

Lightspeed Aviation Service Repair Manual

Models: Tango



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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

- Tango 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 – TANGO:

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
Tango	4044	800-00014-001	ASSY, HEADSET, TANGO (GA)
Tango	4045	800-00014-002	ASSY, HEADSET, TANGO, P
Tango	4049	800-00014-003	ASSY, HEADSET, TANGO, H
Tango	4054	800-00015-001	ASSY, HEADSET, TANGO, GA, EU
Tango	4055	800-00015-002	ASSY, HEADSET, TANGO, PANEL, EU
Tango	4059	800-00015-003	ASSY, HEADSET, TANGO, HELI, EU

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

GA = General Aviation plugs

P = Panel Power (6-pin LEMO connector)

EU = European Union version (wireless frequency differences)

Parts List

REPLACEABLE PARTS – ASSEMBLY/PART:

a. Below parts must be replaced as an assembly

Part Number	Description
250-00008-000	Ear Seal
285-00041-000	Right Faceplate
285-00042-000	Left Faceplate US
285-00043-000	Right Cup
285-00044-000	Left Cup
285-00045-000	Boom Assembly
285-00046-000	Panel Interface Top
285-00047-000	Battery Door Kit
285-00048-000	Left Faceplate EU
285-00049-000	Battery Door Replace
285-00052-000	Tango Headband Assy

Parts List

REPLACEABLE PARTS – ASSEMBLY OR SUB-COMPONENTS:

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

	Description
000001524	Windscreen
250-00008-000	Head pad - Sierra
200-00033-000	PCBA, Transceiver - US
200-00033-001	PCBA, Transceiver - EU
200-00036-000	PCBA, Transceiver Charger, Tango
200-00038-000	PCBA, Panel Power, Transceiver Charger
250-00013-000	Foam, Cup
260-00036-001	Assy, Transceiver GA US
260-00036-002	Assy, Transceiver Panel US
260-00036-003	Assy, Transceiver Heli US
260-00039-001	Assy, Transceiver GA EU
260-00039-002	Assy, Transceiver Panel EU
260-00039-003	Assy, Transceiver Heli EU
300-00027-000	Cable, Lower, Dual GA
300-00028-000	Cable, Lower, U174
300-00029-000	Cable, Lower, Panel
300-00030-000	Cable, Emergency
300-00031-000	Cable, Emergency Jack
301-00005-000	USB Cable
303-00179-000	Battery Door USB Cover
304-00025-000	Label Left Cup
304-00026-000	Label Transceiver

Parts List

REPLACEABLE PARTS – ASSEMBLY OR SUB-COMPONENTS:

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

	Description
305-00006-100	O-Ring, Boom
311-00002-000	E-Clip, Boom
312-00001-000	Washer, Boom
315-00063-000	Pocket Clip
806-00002-000	Black Dual USB Port Charger

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. 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. Pair Headset to connect Golden Transceiver Module assembly. Retest.
 - *Ensure Channel selects on headset and Transceiver match
 - a. failure resolved? Isolate down to cables or transceiver PCBA(s), replace each and reconnect until faulty part found. Note: move the cable around strain relief areas to facilitate pinpointing of faulty part.
 - b. failure continues? Go to step 2
2. Connect Original Transceiver Module to Golden Headband Assembly (headband/faceplates)
 - a. failure resolved? Open Original headband Left/Right Cup and check PCBA, wiring, reseal and re-assemble.
 - b. failure continues? Isolate failure to left or right faceplate, replace, then retest.
3. Disconnect Boom MIC and test with golden Boom MIC.
 - *Ensure Channel selects on headset and Transceiver match
 - a. failure resolved? Replace Boom Mic with known good/tested Boom Mic.
 - b. failure continues? Restart at Step #1

Component Replaced	Assembly Reference
Transceiver Module / sub-components	<ul style="list-style-type: none"> Tango PART REMOVAL/REPLACEMENT VIDEOS
Headband assembly	<ul style="list-style-type: none"> Tango PART REMOVAL/REPLACEMENT VIDEOS
Boom Mic	<ul style="list-style-type: none"> Tango PART REMOVAL/REPLACEMENT VIDEOS
Left or Right Faceplate	<ul style="list-style-type: none"> Tango 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 or Right faceplate assemblies if there is abnormal noise 3. Turn off Transceiver and retest, If Abnormal Noise is present only when Transceiver is on, replace 200-00033-00X (Transceiver PCBA) 	<ul style="list-style-type: none"> • Tango PART REMOVAL/REPLACEMENT VIDEOS
2	Panel Interference (Noise)	<ol style="list-style-type: none"> 1. Test headset with Transceiver powered off 2. If issue is resolved, change channel select on both transceiver and headset and re-link 3. If issue is still present, replace 200-00033-00X (Transceiver PCBA) 	<ul style="list-style-type: none"> • Tango PART REMOVAL/REPLACEMENT VIDEOS
3	Bluetooth	<ol style="list-style-type: none"> 1. Use a device to try and pair to the headset 2. If there is still an issue try to re-pair the device to headset 3. Replace 200-00033-00X (Transceiver PCBA) 	<ul style="list-style-type: none"> • Tango PART REMOVAL/REPLACEMENT VIDEOS
4	No Comm Audio/Distorted Comm Audio	<ol style="list-style-type: none"> 1. Perform test while headset and transceiver powered on 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. Check that the cable is fully plugged into the Transceiver PCBA 6. Isolate by part (Page 8). 	<ul style="list-style-type: none"> • Tango PART REMOVAL/REPLACEMENT VIDEOS

Troubleshooting Guide – By Symptom/Failure



#	Symptom/Failure	Repair Action	References
5	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. Ensure Transceiver and Headset have same channel selected 3. 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 4. Visually inspect cabling for wear or defects 5. 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 6. Isolate by part (Page 8). 	<ul style="list-style-type: none"> • Tango PART REMOVAL/REPLACEMENT VIDEOS
6	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 200-00033-00X (Transceiver PCBA) 	<ul style="list-style-type: none"> • Tango PART REMOVAL/REPLACEMENT VIDEOS
7	No Power (Headset)	<ol style="list-style-type: none"> 1. Confirm Battery is good. 2. Retest 3. Replace Left Cup Assembly 	<ul style="list-style-type: none"> • Tango PART REMOVAL/REPLACEMENT VIDEOS
8	No Power (Transceiver)	<ol style="list-style-type: none"> 1. Confirm Battery is good 2. Retest 3. Replace 200-00033-00X (Transceiver PCBA) and Retest 4. Replace Transceiver 	<ul style="list-style-type: none"> • Tango PART REMOVAL/REPLACEMENT VIDEOS
9	Comm Priority	<ol style="list-style-type: none"> 1. Replace Right cup Assembly 	<ul style="list-style-type: none"> • Tango PART REMOVAL/REPLACEMENT VIDEOS
10	Volume Button Failure	<ol style="list-style-type: none"> 1. Replace Right cup Assembly 	<ul style="list-style-type: none"> • Tango PART REMOVAL/REPLACEMENT VIDEOS