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## TEST TOOLS MANAGEMENT APPLICATION USER GUIDE

### TEST AND CALIBRATION

**144M2949**

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		Revision	<b>B</b>

### Amendment Record

Rev. Lev.	Date	Author	Amendments
-	Dec 19	A McEvoy	First release
A	29 Jul 20	J Ward	Document properties corrected to avoid confusion
B	28 Apr 21	J Ward	Clarification added to section 5.1.1 to assist users to find downloaded Firmware application

### Approvals

<b>Checked</b> <b>C.Gosden</b>	<b>Engineering</b> <b>L.Surtees</b>	<b>Product Management</b> <b>F.Jackson</b>
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**1 SCOPE**

This document details the installation and operation of the Test Tools PC application.

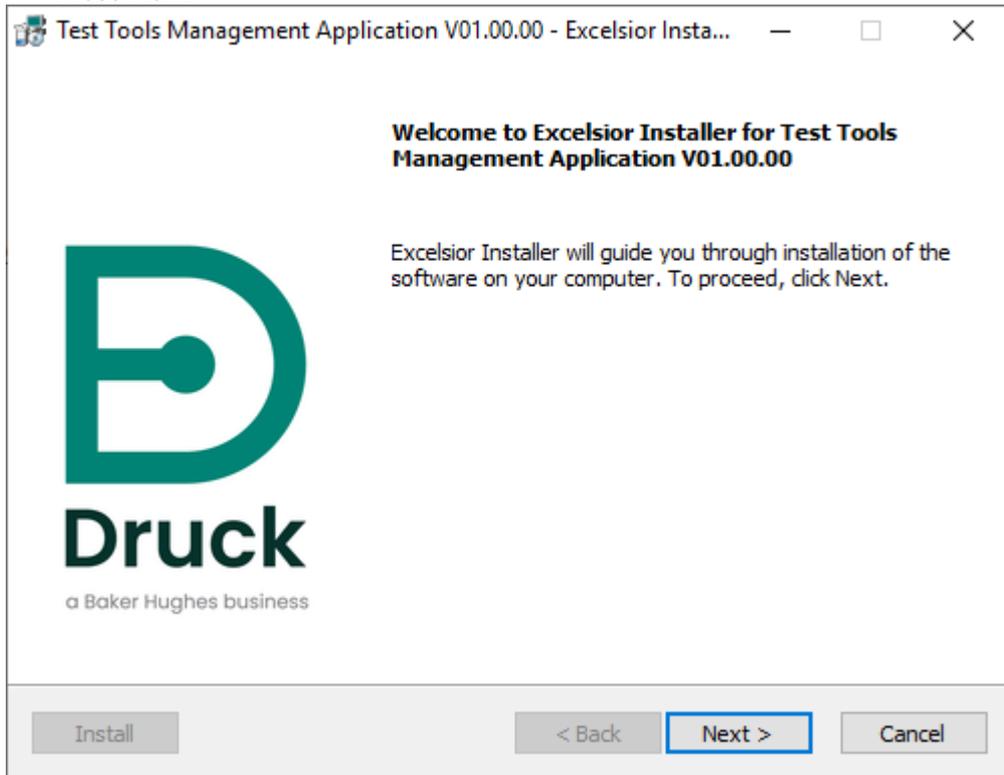
**2 PREREQUISITES**

- Recommended operating system: Windows 10.
- Device capable of communicating using Druck's proprietary communication protocol, DUCI eg. DPI705E.
- USB RS485 cable to connect device to PC.

**3 INSTALLATION**

Obtain the latest version of Test tools PC application. eg TestToolsPCApp-V01.00.00.exe  
Execute the file and follow the on-screen installation instructions.

i) Press Next.



- ii) Once the licence terms have been read, select “I accept the terms of the license agreement” and press Next.

Test Tools Management Application V01.00.00 - Excelsior Insta... — □ ×

**License agreement**

Installation and use of Test Tools Management Application V01.00.00 requires acceptance of this license agreement: 

For license terms, please refer to the Purchase Order and/or Beta Trial agreement.

I accept the terms of the license agreement  
 I do not accept the terms of the license agreement

Install < Back Next > Cancel

- iii) Select which account(s) the application will be installed and press Next

Test Tools Management Application V01.00.00 - Excelsior Insta... — □ ×

**Installation type**

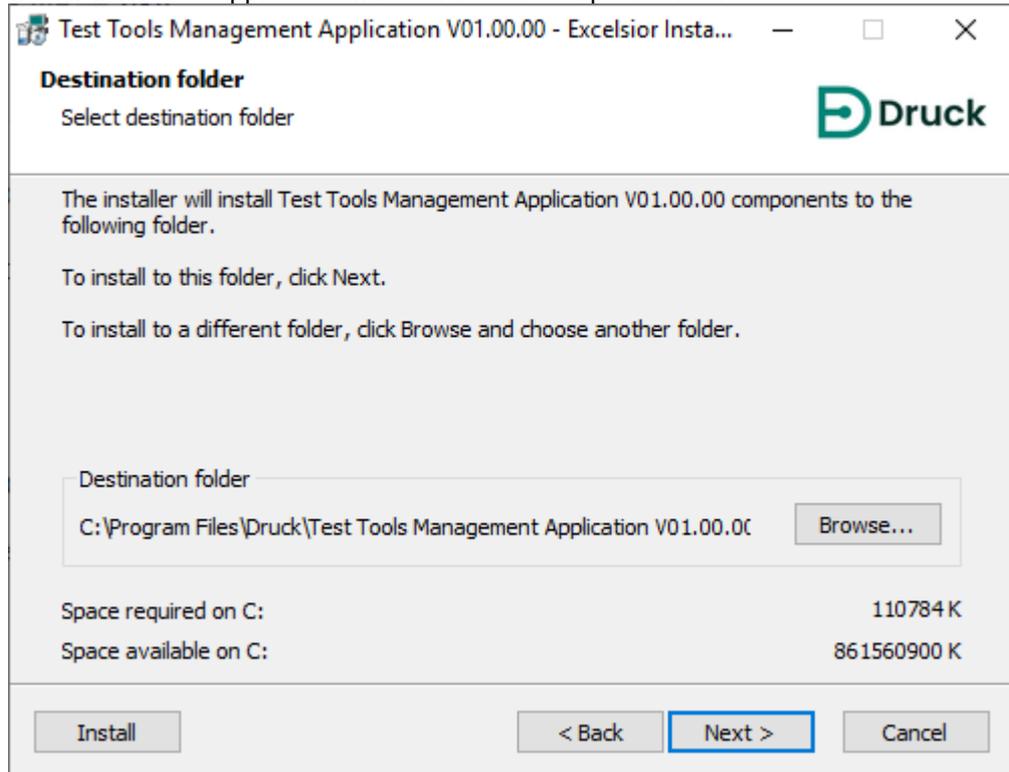
Choose installation type 

Install this application for:

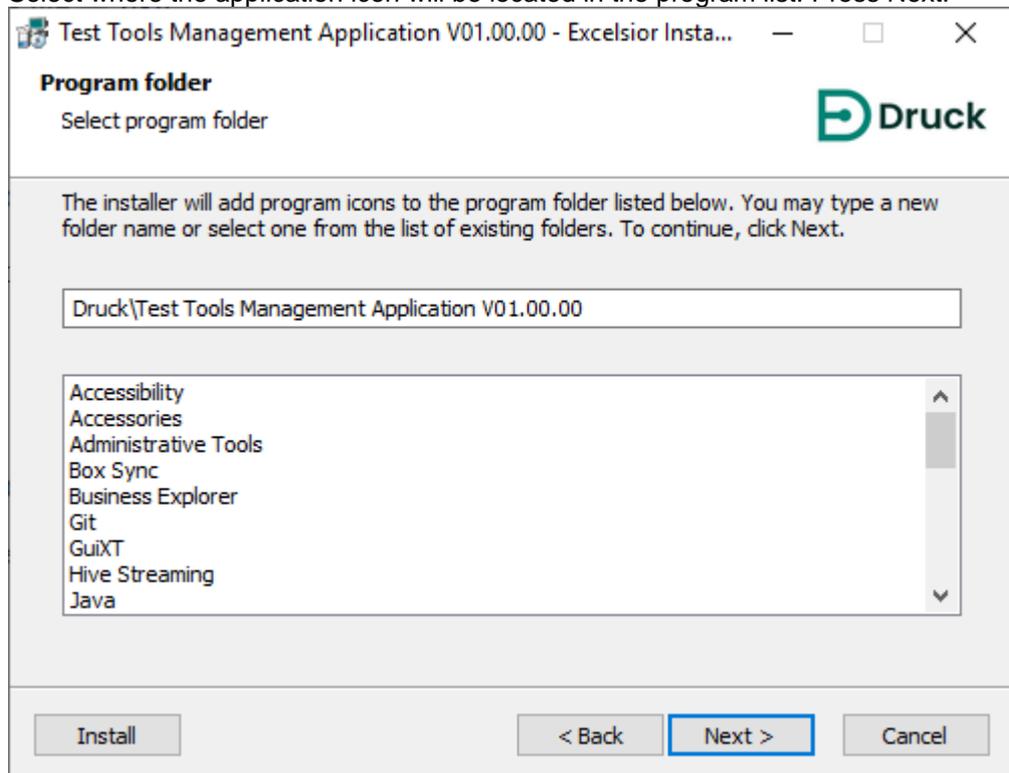
Current user only  
 Anyone who uses this computer

Install < Back Next > Cancel

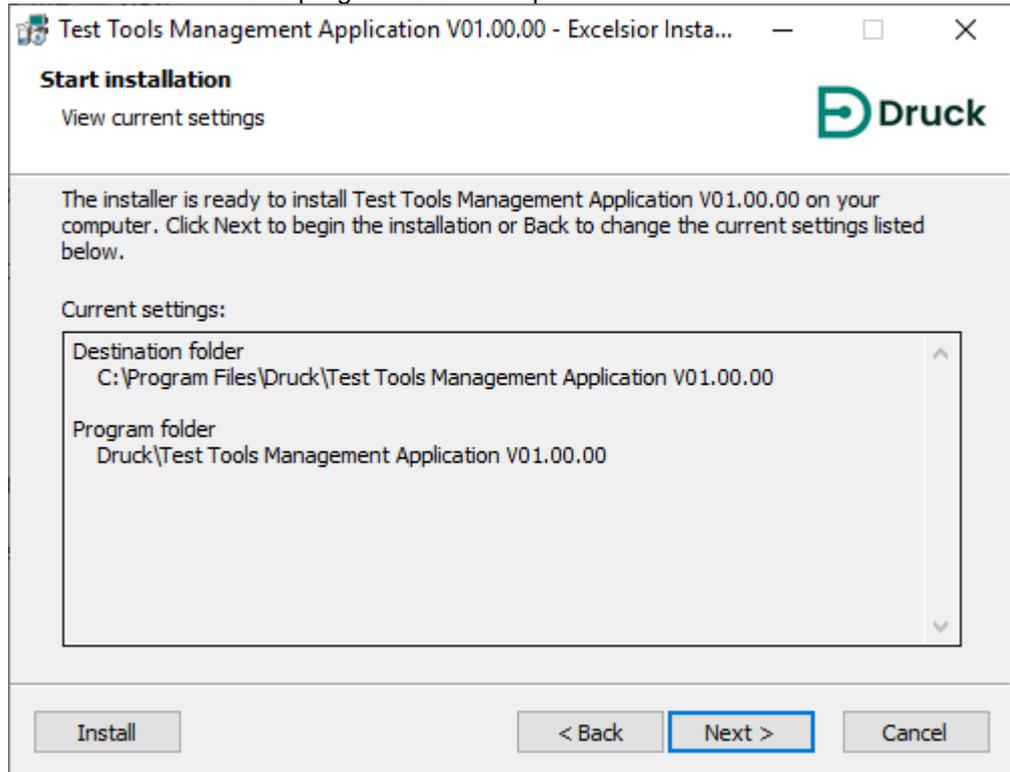
iv) Select where the application will be installed and press Next.



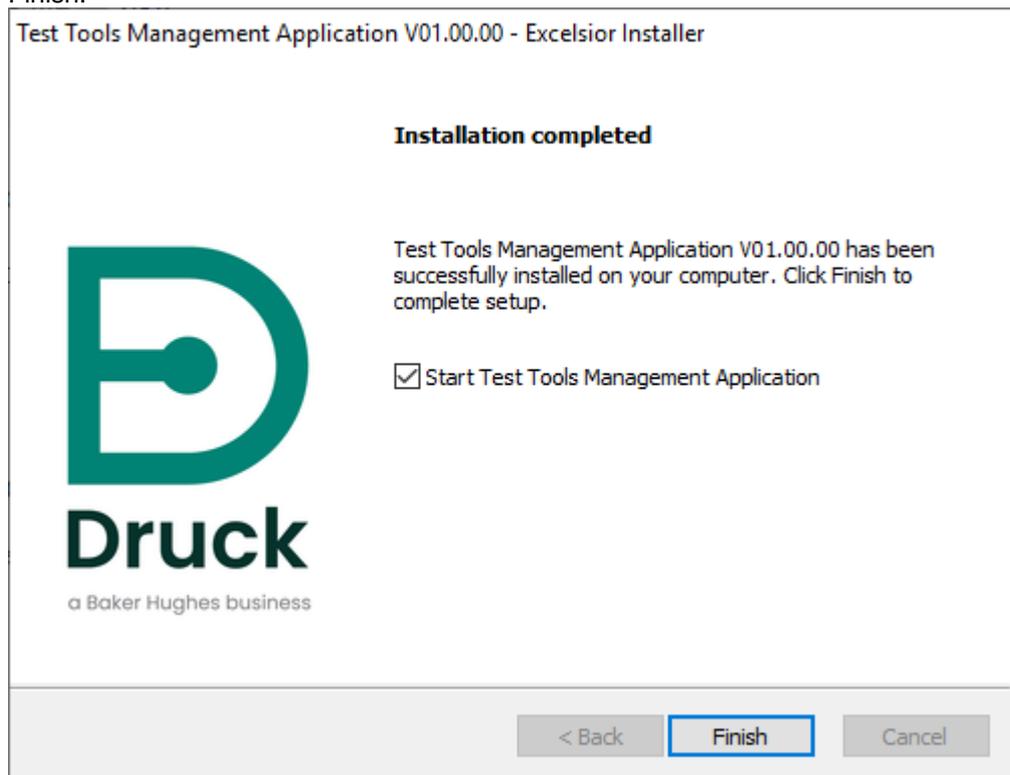
v) Select where the application icon will be located in the program list. Press Next.



vi) Confirm destination and program folder and press Next.



vii) Application will then be installed in the specified locations.  
viii) Upon successful installation, choose whether to run the application now or later. Press Finish.



#### 4 RUN APPLICATION

Once installed, the Test Tool PC Application can be run from the Program Folder selected during the installation process.

For example: Start > Druck > Test Tools PC Application.

#### 5 TEST TOOLS PC APPLICATION

To fully utilise the Test Tools PC Application, a valid device must be connected to the PC using equipment outlined in section 2. **Prerequisites.**

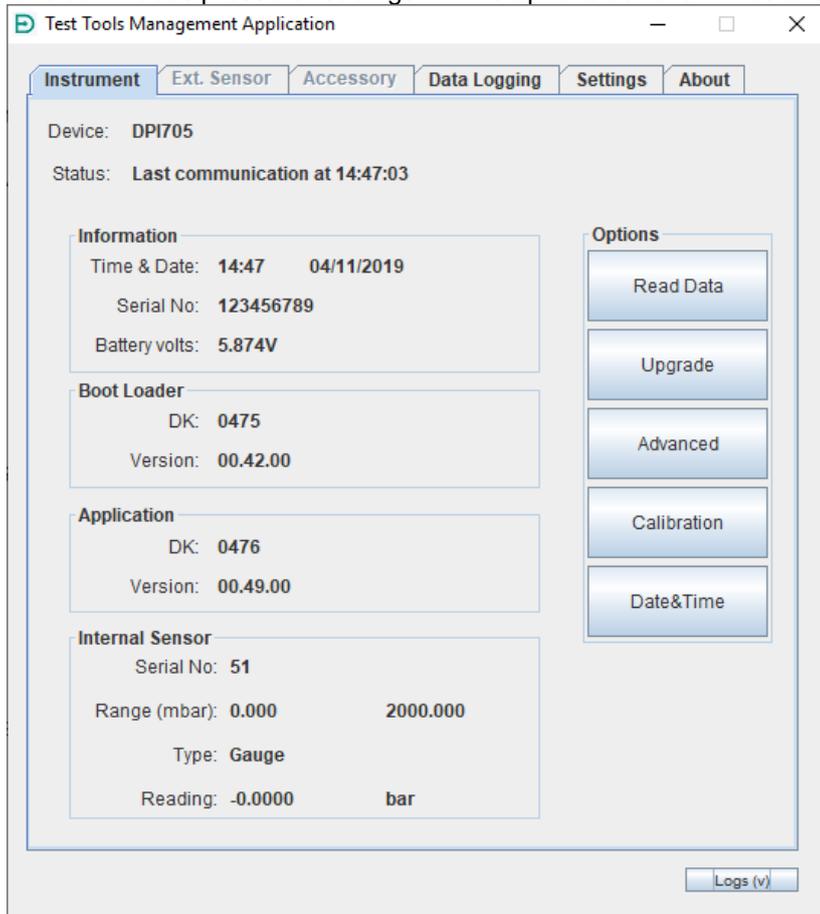
A valid device can be connected both before and after the Test Tools PC Application is running.

For the following sections, unless stated otherwise, it is assumed that a valid device is powered and connected to the PC.

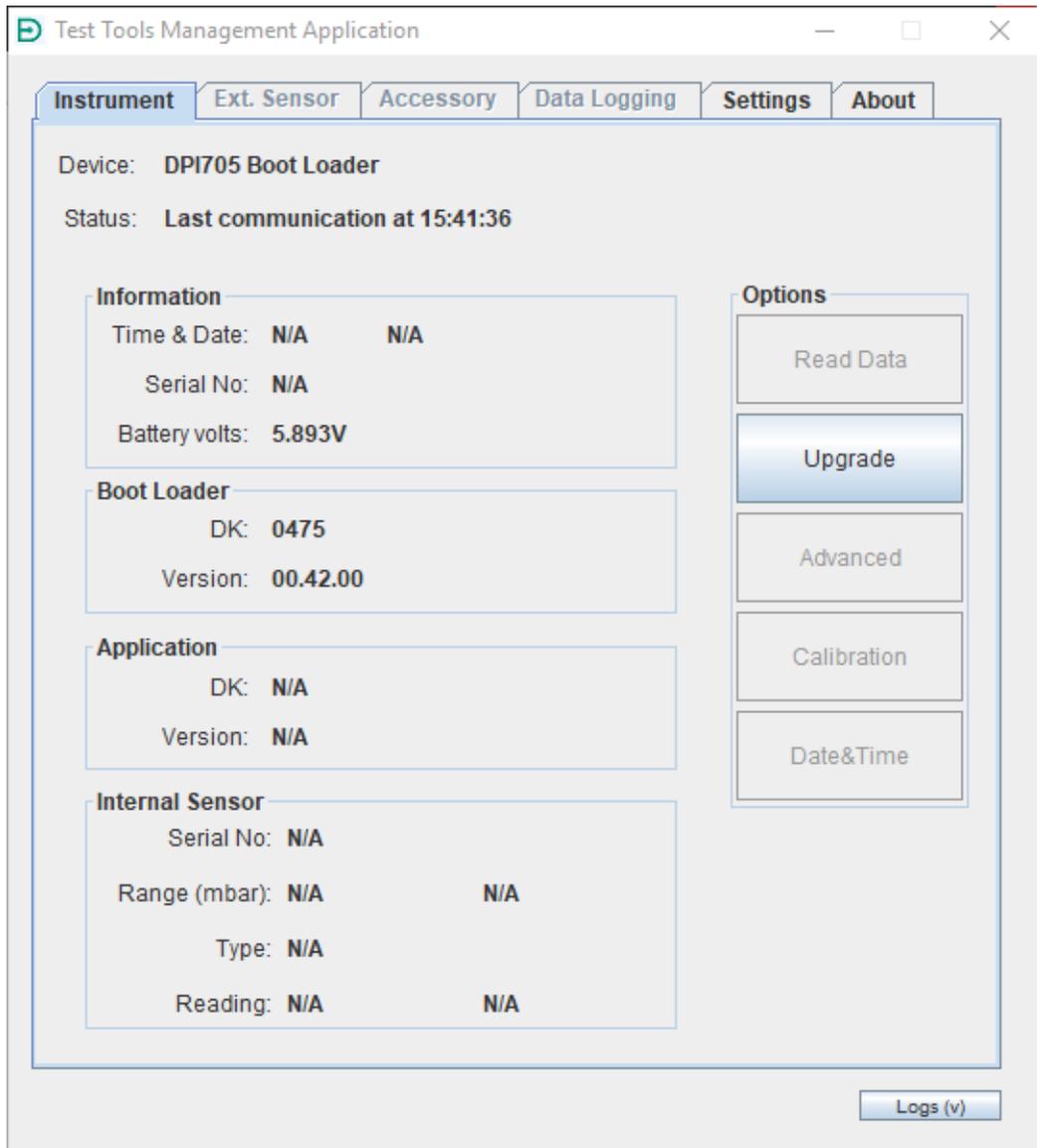
If unfamiliar with how the Test Tools Application operates, it is advised to start with section 5. e. **Settings.**

#### 5.1 Instrument

Once the COM port of a valid instrument is open, the appropriate tab will be enabled and select the Instrument tab. The application will automatically start taking readings from the device. It will take continuous pressure readings. All the options buttons will be enabled.



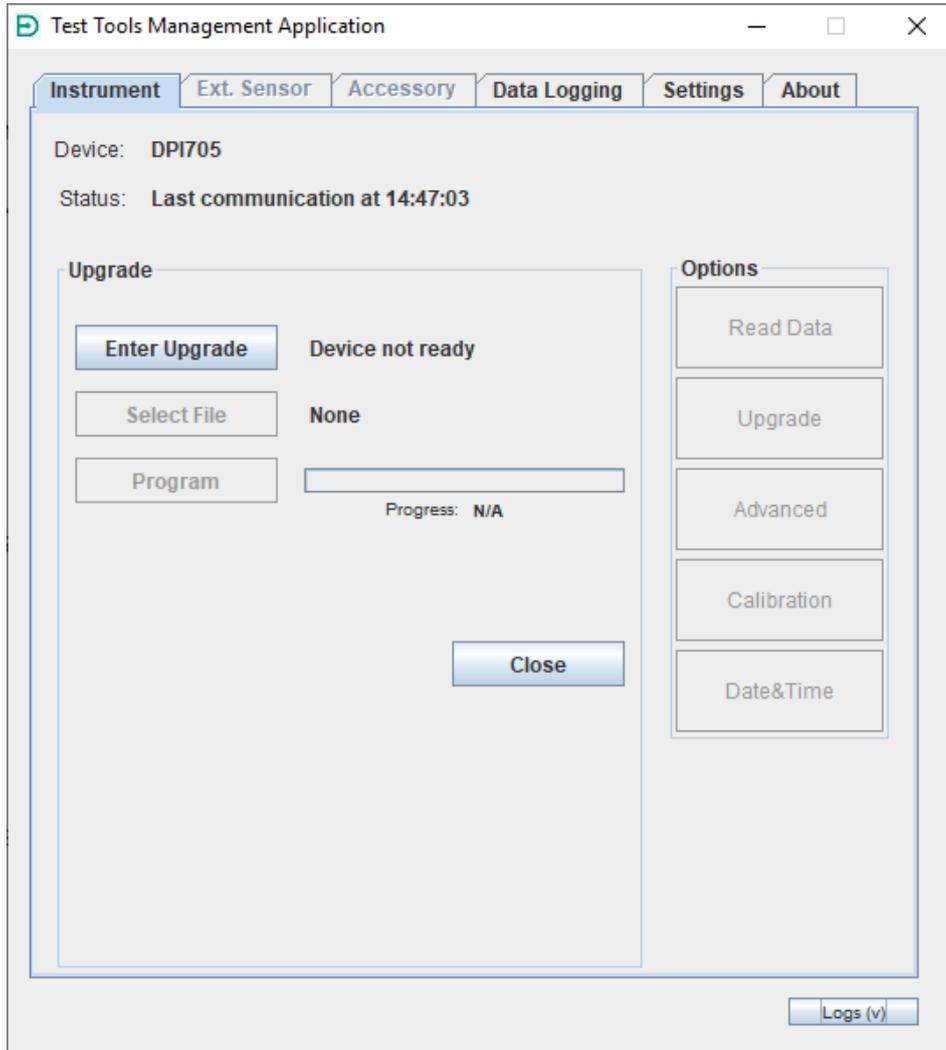
Depending on the current state of the instrument, different Options will become available, and not all information may be populated.



