

TubeTAG^{PLUS TM}

Operators' Manual

Version 1.2

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1. Warnings

Please first read the ULTRA/ULTRA 50:50[™] manual to familiarise yourself with the autosampler software and operation before analysing tagged tubes.

Under no circumstances should you directly expose tags to temperatures exceeding 110°C (Note: the ULTRA tube oven is specifically designed to allow heating to 390°C, with a tagged tube in position, without damaging the tag).

1.1. Tags on metal tubes [¼"stainless steel, Silcosteel[®]]

- Must be removed prior to loading on ULTRAs prior to serial number (GB00)M20456
- *May remain* on tubes during analysis on a tag "ready" (with the capability to read and write tags) ULTRA from serial number (GB00)M20467
- *Must be removed* before analysis on UNITY[™] (can be left in place with UNITY 2[™])
- Must be removed before conditioning on TC-20[™]

2. Introduction

Associating sample and usage data with thermal desorption (TD) tubes, have historically relied on manually recording tube serial numbers. Barcode technology has proved difficult to apply to TD tubes because the high temperatures required limit the lifetime and readability of labels. In addition, barcodes cannot be programmed to record tube history or sample specific information (*e.g.* sampling time and date).

TubeTAG represents a revolutionary advance in sorbent tube informatics. The product comprises an RFID tag and clip that can be attached to individual sorbent tubes. A TAG^{SCRIBE} or a TubeTAG equipped ULTRA can then be used to automatically read and write tube and sample specific data to these tagged tubes.

TubeTAGs are generally used in two ways:

- **Sample specific mode** A tag is attached to a conditioned sample tube in the laboratory before field deployment. That tag then stays with and tracks that sample tube whilst sampling in the field, where further sampling information can be logged to it, until its return to the laboratory. On return, the information is read back off the tag before sample analysis. The tag is then removed and the tube analysed. The information on the tag is then cleared. It is then ready to go out with another tube to track another sample.
- **Tube specific mode** A specific tag is associated with a specific tube throughout its life time so that it logs both sample specific data and tube history information: number of thermal cycles, back pressure during sampling, when the tube needs repacking, *etc.*

Both modes of operation offer a significant step forward and a new range of benefits to the busy air monitoring lab. Tags can be reused almost indefinitely.

3. Attaching and removing tags from tubes

3.1. Metal tubes [1/4" (6.35 mm)]

A special removal/replacement tool is required to take the tags off metal tubes and to correctly position them when putting them back on.



Note: Carefully check the alignment of the PTFE (white) component of the tab after attachment. It must be parallel to the tube (as illustrated by green arrows). If not, adjust accordingly.

The following images show incorrect tube tag alignment. Failure to align tubes correctly can lead to problems such as tube jamming and forcing of the tube oven out of correct position. The latter may lead to incomplete sample desorption and therefore unreliable sample analysis. *The precise construction of the autosampler highlights the need for care in aligning the tag.*



The broken green arrow indicates the correct (parallel) alignment of PTFE tube tag component (see also bottom picture on page 3 for illustration). The right-hand part of the image illustrates the impact that the incorrectly aligned tag may have on tray positioning, resulting in the problems described.

After tag attachment, and prior to insertion of the tube into an ULTRA tray, fit a tag-compatible cap to the ungrooved end of the tube. For long term storage, substitute with a brass cap assigned for this purpose.

3.2. Glass tubes

1.1. 7.2 Glass tubes

To install the TAGs onto glass tubes follow the instructions below.









4. Software

4.1. Installation

Install the software by inserting the software CD and following the onscreen prompts. Alternatively, navigate to the CD using Windows Explorer and locate the appropriate 'setup.exe' file. (Note: If you already have a copy of the Markes control software installed, you should uninstall this first *via* the 'Add/Remove programs' feature in Windows).

