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TEST TOOLS MANAGEMENT APPLICATION USER GUIDE

TEST AND CALIBRATION

144M2949

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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

Checked C.Gosden	Engineering L.Surtees	Product Management F.Jackson
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1 SCOPE

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

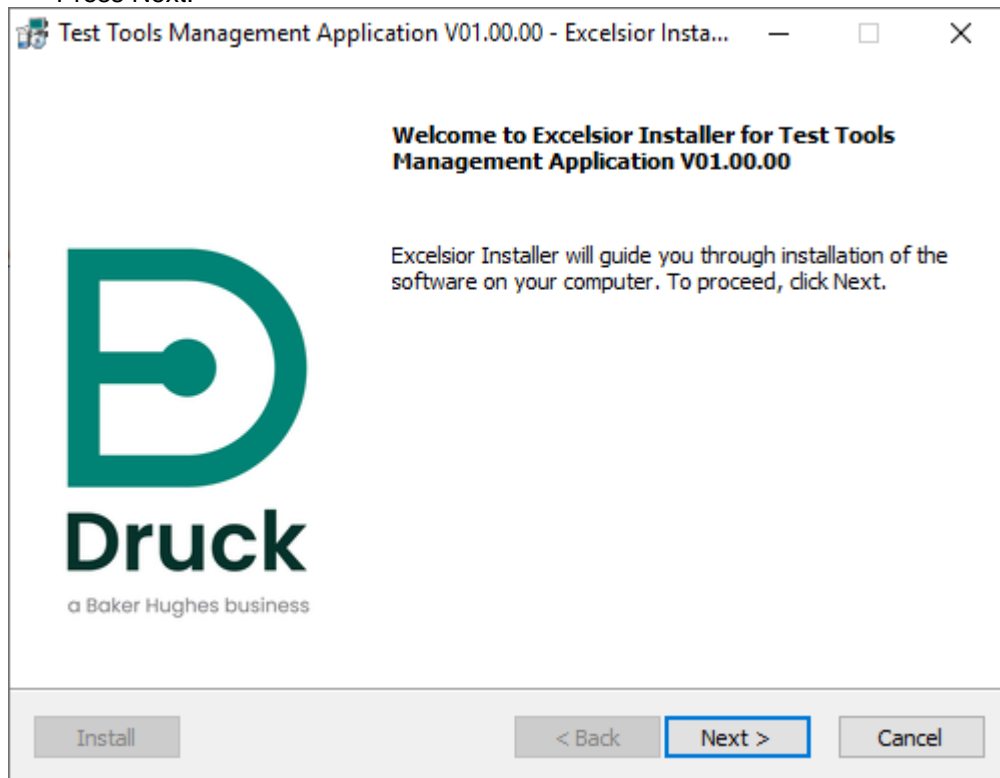
2 PREREQUISITES

- 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.

Test Tools Management Application V01.00.00 - Excelsior Insta...

Destination folder
Select destination folder

The installer will install Test Tools Management Application V01.00.00 components to the following folder.

To install to this folder, click Next.

To install to a different folder, click Browse and choose another folder.

Destination folder
C:\Program Files\Druck\Test Tools Management Application V01.00.00

Space required on C: 110784 K
Space available on C: 861560900 K

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

Test Tools Management Application V01.00.00 - Excelsior Insta...

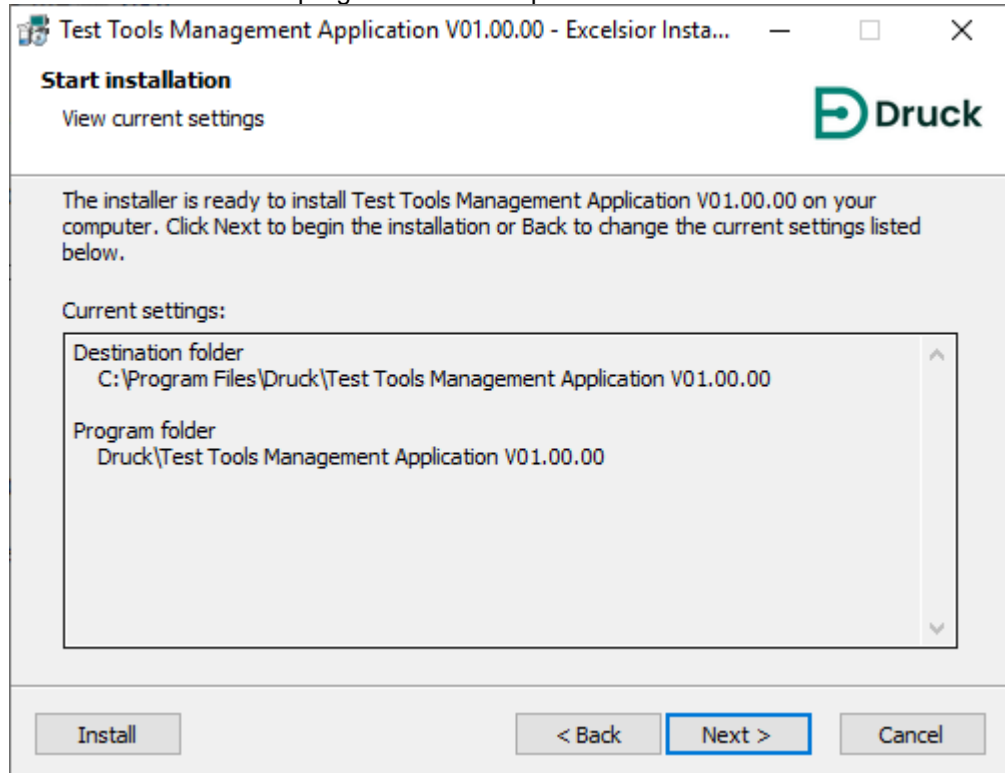
Program folder
Select program folder

The installer will add program icons to the program folder listed below. You may type a new folder name or select one from the list of existing folders. To continue, click Next.

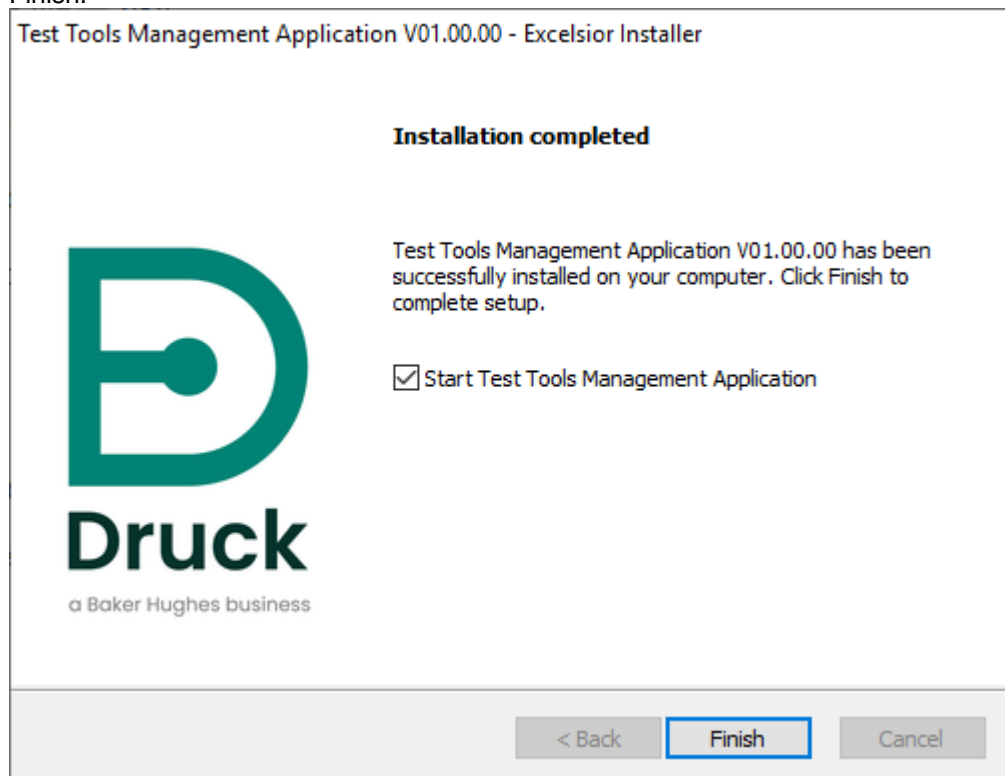
Druck\Test Tools Management Application V01.00.00

Accessibility
Accessories
Administrative Tools
Box Sync
Business Explorer
Git
GuiXT
Hive Streaming
Java

- 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.

The screenshot shows the 'Test Tools Management Application' window with the 'Instrument' tab selected. The interface displays the following information:

- Device:** DPI705
- Status:** Last communication at 14:47:03
- Information:**
 - Time & Date: 14:47 04/11/2019
 - Serial No: 123456789
 - Battery volts: 5.874V
- Boot Loader:**
 - DK: 0475
 - Version: 00.42.00
- Application:**
 - DK: 0476
 - Version: 00.49.00
- Internal Sensor:**
 - Serial No: 51
 - Range (mbar): 0.000 2000.000
 - Type: Gauge
 - Reading: -0.0000 bar
- Options:**
 - Read Data
 - Upgrade
 - Advanced
 - Calibration
 - Date&Time
- Logs (v)** button at the bottom right.