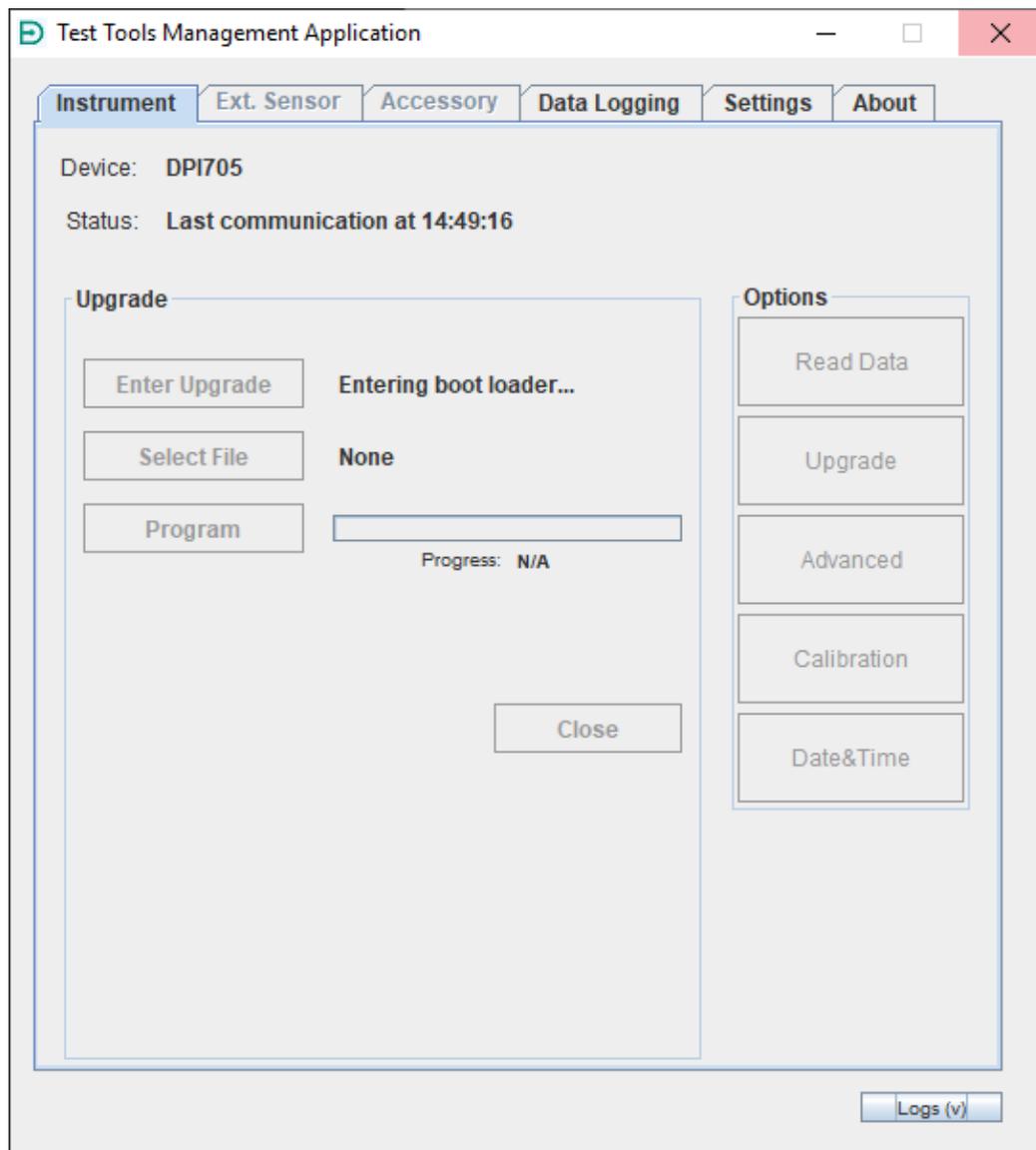
### 5.1.1

#### Upgrade

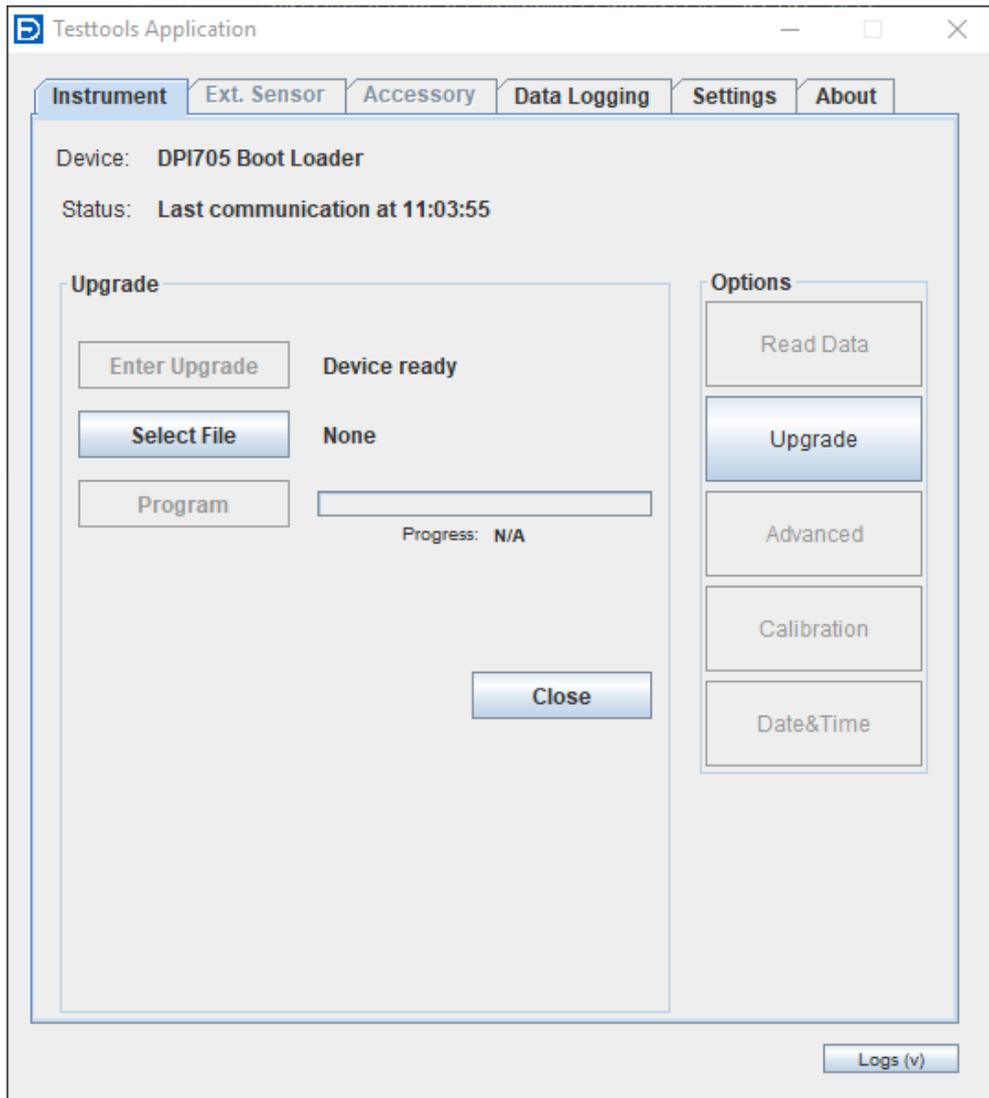
To upload the latest application firmware to an instrument:  
Press the Upgrade button to view Upgrade options.



Instrument must be in boot loader mode to perform an upgrade. If instrument is not already in boot loader mode press the Enter Upgrade button. The instrument will reset and attempt to enter boot loader mode. This can take a few seconds to perform.



Confirm instrument is in boot loader mode by checking that the device name contains 'Boot Loader'.

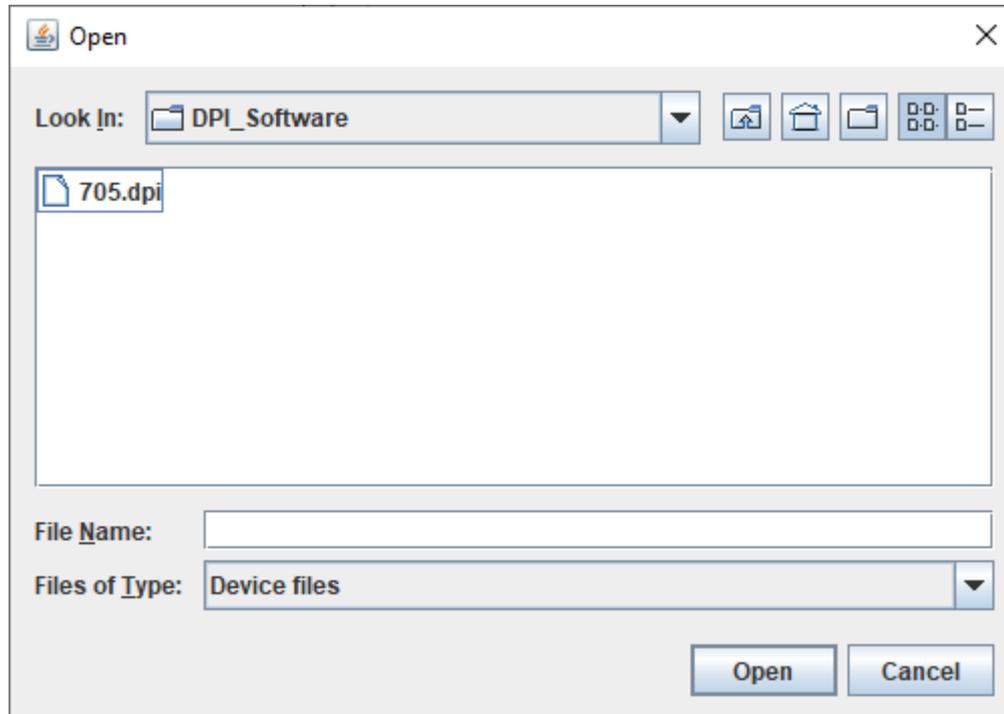


Press Select File. An “Open” dialog will display as shown below. Navigate to the downloaded Application Firmware package (a .dpi file).

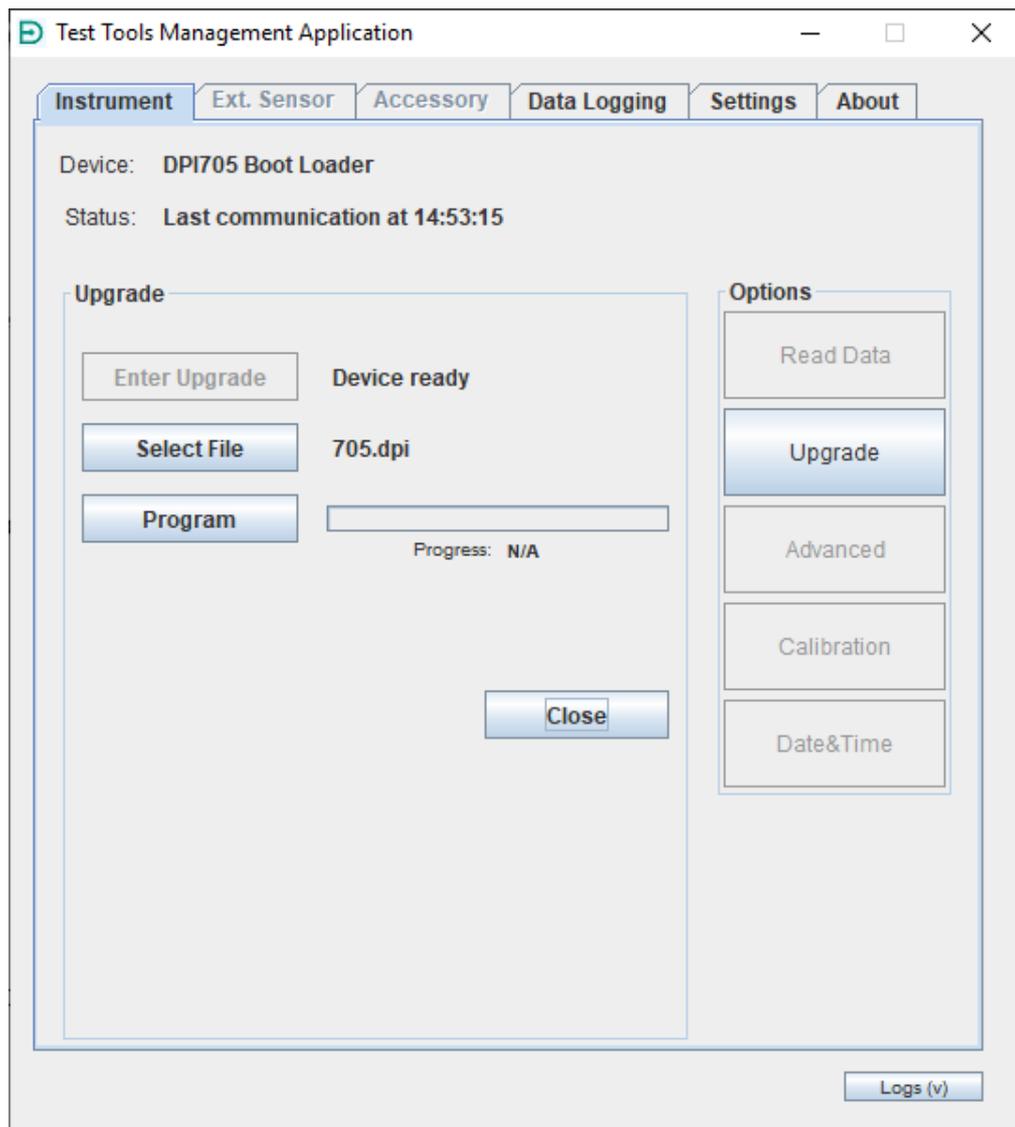
**Note:** This file will be found where the downloaded zip file was unzipped to. Usually this will be in the Downloads (<PC Name>/Downloads) folder under Windows, if the zip file was downloaded here and unzipped (extracted) in place.

Navigate to [DPI705E\\_PC\\_UTILITY\\_and\\_RELEASExxxx](#) then [DPI705E\\_Firmware](#) then [Main](#) where you will see a [DK0476-Xxx.xx.xx.dpi](#) file, which should be selected by double-clicking.

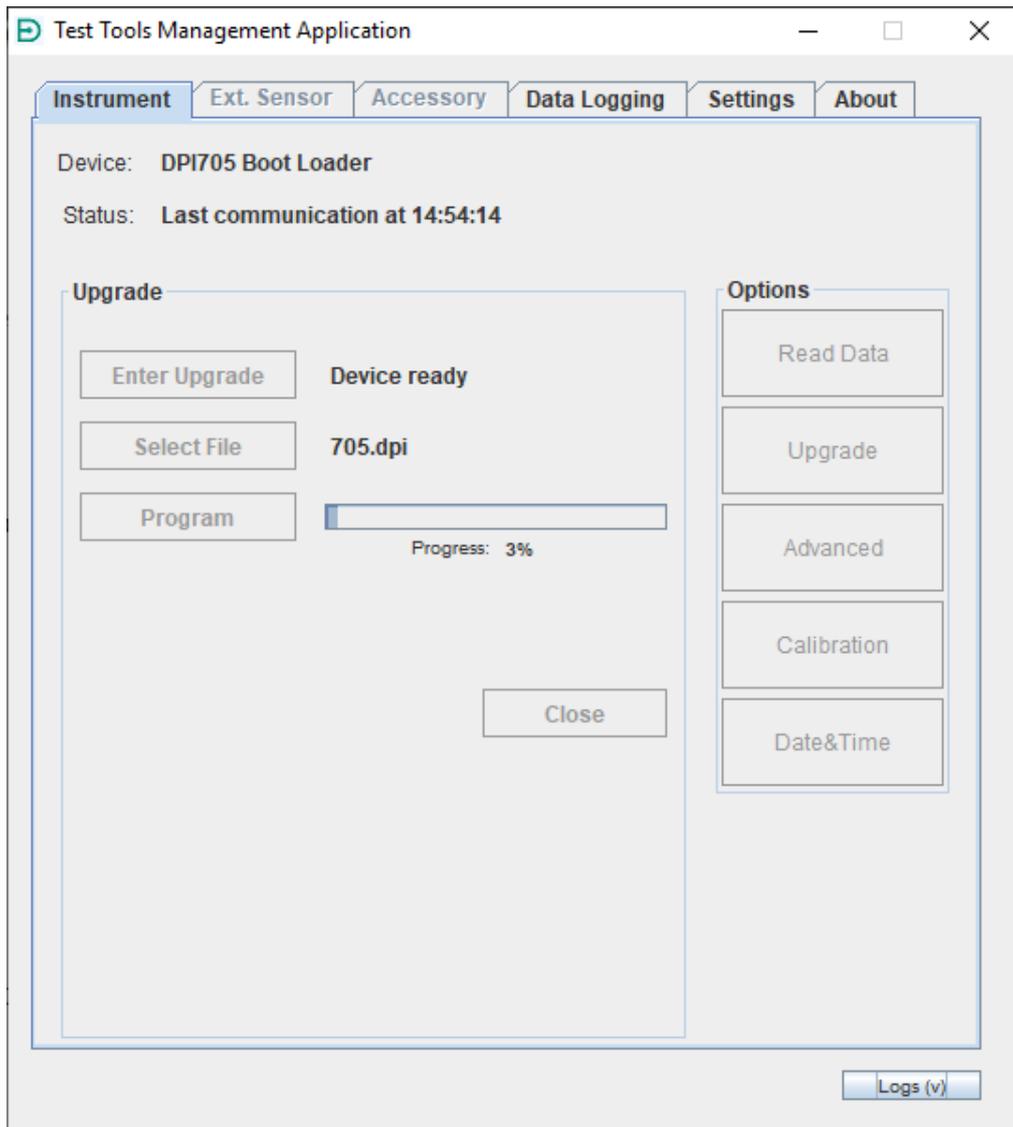
**Note:** Only .dpi files are viewable.



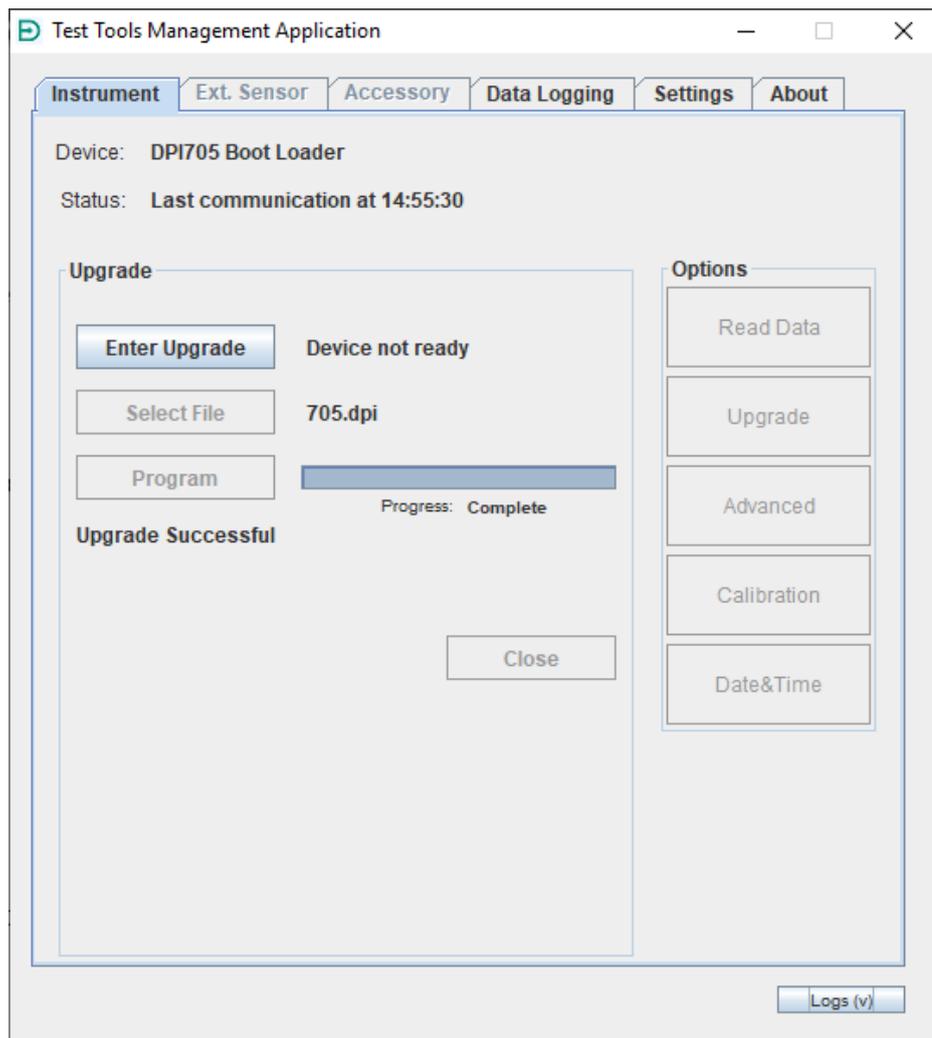
Before programming the connected instrument, confirm the chosen file is displayed.



Once confirmed, press the Program button.  
 Allow for a few seconds while the upgrade process prepares.  
 The programming will then start showing its current progress.



Once finished, the Progress status will change to Complete.



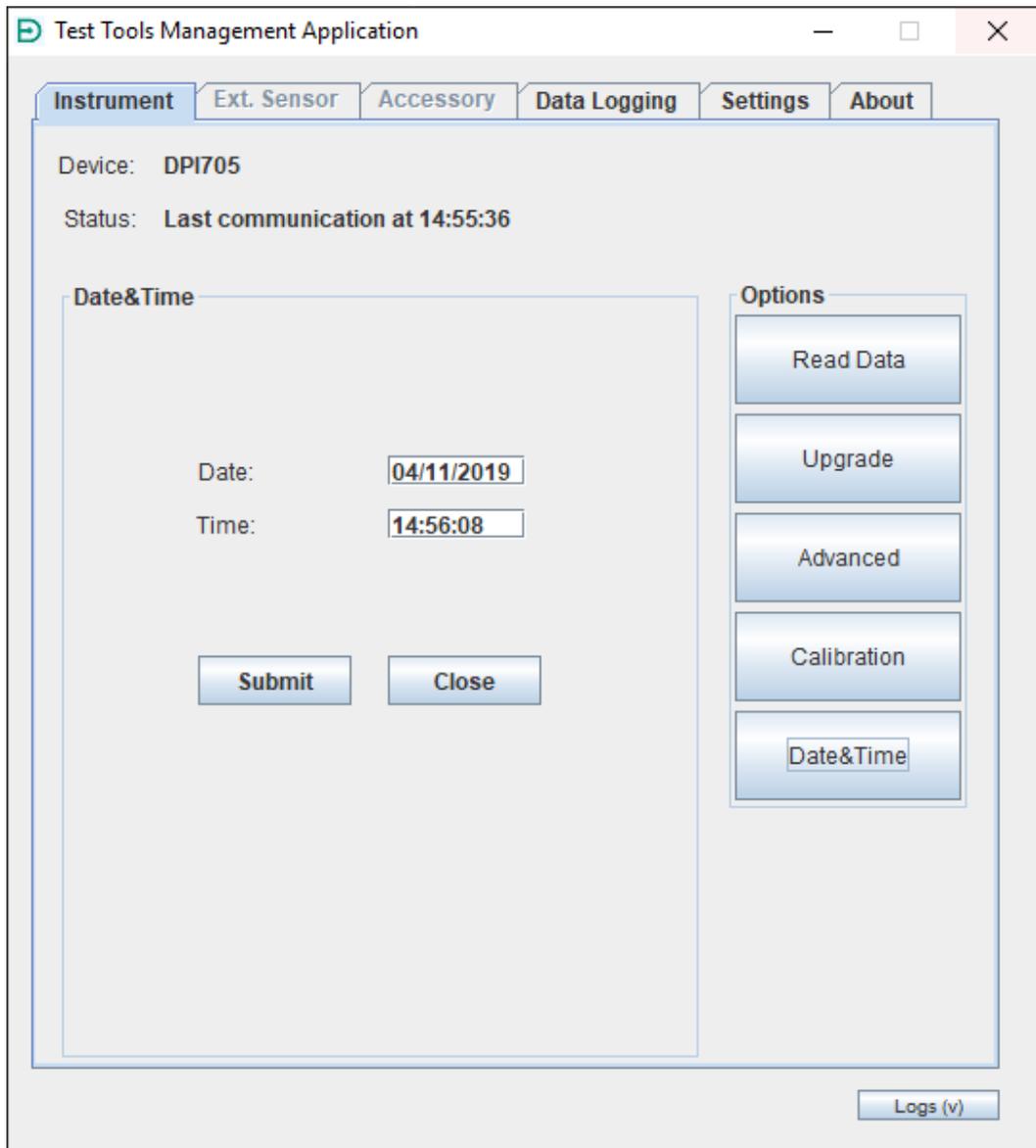
Confirm the latest version of code is installed by Closing the Upgrade panel and checking the Application Version number in the Instrument Tab.  
If the upgrade fails, no main application will be detected on the instrument, and then the application will allow you to retry the upgrade.

### 5.1.2

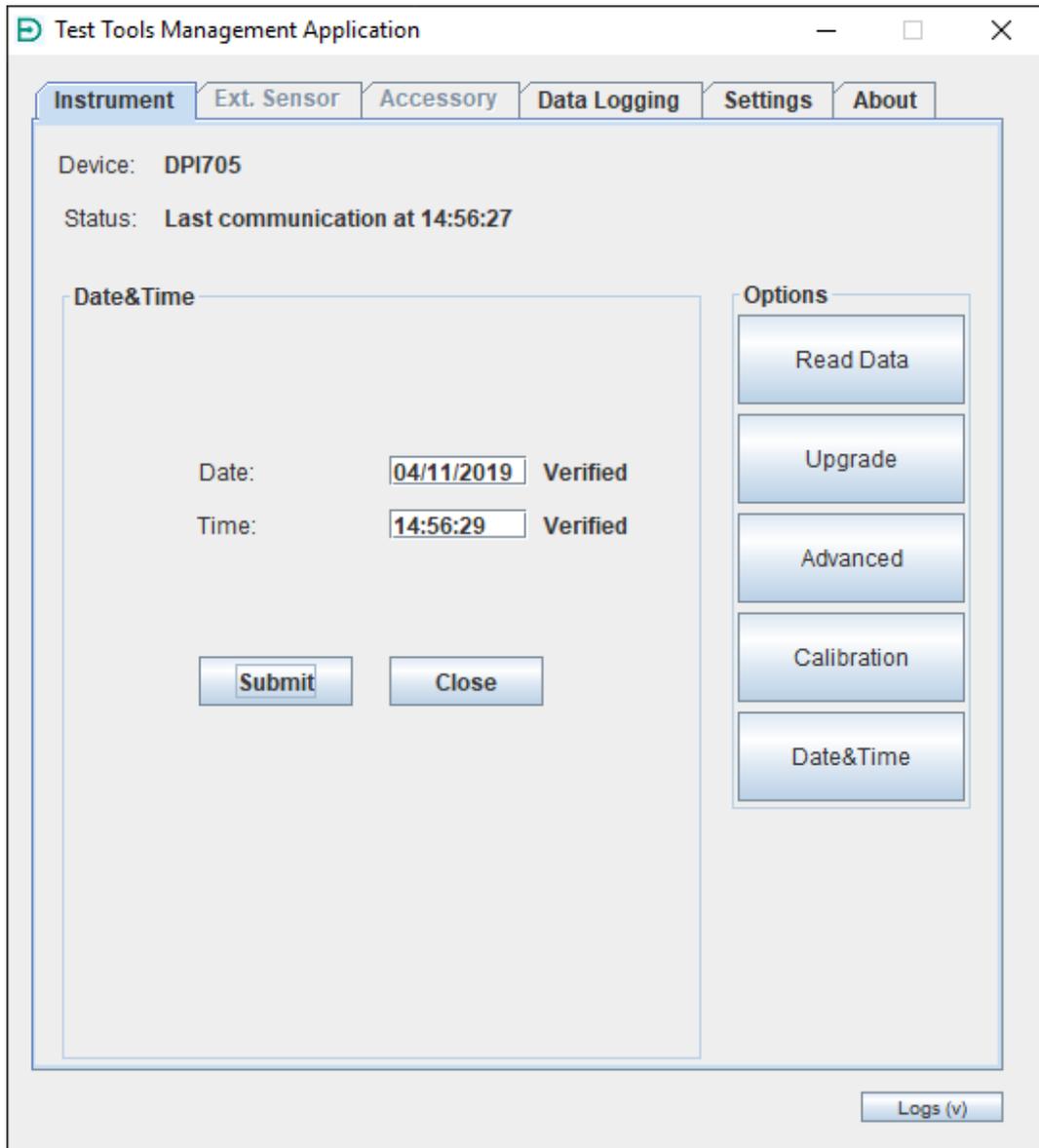
#### Date & time

Sets the connected instruments' date and time.

Press the Date&Time button to view date and time options.



To set the connected instruments' time and date with the PC's time and date, press the Submit button.

