



## *TA Instruments* *What's New in Thermal Advantage*

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### **What's New in Thermal Advantage Software V5.5.22**

- Added support for ACS-2 (Air Chiller System).
- DMA Firmware V21.03.96
  - Added support for the ACS-2

### **What's New in Thermal Advantage Software V5.5.20**

- Bug fix to repair the installer, which was failing due to a Microsoft Security update.

### **What's New in Thermal Advantage Software V5.5.19**

#### *Miscellaneous Fixes and Enhancements*

- DMA Firmware V21.02.88
  - Updated temperature control for the ACS-3. The ACS-3 requires new clamp screens that are now being included in the Q800 Chiller Panel Assembly.

### **What's New in Thermal Advantage Software V5.5.17**

- Added support for Nitrogen Purge Cooler and ACS-3 (Air Chiller System).
- DMA Firmware v21.2.73
  - Support added for ACS-3 and NPC.
  - Compliance correction for the submersion (fluid) compression clamp has been corrected to have the right sign. Previously sign was opposite of the standard compression clamp.
  - The allowable input for the Control/Go To Temperature command has been expanded to include the full range of temperatures. Previously, this command was limited to sub-ambient temperatures only.

- Navigator script updates (including Microsoft Word 2013 template issues)

## What's New in Thermal Advantage Software V5.5.3

- Updated DMA Embedded Code to fix Dynamic Calibration issues. Electronic and Dynamic Calibrations required after installation.
- Updated DSC Embedded Code to enable the option for MDSC on Q20P.
- Updated Q5000 Embedded Code to fix PID algorithm for LFA Type 2.
- Updated document DMA-RH Getting Started Guide.pdf.
- Updated document InstallingAdvantage.pdf.
- Updated document 925911.pdf.

## What's New in Thermal Advantage Software V5.4

- Added Navigator support for DHR.
- Fixed file load and save issues with sequences and preferences.

## What's New in Thermal Advantage Software V5.3

- Installation of Entrust Root Certificate
- Windows 7 changes:
  - Fixed **File Open** dialog crashes (QNX-based instrument control)
  - Fixed failing to save or print Instrument Log
- DSC:
  - Fixed hidden **OK** button when saving cell constant calibration results when DSC MultiCal Set enabled
  - Fixed Platinum Tzero analysis failure
  - Q20 Modulated: Updated modulated signal list
- TGA Q500: Corrected initial size value when using Force Start
- TGA Q5000: Support for new Lower Furnace Assembly (LFA2). Selection found on **Instrument > Preference** window.
- SDT Q600: Fix display of missing curve for Weight Calibration

# What's New in Thermal Advantage Software V5.2

## *Feature Enhancements*

- Tzero<sup>®</sup> Pressure DSC cell support: Q Series<sup>™</sup> v5.2 supports for the Tzero Pressure DSC cell (P/N 970800.901), as well as the Q Series Pressure DSC cell (P/N 970900.901).
- Windows 7 and 64-bit operating system support:
  - This version of Advantage software was updated to include compatibility with the Windows 7 operating system.
  - Universal Analysis data package requires a specific Windows component called **WinHelp system**. The drivers to support this system are not native to the Windows 7 operating system, but can be obtained from the Microsoft website at:  
<http://www.microsoft.com/downloads/details.aspx?familyid=258AA5EC-E3D9-4228-8844-008E02B32A2C&displaylang=en>
  - In addition, the installation program was changed to support installation of Advantage software on 64-bit operating systems.

## *Miscellaneous Fixes and Enhancements*

- All instruments and controller software: Updated TA logo graphics.
- Documentation: Updated DMA-RH Accessory manual; added new Tzero Pressure DSC Cell manual.
- TGA Q5000 IR: Corrected HiRes TGA issue that occurred at temperatures above 800°C.
- DMA Q800: Completion of the electronic calibration now properly finishes; DMA-RH service signals were expanded; optimized static force control for low force experiments. Note that installation of software requires recalibration of Force.
- DMA-RH Accessory software: DMA-RH sample chamber temperature control has been modified to optimize operation and minimize settling times. The allowable barometric pressure range was also expanded; software upgrade requires temperature mapping calibration to be performed using the DMA-RH application program (under the **Accessory Setup** tab). Consult the DMA-RH Accessory manual for details.