4.2. Manual tag read/write



When the toolbar tag icon is clicked the `Manual tag Read Write ' window is displayed. This window allows you to manually read from and write to tags while the system is in standby.	Manual Tag Read Write Tube Information Tube Letter/Number TAG ID Tube Type Not defined Adsorbent Packing Unknown Packing Date 01/01/2000 Tube Type Not defined Packing Date 01/01/2000 Themal Cycles Tube Status Unknown Tube re-collected from Sample Information Sample Ref Pump Ref Sample Statu Date 01/01/2000 Sample Statu Date 01/01/2000 Sample Statu Date 01/01/2000 Sample Statu Date 01/01/2000 Sample End Date 01/01/2000 Sample End Date 01/01/2000 Sample End Time 00:00:00 Statt Flow Rate Sample End Date 01/01/2000 Sample End Time	Tube Load 1 VILoad
To read a tag from a specific tube, it must first be loaded by selecting the tube number from the drop down menu and clicking `Load '.	Load 1 UnLoad 1 0 1	
 While the tube is being loaded, read from or written to, all the function buttons are grayed out. Once the tube is loaded, the tag information is automatically read. (Note: When using the manual read/write function, the data read from the tag is not stored to file) 	Manual Tag Read Write Tube Information Tube Letter/Number TAG ID Tube Type Not defined Adsorbent Packing Unknown Packing Date 01/01/2000 Thermal Cycles Tube Status Unknown Tube Status Unknown Tube Status Unknown Sample Information Sample Ref Pump Ref Sample Start Date 01/01/2000 Sample Start Date 01/01/2000 Sample End Date 01/01/2000 Sample Start Date 01/01/2000 Sample End Date 01/01/2000 Sample End Date 01/01/2000 Sample End Date 01/01/2000 Sample End Time 00:00:00 End Flow Rate	no Tube

