Service Source

iPod Testing Procedures
iPod shuffle

Testing Procedures

Purpose

These procedures are a tool to help identify an iPod hardware failure point before sending the iPod in for repair. The procedures include a list of tools, computer setup, Restoring procedures, various standard tests and checks, and the battery life test.

Important: iPods without an identified hardware failure do not qualify to be sent to Apple for repair. If received by Apple, such units will be identified as NTF (No Trouble Found).

How To Use These Procedures

These "iPod Testing Procedures" are available for download in PDF format at: http://service.info.apple.com/ipod-tp.html

Normal troubleshooting is not covered in these procedures. Refer to the iPod Service & Support Page: http://www.apple.com/support/ipodshuffle/

Refer to the Preparation section, below, to determine other setup needs.

The procedures are written in a beginning-to-end format, but it is not required to complete all the procedures.

You may find that performing a test out of order may be helpful to quickly identify a likely hardware failure. Keep in mind, each test or procedure may not be self-contained, due to the beginning-to-end structure, an earlier procedure may set up the iPod or connections needed for a later procedure.

Warning: These procedures reformat the iPod for the Mac, and erase all data. Verify data is backed up.

If all tests complete successfully, the iPod is returned to its original shipping condition, with the most current Mac version of its iPod software installed.

Preparation

Tools needed

- Apple Macintosh computer with the following:
    - **Note:** A USB extension cable (such as a USB keyboard extension cable) is needed if using an iMac G3 or eMac computer (the iPod shuffle will not fit into their USB ports)
    - high-power USB port (a high-power USB port is required to supply power to the iPod shuffle; a USB 2.0 port is recommended since it will transfer songs faster)
    - Mac OS X 10.3.5 or later
    - iTunes 4.7.1 or later
    - iPod Updater 2005-01-11 or later (download at http://www.apple.com/ipod/download/)
    - Approximately a CDs worth of known good, distortion free, stereo, computer authorized MP3 or AAC music files in iTunes
- iPod shuffle power adapter (p/n 661-3522)
- Audio headphones

Computer setup

Note: Refer to the Tools needed section, above.

1. Install the required, or latest, iPod Updater onto the Macintosh computer.

    Note: The system usually stores the iPod Updater in an "iPod Software Updater" folder in the Utilities folder (if desired, you may need to create this if iPod software was not originally installed from a CD).

2. Install or update iTunes to the required version.

3. Open **iTunes** and create a playlist. Name it something like the following example: (**Tip:** Adding a bullet or other symbol can sort the playlist near the top)
    - iPod Testing

4. From the iTunes Library, drag a CD or more worth of imported songs into the iPod Testing playlist.

Initial Inspection

Inspect the shipping box for damage that may have damaged the iPod. Apple will repair damage caused by shipping.

Under warranty

Damage NOT covered under warranty (unless caused by shipping):
- visually broken
- cracked
- deformed
- liquid seeped inside
- iPod shows signs of being opened
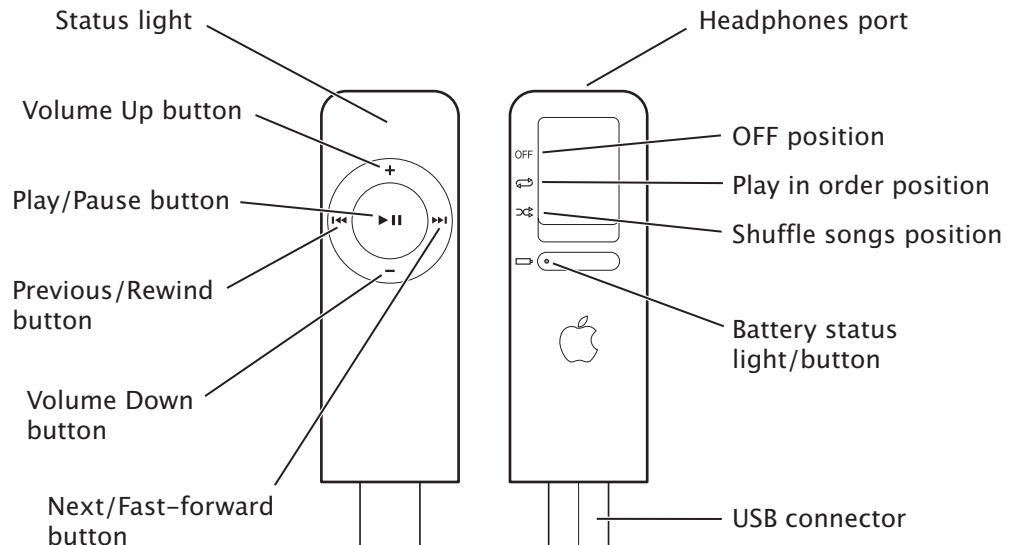- customer acknowledged causing damage

Out of warranty

Apple will repair, for a fee, iPods that are out of warranty, unless they have "excessive" damage that requires too many internal parts to be replaced.