## **What's New in Thermal Advantage Software V5.1**

### *Feature Enhancements*

#### **DMA-RH Accessory Support**

Advantage V5.1 includes support for the new DMA-RH accessory, which allows for the control of both temperature relative humidity around the sample. The DMA-RH accessory consists of a sample chamber mounted on the DMA, and a control cabinet. The sample chamber connects to the control cabinet through a conditioned transfer line which contains the heated gas/vapor tube, liquid lines for cooling the chamber mounted thermoelectric modules, and all the electrical control lines required to control the chamber. With the DMA-RH accessory installed, samples can be analyzed over the temperature range of 5–120°C, and the relative humidity range of 5–95%

The DMA-RH accessory is compatible with the latest generation QNX-based Q800 DMA operating version 20.12 or later.

## **What's New in Thermal Advantage Software V5.0**

### *Feature Enhancements*

#### **Expanded Cooler Options for the TMA**

A new Mechanical Cooling System (MCA70) has been added to the list of available coolers for use with the TMA Q400. The MCA70 is designed to provide you with a source of continuous cooling for the TMA, while eliminating the need for liquid nitrogen or dry ice. The accessory consists of a two-stage, cascade, vapor compression refrigeration system with an attached cooling head. It can be used for experiments requiring cooling within an operating range of -70 to 400 °C. For complete details on using this accessory, see the MCA Mechanical Cooling Accessory Getting Started Guide accessed through the Q Series TA

Books. (The MCA70 is only compatible with QNX-based TMA systems with instrument software version 22 or higher.)

## *Miscellaneous Fixes and Enhancements*

A number of miscellaneous software changes have been made. (These changes only apply to Platinum/QNX- based instruments).

- **All Instruments:** The software has been updated to address improper filename incrementing of run sequences.
- **DSC Q2000/Q200:** Enhance operation with the PCA to support communications via RS232 and a new associated Shutter method segment.
- **TGA Q50/500:** Corrected the “Error” status displayed on the touch screen when taring a pan.
- **TGA Q5000:**
  - Corrected a problem that incorrectly reported back the method log when there were two back-to-back Hi-Res method segments.
  - The autosampler sequence will now immediately halt when any over temperature limit errors occur.
- **TMA Q400:** Added support for the new MCA70 cooling accessory.
- **DMA Q800:**
  - Message added to recommend closing the furnace for best results during submersion clamp calibration.
  - Adjusted the input range for better control at the drive shaft lower limit.

## **What’s New in Thermal Advantage Software V4.9**

### *Feature Enhancements*

#### **Expanded Cooler Option for the DSC**

A new Circulator-Based Cooling System (CCS) has been added to the list of available coolers for use with the DSC Q2000, Q200 or Q20. (The CCS is not available for use with the Q1000, Q100 or Q10 DSC.) The CCS is used to supply a cooling fluid to the DSC that will cool the cell to a minimum temperature of –15 °C (the lowest achievable temperature is dependent on the temperature and flow rate of the cooling media). The CCS consists of a cooling head and feed hose. You can use the CCS with or without a circulator/chiller. TA Instruments supplies an optional PolyScience circulator/chiller, if desired. For complete details on using this accessory, see “DSC Circulator-Based Cooling System Getting Started Guide” accessed through the Q Series TA Books.

## Miscellaneous Fixes and Enhancements

A number of miscellaneous software changes have been made. (These changes only apply to Platinum/QNX-based instruments).

