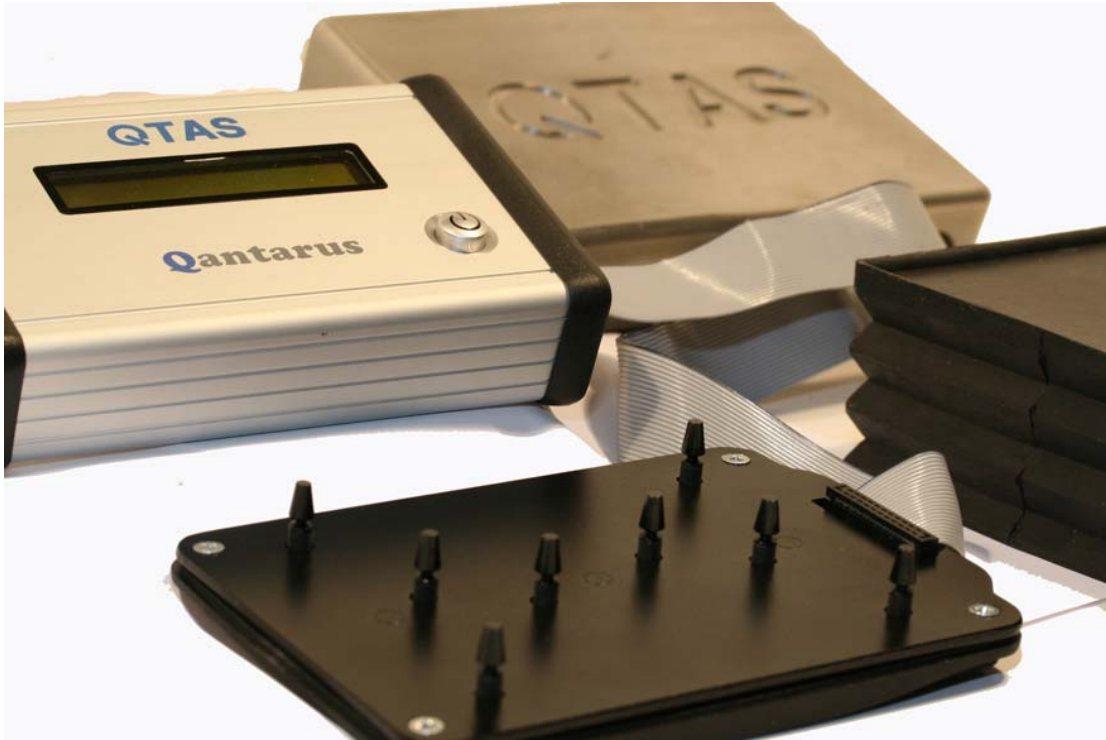


# User Manual



**QTAS 8..16..24..48..96**

**Temperature Acquisition Systems  
for  
Thermal Cycler Analysis**

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## Warranty

Quanta Biotech guarantees that the QTAS System you have received has been thoroughly tested and meets its published specification.

This guarantee is valid for **12** months against defects in materials and workmanship only if the product and functions have been used according to the instructions supplied with the unit.

The QTAS probes are guaranteed for 6 months.

No liability is accepted for loss or damage arising from the incorrect use of the unit and refund of the purchase price is at Quanta Biotech's option. Quanta Biotech is not liable for any consequential damages.

Quanta Biotech reserves the right to alter the specification of QTAS Systems without prior notice. This will enable us to implement developments and new improvements as soon as they arise.

QTAS Systems are for temperature validation purposes only.

Please note the serial number and date of purchase below. This information will be required in the event that service becomes necessary. The serial number of QTAS can be found on the underside of the blue control unit.

Serial Number \_\_\_\_\_

Date of purchase \_\_\_\_\_

## Safety Information

Before using the QTAS System for the first time, please read the entire manual. If you are unsure about the operation of the QTAS System please contact Quanta Biotech. It is important to observe the following safety symbols/precautions:

### Lithium battery:



The unit contains a lithium ion battery. If replacement is necessary, please observe the appropriate disposal instructions

### Liquids:



Ensure no liquids enter the inside of the device

### Heat:



The QTAS System can reach 99 °C. Care must be taken when handling the unit and accessories to avoid burns; allow the unit to cool prior to replacing or moving probes and prior to storage

### User Maintenance

This equipment should only be dismantled by properly trained personnel

### Working Conditions

Ambient temperatures of 4 °C to 32 °C

Up to 90% relative humidity

Satisfies the requirements of BS EN 61010-1:1994 parts 1 & 2

Alteration of this unit by the user invalidates the warranty, voids the above safety requirements and can be potentially hazardous

## Unpacking and Inspection

Unpack your QTAS System from its box and check that the unit has not been damaged in transit.

Please check the contents; your QTAS System is supplied with the following standard components.

1. QTAS Control Module
2. Fixed Probe Plate
3. QTAS Control Module/Probe Interface Plate Connection lead

QTAS Model	Number of Temperature Probes
QTAS8	8
QTAS16	16
QTAS24	24
QTAS48	48
QTAS96	96

4. USB Cable
5. QTAS Application CD

Save the packaging until you are sure all items are present and correct.

**If for any reason you need to return the unit, please contact Quanta Biotech on +44 1276 453658 or email [info@Quantadirect.com](mailto:info@Quantadirect.com).**

Quanta Biotech is not responsible for damage incurred during returns transit unless the unit is correctly packed and transported in its original packaging.

### Initial Set Up upon Receiving the QTAS Unit

The QTAS System unit requires an overnight charge prior to use.

1. Unpack the QTAS
  2. Connect QTAS to PC via USB cable using the USB cable
  3. Leave for 8 hours
- \* do not connect probes at this point

The unit requires 8 hours charging prior to use. QTAS will operate in stand-alone mode for > 2 hours with a fully charged battery. The battery charges whenever it is connected to the USB port even if the QTAS itself is switched off.

# SECTION 1

## Introduction

Many protocols in life science laboratories require the incubation of samples at specific temperatures. The outcome of these protocols can be dramatically influenced by the accuracy and the uniformity of the incubation temperature between samples during the execution of the protocol. The results of such experiments form the basis of most life science research publications. It is therefore essential that equipment used for the incubation is performing correctly and creating conditions that researchers can reproduce throughout the world.

