



Installing TAM Air Assistant Software™

Installation Instructions

This document describes how to make a new installation of TAM Air Assistant. TAM Air Assistant is intended to be installed on a PC running the Microsoft Windows versions listed below and with a minimum of 512 Mb RAM. The PC must have a USB port V1.0 or 2.0.

The installation CD, included with a newly delivered TAM Air instrument, is intended for a new installation of TAM Air Assistant. Running the installation program on the CD includes the installation of the Windows software package “.NET Framework 2.0” (English version), in addition to the installation of TAM Air Assistant.

In case of future upgrades of “.NET Framework 2.0” it might be necessary to get an upgraded installation CD and perform another complete installation of TAM Air Assistant.



The figures in this section refer to the current version and build number of TAM Air Assistant. This will change when a new version is installed.



SPECIAL NOTE: When upgrading software versions earlier than 1.1.14.6, the prior device drivers must be manually uninstalled before installing the newer software. Please refer to “Uninstalling the Drivers” on page 21 for more information.

Basic Steps for Installation

Before installing the TAM Air Assistant software as directed in the next section, make sure you have checked the following computer settings.

- 1 Make sure that the energy saving functions are disabled on the computer. This includes Processor Sleep and Hibernate functions, and hard disk power saving. In addition to those settings, in Windows 7 systems the USB Selective Suspend setting should be **Disabled**. As experiments are rather long, there may be long times with inactivity on the computer, so the computer must always be on. This also applies to the hard drive, as the software will access it frequently.



Note for IT personnel: Since the data control and collection software depends on accurate timings, it is highly recommended to set the computer BIOS settings for performance rather than for power savings. Some computer manufacturers may have different names for this. For example, some Dell computer have a setting called “C-States” that includes the C1E setting, which should be disabled. Other computer manufacturers may call it “Enhanced Halt State”. Other settings that should be disabled (if available) are EIST (Intel SpeedStep) and AMD’s Cool ‘n’ Quiet.

- 2 Make sure that the Microsoft Windows Update feature is set to NOT install updates automatically. Sometimes the automatic update will restart the computer, which is not desirable. It is recommended to select the option to “automatically download all updates, but let me decide when to install them”. This would allow you to be notified of an update.



TAM Assistant software supports 32-bit versions of Windows® 2000, Windows® XP, or Windows® Vista Business or Ultimate. Both 32-bit and 64-bit versions of Windows 7 are also supported.

Before installing the TAM AIR Assistant software, you should ensure that the computer system meets the following specifications:

Computer Requirements for TAM Air Assistant Software

Description	Recommended	Required
Operating Systems Supported	Windows 2000 Professional or XP Professional 32-bit; Windows 7 32-bit or 64-bit	
Service Packs* <ul style="list-style-type: none"> • Windows 2000 • Windows XP • Windows Vista Business • Windows 7 	Service Pack 4 or higher Service Pack 2 None Service Pack 1	Service Pack 4 or higher Service Pack 2 None
File System	NTFS	
Processor	Intel Pentium III, 1.4 GHz with 256kB L2 cache or better	
Memory	≥ 1 GB RAM	
Hard Drive	≥ 20 GB free on Hard Drive	
CD-ROM	Required	
Screen Resolution	1024x768 with ≥64K colors	
Graphic Memory	128MB	



The following Microsoft components are automatically installed as part of TAM Assistant software installation: Windows Installer 3.1 and MS .NET Framework 2.0.

Computer Settings Before Installation

Before installing the TAM Air Assistant software as directed in the next section, make sure you have checked the following computer settings.

- 1 Make sure that the energy saving functions are disabled on the computer, as experiments are rather long it may be long times with inactivity on the computer, the computer must always be on, this applies to hard drives also as the software access it often.
- 2 Make sure that the Microsoft Windows Update feature is set to NOT install updates automatically. Sometimes the automatic update will restart the computer, which is not desirable. You can try setting this option to download updates, but let you decide when to install them. This would allow you to be notified of an update.

Installing the TAM Air Assistant Software

Hardware and Software Requirements

TAM Air Assistant is intended to be installed on a PC running under Windows 2000/XP/7 and a minimum of 512 Mb RAM. The PC must have a USB port V1.0 or 2.0.

The installation CD, included with a newly delivered TAM Air instrument, is intended for a new installation of TAM Air Assistant. Running the installation program on the CD includes the installation of the Windows software package “NET Framework 2.0” (English version), in addition to the installation of TAM Air Assistant.

In case of future upgrades of “NET Framework 2.0” it might be necessary to get an upgraded installation CD and perform another complete installation of TAM Air Assistant.

The installation of an upgraded version of TAM Air Assistant requires only one installation file, e.g., “TAMAssistantInstaller v0.9.988.0.msi.”

The software CD no longer contains calibration files for the thermostat or the calorimeter. These files are now on separate CDs shipped with those hardware modules.

NOTE: The figures in this section refer to the installation under Windows XP and 2000. For examples of screen shots during installation under Windows 7, refer to the document “Installing TAM and TAM Air Assistant.”

NOTE: When upgrading from versions earlier than 1.1.14.6, all FTDI drivers must first be uninstalled in the Add/Remove Programs option within the Windows Control Panel.

The installation CD required for a new installation as well as for the installation of an upgraded version of TAM Air Assistant can be obtained from TA Instruments.

Installation

NOTE: Installation of the software must be made before connecting the TAM Air unit to the computer for the instrument drivers to be installed correctly.

Follow these steps to install the TAM Air Assistant:

- 1 Close all windows programs before installing TAM Air Assistant.
- 2 Place the TAM Air Assistant CD in the CD drive of the computer, and click **Install TAM Air Assistant**.



Figure 1 Install TAM Air Assistant.

- 3 Disconnect the USB cable from the TAM Air before proceeding.



Figure 2 Disconnect the USB cable.

4 Click **Next** to start the Setup program. The installation wizard starts.



Figure 3 Setup Wizard Welcome screen.

5 Step through the Wizard according to the instructions given.

6 Click **Next** to continue. Read the end user license agreement carefully before proceeding.

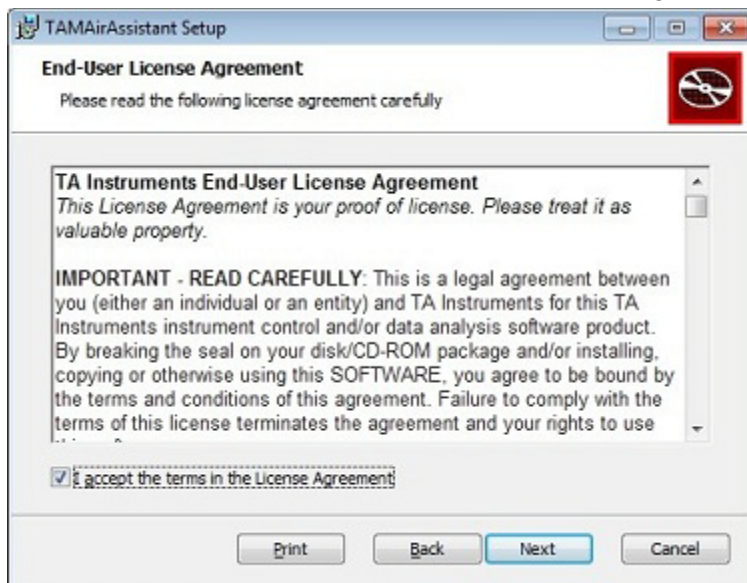


Figure 4 End User License Agreement.