- **DSC Q2000/Q200/Q20:**
  - Added support for new CCS cooler.
  - Enhanced the software to reduce the occurrence of false LNCS tank empty triggers.
  - The pressure DSC Offset Calibration Table was corrected for reverse column entry.
  - When using the DSC Tzero Calibration wizard to perform Indium cell constant and temperature calibration, the message “File not found” is no longer generated when advancing to the temperature analysis page.
- **TGA Q50/500:** Added support for internal manufacture procedure change.
- **TGA Q5000:** Corrected a problem when performing combined Modulated/Hi-Res<sup>TM</sup> experiments.
- **TMA Q400:** Corrected a problem preventing the execution of modulated TMA experiments.

The following changes apply to the Universal Analysis program:

- **DMA Files:** DMA Stress and Strain signals are now properly corrected for the size adjustment (changing size on the Data File Information dialog) of Q Series DMA data files, when the geometry is “Rectangular” and the selected clamp mode is “Dual Cant,” “Single Cant,” “3-Point,” or “Submersion 3-Point.”
- **Integrity:**
  - Corrected a “file not found” error that would occur when you tried to save a modified saved analysis record back to the database as a new record.
  - After upgrading software from Integrity V2.0 (Universal Analysis V3.9), saved analysis-only records within the Integrity database would not open properly with later versions. An “Invalid Data Message” was displayed.
  - The Integrity record ID at the top of the plot no longer reverts back to the original data file record ID when the parameter block is viewed.
- **Humidity Analysis:** Changes made to the Data File Information fields: Size, Sample, Method, Operator, and Comment, in the original data file, are now carried over to the humidity analysis.
- **Analysis Log:** The Analysis log entry for the Tools/Baseline File function has been expanded to include the selected baseline filename as part of the log entry.

The following change applies to non-Platinum/QNX-based instruments:

- **All Instruments:** The software has been updated to address a German localization issue related to an empty DSC calibration standards list.

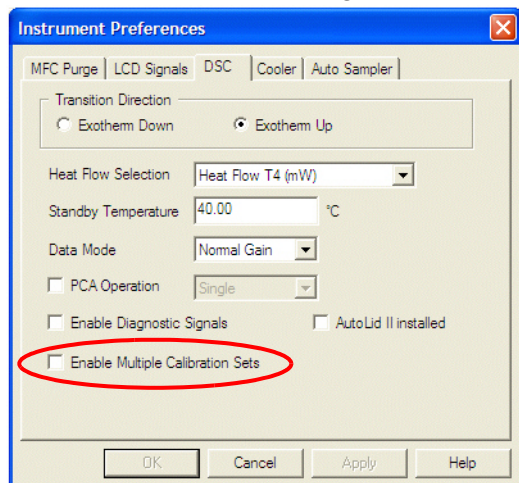
# What's New in Thermal Advantage Software V4.8

## Feature Enhancements

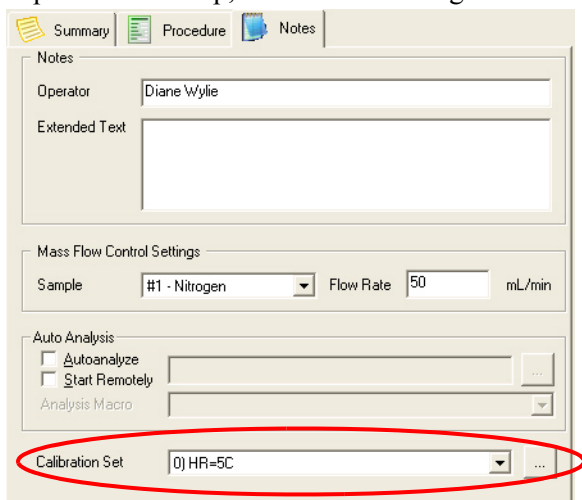
### DSC Multiple Calibration Sets

The TA Instruments Platinum features for the DSC were updated to add support for multiple calibration sets. This new option gives you the ability to configure specific calibration sets that can be applied later to match specific experimental conditions. This is particularly useful when running experiments using the DSC Autosampler. For example, calibration sets can be configured using a specific combination of heating rate, purge gas, and pan type. Subsequently, when you run an experiment, the calibration set closest to the current experimental conditions can be chosen and applied. Up to ten calibration sets can be created and saved. This feature, combined with Platinum's autocalibration options, further enhances the DSC Q2000/Q200/Q20 software flexibility.