From an equipment perspective probably the most demanding temperature dependent reaction in the Life sciences is the Polymerase Chain reaction (PCR). It requires rapid change in temperature, typically between three set temperatures for approximately 30 cycles a process usually automated by a thermal cycler. For each of these steps the unit must move the samples in the experiment to the next incubation temperature maintaining an even temperature across the samples and delivering them to the next set temperature, accurately, at the same time, with the minimum of overshoot/undershoot. A set temperature can be maintained for as little as 10 seconds and there is therefore minimal time for equilibration of the system before the unit must move the samples to the next set point. This is a considerable task and there is considerable variability in thermal cycler performance between vendors and during the life cycle of an individual unit.

The current era of quantitative biology demands ever more detailed analysis of the relationships between samples in gene expression studies and has profound importance in all aspects of health and disease.

Consequently it is good practice to verify the correct operation and calibration of the thermal cycler or other incubation instrument. Generally such analysis is conducted off site by a third party. This has the disadvantage of making the instrument unavailable for use for what can be a considerable time period.

QTAS systems are high performance multi channel temperature acquisition systems, calibrated, and traceable to the international temperature standard ITS90. Rapid response temperature sensors and flexible probe positioning allow users to monitor the performance of their own machines to troubleshoot applications, transfer protocols between machines and monitor life cycle performance as and when required. QTAS empowers users with the knowledge to optimize their incubations, identify poorly performing equipment and eliminate wasted time and reagent use. Procedures are easily implemented to allow laboratories to fully comply with any regulatory and quality system requirements.

## Hardware Specifications

Dimensions (LxWxH)	125mm x 90mm x 40mm
Weight	350g
Measurement range	0 °C – 100 °C
Number of channels	8, 16, 24, 48, 96 (Model Dependent)
Probe identification/position	Position and identification of probe is automatic
Measurement resolution	16 bits
Accuracy: average channel value accuracy	Accuracy +/- 0.1 °C @95 °C using PC driven QTAS System Accuracy +/- 0.2 °C @25 °C using stand-alone QTAS System Restored to 0.1 °C@95 °C accuracy when data downloaded to PC Software
Software sample rate/channel	Sampling rate of 10 Hz (10 times a second) to once per hour
Response time of temperature sensor	Rapid time constant sensor (<0.2s)
Identity of temperature probe	Each probe stores its own identity
Sensor calibration interval	Up to 12 months
Accreditation	CE Mark
Operating System	Windows 2000 and XP formats

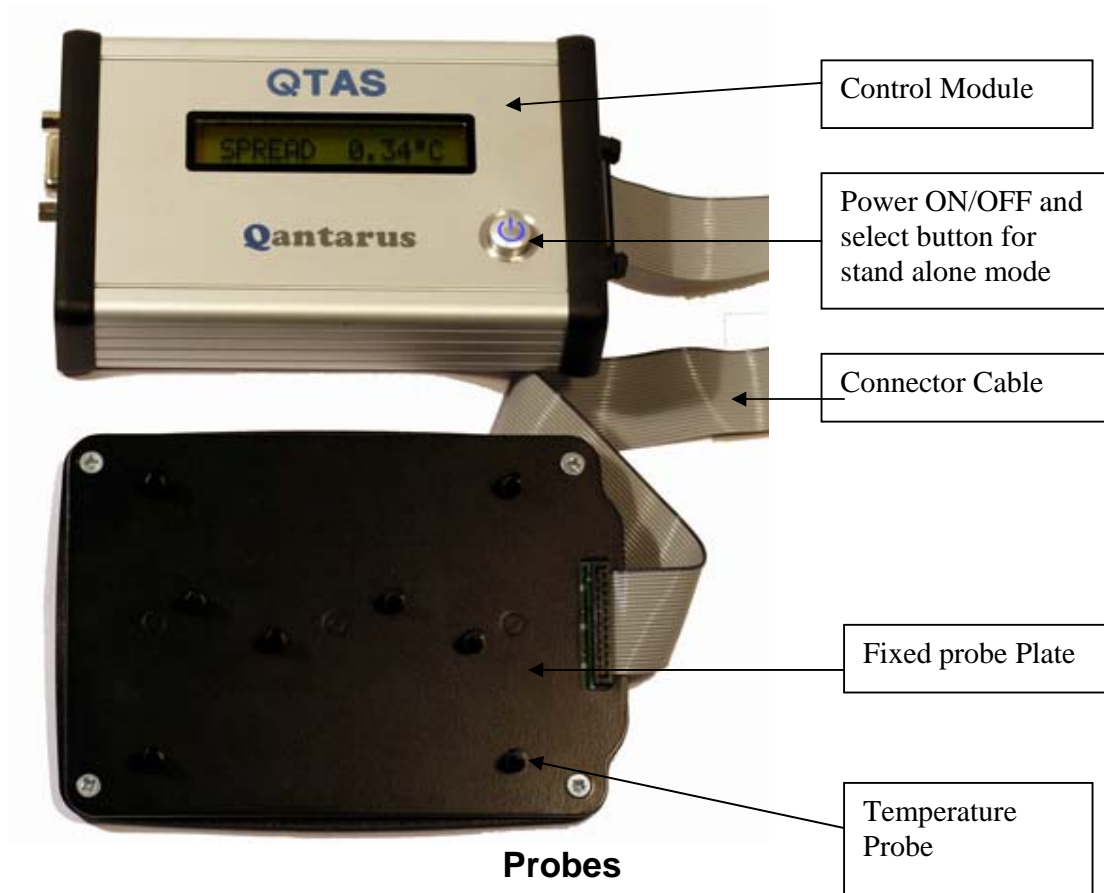
## Software Features

Real Time chart with zoom able axis	Detailed check of accuracy, uniformity, ramp rates at any stage in the protocol
Automatic Detection of overshoots and Undershoots	Yes, alarm can be set
Graph Overlay	Compare one performance trace to another for life cycle performance monitoring or detailed machine to machine comparison
Temperature sensitive plate display	Visible representation of block temperature profile for static and dynamic uniformity analysis and Gradient Checks
Unique run records	GLP & 21 CFR part 2 compliant records store date, user, probes and temperature data in protected records
Export in spreadsheet format	Excel compatible to enable custom data reports
Automatic probe identification and position log	Ensures correct calibration parameters used with each probe and makes it impossible to use out of calibration probes without warning and logging in the data report

