

Lightspeed Aviation Service Repair Manual

Models: Sierra



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1. PURPOSE

This guide is designed to simplify troubleshooting/repair process and provides two options for the user to utilize during the process.

- Isolate by Part: Method to quickly identify failed part via use of “known good Sample Parts”
- Isolate by Symptom Failure: Method using possible failure modes to pinpoint most likely part

2. SCOPE

- Sierra models

3. TROUBLESHOOTING AIDS

- FAQ per Lightspeed Aviation website (<https://www.lightspeedaviation.com/support/>)
- Part Removal/Replacement Video – Step by Step guide of product disassembly and re-assembly
- Audio device with 3.5mm output (eg am/fm radio, mobile device, etc...)
- Audio device with BT capability (eg am/fm radio, mobile device, etc...)
- Com Panel/COM Radio or access to aircraft with Com Panel/Radio (GA, Lemo, U-174 ports depending on headset)
– Available on the open market

Before You Start

1. **CONTACT LIGHTSPEED AVIATION SERVICE DEPARTMENT TO DETERMINE IF YOUR SIERRA HEADSET QUALIFIES FOR WARRANTY REPAIR OR TRADE-UP PROGRAM**
 - Toll free: 1-800-332-2421 (Monday-Friday, 7am - 4pm Pacific Time)
 - Email: support@lightspeedaviation.com
2. **REVIEW AND FAMILIARIZE YOURSELF WITH THE GUIDE IN ITS ENTIRETY BEFORE ATTEMPTING REPAIR**
3. **REVIEW FAQs FOUND ON LIGHTSPEED AVIATION WEBSITE (<https://www.lightspeedaviation.com/support/>)**
4. **LOCATE APPROPRIATE REPAIR MANUAL via LIGHTSPEED AVIATION WEBSITE (<https://www.lightspeedaviation.com/other-policies/>)**
5. **LOCATE APPROPRIATE PART REMOVAL/REPLACEMENT VIDEO INSTRUCTION via LIGHTSPEED AVIATION WEBSITE (<https://www.lightspeedaviation.com/other-policies/>)**
6. **PART AVAILABILITY AND COST ARE UPDATED FREQUENTLY. PLEASE CHECK LIGHTSPEED AVIATION WEBSITE (<https://www.lightspeedaviation.com/other-policies/>) FOR THE LATEST INFORMATION OR CONTACT LIGHTSPEED AVIATION SERVICE DEPARTMENT**
 - Toll free: 1-800-332-2421 (Monday-Friday, 7am - 4pm Pacific Time)
 - Email: support@lightspeedaviation.com

Headset Part Numbers

APPLICABLE PART NUMBERS – SIERRA:

Note: Contact Lightspeed Aviation directly if the part number is unknown, not listed, or has different plug types than listed

Model	Item Number	Part Number	Description
Sierra	4000	800-00001-000	ASSY, HEADSET, SIERRA (GA)

NOTE: CHECK WITH LIGHTSPEED AVIATION TO DETERMINE IF YOUR SIERRA HEADSET QUALIFIES FOR WARRANTY REPAIR (Toll free: 1-800-332-2421)

GA = General Aviation plugs

Parts List

REPLACEABLE PARTS – ASSEMBLY/PART:

a. Below parts must be replaced as an assembly

Part Number	Description
285-00012-000	Battery Box, Battery
285-00019-000	Speaker Plate Pair
285-00022-000	Mic Boom Assembly
285-00024-000	Ear Cup Assy, Left w/o mic
285-00025-000	Ear Cup Assy, Right
285-00056-000	Sub-Assy, Control Box Bottom, Battery
285-00063-000	Volume Slider Kit

Parts List

REPLACEABLE PARTS – ASSEMBLY OR SUB-COMPONENTS:

a. Below parts can be replaced as an assembly or its individual parts

	Description
000000316	Cable, Lower, Dual GA
000000343	Lightpipe
000000439	Button, Power, Painted
000000813	Button, Bluetooth Volume Down
000000814	Button, Bluetooth Control, Painted
000000815	Button, Bluetooth Volume Up, Painted
000000816	Button, Comm Priority, Painted
200-00015-000	PCBA, Control Box Upper, Battery
200-00024-000	PCBA, Control Box Lower
250-00013-000	Foam, Cup
250-00055-000	Control Box Assembly, Bottom
300-00010-000	Cable Upper, Straight
303-00197-000	Control Box Top
304-00004-000	Decal Sierra
305-00006-100	O-Ring, Boom
311-00001-000	Control Box & Faceplate Screws
311-00003-000	Washer, Boom
311-00050-000	E-Clip, Boom

Troubleshooting Guide

FAILURE VALIDATION:

1. Validate/duplicate failure complaint using 1. Customer set-up 2. LSA set-up
 - a. No Problem Found?
 - Check with customer to ensure appropriate information for duplication. Retest as needed
 - Document test method, Retest.
 - b. Confirmed?
 - Proceed to step 2.
2. Ensure fresh batteries or known good panel power source as appropriate for control module
3. Unplug from com panel
4. Retest
 - a. Failure resolved?
 - Failure mode is either bad batteries or panel power source
 - b. Failure continues?
 - a. Isolate by Part
 - b. Isolate by Symptom

Troubleshooting Guide – By Part

Isolate by Part:

Note: If failure is related to Side Tone (Boom Mic) Go to step 3, otherwise proceed with step 1.