This feature is activated using the **Tools/Instrument Preferences/DSC** page as shown in the figure below.



Once activated, the multiple calibration table can be viewed by selecting **Calibrate/Cell Temp Table** or by clicking on the Browse button (...) next to the new **Calibration Set** parameter on the Notes page of experimental setup, as shown in the figure below.



You may see the following messages after loading the new DSC instrument code:  
“File not found:/multiple.dat (705)” and “Multi-point Cal set (0) Activated.” This is normal.

For complete details on using this feature, see “Configuring and Using Multiple Calibration Sets” in the online help.

## Support for Microsoft Vista Operating System

This version of Advantage software was updated to include compatibility with the Windows® Vista operating system. If you have an Advantage Integrity system, compatibility with Vista is not yet available.

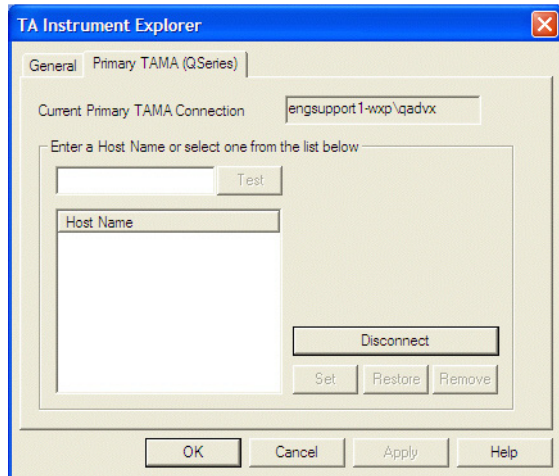
## Miscellaneous Fixes and Enhancements

A number of miscellaneous software changes have been made. (These changes only apply to Platinum/QNX based instruments).

- **Run Sequencing:** Numerous improvements were made to sequences with respect to sequence creation, reordering, data file incrementing, saving, and restoring. The sequence file format was updated for saving test templates. It's recommended that older sequence files be resaved with this latest version of software.
- **DSC Q2000/Q200/Q20:** A new standard, adamantane, has been added to the calibration standard list; An issue was addressed regarding the Platinum indium verification data logging within the indium tracking report. Indium tracking was modified to add the calibration set index number to the spreadsheet view. The Instrument Preferences data mode list display has been updated for instances when the application is set to a language other than English.
- **DSC all Q Series:** The gas entries in the data file parameter block have been corrected to display the selected gas type for Gas 1 (previously, Gas 2 selection was displayed for both Gas 1 and 2).
- **TGA Q5000:** Corrected a display issue that occurred when switching between the TGA Autoweight window and the Experimental pane. Corrected an abnormal method termination situation when using the stepwise isothermal template.
- **TGA Q50/500:** Corrected an abnormal method termination situation when using the stepwise isothermal template.
- **DMA Q800:** The initialization of the data file path has been corrected to avoid data file creation (DFA) issues after installing software or performing reset parameters. The missing Method and Frequency tabs from the Procedure page have been corrected.
- **SDT Q600:** The signal display list, within the instrument control software, now displays properly after loading new instrument software. The numerical notation for the Japanese and Chinese languages is now correctly displayed as a period (e.g., 12.345) in the data file parameter block.
- **TMA Q400:** The MFC, which was missing from the instrument options list when installed, is now corrected. The numerical notation for the Japanese and Chinese languages is now correctly displayed as a period (e.g., 12.345) in the data file parameter block.
- **General:** The **Run Information** windows have been modified to remove calibration run information when not applicable. The **Modify running method** option now properly modifies the active experiment when the selected run in the run sequence list is not the active run.
- **Platinum Mail & Messaging:** The Platinum mail/messaging component has been changed from MSDE to SQL Server 2005. If you are upgrading an existing QSeries system with Mail & Messaging