## Getting to Know the QTAS System

### External Layout

The QTAS System you have purchased has a unique look and we would like you to take a moment to familiarize yourself with the external layout

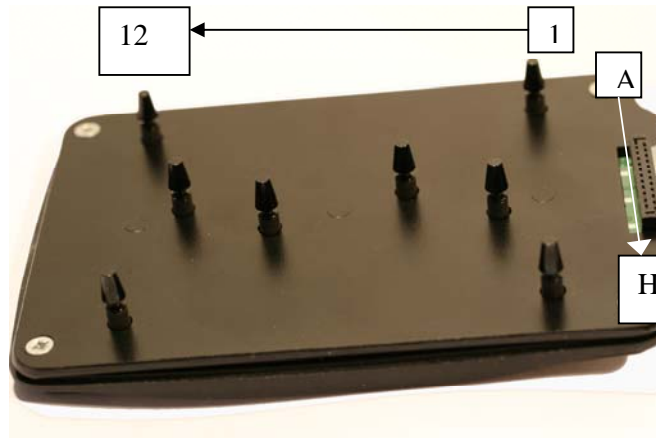


Each probe contains a thermistor and is designed to match the well profile of either a 0.2ml thermal cycling block in a 96 well format (well centre to centre is 0.9cm)

These probes interact directly with the block of the thermal cycler such that a reading is taken to determine the temperature of the well at any one given time. Each probe has a unique 'address' that is determined with a string of letters and numbers. This ensures correct use of calibration parameters for each probe.

## Fixed Probe Plate

The fixed probe plate has between 8 and 96 probes (dependent on QTAS model)



In a 96 well thermal cycler the fixed probe plate is positioned in the block such that A1 is top left of the block

## Storage of Fixed Probe Plate when not in Use

Always store probes in the original packaging to avoid damage.  
Never store QTAS with probes facing down.



## SECTION 2

### Using QTAS in Stand-Alone Mode

QTAS System can be used in stand-alone mode.

QTAS will operate for over 2 hours with a fully charged battery.

The battery charges whenever it is connected to the USB port even if the QTAS itself is switched off; see page 3.

The data from this run is stored in the controller until the unit is used again in stand-alone mode upon which it will be overwritten.

1. Press and hold **POWER** button for 2 seconds to turn on QTAS
2. Upon powering the unit **QTAS 0.8** will be shown briefly followed by **QUANTA QTASXX** which will be displayed for 5 seconds (XX is the model number and dictates the maximum number of channels for temperature acquisition)

	Q	U	A	N	T	A		T	A	S	X	X	
--	---	---	---	---	---	---	--	---	---	---	---	---	--

3. **Probes Found: xx** will be displayed for 5 seconds where x is the number of probes found

P	R	O	B	E	S		F	O	U	N	D		X	X
---	---	---	---	---	---	--	---	---	---	---	---	--	---	---

4. **Press To Acquire** is then displayed

P	R	E	S	S		T	O		A	C	Q	U	I	R	E
---	---	---	---	---	--	---	---	--	---	---	---	---	---	---	---

5. Press the **POWER** button to acquire data

A	C	Q	U	I	R	I	N	G	.	.	.		
---	---	---	---	---	---	---	---	---	---	---	---	--	--

### Temperature Spread

The following screens rotate continuously to provide the Min and Max temperatures and the temperature spread.

SPREAD is defined as being the maximum temperature of all probes less the minimum temperature of all probes at any one moment, and where 'TT:TT' represents the spread temperature value in °C between the range of 0 °C and 99.9 °C. The spread temperature is updated every second.

TEMPERATURE is a real time value taken once per second as default (see page 16). Temperature accuracy is +/-0.2 °C using QTAS stand-alone. "R" represents the row identifier (valid range A to H), and "CC" identifies the column (valid range 1 to 12). "TT:TT" represents the temperature value in °C (valid range 0 °C and 99.9 °C)

S	P	R	E	A	D		T	T	.	T	T	°C	
---	---	---	---	---	---	--	---	---	---	---	---	----	--

M	I	N		C	R	R		T	T	.	T	T	°C	
---	---	---	--	---	---	---	--	---	---	---	---	---	----	--

S	P	R	E	A	D		T	T	.	T	T	°C	
---	---	---	---	---	---	--	---	---	---	---	---	----	--

M	A	X		C	R	R		T	T	.	T	T	°C	
---	---	---	--	---	---	---	--	---	---	---	---	---	----	--

### Temperature of Each Probe

Press the **POWER** button once and the probes will go through each temperature as follows where "R" represents the row identifier (valid range A to H), and "CC" identifies the column (valid range 1 to 12). "TT:TT" represents the temperature value in °C (valid range of 0 °C and 99.9 °C)

T	T	.	T	T	°C		(	C	R	R	)		
---	---	---	---	---	----	--	---	---	---	---	---	--	--

**\*\*Toggle between Spread and Individual readings by pressing the POWER button\*\***

## SECTION 3

### Software

#### Installing & Upgrading QTAS Software

##### QTAS Application Software Installation & Upgrade Procedure

1. Insert the QTAS Software CD in to your computer's CD drive
2. Click the Start button on the Windows QTASbar
3. Select Run...
4. Type X:/setup.exe where X is the drive letter designation for your CD drive
5. Click the Ok button

##### Installing QTAS USB Drivers

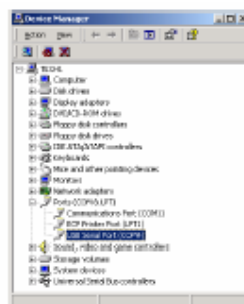
If you are installing QTAS software for the first time the drivers will be automatically installed.

If the drivers are subsequently corrupted or removed by other applications then you will also need to reinstall the USB port drivers into your Windows System. These drivers enable a USB port to function as a conventional serial port for communication with the QTAS device. The drivers can be found in the USB Driver file folder on this disk. The single inf file includes listings for Windows2000 and Windows XP. Your operating System will select the appropriate driver version.

