	Troubleshooting Guide: Audio Speakers
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Symptom	Possible Cause	Test Procedure	Repair
iPod does not charge. ¹	iPod not synced	Make sure the iPod is completely docked.	Press the iPod firmly into the dock, and allow up to two minutes for the iPod to sync.
	Failed wiring or failed dock	<ul style="list-style-type: none"> Verify that the wire that connects the UCB to the dock is not pinched or cut. Check the wire's connections. Check the wire's continuity. 	<ul style="list-style-type: none"> If the wire fails the continuity test, replace the wire. If the wire passes the continuity test, replace the dock.
Shocks from headphones.	Faulty headphones	Try a different pair of headphones. JHTNA quality department has found that certain headphones are more likely to deliver static shocks.	Use a different pair of headphones.
Buzzing from speaker.	Damaged wiring	<ul style="list-style-type: none"> Verify there are no pinches or cuts in the wire that connects the audio in and audio out boards. Verify there are no pinches or cuts in the wires that are connected to the speaker board.² 	<ul style="list-style-type: none"> Replace damaged wiring. If zip ties cause a wire to bend, carefully cut the zip ties.
	Failed speakers	Verify the speakers fully connect to the speaker board. ²	Replace the speakers.
No sound through headphones, but speakers work.	Damaged or improper wiring	<ul style="list-style-type: none"> Verify that there are no pinches or cuts in the wire between the audio in and audio out boards. Check the wire's connections. Check the wire's continuity. 	Replace the wire if it fails the continuity test.
	Failed audio out board	Check continuity across this board. ³	Replace the board if it fails the continuity test.

¹ Only applies to models that have an iPod dock. Example: T103.

² Some models do not have a speaker board. On these models, the speakers and audio out board plug into the UCB. Example: LS15.0T.

³ See Appendix.

No sound from speakers, but headphones work. ⁴	No power from the amp adapter board in the motor tray ⁵	<ul style="list-style-type: none"> Check the wire connection between the amp adapter board and the console. Verify that the amp adapter board outputs 12V. 	Replace the amp adapter board and the cables that connect the amp adapter board to the console.
	Damaged or improper wiring from the amp adapter board ⁵	<ul style="list-style-type: none"> Make sure the wire that connects the amp adapter board to the speaker board is firmly attached. Check the wire's continuity. 	Replace the wiring that connects the amp adapter board to the speaker board. ⁶
	No power from the UCB ⁷	<ul style="list-style-type: none"> Check the wire connection between the UCB and the speaker board. Verify power from the UCB.³ 	Replace the UCB and console cables.
	Damaged or improper wiring from the audio out board	<ul style="list-style-type: none"> Make sure the wire that connects the audio out board to the speaker board is firmly attached.² Check the wire's continuity. 	Replace the audio out board wiring.
	Failed audio out board	Check continuity across this board. ³	Replace the board if it fails the continuity test.
	Failed speaker board ²	Verify that the speaker board outputs 12V.	Replace the speaker board.
	Failed speakers	Verify the speakers fully connect to the speaker board. ²	Replace speakers.
No sound from one speaker.	No music player	<ul style="list-style-type: none"> Make sure the iPod is completely docked.¹ Make sure the MP3 player or iPod is connected to the audio adapter cable. 	<ul style="list-style-type: none"> Press the iPod firmly into the dock, and allow up to two minutes for the iPod to sync.¹ Attach the MP3 player or iPod to the audio adapter cable.
	Failed speaker or speaker board ⁴	<ul style="list-style-type: none"> Verify that the speaker fully connects to the speaker board.² Switch the speaker connections from one speaker to the other. 	<ul style="list-style-type: none"> If the sound does not switch sides when the speaker connections are swapped, replace the speaker board. If the sound does switch sides, replace the speaker.

⁴ Throughout this document, "amp adapter board" refers to a board that is installed in the motor tray. The term "speaker board" refers to a board that is installed in the console; on most models, the speakers plug into this board. These part names may vary across Online Remedy parts lists and wiring guides.

⁵ Cause only applies to models that have an amp adapter board in the motor tray. Example: 5.0AT. See Appendix.

⁶The wiring between the amp board and speaker board varies by model. On some models, they are connected by the console cables; on others, they are connected by separate wires.