enabled, you will need to access TA Explorer settings and reselect the **Current Primary TAMA Connection**. (See the figure below.) Select the desired Primary TAMA server from the **Host Name** list. Computers hosting a TAMA database will be listed using the format “Computer Name\qadvx.” (The Host Name is the name of the computer hosting the database and qadvx is the Instance Name.)



These changes apply to non Platinum/QNX based instruments only:

- **All Instruments:** The software download procedure was modified to accommodate larger sized, instrument flash disks.
- **German Instrument String File:** The German instrument string file was corrected to address issues with improper display of some text (e.g., Method segments options for Motor, Event, and Data segments). The instrument software itself did not change. Once the new software is installed, **download the instrument software again** to load the new German string file.

This change applies to Universal Analysis:

- **Localization:** The Universal Analysis string files were updated to correctly display the  $\mu$  symbol in these files. (Previously the  $\mu$  symbol used the wrong characters, thus preventing display of the TMA analysis options for the dimension change signal when localized to Chinese and Japanese.) The program itself did not change.

# What's New in Thermal Advantage Software V4.7

## Feature Enhancements

### QDMA, QTMA, QSDT Platinum Instrument Support

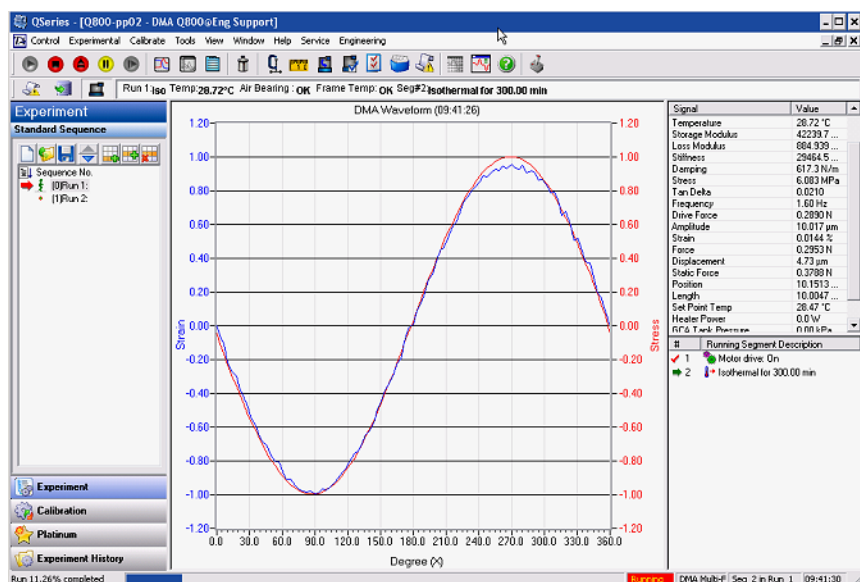
The Advantage Q Series™ software is compatible with the latest QDMA, QTMA, and QSDT instruments with Platinum/QNX capability. These instruments have been updated with the latest generation operating system (QNX), larger touch screen display with enhanced capability, and Platinum functionality, enabling autodiagnostic routines, messaging, and software updates.

### Enhanced TGA-FTIR Interfacing for TGA Q5000IR

An evolved gas interface kit is available for interfacing a TGA Q5000IR to an FTIR spectrometer equipped with a heated transfer line and gas cell. This interface kit includes a heated adapter to minimize condensation of the evolved gas from the TGA to the FTIR heated transfer line. Access the Tools/Instrument Preferences/TGA page to turn on the Evolved Gas Adapter Heater when installed. In addition, the Universal Analysis program was updated to further enhance interfacing to a FTIR by allowing importation of Gram-Schmidt and/or chemigram reconstructs (JCAMP) formatted files for direct overlay with TGA signals.