1. Plug the USB cord into an available USB port on your computer and into the QTAS unit
2. Turn on the QTAS unit
3. The Microsoft plug and play wizard should recognize the QTAS unit as a new USB device
4. Direct the plug and play wizard to search for files in the X:\USB Driver directory, where X is the letter designation for the CD drive holding the QTAS software disk
5. Continue through the wizard screens selecting Next, Accept or Finish as appropriate
6. At the end of the software installation if the computer prompts you to restart, please do so

##### Com Port Setup

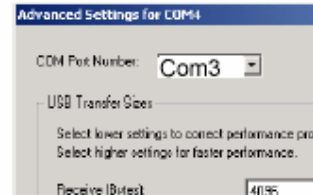
From DeviceManager, select "View devices by type", then "Ports (COM & LPT)". Select the USB serial port and right click, or double click to Properties



On the " Port Settings" tab set the parameters as shown.  
Baud rate = 57600  
Data Bits = 8  
Parity = None  
Stop Bits = 1  
Flow Control = None



To change the com port number, click the Advanced. Button. Then choose the required COM port number from the list and click OK



## Notes

If a device is attached to the USB serial port when the port number is changed, it will continue to work under the new port number.

If a device had been attached to the USB serial port but was not attached when the port number was changed, it may not work after the port number has been changed.

If this is true, remove the device from the System and re-install it.

## QTAS Calibration Files

Calibration files will be installed as part of the installation process. Please note however that before you can use the QTAS System after probe recalibration, you will need to install the appropriate new calibration files.

1. Click the Start button on the Windows QTAS taskbar
2. Select Run...
3. Type X:/CalFiles/update.exe, where X is the letter designation for the CD drive holding the QTAS software disk
4. Click the OK button

The calibration files will be installed ready for use by the QTAS software.

## QTAS Application Update

If there is a new application file in the "Updated Application" folder, you will need to replace your current application file with this updated version.

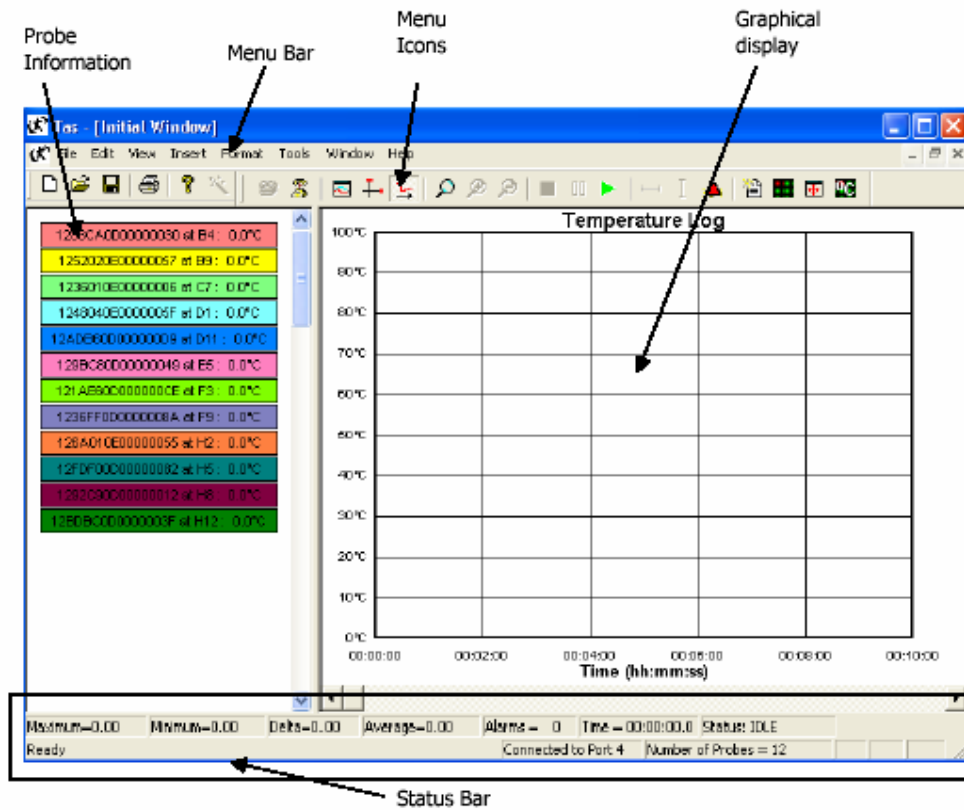
On your hard drive, find the "C:\Program Files\Quanta\QTAS\QTAS.exe" file.

Copy the updated application to this location, replacing the version installed by the setup program.

The QTAS software is now ready to run.

## QTAS Software - Main Screen

The QTAS software functions are accessed via this main screen. The manual refers to either drop down menus from the Menu Bar or to the Menu Icons.



## SECTION 4

### Using the Software

Once the QTAS software has been opened the user can set some important parameters

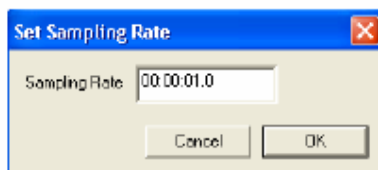
#### Set Sampling Rate

The default sampling rate is 1 reading per second (1Hz). This can be changed.

In stand-alone mode the QTAS will use whatever sampling rate was last used when it was connected to the PC.

This allows the user to change the sampling rate to 10 seconds and run the QTAS remotely, effectively extending the maximum acquisition time of the QTAS (which in stand-alone mode is limited by data points and battery capacity).

1. Select **Tools** and **Set Sampling Rate**

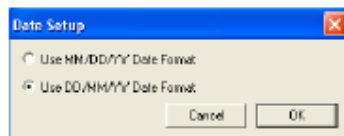


Sampling rate is shown as default of 1 reading per second, 00:00:00.1 would be 1 reading per 10 seconds and 00:00:10:0 would be 10 readings per second

#### Set the Date Format

The date can be changed to a European or US style. This date is 'stamped' onto the trace and in the notes section to comply with GLP and cannot be edited.

1. Select **Format** from the **Menu Bar**
2. Select **Date** and **Set**
3. Check the date to set and select **OK**

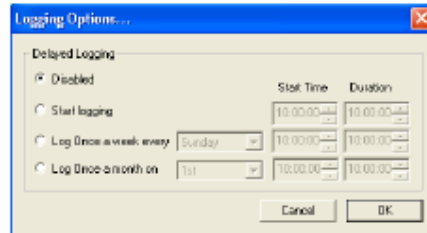


## Set Logging Options

QTAS can be set to begin logging data in the future; at a particular time or set for once a week or month.

