

# **Installation Instructions**

This document describes how to install an upgraded version of TAM Assistant 3.x on a computer.

### **TAM III installations are not yet supported for 3.0 release but will be in a future release.**

Before installing the TAM Assistant software, you should ensure that the computer system meets the specifications described in the appropriate Site Preparation Guide.



The following Microsoft components are automatically installed as part of TAM Assistant software installation: .NET 6.0.

## Important Note about Updating TAM Assistant Software

If the presently-installed TAM Assistant Software version is lower than 1.0, the upgrade process will involve additional changes to the system hardware and software components which must be performed by a TA Instruments Service Engineer. Do not attempt to follow these installation instructions, as they may render the instrument inoperable. Contact TA Instruments to arrange for a service appointment.

## Requirements

#### Host computer minimum hardware requirements

- Windows 10 Professional or higher
- 8 gig or more of RAM
- 100 gig or more free hard drive space
- High resolution monitor 1920 x 1080 or higher

### TAM III embedded computer minimum hardware requirements

- AIMB-501 motherboard
- Windows 10 IoT (to be installed by a Field Service Engineer)
- 8 gig or more of RAM

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- 100 gig or more free hard drive space
- High resolution monitor 1920 x 1080 or higher with a VGA connection
- Extra hard drive (for possibility to downgrade)

### Basic Steps for Installation

Follow the steps below to install your software on the computer that is to be connected to a TAM IV instrument.

If you are not logged into Windows with Administrator rights, log out and log into Windows with Administrator rights.

- 1 End all running TAM Assistant applications.
- 2 Install the latest Windows updates.
- 3 Install Adobe Acrobat Reader (if required) to read pdf documentation file.
- 4 Uninstall older versions of TAM Assistant.
- 5 Install the TAM Assistant software.
- 6 Connect to an instrument.

### **Detailed Installation Instructions**

#### (1) End all running TAM Assistant applications

End any running experiments and close TAM Assistant.

### (2) Install Microsoft Operating System Critical Updates

If you don't have the required versions of these packages, they can be obtained through the Microsoft website (at www.Microsoft.com/downloads) or by using the Microsoft Windows Update mechanism (accessed through the Start menu or by accessing http://update.Microsoft.com).



It is critical to install the latest Windows Update or the devices may not load properly.

### (3) Install Adobe Acrobat Reader

All of the manuals, application notes, etc. supplied by TA Instruments are supplied in Adobe PDF format. If your computer doesn't have Adobe Acrobat Reader already installed, you will need to install it to view these files on your computer.

### (4) Uninstall Older Versions of TAM Assistant Software

If you have a previous version of TAM Assistant Software on your computer, you will need to uninstall the software before you install the new version. To do this:

- 1 Type "Uninstall" in the search bar.
- 2 Select the Add or Remove Programs app.
- Under Apps & Features, browse to TAM Assistant, and then click it and select Uninstall. 3

#### (5) Install TAM Assistant Software

If starting the installation from a CD, browse to the executable file (there is only one) on your CD and run it, or download it from https://www.tainstruments.com/support/software-downloads-support/downloads/



Agree to the license terms and conditions and then click Next.

2 Choose which features to install and then click Next.

🐻 TAM Assistant 3.0 Setup	-		×
TAM Assistant 3.0 Choose features			
Choose the additional features you want to install			
Include TAM Assistant Device Emulator Allows you to run TAM Assistant against emulated TAM III thermostat and calorimeters			
Include TAM Air (3115-6) support Allows you to connect to older TAM Air (3115, 3116) devices			
Include legacy SolCal support Allows you to connect to legacy SolCal devices			
Advanced options			
Include TAM Assistant Security Manager Allows you to view and define users, and assign access rights for different parts of the system. (Requires that the TAM Assistant Security Server is available.)			
Back Nex	t	Close	2

- **TAM Assistant Device Emulator**: Is used to emulate different types of devices. Install if you want to try the program without connecting to a real instrument.
- **TAM Air Legacy (3115-6) support**: Select this option to connect to a legacy TAM Air instrument (the legacy TAM Air will have an external Omron thermostat controller attached).
- Include Legacy SolCal support: Select this option to connect to a SolCal instrument using an older TAM III Accessory Interface.
- **TAM Assistant Security Manager**: Only needs to be installed if the TAM Assistant security system is used. For more information see the TAM Assistant security documentation.
- **3** Determine the installation location. We recommend that the default path is used. Click **Install** to begin the installation.



