (Personal Protective Equipment) should be worn to handle/dispose of the battery.

Charger Warnings

1. **WARNING: SHOCK HAZARD.** Do not allow any liquid to get inside the wall charger. Electric shock may result.
2. 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.
3. Do not expose the charger to rain or snow.
4. 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.
5. When disconnecting the charger, pull by the plug not the cord.
6. Charge the unit in a dry location where damage will not occur.
7. 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.
8. Do not operate the charger if there is damage to the cord or plug.
9. **WARNING: SHOCK HAZARD.** Do not use the charger if it has incurred damage in any way.
10. **WARNING: SHOCK HAZARD.** Do not disassemble the charger.
11. **WARNING: SHOCK HAZARD.** Disconnect the charger from the outlet before attempting any cleaning.
12. The charger provided is designed to operate on 90-264VAC 47-63Hz and draws a maximum of 1.5A RMS
13. The charger should be removed from the HS-10 when the battery status indicator shows a charged battery.
14. Partially charged batteries will continue to function but will not have the same run time.

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.

Rev C

90199A-MAN-HS10

2. Hardware

2.1. Hardware

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 2.1-1 HS-10

The Model 'C' features lower weight with a single transducer and an output of 136 dB, while the Model 'R' features dual transducers for maximum acoustic output of 144 dB.

Full physical, electrical, and acoustic specifications are contained in Section 3.

2.2. Included in Box

2.2.1. HS-10 Model C
P/N 90199A-801 included items:
- 1x HS-10 Model C Assembly
- 1x Microphone, P/N 92012A-803
- 1x Wall Plug Power Supply, P/N 42217A-1
- 1x Audio Line-In Cable, P/N FE-3MM-06-90

2.2.2. HS-10 Model R
P/N 90199A-802 included items:
- 1x HS-10 Model R Assembly
- 1x Microphone, P/N 92012A-803
- 1x Shoulder Strap, P/N 33653A-1
- 1x Wall Plug Power Supply, P/N 42217A-1
- 1x Audio Line-In Cable, P/N FE-3MM-06-90
- 1x Accessory Bag - Standard Gray, P/N 92013A-1

2.3. Unboxing

Remove the HS-10 and all accessories from the packaging in a safe manner. Ensure all accessories are included while unpacking. If any parts are missing, contact the reseller as soon as possible.

The packaging may be kept to facilitate future shipping needs. If packaging is discarded, dispose in an environmentally responsible manner and recycle if possible. Keep all plastic bags away from children due to suffocation risk.
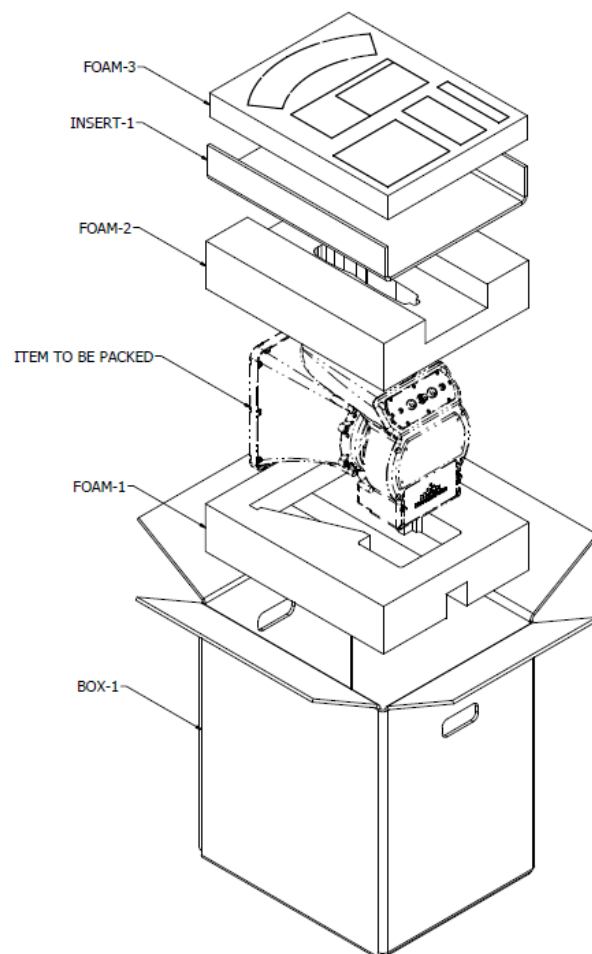

