

Zulu

USER GUIDE



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INTRODUCTION

This guide describes how to set up and use your Zulu® ANR aviation headset for the best sound quality, Active Noise Reduction (ANR), safety, and comfort. Lightspeed offers the following Zulu headset models:

Zulu—Battery-powered, for flexibility when switching between aircraft

ZuluP—Panel-powered, for installation in aircraft

ZuluC—Battery-powered helicopter version

ZuluCP—Panel-powered helicopter version

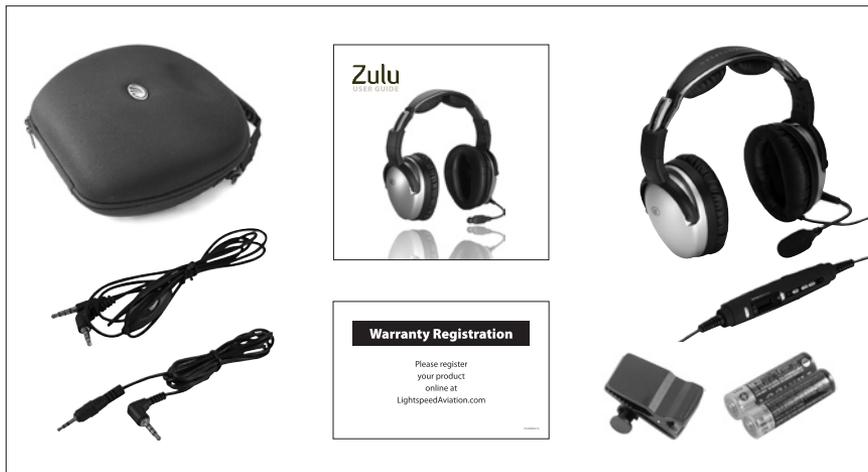
ZuluCD—Standard Zulu with coiled upper cord

For more details on Zulu models, see “Zulu configurations available,” on page 17.

Where to find key information in this guide

For information on...	See...
How to fit your headset for the best comfort and noise reduction	“Fitting your headset,” on page 6
How to use Zulu’s controls and features	“Using your Zulu headset,” on page 8
How to get the best sound from your Zulu headset	“Getting the best possible performance from your Zulu,” on page 10
When to change Zulu’s Stereo or Mono setting	“Matching Zulu’s Stereo/Mono setting to your audio panel signal,” on page 10
How to turn down music automatically during radio communications	“Using Auto MusicMute to quiet auxiliary devices,” on page 9
How to set up Bluetooth devices	“Using a Bluetooth device,” on page 12
Answer to commonly asked questions	“Frequently Asked Questions,” on page 16
How to contact Lightspeed	“How to contact Lightspeed,” on page 18

What's in the box



Your Zulu headset package includes (clockwise, from top left):

- Carrying case
- This user guide
- Zulu ANR headset with Zulu Controller
- Two AA batteries (for battery powered headsets)
- Cord clip
- Warranty card
- Cell phone cable with standard 2.5mm connector
- Audio device/iPhone cable with standard 3.5mm connector

SETTING UP ZULU

Fitting your headset

A good headset fit is a key part of both comfort and ANR performance. Zulu's Active Noise Reduction feature requires a good seal around your ears and a symmetrical fit over your head. When properly fitted, the ear cups should completely cover your ears and the headband should rest lightly on top of your head.

To fit the headset to your head:

1. Fully extend both ear cup sliders.
2. Put the headset on with the microphone and cord to your left.
3. Pressing the top of the headband down onto your head, slide up each ear cup until it covers your entire ear without pinching any part of your ear under the seal. Make sure the two ear cup sliders are extended an equal amount.
4. Position the microphone 1/8 inch from your mouth.

The Zulu headset adjusts to fit most adults. If you have a small head or are using the headset for a child, contact Lightspeed for different headpads.



Changing batteries and monitoring battery life

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

To install batteries, open the battery/DIP switch door on the back of the Zulu controller, either by pressing down on the circle icon to pop open the door or by prying open the door along its notched edges.

When Zulu is turned on and battery power is strong, the power indicator LED flashes green. Under normal conditions, a set of batteries provide up to 50 hours use; however, heavy Bluetooth use can significantly reduce battery life.

When batteries run low, the power LED flashes red. If the power LED flashes red when you first turn on the headset, Lightspeed recommends that you install fresh batteries before take-off. If batteries run low during flight, it's best to keep Zulu powered on continuously until you can change the batteries safely.

Zulu's power shuts off automatically two minutes after you remove the headset from your head.



