



## Zulu.2 User Guide

# Welcome

---

Congratulations on purchasing a Lightspeed Aviation Zulu.2 headset. Your headset is a premium product that will provide many years of comfortable high performance for your flying endeavors.

If this is your first Lightspeed Aviation headset—welcome to the Lightspeed family. We look forward to building a lasting community with our customers founded on products and service that are best in class. To support your passion for flying we invite you to visit [LightspeedAviation.com](https://LightspeedAviation.com) where you will find useful insights about our other products and aviation.

Thank you for choosing a Lightspeed Aviation headset.



# Contents

<b>Introduction</b> .....	2	<b>Bluetooth Devices</b>	
<b>Getting Started</b>		Connecting Cell Phones for the First Time .....	12
Fitting Your Headset .....	4	Bluetooth Features .....	13
Battery Installation .....	4	Bluetooth Mode—ON and OFF .....	13
Battery Types .....	5	<b>FAQ's</b> .....	14
Battery Life .....	5	<b>Peak Performance Tips</b> .....	16
Controller .....	6	<b>Specifications</b> .....	17
<b>Using Your Zulu.2 Headset</b>		<b>Warranty Information</b> .....	19
Turning ON and OFF .....	7	<b>Registration</b> .....	21
Matching Stereo/Mono Setting to an Audio Panel .....	8		
Front Row Center .....	8		
Auto MusicMute .....	8		
Wired Auxiliary Devices .....	8		
Setting DIP Switches .....	9		

# Introduction

---

Your Zulu.2 headset package includes (clockwise, from top left on the following page):

- Carrying case
- User and Quick Start Guide with warranty information
- Zulu.2 ANR headset
- Two AA batteries (not included with panel-powered headsets)
- Two cord clips
- Cell phone cable with standard 2.5mm connector
- Audio device/iPhone cable with standard 3.5mm connector

# Introduction



LIGHTSPEED

Zulu.2 User Guide

**More Than Quiet**

...a unique blend of technology and high performance Analog Headset.

**Checklist**

- Turn on Zulu, remembering the correct button and the light bar position.
- Turn on BeQuiet by holding the BeQuiet button for 3 seconds until the light bar turns off.
- Charge your headset's nickel-ni-cadmium and nickel-metal-hydride batteries.
- Place the ear speakers in the correct position.
- Do more details about Zulu.2 headset components like the BeQuiet button.

Cleared for Takeoff

**Fitting Your Headset**

- Make sure you have enough space in the ear to adjust the headset for the best fit.
- Adjust the headset for the best fit.
- Turn the headset on top of your head for the best fit.
- Adjust the headset for the best fit.



# Getting Started

---

## Fitting Your Headset

Fitting your headset properly is the key to comfortable use and superior Active Noise Reduction (ANR) capabilities. To gain peak performance from the ANR feature it is necessary to have a solid seal around your entire ear combined with a symmetrical fit on your head.

The following tips will assist you in achieving the proper fit.

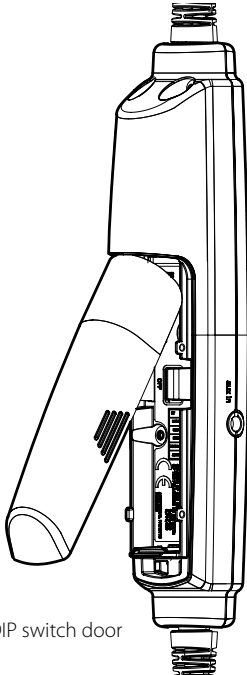
- A. Fit your ears entirely within the ear cups providing a solid seal.
- B. Rest the headband lightly on top of your head with the right and left sliders extended to equal lengths.
- C. Position the microphone 1/8 inch from your mouth.

## Battery Installation

The standard Zulu.2, Zulu.2:CD and Zulu.2:C battery-powered headsets require two AA batteries (included). Use alkaline batteries for best performance.

- A. Open the controller battery/DIP switch door by either pressing down on the circle icon or by pulling open the door along the notched edges. Insert two AA batteries with the correct polarity positioning.
- B. The LED flashes GREEN when charged batteries are in use and the power is on.
- C. When batteries begin to run low the power LED flashes RED. If the LED flashes RED during flight the headset will continue to operate. Install new batteries as soon as possible at any indication of low batteries.

# Getting Started



Battery/DIP switch door

## Battery Types

Use two “AA” alkaline or lithium batteries. Lithium batteries may provide improved battery life in colder temperatures. We do not recommend using re-chargeable batteries or mixing battery types and brands.