Figure 2.3-1 HS-10 – In Packaging

Rev C

3. Specifications

3.1. Model C and R Comparison

	HS-10-C	HS-10-R
ACOUSTIC SPECIFICATIONS		
Sound Pressure Level (peak)	136dB A-weighted @ 1m	144dB A-weighted @ 1m
Usable Range	400+ meters	750+ meters
Beam Width	±15 degrees	±15 degrees
Frequency Range	400Hz-7kHz	400Hz-7kHz
STI PA (intelligibility)	0.85	0.85
POWER REQUIREMENTS		
Power	Internal rechargeable battery pack	Internal rechargeable battery pack
Battery Life (25°C)	15 hours @ duty cycle	8 hours @ duty cycle
Battery Charge Time	4.5 hours	4.5 hours
PHYSICAL SPECIFICATIONS		
Dimensions	13.5"H x 12.5"L x 10.0"W (34.3cm H x 31.8xm L x 25.4cm W)	13.5"H x 12.5"L x 10.0"W (34.3cm H x 31.8xm L x 25.4cm W)
Weight	12lbs	15lbs
Housing Material	Flame retardant UV stable composite	Flame retardant UV stable composite
Standard Color	Black (01)	Black (01)
2-Tone Colors	Gray (04), Red (05), White (06)	Gray (04), Red (05), White (06)
Hydrodip	Camouflage (07)	Camouflage (07)
Custom Color/Logo	Prestige (00)	Prestige (00)
ENVIRONMENTAL		
Ingress Protection	IP65, NEMA3R	IP65, NEMA3R
Operating Temperature	-20°C to 60° C	-20°C to 60° C
Humidity Range	0-75% non-condensing	0-75% non-condensing
STANDARD FEATURES		
Auxiliary Input	Analog line input	Analog line input
Microphone Input	Live & Record/Play Mic	Live & Record/Play Mic
Status Indication LEDs	Status, Mode	Status, Mode
Controls	Power, Alert, Volume, Mode	Power, Alert, Volume, Mode
Remote Control	Phone App - wired	Phone App - wired
Digital Signal Processing	Optimized for human voice	Optimized for human voice
ORDERING INFORMATION		
Part Number	90199A-801-(XX color code)	90199A-802-(XX color code)

3.2. User Controls and Connections

The controls, connectors, and status indicators are shown in Figure 3.2-1.

Figure 3.2-1 Features Legend

A. LED Battery Status Indicator (Status/Charge/Fault)
B. LED Microphone Mode Indicator (Record/Playback or Live Voice mode)
C. Alert Tone Button (triggers alert tone)
D. Line Input (line input connector for MP3 player/phone/etc.)
E. Power Button (turns HS-10 on and off)
F. Volume Knob (adjusts system volume)
G. Mode Button (cycles mode between Record/Playback and Live Voice)
H. Microphone Input (microphone input connector)
J. Charge Port (battery charge connector)
K. Microphone Key Switch

3.3. Status Indicators

When the HS-10 initially powers up, the status indicator (A) will briefly flash during system initialization. The unit is ready for operation when the indicator displays solid green.

Refer below for status indicator codes.

3.3.1. Battery Status Indicator (A)
Solid Green – Unit ready to operate with full battery
Flashing Green – Unit ready to operate with low battery
Solid Yellow – Charger connected – Unit in Standby mode – Fully Charged
Flashing Yellow – Charger connected – Unit in Standby mode – Charging
Solid Red – Fault – See Section 5.2

3.3.2. Microphone Mode Indicator (B)
Solid Green – Unit in Record/Playback mode
Solid Red – Unit in Live Voice mode

Rev C

4. HS-10 Operation

<div style="border: 3px solid red;">

WARNING:

TEMPORARY OR PERMANENT HEARING DAMAGE MAY OCCUR.

HIGH LEVEL 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.

</div>

Note: Refer to Figure 3.2-1 for feature designations.

4.1. Turn Unit ON and OFF:
1. Press and hold the Power Button (E) for one second to turn the HS-10 on and off

4.2. Play Internal Alert Tone:
1. Set volume knob (F) to desired level
2. Press and hold Alert Tone Button (C)
   Note: Alert Tone has priority over Live Voice, Record/Playback, and line input.