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


Test Tools Management Application

Instrument

Ext. Sensor

Accessory

Data Logging

Settings

About

Device: DPI705 Boot Loader

Status: Last communication at 15:41:36

Information

Time & Date: N/A N/A

Serial No: N/A

Battery volts: 5.893V

Boot Loader

DK: 0475

Version: 00.42.00

Application

DK: N/A

Version: N/A

Internal Sensor

Serial No: N/A

Range (mbar): N/A N/A

Type: N/A

Reading: N/A N/A

Options

Read Data

Upgrade

Advanced

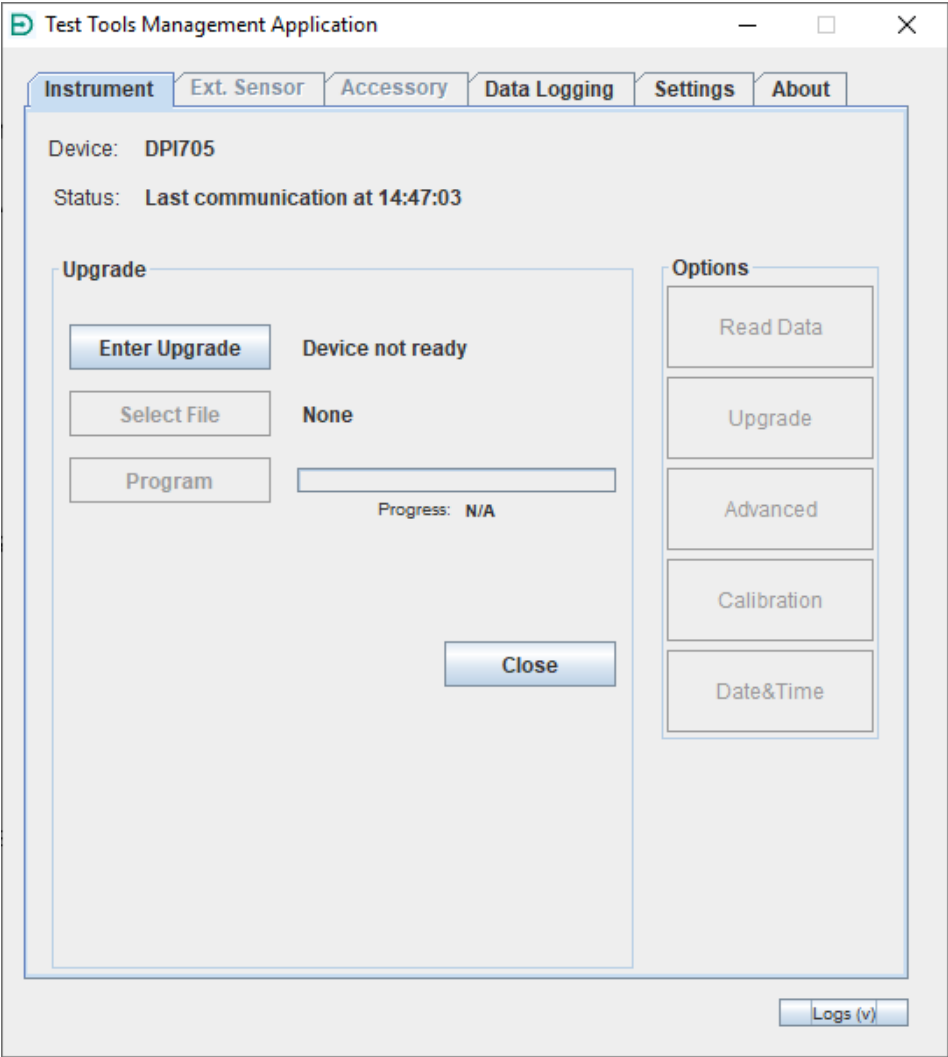
Calibration

Date&Time

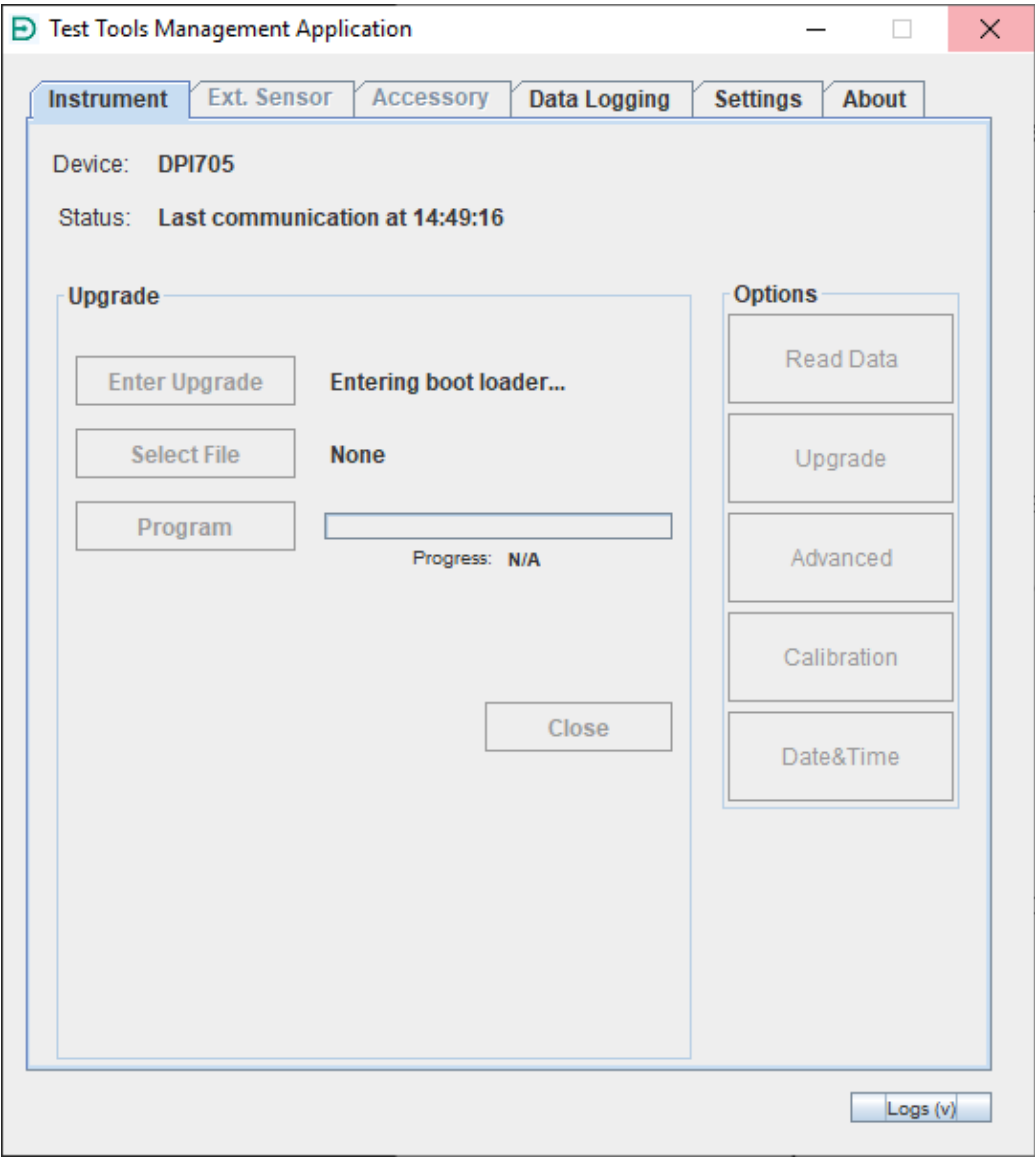
Logs (v)

5.1.1 Upgrade

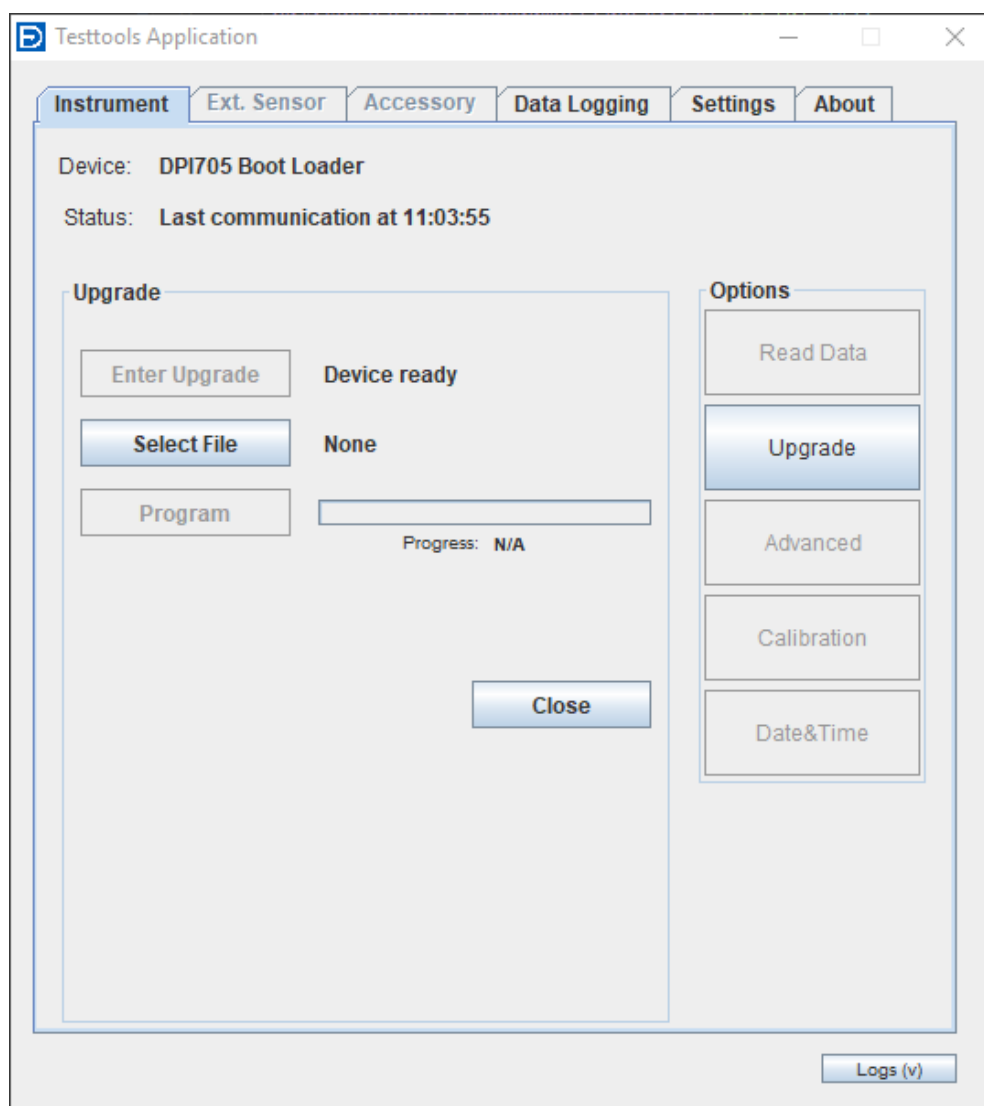
To upload the latest application firmware to an instrument:
Press the Upgrade button to view Upgrade options.



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'.

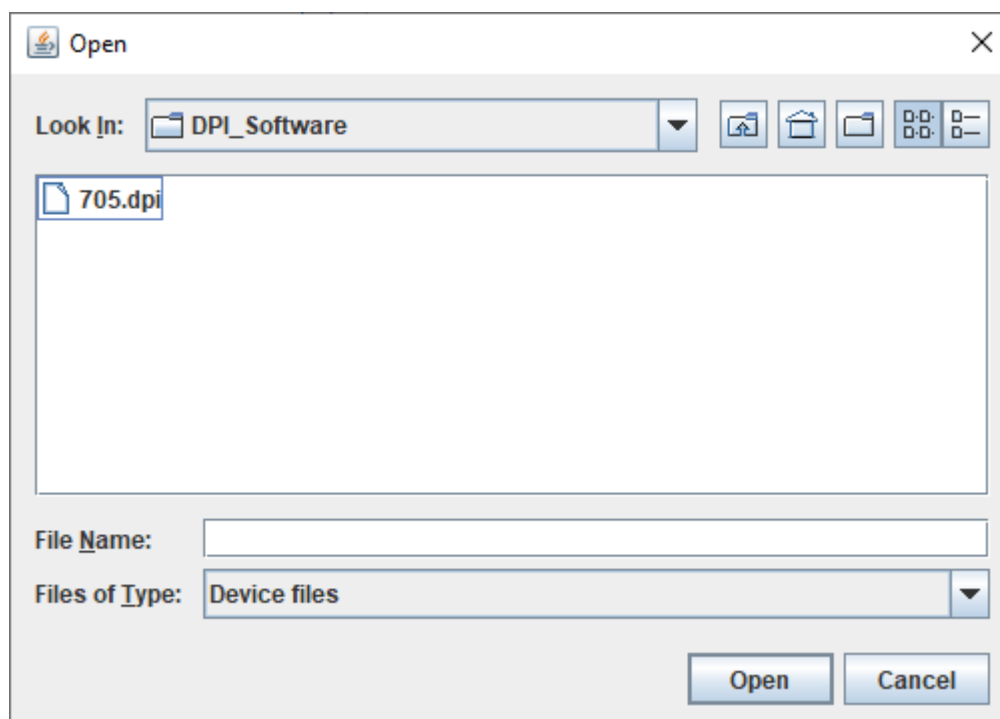


Press Select File. An “Open” dialog will display as shown below. Navigate to the downloaded Application Firmware package (a .dpi file).

