



*PROPRIETARY
INFORMATION*

Orion TI-84 Plus Firmware Upgrade Utility User Guide

**1st November 2017
Version 0.7**

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1 Introduction

This document describes the Orion TI-84 Plus firmware upgrade procedure.

2 Requirements

2.1 Hardware

1. Orion TI-84 Plus unit
2. Standard A to Mini-B USB cable

2.2 Software

1. Orion TI-84 Plus Upgrade Utility vX.X.X
2. Orion TI-84 Plus firmware file (e.g. "Orion TI-84 Plus R2 v02.00.15.bin")
3. A PC with Windows 10.

3 Device Connection Modes

1. Upgrade Mode: Connect Orion TI-84 Plus in upgrade mode in order to upgrade the device. Please see section 4 below.
2. Normal Mode: This is the default mode when the device is plugged into the PC. In this mode, the upgrade cannot be performed but the device will start to charge the battery.

4 Orion TI-84 Plus Firmware Upgrade Procedure

1. Connect the Mini-B USB cable to Orion TI-84 Plus and the USB's other end with the PC and start the Orion TI-84 Plus Upgrade Utility. The PC utility will show "Orion TI-84 Plus is connected" message. At this stage the device is in normal mode.
2. To connect the Orion TI-84 Plus unit with the Upgrade Utility in upgrade mode, press and hold down the "Cursor UP" Key on the Orion unit. While "Cursor UP" key is kept pressed, press the "CTRL" and "Shift" keys simultaneously.
3. Now release the "CTRL" and "Shift" keys first and then release "Cursor UP" key. At this point the utility will show "Orion TI-84 Plus is connected" message in the device status and "Do you want to upgrade/downgrade/repair the device? If yes, then press "Upgrade button" in the message field (see Figure1).

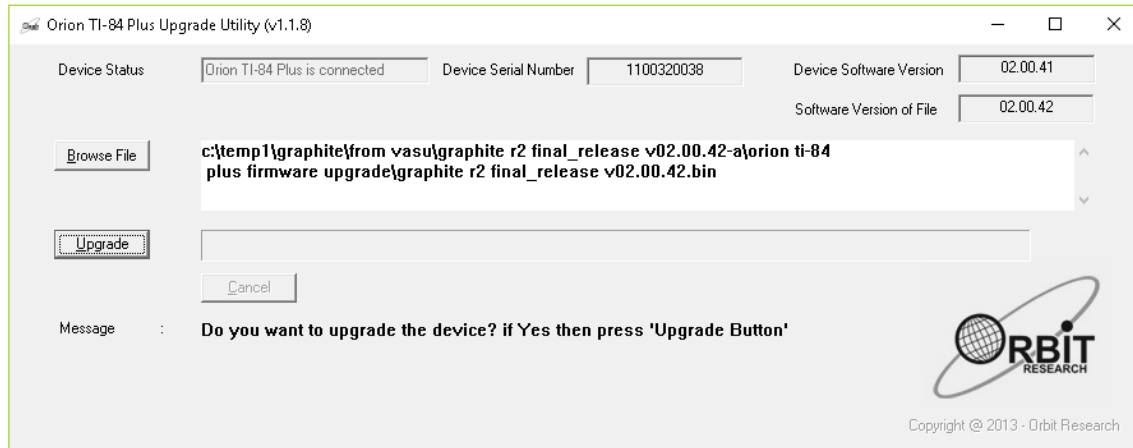


Figure 1. Device is in upgrade mode

4. Turn OFF TI-84 Plus if it is already ON.
5. If the device is connected in upgrade mode, the utility shows the device serial number as well as its software version at top right corner of the window.
6. If the firmware file is already available in the software package, it will automatically browse and select the firmware file. Otherwise, browse and select the firmware file. The GUI shows the software version of the selected file.
7. Click on the Upgrade button.
8. The utility starts upgrading the device (Figure2).