## Battery Life

A set of batteries can provide up to 40 hours of power. However, heavy Bluetooth usage can significantly reduce battery life. Under quiet conditions Zulu.2 will auto shut off approximately five minutes after the headset is removed from your head.

# Getting Started

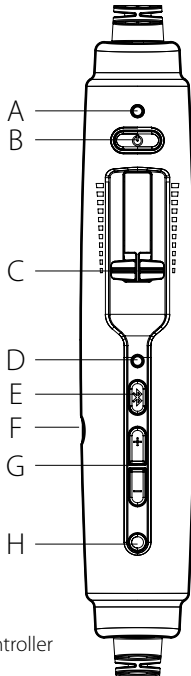
---

## Controller

- A. Power indicator LED: Flashes GREEN when power is supplied to Zulu.2 and batteries are strong. Flashes RED when batteries are low.
- B. Power button: Powers on headset, turning on Active Noise Reduction (ANR). Press button once to turn Zulu.2 on; press and hold to turn Zulu.2 off.  
  
To toggle the LED brightness from bright to dim quickly press the power button twice.
- C. Volume control: Controls audio panel volume with individual sliders for each ear. Does not affect the volume of auxiliary devices.
- D. Bluetooth indicator LED: Flashes BLUE when Bluetooth mode is on and RED when Bluetooth is being turned off. In pairing mode, flashes alternating RED and BLUE.
- E. Bluetooth power button: Turns on and off the Bluetooth signal and controls Bluetooth-connected devices.
- F. Auxiliary input jack: Provides a wired input for audio and cell phone devices.
- G. Bluetooth volume buttons: Controls the volume of Bluetooth devices.
- H. Auto MusicMute button: When enabled, automatically quiets music and audio from auxiliary devices during radio communications.



# Using Your Zulu.2 Headset



The Zulu.2 controller

## Turning ON and OFF

**ON:** Press the power button once to turn on the headset. The GREEN power LED flashes when power is supplied. Active Noise Reduction (ANR) is engaged when you turn on the headset.

**OFF:** Press and hold the power button until the GREEN power LED turns off.

Zulu.2 will auto shut off approximately five minutes after removing the headset and under quiet conditions.

The power LED flashes RED when batteries are low; see Battery Installation, on page 4.

# Using Your Zulu.2 Headset

---

## **Matching Stereo/Mono Setting to an Audio Panel**

The Stereo/Mono DIP switch setting should match the signal from your audio panel. For a stereo panel, best performance is gained by setting the headset for stereo. The same is also relevant to a mono panel. Incorrect settings result in communications being heard in only one ear. The Stereo/Mono DIP switch does not affect auxiliary devices, so you can enjoy auxiliary audio in stereo regardless of how the Stereo/Mono DIP switch is set.

## **Front Row Center**

Front Row Center is a built-in feature that gives you a theater-like experience, enhancing stereo sound reproduction so that audio seems to come from all around you, not just from your right and left.

## **Auto MusicMute**

Auto MusicMute is turned on or off by the bottom-most controller button. With Auto MusicMute on and when radio communications are detected, the volume of auxiliary devices will be significantly reduced.

To enable Auto MusicMute, turn on the feature, plug into your intercom and talk into the headset microphone while playing music over a wired device; see [Wired Auxiliary Devices](#). If enabled, your auxiliary music will decrease when you start to talk.

## **Wired Auxiliary Devices**

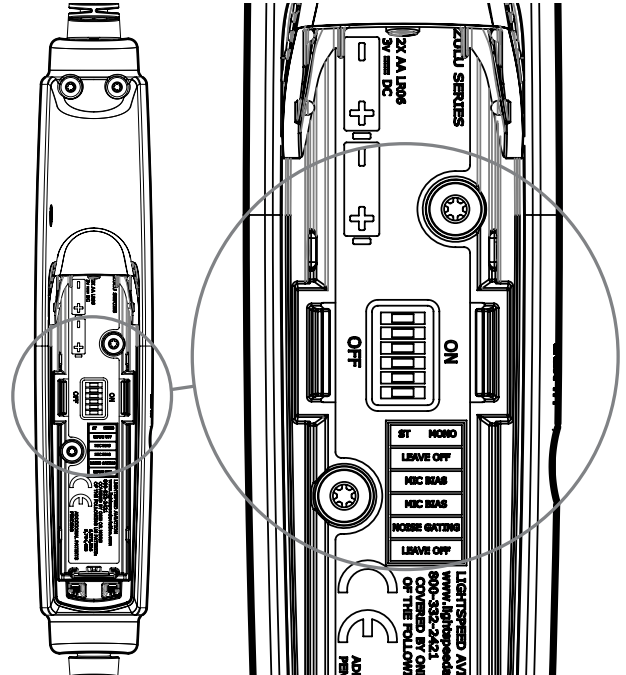
Zulu.2's wired auxiliary input allows you to connect to cell phones and to most audio devices. To connect a music player to Zulu.2's auxiliary input jack, use the cord provided.