7 Click the **I accept the terms in the licence agreement** check box and then click **Next**.

8 Click **Next** to install the software in the default folder, or enter a new destination if desired.

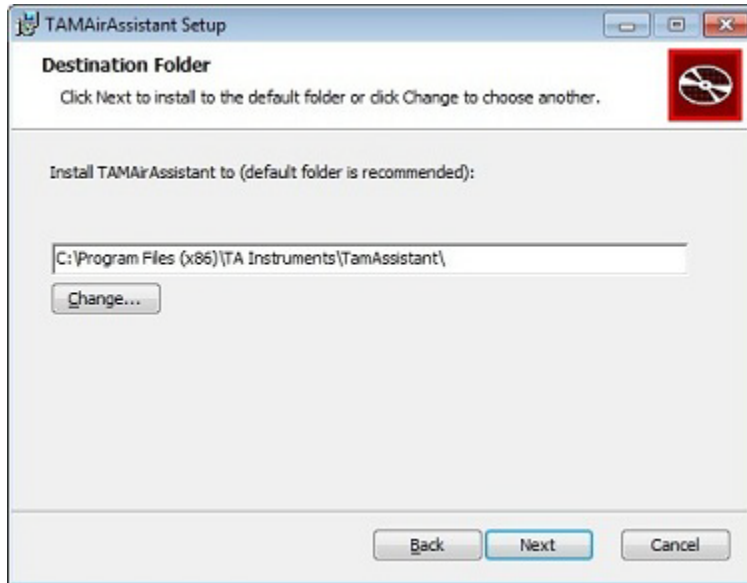


Figure 5 Installation folder dialog box.

9 Click **Typical** or **Complete** for the Setup Type and then click **Next**.

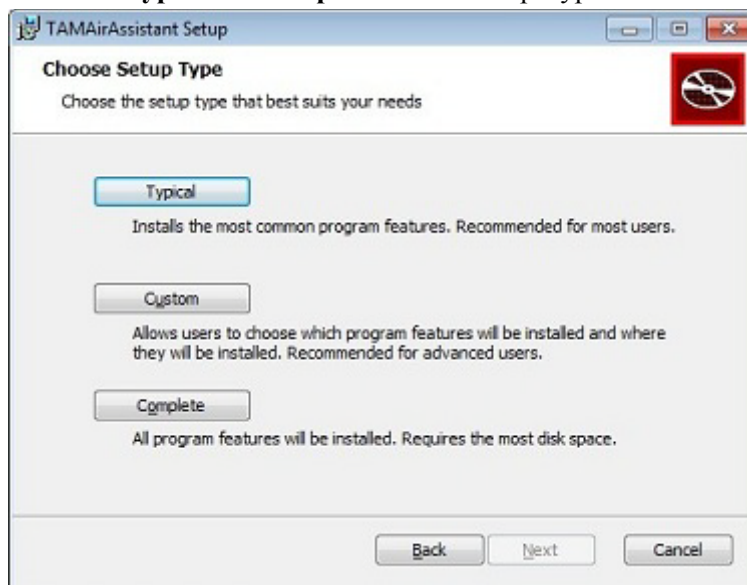


Figure 6 Choose Setup Type.

- 10 Click **Install**. The software is now being installed. This is a quick process that normally takes less than 30 seconds. (If the computer doesn't have .net Framework installed already the installation takes a bit longer).

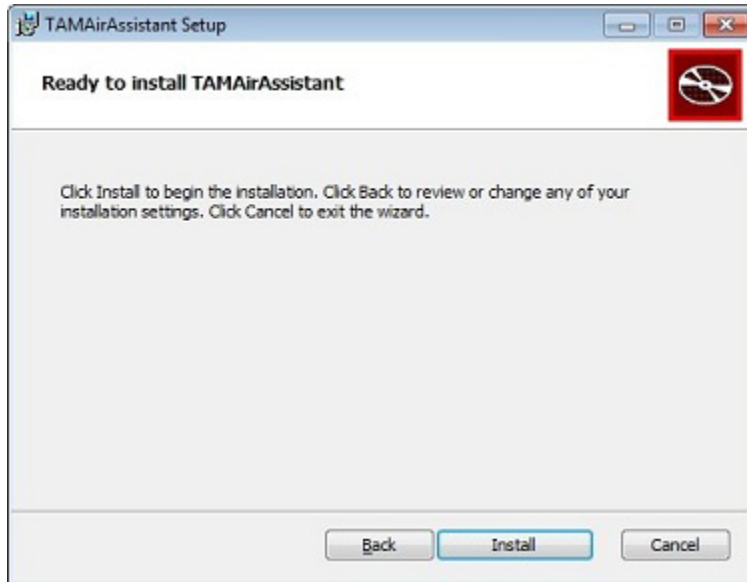


Figure 7 Ready to install TAMAirAssistant.

NOTE: At this stage, a Hardware Installation warning may display. Click **Continue Anyway** to continue the installation.

- 11 Click **Finish** to exit the Setup program. The TAM Air Assistant software has now been installed. Before the TAM Air is used to run experiments, the drivers for the Calorimeter Data-Logger and Thermostat must be installed. This is only necessary when TAM Air Assistant is installed for the first time, or if a new calorimeter module is being added to the system, or if the drivers from an earlier installation have been uninstalled on the computer.



Figure 8 Exit the Setup Wizard.

- 12 Plug in the USB cable and wait for the device drivers for the USB Serial Converter and Pico High Resolution Data Logger to load. Start the TAM Assistant software. The thermostat and calorimeter will display as “New” in the Devices group if this is a first time installation. Follow the directions in the next section to import the calibration files.

NOTE: If the thermostat and calorimeter devices do not appear, verify the device installation in the [“Checking Device Installation”](#) section.

Checking Device Installation

To check that the software for the devices USB Serial Converter and Pico high resolution data logger open the Control Panel from the Start menu and select System. A System Properties dialog box displays.

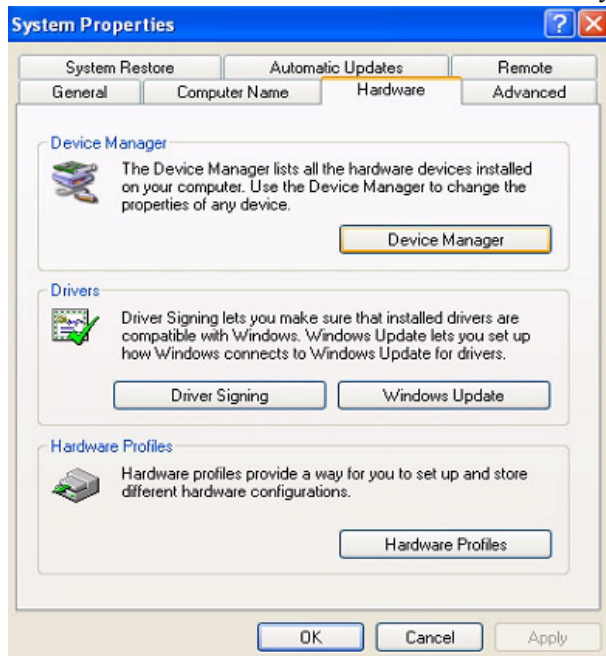


Figure 9 System Properties dialog box.