Normally QTAS is used **disabled** i.e. each test is done when required.

The delayed logging will apply in future upgrades to the QTAS hardware and is not relevant in this version of QTAS.



## SECTION 5

### The Basics

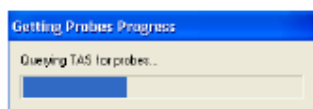
#### Starting a QTAS Trace

To start a trace the software must now be asked to find the probes.

- a. Connect Probe plate to QTAS control module page 10.
  - b. Connect QTAS to PC via USB cable using the USB cable.
  - c. Turn on QTAS by pressing and hold **POWER** button for 2 seconds to turn on QTAS
  - d. Upon powering the unit **QTAS 0.8** will be shown briefly followed by **Quanta QTASXX** which will be displayed for 5 seconds
  - e. **Probes Found: xx** will be displayed for 5 seconds where x is the number of probes found. Check that the number of probes found is correct. If incorrect check the location of each probe in the probe interface plate and then repeat the above procedure.
  - f. **Press To Acquire** is then displayed
1. Select the Connect Icon in the QTAS PC Application software



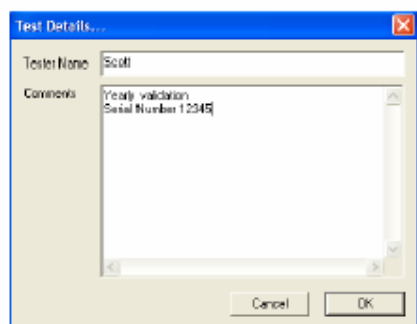
2. The software will prompt QTAS to locate probe position and identity



3. Probe Information (serial numbers and location) is displayed to the left of the Main Screen. (The QTAS LCD will now display PC MODE)
4. QTAS is ready to start a trace, to begin select the Start Tracing Icon



5. Enter tester details and information on the test such as brand of thermal cycler, serial number and reason for test. Select OK or cancel to return to main screen



6. Temperature trace will now begin in real time. In pages 21 onwards you will learn how to manipulate the data in a number of ways

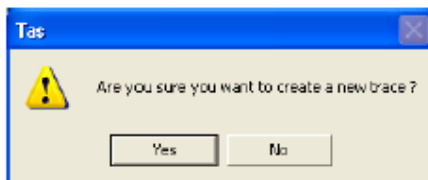
### Stopping and Pausing a Trace

1. To stop a trace, select the red square.



### Start a new Trace

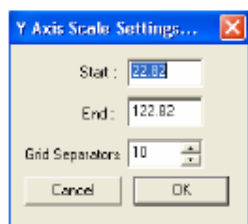
1. Select File and New from the Menu Bar
2. The following will be displayed
3. Select Yes
4. Connect, page 19 (1-6)



### Change the Temperature Axis

A new trace defaults to temperature axis of 0°C to 100°C. Entering below -120 and above 130 will result in an error screen.

1. On the Menu Bar select **Format** and **Temperature Axis Setup**
2. Enter Start Temperature and End Temperature
3. Enter grid separators between 1 and 10. The number is arbitrary, it is not degrees, but merely splits the graph into up to 10 sections
4. Select **OK** to change axis settings or **Cancel** to go back to trace

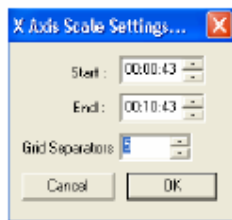


\* As a shortcut click on the X-axis values and the above screen will appear.

## Change the Time Axis

If you would like to view the first five minutes, an hour of trace etc, you can change the Time Axis to fit in more of the trace or hone in on one particular section of the trace. Values outside 0 and 23:59:59 are not accepted.

1. On the Menu Bar select **Format** and **Temperature Axis Setup**
2. Enter Start Time and End Time
3. Enter grid separators between 1 and 10. The number is arbitrary, it is not time, but merely splits the graph into up to 10 sections
4. Select **OK** to change axis settings or **Cancel** to go back to trace

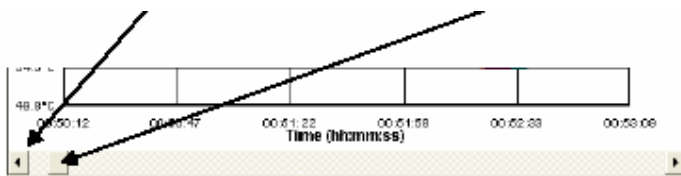


\* You can also click on the Y-axis itself

## Scroll Function

The traces are often long and so the entire trace does not fit on to one window. The scroll button allows access to other parts of the trace and perform further analysis on different parts of the trace.

1. Click on the left or right scroll buttons or move the bar left or right



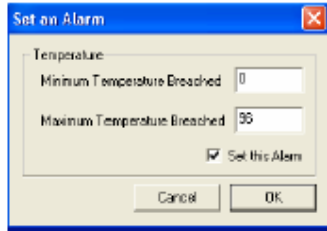
## Detect Overshoots and Undershoots Setting an Alarm

An alarm can be set to detect a temperature, above or below one or a pair of temperatures. This feature is useful for detecting undershoots and overshoots. The corresponding probe trace out of the alarm parameters will color **RED**

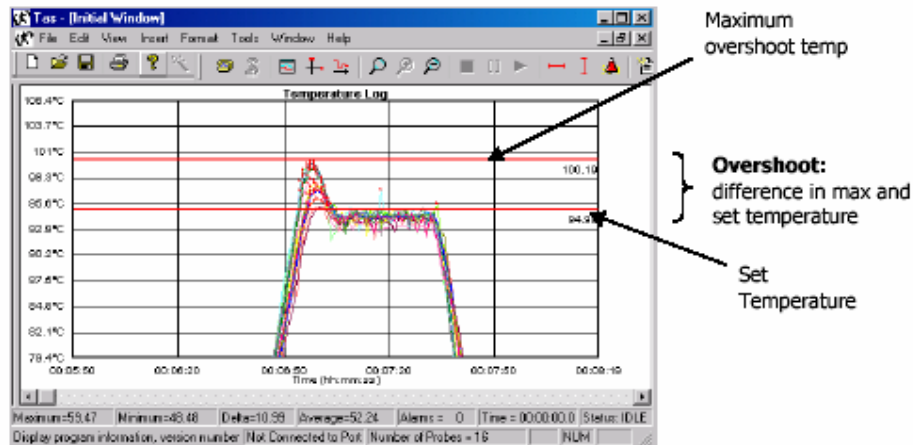
1. Select the Alarm icon



2. Enter temperature/s and check the 'Set this alarm' box. Click OK to accept or cancel to return to trace



- An overshoot could look like this:



## Analyzing Data

It is recommended that you stop a trace, page 19 and then save prior to further analysis to avoid losing your data, page 33.