Damage NOT repairable (unless caused by shipping):
- severely damaged, crushed
- iPod arrives in pieces

iPod shuffle Controls

Status light

Volume Up button

Play/Pause button

Previous/Rewind
button

Volume Down
button

Next/Fast-forward
button

Headphones port

OFF position

Play in order position

Shuffle songs position

Battery status
light/button

USB connector

Verify Problem Reported by Customer

- Attempt to duplicate and document the problem reported by the customer.
- Use standard troubleshooting procedures to diagnosis and fix the problem, if possible.
- If a problem is documented and cannot be resolved, there is no need to continue. The iPod and the documented problem information can be sent to Apple for repair.

Restore iPod Software

Warning: This procedure erases all data on the iPod, and formats it for Macintosh computers. Verify data backup.

Important: Make sure you have completed the earlier Computer setup procedures, before continuing.

1. (With the iPod shuffle NOT connected to the computer) reset it by setting the switch on the back to OFF for five seconds and then set it to either play in order ⇄ or shuffle songs ⤨ .

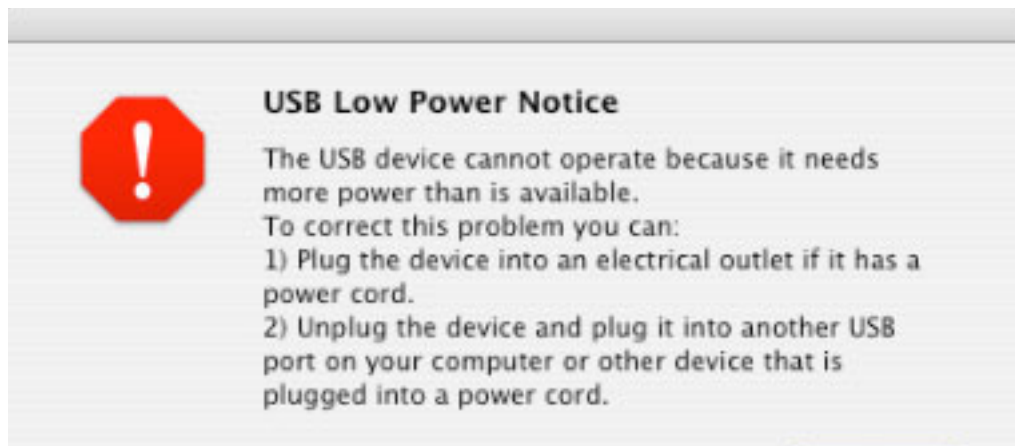   **Note:** The status light should show solid green for a few seconds.

2. Launch the latest release of iPod Updater on the computer. Wait until you see the message "Plug in an iPod to update it."

3. Quit iTunes if it is open.

4. Plug the iPod shuffle into a high-power USB port on the computer.

   Notes:
   - Use a USB 2.0 port for faster music transfer speeds.
   - Battery charging will be verified, so a high-power USB port must be used. The iPod shuffle can only be charged via a high-power USB port (USB ports on the keyboard are not high-power so they cannot be used). If the port does not have enough power, the following notice will appear.

5. The iPod shuffle should begin blinking orange — do NOT disconnect it.

    Important: Whenever the iPod shuffle status light blinks orange, it indicates that the iPod shuffle is mounted to the Desktop and must be ejected (the status light will stop blinking) before it can be disconnected from the computer.

    In this case, whether the iPod shuffle has been enabled for disk use or not, iPod Updater mounts the iPod shuffle on the Desktop.

    Note: If the iPod Updater screen says that the attached iPod model is not supported by this application, quit iPod Updater and launch iPod Updater 2005-01-11 or later.

6. The iPod Updater window displays the iPod shuffle name, serial number, software version, capacity, and the Restore button is available. Example shown here:

    Note: The approximate Capacity for the following iPods should be:
    • iPod shuffle (512 MB): 500 MB
    • iPod shuffle (1 GB): 1 GB

7. Click Restore. Click Restore again, when it asks you if you are sure.

8. Enter your name and password in the Authenticate screen.
    A progress bar appears.

9. When the progress bar completes, the message "Your iPod has been restored..., and is restarting." appears.

10. Wait until the iPod Updater window displays the iPod name and serial number screen.

11. Quit the iPod Updater. The iPod has been Restored. Do not disconnect it.

iTunes Synchronization Test

1. Open iTunes if it didn't launch automatically.

   Note: If iTunes was already open, quit and relaunch it.

