



## Equipment Affected

This field service bulletin applies to **all SBE 56 Temperature Loggers with firmware versions 0.96, 0.97, 1.0, and 1.01**. This corresponds with any **SBE 56 with a serial number below 56-09381**.

## Problem Description

A bug in the SBE 56 firmware causes the following configuration changes to occur automatically:

- The sample interval resets to the default **60 seconds**.
- The battery installation date/time setting resets. This resets the “calculated battery life remaining” value in SeaTermUSB, but otherwise does not affect actual battery life.

**This bug occurs when the SBE 56 starts logging at a delayed start date/time, if the start date/time is after December 27<sup>th</sup>, 2019 at 00:00:00**. If the delayed start date/time is set any time after 27-Dec-2019 (e.g. 14-Jan-2020 12:00:00), the SBE 56 will trigger the bug when it reaches that date and time. It will still begin sampling at the specified date and time, but it will automatically revert to a 60-second sample interval.

Selecting “Starting sampling on USB cable disconnect” will not trigger this bug, even if sampling upon USB disconnect starts after 27-Dec-2019. SBE 56s that are already logging when the internal clock reaches 27-Dec-2019 00:00:00 will not trigger this bug either. **This bug is only triggered when using a delayed start date/time after 27-Dec-2019.**

If this bug occurs, the SBE 56 will continue to sample and log data to the memory at a 60-second interval. **This does not erase any events in the event counter nor samples currently present in memory.** However, an unintended change to a 60-second interval will cause deployment problems:

- If the intended sample interval is faster than 60 seconds (e.g. sampling every 15 seconds), the SBE 56 will log fewer samples than intended.
- If the intended sample interval is slower than 60 seconds (e.g. sampling every 900 seconds), the SBE 56 batteries will be exhausted faster than intended, reducing total deployment endurance.

## Solution

Sea-Bird Scientific has released a new version of the firmware that addresses this problem. Upgrading the instrument’s firmware will allow the SBE 56 to sample with a delayed start date/time after 27-Dec-2019 without reverting to a 60-second sample interval. Download the firmware package here:

<https://www.seabird.com/asset-get.download.jsa?id=56875957151>

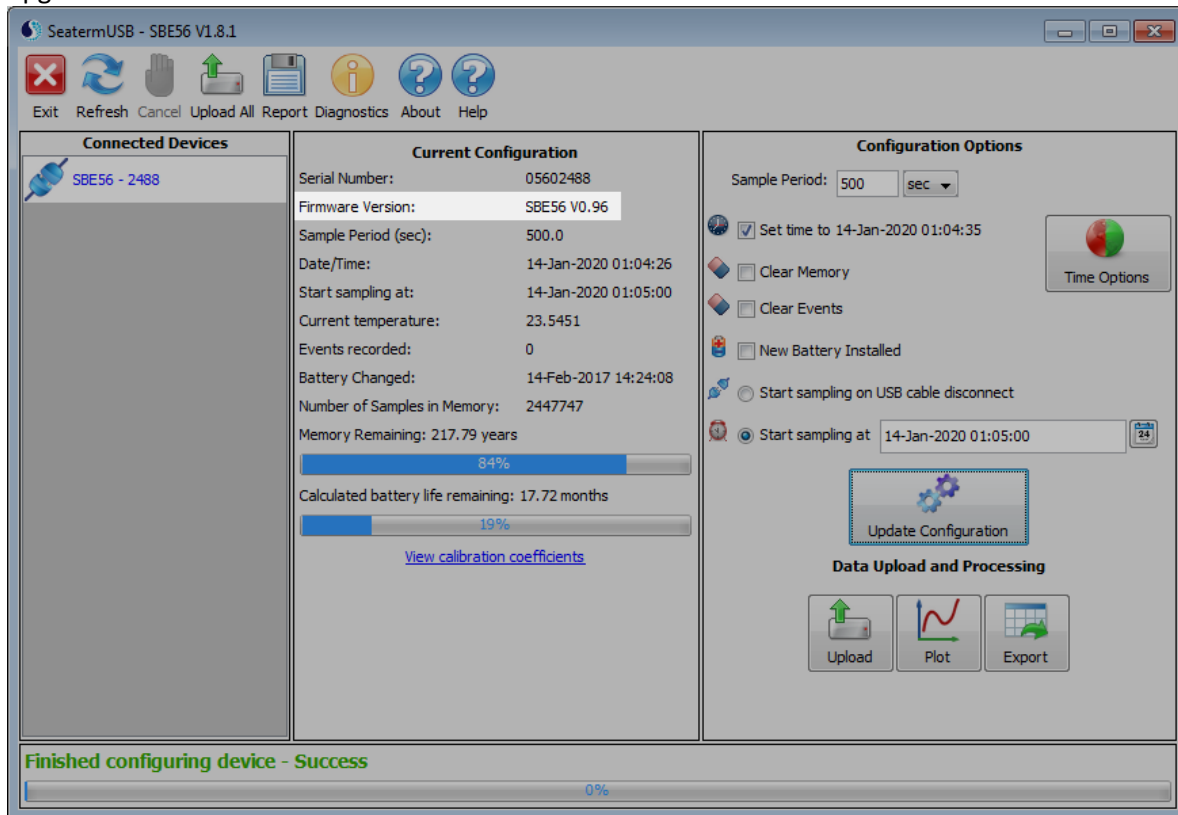
This package contains the SBE 56 Firmware Loader, two firmware versions, and a copy of this document. Download and extract these files.