# Using Your Zulu.2 Headset

To adjust the volume on a device connected to Zulu.2's auxiliary input jack, use the controls on the device itself.

## Setting DIP Switches

DIP switches are factory set to match most aircraft audio panels. To change a DIP switch setting open the controller battery/DIP switch door. Use a small pointed object like a wood toothpick to slide the DIP switch to ON or OFF depending on your preference.



# Using Your Zulu.2 Headset

## Zulu.2 DIP Switch and Their Recommended Use

DIP switch	OFF position	ON position	Recommendations
Stereo/ Mono	Stereo	Mono— Factory setting	Affects audio from the panel only and should be set to Mono in most cases. Set to Stereo only if you are using a stereo panel. If your audio panel produces a mono signal but the switch is set to Stereo, you will hear audio communications in only one ear.
Leave off	Leave set to OFF		Test mode; for factory use only.
Cell mic bias— two switches that must both be in the same position	Cell mic bias off—Factory setting for helicopter and panel-powered headsets	Cell mic bias on—Factory setting for battery- powered airplane headset	Lets you make phone calls with the headset when it is not plugged into a cockpit audio panel. Available for battery-powered headsets only. Note to helicopter pilots: The ON setting for these switches is incompatible with some helicopter audio panels. If you plan to use this feature and keep the switches set to ON, test the headset in the cockpit before takeoff.

# Using Your Zulu.2 Headset

## Zulu.2 DIP Switch and Their Recommended Use (Cont.)

<b>DIP switch</b>	<b>OFF position</b>	<b>ON position</b>	<b>Recommendations</b>
Noise gating	Factory setting		When enabled, Noise Gating eliminates a low level threshold of sound (example: noisy intercoms). Test before using to avoid missed communications from softer radio signals.
Leave off	Leave set to OFF		Test mode; for factory use only.

# Bluetooth Devices

---

Zulu.2's Bluetooth interface allows cell phone and stereo music streaming capability (A2DP).

## Connecting Bluetooth Cell Phones for the First Time

Before using a Bluetooth cell phone for the first time with Zulu.2 it must be "paired" or electronically connected.

To pair a Bluetooth cell phone with Zulu.2:

1. Turn on the headset and verify the GREEN LED is flashing. Make sure Zulu.2's Bluetooth mode is turned OFF. BLUE or RED flashes from the Bluetooth LED should not be present (see "Bluetooth Mode—ON and OFF", page 13).
2. Press and hold the Zulu.2 Bluetooth button for about five to ten seconds or until the Bluetooth

LED **continually flashes RED and BLUE**. This indicates the Zulu.2 pairing mode setting and lasts about two minutes. If this step takes longer and the Bluetooth LED is no longer alternating RED and BLUE, start over from step one.

3. With Zulu.2 in pairing mode, follow the menu prompts on your Bluetooth phone directing it to look for Bluetooth devices.
4. Select Lightspeed-V### (numbers may vary) on your Bluetooth phone from the list of found devices
5. If asked to enter a password or PIN, enter 0000

Your cell phone should now be paired and ready for continued use with Zulu.2.

When you turn on the Zulu.2 Bluetooth mode it will connect to the most recently paired device. Most

# Bluetooth Devices

Bluetooth cell phones connect to Zulu.2 automatically. If that doesn't happen it may be necessary to use the cell phone menu of found devices to signify Lightspeed-V### (numbers may vary).

## Bluetooth Features

Depending on the Bluetooth profile of the phone, you can use Zulu.2's Bluetooth buttons to perform several functions. Some typical functions are:

- Press the Bluetooth button once for voice dialing (if supported by your phone).
- Press the Bluetooth button once to answer the phone when it rings.
- Press the Bluetooth button once to disconnect from a call.