- 1 Under the **Hardware** tab, click on **Device Manager**. Under **Universal Serial Bus Controllers** the controllers for the two TAM Air devices are listed. They are USB Serial Converter and Pico High Resolution Data Logger. This confirms that the Device controllers are installed.
- 2 Right-click on the Device controller and check Device status. If status reads “This device is working properly” then the installation was successful.

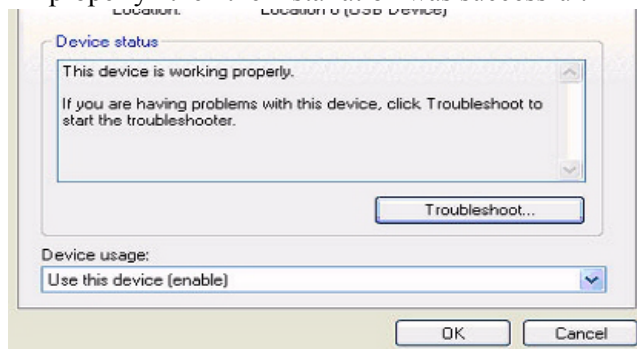


Figure 10 This device is working properly.

- 3 Close the open windows.

NOTE: If both drivers for the TAM Air are not present, contact TA Instruments for the instructions on proper driver installation procedures.

Importing Thermostat Calibration Files

The TAM Air system includes user-interchangeable calorimeter modules in two types: 20-mL capacity with 8 channels, and 100-mL capacity with 3 channels. A complete system includes the thermostat, one or both calorimeter modules, and calibration files for the thermostat and all calorimeters. Prior to July 2012 and TAM Air Assistant software version 1.3.0.34, calibration files for the thermostat and calorimeters were included on the software installation CD. In the current version the calibration files are each on their own CDs. Additional calorimeters can also be ordered as accessories and they can be switched by the customer. Be sure to keep these CDs in a safe place in case the files are needed in the future, for example when installing the TAM Air Assistant software on a new computer.

- 1 Start TAM Air Assistant software.
- 2 From the **File** menu select **User Information**. Click the **User Level** tab and select the **Advanced** option. This is only necessary for importing calibration files. The user level will be set back to “Normal” once this has been completed.

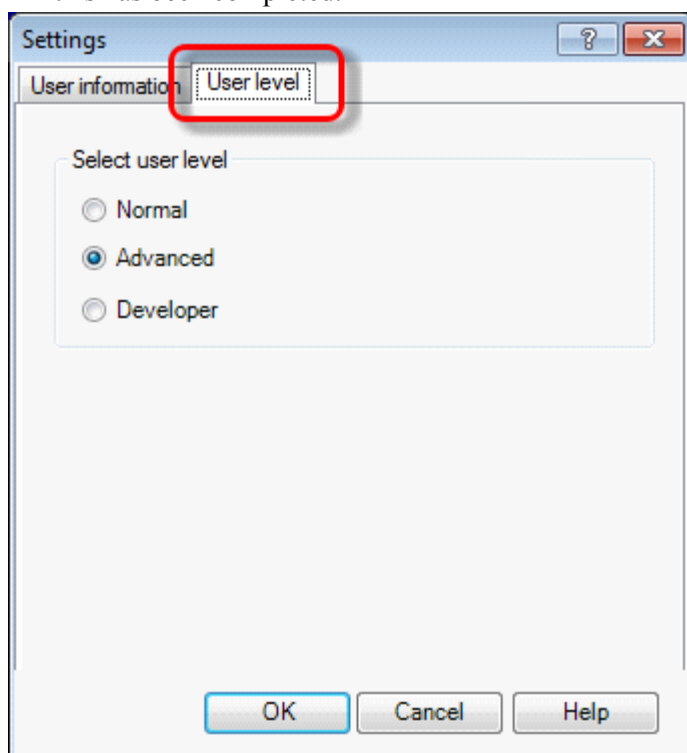


Figure 11 File > User Information > User Level > Advanced.

- 3 Load the calibration file CD that was supplied with the thermostat into the computer's optical drive.

- 4 Import the thermostat calibration file using the calibration file CD that was supplied with the thermostat.
 - a The thermostat object in the Devices groups is labeled <New> and displays the current temperature reading. Click the object; a Message Box dialog box displays. Click **Import Thermostat Calibration File**.

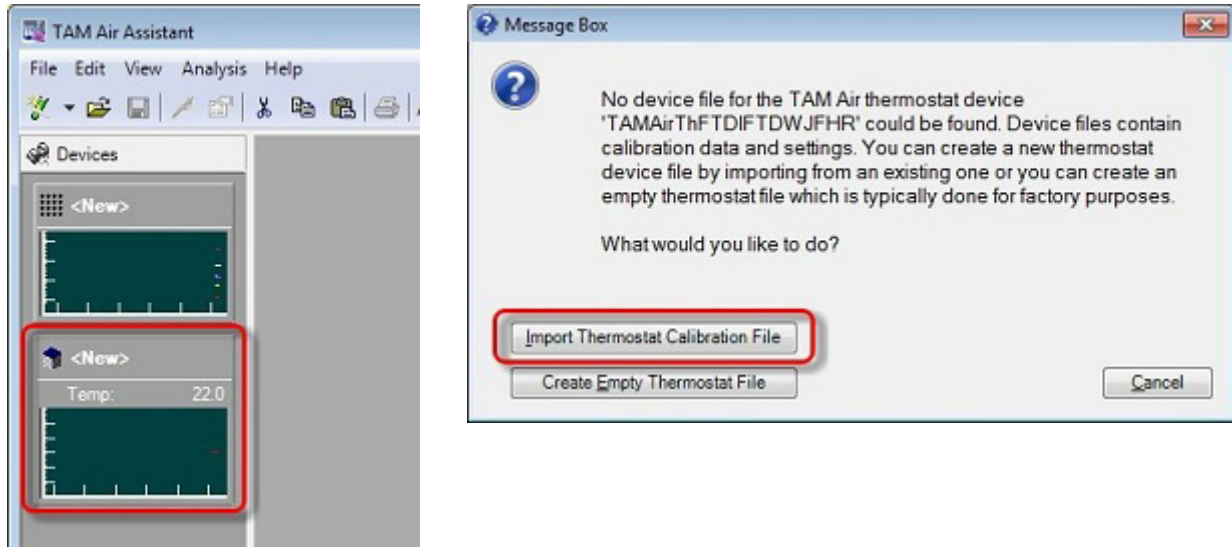


Figure 12 New > Import Thermostat Calibration File.

- b Browse to the supplied CD and select the Thermostat calibration file. Click **Import** to load the file.