#### 4 Wait while TAM Assistant is installed.

🛃 TAM As	sistant 3.0 Setup	-		×
	TAM Assistant 3.0 Install progress			
Please wa	it while the setup wizard installs TAM Assistant.			
Processin	g: TAM Assistant			
			Cancel	I
5 Clic	k <b>Close</b> . TAM Assistant is now installed.	_		×
	TAM Assistant 3.0 Install finished			
Insta	llation successfully completed			
			Clo	ose

If you selected the option to include TAM Air support, follow the instructions listed in "Connecting TAM Air to the Computer" in the document "Installing TAM Air Software."

#### Installed programs

After the installation, TAM Assistant 3.0 has been installed on the computer and is found under **Start** > **Programs**.

#### TAM Assistant

This program is used to run TAM Assistant in normal mode and to connect to supported instruments such as TAM IV, TAM III, TAM Air, TAM III Accessory Interface, and TAM IV Accessory Interface.

The following optional components are also found in the **Start** menu if they were selected to be installed.

• TAM Assistant Extras/Device Emulator

This program can be used to run an emulator that simulates calorimetric experiments. The data collection frequency can be sped up to reduce the response time. This mode is useful for training purposes to learn about the different functions of the TAM Assistant software.

#### • TAM Assistant Extras/TAM Assistant Security Manager

The security manager is used to view and define TAM Assistant security settings. For more information see the TAM Assistant Security documentation.

### (5) Connect to a TAM IV Instrument

After the software installation is complete, the TAM Assistant Server 3.0 service automatically starts. This service differs from the service in 2.x in that it is always running, even when the TAM Assistant software is not running.

🔍 Services						_ D	×
<u>F</u> ile <u>A</u> ction <u>V</u> iew	<u>H</u> elp						
o 🗐 📊 🔶 🔷	à 📑   🚺 📷   🕨 🔲 II 🕪						
Services (Local)	Services (Local)						
	TAM Assistant Server 3.0	Name	Description	Status	Startup Type	Log On As	^
	Stop the service Restart the service Description: TAM Assistant 3.0 Device and Experiment Server	<ul> <li>Storage Tiers Management</li> <li>Sync Host_1fa7f9</li> <li>SysMain</li> <li>Sysmon64</li> <li>System Event Notification S</li> <li>System Events Broker</li> </ul>	Optimizes t This service Maintains a System Mo Monitors sy Coordinates	Running Running Running Running Running	Manual Automatic ( Automatic Automatic Automatic Automatic (T	Local Syste Local Syste Local Syste Local Syste Local Syste	
		System Guard Runtime Mo TAM Assistant Server 3.0 Task Scheduler TCP/IP NetBIOS Helper TeamViewer	Monitors an TAM Assista Enables a us Provides su TeamViewer	Running Running Running Running Running	Automatic ( Automatic ( Automatic Manual (Trig Automatic	Local Syste NT SERVIC Local Syste Local Service Local Syste	l v
	Extended Standard						

Switch on the power to the TAM IV and connect a USB cable from the PC to the instrument. TAM Assistant automatically detects firmware upgrades. The firmware can be updated on each individual device by clicking on the corresponding link as shown below.