- Press and hold the Bluetooth button for two seconds to redial the last number called.
- Use the Bluetooth volume buttons (Zulu.2's + and – buttons) to adjust the volume.

## Bluetooth Mode—ON and OFF

ON: With Zulu.2 turned ON, press and hold the Bluetooth button; see page 6, until you hear a high tone and the Bluetooth indicator LED flashes three BLUE pulses. For first time pairing see instructions on page 12.

OFF: Press and hold Zulu.2's Bluetooth button for about three seconds until a high tone is emitted and the Bluetooth indicator LED flashes three RED pulses.

Note: The Bluetooth feature must be turned ON for Bluetooth connected devices to correctly function.

# FAQ's

---

## **Why do I hear radio communications in only one ear?**

Zulu.2's Stereo/Mono DIP switch is probably set to Stereo while your audio panel is transmitting a mono signal. To fix this, change Zulu.2's Stereo/Mono DIP switch to Mono. This setting does not affect music or audio from auxiliary devices; you can hear stereo sound on auxiliary devices even when the Stereo/Mono DIP switch is set to Mono.

## **When pairing Zulu.2 with my Bluetooth phone, why does my phone indicate it cannot connect?**

The headset may not be in pairing mode. To enter pairing mode, you must start with Bluetooth mode turned fully OFF; (see "Connecting Bluetooth Cell Phones," on page 12).

## **Why doesn't my Bluetooth phone accept Zulu.2's 0000 passcode?**

Your headset may not be in pairing mode. Some phones prompt for a pass code without checking for pairing mode. When the phone cannot pair with the headset, it rejects the passcode. To enter pairing mode, you must start with Bluetooth mode turned fully OFF (see "Connecting Bluetooth Cell Phones," on page 12).

## **How can I reduce static noise during cell phone calls?**

To reduce RF interference during phone calls, keep cell phones at least 12 inches from the Zulu.2 controller and headset when making calls.



### **When flying what causes a warbling noise in the ear cup?**

If your ear is not entirely inside the cup, with a tight seal, air can seep in and cause the ANR to compensate for uneven internal cup pressure.

# Peak Performance Tips

---

- Start with an excellent fit—see “Fitting your headset,” on page 4.
- Set Zulu.2’s Stereo/Mono DIP switch to match the signal from your audio panel (see “Matching Stereo/Mono Setting to an Audio Panel ” on page 8).
- Keep cell phones at least 12 inches from the Zulu.2 controller and headset when making call to reduce static noise during phone calls.
- To conserve battery life, turn off Bluetooth mode when not in use.
- You can use auxiliary devices such as a music player by connecting to Zulu.2’s auxiliary input jack and a cell phone by connecting via Bluetooth, or through the standard 2.5mm cell phone cable provided.
- Lightspeed recommends replacement of the soft goods on your headset (ear seals, head pads and mic muffs) every 18 months to ensure peak ANR performance and comfort. These are wear items that are not covered by the Lightspeed warranty and are available for purchase on our website at [LightspeedAviation.com/content.cfm/Store](https://LightspeedAviation.com/content.cfm/Store)

# Specifications

## Zulu.2 Configurations

<b>Model</b>	<b>Power Source</b>	<b>Cord</b>	<b>Connector</b>
Zulu.2	Two AA batteries	Straight	Dual general aviation connectors with .250-inch commercial stereo headphone plug and .206-inch MIL-SPEC microphone plug
Zulu.2:P	Audio Panel	Straight	LEMO
Zulu.2:C	Two AA batteries	Coiled	U-174
Zulu.2:CP	Audio Panel	Coiled	LEMO
Zulu.2:CD	Two AA batteries	Coiled	Dual general aviation connectors with .250-inch commercial stereo headphone plug and .206-inch MIL-SPEC microphone plug

# Specifications

---

## General

Battery power supply: 3V, two AA batteries

Weight: 13.9 oz.

Panel aircraft 8-40 VDC

## Headphone

Transducer: 40mm moving coil

Frequency response: 20 Hz-20 kHz

Nominal impedance @ 1 kHz:

OFF—Mono: 200 ohms, ON—Mono: 280 ohms

OFF—Stereo: 400 ohms, ON—Stereo: 560 ohms

## ANR

Maximum SPL: Greater than 125 dB at 100 Hz

## Microphone

Transducer principle: Noise-canceling electret

Frequency response: 200 Hz-6000 Hz

Maximum SPL: 110 dB

Terminating impedance: 220–2200 ohms

Operating voltage: 8V-16V DC

## Product Serial Number

The Zulu.2 serial number (a small, white, bar-code sticker with numbers) can be found on the headset underneath the head pad. The head pad, located on the inner radius of the headband, must be removed to reveal the serial number. Simply pinch the cushioned part of the head pad, pull down and it will snap out.