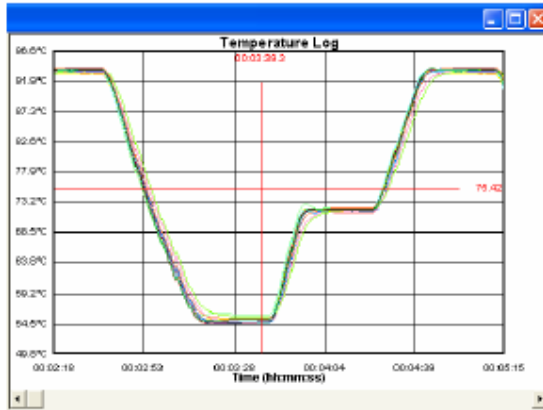
### Analyze Individual Data Points

The display cursor can be used while trace is being acquired, or, most useful after trace has been stopped and saved and allows individual data points to be analyzed for time and temperature. Use the zoom, page 25, to analyze data points in greater detail.

- Select the Display Cursor Icon



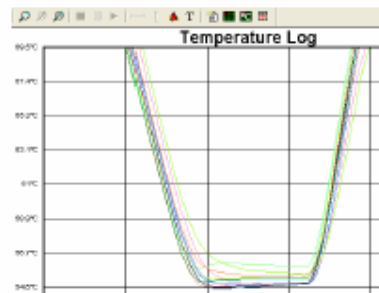
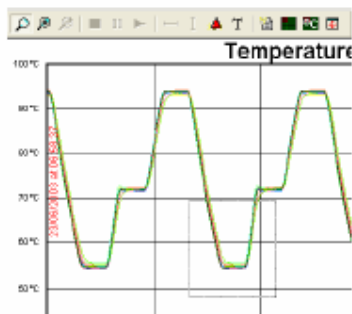
- Move away from the icon, and two red lines will appear, drag them to the area of the graph you are interested in
- The horizontal line will display the temperature; the vertical line will display the time



### Zoom Functions

Once a trace has been acquired and stopped, the Zoom icons become active. It is always good practice to save data prior to further analysis, see page 33.

1. To zoom, click once on the zoom icon, move cursor to area of interest, click the mouse and hold and drag the area you want to zoom



2. To return to original trace press the Zoom out icon, and the Zoom in Icon to return to the zoomed trace
3. Continue to zoom and drag area until the area of interest is large enough

### Insert a Horizontal Marker

This feature inserts a horizontal line onto your trace that displays the temperature. It can be placed anywhere on the trace. It is useful as it displays the temperature on the right hand side and so can be placed at a temperature of interest to reference the trace to. Multiple horizontal markers may be placed on the same trace. The horizontal marker should **always** be placed prior to utilizing the zoom function.

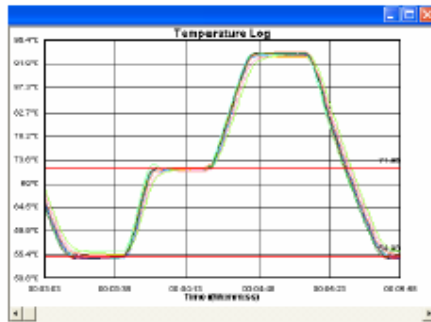
Select Toggle Autoscroll icon to activate the marker icons.



Select the 'Insert Horizontal Marker' Icon or select Insert on the Menu Bar followed by marker and horizontal.



A horizontal marker is inserted, which is moved by hovering the cursor on the line until a double-ended arrow appears. Left click the mouse and move the line up or down.



### Delete a Horizontal Marker

Hovering the cursor on the line until a double-ended arrow appears. Double click the marker and a dotted red line replaces the solid one. Press delete on the keyboard. Repeat for multiple markers.

### Insert a Vertical Marker

This feature inserts a pair of vertical lines onto your trace that displays the time between them. It can be placed anywhere on the trace. It is useful as it displays the time in the red box between the lines. This enables dwell times to be ascertained.

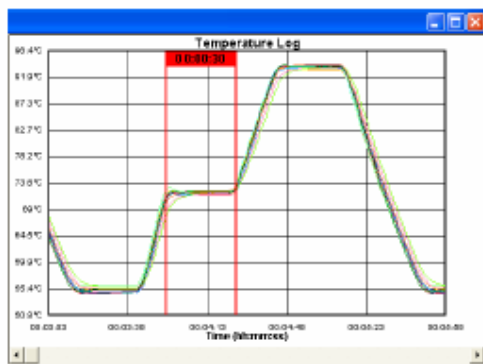
Select Toggle Autoscroll Icon to Activate the Marker Icons.



Select the 'Insert Vertical Marker' Icon or select Insert on the Menu Bar followed by marker and vertical.



A vertical marker is inserted. Time is displayed between the lines. The markers are moved left and right by hovering the cursor on the line until a double-ended arrow appears. Click and drag the lines. Repeat for multiple markers. Note that dragging the right line past the left line generates a negative time.



### Delete a Vertical Marker

Double click on the red portion that displays the time and a dotted red line replaces the solid ones. Press delete on the keyboard. Repeat for multiple markers.