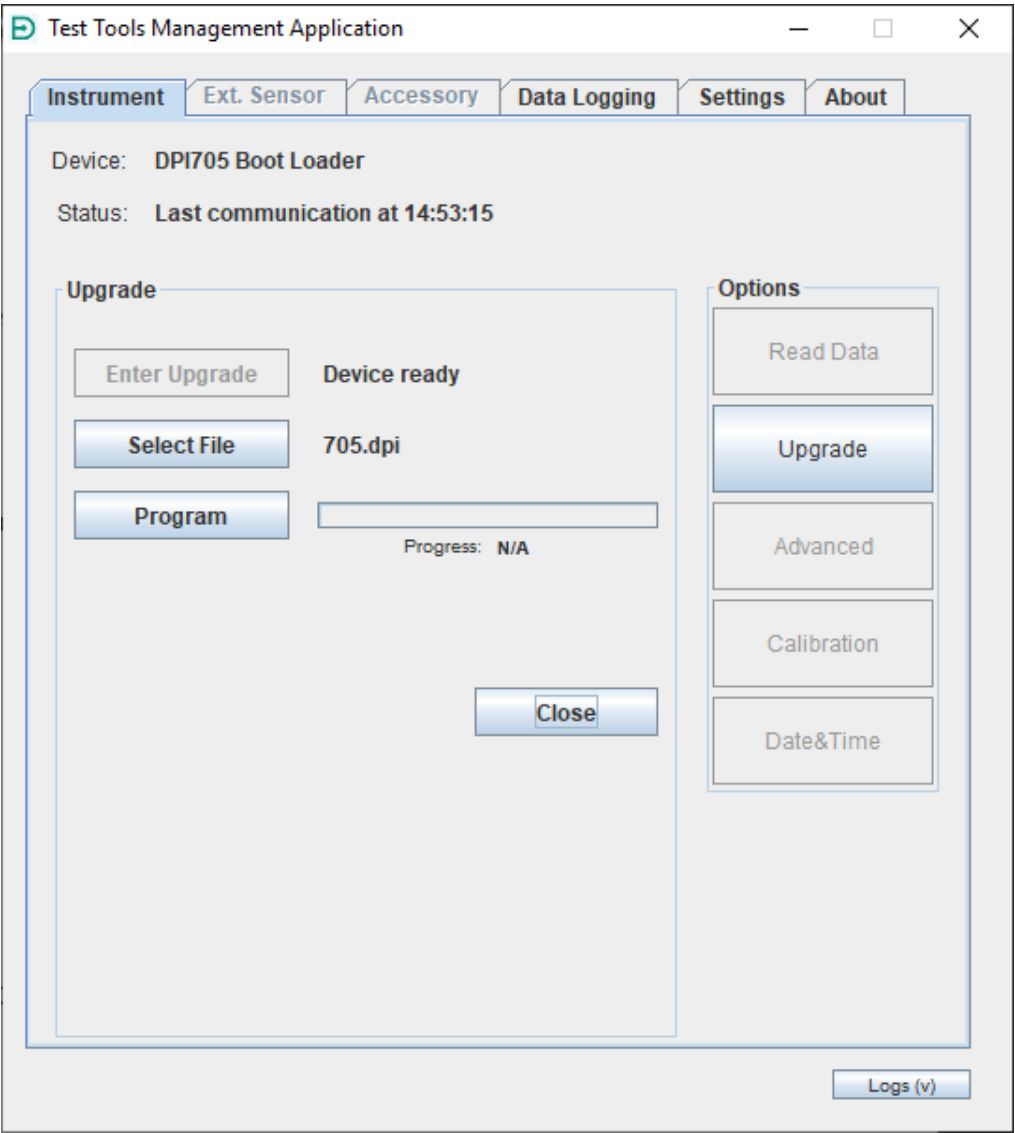
Note: This file will be found where the downloaded zip file was unzipped to. Usually this will be in the Downloads (<PC Name>/Downloads) folder under Windows, if the zip file was downloaded here and unzipped (extracted) in place.

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.

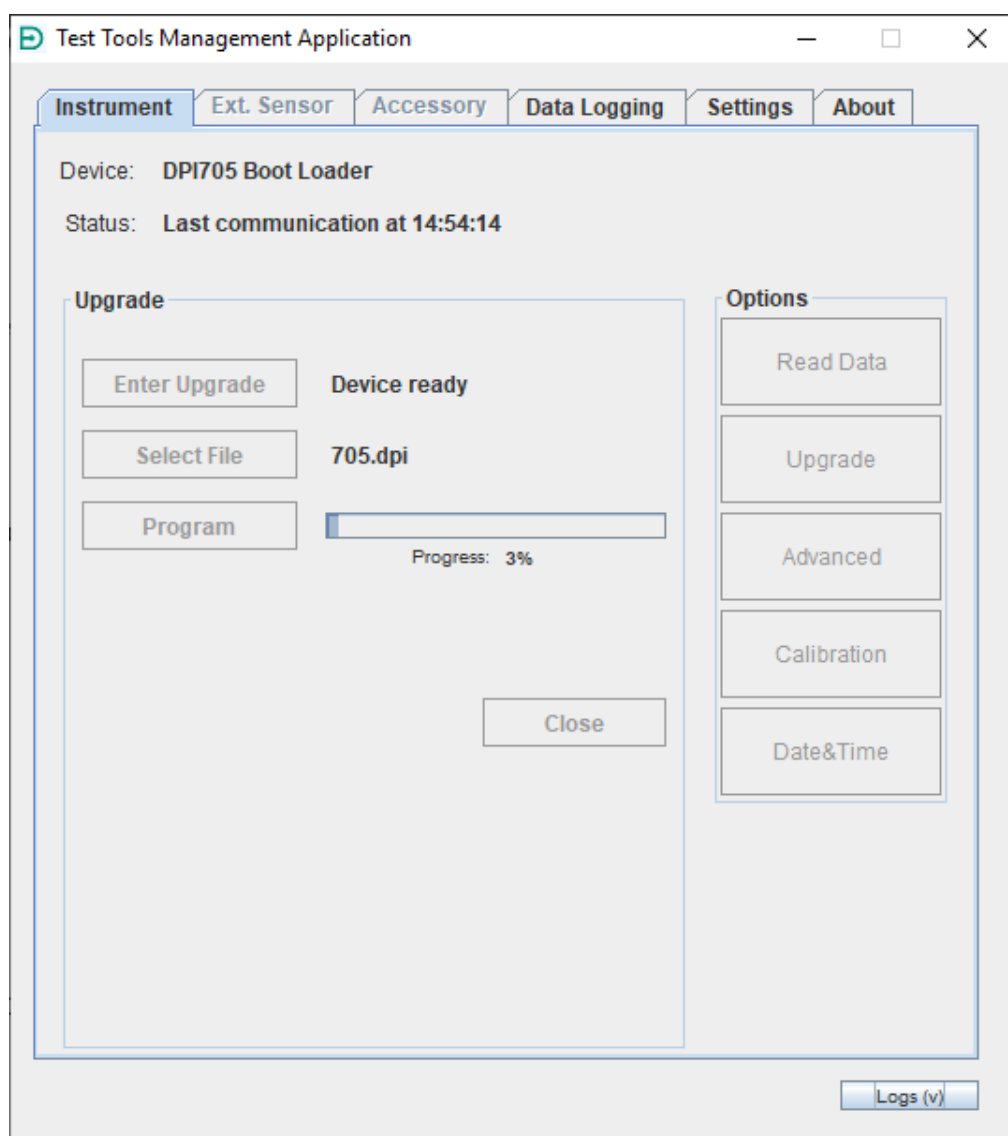
Note: Only .dpi files are viewable.



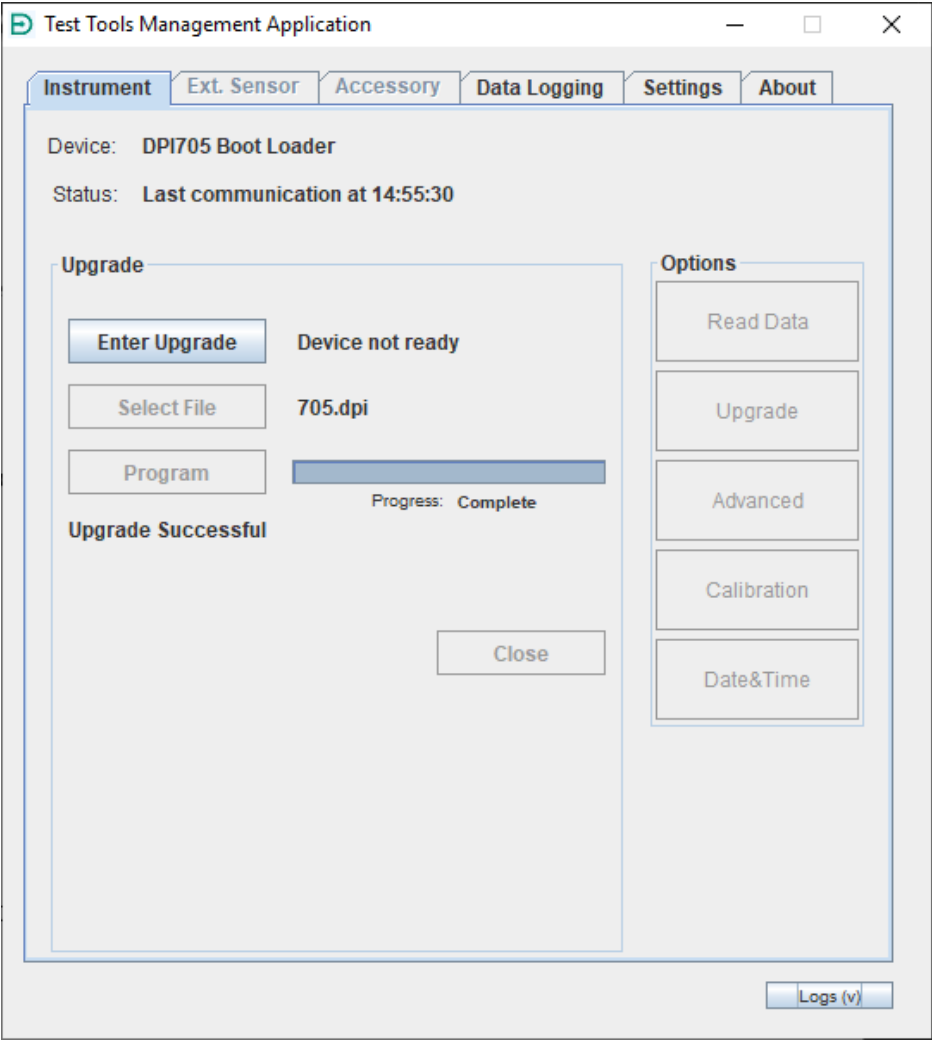
Before programming the connected instrument, confirm the chosen file is displayed.