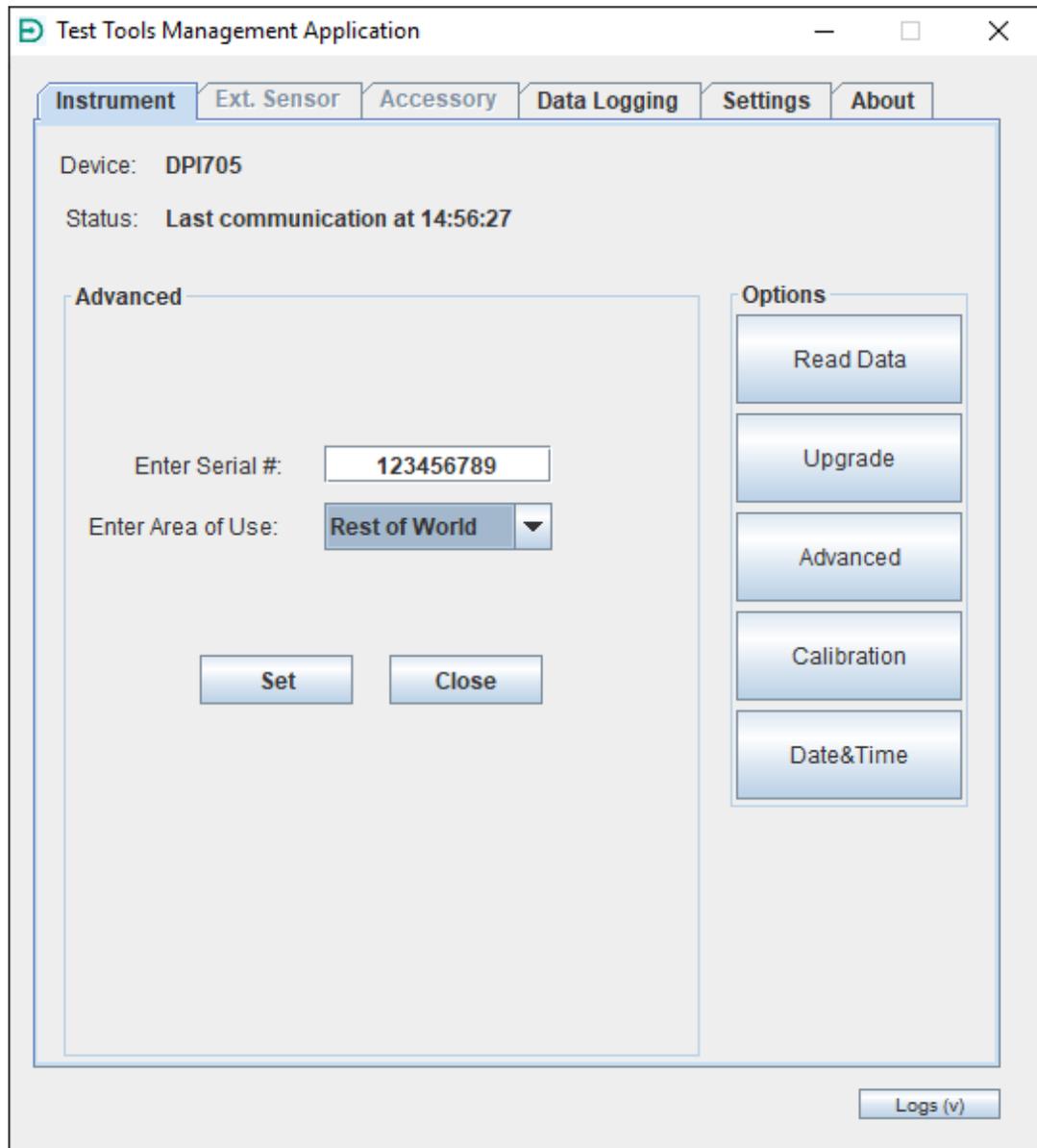


Confirm the verified messages appear after submitting.

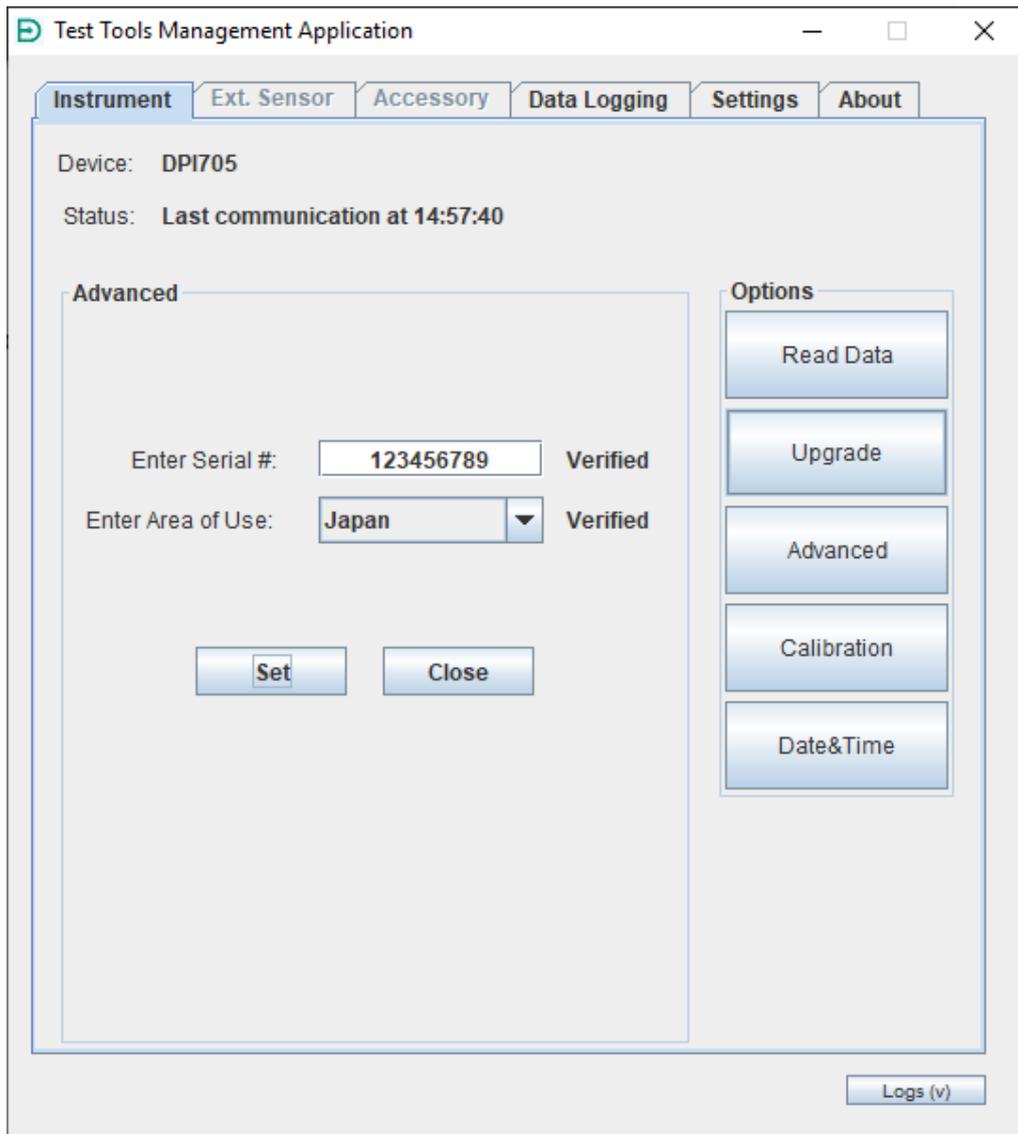
### 5.1.3 Advanced

Sets serial number and region of use. Requires PIN to access.

Press Advanced button and enter PIN which is 1129 to view advanced options.



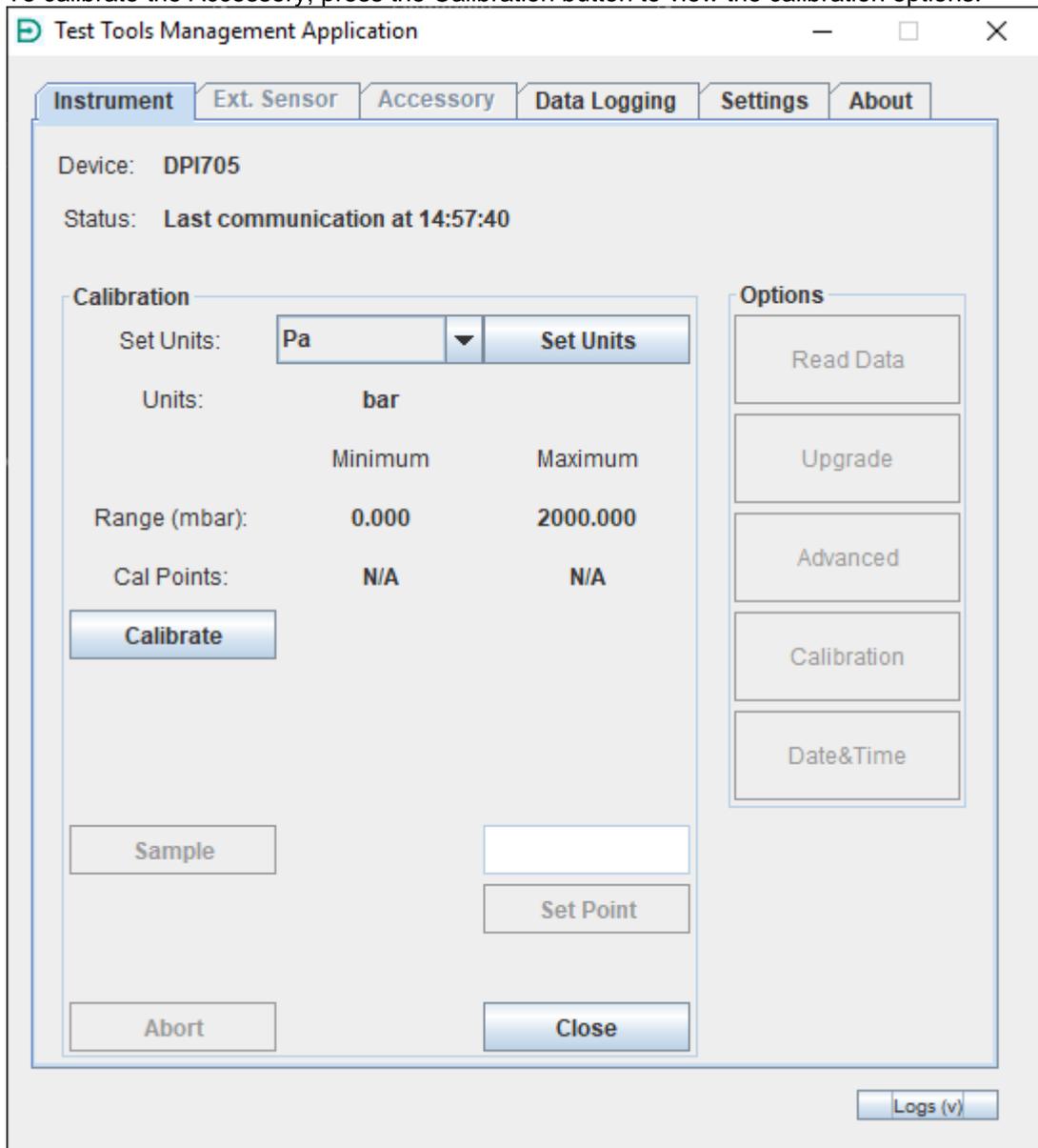
To set the connected instruments' serial number and region of use, enter a 9-character serial number in to the serial number text box, choose an option from the Area of Use menu, then press the Set button. The serial number can have alphanumeric characters only.



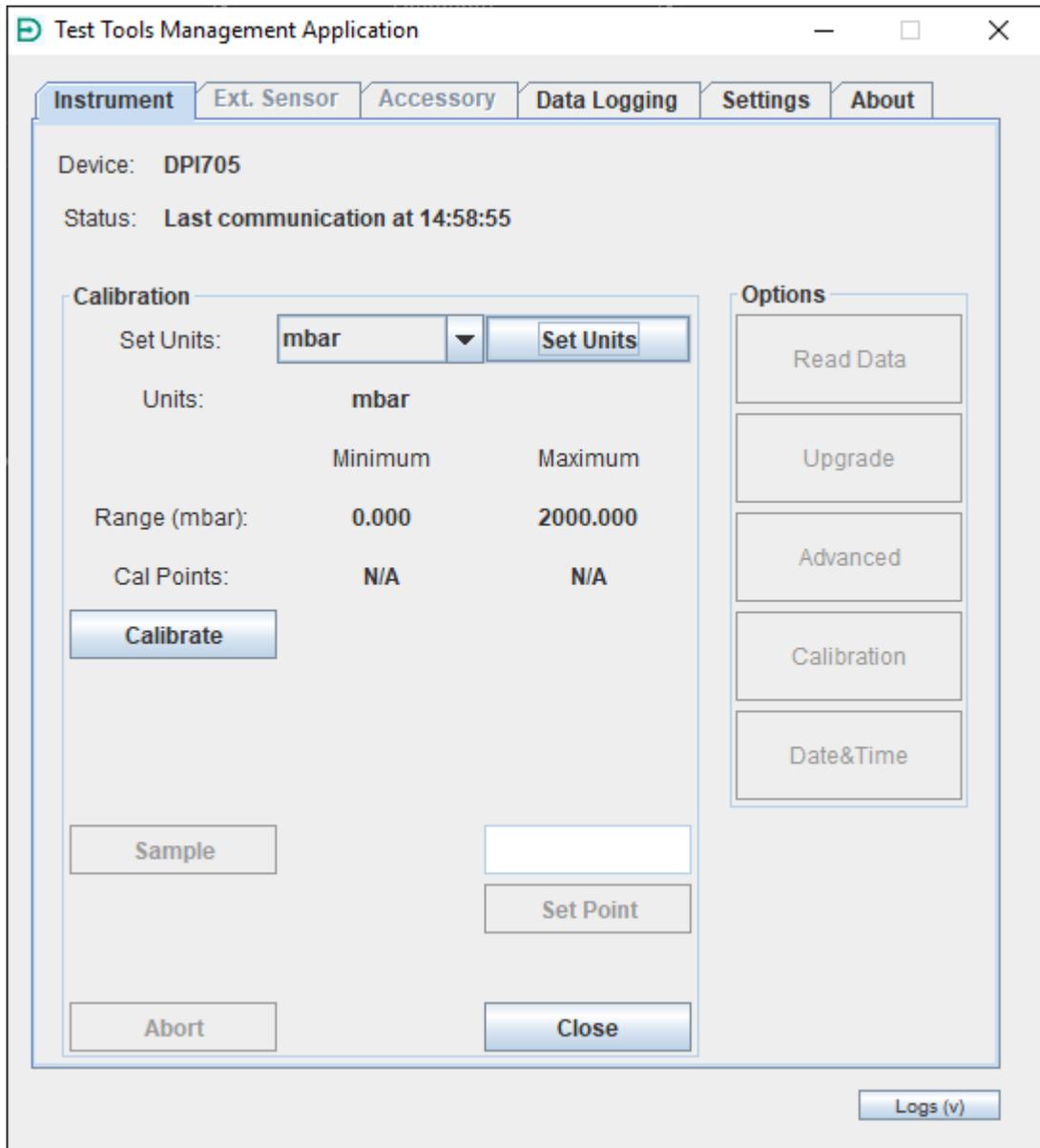
Confirm verified messages appear after submitting.

**5.1.4 Calibration**

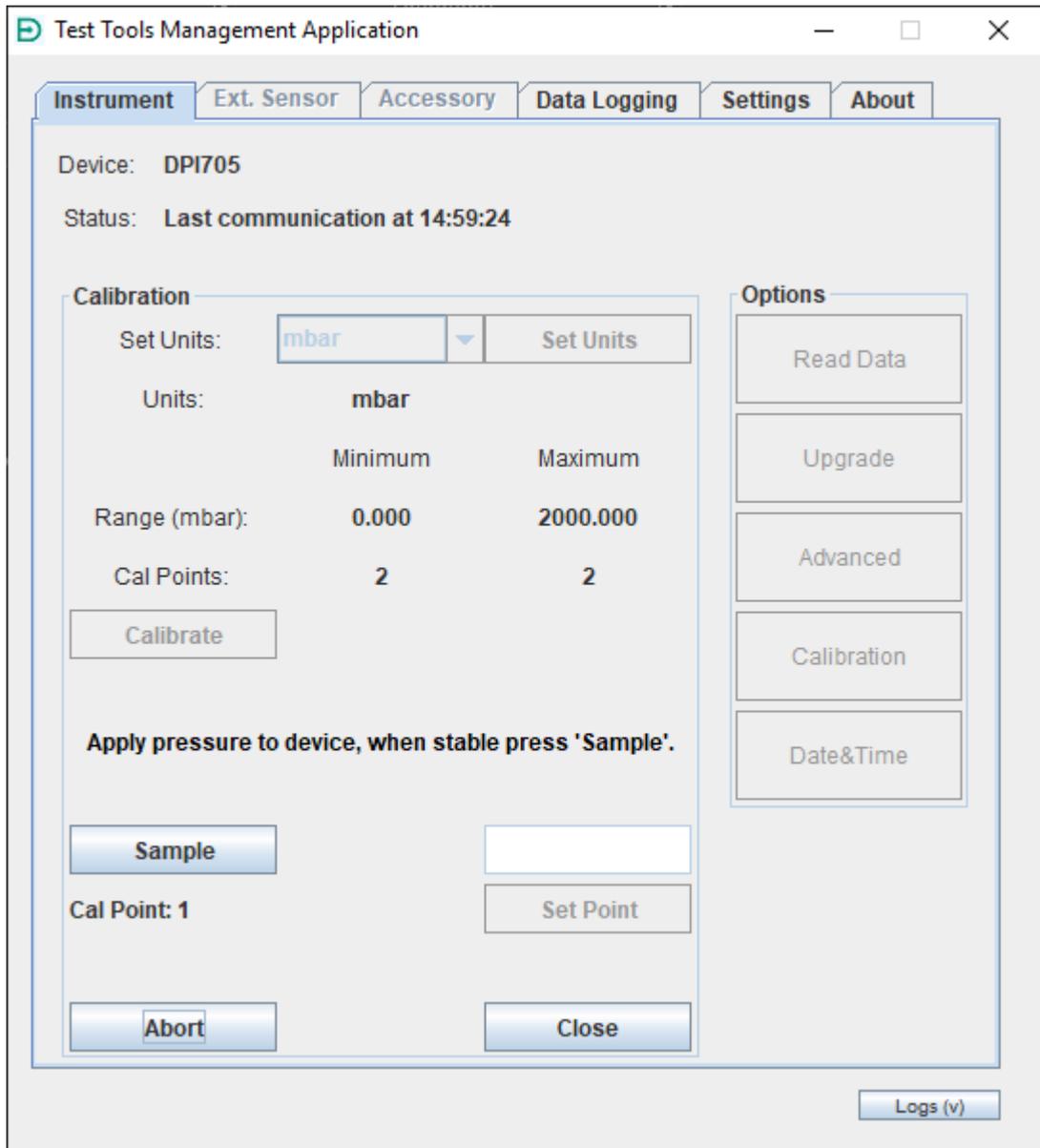
To calibrate the Accessory, press the Calibration button to view the calibration options.



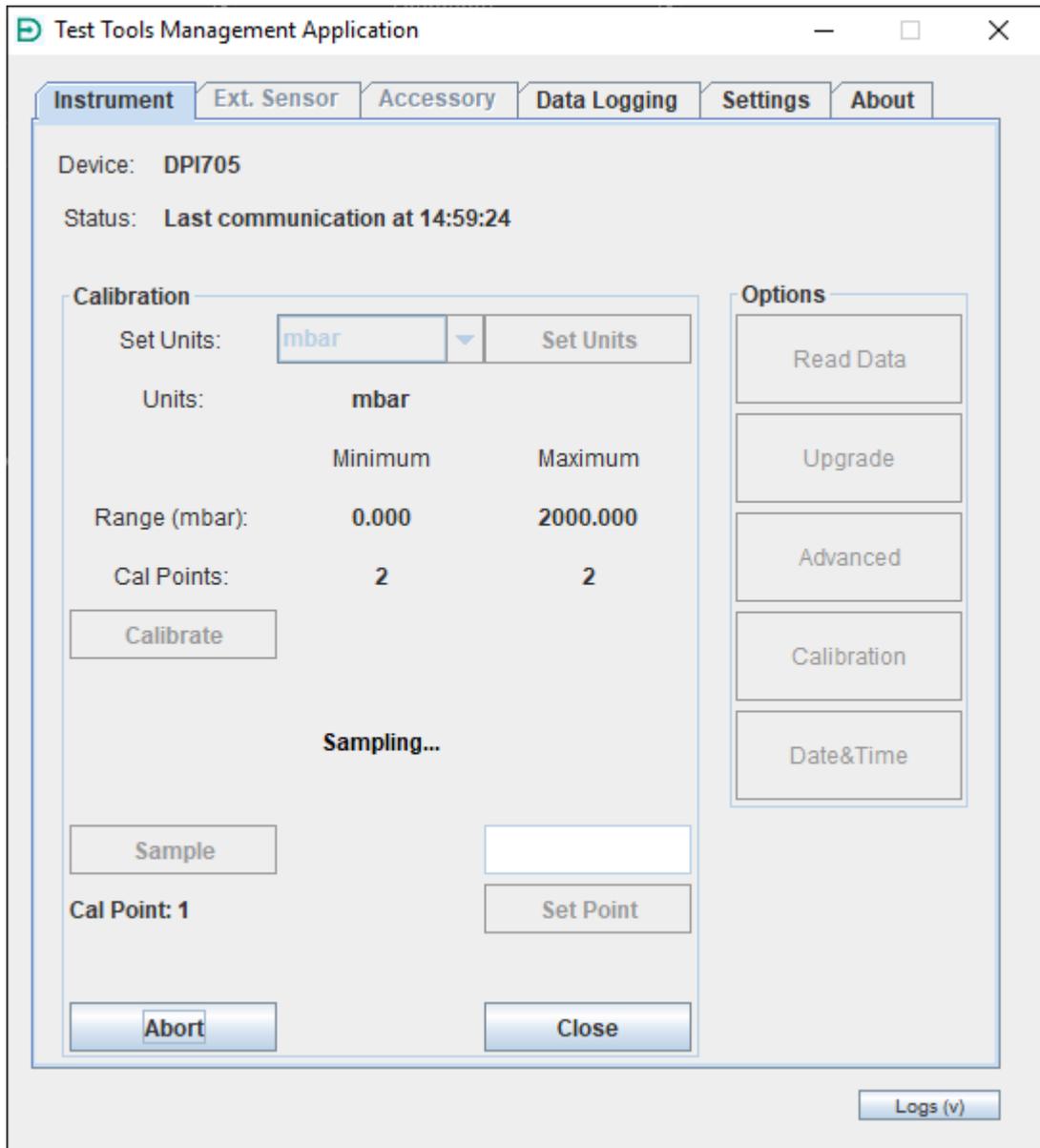
The units can be changed from this screen as well, for instruments, the choice of units changes depending of what area of use is set. Pick the desired units and press the 'Set Units' button. Confirm the units have been set by checking if the Units label displays the one that has just been set.



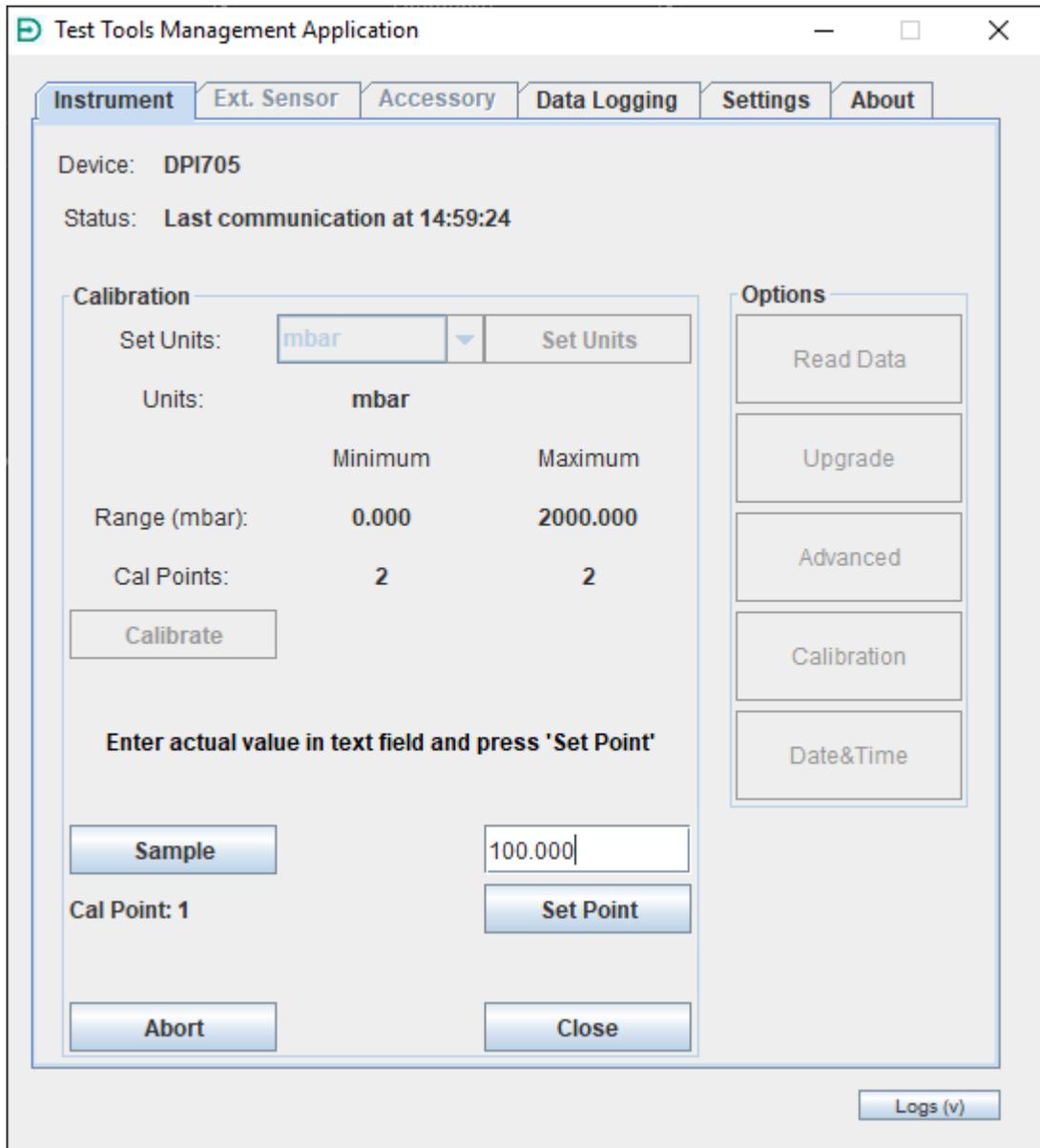
To start a calibration, press the 'Calibrate' button and this will put the device into the correct mode to begin the Calibration. It will also retrieve the minimum and maximum number of calibration points available for the instrument.



As shown on the screen, the next step is to apply pressure to your device and when the pressure is stable, press the 'Sample' button. Allow for about 5 seconds for the application to sample from the instrument.