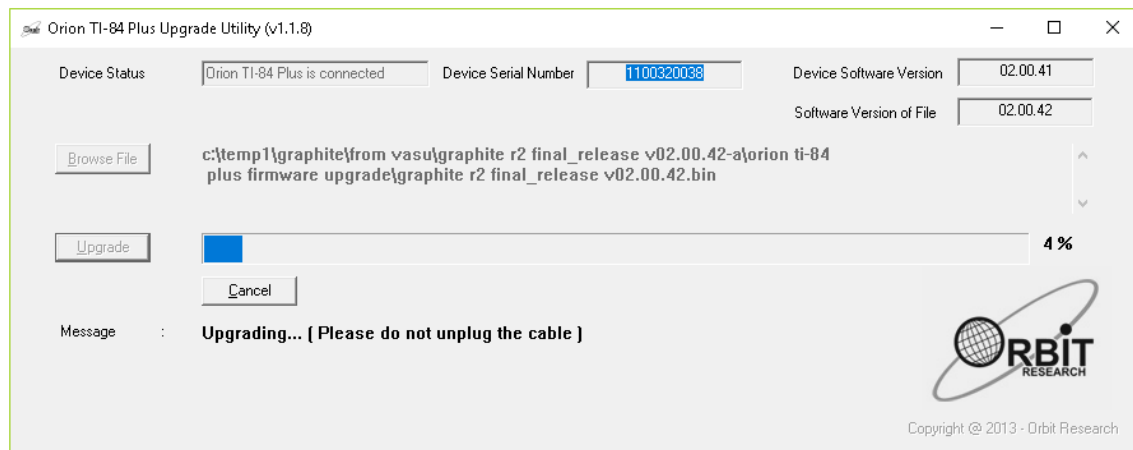


Figure 2. Upgrading the device

9. During firmware upgrade, Orion TI-84 Plus gives vibration indications every few seconds.
10. Wait for the message “Device upgrade has been completed” on the upgrade utility (Figure3). Do not unplug the cable.

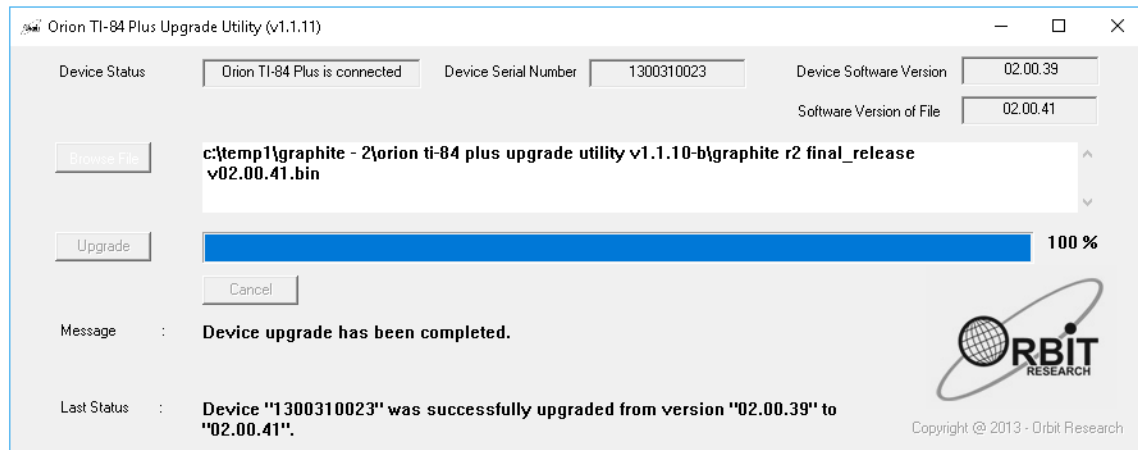


Figure 3. Device upgrade has been completed successfully

11. Wait for the announcement “Device upgrade is completed successfully” from the device.
12. Now if TI-84 Plus is turned on, turn it off first and then turn back on.
13. Unplug the USB cable.
14. Device is now ready to use.

5 Verification

The firmware version loaded into the unit can be verified by the following steps. The version number can also be read through the Orion help menu.

1. Turn off the calculator and unplug the USB cable.
2. Connect the device in upgrade mode (steps 2 through 4 in the firmware upgrade procedure).
3. GUI will show the device’s hardware serial number as well as version of the installed firmware.
4. If the utility does not show anything, try again from step 1 of this (verification) section.

6 Troubleshooting

- Keep the calculator off during the firmware upgrade.
- Connect the Battery during the firmware upgrade.
- Follow firmware upgrade procedure again from starting, in case of any failure.
- In case the device does not detect the PC utility, open the device manager and check the status of the connected device in the HID section by plugging and unplugging the device. If there is still no response, connect the device to another USB port or restart the PC.

7 Appendices

7.1 Appendix 1: Revision History

Rev.	Date	Description of Changes	Author
0.1	15 th July 2013	First external version	
0.2	15 th July 2013	Edits and formatting	
0.3	11 th Sep 2014	Edits for new firmware upgrade utility	
0.4	23 rd Feb 2015	Installation of C++ Redistributable is added in troubleshooting section	
0.5	28 th Oct 2017	Edits for changes in the design	
0.6	1 st Nov 2017	Edits	