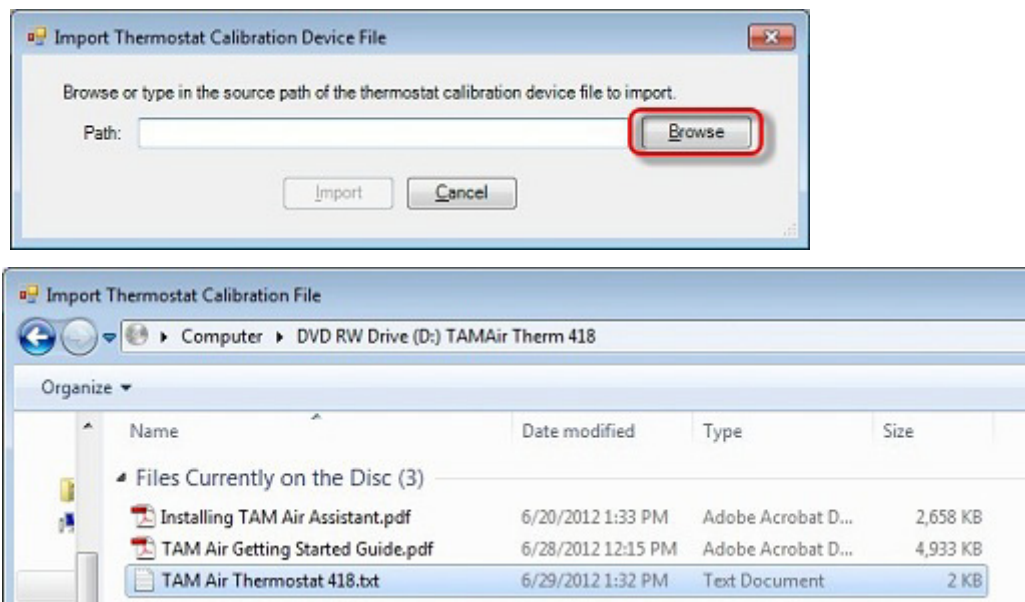


Figure 13 Select the thermostat calibration file.

- c An Import Success dialog box displays, click **OK**.

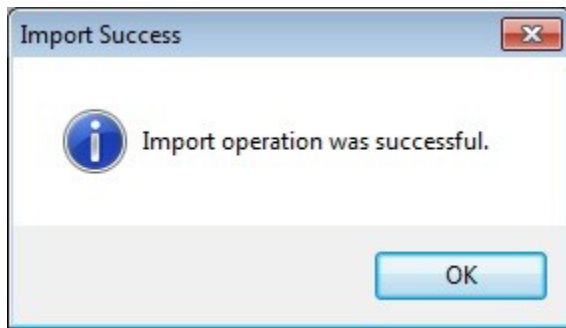


Figure 14 File successfully imported message.

The thermostat calibration is now loaded and the serial number displays in the thermostat icon. You may now import the calorimeter calibration file as described in the next section.

Importing Calorimeter Calibration Files

If you are updating a version of TAM Air Assistant software prior to 1.3.0.34:

- 1 Update the software using the software installation CD. The existing calibration files will be automatically recognized.
- 2 If a new calorimeter is also being added, it will need to be imported via the process in the next step.

If you are adding a calorimeter to an existing TAM Air Assistant software with version 1.3.0.34 or higher:

- 1 Insert the calorimeter's calibration file CD into the computer.
- 2 On the thermostat module, select the **Advanced Settings** tab (1), select **Import Calorimeter Calibration** (2), and then click **Browse**.

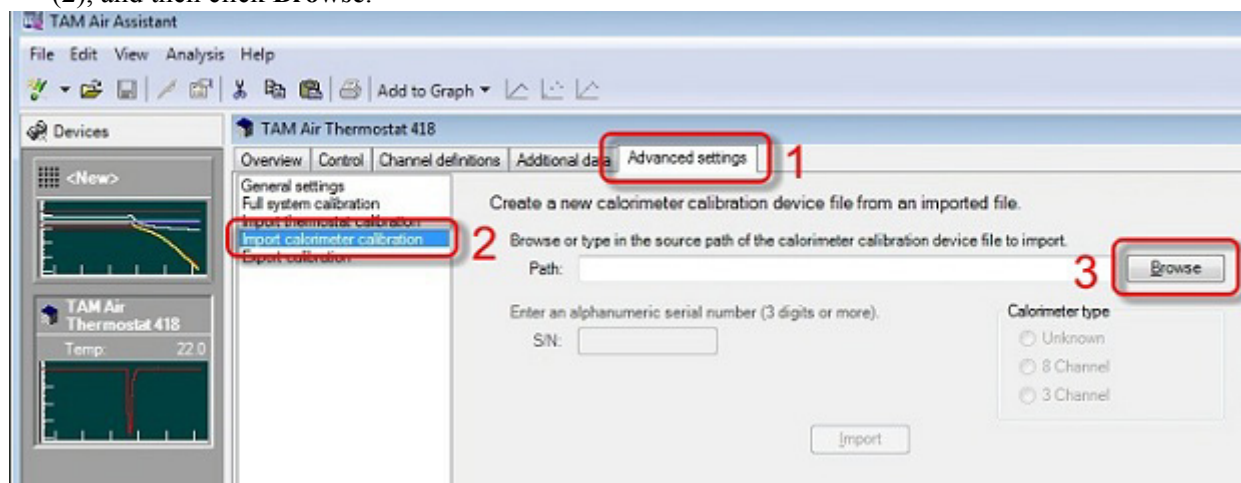


Figure 15 Thermostat module > Advanced Settings > Import Calorimeter Calibration.