Once a tag has been read	Manual Tax Band III			
Once a tag has been read,	Manual Tag Read W Tube Information	rice		Select Instrument
all the stored information is	Tube Letter/Number	A 👻 654321	Read Tube &	Sampling Ultra
displayed in the relevant	TAG ID	20080721-0001	Sample Info	
boxes.	Tube Type	Silcosteel 1/4"	Write Tube & Sample Info	C Collecting Ultra
	Adsorbent Packing	Tenax TA 💌	Clear Tube Info	
For information on the fields	Packing Date	15/07/2008		
available, see section 4.2.1.	Thermal Cycles	5	Clear Sample Info	Tube
	TD Method	Single split Tenax desorption 50:30	on whe	Load 1 💌
	Pressure Ratio	0.98		
	Tube Status	Conditioned		UnLoad
	Tube re-collected from			
	Sample Information			
	Sample Ref		Clear Sample Info	
	Pump Ref			
	Sampling Mode	Pumped		
	Sample Start Date	01/01/2000 Sample Start Ti	me 00:00:01	<u></u>
	Start Flow Rate	0	-	
	Sample End Date	01/01/2000 Sample End Tir	ne 00:00:01	200
	End Flow Rate	0		
If you wish to alter any of	Manual Tag Read W	rite		Calast Instrument
If you wish to alter any of the tube or sample	Manual Tag Read W Tube Information Tube Letter/Number		Read Tube &	Select Instrument
	Tube Information	A ▼ 654321 20080721-0001	Read Tube &Sample Info	Select Instrument
the tube or sample information use the text	Tube Information Tube Letter/Number	A v 654321	Sample Info	Sampling Ultra
the tube or sample	Tube Information Tube Letter/Number TAG ID	A 654321 20080721-0001 Silcosteel 1/4" Not defined	Sample Info Write Tube & Sample Info	
the tube or sample information use the text boxes or drop down menus.	Tube Information Tube Letter/Number TAG ID Tube Type	A ▼ 654321 20080721-0001 Sicosteel 1/4" Not defined Stainless Steel 1/4" Sicosteel 1/4"	Sample Info	Sampling Ultra
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing	A ▼ 654321 20080721-0001 ▼ Silcosteel 1/4" ▼ Stainless Steel 1/4" ▼ Safelok 1/4" Glass 1/4"	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info	Sampling Ultra
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date	A 654321 20080721-0001 Silcosteel 1/4" Stainless Steel 1/4" Silcosteel 1/4" Silcosteel 1/4" Silcosteel 1/4" Silcosteel 1/4"	Sample Info Write Tube & Sample Info	Sampling Ultra Collecting Ultra
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number of characters. Place the	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Thermal Cycles	A ▼ 654321 20080721-0001 Silcosteel 1/4'' ▼ Not defined Stainless Steel 1/4'' Safelok 1/4'' Glass 1/4'' Glass I/4'' Glass Form	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info	C Collecting Ultra
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Thermal Cycles TD Method	A G54321 20080721-0001 Silcosteel 1/4" Stainless Steel 1/4" Silcosteel 1/4" Glass 1/4" Glass 1/4" Glass 6mm Unknown	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info	C Collecting Ultra
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number of characters. Place the	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Packing Date Thermal Cycles TD Method Pressure Ratio	A G54321 G0080721-0001 Silcosteel 1/4" Slcosteel 1/4" Slcosteel 1/4" Glass 1/4" Glass 1/4" Glass 6mm Unknown 0.98	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info	C Collecting Ultra C Collecting Ultra Load
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number of characters. Place the mouse over the field and a	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Thermal Cycles TD Method Pressure Ratio Tube Status	A G54321 G0080721-0001 Silcosteel 1/4" Not defined Stainless Steel 1/4" Silcosteel 1/4" Glass 1/4" Glass 1/4" Glass 6mm Unknown G.98 Conditioned	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info	C Collecting Ultra C Collecting Ultra Load
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number of characters. Place the mouse over the field and a text box will appear stating	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Thermal Cycles TD Method Pressure Ratio Tube Status Tube re-collected from	A G54321 G0080721-0001 Silcosteel 1/4" Not defined Stainless Steel 1/4" Silcosteel 1/4" Glass 1/4" Glass 1/4" Glass 6mm Unknown G.98 Conditioned	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info Clear Sample Info on Write	C Collecting Ultra C Collecting Ultra Load
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number of characters. Place the mouse over the field and a text box will appear stating the maximum field length.	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Thermal Cycles TD Method Pressure Ratio Tube Status Tube te-collected from Sample Information	A G54321 G0080721-0001 Silcosteel 1/4" Not defined Stainless Steel 1/4" Silcosteel 1/4" Glass 1/4" Glass 1/4" Glass 6mm Unknown G.98 Conditioned	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info	C Collecting Ultra C Collecting Ultra Load
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number of characters. Place the mouse over the field and a text box will appear stating the maximum field length. If the correct Tube Type ,	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Thermal Cycles TD Method Pressure Ratio Tube Status Tube Status Tube re-collected from Sample Information	A G54321 G0080721-0001 Silcosteel 1/4" Not defined Stainless Steel 1/4" Silcosteel 1/4" Glass 1/4" Glass 1/4" Glass 6mm Unknown G.98 Conditioned	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info Clear Sample Info on Write	C Collecting Ultra C Collecting Ultra Load
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number of characters. Place the mouse over the field and a text box will appear stating the maximum field length. If the correct Tube Type , TD Method or Adsorbent	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Thermal Cycles TD Method Pressure Ratio Tube Status Tube re-collected from Sample Information Sample Ref Pump Ref	A ▼ 654321 20080721-0001 Silcosteel 1/4" Not defined Stainless Steel 1/4" Safelok 1/4" Glass 6mm Unknown 0.98 Conditioned ▼	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info on Write Clear Sample Info	C Collecting Ultra C Collecting Ultra Load
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number of characters. Place the mouse over the field and a text box will appear stating the maximum field length. If the correct Tube Type , TD Method or Adsorbent Packing is not shown refer	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Thermal Cycles TD Method Pressure Ratio Tube Status Tube Status Tube re-collected from Sample Information Sample Ref Pump Ref Sampling Mode	A ▼ 654321 20080721-0001 Silcosteel 1/4" Not defined Stainless Steel 1/4" Silcosteel 1/4" Safelok 1/4" Glass Enr Unknown 0.38 Conditioned ▼ 0	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info on Write Clear Sample Info	 G Sampling Ultra Collecting Ultra Tube Load UnLoad
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number of characters. Place the mouse over the field and a text box will appear stating the maximum field length. If the correct Tube Type , TD Method or Adsorbent Packing is not shown refer to section 4.5 for	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Thermal Cycles TD Method Pressure Ratio Tube Status Tube re-collected from Sample Information Sample Ref Pump Ref Sampling Mode Sample Start Date	A ▼ 654321 20080721-0001 Silcosteel 1/4" Not defined Stanless Steel 1/4" Safelok 1/4" Glass Enrin Unknown 0.38 Conditioned ▼ 0 Sample Start Ti 01/01/2000 Sample Start Ti	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info Clear Sample Info Clear Sample Info Clear Sample Info 00:00:01	 G Sampling Ultra Collecting Ultra Tube Load UnLoad
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number of characters. Place the mouse over the field and a text box will appear stating the maximum field length. If the correct Tube Type , TD Method or Adsorbent Packing is not shown refer to section 4.5 for instructions on altering the	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Thermal Cycles TD Method Pressure Ratio Tube Status Tube re-collected from Sample Information Sample Ref Pump Ref Sampling Mode Sample Start Date Start Flow Rate	A ▼ 654321 20080721-0001 Silcosteel 1/4" Not defined Stanless Steel 1/4" Silcosteel 1/4" Satelok 1/4" Glass form Unknown 0.98 Conditioned ▼ 0 Sample Start Ti 0	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info Clear Sample Info Clear Sample Info Clear Sample Info 00:00:01	Collecting Ultra C Collecting Ultra Load UnLoad
the tube or sample information use the text boxes or drop down menus. Note: The alphanumeric fields have a limited number of characters. Place the mouse over the field and a text box will appear stating the maximum field length. If the correct Tube Type , TD Method or Adsorbent Packing is not shown refer to section 4.5 for	Tube Information Tube Letter/Number TAG ID Tube Type Adsorbent Packing Packing Date Thermal Cycles TD Method Pressure Ratio Tube Status Tube re-collected from Sample Information Sample Ref Pump Ref Sample Start Date Start Flow Rate Sample End Date	A ▼ 654321 20080721-0001 Silcosteel 1/4" Not defined Stainless Steel 1/4" Silcosteel 1/4" Glass form Unknown 0.98 Conditioned ▼ 0 01/01/2000 Sample Start Ti 0 01/01/2000 Sample End Tir	Sample Info Write Tube & Sample Info Clear Tube Info Clear Sample Info Clear Sample Info Clear Sample Info Clear Sample Info 00:00:01	Collecting Ultra C Collecting Ultra Load UnLoad