1. Open Left Earcup and unplug Control Module assembly (Upper Cable/Control Module/Lower Cable), connect known good Control Module assembly. Retest.
 - a. failure resolved? Isolate down to cables or control module replacing each and reconnect until faulty part found and replace. Note: move the cable around strain relief areas to facilitate pinpointing of faulty part.
 - b. failure continues? Go to step 2

2. Connect Original Control Module to known good Headband Assembly (headband/faceplates)
 - a. failure resolved? Open Original headband Left/Right Cup and check PCBA, wiring, reseat and re-assemble.
 - b. failure continues? Isolate failure to left or right faceplate, replace, then retest.

3. Disconnect Boom MIC and test with known good Boom MIC.
 - a. failure resolved? Replace Boom Mic with known good/tested Boom Mic.
 - b. failure continues? Restart at Step #1

Component Replaced	Assembly Reference
Control Module / sub-components	<ul style="list-style-type: none">SIERRA PART REMOVAL/REPLACEMENT VIDEOS
Headband assembly	<ul style="list-style-type: none">SIERRA PART REMOVAL/REPLACEMENT VIDEOS
Boom Mic	<ul style="list-style-type: none">SIERRA PART REMOVAL/REPLACEMENT VIDEOS
Left or Right Faceplate	<ul style="list-style-type: none">SIERRA PART REMOVAL/REPLACEMENT VIDEOS

Troubleshooting Guide – By Symptom/Failure

#	Symptom/Failure	Repair Action	References
1	Noise – Headset powered on (ANR)	<ol style="list-style-type: none"> 1. Listen to headset and: Shake head, push on cups, open/close mouth 2. Replace Left and Right faceplates if there is abnormal noise 3. If complaint is about squealing when descending fast, replace both left and right faceplates 	<ul style="list-style-type: none"> • SIERRA PART REMOVAL/REPLACEMENT VIDEOS
2	Bluetooth *Prior to Rev A4 Sierra does not support streaming music	<ol style="list-style-type: none"> 1. If headset will not pair with any device or Audio is Missing/Distorted <ol style="list-style-type: none"> 1. Replace Control Box Upper PCBA 200-00015-000 	<ul style="list-style-type: none"> • SIERRA PART REMOVAL/REPLACEMENT VIDEOS
3	No Comm Audio/Distorted Comm Audio	<ol style="list-style-type: none"> 1. Perform test while headset powered on and off 2. Visually inspect cabling for wear or defects. 3. Plug headset into comm. panel. 4. Pull and bend Lower cable along length of wires and strain reliefs while listening to headset 5. If no change, Pull and bend Upper cable along length of wires and strain reliefs while listening to headset 	<ul style="list-style-type: none"> • SIERRA PART REMOVAL/REPLACEMENT VIDEOS
4	No Mic Audio	<ol style="list-style-type: none"> 1. Plug headset into comm. panel. <ol style="list-style-type: none"> 1. If possible, turn squelch setting down to ‘hot mic’ 2. Rock and bend Boom mic, tap on mic while listening <ol style="list-style-type: none"> 1. If audio is intermittent, replace boom mic assembly 3. Visually inspect cabling for wear or defects 4. Pull and bend Lower cable along length of wires and strain reliefs while listening to headset <ol style="list-style-type: none"> 1. If audio is intermittent, replace Lower cable 5. If no change, Pull and bend Upper cable along length of wires and strain reliefs while listening to headset <ol style="list-style-type: none"> 1. If audio is intermittent, replace Upper cable 	<ul style="list-style-type: none"> • SIERRA PART REMOVAL/REPLACEMENT VIDEOS

Troubleshooting Guide – By Symptom/Failure

#	Symptom/Failure	Repair Action	References
5	No Auxiliary Audio	<ol style="list-style-type: none"> 1. Play sound through Auxiliary patch cord into headset. 2. Rock cord back and forth while listening to headset <ol style="list-style-type: none"> 1. If music cuts in/out or is distorted, replace 200-00024-000 Control board lower PCBA 	<ul style="list-style-type: none"> • SIERRA PART REMOVAL/REPLACEMENT VIDEOS
6	No Power	<ol style="list-style-type: none"> 1. Confirm Batteries are good. 2. Visually inspect cabling for wear or defects 3. Pull and bend Upper cable along length of wires and strain reliefs while testing for power 4. Move sliders up and down and press buttons on control box while gently twisting. 5. Replace Control Box Upper PCBA (200-00015-000) 	<ul style="list-style-type: none"> • SIERRA PART REMOVAL/REPLACEMENT VIDEOS