3 Browse to the CD (4), select the calibration file (5) and click **Open** (6).

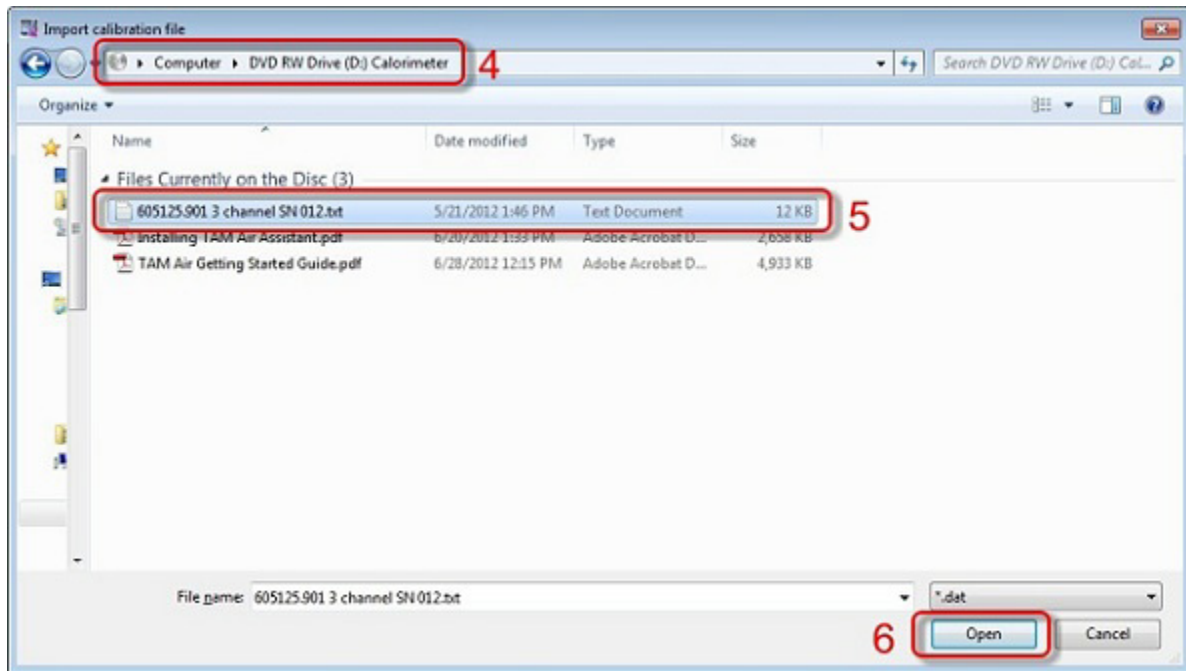


Figure 16 Select the calibration file.

4 Click **Import**.

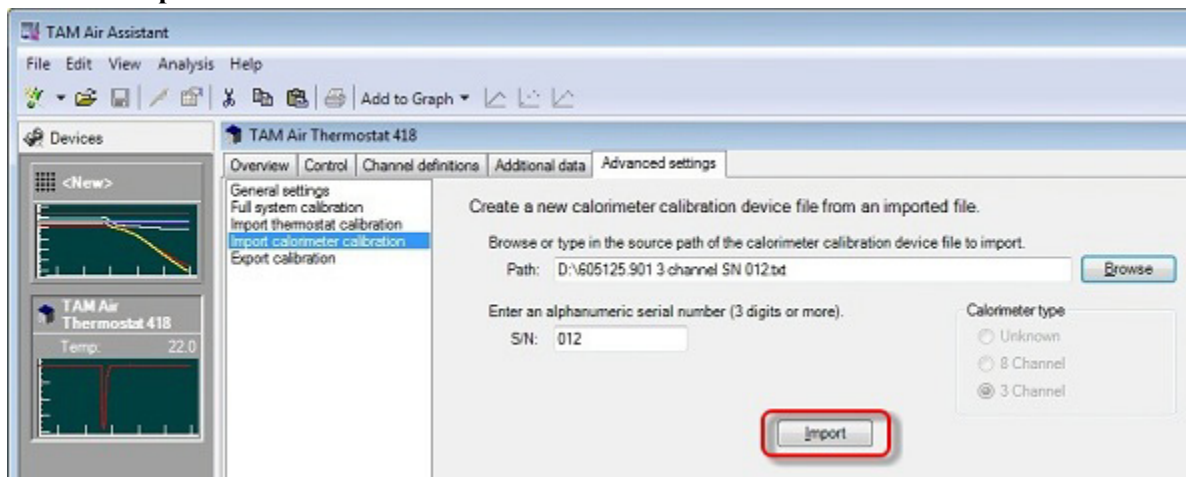


Figure 17 Import.

- 5 The software will need to re-start to load the new calibration data. When the below dialog box displays, click **OK**. The software will shut down.

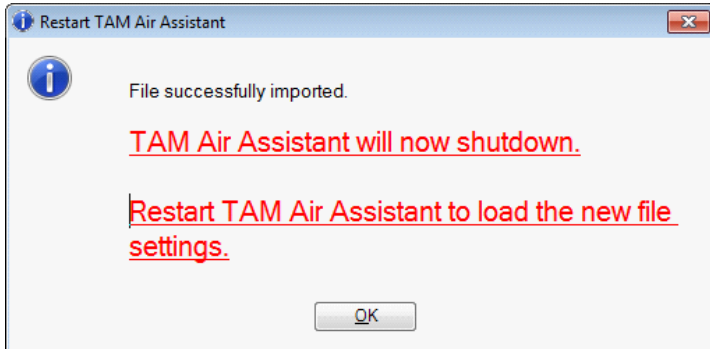


Figure 18 File successfully imported, restart software.

- 6 When you restart TAM Air Assistant, the serial number displays in the calorimeter icon.

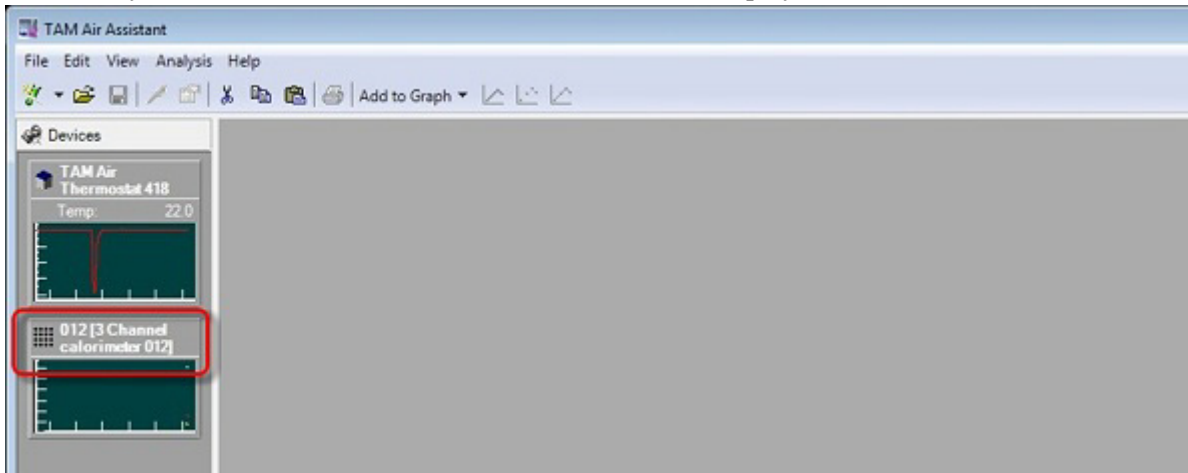


Figure 19 Calorimeter icon.

7 The User Level can now be switched back to **Normal**.

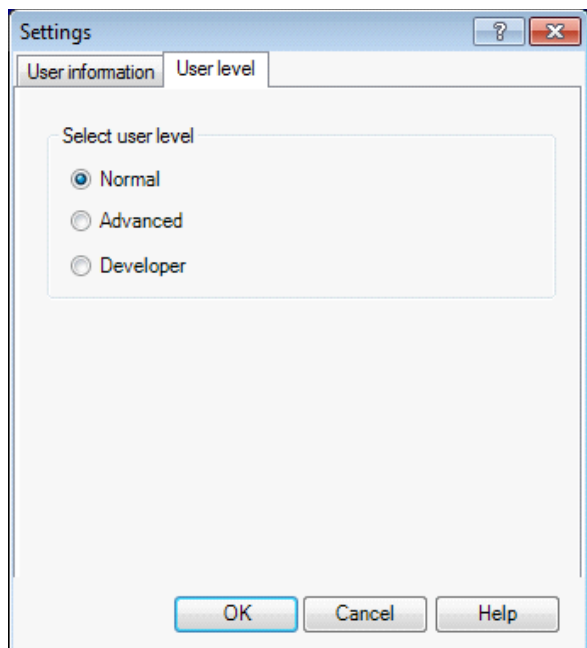


Figure 20 Select Normal user level.