4.3. Use Microphone:
For best performance and to minimize the risk of feedback, position the microphone directly in front of mouth and rest upper lip on rubber bumper.

4.3.1. Use Record/Playback Feature:
1. Plug microphone into 'Mic Input' (H)
2. Record/Playback mode is confirmed by indicator (B) showing solid green
   - Press and release button (G) as needed to toggle between Live Voice and Record/Playback microphone modes
3. Set volume knob (F) to desired level
4. Press and hold microphone key switch (K)
5. Speak loudly and clearly into microphone
6. Release microphone key switch (K)
7. Unit will automatically play prerecorded message when microphone key switch is depressed
   Note: To stop playback, press and release microphone key switch (K) rapidly.

4.3.2. Use Live Voice Mode:
1. Plug microphone into 'Mic Input' (H)
2. Live Voice mode is confirmed by indicator (B) showing solid red
   - Press and release button (G) as needed to enter Live Voice mode

3. Set volume knob (F) to desired level
4. Press and hold microphone key switch (K)
5. Speak loudly and clearly into microphone
6. Release microphone key switch (K)
   Note: If the Live Voice audio feeds back or 'squeals' choose Record/Playback Mode, reduce volume, or move microphone further away from the unit.

4.4. Use Line Input:

1. Plug auxiliary player (MP3/phone/etc.) into 'Line Input' (D)
2. Set output volume of auxiliary player to high
3. Set volume knob (F) to desired level
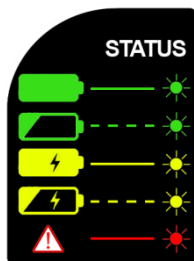4. Press play on auxiliary player to broadcast

4.5. Charge Internal Battery:

1. Plug charger into Charge Port (J) 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 a damaged battery.

2. Plug charger into electrical outlet
3. Status Indicator (A) should start flashing yellow
4. Once charging is complete, the status indicator 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.

Solid Green – Unit ready to operate with full battery
Flashing Green – Unit ready to operate with low battery
Solid Yellow – Charger connected – Unit in Standby mode – Fully Charged
Flashing Yellow – Charger connected – Unit in Standby mode – Charging
Solid Red – Fault – See Section 5.2