# Warranty Information

We encourage you to register your headset at our website [LightspeedAviation.com](https://www.lightspeedaviation.com). In the situation your headset may require service, registration helps assure quick and efficient processing.

## **5-Year Limited Warranty for New Aviation Headsets Sold by Lightspeed Aviation, Inc.**

Lightspeed Aviation, Inc. ("LSA") warrants that the new aviation headset sold by LSA ("New Headset") is free from all material defects in workmanship and materials. For the New Headset, all warranties provided by LSA and all implied warranties imposed by law are limited to a 5-year period, beginning on the purchase date shown on the New Headset's sales receipt ("Warranty Period"). This 5-year Limited Warranty ("Limited Warranty") is provided solely for the benefit of the initial purchaser of the New Headset ("Purchaser"), and it excludes all 3rd parties, including distributors, dealers, retailers, subsequent owners, and other users of the New Headset. This Limited Warranty is not assignable and remains in full force and effect during the Warranty Period, but only if the New Headset: (a) has been properly maintained; (b) has not been abused or misused; and (c) has not been repaired, altered, or modified without LSA's approval. This Limited Warranty specifically excludes all taxes, shipping costs, and problems relating to any: (1) repair, alteration, or modification not approved by LSA; (2) abuse or failure to properly maintain the New Headset; (3) faulty workmanship by any person, except LSA or its approved agent; (4) operation of the New Headset, except as specified in its operating manual; (5) ordinary wear and tear; or (6) finish and appearance item. For each claim made under this Limited Warranty ("Claim"), Purchaser must, within 10 days of discovering a New Headset problem indicating a breach of this Limited Warranty, deliver to LSA a written notice that explains in detail the New Headset's specific defect, that shows proof of Purchaser's purchase of the New Headset before the end of the

Warranty Period, and that shows proof that this Limited Warranty applies to the New Headset. LSA or its agent may investigate any Claim. For each Claim, LSA may, in its sole discretion, choose any of the following exclusive remedies: (I) repair or replace the New Headset or any part thereof, without charge to Purchaser, but first Purchaser must return the New Headset to LSA's authorized repair facility, pre-paying all shipping charges, and Purchaser must accept the same as repaired or replaced at the facility's location (i.e., FOB the facility) within 10 days of the date of LSA's completion notice sent to Purchaser, or else LSA will deem the New Headset abandoned, in which case LSA may keep, sell, or otherwise discard it; or (II) refund the New Headset's purchase price to Purchaser. Without paying any amount to Purchaser, LSA may keep, sell, or otherwise discard all replaced New Headsets and parts thereof and all New Headsets where LSA has refunded the purchase price to Purchaser. In repairing or replacing any New Headset, LSA may, in its sole discretion, use new, used, or reconditioned parts or provide a refurbished used headset as a replacement. In connection therewith, LSA warrants that all new, used, or reconditioned parts or refurbished used headsets will be free from all material defects in workmanship and materials during the Warranty Period and for a period of up to 90 days thereafter, but only to the extent that such event occurs during the final 90 days of the Warranty Period. LSA may, in its sole discretion, (i) establish separate, additional, non-warranty repair and replacement programs for any new or used headset ("Non-Warranty Service Programs"), (ii) the Non-Warranty Service Programs may cover any time period, before or after any Warranty Period has expired, and (iii) charge any amount and impose any term with respect to any Non-Warranty Service Program. For Non-Warranty Service Programs, LSA warrants that all new, used, reconditioned, or refurbished parts and headsets used to repair or replace any headset will be free from all material defects in workmanship and materials, but only for a limited period of 90 days thereafter. Purchaser acknowledges that used or reconditioned parts may be used to repair any new or used headset, and that a refurbished used headset may be provided as a replacement for any new or used headset. LSA may hire a 3rd party to repair or replace any new or used headset. "Including" means "including, but not limited to." THE TERMS IN THIS DOCUMENT ARE