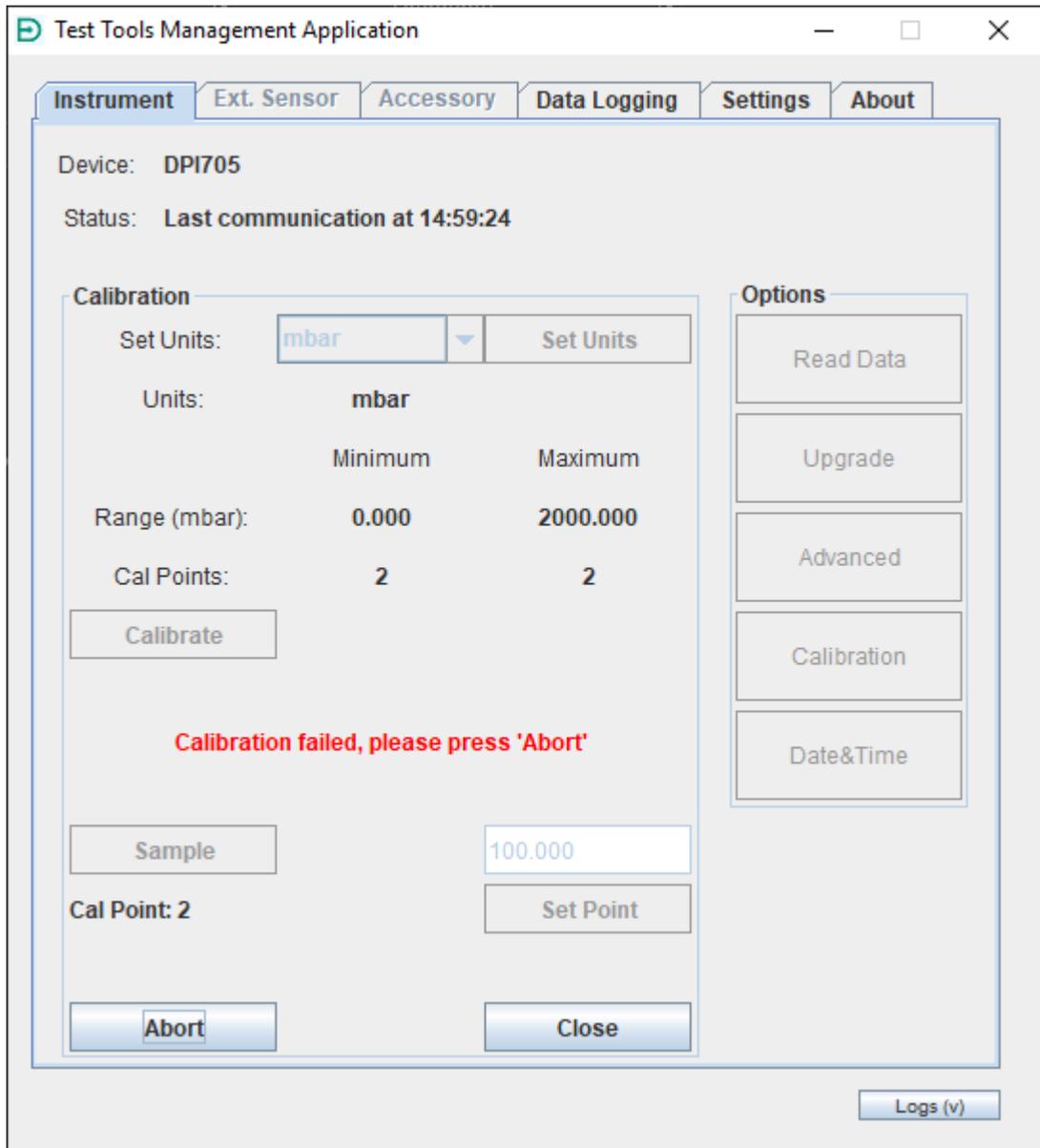


Once sampling is complete, enter the actual value of the pressure in the text field and press 'Set Point'.



Once this has been done, repeat the sampling process for next calibration point.

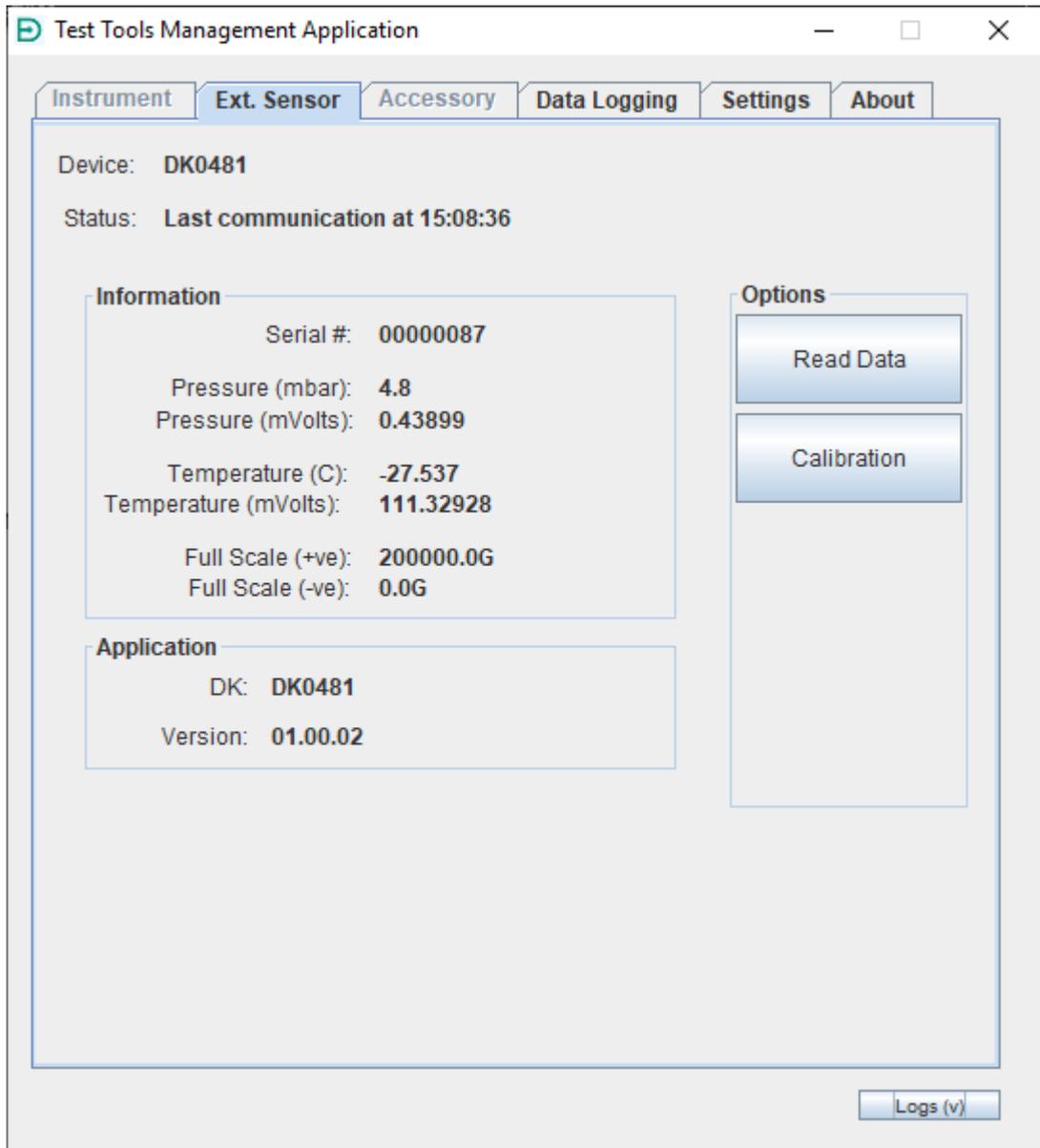
Once all calibration points have been completed, the application will send a request to the device asking if the calibration passed or failed. If the calibration passed, the instrument has been successfully calibrated, if it failed, please press 'Abort' and then the option to restart the calibration is there by pressing the 'Calibrate' button. A failed calibration normally means that the values entered were not within the given tolerance of each set point for the instrument.



## 5.2 Sensor

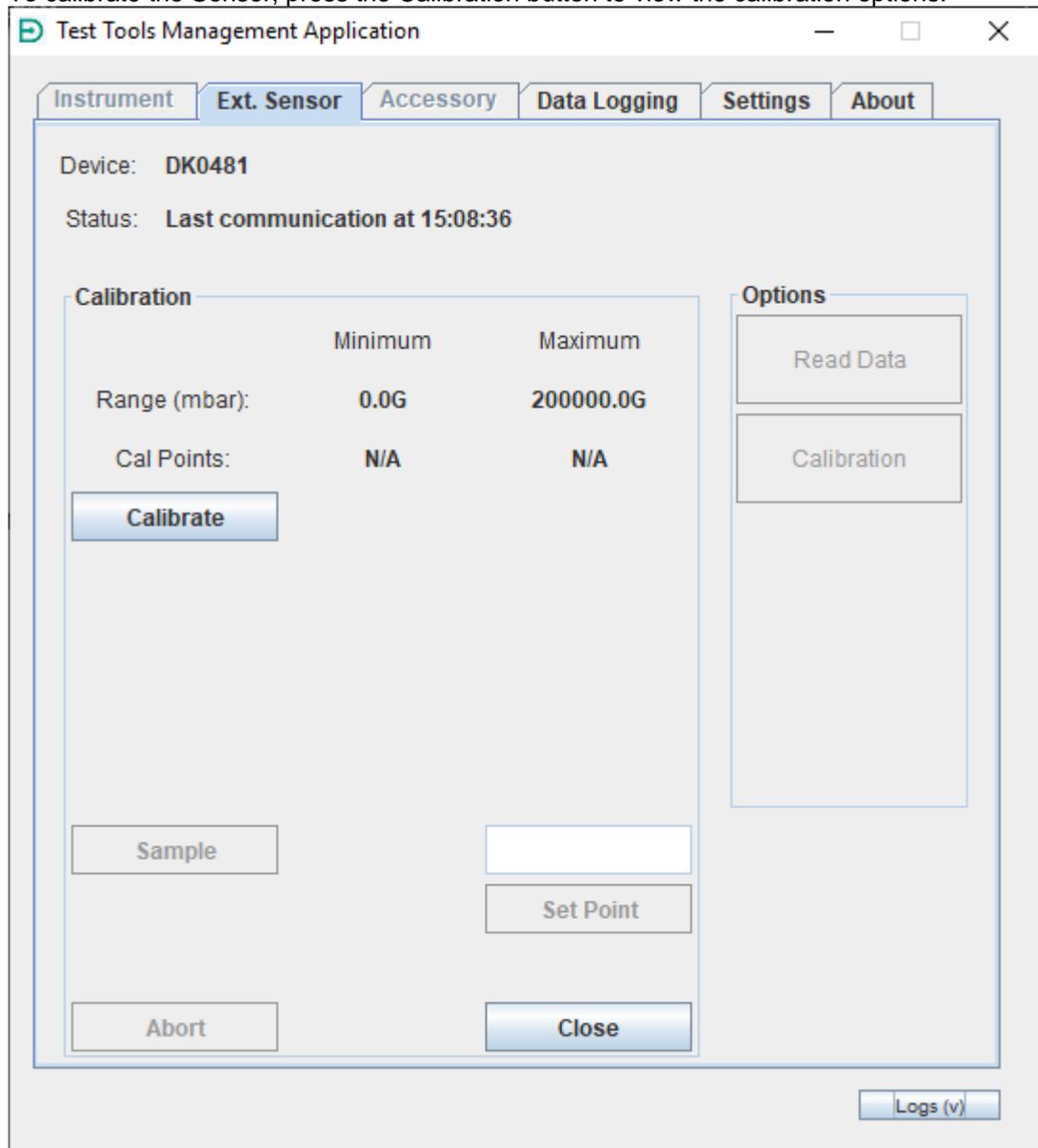
Once the COM port of a valid sensor is open, select the Sensor tab (which will become enabled). The application will then automatically request the data from the sensor and the appropriate sections will be populated.

Pressing 'Read Data' again will repopulate the sections with updated data from the sensor.

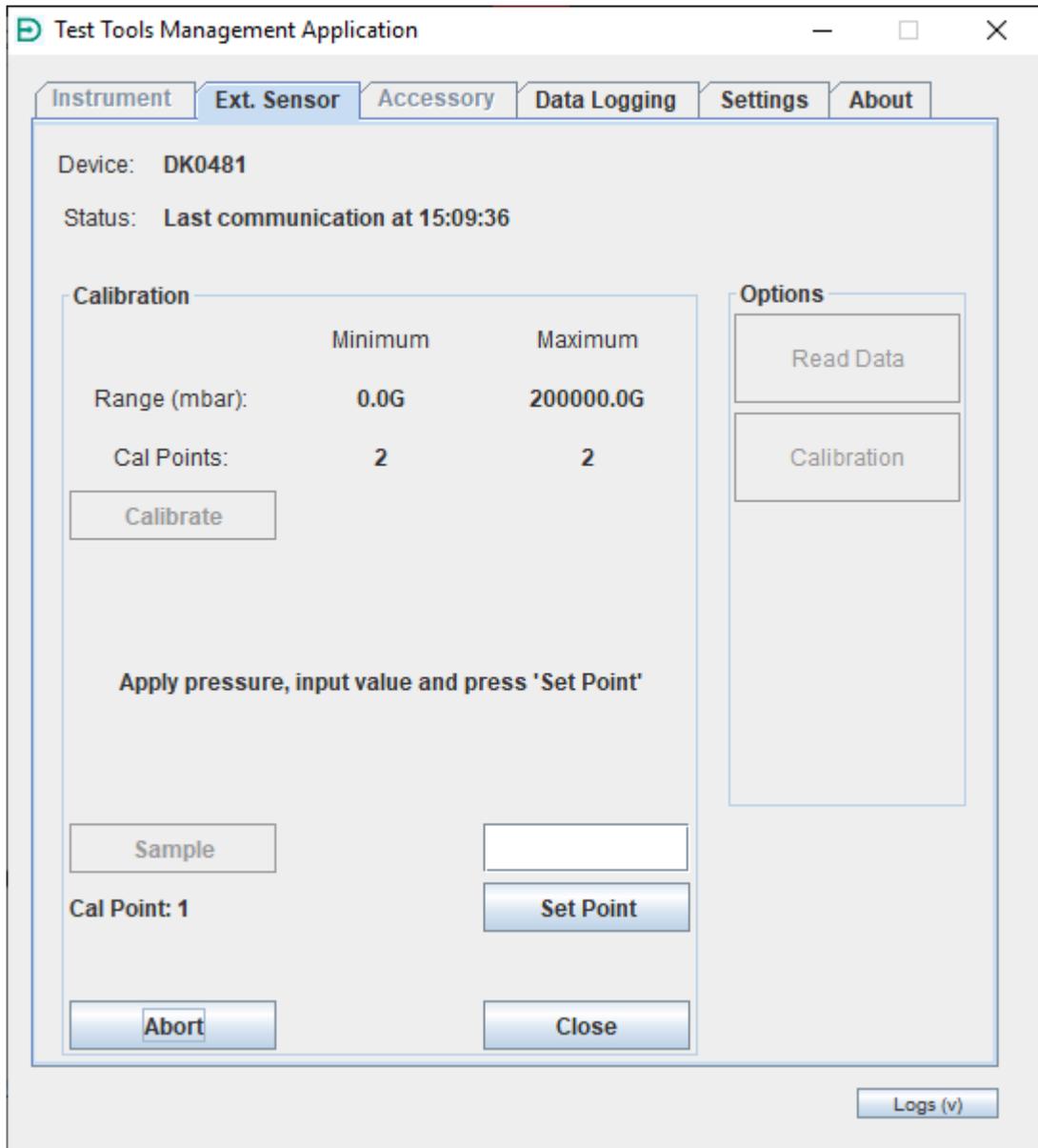


### 5.2.1 Calibration

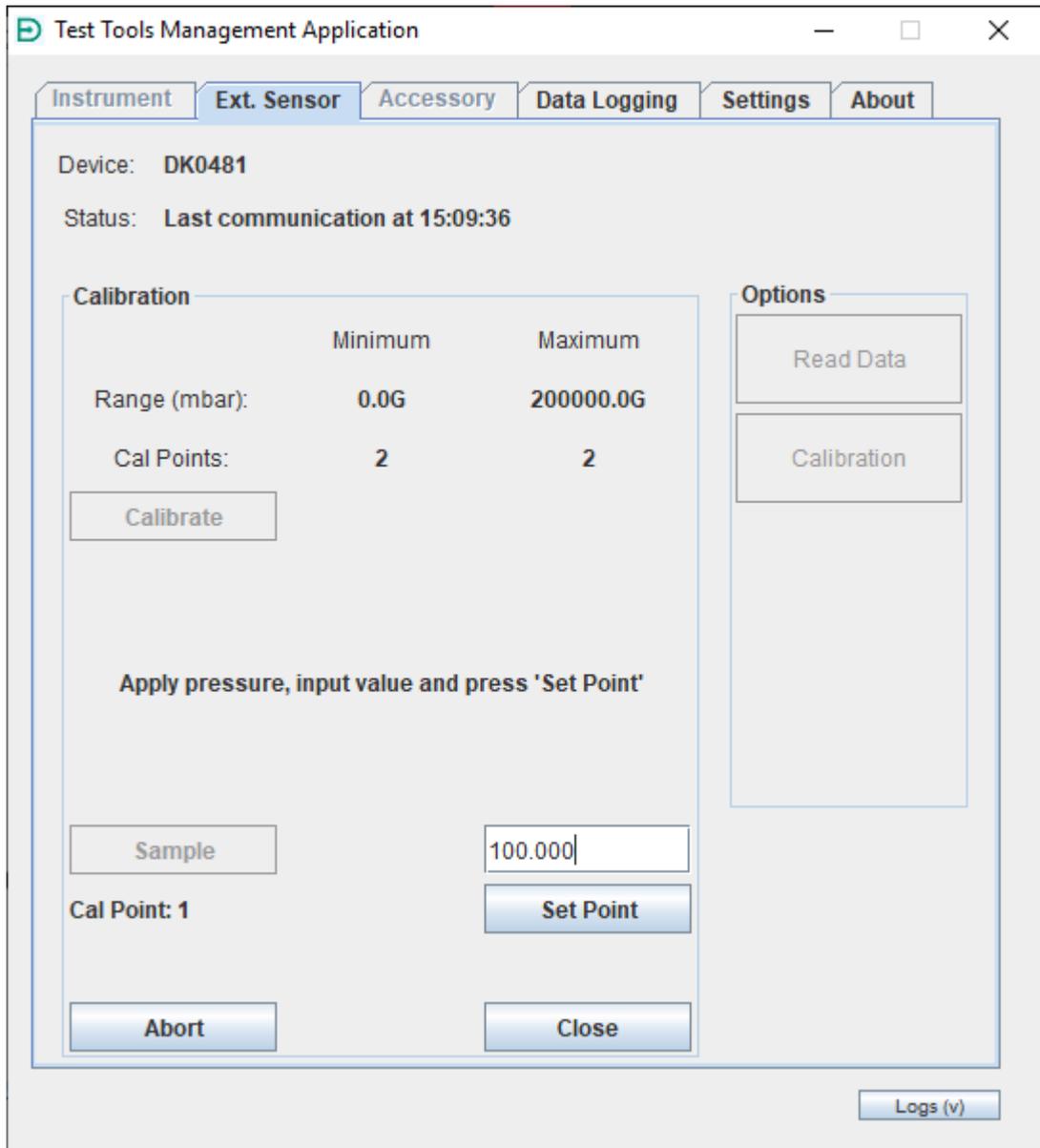
To calibrate the Sensor, press the Calibration button to view the calibration options.



To start a calibration, press the 'Calibrate' button and this will put the device into the correct mode to begin the Calibration. It will also retrieve the minimum and maximum number of calibration points available for the sensor.

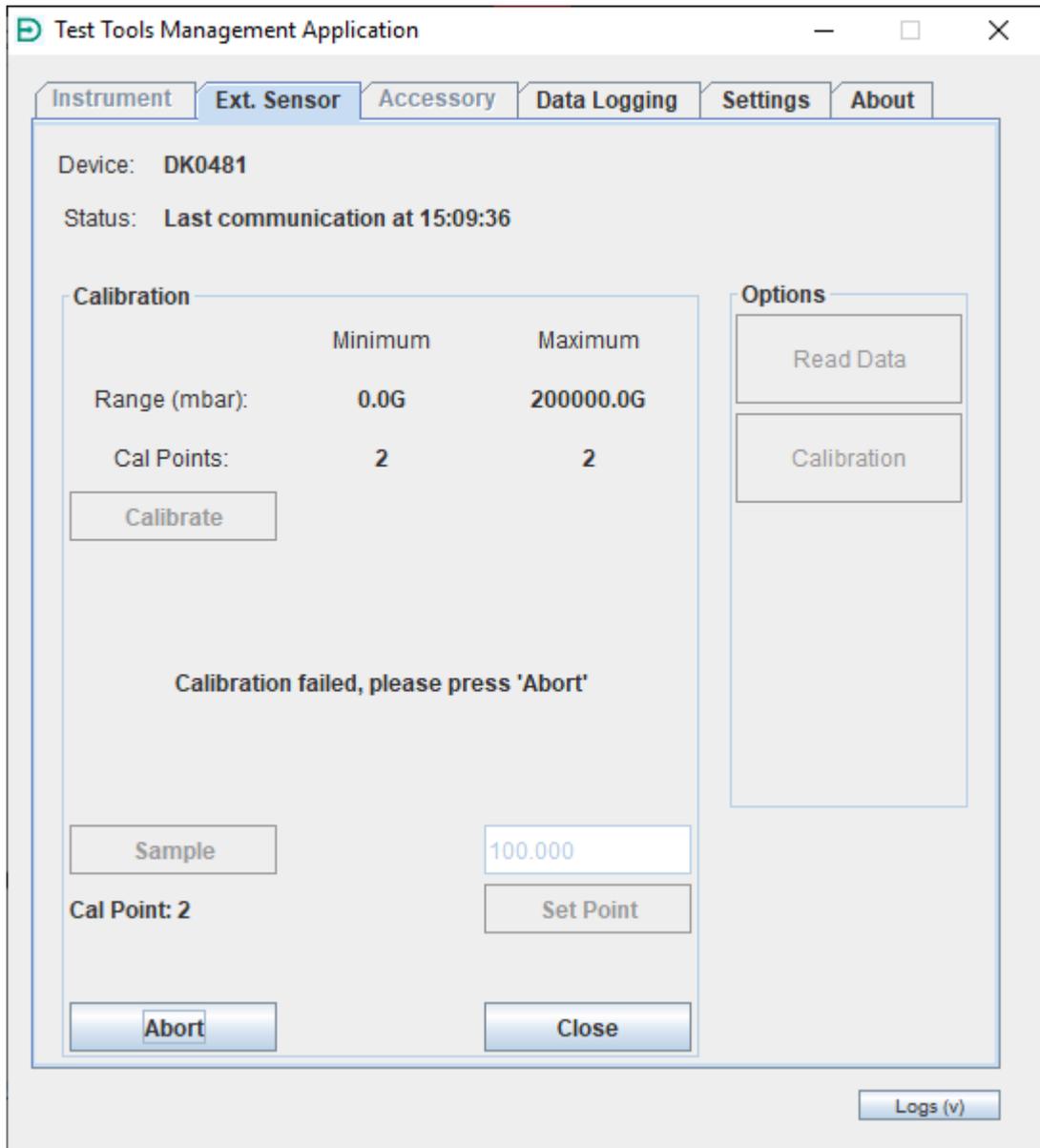


Apply pressure to the device and input the actual value of the pressure in the text field. Then press 'Set Point'.



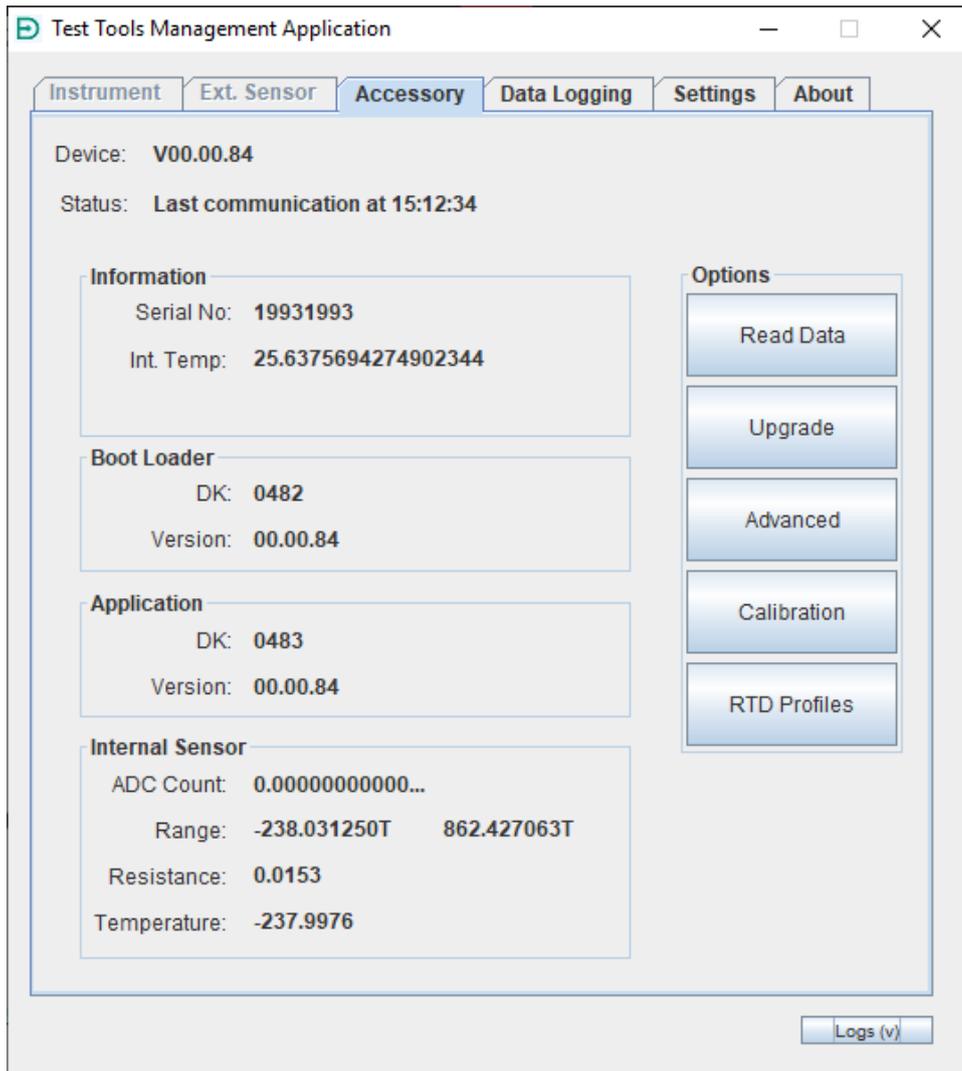
Once this has been done, repeat the process of for the next calibration points.

Once all calibration points have been completed, the application will send a request to the device asking if the calibration passed or failed. If the calibration passed, the sensor has been successfully calibrated, if it failed, please press 'Abort' and then the option to restart the calibration is there by pressing the 'Calibrate' button. A failed calibration normally means that the values entered were not within the given tolerance of each set point for the sensor.