2. The iPod Setup Assistant window will be displayed.

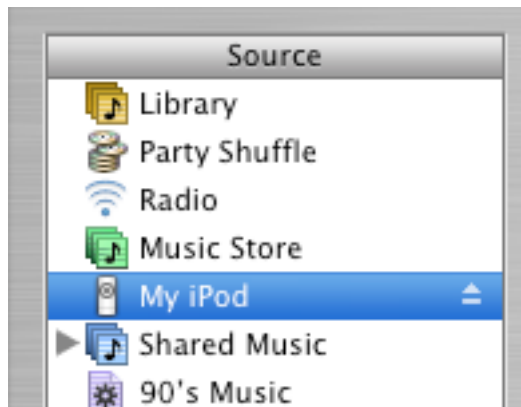3. Uncheck the "Automatically choose songs for my iPod" check box. Click Next.

4. In the "Register Your iPod" screen, click Done.

Note: iTunes may attempt to connect to the Apple Music Store. If it is unsuccessful, due to no internet connection for example, you will receive a message window.

5. In the iTunes Source panel, select the iPod shuffle icon.

6. Select the "Display iPod options" button at the bottom right corner of the iTunes window to open the iPod Preferences.

7. Make the selections shown below.

8. When checking the Enable disk use check box, a message window appears about the need to unmount (eject) the iPod before disconnecting. Click OK.
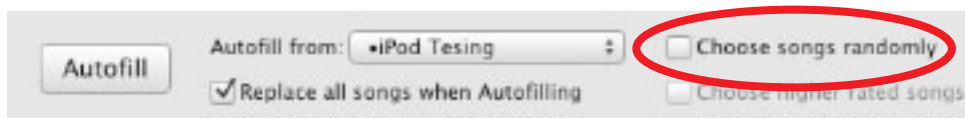
   Important: Again, whenever the iPod shuffle is mounted on the Desktop, the status light blinks orange. The iPod must be ejected (the status light will stop blinking) before it can be disconnected from the computer.
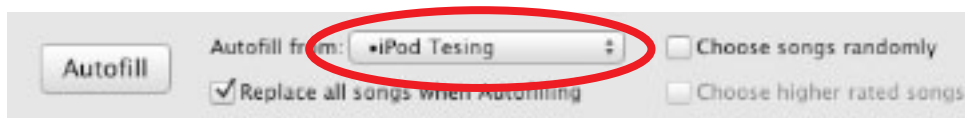

Enabling iPod for disk use requires manually unmounting iPod before each disconnect, even when automatically updating music.

Cancel   OK

9. Click OK to close the iPod options window.

10. Make sure that the iPod shuffle icon is on the desktop, and verify that both status lights (status light, and battery status light) are blinking orange.
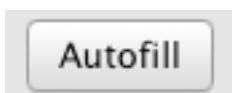

MY IPOD

11. Uncheck the Choose songs randomly check box in the Autofill settings area at the bottom of the iTunes window.

Autofill   Autofill from: •iPod Tesing   Choose songs randomly
          ☑ Replace all songs when Autofilling   Choose higher rated songs

12. Choose the iPod shuffle testing playlist, created earlier, from the pull-down menu.

Autofill   Autofill from: •iPod Tesing   Choose songs randomly
          ☑ Replace all songs when Autofilling   Choose higher rated songs
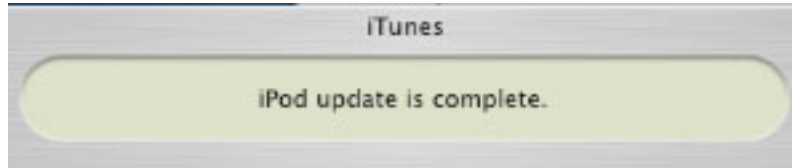
13. Click Autofill to download the music in the playlist to the iPod shuffle.

Autofill

14. When the iPod shuffle has finished downloading the music files, the following will be displayed in iTunes.

   Note: The window does not say OK to disconnect, because the iPod shuffle is mounted to the Desktop.

iTunes

iPod update is complete.

Battery Charging Check

1. Eject the iPod shuffle by clicking the eject icon in the iTunes Source panel, or click the iPod Eject button at the bottom right corner of the iTunes window, or drag the iPod shuffle desktop disk icon to the trash.

   Leave the iPod shuffle connected to the computer.

2. Before disconnecting from the computer, check that the status light has changed to solid orange or green.

   Orange = charging
   Green = fully charged

3. Disconnect the iPod shuffle from the computer.

4. Press the battery status button on the back of the iPod shuffle. The light shows for a moment, either green or orange. If red or no light, reconnect the iPod shuffle to the high-power USB port on the computer, to charge for about 15-minutes.

   Note: The iPod shuffle can only be charged via a high-power USB port (USB ports on the keyboard are not high-power so they cannot be used).