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.

The screenshot shows the 'Test Tools Management Application' window. The 'Instrument' tab is selected. The device is 'DPI705' and its status is 'Last communication at 14:55:36'. The 'Date&Time' section contains input fields for 'Date' (04/11/2019) and 'Time' (14:56:08), with 'Submit' and 'Close' buttons below them. An 'Options' sidebar on the right includes buttons for 'Read Data', 'Upgrade', 'Advanced', 'Calibration', and 'Date&Time' (which is highlighted). A 'Logs (v)' button is at the bottom right.

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

The screenshot shows the 'Test Tools Management Application' window. The 'Instrument' tab is selected, displaying information for device 'DPI705'. The status indicates 'Last communication at 14:56:27'. A 'Date&Time' section contains two rows: 'Date: 04/11/2019 Verified' and 'Time: 14:56:29 Verified'. Below this are 'Submit' and 'Close' buttons. To the right, an 'Options' panel lists 'Read Data', 'Upgrade', 'Advanced', 'Calibration', and 'Date&Time' (which is highlighted). A 'Logs (v)' button is located at the bottom right of the window.

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.

The screenshot shows the 'Test Tools Management Application' window with the 'Advanced' tab selected. The window displays the following information and controls:

- Device:** DPI705
- Status:** Last communication at 14:56:27
- Advanced Section:**
 - Enter Serial #:** A text input field containing '123456789'.
 - Enter Area of Use:** A dropdown menu currently showing 'Rest of World'.
 - Buttons:** 'Set' and 'Close' buttons are located below the input fields.
- Options Section:** A vertical stack of buttons on the right side, including 'Read Data', 'Upgrade', 'Advanced' (which is highlighted), 'Calibration', and 'Date&Time'.
- Footer:** A 'Logs (v)' button is located at the bottom right of the window.

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.

The screenshot shows the 'Test Tools Management Application' window. The 'Instrument' tab is selected. The interface displays the following information and controls:

- Device:** DPI705
- Status:** Last communication at 14:57:40
- Advanced Section:**
 - Enter Serial #:** A text box containing '123456789' followed by the text 'Verified'.
 - Enter Area of Use:** A dropdown menu showing 'Japan' followed by the text 'Verified'.
 - Buttons:** 'Set' and 'Close' buttons are located below the input fields.
- Options Sidebar:** A vertical stack of buttons on the right side: 'Read Data', 'Upgrade', 'Advanced', 'Calibration', and 'Date&Time'.
- Footer:** A 'Logs (v)' button is located at the bottom right of the window.

Confirm verified messages appear after submitting.

5.1.4 Calibration

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

Test Tools Management Application

Instrument

Ext. Sensor

Accessory

Data Logging

Settings

About

Device: DPI705

Status: Last communication at 14:57:40

Calibration

Set Units: Pa

▼

Set Units

Units: bar

MinimumMaximum

Range (mbar): 0.0002000.000

Cal Points: N/AN/A

Calibrate

Sample

Set Point

Abort

Close

Options

Read Data

Upgrade


Advanced

Calibration

Date&Time

Logs (v)


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.


Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: **DPI705**
Status: **Last communication at 14:58:55**

Calibration

Set Units: **mbar**  **Set Units**

Units: **mbar**

Minimum

Maximum

Range (mbar): **0.000** **2000.000**

Cal Points: **N/A** **N/A**

Calibrate

Options

Read Data

Upgrade

Advanced

Calibration

Date&Time

Sample

Set Point

Abort

Close

Logs (v)

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.

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: **DPI705**
Status: **Last communication at 14:59:24**

Calibration

Set Units:
Units: **mbar**

	Minimum	Maximum
Range (mbar):	0.000	2000.000
Cal Points:	2	2

Apply pressure to device, when stable press 'Sample'.

Cal Point: 1

Options

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.

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Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: **DPI705**
Status: **Last communication at 14:59:24**

Calibration

Set Units:
Units: **mbar**

	Minimum	Maximum
Range (mbar):	0.000	2000.000
Cal Points:	2	2

Sampling...

Cal Point: 1

Options

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

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Test Tools Management Application

[Instrument](#)
[Ext. Sensor](#)
[Accessory](#)
[Data Logging](#)
[Settings](#)
[About](#)

Device: **DPI705**

Status: **Last communication at 14:59:24**

Calibration

Set Units:

Units: **mbar**

	Minimum	Maximum
Range (mbar):	0.000	2000.000
Cal Points:	2	2

Enter actual value in text field and press 'Set Point'

Cal Point: 1

Options

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.

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: DPI705
Status: Last communication at 14:59:24

Calibration

Set Units: mbar
Set Units

Units: mbar

	Minimum	Maximum
Range (mbar):	0.000	2000.000
Cal Points:	2	2

Calibrate

Calibration failed, please press 'Abort'

Sample

100.000

Cal Point: 2
Set Point

Abort

Close

Options

Read Data

Upgrade

Advanced

Calibration


Date&Time

Logs (v)

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.


Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: **DK0481**
Status: **Last communication at 15:08:36**

Information

Serial #: **00000087**
Pressure (mbar): **4.8**
Pressure (mVolts): **0.43899**
Temperature (C): **-27.537**
Temperature (mVolts): **111.32928**
Full Scale (+ve): **200000.0G**
Full Scale (-ve): **0.0G**

Options

Read Data
Calibration

Application

DK: **DK0481**
Version: **01.00.02**

Logs (v)

5.2.1 Calibration

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

Test Tools Management Application

Instrument

Ext. Sensor

Accessory

Data Logging

Settings

About

Device: DK0481

Status: Last communication at 15:08:36

Calibration

	Minimum	Maximum
Range (mbar):	0.0G	200000.0G
Cal Points:	N/A	N/A

Calibrate

Options

Read Data

Calibration

Sample

Set Point

Abort

Close

Logs (v)

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.

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: DK0481
Status: Last communication at 15:09:36

Calibration

	Minimum	Maximum
Range (mbar):	0.0G	200000.0G
Cal Points:	2	2

Calibrate

Apply pressure, input value and press 'Set Point'

Sample

Cal Point: 1

Set Point

Abort

Close

Options

Read Data

Calibration

Logs (v)

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

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: DK0481
Status: Last communication at 15:09:36

Calibration

	Minimum	Maximum
Range (mbar):	0.0G	200000.0G
Cal Points:	2	2

Calibrate

Apply pressure, input value and press 'Set Point'

Sample

100.000

Cal Point: 1

Set Point

Abort

Close

Options

Read Data

Calibration

Logs (v)

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.

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: DK0481
Status: Last communication at 15:09:36

Calibration

	Minimum	Maximum
Range (mbar):	0.0G	200000.0G
Cal Points:	2	2

Calibrate

Calibration failed, please press 'Abort'

Sample

Cal Point: 2

100.000

Set Point

Abort

Close

Options

Read Data

Calibration

Logs (v)

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.

Test Tools Management Application

Instrument

Ext. Sensor

Accessory

Data Logging

Settings

About

Device: V00.00.84

Status: Last communication at 15:12:34

Information

Serial No: 19931993
Int. Temp: 25.6375694274902344

Boot Loader

DK: 0482
Version: 00.00.84

Application

DK: 0483
Version: 00.00.84

Internal Sensor

ADC Count: 0.000000000000...
Range: -238.031250T 862.427063T
Resistance: 0.0153
Temperature: -237.9976

Options

Read Data

Upgrade


Advanced

Calibration

RTD Profiles

Logs (v)

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


Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: **V00.00.84 Boot Loader**
Status: **Last communication at 15:39:20**

Information
Serial No: **N/A**
Int. Temp: **N/A**

Boot Loader
DK: **0482**
Version: **00.00.84**

Application
DK: **4294967295**
Version: **N/A**

Internal Sensor
ADC Count: **N/A**
Range: **N/A** **N/A**
Resistance: **N/A**
Temperature: **N/A**

Options
Read Data
Upgrade
Advanced
Calibration
RTD Profiles

Logs (v)

5.3.1 Upgrade

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

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: **V00.00.84**
Status: **Last communication at 15:12:34**

Enter Upgrade

Device not ready

Select File

None

Program

Progress: N/A

Close

Options

Read Data

Upgrade


Advanced

Calibration

RTD Profiles

Logs (v)

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.


Test Tools Management Application

Instrument

Ext. Sensor

Accessory

Data Logging

Settings

About

Device: V00.00.84

Status: Last communication at 15:13:44

Upgrade

Enter Upgrade

Select File

Program

Entering boot loader...

None

Progress: N/A

Close

Options

Read Data

Upgrade

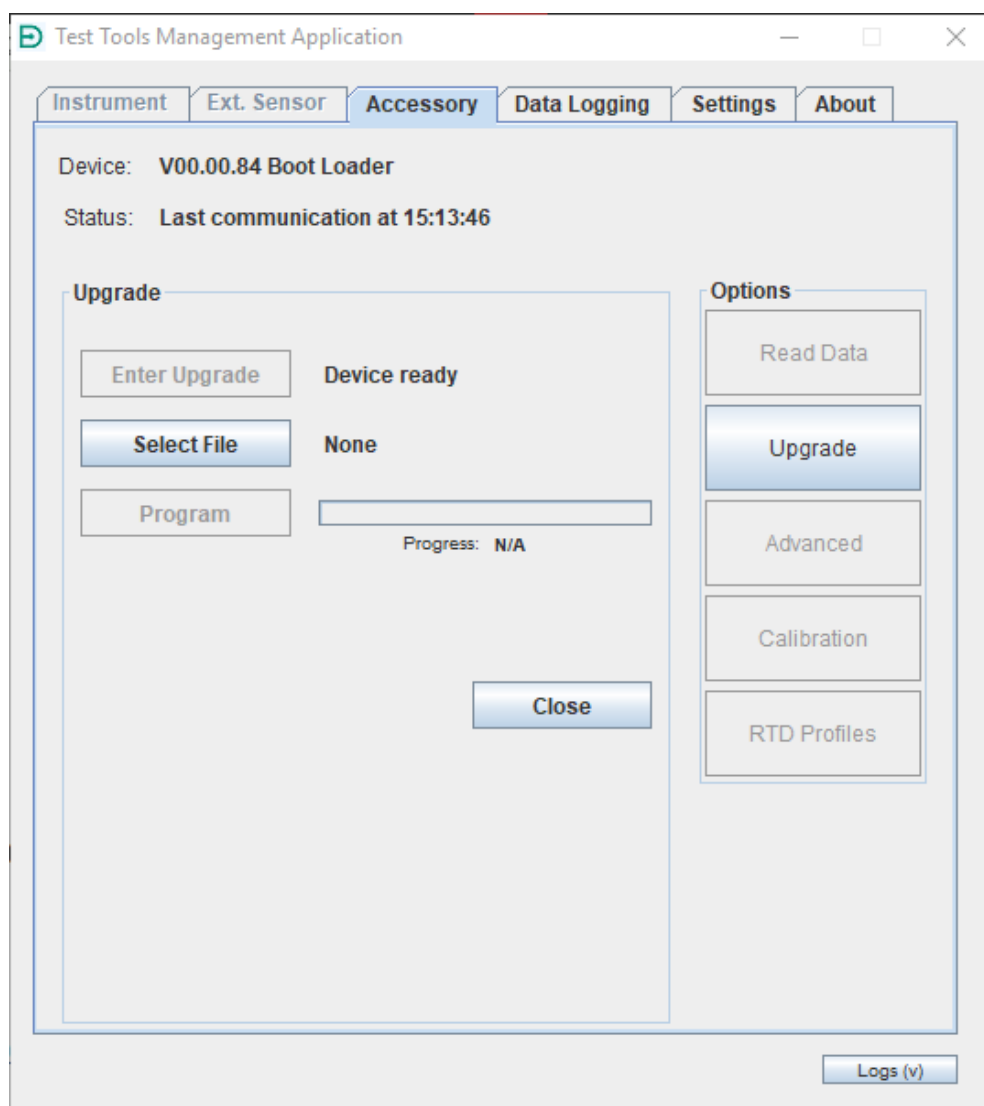
Advanced

Calibration

RTD Profiles

Logs (v)