Sea-Bird has released two new firmware versions for the SBE 56. **The current SBE 56 firmware version determines which to install:**

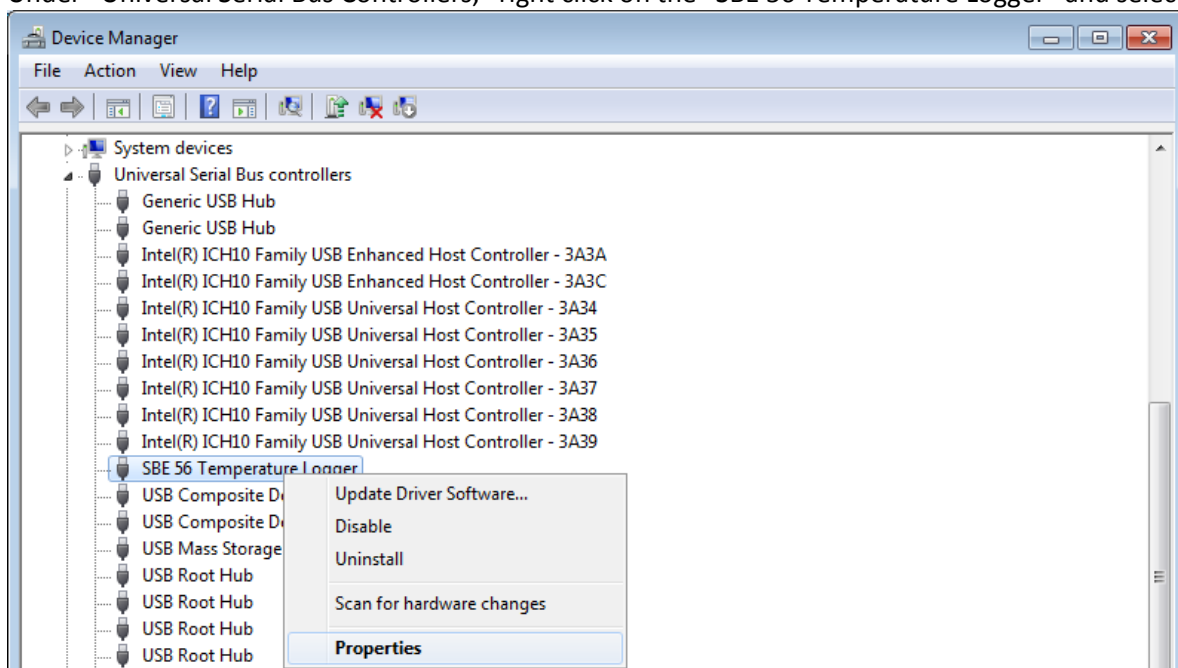
- Install version 0.98 (SBE56 v0.98.txt) if the 56 currently has firmware 0.97 or below.
- Install version 1.02 (SBE56 v1.02.txt) if the 56 currently has firmware 1.0 or 1.01.