To write the updated information to the tag click 'Write Tube & Sample Info'. To prevent accidental loss of information a password is required to write data. The user name is left blank and the password is: Mona Lisa Note: Once the password has been entered you will not be asked for it again until the software is restarted.	Access Tag Modification Image: Select Instrument User Name: Read Tube & Sample Info Password: Write Tube & Sample Info DK Cancel Packing Date 15/07/2008 Thermal Cycles 5 TD Method Single split Tenax desorption 50:30 Pressure Ratio 0.38 Tube Status Conditioned Tube re-collected from 0 Sample Info UnLoad Sample Statt Date 01/01/2000 Sample End Date 01/01/2000
If you wish to clear all the information on a tag (<i>e.g.</i> if you were moving the tag to a different tube) click ' Clear Tube Info '. Once again, to prevent accidental loss of information a password is required to clear the data. The user name is left blank and the password is: Mona Lisa Note: Once the password	Manual Tag Read Write X Tube Information A 654321 Read Tube & Sample Info Sample Info Select Instrument Tube Letter/Number A 654321 Read Tube & Sample Info Write Tube & Sample Info Write Tube & Sample Info Clear Tube Info Clear Tube Info Tube Packing Date 15/07/2008 Clear Tube Info Tube Tobe & Single split Tenax desorption 50.30 Clear Sample Info Tube Status Conditioned UnLoad Tube re-collected from 0 Unity Sample Information Vau are about to clear all tube information information from the tag Sample Ref OK Cancel Pump Ref OK Cancel Sample Statt Date 01/01/2000 Sample Statt Time 00.00.01 Sample End Date 01/01/2000 Sample End Time 00.00.01 Sample End Date 01/01/2000 Sample End Time 00.00.01
has been entered you will not be asked for it again until the software is restarted. A final window then appears asking you to confirm clearing the tag data. If you wish to clear the sample info fields when you write to the tag tick 'Clear Sample Info on Write'. To unload the tube click	Clear Sample Info on Write
'Unload'. The tube and cap	

heater/bobbin will then cool	Tube
to the unload temperature.	Load 1 V
Note: Refer to the	UnLoad 3
UltrA/UltrA <i>50:50</i> ™	45
manual for further	67
information on the unload	8
temperature.	
If loading a second tube,	
simply repeat the tube load	
procedure. The system will	
cool then unload the first	
tube before loading another.	
Note: If several tubes are	
to be loaded for manual	
read/write, lowering the	
flow path temperature to	
the unload temperature will	
speed up the procedure.	