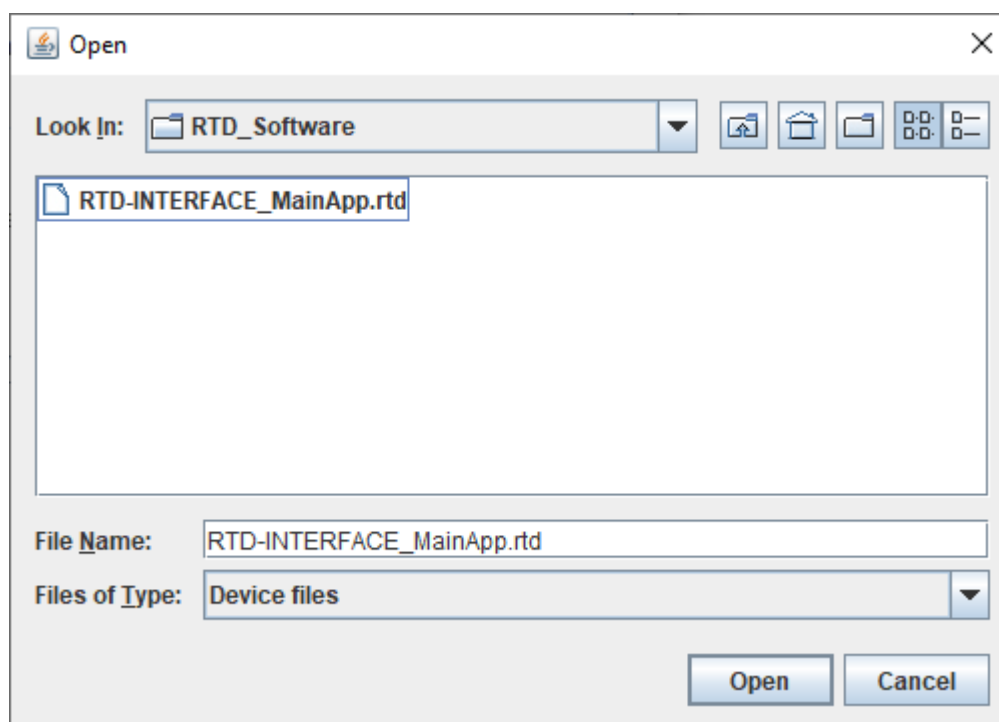
Confirm accessory is in boot loader mode by checking that the device name contains 'Boot Loader'.



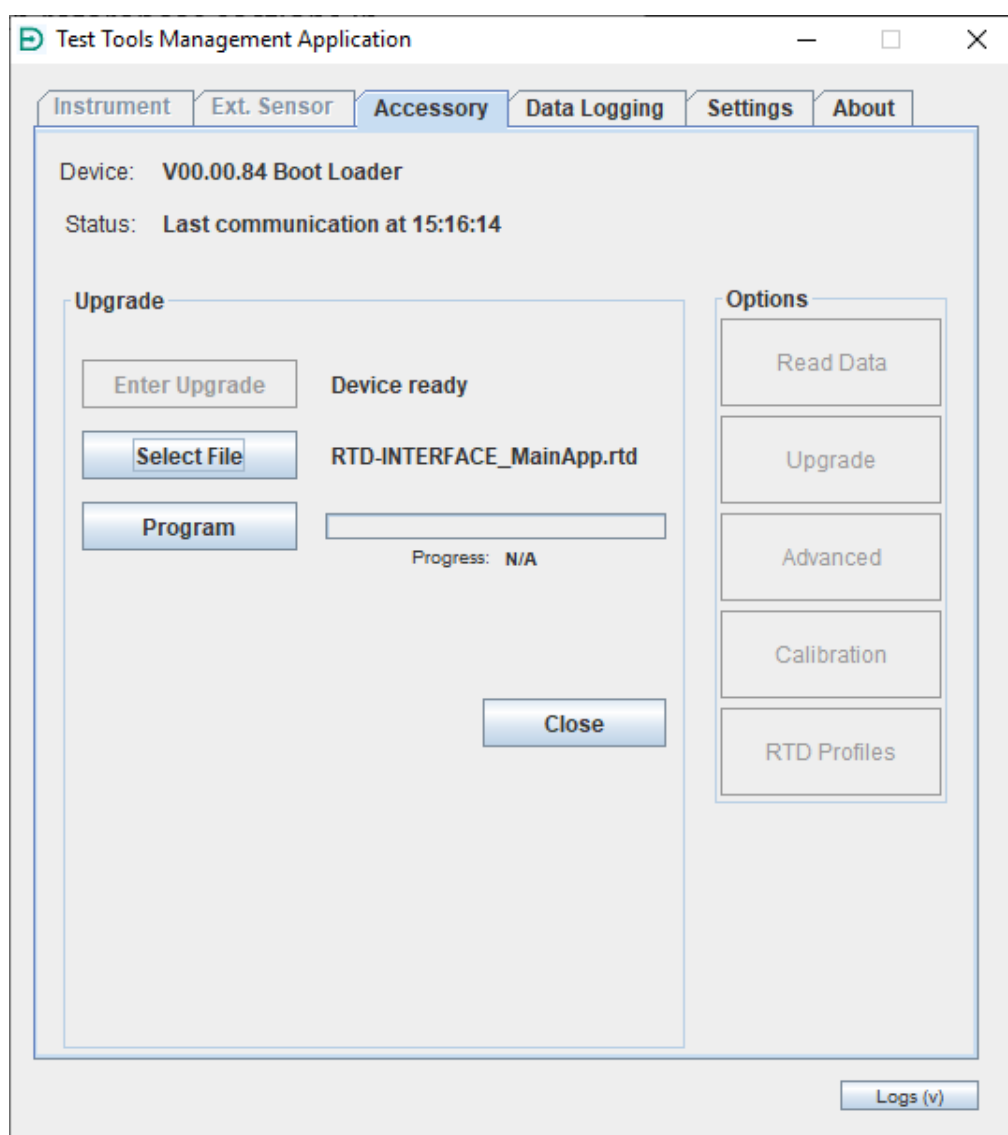
Press Select File. An open dialog will display. Navigate to, and open the file to upload to the instrument.

Example of valid file to upload: RTD-INTERFACE_MainApp.rtd

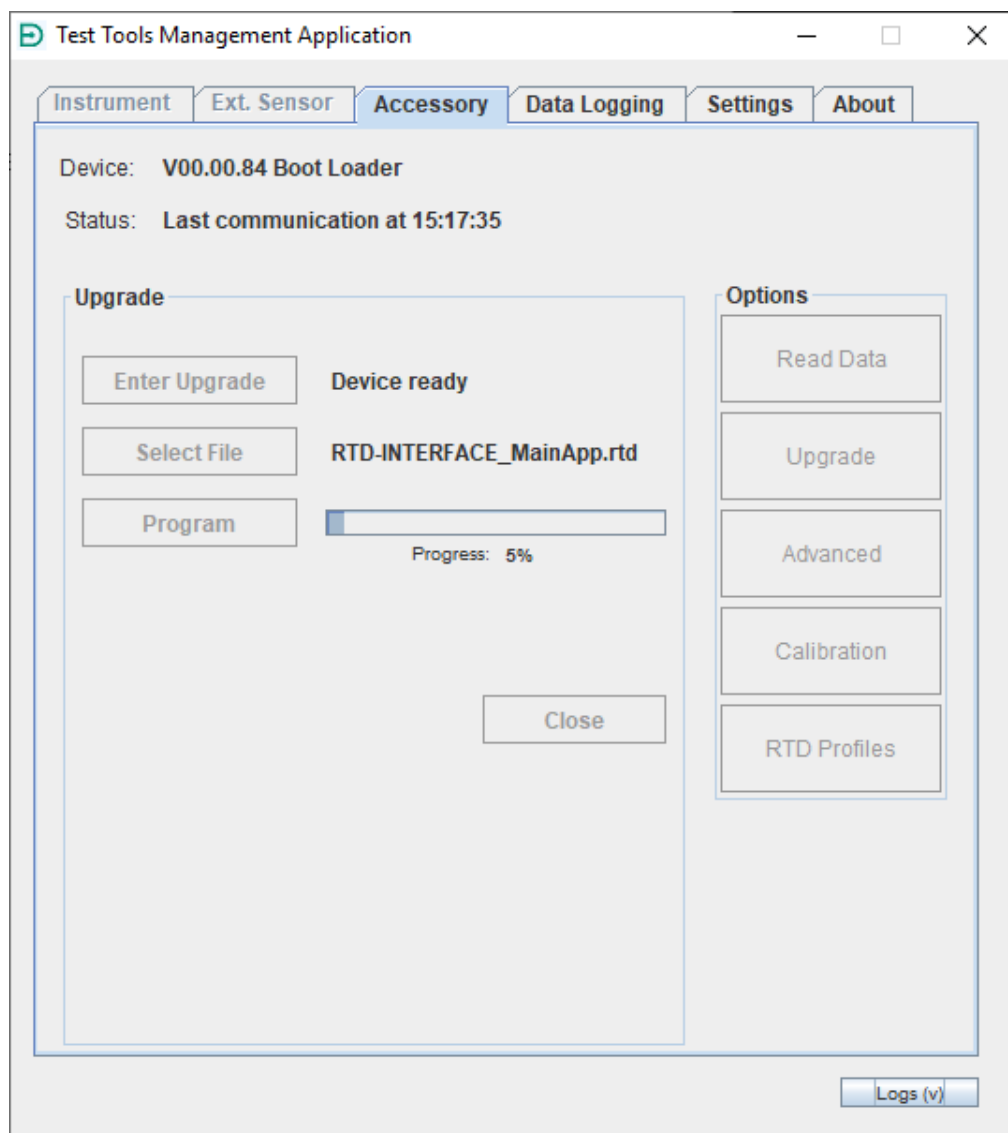
Note: Only .rtd files are viewable.