9 -				TAM Assistant			⊞	-		×
Home	Analysis Settings He	٩b								
New Experim	Mew Report ment	Open Results/Data	Properties Permissions Audit trail	Show dashboard ``_`` Show maximized Manage layouts ~		Jisconnect	Download results	Update firmware	Messages	
	New 🕞	Open	Properties	Layout	Security			Devices		^
Devi	ikes	▲ 'Legacy TA ▲ 'Legacy TA ▲ 'Legacy A	M IV Thermostat' is using a legacy M IV Calorimeter Backplane' is usi ccessory Box Interface' is using a le Waiting †	r communication protocol and requires a f ng a legacy communication protocol and gacy communication protocol and require for devices to be connected t	firmware upgrade. <u>Update:</u> requires a firmware upgrad es a firmware upgrade. <u>Ups</u> o TAM Assistant de	firmware le. <u>Update firm</u> late firmware evice serve	nware			× × ×
Devi	ces Experime	ents Results	Reports •••							

It can also be installed on all devices with a single click via the **Update Firmware Devices** button shown below.

•				TAM Assistant			Ē	-		×
Home	Analysis Settings He	łp								
New Expe	iment 🔠 New Results/Data	Open Results/Data	Properties Permissions Audit trail	Show dashboard (h) Show maximized Manage layouts ~	$ \begin{array}{ c c c c } & & & & & \\ \hline & & & & \\ \hline & & & & \\ \hline & & & &$	Disconnect	Download results	Update firmware	/essages	
	New 🛱	Open	Properties	Layout	Security			Devices		^
PL De	vices	▲ 'Legacy TA ▲ 'Legacy TA ▲ 'Legacy Ad	AM IV Thermostat' is using a legacy AM IV Calorimeter Backplane' is usi ccessory Box Interface' is using a le	communication protocol and requires a ng a legacy communication protocol and gacy communication protocol and requir	firmware upgrade. <u>Update</u>   requires a firmware upgrac es a firmware upgrade. <u>Up</u> o	firmware le. <u>Update firn</u> date firmware	nware			×××
		Firmware Update	e - TAM Assistant				×			
		The following d Select device bo	levice modules have firmware the ards to update and click Start firms	<b>at can be updated.</b> vare update.						
			Device	Current version	New version					
			egacy TAM IV Thermostat	0.70	1.0.13					

Verify device communication is properly setup by launching **Device Manager** (type Device Manager in your search bar) and checking the **Ports** group. A separate COM port is setup for the TAM IV thermostat, TAM Air thermostat (not shown in this example), each calorimeter backplane, and the TAM IV Accessory Interface as shown below:



### (6) Connect to a TAM III Instrument

The TAM III instrument must be upgraded by a field engineer to the Windows 10 IoT operating system. If the embedded computer has an outdated motherboard, the entire embedded computer must be replaced with a newer one. Older display monitors must be replaced with a high resolution 1920 x 1080 monitor with a VGA connection.

## *Installing and Setting Up the Solution Calorimeter (SolCal) Features in TAM Assistant*

The TAM III Accessory box can be connected to the external computer via a USB connection on the back or a serial port.

- TAM III and SolCal: The Accessory box that contains the SolCal electronics must be connected to the external computer. The SolCal only shows up as a device on the external computer and not on the embedded software on the TAM III.
- TAM IV and SolCal: The Accessory box is connected directly to the computer that runs TAM Assistant.

For assistance with upgrading TAM Assistant and connecting your SolCal, please contact your local service representative.

TAM Assistant can be downloaded from www.tainstruments.com/support > **Software Downloads**.

**1 TAM III only**: For a SolCal install in TAM III install you must disconnect the TAM III from the external computer. This is done from the main menu. Select **Settings** > **Configure connections**.

Manage connected servers		×
Current set of servers		
Status Name Hostname	IP	Port
Connected TAM III - host: TAMIIInum381 - host: TAMIIInum38 10.48.1.97	10.48.1.97	8085
Add pow conver		
Remove selected server(s)		
		Done

2 TAM III only: Note the IP address for the reconnection. Click to highlight the TAM III and then click Remove selected server(s).

**3 TAM III and TAM IV:** After the installation is complete, power on the instruments and connect them to the host computer. This allows the drivers to load, then start the TAM Assistant software. From the main menu, select **Settings** > **User Information**, then select the **User level** tab and change the user level to **Advanced**.