4.2.1. Tube information field descriptions

Tube Information			Select Instrument
Tube Letter/Number	A 💌 654321	Read Tube & Sample Info	Sampling Ultra
TAG ID	20080721-0001	Sample mit	
Tube Type	Silcosteel 1/4"	Write Tube & Sample Info	C Collecting Ultra
Adsorbent Packing	Tenax TA	Clear Tube Info	
Packing Date	15/07/2008	Clear Tube Inio	
Thermal Cycles	5	Clear Sample Info	Tube
TD Method	Single split Tenax desorption 50:30	on Write	Load 1 💌
Pressure Ratio	0.98		
Tube Status	Conditioned	•	UnLoad
Tube re-collected from	• 0	-	

Tube Letter/Number	These two fields are designed to record the tube serial number (and letter) to which the tag is attached. They are limited to one letter and six digits (Note: numbers beginning with zero(s) will be shortened – <i>i.e.</i> 078323 will be shortened to 78323 when read back from the tag).
TAG ID	Read only field containing the factory set unique identifier for a given tag.
Tube type	By default this field is designed to record the tube type – <i>i.e.</i> ¼" stainless steel, ¼" Silcosteel [®] <i>etc</i> . The options available in this drop down list are completely customisable and could be used, for example, to specify "Environmental Tubes for Diffusive Sampling" or "General Purpose Screening Tubes" <i>etc</i> . For information on editing the available options in these drop down menus, see section 4.5.
Adsorbent	Specifies the nature of the sorbent packing inside the sample tube. By default
Packing	the list contains a selection of some of the most common packings. The
	options available in this drop down list are customisable – see section 4.5.
Packing date	If entered, this specifies the date on which the sample tube was packed and
	allows the user to track the age of the sorbent packing.

Thermal cycles	Tracks the number of times the sorbent in the tube has been heated
	(conditioned or analysed). If analysed on a tag "ready" ULTRA this value is
	increased automatically. Alternatively a value may be typed in directly.
TD Method	Allows the user to specify the recommended TD analytical method for analysis
	of this sample tube. The options in this list box are customisable – information
	on editing the contents is given in section 4.5.
Pressure ratio	Displays the most recent pressure ratio measurement – large changes here
	could indicate a tube that is becoming blocked, or has lost its sorbent packing.
	Valid values are between 0.000 and 1.000 where 0.000 would indicate
	completely blocked and 1.000 completely free flowing. Note: the value is
	reported in the sequence reporter and automatically updated with the most
	recent value, when using an ULTRA 50:50 autosampler.
Tube status	This field should be used to indicate the current status of the sample tube to
	which the tag is attached. The default options include conditioned, sampled
	and desorbed. The options for this list box are customisable – information on
	editing the contents is given in section 4.5.
	NOTE: there is the special tube status of "re-collected" which gives you the
	option to note the number of the tube from which a sample originated when
	using the SecureTD-Q ^{M} option of all Markes TD systems.

4.2.2. Sample Information field descriptions

Sample Information					
Sample Ref	<u> </u>		(Clear Sample Info	
Pump Ref	I		-		
Sampling Mode	Pumped	•			
Sample Start Date	01/01/2000	•	Sample Start Time	00:00:01	
Start Flow Rate	0	i			
Sample End Date	01/01/2000	•	Sample End Time	00:00:01	
End Flow Rate	0				

Sample Ref	Free text field limited to eight alphanumeric characters allowing the user to
	uniquely identify this sample
Pump	Free text field limited to three alphanumeric characters allowing the user to
Reference	identify the pump used to take this sample
Sampling mode	Drop down menu allowing the user to define whether this is a pumped/active
	sample or a diffusive/passive sample
Sample start	Allows user to define sampling start date and time to a two second resolution
time	
Start flow rate	Allows the user to log the pumped sampling flow rate at the start of sampling
Sample end	Allows user to define sampling end date and time to a two second resolution
time	
End flow rate	Allows the user to log the pumped sampling flow rate at the end of sampling