Switching Calorimeters

TAM Air calorimeters can be interchanged by users without any tools. The two main steps in the process are physically switching the parts, followed by selecting the appropriate calibration file.



WARNING: The following precautions must be taken before proceeding:

- Set the operating temperature in the range of 20°–35°C before proceeding to avoid problems with operator safety as well as equipment protection. Allow sufficient time to reach the new temperature.
 - High Temperature Hazard: set the temperature to 35°C or lower in order to prevent thermal injury to the operator.
 - Low Temperature Hazard: set the temperature above the ambient dew point for the room in order to prevent condensation on the internal components.
- When the TAM Air has reached a safe temperature as described above, exit the TAM Air Assistant software.
- Shut off the instrument power on the switch provided on the power inlet module on the rear of the cabinet.

Switching the Calorimeter Hardware

- 1 Check that the precautions listed above are followed before proceeding.
- 2 This sequence illustrates the process of changing from the 8-channel to the 3-channel calorimeter modules. Reverse the steps when changing in the other direction (In step 4 the locking tabs on the lower metal shelf must be clicked into place before replacing the upper metal shelf. Secondly, note that the sheet metal covers are not symmetric left-to-right and they must match the sample and reference ports of the calorimeter block).
- 3 Remove the top lid and set aside. Note that the black thermal caps are not secured in place and may fall out if the lid is tilted.



Figure 21 Remove lid.

- 4 Remove the upper sheet metal panel and set aside. The 8-channel calorimeter has a second sheet metal panel that must be removed next. Loosen the four black captive locking tabs by lifting up until you feel a gentle click. Set this panel aside.

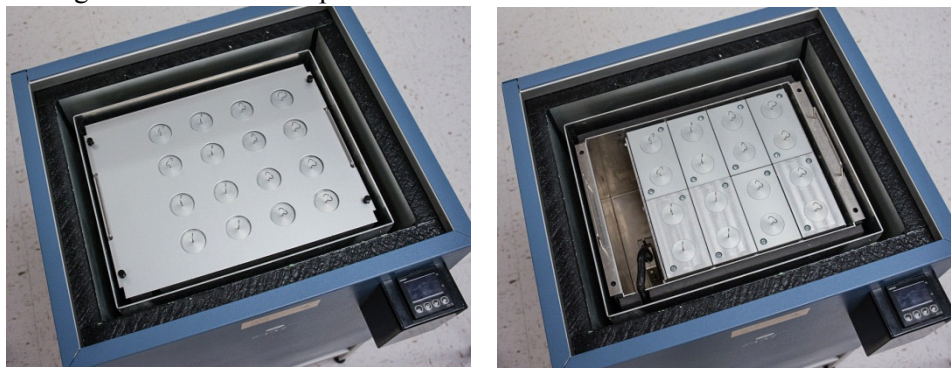


Figure 22 Remove upper sheet metal panel and second sheet metal panel.

- 5 Loosen the two screws that lock the 25-pin connector in place (visible to the left of the main block). Lift the connector and signal cable and swing it up and out of the way. It can be tucked into the outer gap as shown.

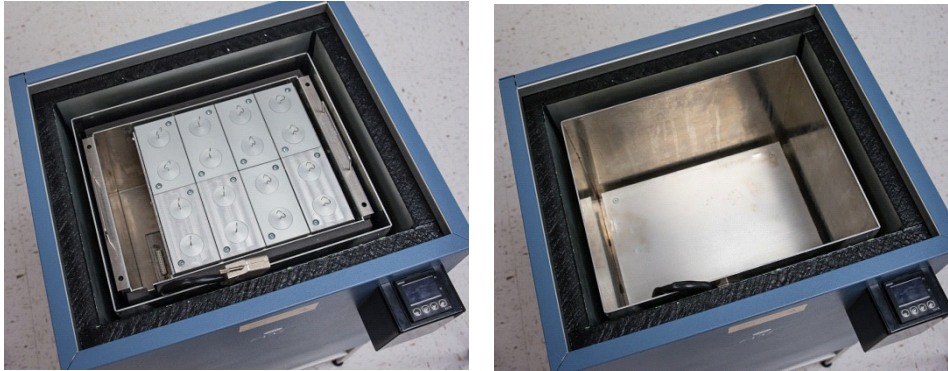


Figure 23 Lift the connector and signal cable.

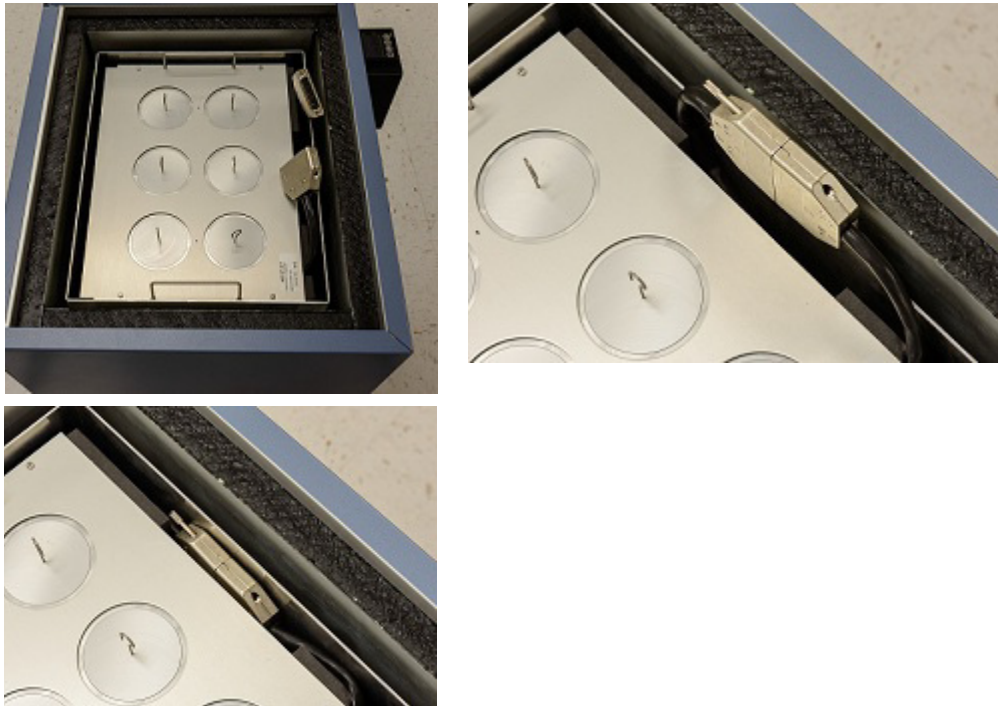


Figure 24 Tuck the cable into the outer gap.

CAUTION: The calorimeter block is heavy. Carefully lift the calorimeter block up and out of the TAM Air cavity. Set aside in a protected location.