Settings	? 🔀
User information User level	
Select user level	
Normal	
Advanced	
Developer	
OK Ca	ncel Help

4 From the Main menu, select Settings > Port Settings. If you are using a USB connection to connect your SolCal to the host computer, select the first available COM port (COM1 if connecting using a serial cable). Using that COM port, select AccBox and click OK.

Port settings			×
COM-port configuration			
COM1 (Built in):	AccBox	$\sim$	
COM4 (Virtual):	<none></none>	~	
	r		
		OK	Cancel

5 After a minute or two, the SolCal device displays in the TAM Assistant.

6 TAM III only: Connect back to TAM III. From the Main menu select Settings > Configure connections. Click Add new server. If the TAM III does not automatically display in the list, the IP address noted earlier can be typed in by selecting Add explicitly specified server.

urrent set of						- 0
Status	Name		Hostname	IP	Port	Port
	TAM III - TAMIIIn	um381	10.48.1 97	10.48.1.97	8085	
Add	Add explicitly spe IP or Hostname:	ecified server				
Add Remove s	<ul> <li>Add explicitly spe IP or Hostname: Port;</li> </ul>	ecified server	]			

7 TAM III and TAM IV: Click on the device and select the Settings tab. You will need to have your SolCal calibration files stored somewhere locally on your host computer hard drive. Click Import and browse to your SolCal calibration file (unit\*.dat). Click OK to import the settings that are specific to your SolCal. Then repeat the import process for the vessel file (vsl\*.dat).

<b>I</b> •			TAM Assistant				Ē	-	□ ×
Home Analysis <mark>Set</mark>	tings Help								
Configure Port Settings	Report User Inform Settings	ation Security Settings							
Devices	Other								
• TAM IV MicroXL Thermo	nstat #3	2225 SolCal Id198 at KSI Overview Control Setting	humway-W10 <sup>15</sup> Channel Definition Adva	nced Settings Ad	ditional data				>
> 🗑 TAM IV Micro>	(L Thermostat #3	SolCal settings Note: you must import t	he solcal calibration file that s	hipped with your ir	nstrument for first	t time use (vessel can be	e imported o	r input ma	nually).
> 🔛 Ch1 [MicroXL 2	22480 in TAM IV #3]	Select a SolCal:	<new> ~</new>	SolCal serial#:			Impor	t	
Sew> Ch2 [4 Minicalorimeter	ml ers in TAM IV #3]		Resistance (SolCal)			Current resistance (Sol	Cal)		
> • • Ch3 [20ml Min TAM IV #3]	icalorimeters in	$U_{B} = V_{B}$	R1: 0	Ω		R1:	Ω	R=Ae <sup>±</sup> <u>M</u> easu	e(RT)
<new> Ch4 [N TAM IV #3]</new>	lacrocalorimeter in	$\downarrow$ $R_0$ $R_2$	R2: 0 BathT: 0	Ω °C	->	R2: BathT:	Ω •C	R0 =	Ω0
<ul> <li>TAM III Accessories inter</li> </ul>	face - COM1								
2225 SolCal Id KShumway-W	198 at 10	Vessel settings						_	
<ul> <li>TAM IV Accessory interface</li> </ul>	ace #1500	Select a vessel:	<new> ~</new>	Vessel serial#:			Impor	t	
> 👔 SolCal Control	21449 (slot 2)		Thermistor constants			Current thermistor c	onstants		
> 🛓 Gas Flow Contr	rol #149 (slot 3)		A: 0		_	A:			
> 📺 Titration Contr	rol #111 (slot 4)		B: 0 C: 0		->	В: С:		]	
> Pump Control	#46 (slot 6)								
Voltage I/O #2	29 (slot 8)		Heater Rnominal: 0 RleadCorr: 0	Ω	->	Current heater Rnominal:		Ω	
								_	

8 Once this is completed, revert back to **Normal** user level. From the Main menu, select **Settings** > **User Information**, then select the **User level** tab and change the user level to **Normal**.

Settings	? 💌
User information User level	
8	
Select user level	
Normal	
Advanced	
Developer	
	·
ОК	Cancel Help

Your SolCal software is now ready for use.