# Upgrading Firmware

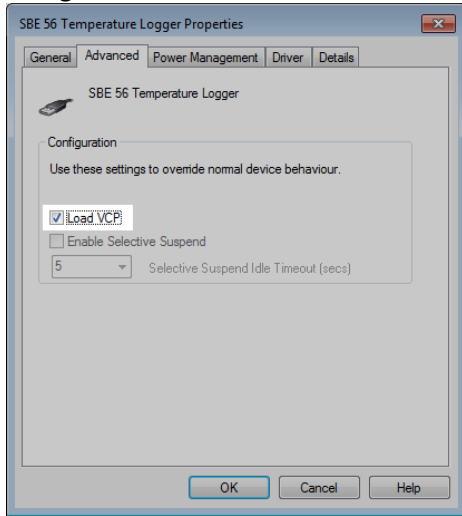
1. Connect the SBE 56 to SeatermUSB to determine the current firmware version. This will dictate which firmware upgrade to install:



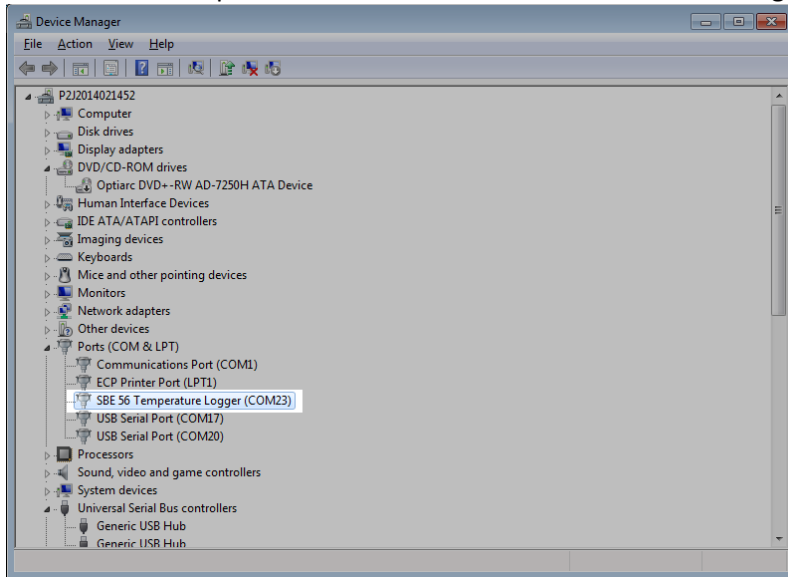
2. Close SeatermUSB.
3. Navigate to the Device Manager.
4. Under "Universal Serial Bus Controllers," right click on the "SBE 56 Temperature Logger" and select "Properties".



5. Navigate to the “Advanced” Tab and check “Load VCP”.

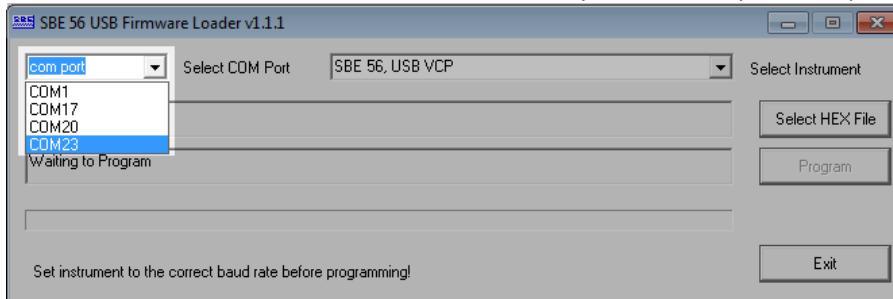


6. Click “OK” and unplug the USB cable from the SBE 56. Wait for 3 seconds, and then reconnect the USB cable.
7. Navigate to “Ports (COM & LPT)” in the device manager.
8. Locate the “SBE 56 Temperature Logger” under “Ports (COM & LPT)”. Determine the COM port # assigned to the SBE 56. The example below shows that this SBE 56 has been assigned to COM port 23:



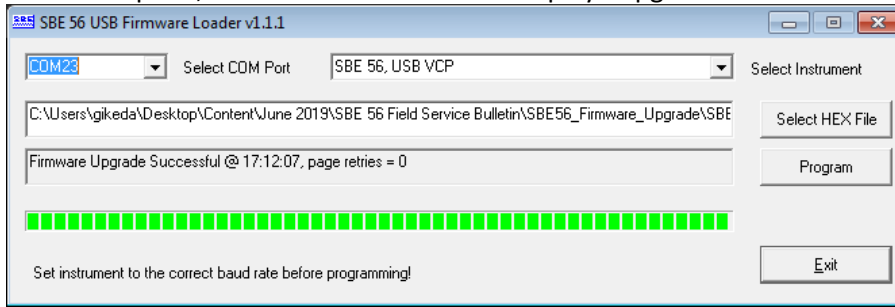
Remember this number—this is the COM Port you will specify in the Firmware Loader.