   Green = remaining charge 80-100%
   Orange = remaining charge 20-79%
   Red = less than 20%
   Blinking red or no light = battery needs charging

Control Buttons & Audio Test

1. Before testing, press the battery status button to verify that it is either orange or green. If not, charge the iPod shuffle for about 15 minutes. as described in the previous steps.

2. Connect headphones to the iPod shuffle.

3. Set the switch on the back to either play in order ⟳ or shuffle songs ⤨ .

4. During these procedures, observe that the status lights work as expected.

5. Press the Play/Pause button to play music.

   Note: When the Play/Pause button is pressed, the status light will display solid green for 2 seconds. For all other buttons, the green light will show only while the button is pressed.

6. Listen for any distortion or poor sound quality. Make sure that both the left and right channels are heard.

7. Press the Volume Up and Volume Down buttons to vary the volume and ensure they work properly.

8. Press the Next/Fast-forward button to play the next song.

9. After about 5 seconds, press the Previous/Rewind button twice to play the previous song (the first press goes to the beginning of the playing song) and play it for about 5 seconds.

10. Press Play/Pause for 3 seconds to toggle Hold On. The status light will blink orange 3 times.

    Press buttons to verify that nothing happens, and that the orange status light shows when pressing buttons.

11. Press Play/Pause for 3 seconds again to toggle Hold Off. The status light will blink green 3 times.

12. Set the switch to play in order ⟳ , and press the Play/Pause to play music.

13. Press the Next/Fast-forward button a few times to move from the first song.

14. Press the Play/Pause button 3 times quickly within 1 second. The first song in the playlist should play.

    Note: This only works when the switch is set to play in order.

15. Press the Play/Pause button to pause the playback.

    Note: When the Play/Pause button is pressed this time, the status light will blink green for 1 minute (do not need to verify time).

16. Set the switch on the back to OFF.

17. Press Play/Pause button and verify that no music plays.

18. Remove headphones.

Battery Life Test

Notes:
- This test is only required for iPod shuffles which are reported having short battery life (less than 9.5 hours playing time).
- For iPod shuffles returned during the 2nd year under APP (Apple Protection Plan), the testing time is 6 hours.

Important: The start time of this test should be planned carefully to ensure that the iPod shuffle will be checked at the times needed. The iPod shuffle is initially checked, and then it must be checked again in either 6 or 9.5 hours, depending on the required test.

1. Set the switch on the back of the iPod shuffle to OFF.

2. Connect the iPod shuffle to a high-power USB port on the computer and allow it to charge for 4.5 hours to fully charge the battery.

3. Set the switch to play in order ⇄ .

4. Press Play/Pause to play music. Connect headphones to the headphones port, listen to make sure the music is playing.

5. Set Hold to On by pressing and holding the Play/Pause button for 3 seconds, until the status light blinks orange three times. This prevents accidental button activation.

6. Verify music is still playing, then disconnect the headphones.

7. Record the start time on a piece of paper.

8. At 6 or 9.5 hours, depending on the required test, connect the headphones and listen for music playing.

9. If the iPod shuffle is still playing music when checked again at the specified time, the battery is OK, and passes the test.

10. If the iPod shuffle stops playing because the battery depleted, then reject the iPod for short battery life.

Restore to Shipping Configuration

This step removes all the music and data on the iPod shuffle and restores it to the manufacturing configuration.

Refer to the Restore iPod Software procedures described earlier, to perform the following:

1. Launch the latest release of iPod Updater on the computer. Wait until you see the message "Plug in an iPod to update it." **Note:** You do not need to Reset the iPod.

2. Quit iTunes if it is open.

3. Connect the iPod shuffle to a high-power USB port on the computer. The iPod Updater window displays the iPod name, serial number, software version, capacity, and the Restore button is available.

4. Click Restore. Click Restore again, when it asks you if you are sure.

5. Enter your name and password in the Authenticate screen. A progress bar appears.

6. When the progress bar completes, the message "Your iPod has been restored..., and is restarting." appears.

7. Wait until the iPod Updater window displays the iPod name and serial number screen, then quit the iPod Updater. The iPod has been Restored. Do not disconnect the iPod.

8. Open iTunes if it didn't launch automatically.

   Note: If iTunes was already open, quit and re-launch it.

9. The iPod Setup Assistant window will be displayed. This time, click Cancel.

10. Drag the iPod shuffle icon on the desktop to the Trash to unmount it.

11. Disconnect the iPod shuffle.

Charge the Battery (unattended operation)

1. If the tested iPod shuffle has passed all the tests so far, connect it to a high-power USB port on the computer and charge it for about 4 hours.

2. Ensure that the battery has a good charge. Press the battery status button, the light should be green. Fail the iPod if the battery is not fully charged.