# Warranty Information

---

THE ONLY TERMS THAT GOVERN LSA'S WARRANTY OBLIGATIONS FOR ANY NEW OR USED HEADSET OR PART THEREOF, NO ORAL OR OTHER WRITTEN TERM APPLIES. THIS DOCUMENT PROVIDES THE EXCLUSIVE REMEDY FOR ALL CLAIMS AGAINST LSA WITH RESPECT TO ANY NEW OR USED HEADSET OR PART THEREOF. NOTWITHSTANDING ANY PROVISION TO THE CONTRARY IN THIS LIMITED WARRANTY, LSA RESERVES THE RIGHT TO MODIFY, AT ANY TIME AND FROM TIME TO TIME IN ITS SOLE DISCRETION, ANY AND ALL TERMS IN THIS LIMITED WARRANTY. EACH SUCH MODIFICATION IS DEEMED EFFECTIVE UPON PUBLICATION ON LSA'S WEBSITE OR OTHERWISE.

TO THE EXTENT ALLOWED BY LAW; LSA DISCLAIMS AND PROVIDES THIS LIMITED WARRANTY IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. LSA IS NOT LIABLE FOR CONSEQUENTIAL, INCIDENTAL, PUNITIVE, INDIRECT, SPECIAL, LOST PROFITS, OR SIMILAR DAMAGES CLAIMED UNDER ANY STATUTE OR LEGAL OR EQUITABLE THEORY. LSA'S TOTAL LIABILITY FOR ALL CONTRACT, TORT (INCLUDING NEGLIGENCE), STATUTORY, OR OTHER CLAIMS ARISING FROM OR RELATING TO THIS LIMITED WARRANTY OR ANY HEADSET OR PART THEREOF IS LIMITED TO \$1,000. SOME STATES DO NOT ALLOW THE LIMITATION OF CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MIGHT NOT APPLY TO PURCHASER. THIS LIMITED WARRANTY GIVES PURCHASER SPECIFIC LEGAL RIGHTS, AND PURCHASER MIGHT HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.

FOR PURCHASERS IN CALIFORNIA: PURCHASER HAS THE RIGHT TO HAVE THE NEW HEADSET SERVICED AND REPAIRED DURING THE WARRANTY PERIOD. THE WARRANTY PERIOD WILL BE EXTENDED FOR THE NUMBER OF WHOLE DAYS THAT THE NEW HEADSET HAS BEEN OUT OF PURCHASER'S HANDS FOR WARRANTY REPAIRS. IF A DEFECT EXISTS DURING THE WARRANTY PERIOD, THIS LIMITED WARRANTY WILL NOT EXPIRE UNTIL THE DEFECT HAS BEEN FIXED. IF ANY WARRANTY REPAIR HAS BEEN DELAYED BECAUSE OF CIRCUMSTANCES BEYOND PURCHASER'S CONTROL, OR IF ANY WARRANTY REPAIR DID NOT REMEDY A DEFECT AND PURCHASER NOTIFIES LSA

OF SUCH FAILURE WITHIN 10 DAYS AFTER THE REPAIR, THE WARRANTY PERIOD WILL BE EXTENDED FOR A PERIOD EQUAL TO THE DURATION OF THE DELAY. IF, AFTER A REASONABLE NUMBER OF ATTEMPTS, THE DEFECT REMAINS UNFIXED, PURCHASER MAY RETURN THE NEW HEADSET FOR REPLACEMENT OR REFUND, SUBJECT TO A REASONABLE DEDUCTION FOR PURCHASER'S USE OF THE NEW HEADSET. ANY EXTENSION OF THE WARRANTY PERIOD DOES NOT AFFECT ANY PROTECTION OR REMEDY AVAILABLE TO PURCHASER UNDER APPLICABLE LAW.

# Registration

## Product Registration

Please register at [LightspeedAviation.com](http://LightspeedAviation.com)  
to optimize your customer experience.

Cert: 0046503  
Lightspeed Aviation, Inc.'s Management  
System is Registered to ISO 9001:2008



Copyright Lightspeed Aviation, Inc., 2011. All rights reserved. Lightspeed Aviation is a trademark and Zulu.2 is a registered trademark of Lightspeed Aviation, Inc. Bluetooth is a registered trademark of the Bluetooth SIG. iPhone and iPad are trademarks of Apple, Inc.

Part Number 704-00005-000 Rev. A2



More Than Quiet

---

Lightspeed Aviation  
6135 Jean Road  
Lake Oswego, Oregon 97035  
sales@lightspeedaviation.com  
service@lightspeedaviation.com  
800.332.2421 Toll Free  
503.968.3113 Tel  
503.968.7664 Fax

**LightspeedAviation.com**