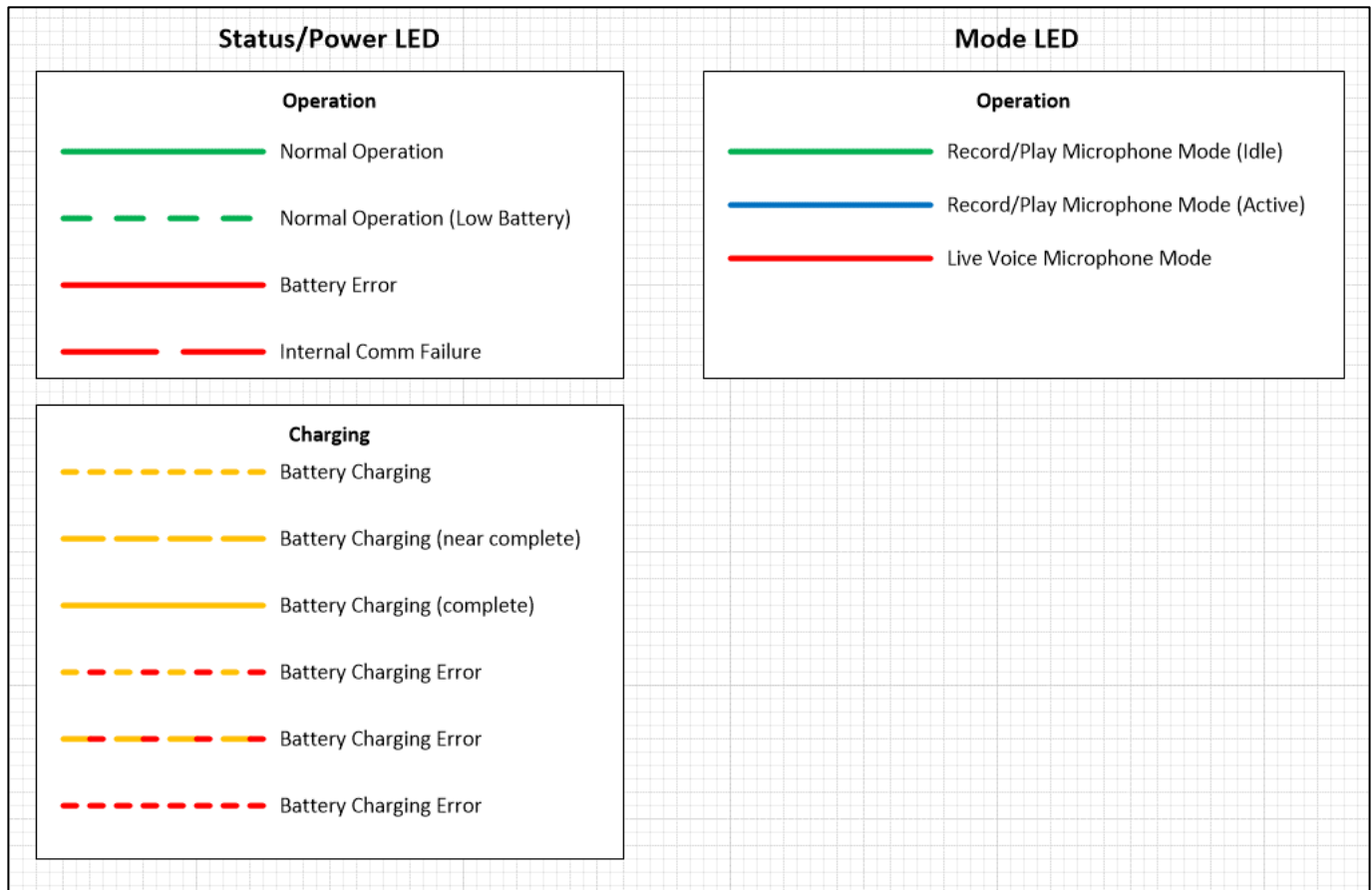Note: The HS-10 is not operational while the battery is charging.

Figure 4.5-1 LED Guide

5. Maintenance and Troubleshooting

5.1. Scheduled Maintenance

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

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

5.2. Troubleshooting Guide

If you are experiencing problems with your HS-10 hailing device, refer to the following table 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 Ultra Electronics – USSI: Model Number, Serial Number, Purchase Date, and Troubleshooting Guide Reference Code.

5.2.1. Operation

Problem	Cause	Solution	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 4.5 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 4.5 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

Rev C

90199A-MAN-HS10

Problem	Cause	Solution	Reference
No sound output when using microphone	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
	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
	Defective microphone assembly	Replace microphone assembly.	A13
No sound output when pressing alert button	HS-10 volume set too low	Turn up HS-10 volume knob until the desired output level is achieved.	A14

5.2.2. Charging

Problem	Cause	Solution	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 4.5 for proper/complete charging procedure. (Note: This may take multiple charge/discharge cycles to fully resolve) -If HS-10 powers on with solid red LED, contact service center	B01
	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

Rev C

90199A-MAN-HS10

6. HyperSpike® App

Quick Reference Guide and download links for Apple and Android devices can be found at http://www.ultra-hyperspike.com/HyperSpike_Mobile_Application.

The HyperSpike App provides an easy method to record and playback audio tracks through Android or Apple devices. Simply connect your device to your HyperSpike loudspeaker via the headphone jack or optional Bluetooth and open the app.

PRESS FOR ALERT TONE

Settings:
- Help
- Report a Problem
- Check for Update
- Activate Live Mic

Current Track

Current Track Information
- Rename
- Delete

Volume Handle

Play / Stop Current Track

Live Microphone

Press to Select a Track

Playlist

*Apple must import tracks through iTunes.
Detailed Instructions at
http://www.ultra-hyperspike.com/HS-app

Track Repeat
- OFF – no repeat
- ALL – repeat entire playlist
- ONE – repeat selected track

Record
- Press and release to begin recording
- Speak into microphone with a loud clear voice
- Press and release to Stop
- Recording is saved and set as current track
- Play track as needed