9. Launch “**Loader\_USB\_v1\_1\_1.exe**” from the extracted files. This opens the SBE 56 Firmware Loader v1.1.1.
10. In the Firmware Loader, select the correct COM port in the top left dropdown box:

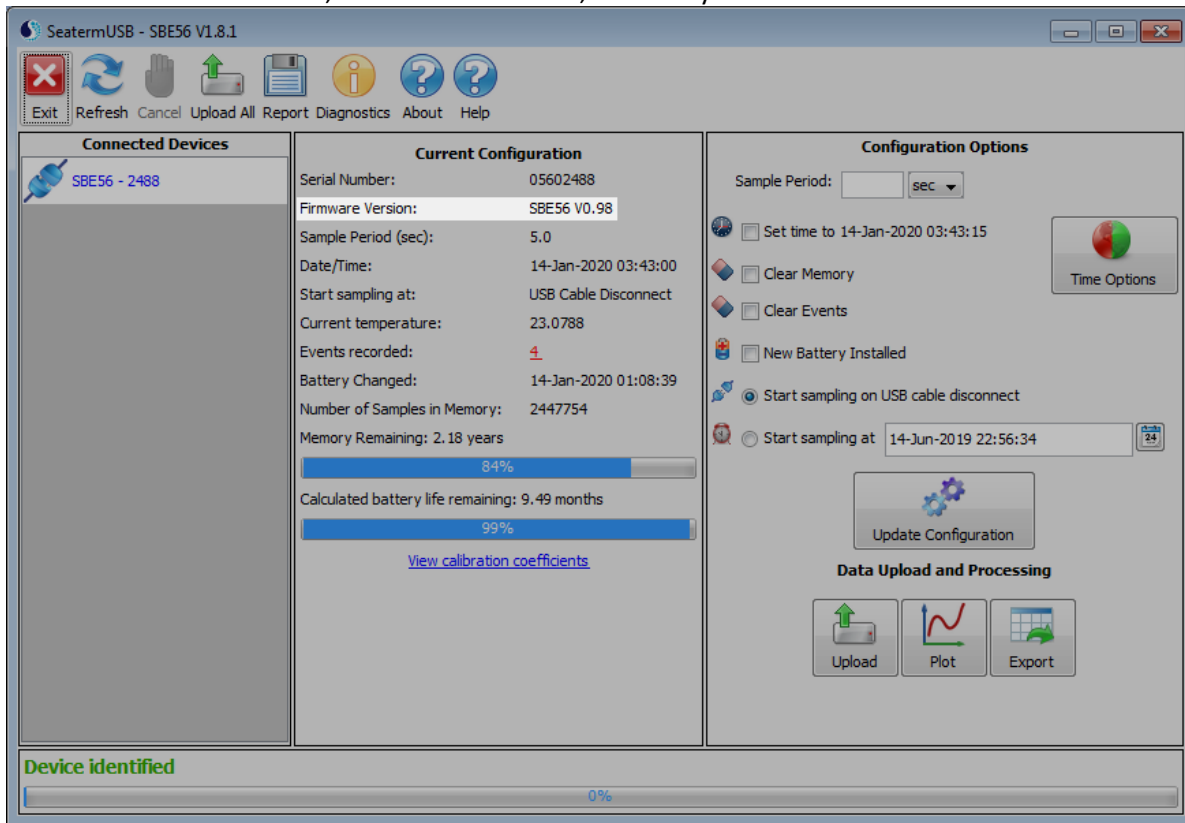


11. Click on “Select HEX File”. Navigate to the folder containing “SBE56 v0.98.txt” and “SBE56 v1.02.txt”
12. Select the appropriate .txt file for the SBE 56.
  - a. Use **SBE56 v0.98.txt** if the 56 currently has firmware 0.97 or below.
  - b. Use **SBE56 v1.02.txt** if the 56 currently has firmware 1.0 and above.

**Note:** if the incorrect firmware file is selected, the Firmware Loader will automatically prevent the update.
13. Click on “Program” and allow the Firmware Loader to complete the upgrade. **Do not disconnect the SBE 56 from the computer until complete.**
14. When complete, the Firmware Loader will display “Upgrade Successful”.



15. Close the Firmware Loader, Launch SeatermUSB, and verify the new firmware version:



16. Reconfigure the SBE 56 to the correct deployment settings in SeatermUSB if necessary.