### Identify a Probe from a Trace

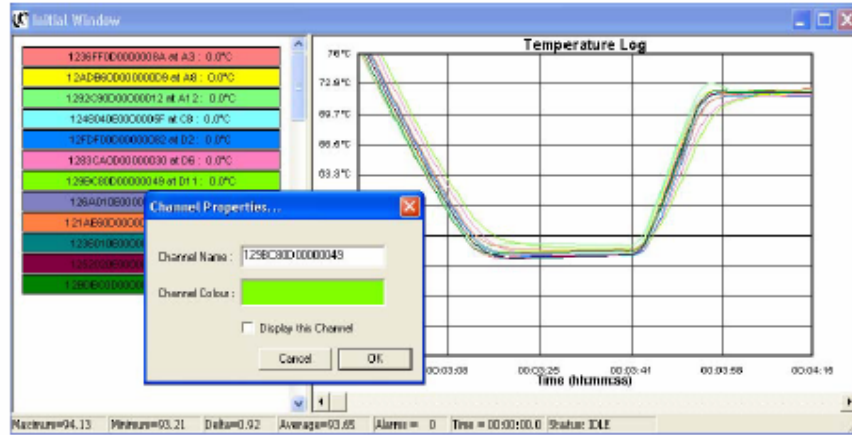
The QTAS trace can look crowded, and even though each probe is colour coded, you may wish to verify which probe you are looking at.

1. Move the mouse over the trace and double click
2. The corresponding probe will flash on the left of the screen
3. To de-activate double click in the trace window away from the trace itself
4. Repeat for other traces if necessary

### Removing Data from Display

It may be necessary to disregard a reading; taken by a faulty probe for example. The saved data for that probe will not disappear, but the individual trace will hide. Upon re-opening trace the hidden trace is now shown again.

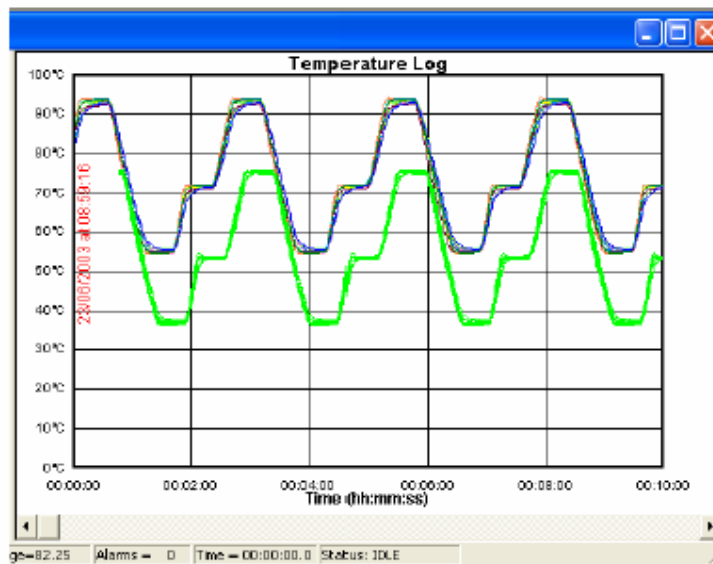
1. Identify the probe, see above
2. Double click on the probe box to the left of the trace
3. **Channel Properties** box appears
4. Remove the check from the **Display This Channel** box
5. Click OK to accept or cancel to return to the trace
6. The corresponding trace is removed from the display
7. The probe box to the left is now clearly marked so it is easily identified as removed



## Graph Overlay

The graph overlay function is useful for comparing the same thermal cyclers over time or to compare different thermal cyclers. It is useful for drift detection; its change in thermal performance over time. The data used for this is contained in a .csv (Excel) file that was saved from a previous test, page 34.

1. Open a previously saved QTAS trace, page 34
2. Select Insert from the Menu Bar and Graph Overlay
3. Locate .csv file and select Open
4. Graph overlay is shown in green. Move the trace to superimpose by click and drag around the screen



## Display Screens

### Probe Positions

A pictorial display of the probe positions can be useful to visualize an area of interest, to check positioning once tracing has begun and ideal for reports.

1. Select the Probe Positions icon

### Probe Temperatures

This screen will show you a colour depending on the temperature of the probes. This screen shows very clearly if there are any hot or cold spots within the block as they are seen as a different shade or a different colour.

1. Select the Probe Temperatures Icon



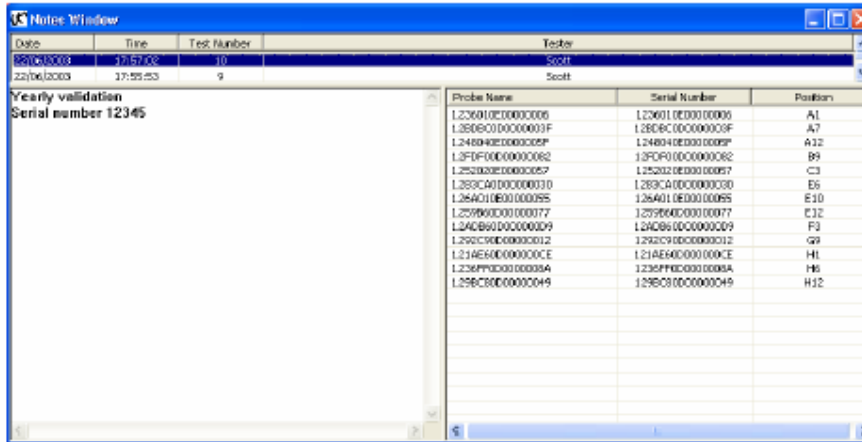
## Notes Section

The notes section records the tester and comments as well as the date and time of the test and the probes that were used for this test. Data in this screen cannot be changed. To view a test, click on the test to highlight as shown in the screen below