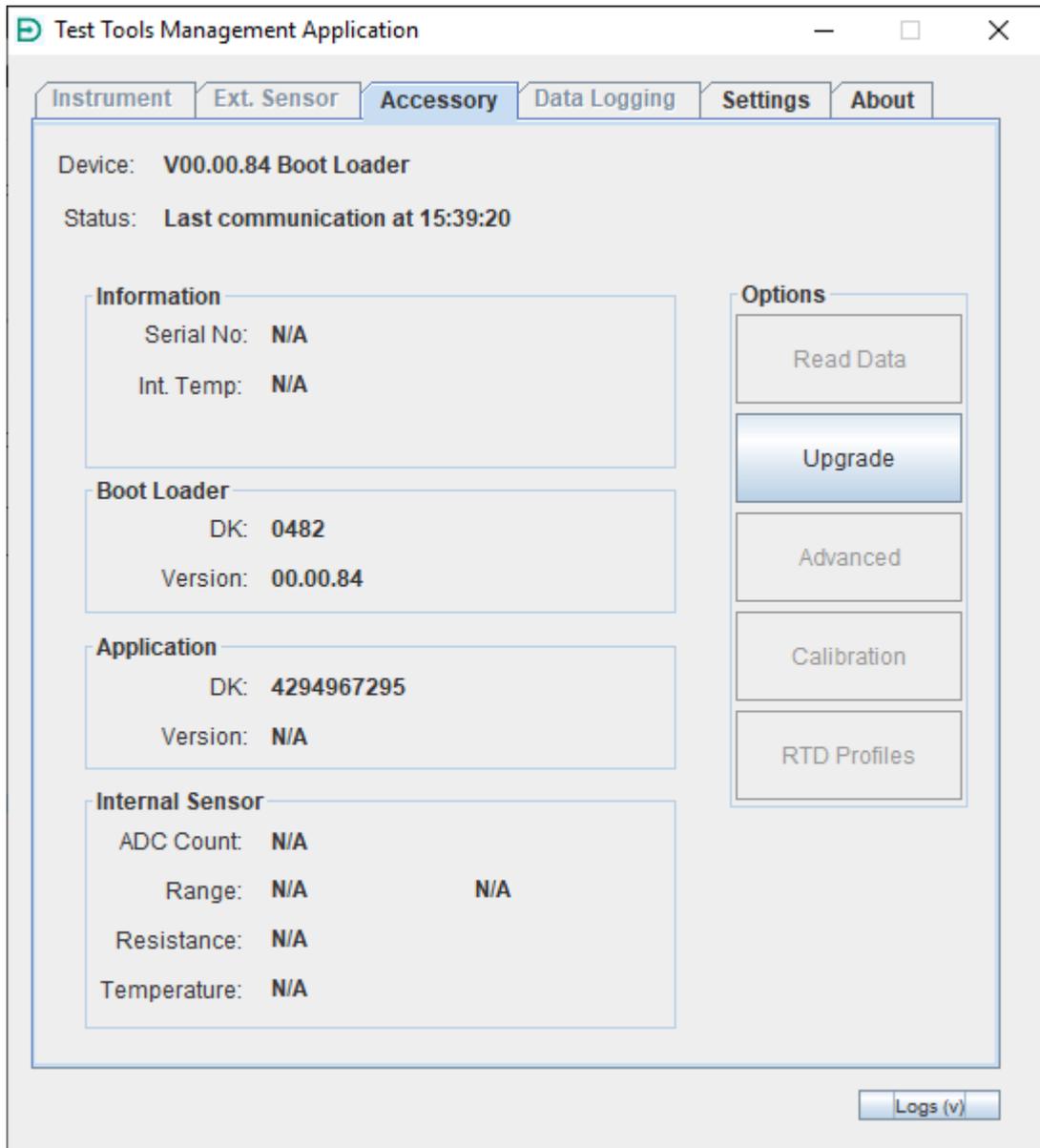


### 5.3 Accessory

Once the COM port of a valid accessory (RTD Probe) is open, the appropriate tab will be enabled and select the Accessory tab. The application will automatically take readings from the device. All the options buttons will be enabled.

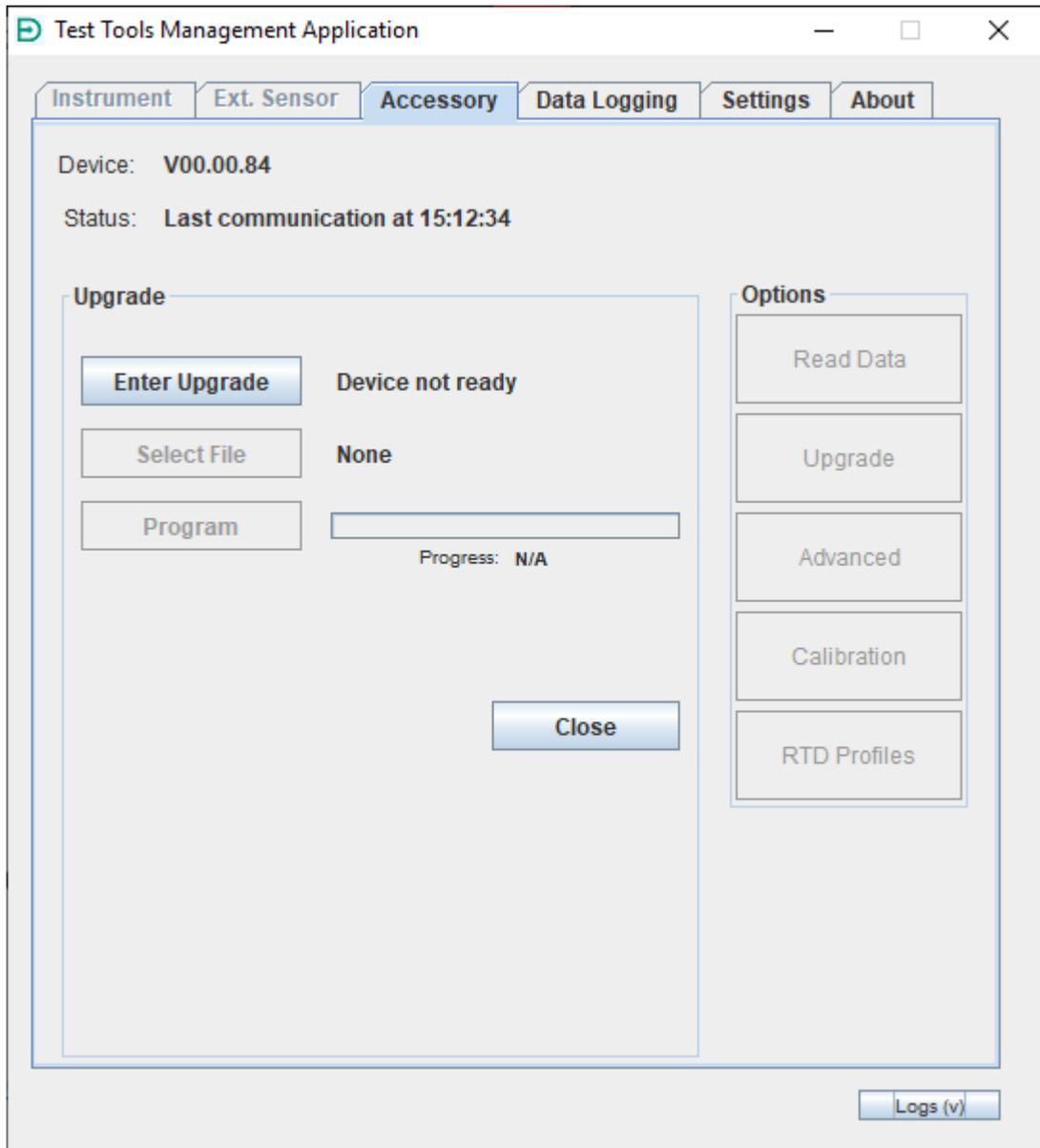


Depending on the current state of the accessory, different Options will become available, and not all information may be populated.



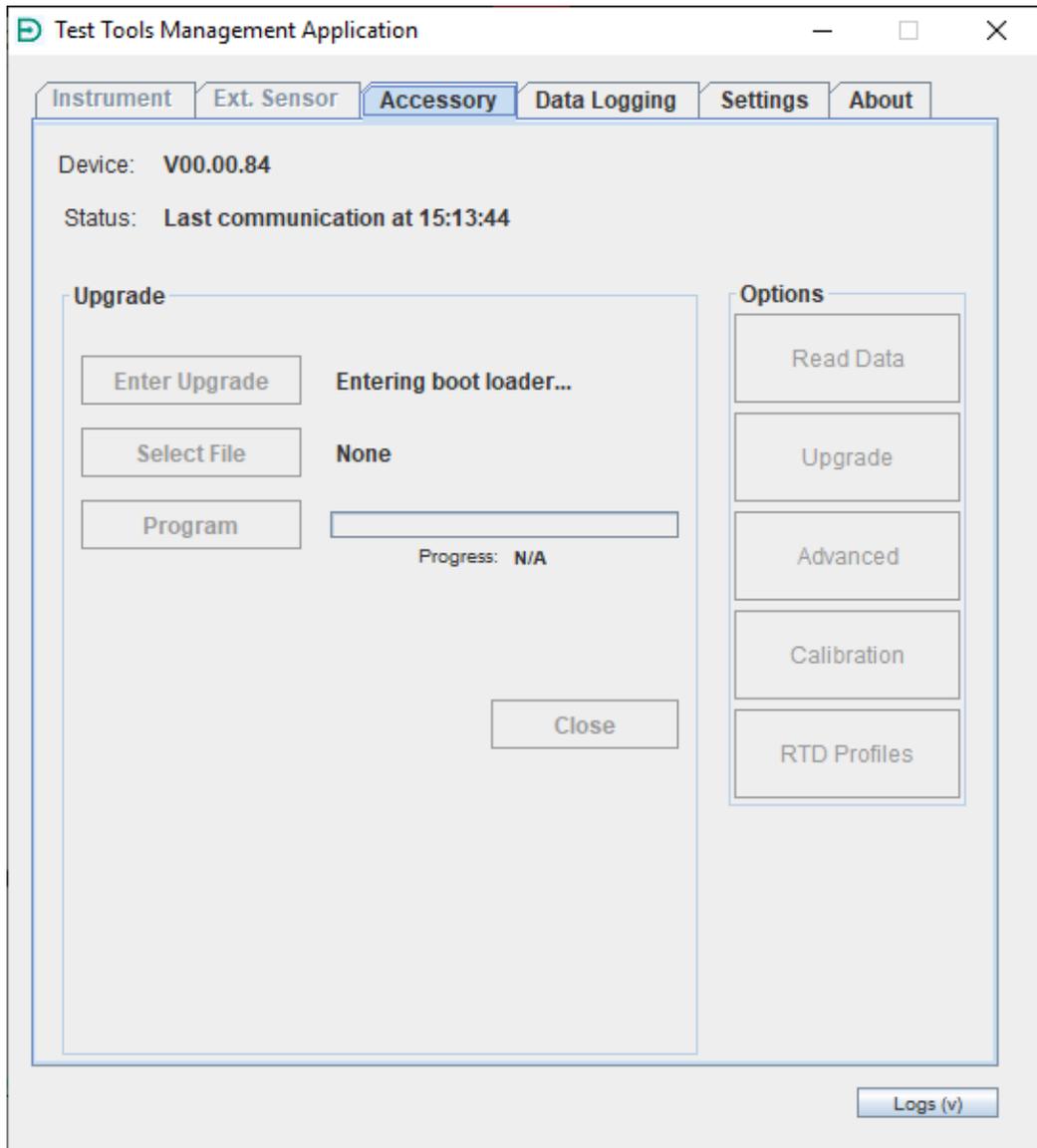
### 5.3.1 Upgrade

To upload the latest application firmware to an Accessory:  
Press the Upgrade button to view Upgrade options.

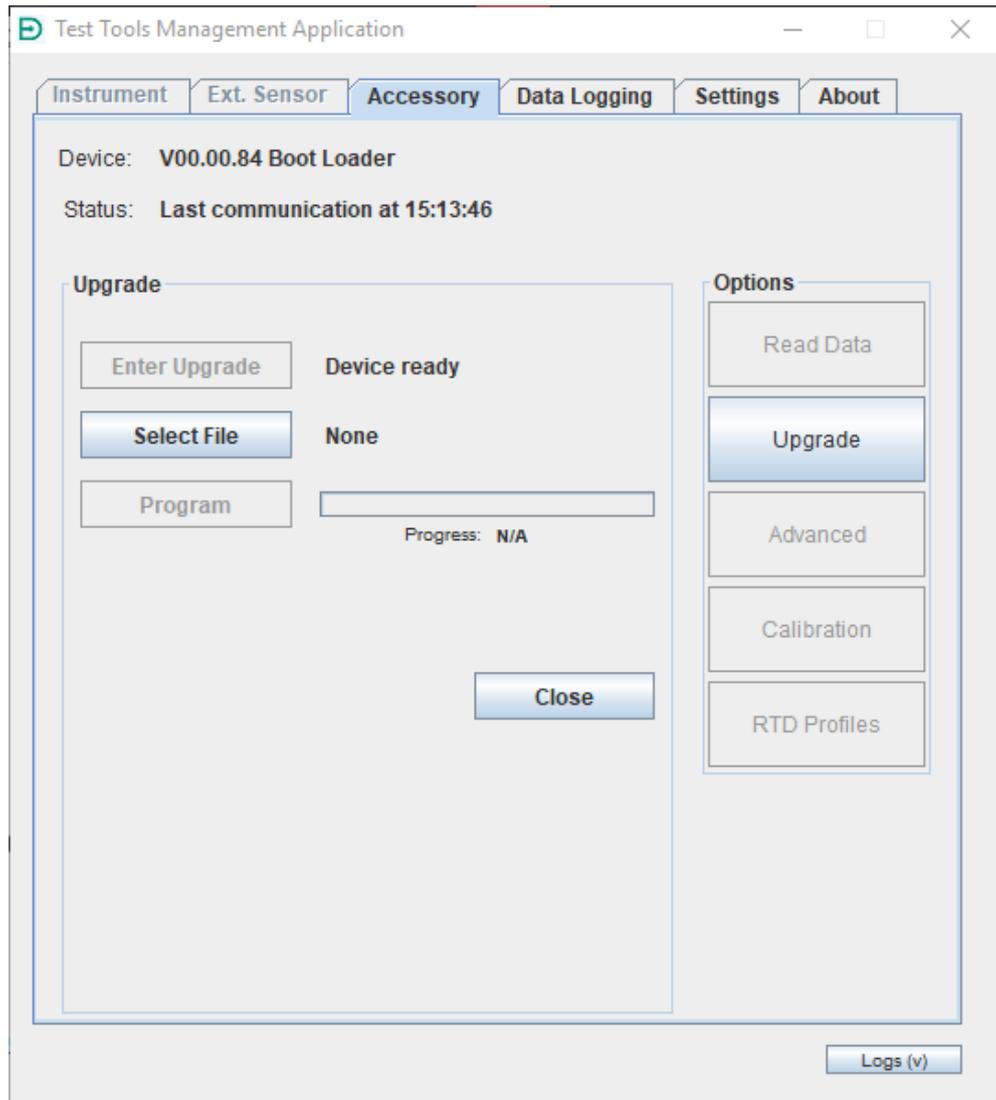


Accessory must be in boot loader mode to perform an upgrade. If accessory is not already in boot loader mode press the Enter Upgrade button.

The accessory will reset and attempt to enter boot loader mode. This can take a few seconds to perform.



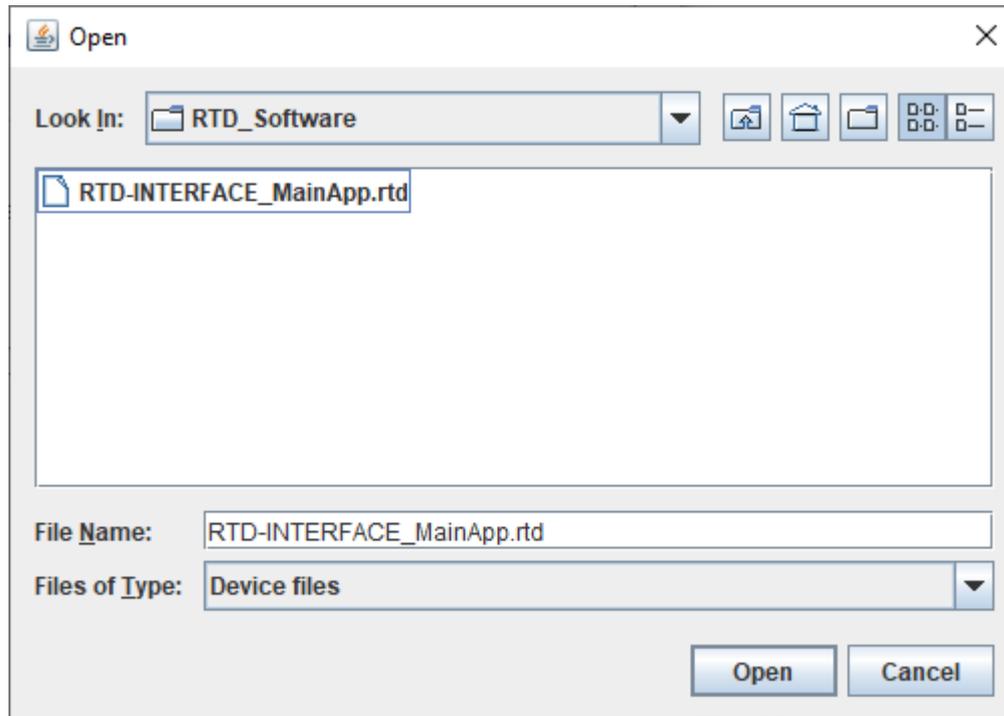
Confirm accessory is in boot loader mode by checking that the device name contains 'Boot Loader'.



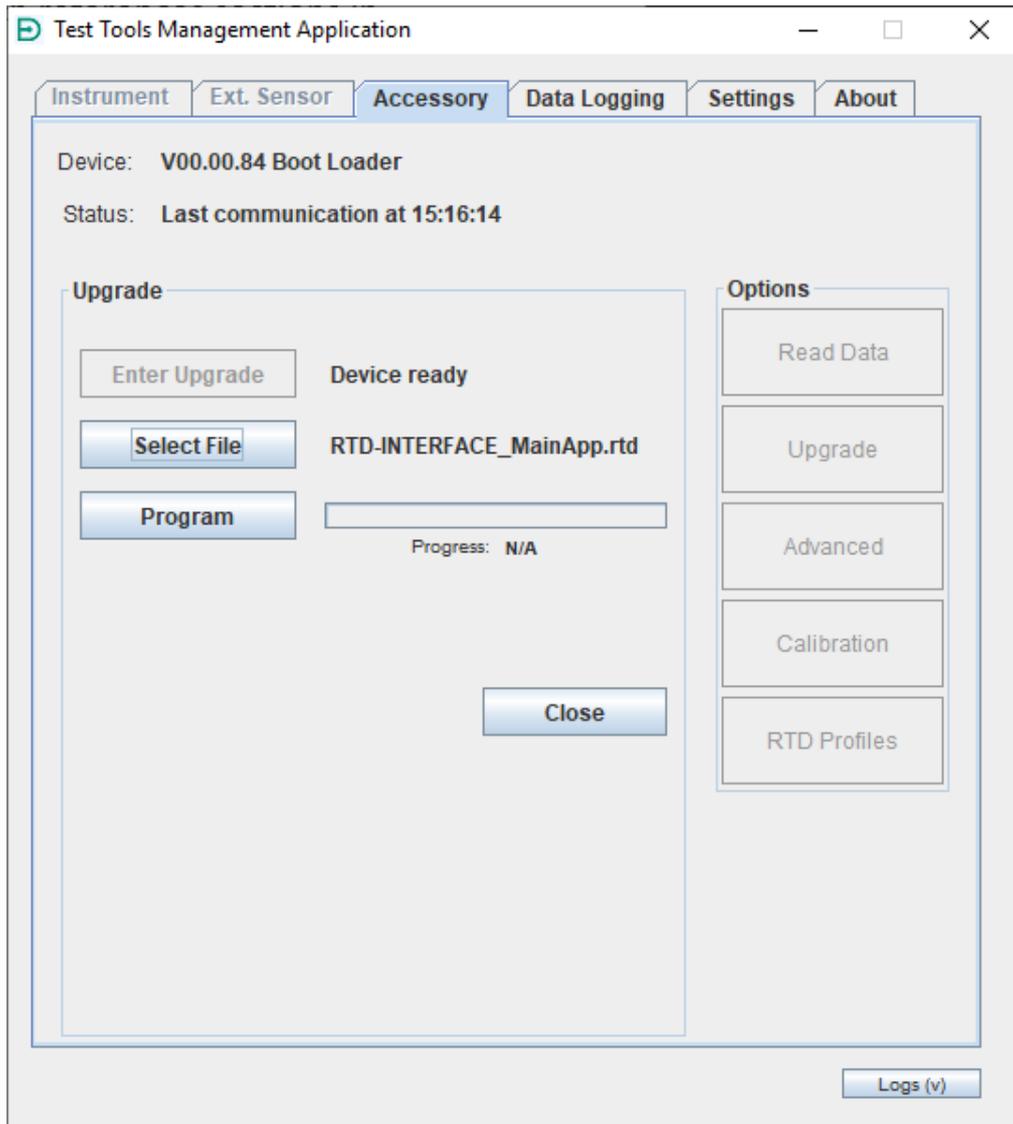
Press Select File. An open dialog will display. Navigate to, and open the file to upload to the instrument.

Example of valid file to upload: RTD-INTERFACE\_MainApp.rtd

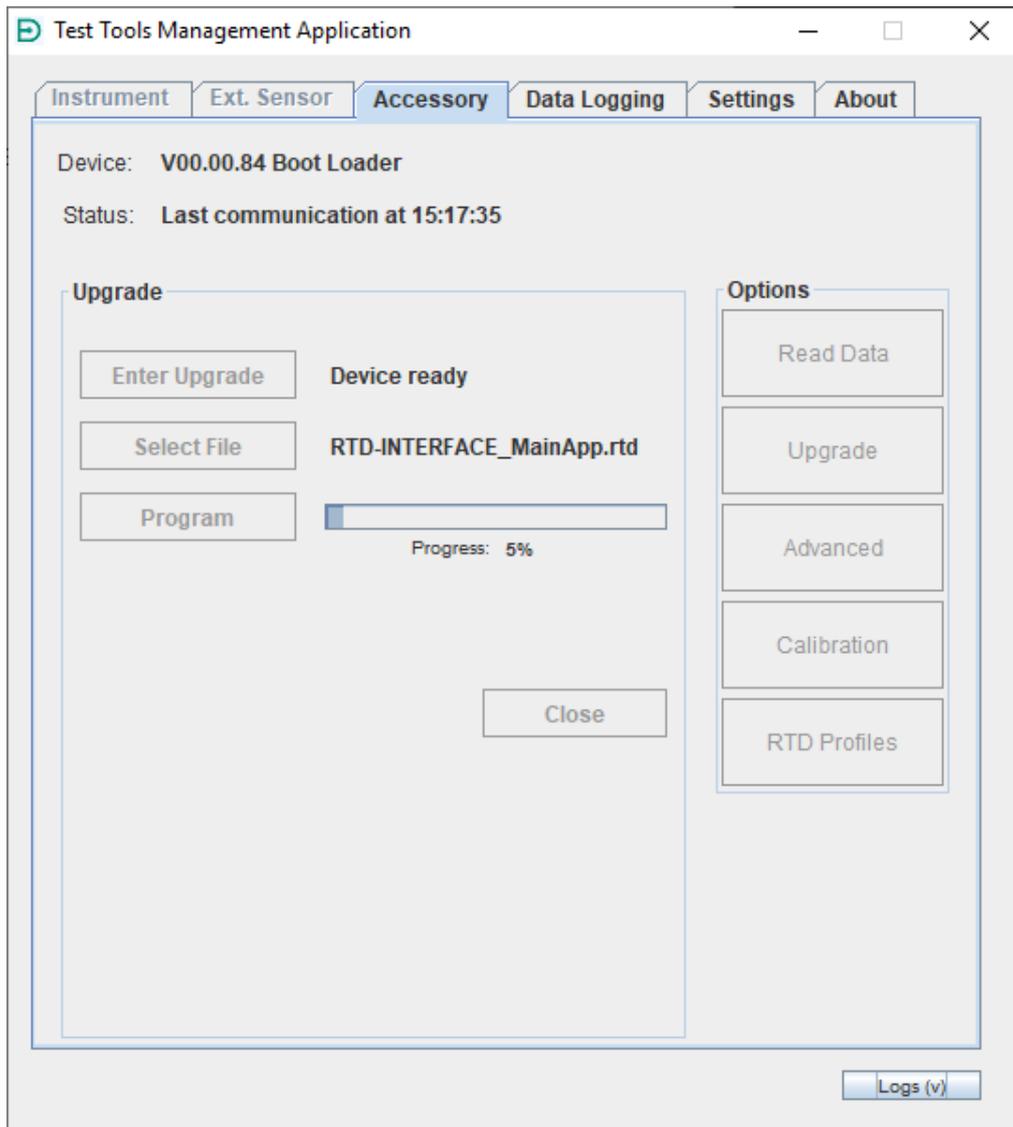
**Note:** Only .rtd files are viewable.



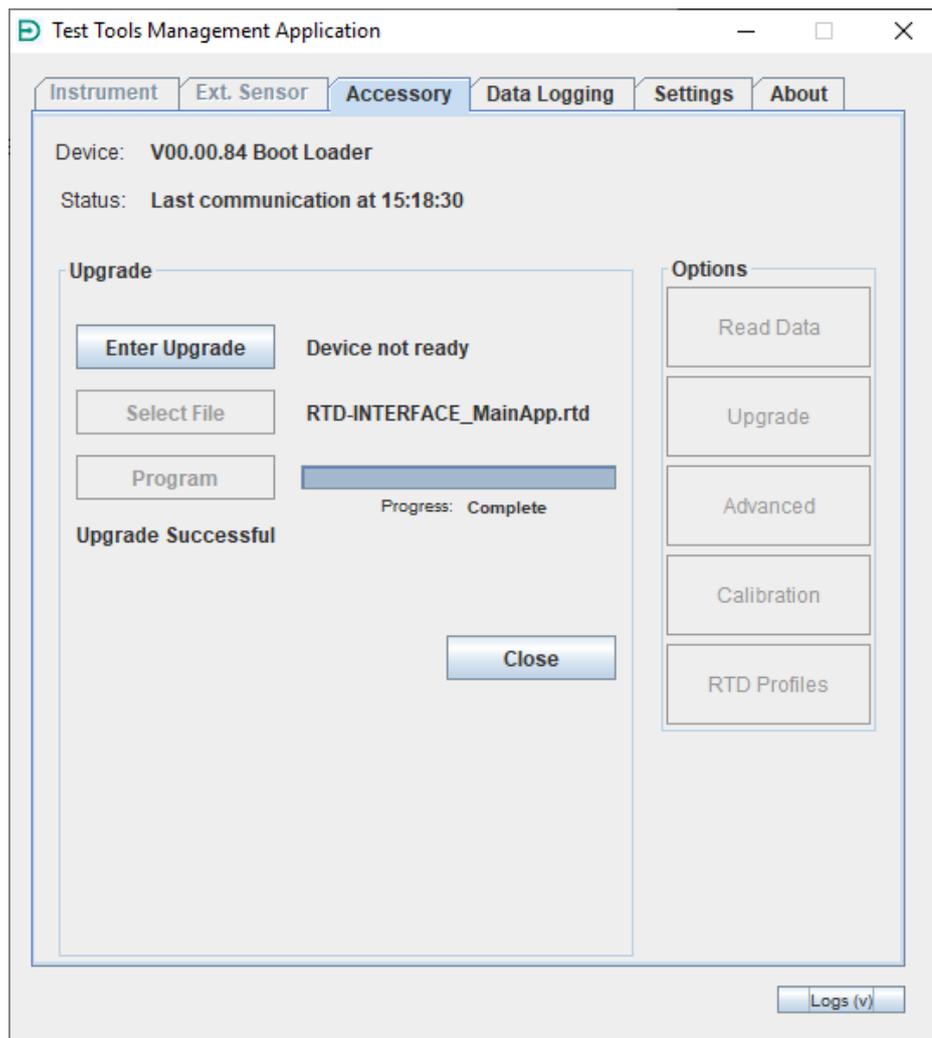
Before programming the connected instrument, confirm the chosen file is displayed.