4.3. Sequence reports

When a tube with a tag fitted is loaded into a	
TubeTAG ULTRA/ULTRA	Sequence Viewer Sequence Reporter
<i>50:50</i> , the tag information	s Tube PR Tube Letter / Number TAG ID Tube Type Packing Packing Date Thermal Cycles TD Method Pressure Ratio
is read and displayed in the	0.983 A 654321 20080721-0001 ilcosteel 1/4 Tenax TA 15/07/2008 5 Tenax desor 0.980 0.983 B 123456 20080731-0001 nless Steel 1 Tenax TA 10/09/2008 3 Tenax desor 0.980
sequence reporter.	
In the sequence reporter tab, any columns containing data read from a tag are highlighted in blue.	
To select which columns are	
displayed in the sequence	Options
reporter go to ' View –	Methods Gas Sequence Ports Configuration Reporting Flow Control Miscellaneous
Options ' then the	Reporting
' Reporting ' tab.	I I Sample Name I I Sample Tube
	Method Name
You can now select/deselect	Desorb Start Time Desorb End Time Peak Desorb Temp
the columns as required.	Sample Type
	Trap Fire Time
(Note: It is necessary to	✓ Unity Deviation
close and reopen the control	🔽 Ultra Deviations
software for these sequence	Injection Count
reporter changes to be	Cycle Count
taken into account)	Tag
	I Tube Letter / Number I TAG ID I Tube Type
	✓ Packing ✓ Packing Date ✓ Thermal Cycles ✓ TD Method ✓ Pressure Ratio ✓ Tube Status
	✓ Re-collected from ✓ Re-collected onto ✓ Tag Deviations
	Sampling Information
	OK Create Report File
Note that two versions of	
the sequence report are	
stored as .csv files in the	test_P12Aug2008_102553.csv
`unity\reports' directory.	E test_F12Aug2008_102553.csv
	Costo randgaded_reader.com
Two versions are saved:	
one with _P in the file name	
with the partial information	
(<i>i.e.</i> that displayed in the	
sequence reporter) and one	
with _F in the file name containing the full	
tag/sequence information.	

4.4. Tag information/error messages

The new tag deviations column in the sequence reporter is used to report information/errors relevant to the tag read/write process:

Read/Write OK	Successful read write
Multiple tag failure: Sample	Read/write error on the sample tube or the re-
read + sample write + collect	collection tube due to no tag being present or a
read + collect write	corrupt tag.
Sample R/W OK – Collect:	Sample tag read/write ok, re-collection tube tag
failed read + failed write	read/write failed (either the selected re-collection
	tube has no tag or the re-collection tube tag is
	corrupt)

Errors written to the 'Tube Status' field on the tag (and to the report file):

Leak test failure: tube not desorbed	Tube failed leak test, sample retained
Instrument failure: sample retained	An error on the instrument occurred before
	primary desorption
Instrument failure: sample lost	An error on the instrument occurred during or after primary desorption of tube

4.5. Altering the TubeTAG drop down menus

If you wish to add additional options in the **Tube Type**, **TD Method** or **Adsorbent Packing** drop down menus you must first browse to your UNITY program directory (Default location: **`C:\Program Files\Unity**').

Using Notepad you can open the following files:

tagadsorbents.txt
tagmethods.txt
tagtubetypes.txt
(tagstatus.txt)
(We recommend that you only add to the files. Do not remove or change any of the default
states in these files as this could cause your tag to be written with the incorrect information).

To add additional options (in the example shown 'Special Packing' has been added) take the next available number in the list (*e.g.* 11), then a comma (no spaces between) and the description (*e.g.* Special Packing) followed by another comma (no spaces between) and N.



Once the changes have been made, save the text file with the original file name *e.g.* tagadsorbents.txt and restart the software. (Note: Do not use commas in names as they are used to separate different sections of information.)

You can use the manual tag read/write window to confirm successful changes.

Note: Text files will need to be copied to all relevant PCs if the same data are to be recalled from the tags.



4.6. Information flow schematic for tagged tubes on ULTRA