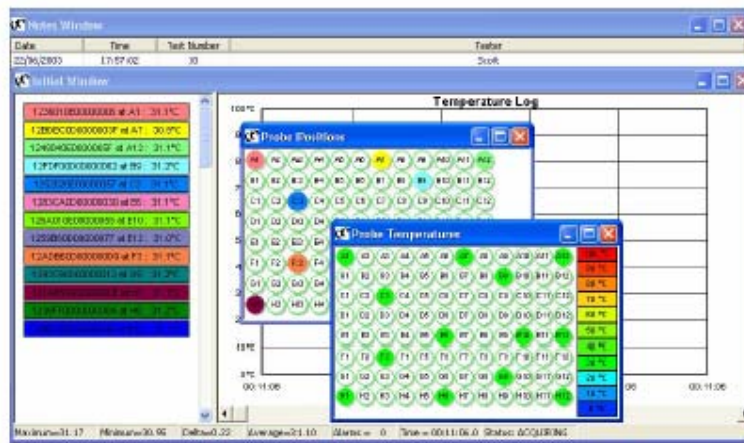
1. Select the notes icon



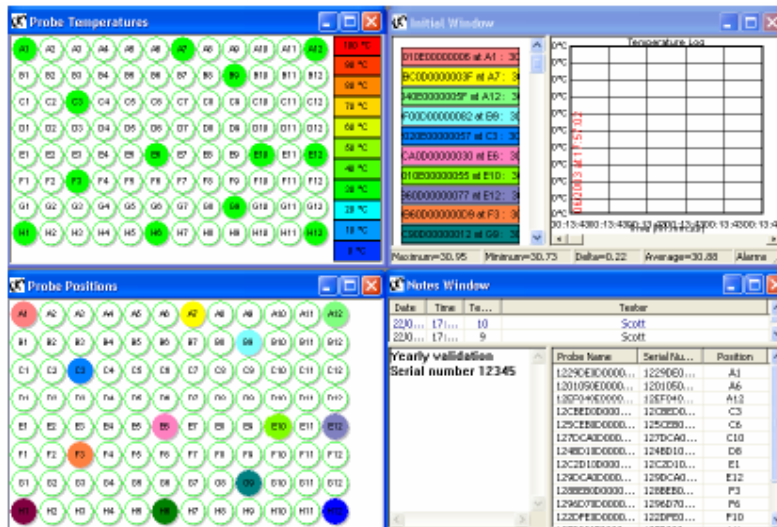
2. Displaying the data on the screen



To view windows as a cascade, select **Window** from the **Menu Bar** and **Cascade**



To view tiled windows, select **Window** from the **Menu Bar** and **Tile**



## Saving QTAS Temperature Data

The saved files are write-protected and date-stamped to comply with GLP requirements. Probe location and serial numbers are stored within the saved file as is the notes entered. It is important to save your QTAS data both as .QTAS and .csv. The .QTAS file is required to open up the graph for further analysis. The .csv file is useful for analyzing the raw data but more importantly it enables use of the **Graph Overlay** function.

### Saving QTAS Trace

1. Stop trace by pressing stop, see page 20
2. Go to **File** and **Save As**
3. Choose location to save, enter a file name and press **Save**



### Saving as .csv file

1. Stop trace if not already done so
2. Go to **File** and **Export all to .CSV**
3. Choose location to save, enter a file name and press **Save**



### Opening a Previously Saved QTAS Trace

1. Select file and open from the Menu Bar
2. Locate file as .QTAS (QTAS icon is data saved as a trace)



3. Select open and trace will be loaded

### Open a .csv File

The QTAS software is not required to open a .csv file.

1. Browse PC to locate saved file as a .csv file
2. Select **Open**
3. A .csv file will be loaded ready for further manipulation

### Example of .csv File

1252020E00000057 : B12	121AE60D000000CE : C4	123CE60D000000CA : C7
38.42	38.41	38.38
38.42	38.41	38.37
38.41	38.41	38.37
38.42	38.41	38.37
38.41	38.41	38.37
38.39	38.41	38.37
38.41	38.4	38.36
38.41	38.4	38.36
38.41	38.4	38.36
38.41	38.4	38.36

## SECTION 6

### Help

QTAS will display a number of error screens that are intuitive and helpful. If values are outside the range then a box will appear to help. The text will inform you that the Temperature Axis values are between -120°C and 130°C for instance.

#### Error Screens While Using as Stand-alone Unit

##### Temperature out of QTAS range

The following screen will be displayed if at any time one of the probes returns a temperature reading exceeding 100.00°C or less than 00.00°C. Where 'R' represents the row identifier of the faulty probe (valid range A to H) and 'CC' represents the column identifier of the faulty probe (valid range 1 to 12)

P	R	O	B	E		E	R	R	O	R		R	C	C	
---	---	---	---	---	--	---	---	---	---	---	--	---	---	---	--

#### Error Screens While Setting up QTAS for PC Mode

If the USB cable is disconnected from the PC when Connect is selected, this error message is displayed. Connect the USB cable and select Connect, as on page 19 and proceed.



If QTAS unit is OFF when Connect is selected, this error message is displayed. Turn QTAS on as on page 19 and proceed.



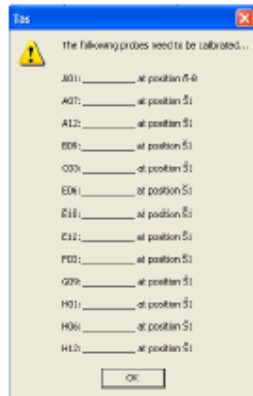
If an error is displayed, this is generally because a probe is not connected. If this persists, disconnect and reconnect. If error remains, contact technical support.

1203C40D00000030 at B4 : 24.5°C
1252020E00000057 at B9 : Error
1236D1CE00000006 at C7 : 24.5°C

## Recalibration

The QTAS probes are guaranteed to be within specification for 12 months. A prompt to recalibrate will automatically be displayed at 12 months.

### Prompt at 12 Months



Details of recalibration fees can be obtained by calling +44 1458 272927 or e-mailing [sales@quantabiotech.com](mailto:sales@quantabiotech.com).

Once calibration has been completed the fixed probe plate will be returned to you together with the new probe calibration files and calibration certificates on cd. The process for installation of the new calibration files is shown below.

1. The new calibration files have the format \*.cal and are stored in the directory calfiles on the cd.
2. If you wish to store the old calibration files for record please copy them from the directory c:\calibration on the local computer to the directory in which you wish to archive them.
3. All files named \*.cal in the calfiles directory on the cd should be copied to the c:\calibration directory on the local computer. If prompted to "o.k to overwrite" click o.k
4. The new calibration files have now been installed and the QTAS is ready for calibrated use.

# APPENDIX 1

## Contact Information

### Head Office:

Quanta Biotech Ltd  
Unit 4 Byfleet Technical Centre  
Canada Road  
Byfleet  
Surrey  
KT14 7JX  
United Kingdom

Tel +44 (0) 1932 344550  
Fax +44 (0) 1932 353108

### Sales Enquiries:

[sales@quantabiotech.com](mailto:sales@quantabiotech.com)

### Technical Information:

[techsupport@quantabiotech.com](mailto:techsupport@quantabiotech.com)

### Website:

[www.Quantabiotech.com](http://www.Quantabiotech.com)