- Carefully lower the next calorimeter block into place in the center of the TAM Air cavity, with symmetrical air gaps on all four sides. Note the position of the calorimeter's signal cable, at the near left corner as shown. Connect the two signal cables and use the securing screws to lock them together. Place the matching metal panel and the cover lid in position on the TAM Air.



Figure 25 Lower calorimeter block in center of TAM air cavity (top left); Place matching sheet metal panel (top right) and lid (bottom left) onto the TAM Air.

- Turn the power on at the rear panel switch. The TAM Air will begin to regulate the temperature at this time.
- Start the TAM Air Assistant software.
- If the instrument temperature needs to be changed, do this in the TAM Air Assistant software.

Selecting the Matching Calibration File

- 1 Select the Thermostat device and select the **Channel Definitions** tab. Click the name of the appropriate calibration file.

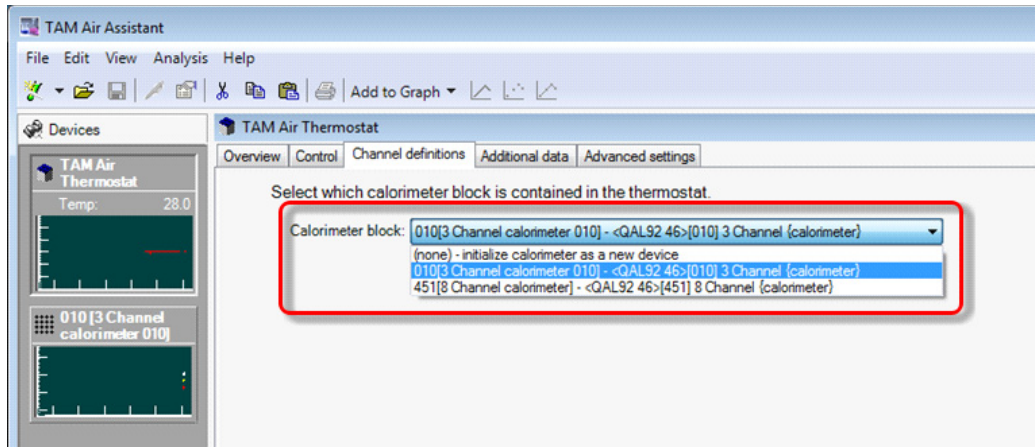


Figure 26 Thermostat device > Channel Definitions > calibration file.

- 2 Click **OK** to restart the software with the new calibration in place.

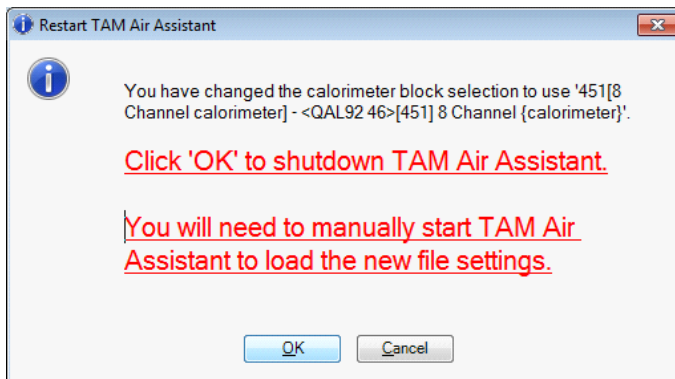


Figure 27 Restart TAM Air Assistant dialog box.

Checking Device Installation

To check that the software for the devices USB Serial Converter and Pico high resolution data logger open the Control Panel in the Start menu and chose System.

The figure shown to the right should appear.

1 Click on **Device Manager** under the **Hardware** tab. The following figure appears.

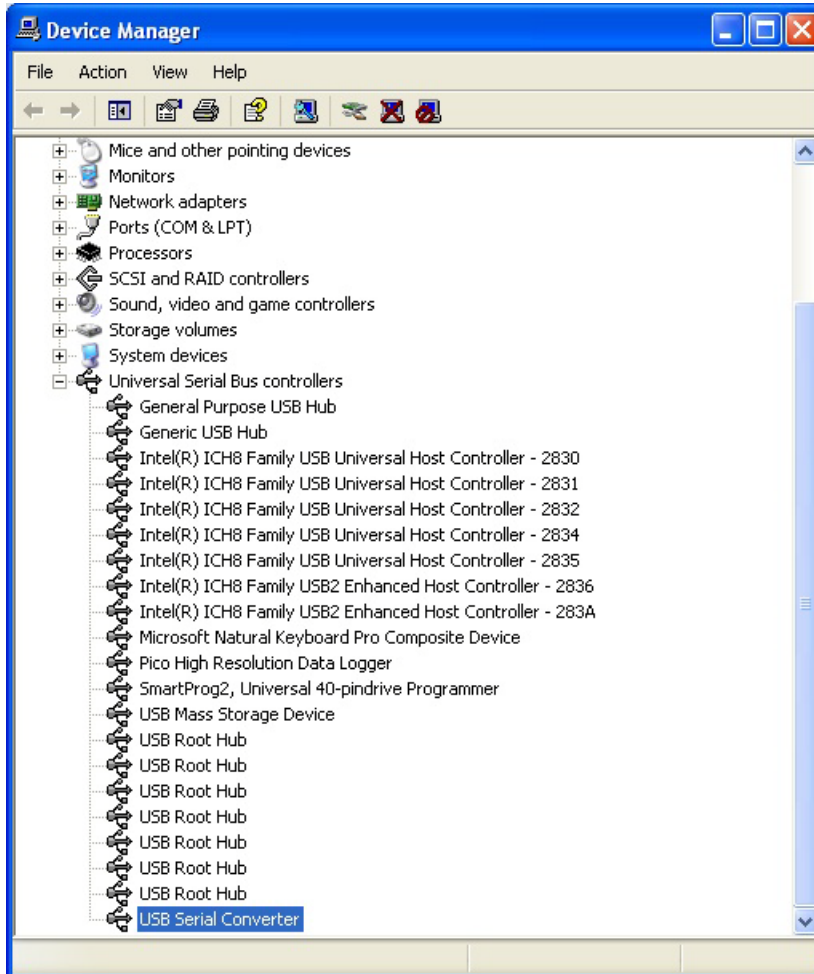


Figure 28 Device Manager.

Under Universal Serial Bus Controllers the controllers for the two TAM Air devices should appear. They are USB Serial Converter and Pico High Resolution Data Logger. This confirms that the Device controllers are installed.

2 Right-click on the Device controller and check Device status. If it says “This device is working properly” as shown in the figure to the right, the installation is successful.

- 3 Close the open windows.



If both drivers for the TAM Air are not present, contact TA Instruments for the instructions on proper driver installation procedures.

Windows Update Settings for Drivers

This section describes how the Windows Update Settings related to driver installations must be set for proper installation of TAM Air Assistant.

- 1 Open **System** in the **Control Panel**. The window shown in the figure to the right should be displayed.
- 2 Click the **Windows Update** button. The following window is shown.
- 3 **IMPORTANT:** Select “**Ask me to search Windows Update every time I connect a new device.**” **DO NOT** select the option, “**If my device needs a driver, go to Windows Update without asking me.**” It is preferable to use the device drivers installed for your instrument and prevent accidental file overwrites.