Track Repeat Delay

Ultra Electronics
USSI | HyperSpike®

HYPERSPIKE

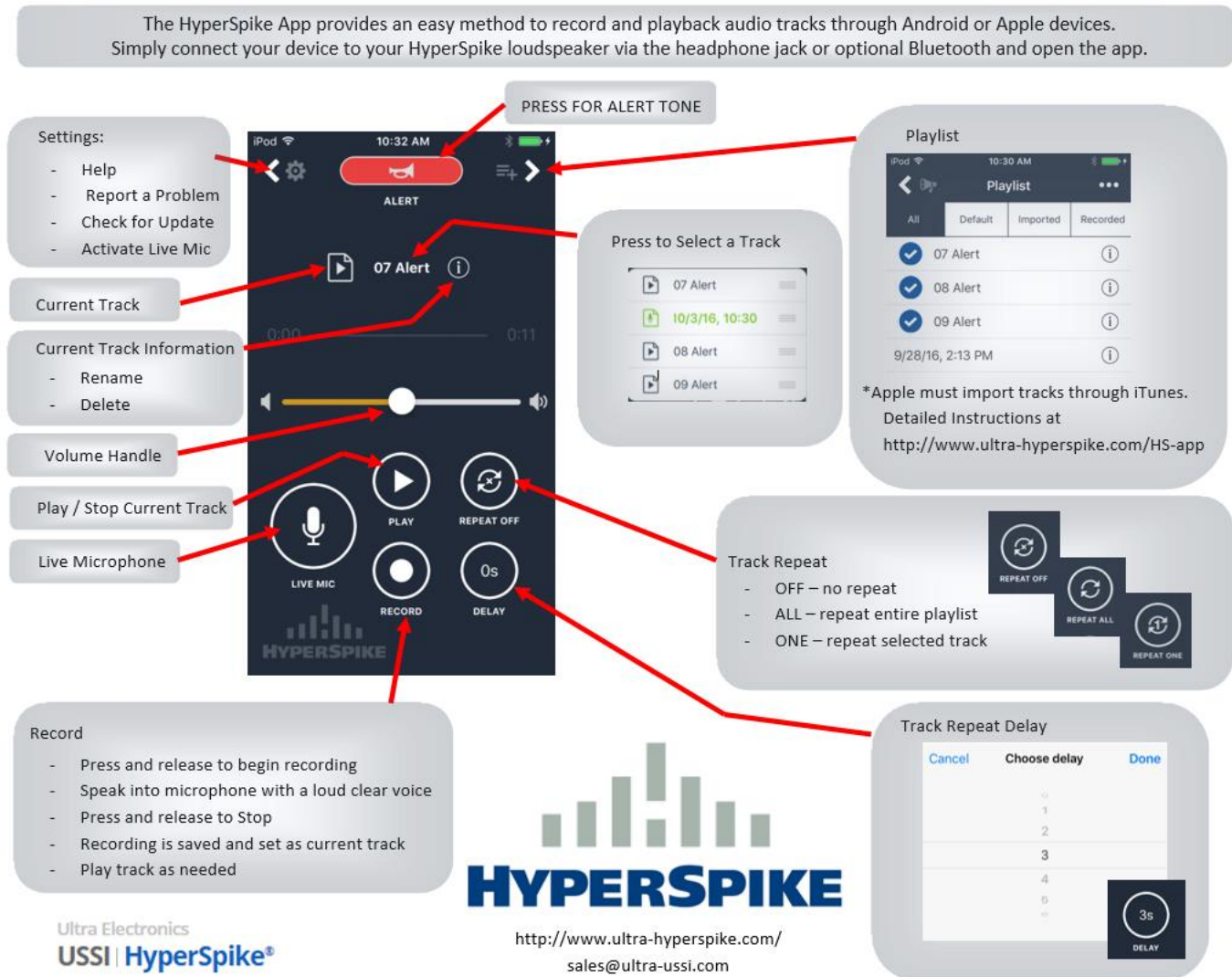http://www.ultra-hyperspike.com/
sales@ultra-ussi.com

Figure 6-1 Quick Reference Guide

7. Warranty

Ultra Electronics USSI warrants its products to be free from defects in material and workmanship for a period of one (1) year from the date of shipment from USSI's facility. 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.