Battery/DIP switch door for battery-powered headsets

USING YOUR ZULU HEADSET

The Zulu Controller



- A** Power indicator LED: Flashes green when power is supplied to Zulu 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 on; press and hold to turn Zulu off.
- C** Volume control: Lets you control audio panel volume with individual sliders for each ear. Does not affect the volume of auxiliary devices.
- D** FRC (Front Row Center) button: Turns on and off Front Row Center. Front Row Center enhances stereo so that it seems to come from all around you, not just right and left.
- E** 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.
- F** Bluetooth button: Turns on and off the Bluetooth signal and controls Bluetooth-connected devices.
- G** Auxiliary input jack: Provides a wired input for audio devices such as music players and cell phones.
- H** Bluetooth volume buttons: Controls the volume of Bluetooth devices.
- I** Auto MusicMute button: Quiets music and audio from auxiliary devices during radio communications. Does not affect cell phone calls.

Turning Zulu on and off

When you turn on Zulu, you turn on Active Noise Reduction (ANR) as well. To turn on Zulu, press the power button once. When power is supplied to Zulu, the power indicator LED flashes green. (For battery-powered headsets, the power LED flashes red when batteries are low; see “Changing and monitoring battery life,” on page 7).

To turn off Zulu, press and hold the power button until the power LED turns off. During shutdown, the power LED glows briefly to show the power status, either green for full power or red for low batteries.

Zulu’s power shuts off automatically two minutes after you remove the headset from your head.

Using Front Row Center to enhance stereo

The FRC button toggles on and off Front Row Center. Front Row Center 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.

Using Auto MusicMute to quiet auxiliary devices

The bottom-most button on the Zulu Controller toggles on and off Auto MusicMute. When radio communications come in from the panel, Auto MusicMute decreases the volume of auxiliary devices by 80%. To test whether Auto MusicMute is enabled, simply talk into your headset microphone while playing music over a wired or Bluetooth auxiliary device (see “Using auxiliary devices,” on page 11). If Auto MusicMute is on, it will turn down your auxiliary music when you start to talk.

Note: Auto MusicMute does not affect cell phone calls.

Matching Zulu's Stereo/Mono setting to your audio panel signal

For best results, Zulu's Stereo/Mono DIP switch setting should match the signal from your audio panel. If you are using a stereo audio panel, Zulu should be set to Stereo for the best sound quality. If you are using a mono audio panel, Zulu should be set to Mono; otherwise, you will hear radio communications in only one ear. The Stereo/Mono DIP switch does not affect auxiliary devices, so you can enjoy auxiliary audio in both stereo and Front Row Center regardless of how the Stereo/Mono DIP switch is set. For information on setting DIP switches, see "Setting DIP switches," on page 14.

Getting the best possible performance from Zulu

Follow these tips to get the best possible performance from your Zulu headset:

- Make sure you have an excellent fit- see "Fitting your headset," on page 6.
- For a theater-like listening experience, press FRC button to turn on Front Row Center.
- For the best sound quality when listening to music or other audio entertainment, use an audio device that is plugged into the auxiliary jack.
- Make sure Zulu's Stereo/Mono DIP switch setting matches the signal from your audio panel; see "Matching Zulu's Stereo/Mono setting to your audio panel signal," above.
- If you need a little help hearing speech clearly during radio communications or phone calls, try using Treble boost, (see "Setting DIP switches," on page 14). If you do not need the extra boost, keep this feature turned off for a more realistic sound.
- To reduce static noise during phone calls, keep cell phones at least 12 inches from the Zulu Controller and headset when making calls.

USING AUXILIARY DEVICES

You can use auxiliary devices such as music player and cell phones by connecting to Zulu's auxiliary input jack or by connecting wirelessly using Bluetooth. You get the best sound quality when you connect devices to Zulu's auxiliary input jack.

To enhance the sound when listening to auxiliary audio devices, turn on Front Row Center. You can also use Zulu's treble and bass boost DIP switches to adjust the sound. Zulu's Stereo/Mono DIP switch setting does not affect auxiliary devices, so you can listen to auxiliary audio in stereo and Front Row Center even when Zulu is set to Mono.

When Auto MusicMute is on, Zulu automatically turns down auxiliary devices during radio communications; see "Using Auto MusicMute to quiet auxiliary devices," on page 9.

Connecting a wired device to the auxiliary input jack

To connect a music player or cell phone to Zulu's auxiliary input jack use the appropriate supplied cable. Some cell phones use proprietary connectors and require an adapter or special cable- call Lightspeed if you need help with your set up.

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

Using wireless devices with Zulu

Before you can connect a wireless Bluetooth device for the first time, you must pair it with Zulu. This procedure is described in "Connecting a Bluetooth device for the first time," on page 12. Once you pair your Bluetooth device with Zulu, you can connect to it easily when Zulu's Bluetooth mode is turned on. For details on using Bluetooth devices with Zulu, see "Using Bluetooth device," on page 12.

USING A BLUETOOTH DEVICE

Note: Different manufacturers use different interfaces and names for the functions described here. See your Bluetooth device documentation for details as needed.