Once confirmed, press the Program button.  
 Allow for a few seconds while the upgrade process prepares.  
 The upload will then start showing its current progress.



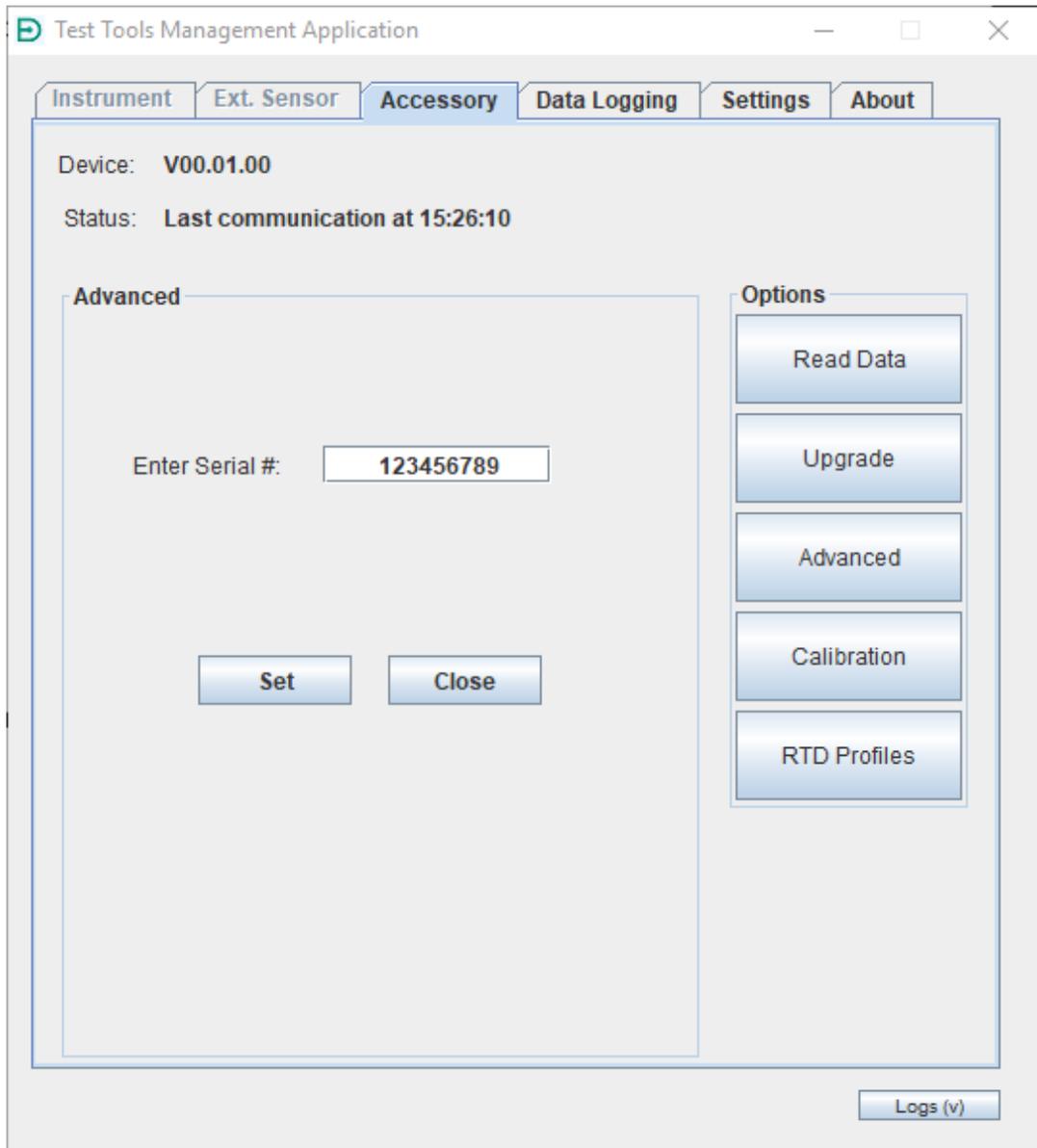
Once finished, the Progress status will change to Complete.



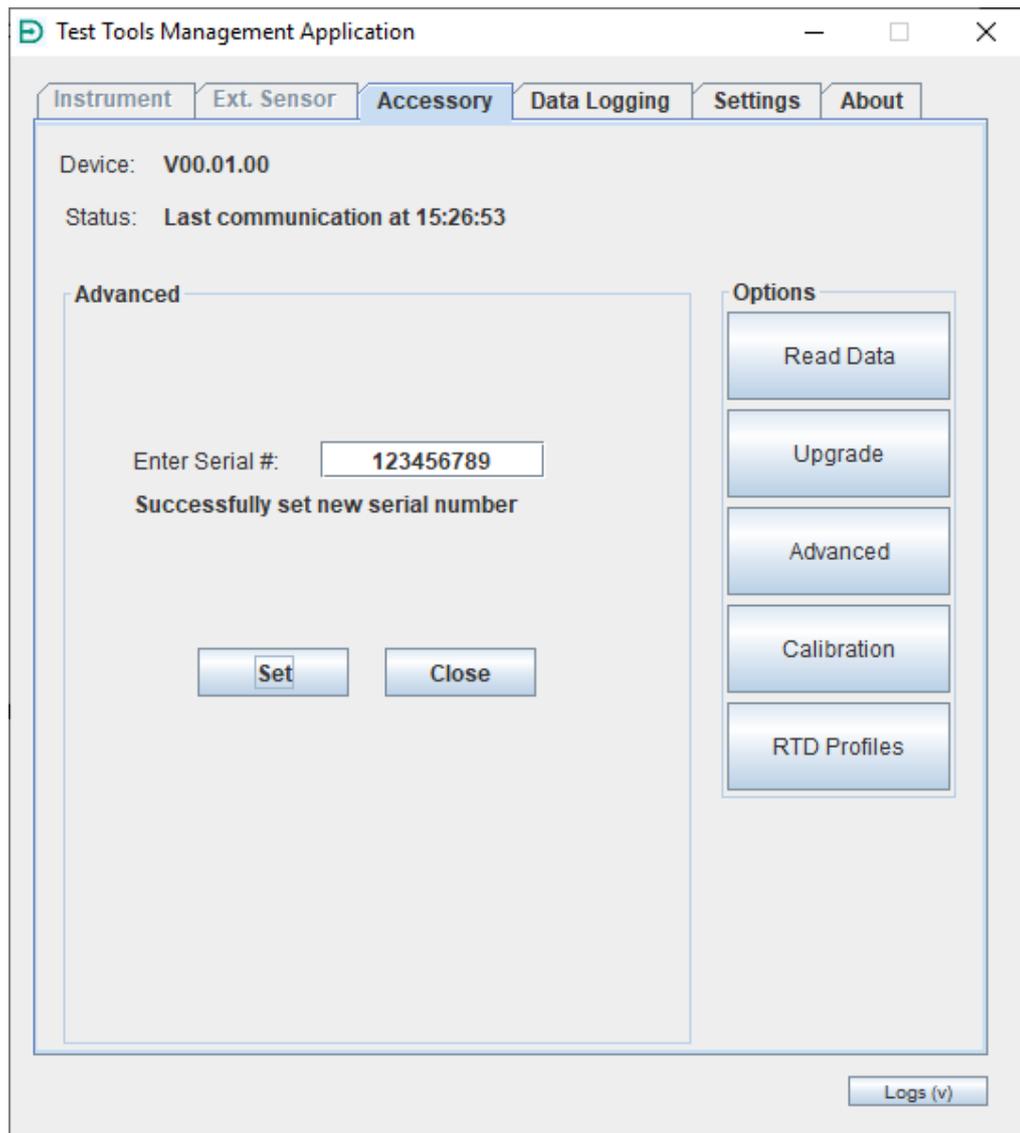
Confirm the latest version of code is installed by Closing the Upgrade panel and checking the Application Version number in the Accessory Tab.  
If the upgrade fails, no main application will be detected on the accessory, and then the application shall allow you to retry the upgrade.

### 5.3.2 Advanced

Sets serial number. Requires PIN to access which is 1129.  
Press Advanced button and enter PIN to view advanced options.



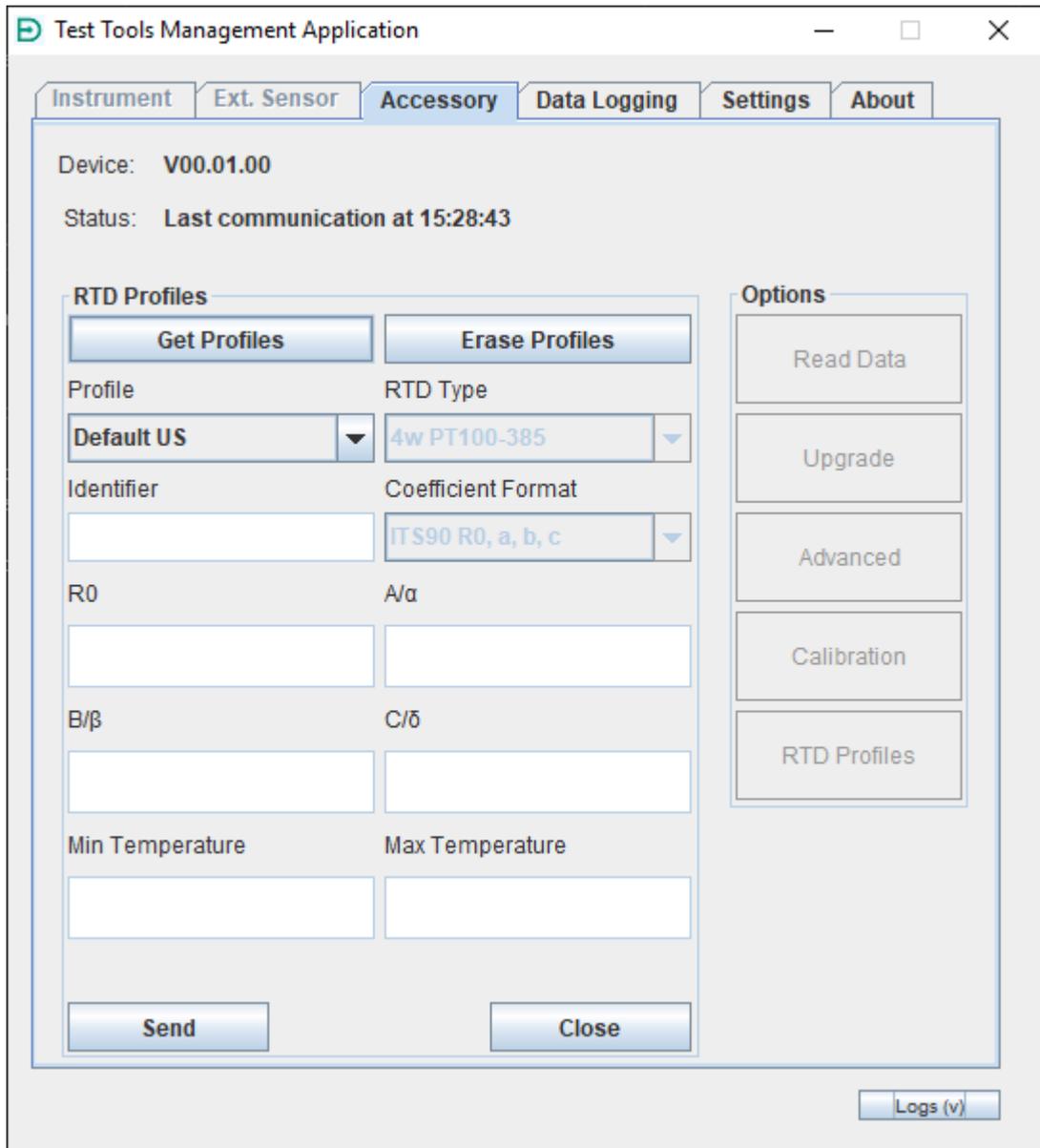
To set the connected accessory's serial number, enter a 9-character serial number in to the serial number text box, then press the Set button.



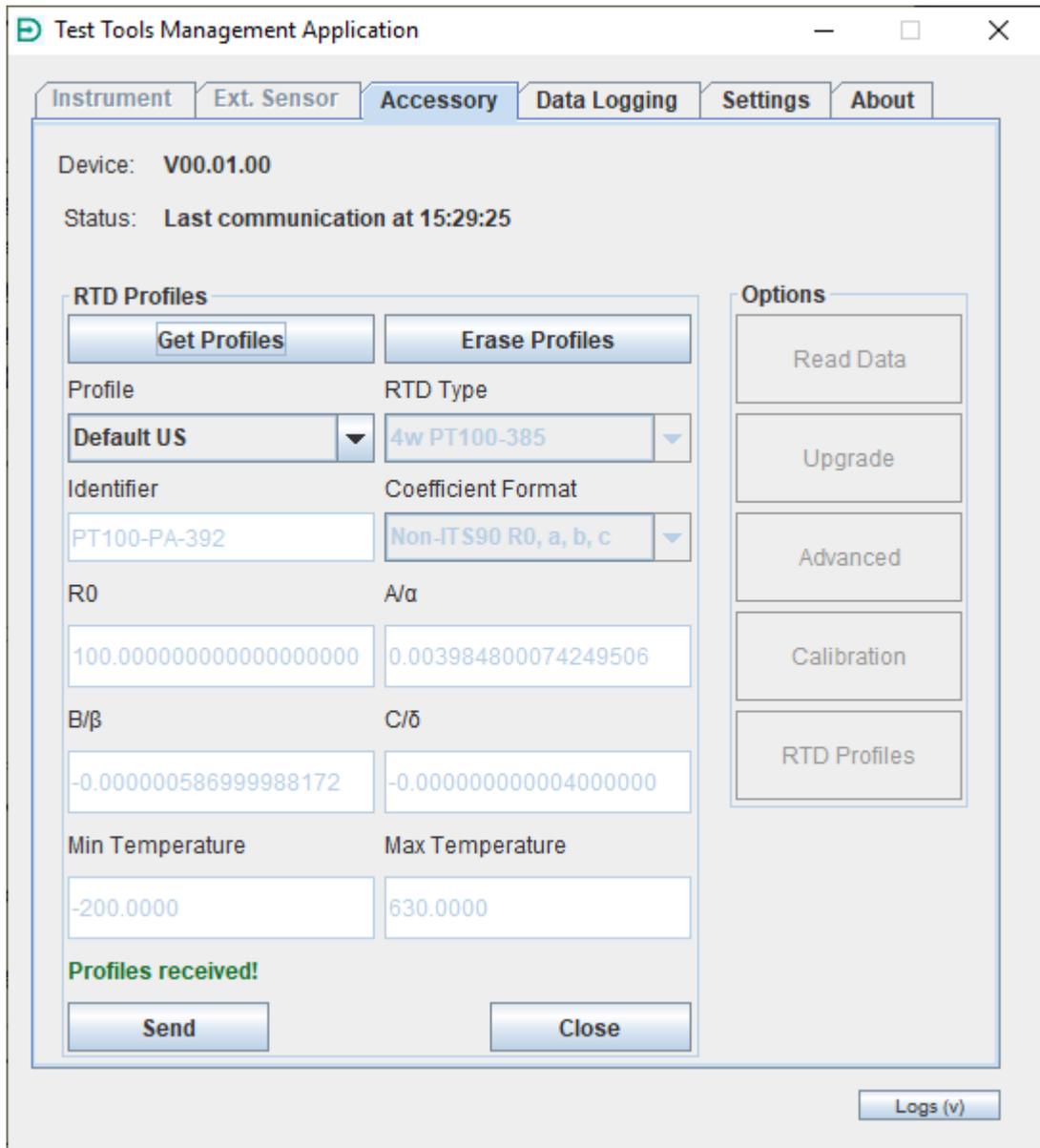
Confirm the message which states if the number has been set successfully.

### 5.3.3 RTD Profiles

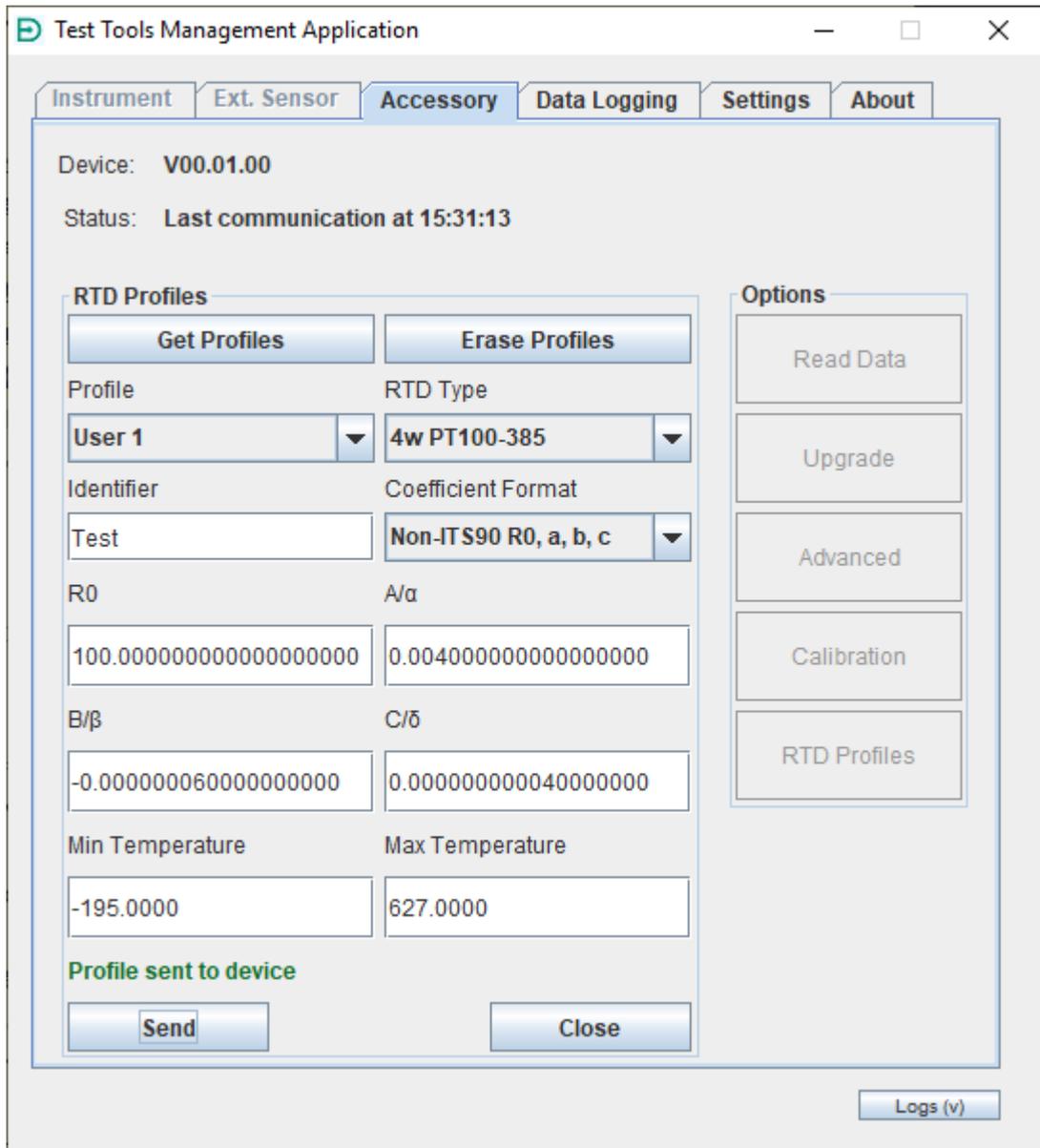
To view any existing RTD profiles on the accessory or set any new ones, press the 'RTD Profiles' button to view the RTD Profile options.



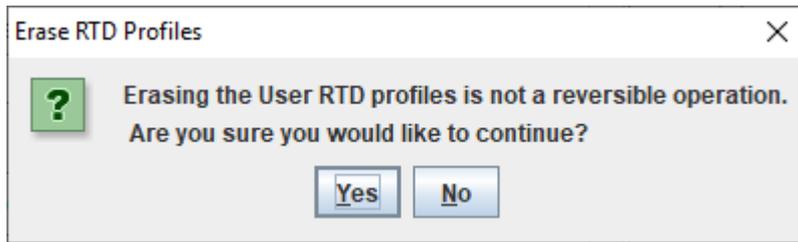
To retrieve ALL profiles on the RTD Probe, press the 'Get Profiles' button. The profile that the screen switches to is the one that is currently set on the RTD Probe.



To send a profile, please enter some valid values and press 'Send', this profile also gets set as the current one on the RTD Probe. Confirm the profile has been sent successfully by viewing the message above the send button.



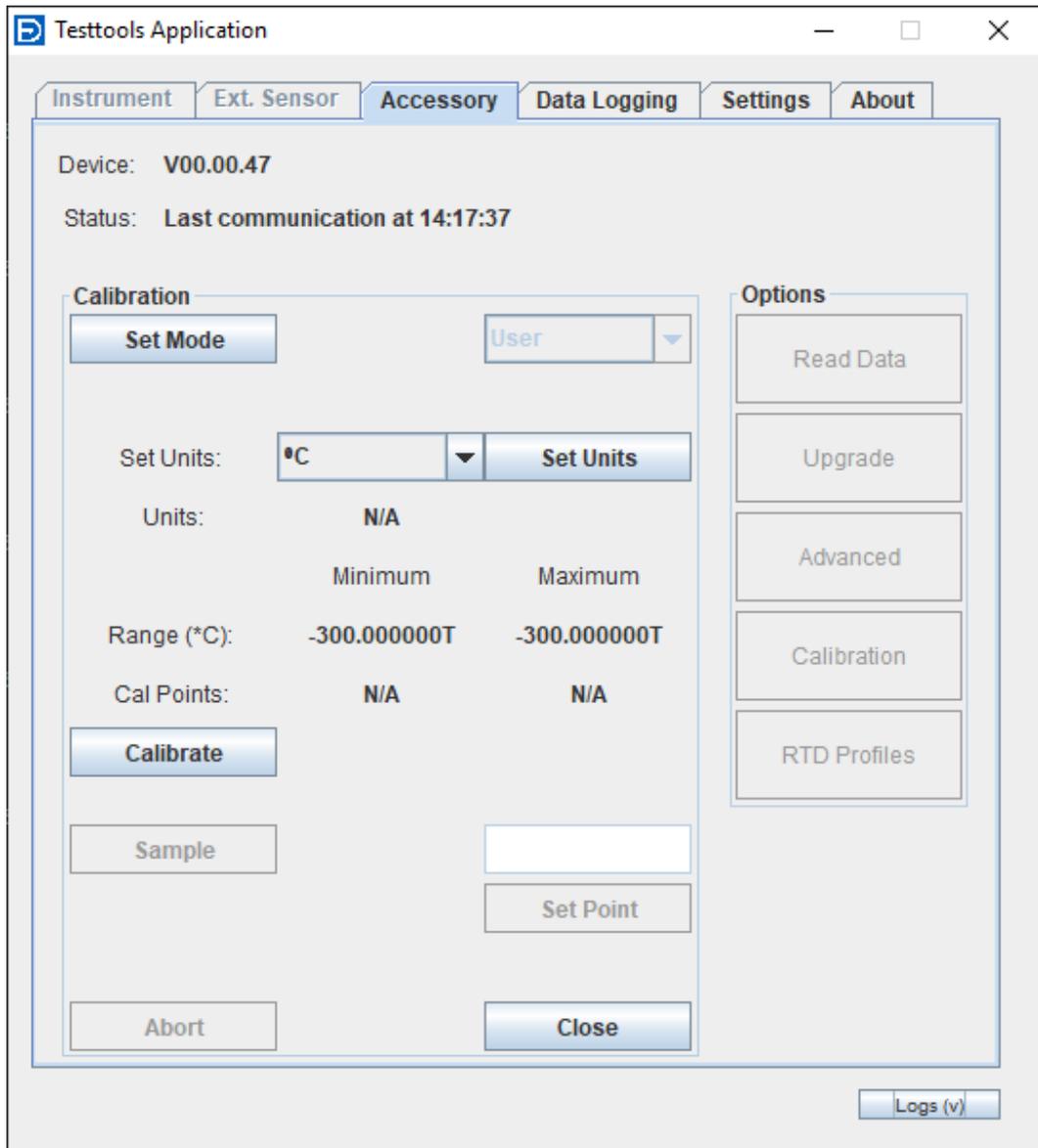
To erase all the existing user profiles on the RTD Profiles, press the 'Erase Profile' button. Confirm that you would like to erase the profile. If you press yes, all the user profiles will be removed, and it will only leave the Default US and Default EU profiles in the RTD Probe. The Default US one will be set on the probe. Ensure that you have saved any important user rtd profiles as this is a non-reversible operation.