Uninstalling the Drivers

If the drivers are not working properly, if you have installed the wrong device, or when upgrading software versions prior to 1.1.14.6, uninstall the devices using the instructions in this section. Then reinstall the drivers following the instructions in the previous sections.

To uninstall a device, access the Control Panel in Windows and select Add or Remove Programs (in Windows 7, this is labeled Uninstall a Program). Uninstall every item labeled Windows Driver Package - FTDI CDM Driver Package.

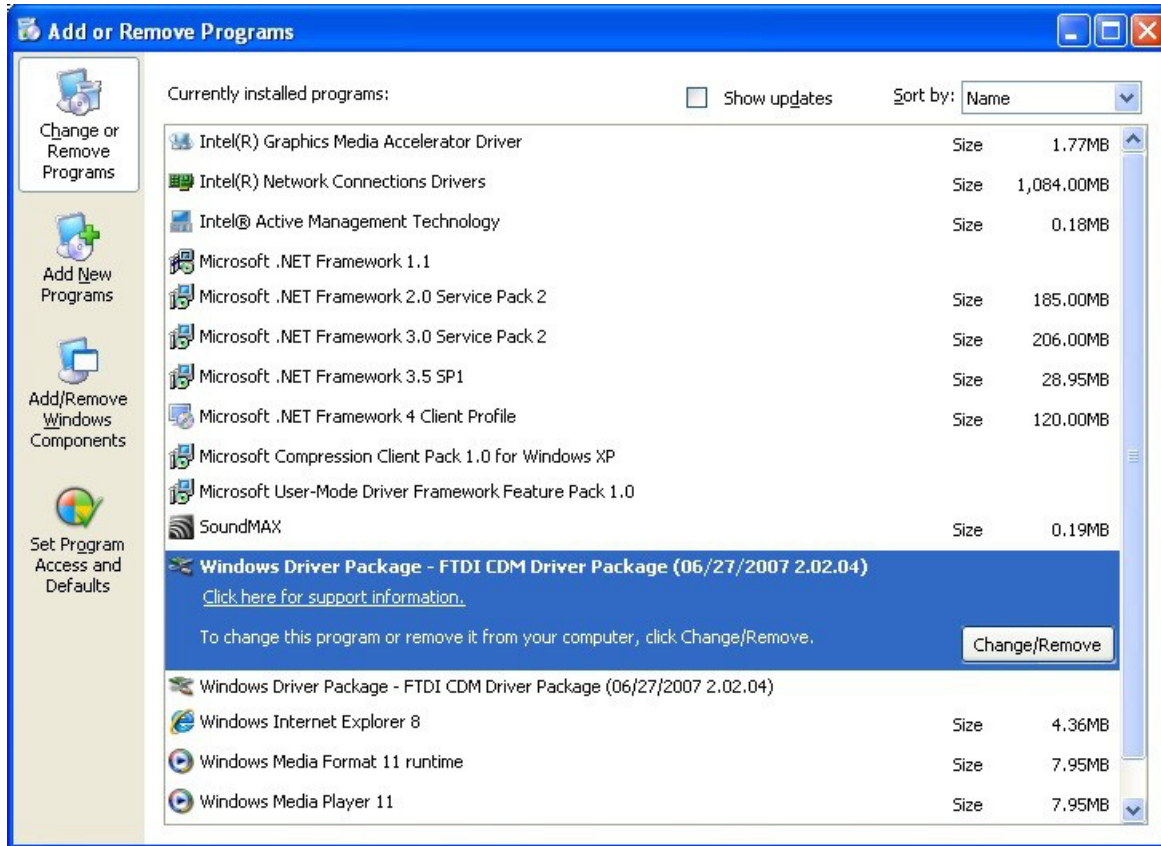


Figure 29 Add or Remove Programs.

If you continue to have problems, please contact TA Instruments for service.

Installing Multiple TAM Air Instruments

Several TAM Air instruments can be run on the same computer. The CDs supplied with TAM Air Assistant software must contain the device files for all the TAM Air instruments. Contact TA Instruments if you need assistance.



IMPORTANT! Follow the instructions for the software installation. When the instruments are to be plugged into the computer for the first time, plug them in one at the time and perform the installation of the device controllers separately.

Computer Settings

- 1 TAM Air measurements are usually long, running for several days. It is important that the data collection is not interrupted or cancelled during the time of the measurement. To decrease the likelihood of unwanted interruptions, set up your computer as directed below:
- 2 Choose the **Settings/Control Panel/Power Options** from the **Start** menu. Select the **Power Schemes** tab as shown in the figure to the right. Select **Never** from both of the lists to the right of **System Standby** and **System Hibernates**. See the figure below.



Figure 30 Power Options Properties.

- 3 Choose the **Settings/Control Panel/Automatic Updates** from the **Start** menu.

- 4 Choose one of these settings: “**Turn off Automatic Updates**” or “**Download updates for me, but let me chose when to install them.**”

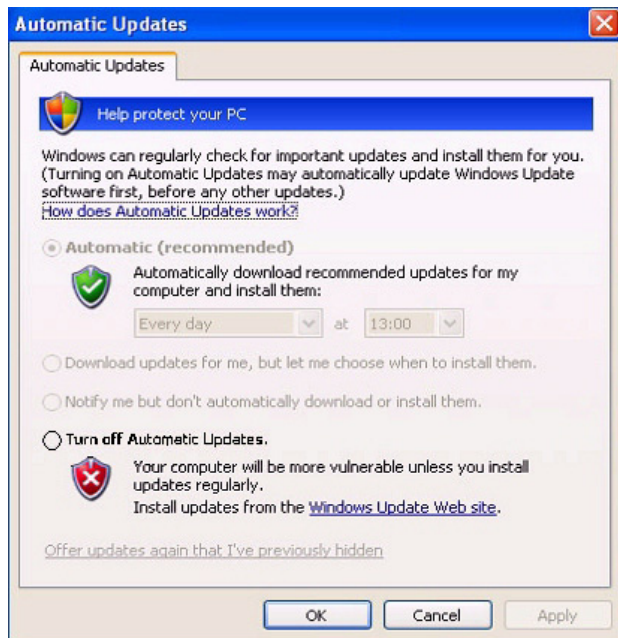


Figure 31 Automatic Updates.

Important Notes

Please read the following notes about the software and its set up.

- The CD-ROM is unique for the TAM Air thermostat and calorimeter as it contains device files holding calibration constants for one particular TAM Air instrument. Once installed, the files will not be overwritten when upgrading the software.
- TA Instruments recommends that the disc be placed in a safe place and/or backup the device files containing the factory calibration data of the instrument. The files are located in the directory Device Files on the disc.
- If the system is recalibrated in the future, the device file located on the local computer will be valid. If the device file on the computer is correct, TA Instruments recommends that you backup the file from the hard drive. The files are located in the directory:

C:\Documents and Settings\All Users\Application Data\SciTech\LabAssistant\Router\Devices