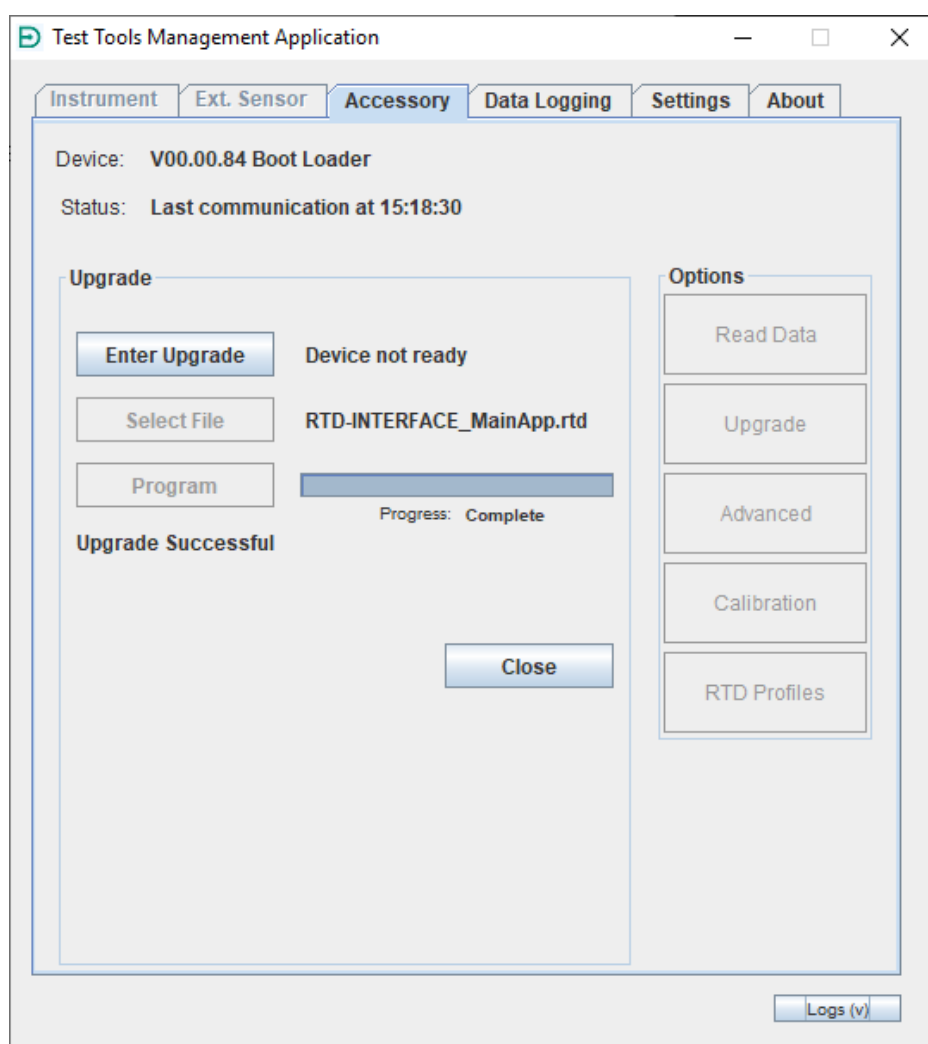
Before programming the connected instrument, confirm the chosen file is displayed.



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.


Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: **V00.01.00**
Status: **Last communication at 15:26:10**

Advanced

Enter Serial #:

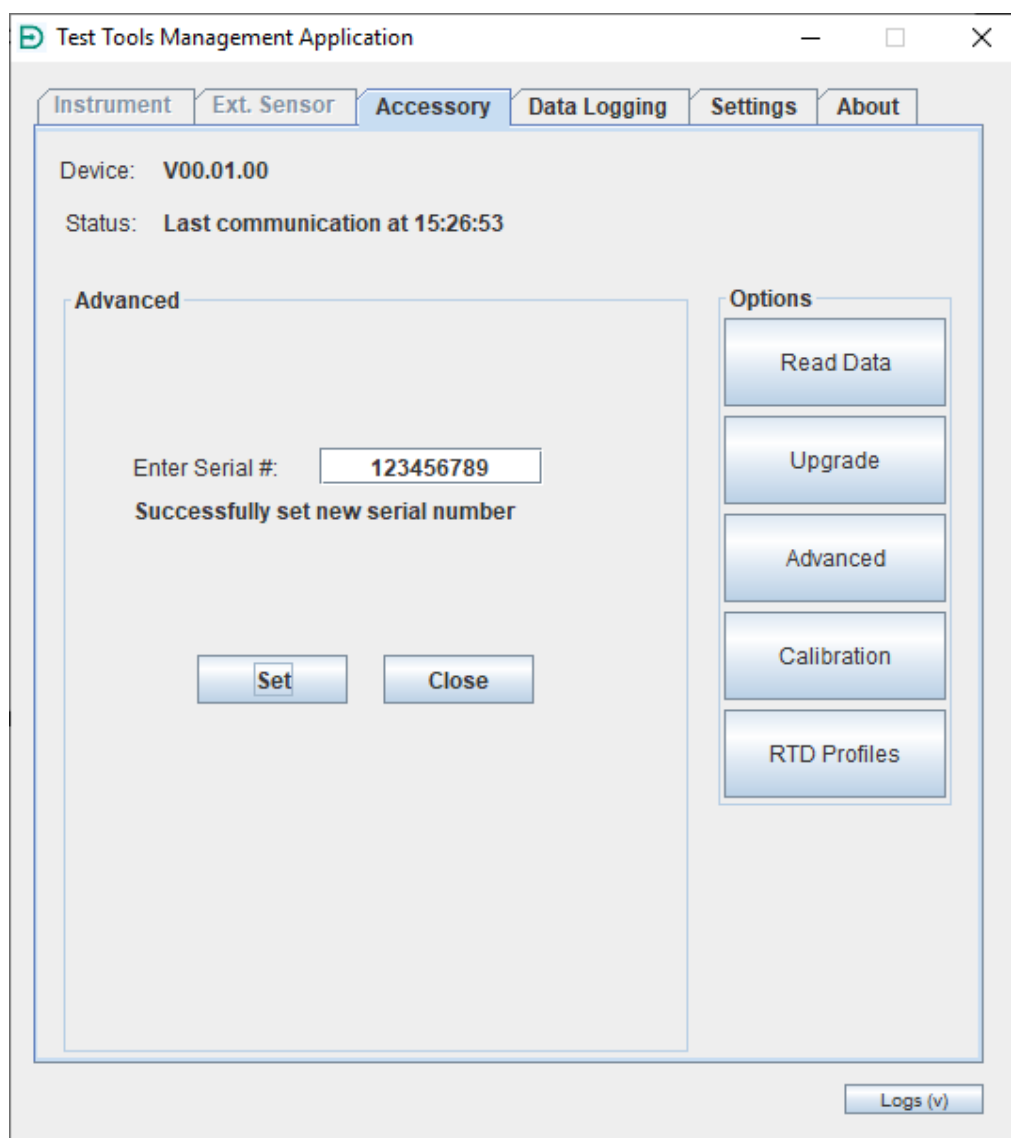
Set
Close

Options

Read Data
Upgrade
Advanced
Calibration
RTD Profiles

Logs (v)

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.

Test Tools Management Application

Instrument

Ext. Sensor

Accessory

Data Logging

Settings

About

Device: **V00.01.00**
Status: **Last communication at 15:28:43**

RTD Profiles

Get Profiles

Erase Profiles

Profile

RTD Type

Default US

4w PT100-385

Identifier

Coefficient Format

ITS90 R0, a, b, c

R0

A/α

B/β

C/δ

Min Temperature

Max Temperature

Send

Close

Options

Read Data

Upgrade

Advanced

Calibration

RTD Profiles

Logs (v)

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.

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: V00.01.00
Status: Last communication at 15:29:25

RTD Profiles

Get Profiles
Erase Profiles

Profile
RTD Type

Default US
4w PT100-385

Identifier
Coefficient Format

PT100-PA-392
Non-ITS90 R0, a, b, c

R0
A/α

100.000000000000000000
0.003984800074249506

B/β
C/δ

-0.000000586999988172
-0.000000000004000000

Min Temperature
Max Temperature

-200.0000
630.0000

Profiles received!

Send
Close

Options

Read Data

Upgrade

Advanced

Calibration

RTD Profiles

Logs (v)

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.

Test Tools Management Application

Instrument | Ext. Sensor | **Accessory** | Data Logging | Settings | About

Device: **V00.01.00**

Status: **Last communication at 15:31:13**

RTD Profiles

Get Profiles **Erase Profiles**

Profile: **User 1** RTD Type: **4w PT100-385**

Identifier: **Test** Coefficient Format: **Non-ITS90 R0, a, b, c**

R0: **100.000000000000000000** A/α: **0.004000000000000000**

B/β: **-0.000000060000000000** C/δ: **0.000000000040000000**

Min Temperature: **-195.0000** Max Temperature: **627.0000**

Profile sent to device

Send **Close**

Options

Read Data

Upgrade

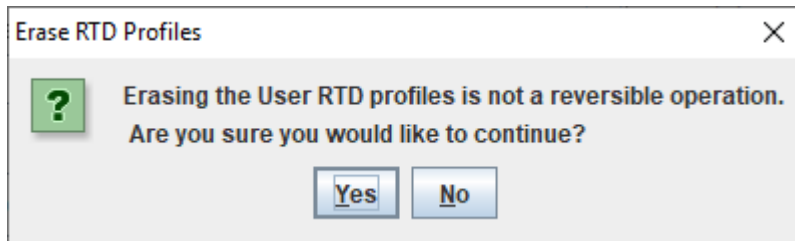
Advanced

Calibration

RTD Profiles

Logs (v)

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.



Testtools Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: V00.00.47
Status: Last communication at 14:17:37

Calibration

Set Mode

User

Set Units: °C

Set Units

Units: N/A

Minimum

Maximum

Range (*C): -300.000000T -300.000000T

Cal Points: N/A N/A

Calibrate

Sample

Set Point

Abort

Close

Options

Read Data

Upgrade

Advanced

Calibration

RTD Profiles

Logs (v)

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.

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: **V00.01.00**
Status: **Last communication at 15:31:31**

Calibration

Set Mode

Factory

Set Units:

*C

Set Units

Units:

N/A

Minimum

Maximum

Range (*C):

-238.031250T

862.427063T

Cal Points:

N/A

N/A

Calibrate

Sample

Set Point

Abort

Close

Options

Read Data

Upgrade

Advanced

Calibration

RTD Profiles

Logs (v)

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.