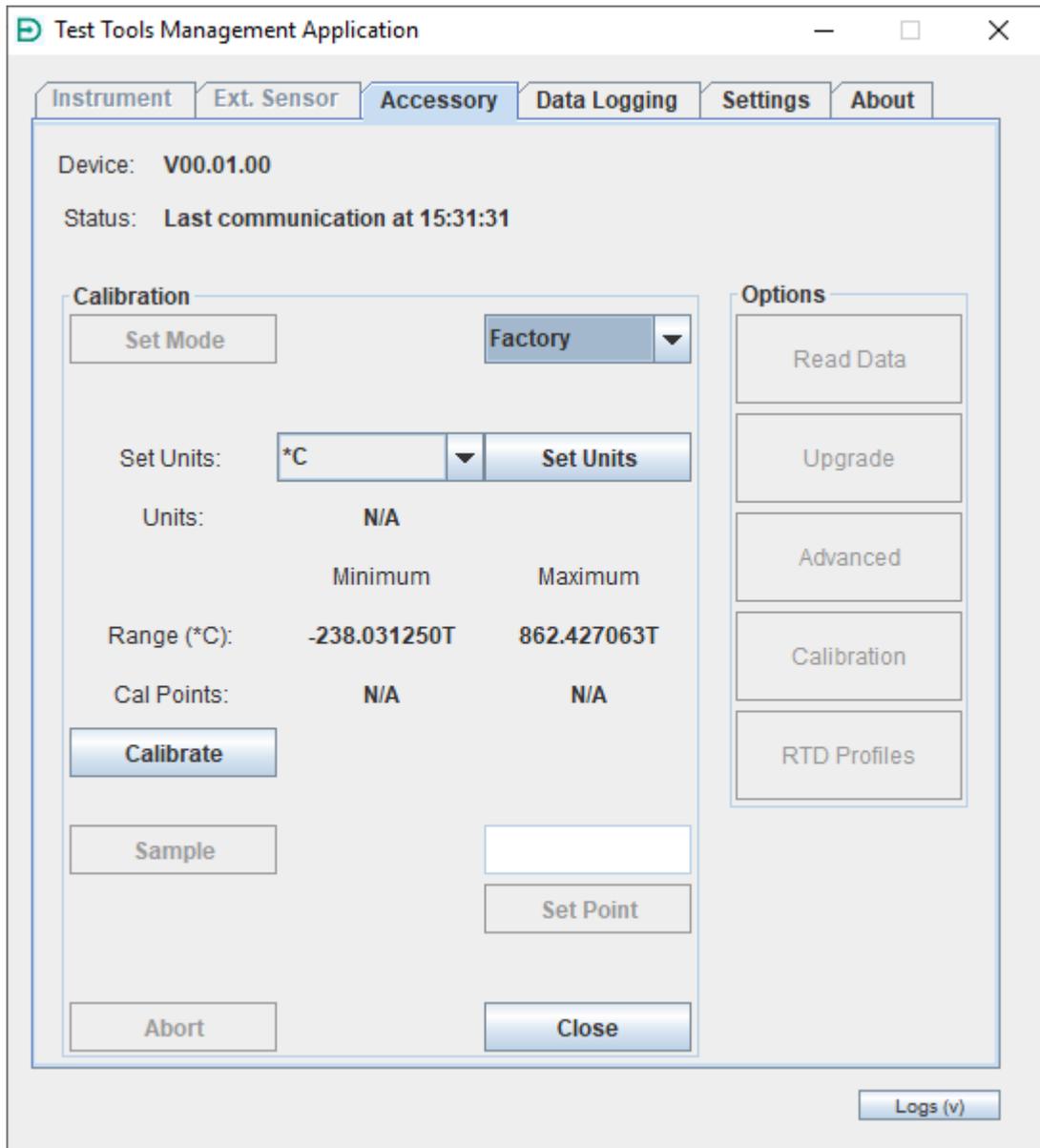
#### 5.3.4 Calibration

To calibrate the Accessory, press the Calibration button to view the calibration options.

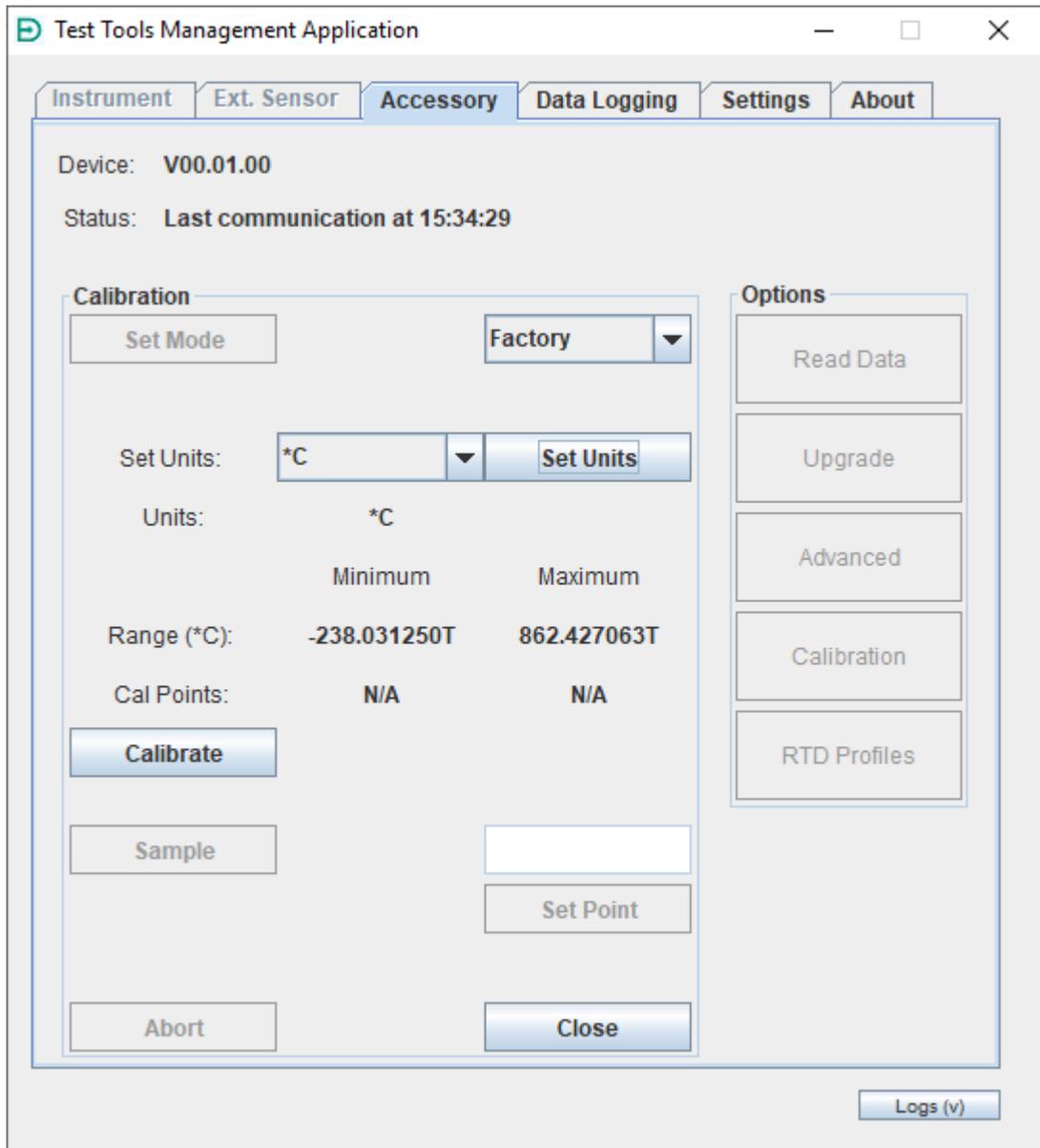




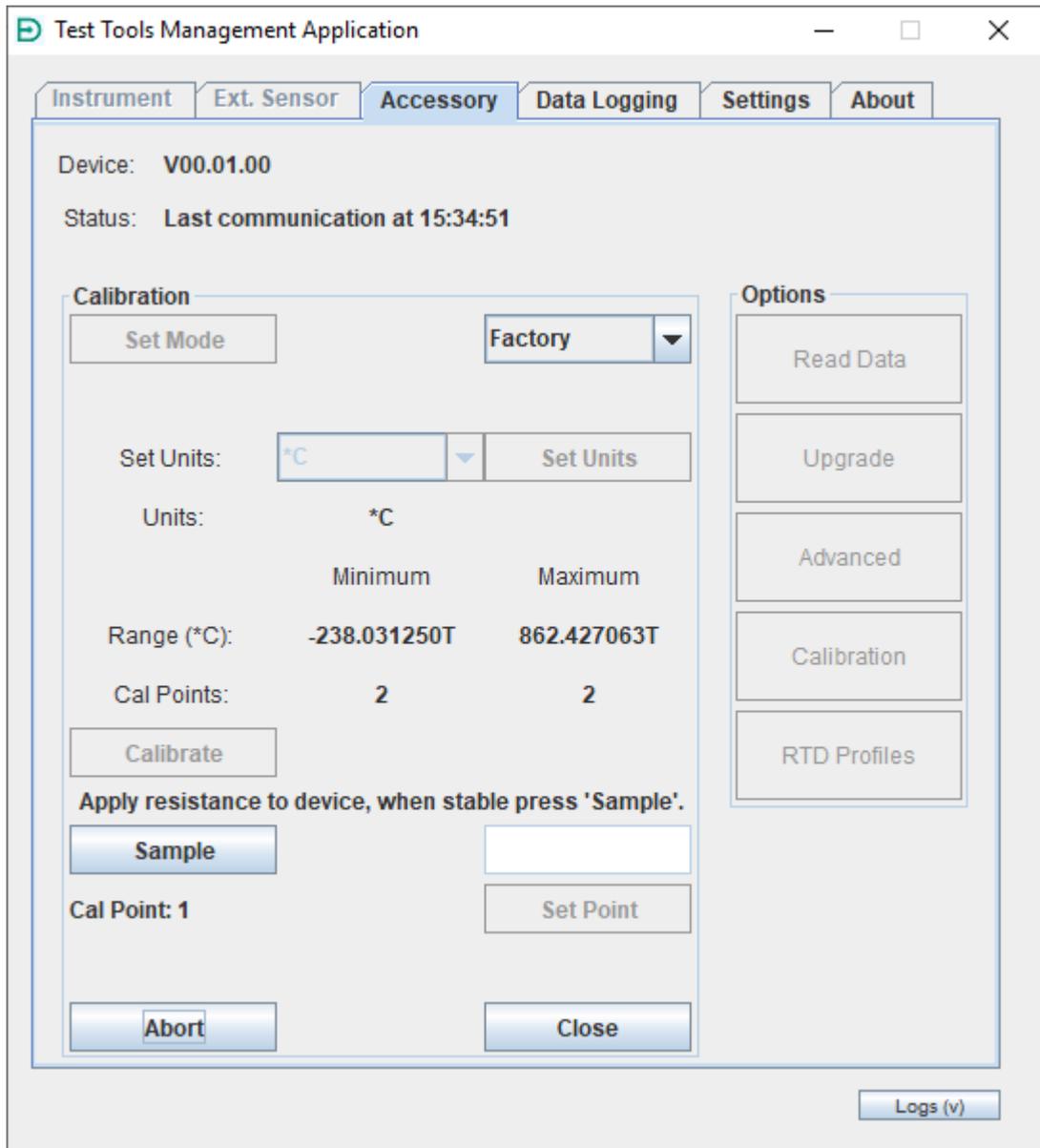
For accessories, two different kinds of calibration can be conducted, a user calibration, or a factory calibration. By default, it is a user calibration. To change the mode to factory, press the 'Set Mode' button and enter the pin which is 1129. The drop down on the right of the button will then be enabled, and the 'Factory' can be picked.



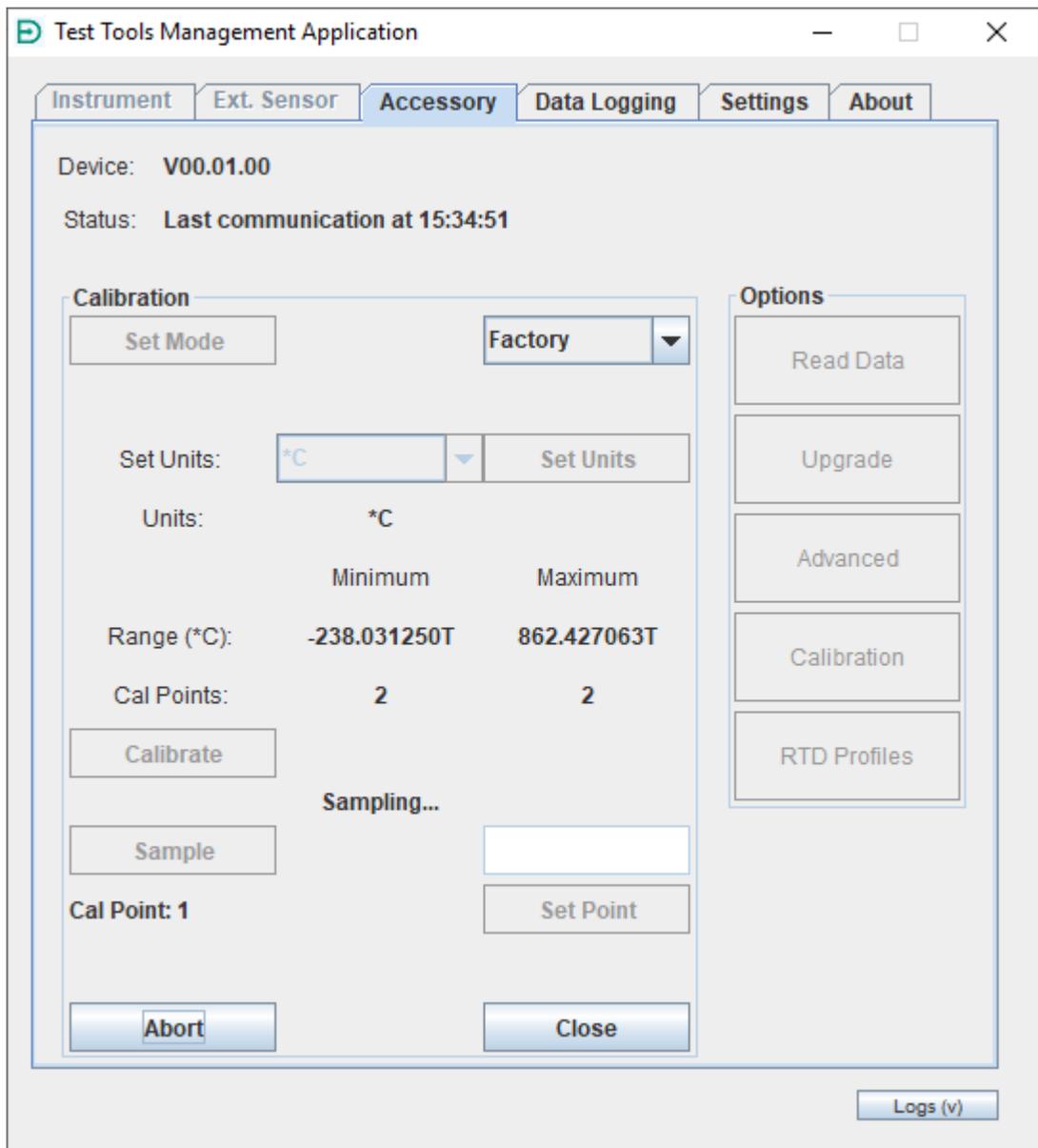
The units can be changed from this screen as well, for accessories it is either \*C or \*F. Pick the desired units, and press the 'Set Units' button. Confirm the units have been set by checking if the Units label displays the one that has just been set.



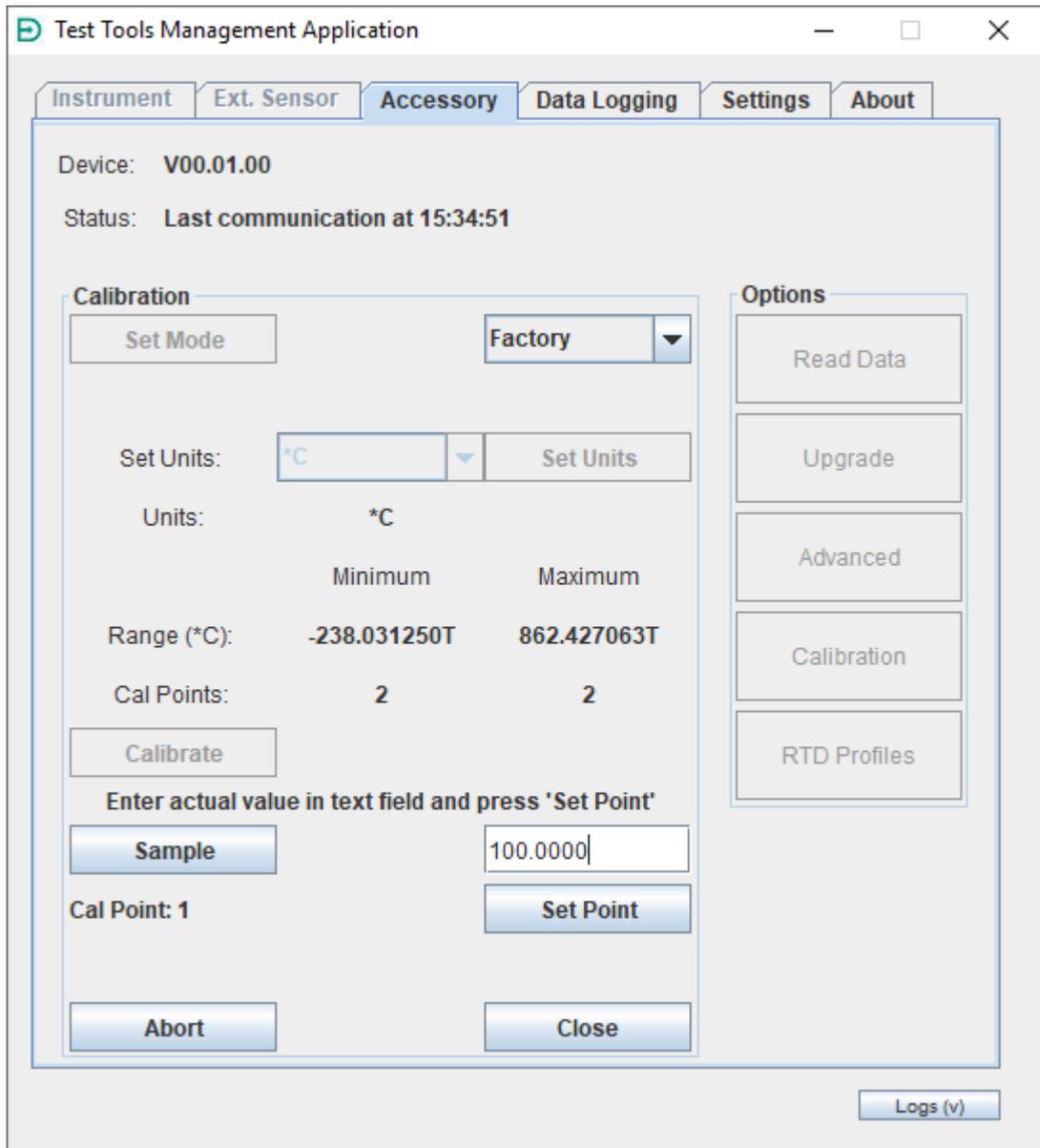
To start a calibration, press the 'Calibrate' button and this will put the device into the correct mode to begin the Calibration. It will also retrieve the minimum and maximum number of calibration points available for the accessory. Note, you cannot change the units after pressing 'Calibrate' until the calibration is complete, or aborted.



As shown on the screen, when a the next step is to apply resistance to your device and when the resistance is stable, press the 'Sample' button. Allow for about 5 seconds for the application to sample from the accessory.

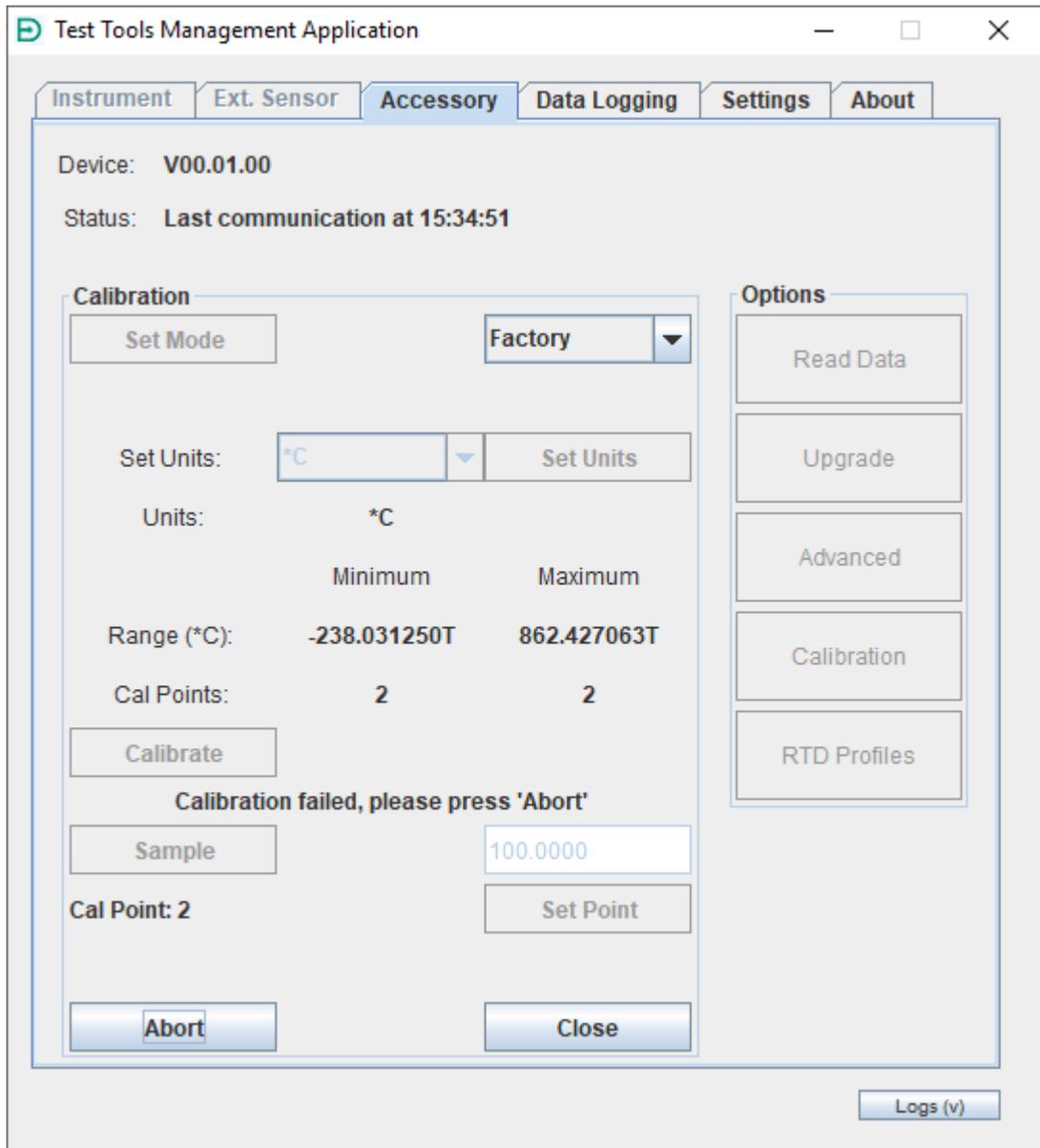


Once sampling is complete, enter the actual value of the resistance in the text field and press 'Set Point'.



Once this has been done, repeat the sampling process for next calibration point.

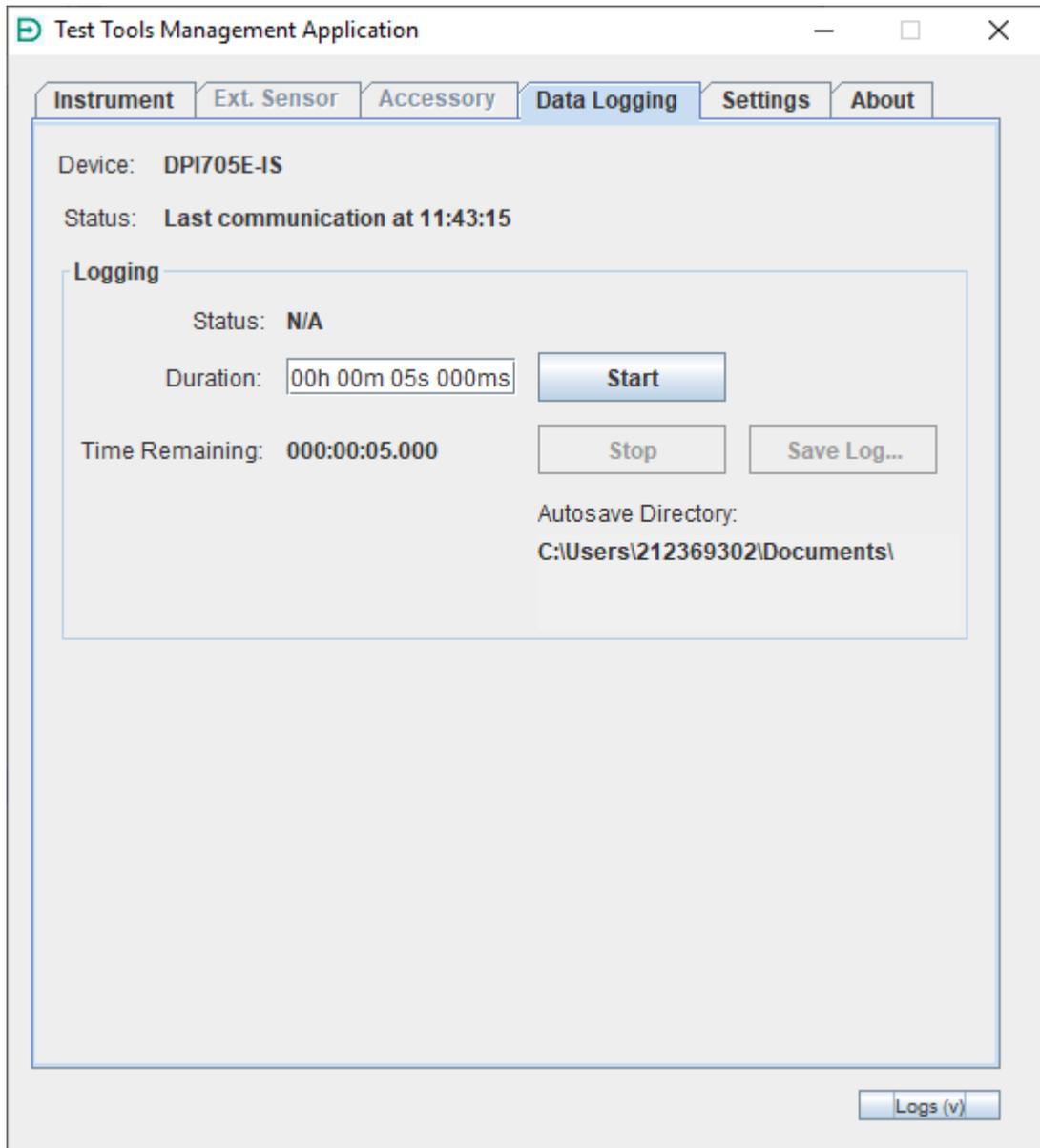
Once all calibration points have been completed, the application will send a request to the device asking if the calibration passed or failed. If the calibration passed, the accessory has been successfully calibrated, if it failed, please press 'Abort' and then the option to restart the calibration is there by pressing the 'Calibrate' button. A failed calibration normally means that the values entered were not within the given tolerance of each set point for the accessory.