### QDMA Waveform Display

The DMA Q800 instrument control software has been enhanced to provide display of the DMA Waveform in oscillation mode. DMA Waveform provides a “virtual oscilloscope” to allow you to monitor the stress (force) and strain (displacement) waveforms as they are being generated during oscillation experiment. This feature can be used to monitor the quality of the data being generated. This can help you locate any signs of distortion in the sine waves that may indicate non-linear behavior in the sample or clipping, which, in turn, could indicate loss of contact between sample and tensioning clamp. This feature is only available for DMA instruments equipped with Platinum functionality. Right click inside the RealTime Plot pane and selecting **Show DMA Waveform** from the pop-up menu to access this function.



## Expanded Accessory Support for QDMA

Several new products are available for the DMA Q800 and supported with this software release. They include a three-point bending submersion clamp, and powder clamp (for use with the dual cantilever clamp). Consult online help documentation for installation and operation instructions. The three-point bending submersion clamp support is only available with QDMA Platinum-based instruments.

## New DSC High Volume and TGA Sealed Pan Dies for Tzero Press

The list of available dies for the new Tzero Press have been expanded to include dies for the DSC high volume pans, standard TA Series hermetic pans, and Q5000 IR TGA sealed aluminum pans. Consult online help documentation for installation instructions.

## *Miscellaneous Fixes and Enhancements*

A number of miscellaneous software changes have been made.

- **Q50 TGA:** The Platform calibration was modified to position the platform under the hang-down wire at the appropriate point in the procedure.
- **Q2000/200/20 QDSC:** Tzero calibration routines have been updated to optimize baseline offset values, ensuring the highest quality heat flow baselines and sensitivity/resolution performance; a new data mode was added for DSC experiments, which is selected on the DSC options tab. Normal Gain mode represents no change to the historical method, and is the default condition. High Gain mode is now included and is designed for experiments in which peak shape analysis is desired. A slightly higher level of baseline noise will result in High Gain mode.
- **Q5000 SA:** Fixed a problem that caused humidity verification to fail when a Mark Data segment was contained in the method.
- **Q800 DMA:** Analysis of dynamic calibration data was enhanced.

# What's New in Thermal Advantage Software V4.6

## *Feature Enhancements*

### Q5000 SA Instrument Support

The Advantage Q Series software is now compatible with the TA Instruments Q5000 SA (Sorption Analyzer). The TA Instruments Q5000 SA is used to determine the amount of moisture a material can adsorb or desorb as a function of its mass, temperature, time, and relative humidity. This instrument is primarily concerned with applications where changing levels of humidity can influence or significantly alter important properties or uses of a material (e.g., physical properties (T<sub>g</sub>), stability, shelf life, bioavailability).

### DSC Q2000, Q200, Q20 Instrument Support

The Advantage Q Series software is now compatible with the new TA Instruments Q2000 Series Differential Scanning Calorimeters (Q2000, Q200, Q20, Q20P and Auto Q20). It supports our current line of complementary accessory products, plus the new Tzero line of DSC sample pans and a new refrigerated cooling accessory (RCS40).

The Q2000 and Q200 are premier research grade instruments, while the Q20, Auto Q20 and Q20P are designed for basic research and QC applications. The Q2000 Series contains many new hardware and software improvements while retaining the full capability of Tzero Technology™, which delivers a fundamentally more accurate and precise measurement of heat flow. The net results include flatter baselines, superior sensitivity and better resolution than available from other DSC technologies.