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: V00.01.00
Status: Last communication at 15:34:29

Calibration

Set Mode

Factory

Set Units: *C

Set Units

Units: *C

Minimum

Maximum

Range (*C):

-238.031250T

862.427063T

Cal Points:

N/A

N/A

Calibrate

Sample

Set Point

Abort

Close

Options

Read Data

Upgrade

Advanced

Calibration

RTD Profiles

Logs (v)

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.

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: **V00.01.00**
Status: **Last communication at 15:34:51**

Calibration

Set Mode

Factory

Set Units:

*C

Set Units

Units:

*C

Minimum

Maximum

Range (*C):

-238.031250T

862.427063T

Cal Points:

2

2

Calibrate

Apply resistance to device, when stable press 'Sample'.

Sample

Cal Point: 1

Set Point

Abort

Close

Options

Read Data

Upgrade

Advanced

Calibration

RTD Profiles

Logs (v)

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.

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: **V00.01.00**
Status: **Last communication at 15:34:51**

Calibration

Set Mode

Factory

Set Units:

*C

Set Units

Units:

*C

Minimum

Maximum

Range (*C):

-238.031250T

862.427063T

Cal Points:

2

2

Calibrate

Sampling...

Sample

Cal Point: 1

Set Point

Abort

Close

Options

Read Data

Upgrade

Advanced

Calibration

RTD Profiles

Logs (v)

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

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: **V00.01.00**
Status: **Last communication at 15:34:51**

Calibration

Set Mode

Factory

Set Units:

*C

Set Units

Units:

*C

Minimum

Maximum

Range (*C):

-238.031250T

862.427063T

Cal Points:

2

2

Calibrate

Enter actual value in text field and press 'Set Point'

Sample

100.0000

Cal Point: 1

Set Point

Abort

Close

Options

Read Data

Upgrade

Advanced

Calibration

RTD Profiles

Logs (v)

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.

Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

Device: V00.01.00
Status: Last communication at 15:34:51

Calibration

Set Mode

Factory

Set Units: °C

Set Units

Units: °C

Minimum

Maximum

Range (°C):

-238.031250T

862.427063T

Cal Points:

2

2

Calibrate

Calibration failed, please press 'Abort'

Sample

100.0000

Cal Point: 2

Set Point

Abort

Close

Options

Read Data

Upgrade

Advanced

Calibration

RTD Profiles


Logs (v)

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.


Test Tools Management Application

Instrument
Ext. Sensor
Accessory
Data Logging
Settings
About

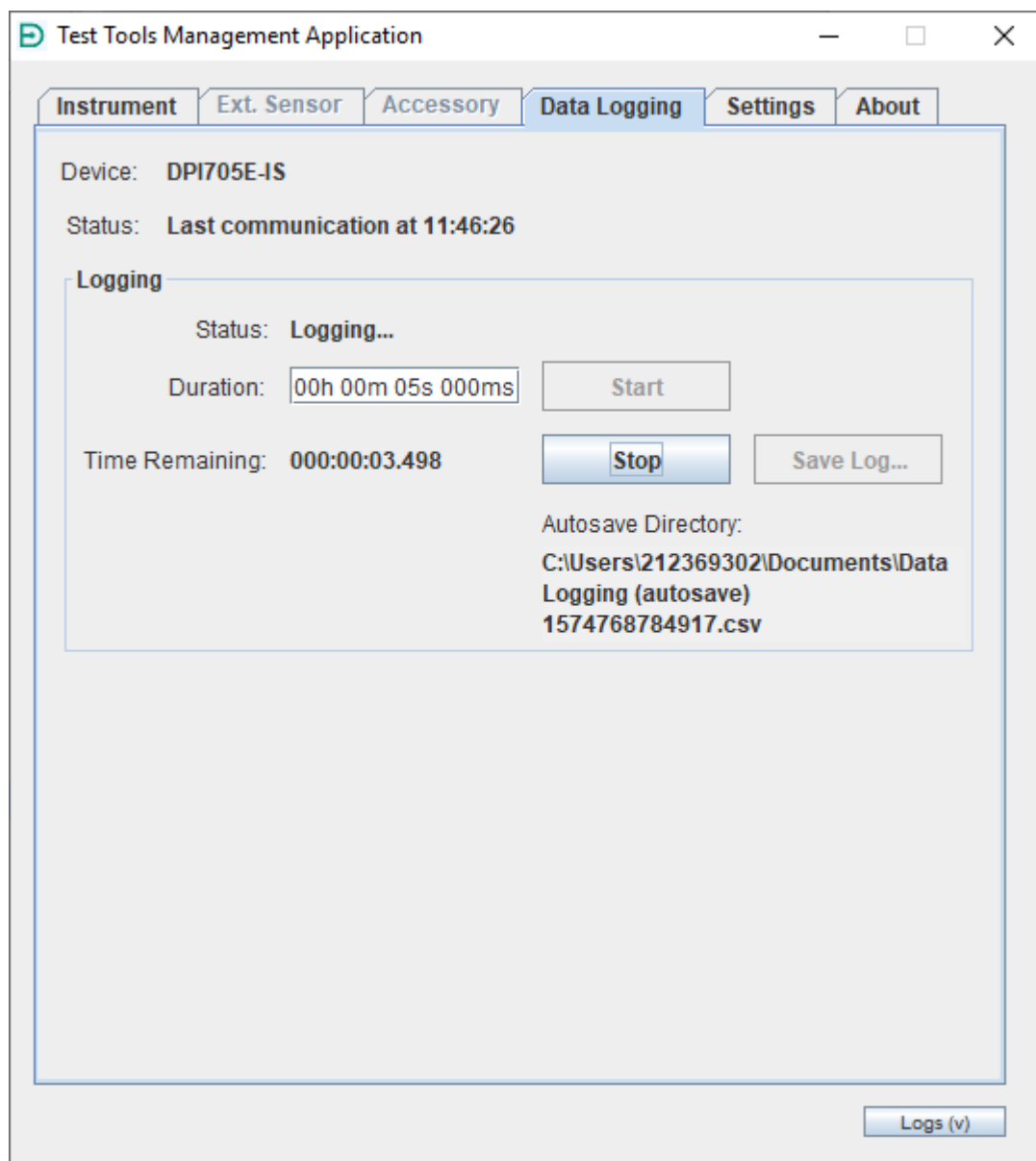
Device: **DPI705E-IS**
Status: **Last communication at 11:43:15**
Logging

Status: **N/A**
Duration:

Time Remaining: **000:00:05.000**

Autosave Directory:
C:\Users\212369302\Documents\

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.

Test Tools Management Application

Instrument | **Ext. Sensor** | **Accessory** | **Data Logging** | **Settings** | **About**

Device: **DPI705E-IS**

Status: **Last communication at 11:46:29**

Logging

Status: **Finished**

Duration: **Start**

Time Remaining: **Stop** **Save Log...**

Autosave Directory:
C:\Users\212369302\Documents\Data
Logging (autosave)
1574768784917.csv

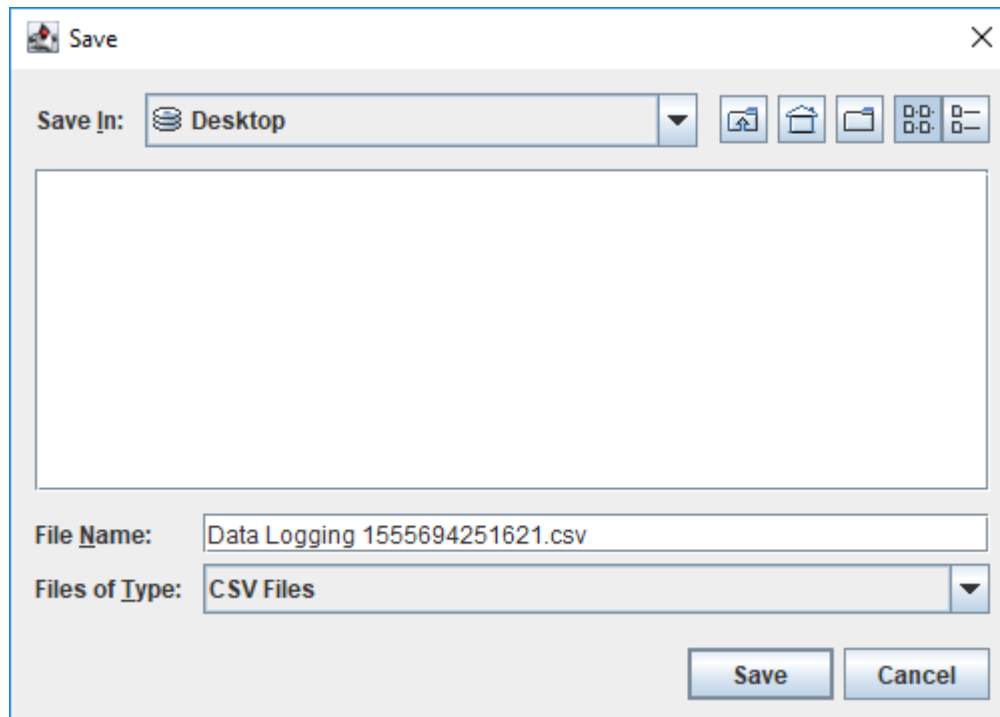
Logs (v)

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.

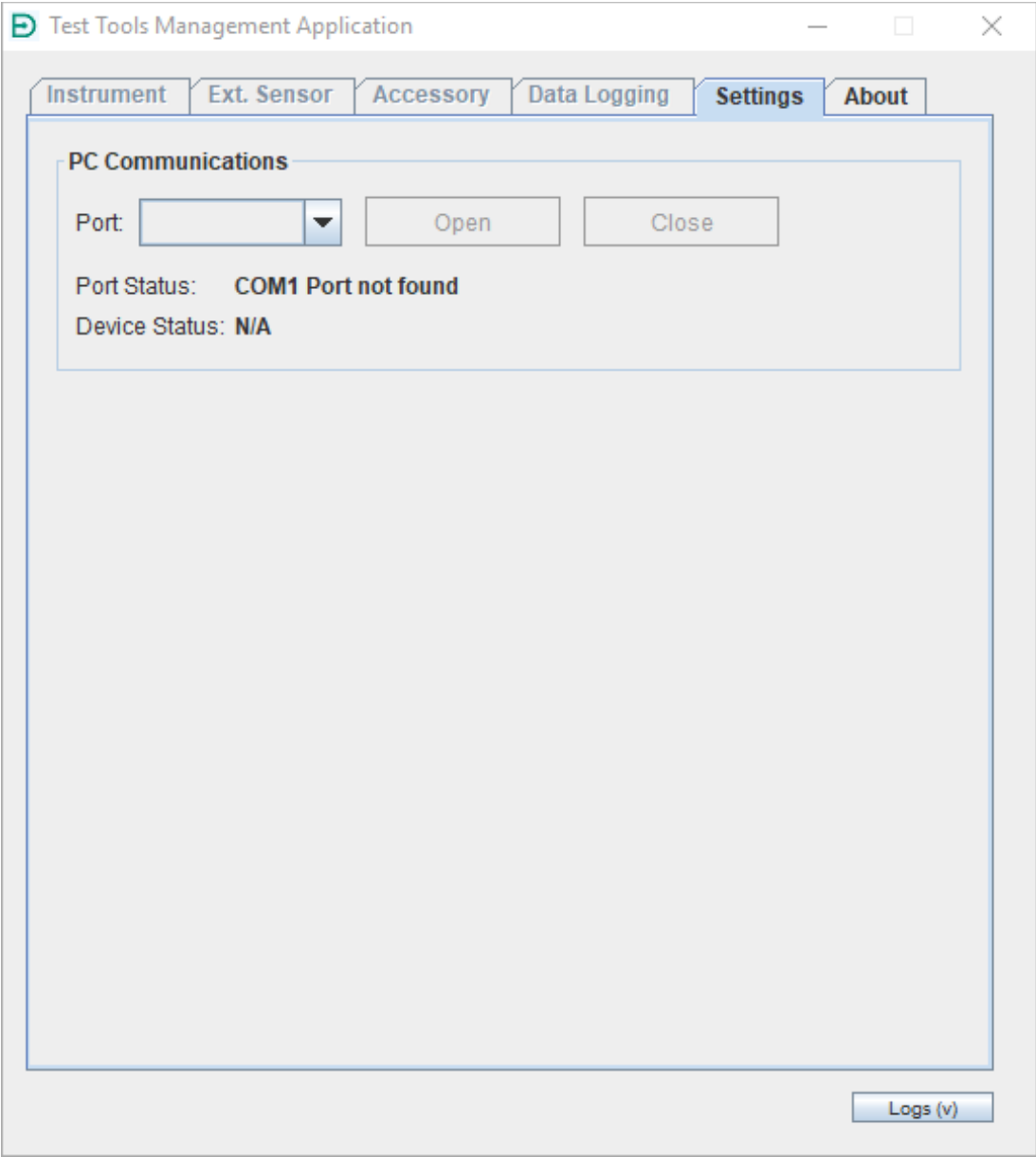
The log file can now be accessed and viewed from the chosen directory.