If your product should require service, write, phone, fax or e-mail Ultra Electronics USSI at:

Ultra Electronics USSI
4868 E Park 30 Drive
Columbia City, IN 46725
Phone: 260-248-3665 Fax: 260-248-3510
E-mail: ServiceDepartment@ultra-ussi.com
URL: www.ultra-HyperSpike.com

We will either direct you to a local service agency or provide you with a Return Material Authorization (RMA) number so that you can ship the product to our factory. Do not ship the product to us without first obtaining an RMA number. Place the RMA number on all boxes returned to the factory to prevent equipment from being lost or mishandled. Merchandise returned to us for service under warranty must be accompanied by a copy of the original bill of sale, and shipped prepaid. You are responsible for transporting your product to our factory. We will pay the return shipping charges on all products repaired under warranty.

7.1. Failures Not Covered by This Warranty

This warranty covers manufacturing defects. The warranty **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.
4) Damage resulting from attempted repairs by unauthorized personnel.
5) Claims based on any perceived agreement not explicitly stated in this warranty such as conversations with service personnel or sales representatives.

7.2. Limitation of Implied Warranties

All implied warranties, including warranties of merchantability, are limited in duration to a period of one (1) year from the date of shipment from Ultra Electronics USSI.

7.3. Exclusion of Certain Damages

Ultra's liability is limited to the repair or replacement, at our option, of any defective product, and shall in no event include incidental or consequential commercial damages of any kind. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the preceding limitation or exclusion may not apply to you.
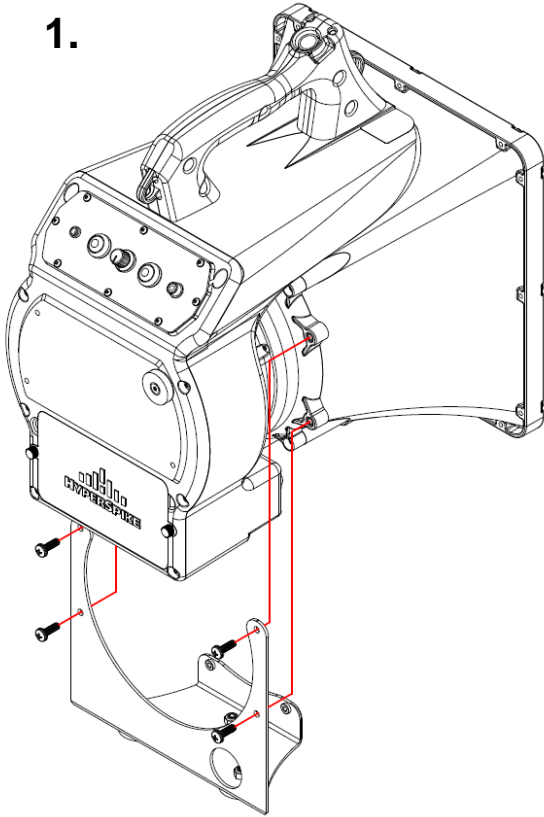
For further information regarding this warranty, parts, or service, please contact Ultra Electronics USSI through one of the methods listed at the beginning of this warranty section.
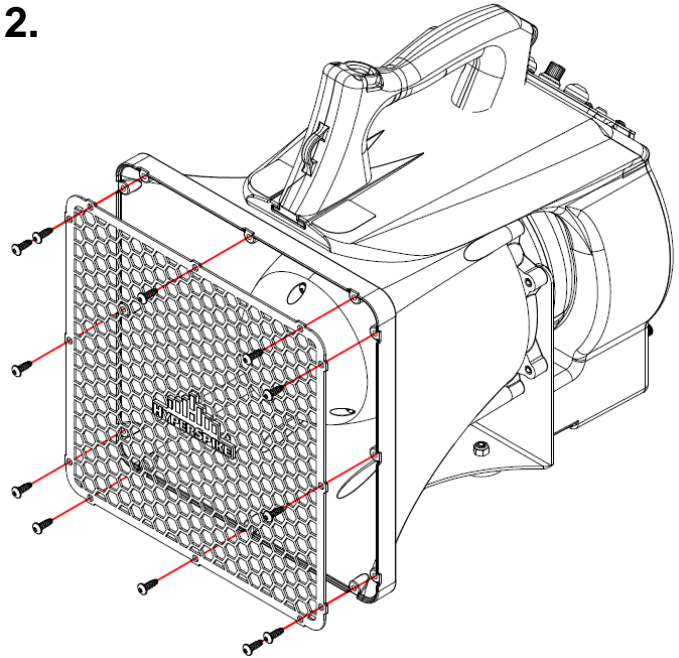
Appendix A — Optional Accessories