### Enhanced Platinum™ Capability

Platinum features are designed to assist you in ensuring that your instrument is in proper working condition, calibrated, and has the latest software available. These features can be performed with minimal operator interaction and can be scheduled to occur on weekends or other times, which do not interfere with normal experiments. This capability has been expanded to include the new Q5000 SA and DSC Q2000, Q200, Q20, and Auto Q20 as well as to QTGA instruments with the Platinum (QNX) upgrade. The main features of Platinum include the following:

- **Automatic Calibration Routines:**
  - **Q5000 SA** - Used for automatic execution of relative humidity verification based on the deliquescence of readily available, well understood materials evaluated in a ramped humidity experiment.
  - **DSC Q2000 series** - Used for automatic execution of cell/cooler conditioning experiments, calibration (Tzero, cell constant, and temperature) and/or cell constant and temperature verification for DSC instruments equipped with an Autosampler.
- **DSC Indium Tracking** - Provides a history (using control charts) of your DSC cell performance, based on indium calibration and verification data obtained while using the Platinum functions. (Microsoft® Excel 2000 or higher is required for this function.)
- **Auto Diagnostics:** Used to perform the diagnostics routine, which provides verification that the instrument subassemblies are in proper operating condition.
- **Event Scheduler:** Allows sequences and procedures (calibration & diagnostics) to be executed at a specified time/day and frequency interval.

- **Email Notification:** Provides email and/or Windows messaging notification of subscribed events including experiment and procedure completion with results. Enables you to follow the instrument's activities. (Email notification requires Microsoft Outlook and a dedicated mail account.)
- **Live Software Updates:** Provides automatic notification that software updates are available for download from TA Instruments web site. (Connection to the Internet from the controller is required for this function.)
- **Sequence Enhancements:**
  - Allows configuration of a separate sequence for calibration/verification, containing up to 10 experiments.
  - Provides enhanced run sequence options that allow the ability to skip a run, jump to a specified run or stop the sequence at a specified run.

## Adobe Reader V7

The software installation CD has been upgrade to include Adobe Reader V7. When using this version to display PDF plots created by Universal Analysis, you'll need to make the following adjustment to the settings to properly display the image:

1. Open Adobe Reader, Version 7.
2. Select the menu item Edit / Preferences.
3. Select "Page Display" from the "Categories" list.
4. Uncheck the box "Smooth line art" and then click OK.

## Miscellaneous Fixes and Enhancements

A number of miscellaneous software changes have been made.

- **All Instruments:** The software was modified in order to improve temperature control in the event of intermittent component failure.
- **TGA Q5000 IR:** The Tare window has been modified to allow access to the experimental setup while taring is in process. Error 679, "File not closing" is no longer posted after AutoCurie analysis, if mail and messaging was not enabled. An emf (image file) of the analyzed data for AutoCurie is now automatically generated even if mail and messaging is not enabled. This file can be found in the same directory as specified for the data file (\*.emf). The heater control has been enhanced for helium purge gas. Mass flow calibration values are now reported in the calibration report as well as the data file.
- **TGA Q5000 IR/Q500/Q50:** The software control for Hi-Res experiments has been enhanced. Support for the Platinum-HT pans has been added.
- **Q5000 SA:** Humidity method templates have been modified to add additional Mark Data segments to enhance data processing. Humidity verification is now recorded in the Calibration Report. AutoDiagnostics routine and reporting was enhanced. Mass flow calibration values are now reported in the calibration report as well as the data file. The temperature calibration table has been expanded to allow up to 10 pairs of calibration points.
- **DSC Q2000/200/20:** Confirmation messages are displayed when performing operations at the touch screen (e.g., opening the lid while the cell is subambient; select stop while maintaining stand-by tem-

perature). The loading of Tzero heat and cool calibration data during a Platinum sequence has been optimized.

- **Universal Analysis:** Enhanced support for Q5000 SA humidity data was added. Localization support for Weight A (found in SDT dual sample experiments) has been added. Restore Cal Defaults was added to the list of TGA Autosampler calibration functions. A typographical error for the duplicate text string “Time at Weight%” has been changed to “Weight at Time” for the tool bar icon label, Macro Capture label and the Item Access file for Integrity.