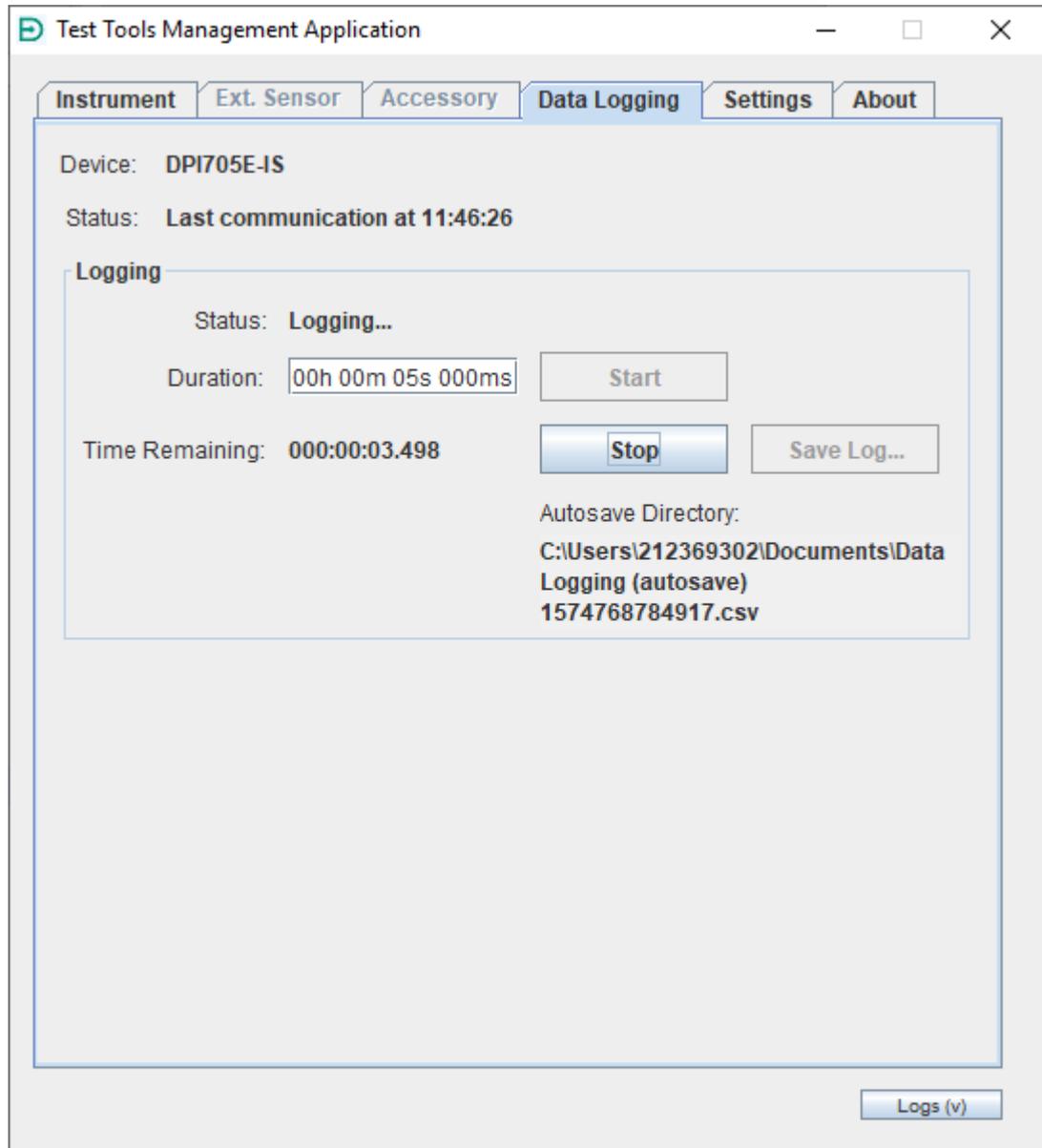
#### 5.4 Data Logging

Used to log and store data of a connected device for a given amount of time. Once communications are established, select the Data Logging tab. The Start button will be enabled.

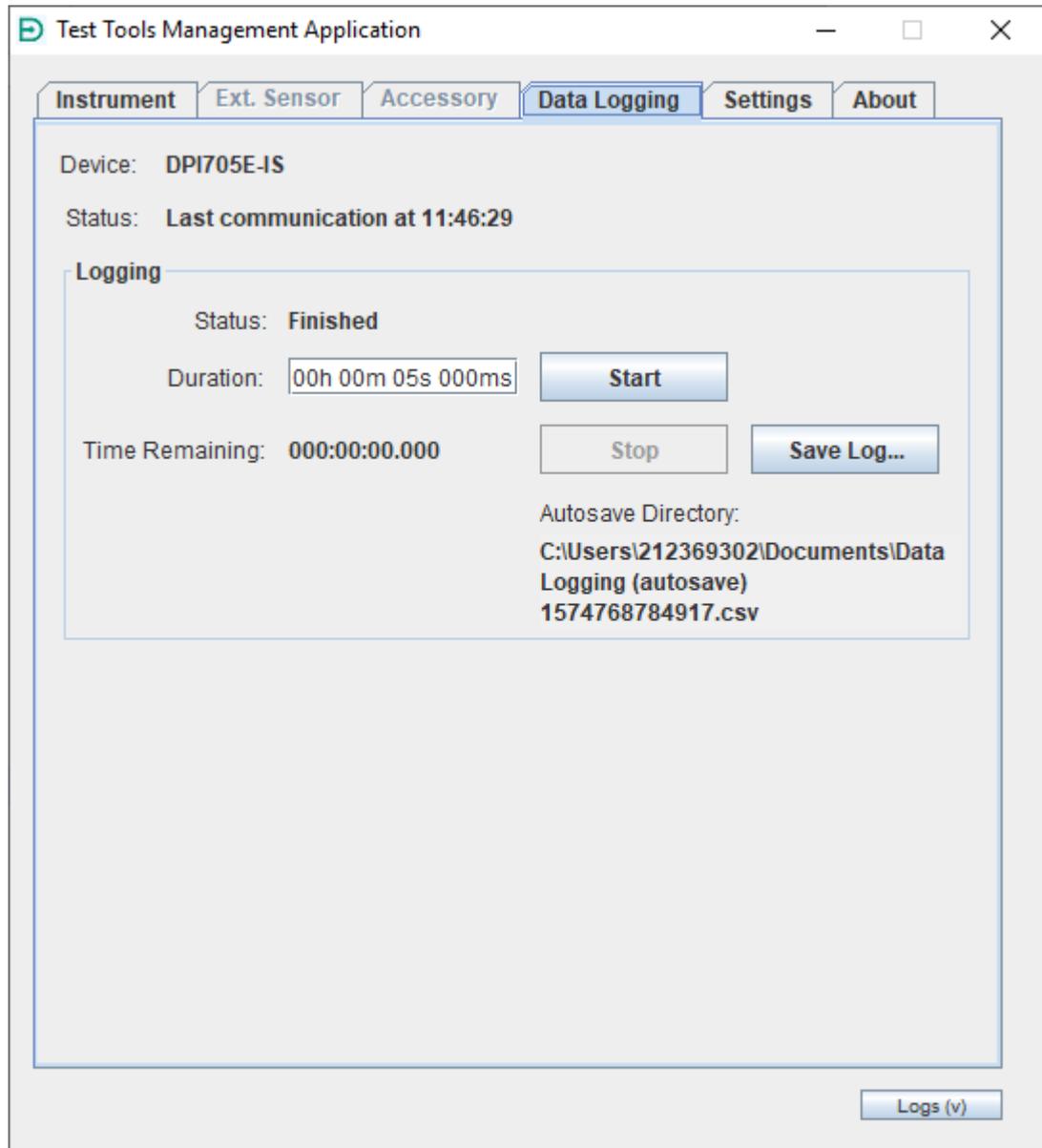
The logging duration can be modified by selecting the duration text box and entering a new time.



Begin data logging by pressing the Start button.  
 Whilst logging, the remaining time will be displayed, and Status will change to Logging...  
 A .csv file is automatically created and saves logged data to it as time progresses. The file is located in the displayed Autosave Directory.  
 Logging stops when time reaches 00:00:00, or the Stop button is pressed.

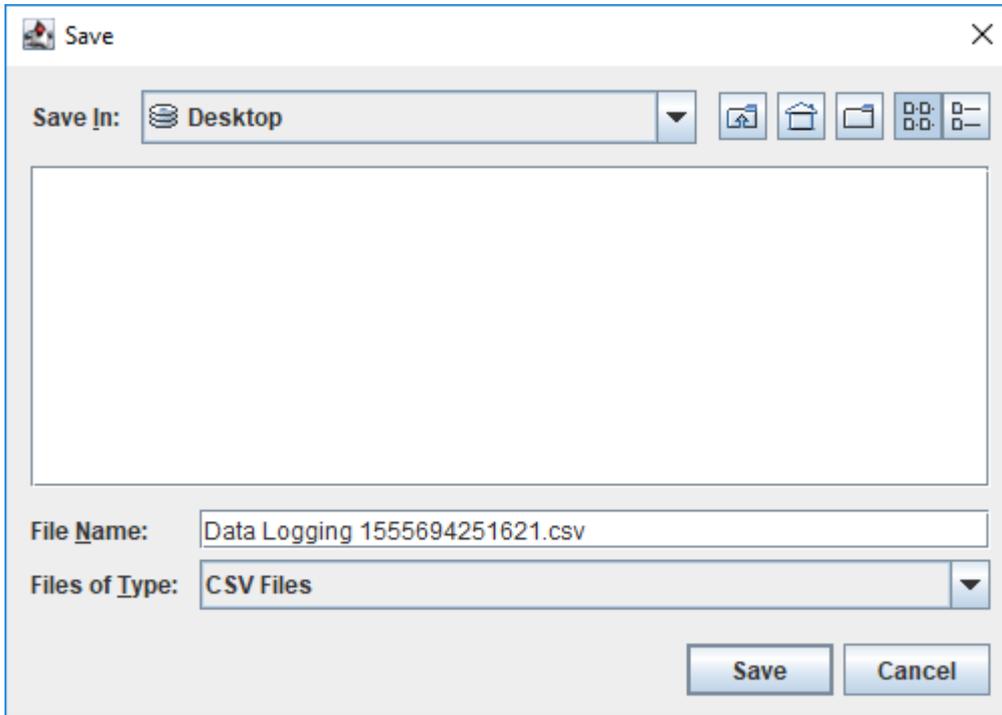


Once logging is finished, Status will change to Finished or Stopped, and the option to manually save the logged data will become available, as will the option to start another logging session.



**5.4.1 To manually save logged data, press Save Log...**

A save dialog will display giving the option to choose a destination, and to rename the log file.  
**Note:** All files are saved as a .csv file, regardless if the extension is modified in the save dialog.  
Once a destination and file name have been chosen, press Save.  
The log file can now be accessed and viewed from the chosen directory.

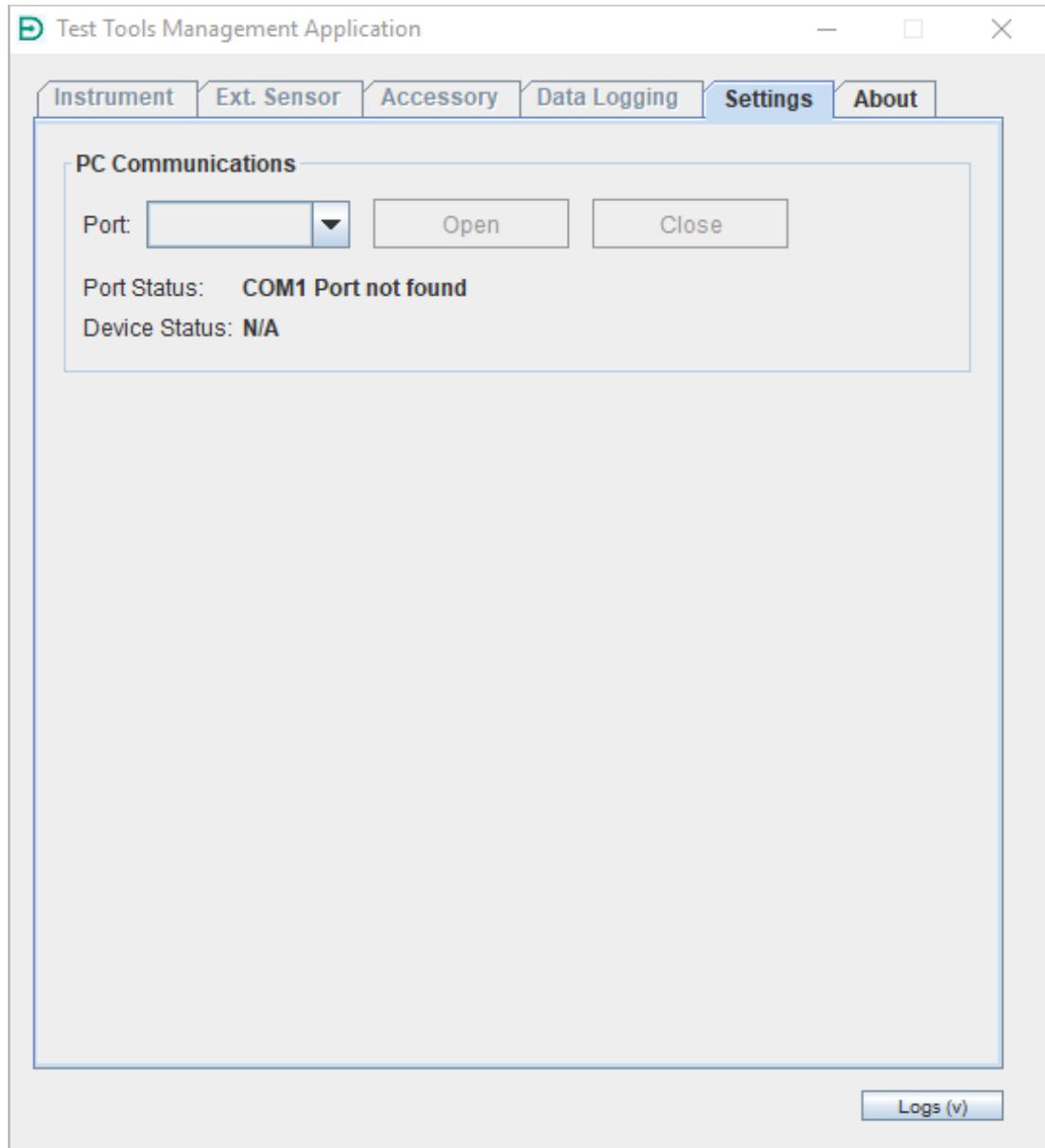


## 5.5

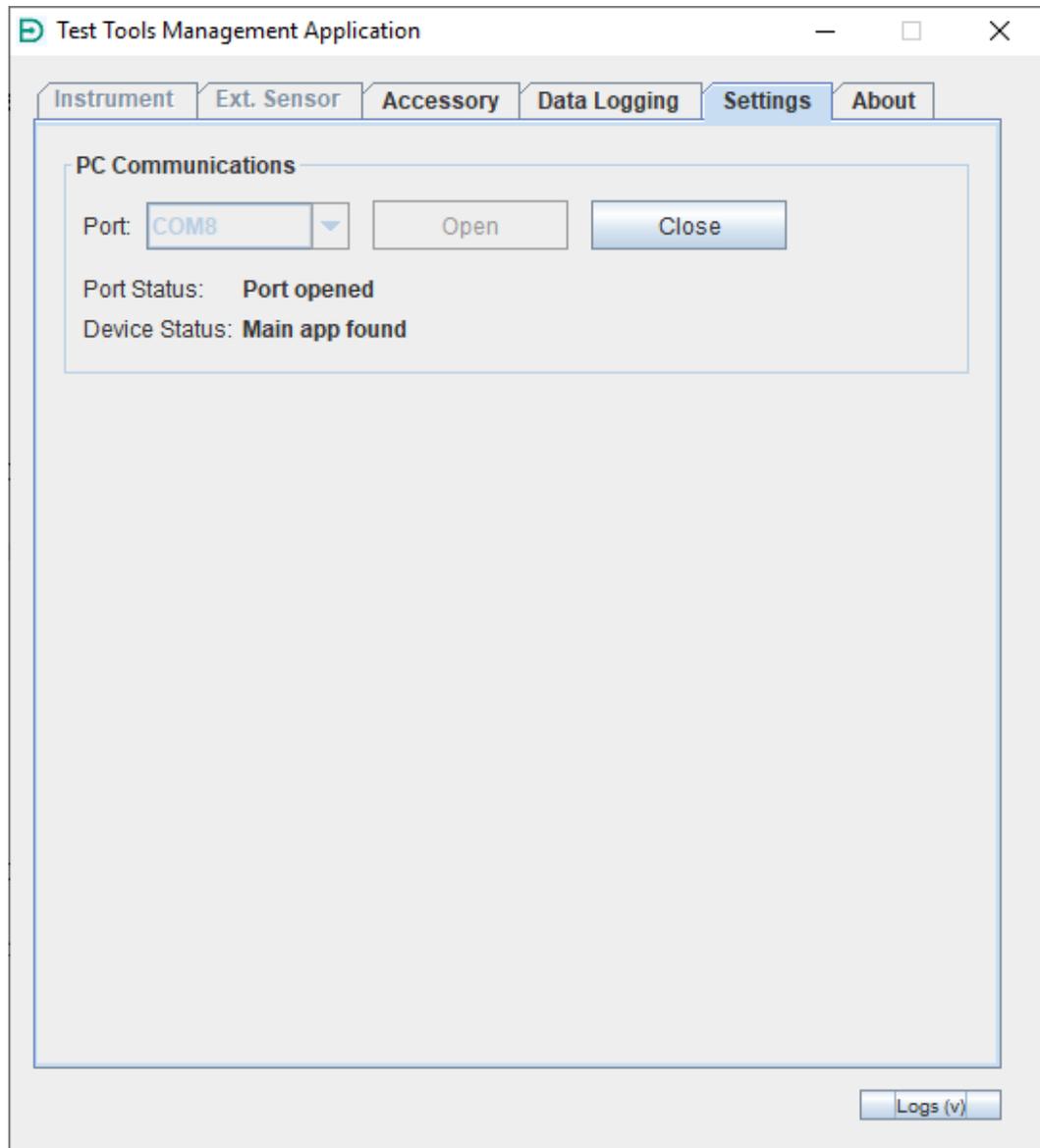
### Settings

It may be necessary to manually open a COM port on the PC before communications with a device can begin.

Select the Settings tab and open the drop-down menu to list all available COM ports.



Choose which COM port the device is connected to and press Open.  
 Port Status will confirm whether the port successfully opened.  
 Device status will confirm what state the device is in and enable necessary operations depending on that.  
**Note:** Opening a COM port on the PC does not automatically mean communications with the connected device are established.

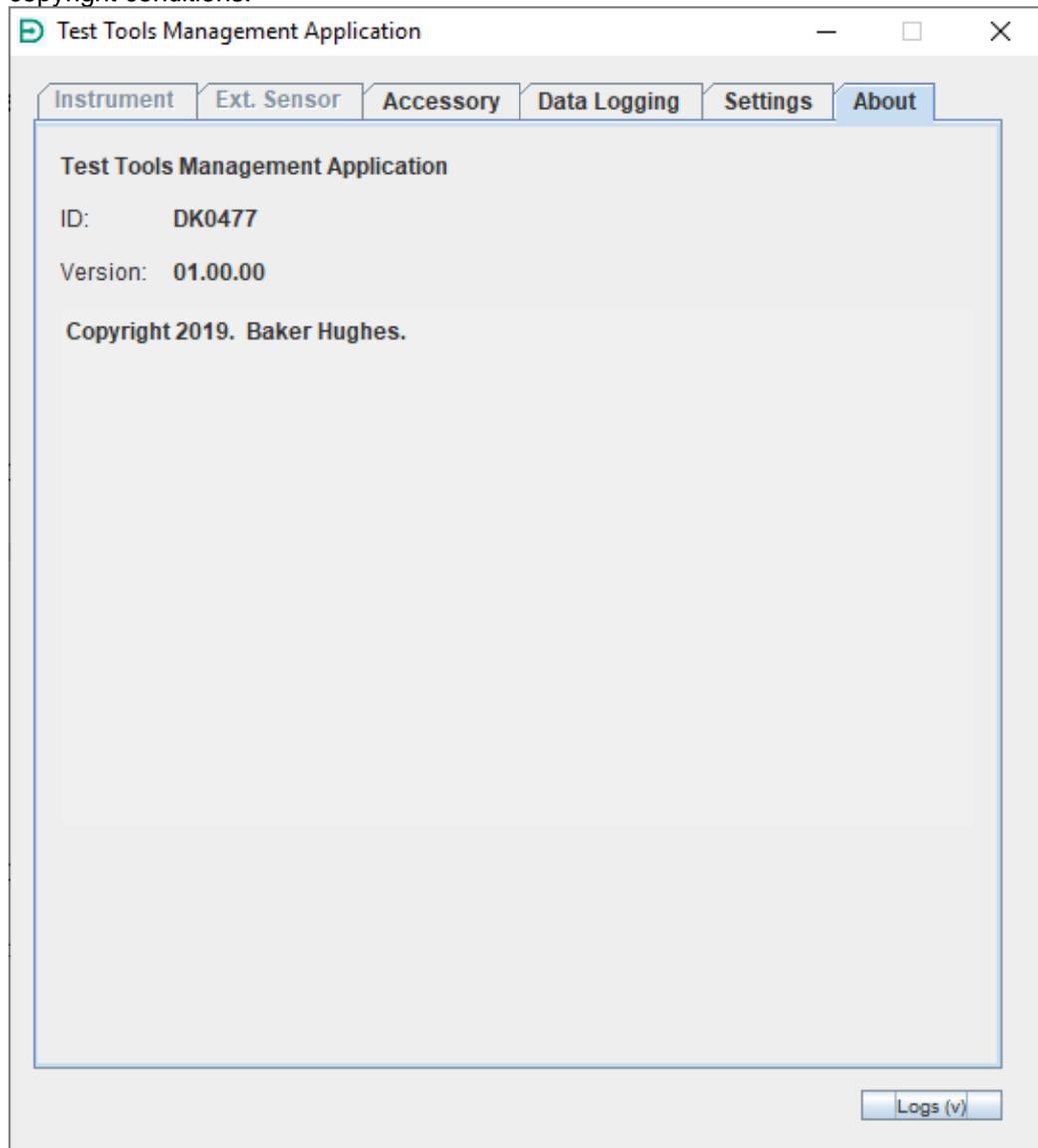


Once a COM port is open, the appropriate device type tab will be enabled and can be selected.  
 i.e. Instrument, Sensor etc.

## 5.6

### About

The About tab contains the name of the application, the current application version, and any copyright conditions.



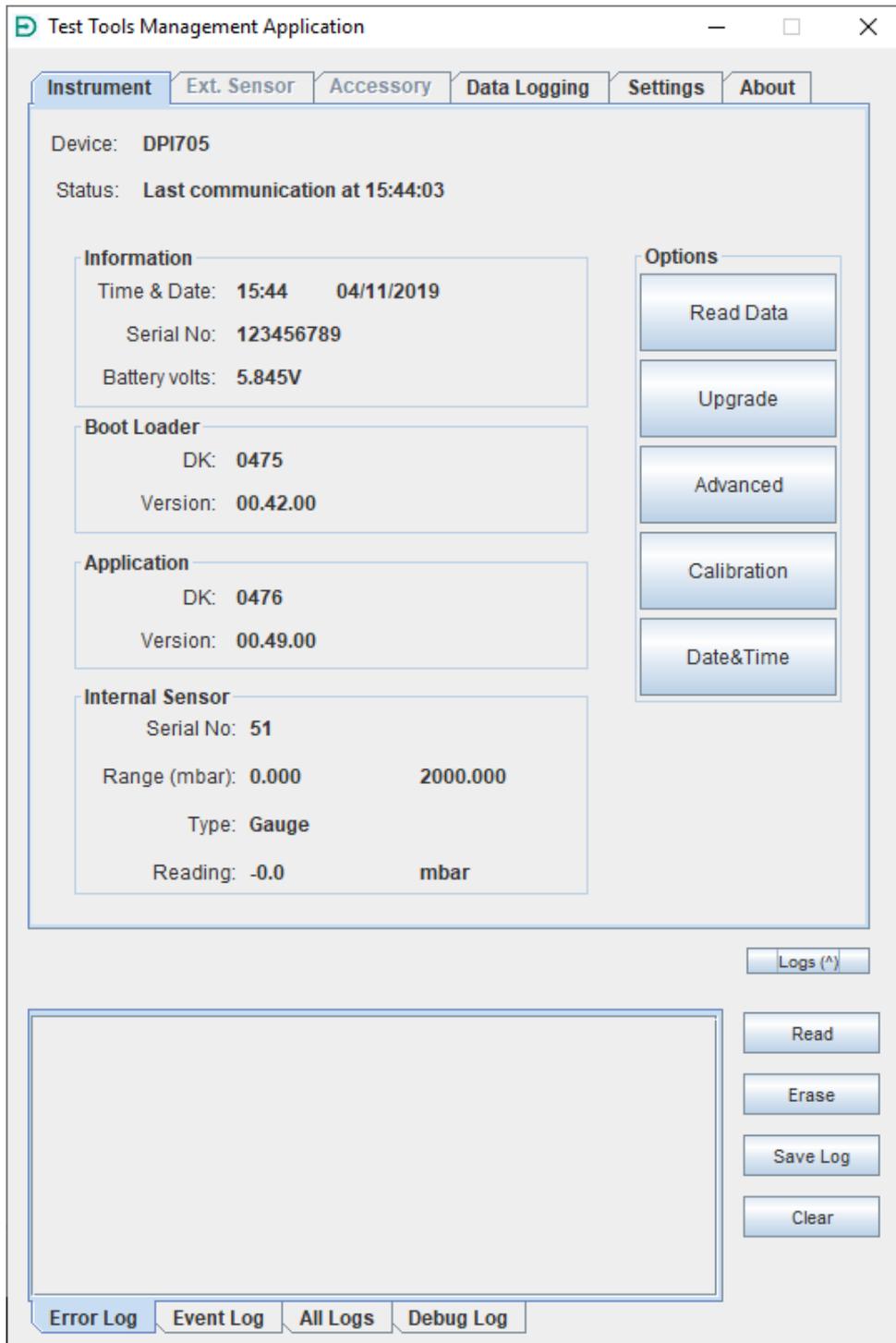
## 5.7

### Logs

The Logs area contains both instrument and PC application log files. By default, the logs area is hidden. To view this area, press the 'Logs (v)' button.

All log data viewable in the scrollable panels can be saved by pressing the Save Log button, and cleared by pressing the Clear button.

**Note:** The Clear button does not erase data on a connected instrument.



### 5.7.1 Error and Event Log

Select the appropriate log tab to access the Error or Event log options. Errors and events are only stored in an instrument.

Once communications are established, the Read and Erase buttons become available. Press the Read button to read the selected instruments' log as a table.

The screenshot shows the 'Test Tools Management Application' window. The 'Instrument' tab is selected, displaying details for device 'DPI705'. The status indicates the last communication was at 15:44:44 on 04/11/2019. The interface is divided into several sections: Information, Boot Loader, Application, and Internal Sensor, each with specific data points. To the right, an 'Options' panel contains buttons for 'Read Data', 'Upgrade', 'Advanced', 'Calibration', and 'Date&Time'. Below these, a 'Logs (^)' button is present. At the bottom, a table displays log entries with columns for Date, Time, and Error #. To the right of the table are buttons for 'Read', 'Erase', 'Save Log', and 'Clear'. At the very bottom, there are tabs for 'Error Log', 'Event Log', 'All Logs', and 'Debug Log'.

Date	Time	Error #
31/10/2019	09:17	
31/10/2019	09:22	
31/10/2019	09:24	
31/10/2019	09:26	
31/10/2019	09:27	
31/10/2019	09:28	
01/11/2019	12:00	
01/11/2019	14:35	
04/11/2019	15:00	

To erase error or event logs on an instrument, press the Erase button. A PIN is required before an erase can be performed.

**5.7.2 All Logs**

Displays viewable log data from Error Log, Event Log and Debug Log (if correct Debug Log PIN is entered).

**5.7.3 Debug Log**

Can only be viewed after entering a valid PIN.  
Displays all data valuable to PC application developers.