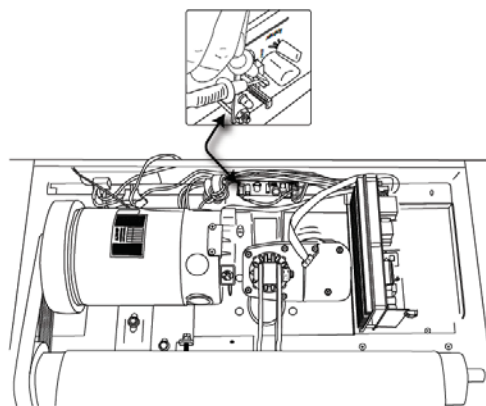
⁷ Cause only applies to models that have a speaker board that is powered through the UCB. Example: CT5.1.

No sound from speakers or headphones.	Audio adapter cable not connected	Make sure the audio adapter cable is connected to the console.	Replace the audio adapter cable.
	Failed wiring between the audio in and out boards	<ul style="list-style-type: none"> • Verify that there are no pinches or cuts in the wire between the audio in and audio out boards. • Check the wire's connections. • Check the wire's continuity. 	Replace the wire if it fails the continuity test.
	Failed audio out board	Check continuity across this board. ³	Replace the board if it fails the continuity test.
	Failed audio in board	Check continuity across this board. ³	Replace the board if it fails the continuity test.
Only one headphone works, or the speakers continue to play while headphones are plugged in.	Improper wiring	<ul style="list-style-type: none"> • Make sure that the wire that connects the audio in and audio out board is fully connected. • Check the wire's continuity. 	<ul style="list-style-type: none"> • If the wire fails the continuity test, replace the wire. • If the wire passes the continuity test, replace the audio out board.

APPENDIX

Amp Adapter Board

The image below shows the location of the amp adapter board in the motor tray, as well as the expected voltage readings. Some models do not have an amp adapter board:

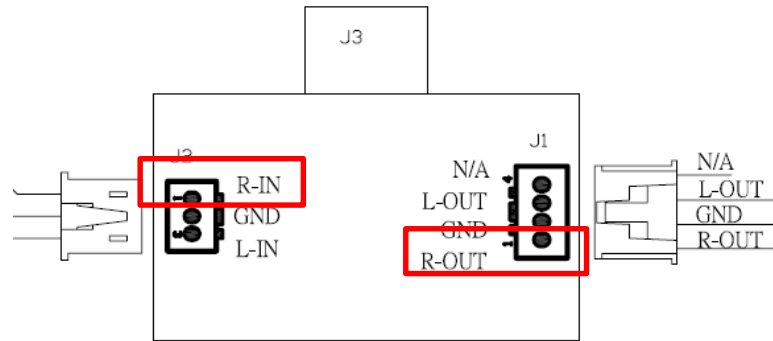


Voltage In	Voltage Out
120v	12v

Check Continuity Across an Audio In or Audio Out Board

Tool required: multimeter

1. Set a multimeter to Ohms.
2. Identify each set of matching pins on the board ports. One set is shown in red below.
Note: The pins may be asymmetrically arranged. The pin labelled N/A is unused.

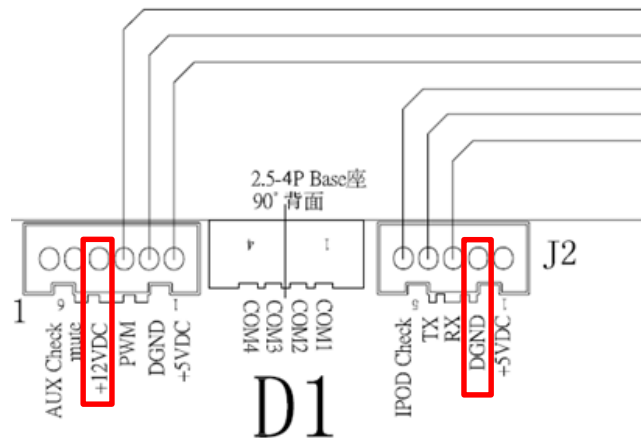


3. Place one lead on each pin in a set.
4. If the meter beeps or displays an Ohm reading, the pin set passes the continuity test.

Verify Power from the UCB

Tool required: multimeter

1. Set a multimeter to DC volts.
2. Place one lead against the 12V pin, and the second lead against the DGND pin in the iPod connector port.



3. If the meter reads 12V, you have verified power from the UCB.