## What's New in Thermal Advantage Software V4.5

### *Feature Enhancements*

#### TGA Q5000 & Platinum Support

Version 4.5.2 of the Advantage Q Series software has been updated with additional support and miscellaneous fixes for the TGA Q5000 instrument and Platinum software. These changes are not readily visible to the person using the software as they function during the running of the software and are not seen as new features. However, it's strongly recommended that all TGA Q5000 customers upgrade to this latest version to obtain these latest software changes. Refer to the next page, Thermal Advantage Q Series 4.4, for the most recent enhancements to the software.

### *Miscellaneous Fixes and Additions*

A number of miscellaneous software changes have been made.

#### Instrument and Controller Software

The follow changes apply to this version:

- **All Q Series Instruments:** The software was modified for compatibility with the latest PCU PIC code.
- **DSC Q10/100/1000:** The software was modified in order to improve cell temperature control in the event of intermittent component failure.
- **DMA Q800:** The GCA fill segment now works properly when used in conjunction with the Repeat Until and Step Temperature segments, as commonly used in time-temperature superpositioning experiments.
- **DMA Q800:** In TMA Strain mode, the initial percentage displacement now appears on the settings line in the data file parameter block as “Display nn.nnnn %”
- **TGA Q50/500:** The software control for hi-resolution ramps has been enhanced.
- **TMA Q400:** The abort method segment was repaired.
- **TMA Q400:** The software was changed to eliminate false error 990 from appearing when opening the furnace while in post test conditions.

#### Data Analysis Software

There were no changes to the Universal Analysis program for this release.

# What's New in Thermal Advantage Software V4.4

## *Feature Enhancements*

### TGA Q5000 IR Instrument Support

The Advantage Q Series software is now compatible with the TA Instruments Thermogravimetric Analyzer (TGA) Q5000 IR (Infrared). The Q5000 IR is a thermal weight-change analysis instrument, used in conjunction with a TA Instruments controller computer and associated software to make up a thermal analysis system.

The Thermogravimetric Analyzer measures the amount and rate of weight change in a material, either as a function of increasing temperature, or isothermally as a function of time, in a controlled atmosphere. It can be used to characterize any material that exhibits a weight change and to detect phase changes due to decomposition, oxidation, or dehydration. This information helps the scientist or engineer identify the percent weight change and correlate chemical structure, processing, and end-use performance.

### New Q5000 Platinum Features

Platinum features are designed to assist you in ensuring that your instrument is in proper working condition, calibrated, and has the latest software available. These features can be performed with minimal operator interaction and can be scheduled to occur on weekends or other times, which do not interfere with normal experiments. The main features include the following:

- **Automatic Calibration Routines:** Used for automatic execution of weight and temperature calibration and/or verification sequence for the Q5000 IR equipped with an autosampler.
- **Auto Diagnostics:** Used to perform the diagnostics routine, which provides verification that the instrument subassemblies are in proper operating condition.
- **Event Scheduler:** Allows sequences and procedures (autoweight calibration, autotemperature calibration, & diagnostics) to be executed at a specified time/day and frequency interval.
- **Email Notification:** Provides email and/or Windows messaging notification of subscribed events including experiment and procedure completion with results. Enables you to follow the instrument's activities. (Email notification requires Microsoft Outlook and a dedicated mail account.)
- **Live Software Updates:** Provides automatic notification that software updates are available for download from TA Instruments web site. (Connection to the Internet from the controller is required for this function.)
- **Sequence Enhancements:**
  - Allows configuration of a separate sequence for calibration/verification, containing up to 10 experiments.
  - Provides enhanced run sequence options that allow the ability to skip a run, jump to a specified run or stop the sequence at a specified run.

# Previous Releases

[Click here to open the document containing the Previous Releases for Advantage Q Series.](#)