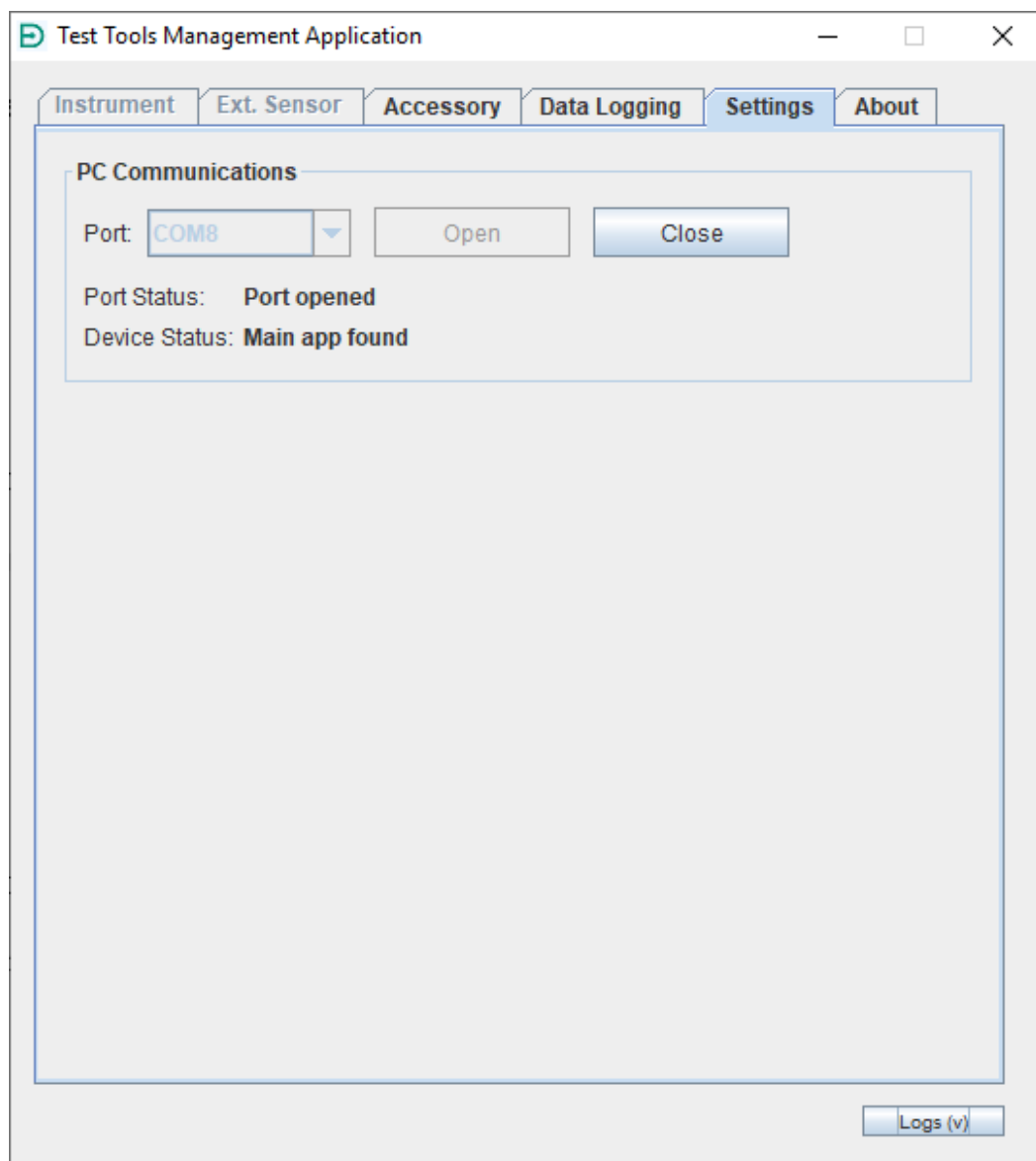
5.5

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.

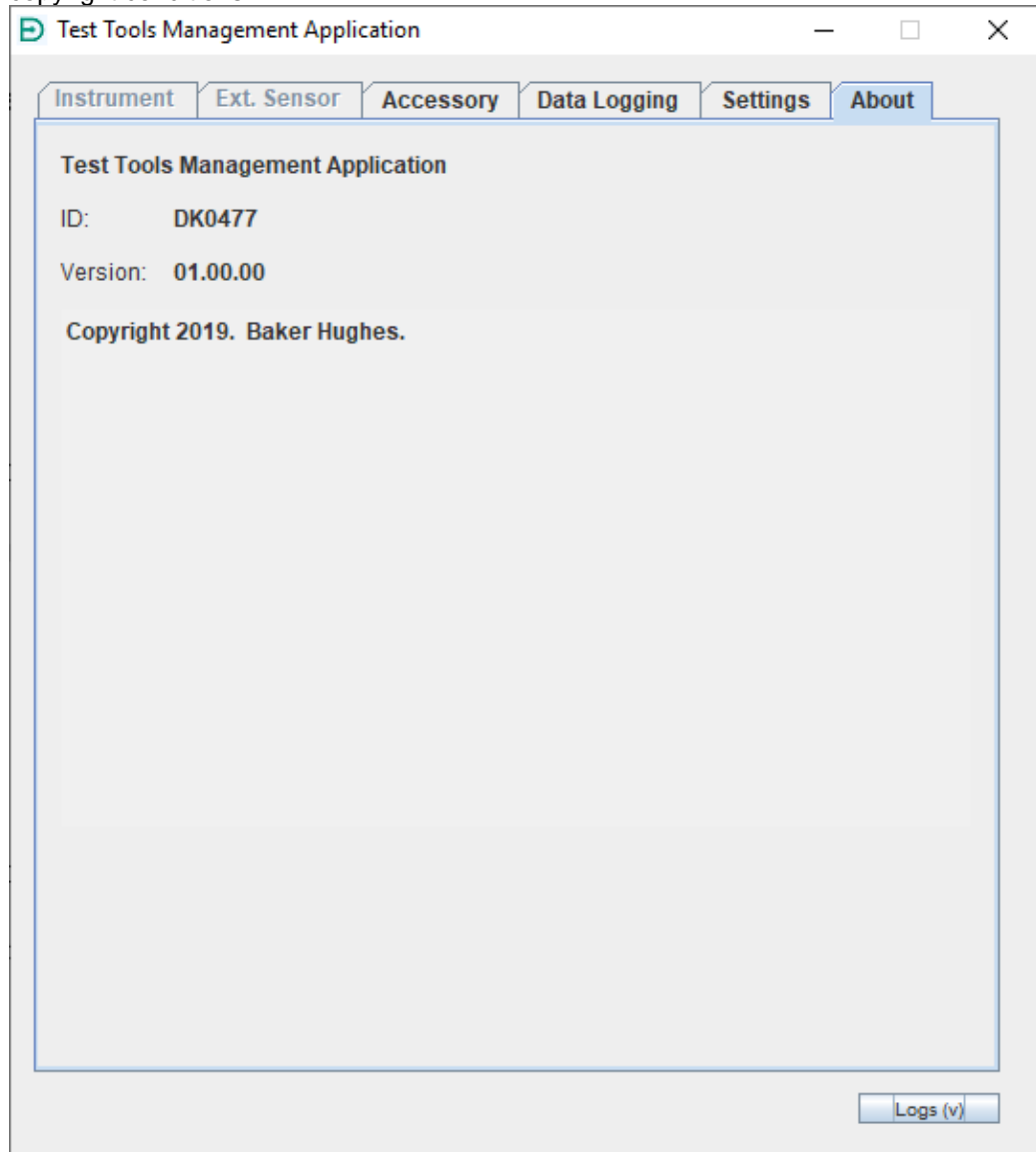


Once a COM port is open, the appropriate device type tab will be enabled and can be selected.
 i.e. Instrument, Sensor etc.

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.

Test Tools Management Application

Instrument

Ext. Sensor

Accessory

Data Logging

Settings

About

Device: DPI705

Status: Last communication at 15:44:03

Information

Time & Date: 15:44 04/11/2019

Serial No: 123456789

Battery volts: 5.845V

Boot Loader

DK: 0475

Version: 00.42.00

Application

DK: 0476

Version: 00.49.00

Internal Sensor

Serial No: 51

Range (mbar): 0.000 2000.000

Type: Gauge

Reading: -0.0 mbar

Options

Read Data

Upgrade

Advanced

Calibration

Date&Time

Logs (^)

Read

Erase

Save Log

Clear

Error Log

Event Log

All Logs

Debug Log

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 information for device 'DPI705'. The status indicates the last communication was at 15:44:44. The interface is divided into several sections: 'Information' (Time & Date: 15:44 04/11/2019, Serial No: 123456789, Battery volts: 5.845V), 'Boot Loader' (DK: 0475, Version: 00.42.00), 'Application' (DK: 0476, Version: 00.49.00), and 'Internal Sensor' (Serial No: 51, Range (mbar): 0.000 to 2000.000, Type: Gauge, Reading: -0.0 mbar). On the right, there are buttons for 'Read Data', 'Upgrade', 'Advanced', 'Calibration', and 'Date&Time'. Below these, a 'Logs (^)' button is present. At the bottom, there is a table with columns 'Date', 'Time', and 'Error #'. The table contains 10 rows of data. 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.