Turning Bluetooth mode on and off

To turn on Bluetooth mode:

With Zulu turned on, press and hold Zulu's Bluetooth button until you hear a long, high-pitched tone and then Bluetooth indicator LED flashes three quick blue pulses. For first-time pairing, see "Connecting a Bluetooth device for the first time," below.

To turn off Bluetooth mode:

Press and hold Zulu's Bluetooth button for about five seconds-until you hear a long high-pitched tone and the Bluetooth indicator LED flashes two long red pulses.

Connecting a Bluetooth device for the first time

Before you can connect a Bluetooth device to Zulu for the first time, you must pair it with Zulu. Use the steps below.

To pair a Bluetooth device with Zulu:

1. Make sure Zulu's Bluetooth mode is turned fully off. (You should not see blue or red flashes from Bluetooth LED, only green flashes from Zulu's power LED).
See "To turn off Bluetooth mode," above.
2. Once Bluetooth mode is off, press and hold the Bluetooth button for about ten seconds, until the Bluetooth LED starts flashing alternating red and blue. This indicates that Zulu is in pairing mode.

3. With Zulu in pairing mode, follow the menu prompts on your Bluetooth phone or device to direct it to look for Bluetooth devices.

Note: Zulu's pairing mode lasts two minutes. If this step takes you longer and the Bluetooth LED is not longer flashing alternating red and blue, start over from Step 1.

4. Select ZULU_BT or ZULU_V110 from the list of found devices.

5. When asked to enter a passcode or PIN, enter 0000.

Connecting a previously paired Bluetooth device

When you turn on Bluetooth mode, Zulu tries to reconnect to the most recently paired phone or device. Most Bluetooth devices connect to Zulu automatically, but in some cases, you may need to use the device's menu to select ZULU_BT or ZULU_V110.

Using Zulu's Bluetooth features

You can use Zulu's Bluetooth buttons to perform several functions on your phone or audio device. These functions vary depending on the Bluetooth profile supported by your phone or device. Some typical functions for a cell phone 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's + and – buttons) to adjust the volume.

To conserve Zulu's batter power, turn off Bluetooth mode when not in use.

ADDITIONAL INFORMATION

Setting DIP switches

Zulu DIP switches are factory-set to match most audio panels. You may need to adjust the Stereo/Mono DIP switch to match your setup, but in most cases, you can leave the switches set to their factory defaults. See the table on the next page for recommendations on DIP switch settings.

To change a DIP switch setting, open the door on the back of the Zulu Controller. For battery-powered headsets, remove one or both batteries. Slide the DIP switch to the desired position, OFF or ON, using a pen, toothpick or paper clip.



Zulu 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.
Bass boost	Bass boost off Factory setting	Bass boost on	Increases bass amplification.
Treble boost	Treble boost off Factory setting	Treble boost on	Increases treble. This feature can be useful if you need extra help hearing speech clearly.
Cell mic bias	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 this switch is incompatible with some helicopter audio panels. If you plan to use this feature and keep the switch set to ON, test the headset in the cockpit before takeoff.
Noise gating	Leave set to OFF.		If interested in using this feature, call Lightspeed for information.
Leave off	Leave set to OFF.		Test mode; for factory use only.

Frequently Asked Questions

Why do I hear radio communications in only one ear?

You probably have Zulu's Mono/Stereo DIP switch set to Stereo while your audio panel is transmitting a mono signal. A stereo configuration requires two channels, one for each ear. Audio panels that transmit mono signals send audio through only one channel, so you hear audio in only one ear. To fix this, reset Zulu's Stereo/Mono DIP switch to Mono (see "Setting DIP switches," on page 14). This setting does not affect music or audio from auxiliary devices; you can hear stereo sound and use Front Row Center on auxiliary devices even when the Mono/Stereo DIP switch is set to Mono.

When pairing Zulu to my Bluetooth phone, why does my phone tell me it cannot connect?

Your Zulu headset may not be in pairing mode. To enter pairing mode, you must start with Bluetooth mode turned fully off; (see Connecting a Bluetooth device for the first time," on page 12).

Why won't my Bluetooth phone accept Zulu's 0000 passcode?

Your Zulu headset may not be in pairing mode. Some phones prompt for a passcode without checking first to see whether the headset is in 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 a Bluetooth device for the first time," 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 Controller and headset when making calls.

Specifications

Zulu configurations available

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

General

Connectors: See above table

Battery power supply: 3V, two AA batteries

Panel power supply: Aircraft 8V-40V DC

Weight: 13.9 oz.

Headphone

Transducer: 40mm moving coil

Frequency response: 20 Hz-20kHz

Nominal impedance: 170 ohms stereo; 85 ohms mono

Microphone

Transducer principle: Noise-canceling electret

Frequency response: 200 Hz-6000 Hz

Maximum SPL: 114 dB

Terminating impedance: 470 ohms

Operating voltage: 8V-16V DC; approximately 5 mA-12mA

ANR

Maximum SPL: Greater than 125 dB at 100 Hz

How to contact Lightspeed

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