Part Number	Description
11019A-1	Microphone Headset - HS-10
92065A-1	Power Supply Adapter Plug - North American
92065A-2	Power Supply Adapter Plug - Australia
92065A-3	Power Supply Adapter Plug - Brazil
92065A-4	Power Supply Adapter Plug - China
92065A-5	Power Supply Adapter Plug - Europe
92065A-6	Power Supply Adapter Plug - India / S. Africa
92065A-7	Power Supply Adapter Plug - United Kingdom
61004A-2	MP3 Player - 8GB
92064A-801	Accessory Pocket - HS-10
92063A-801	Soft Case - HS-10
99088A-1	Transit Case - HS-10
72349B-801	Universal Mount Kit - HS-10
72354B-801	Tripod and Case - HyperSpike
11017A-1	Low Profile Microphone
11018A-1	Ruggedized Microphone

Appendix B — Universal Mount Kit (72349B-801) Installation

1.

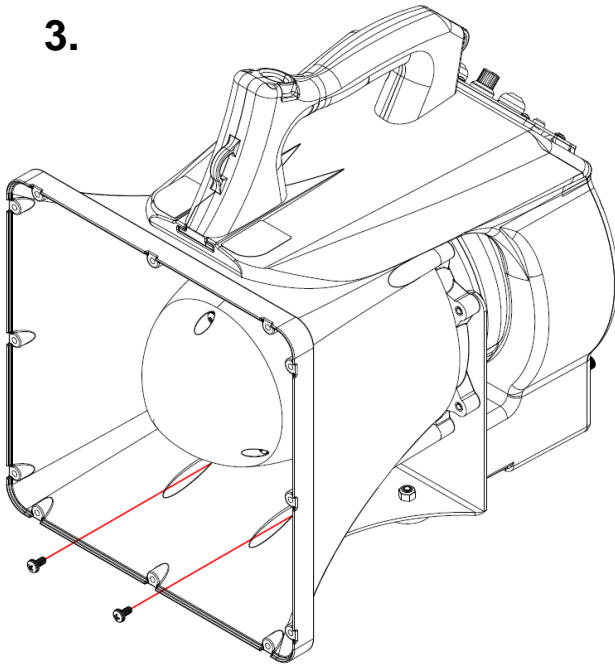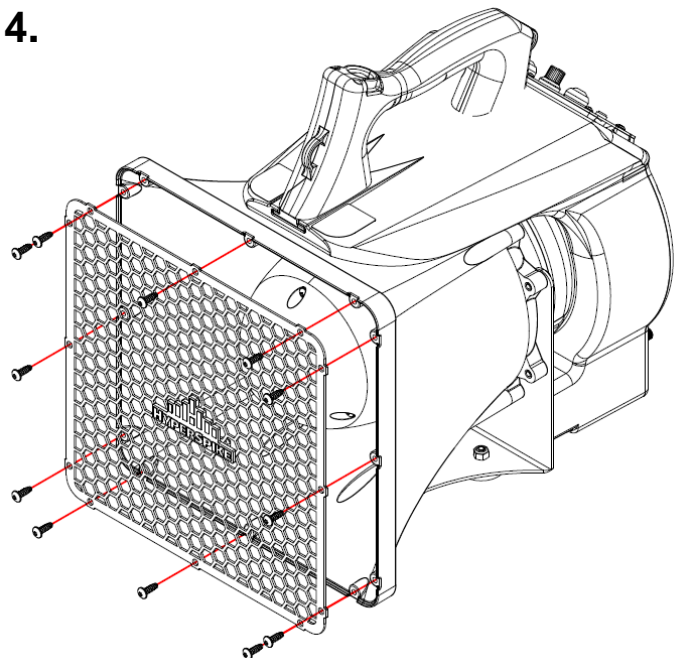**2.**

3.

4.

Rev C

Ultra
ELECTRONICS

90199A-MAN-HS10

Appendix C — Accessory Pocket (92064A-801) Installation

1.