Software Update Notification

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Dispersion Technology and Light Scattering Products, (Autosizer, Lo-C, Zetamaster, Zetasizer)

PSS0001 Issue 4
Contains…..

Product	PartNo./Version
DTS/PCS for Windows	PSW0001/1.52
MPT-1 Autotitrator	PSW0058/1.02
COR3140 Correlator	PFW 0004/2.10

AUTOSIZER

ZETAMASTER

ZETASIZER

Contents

1. Scope

This document is the software update notification for the PCS/DTS software suite (PSS0001) it contains:

DTS/PCS software	PSW0001/1.52 (Previously 1.51)
MPT-1 Autotitrator software	PSW0058/1.02 (Previously 1.01)
COR3140 Correlator firmware	PFW0004/2.10 (Previously 2.00)
macro program	cellpos.pcm

Version 1.52 implements DCO3797 which contains 9 SCR's.
Some files on the CD refer to French and Japanese versions of the software. These are not provided on this CD.

Summary of changes

Product	**Part no/Ver/Iss**	**Previous ver/Iss**	**Change summary**
DTS/PCS CD-ROM software suite	PSS0001 Iss 4	Iss 3	4 changes under SCR's 998, 999, 1334, 1364 and 1366
DTS/PCS software	PSW0001/1.52	1.51	9 changes under SCR's 1159, 1295, 1327, 746, 1414, 922, 1367, 1368 and 1433
MPT-1 Autotitrator	PSW0058/1.02	1.01	9 changes under SCR's 739, 1003, 1127, 1133, 1183, 1228, 1340, 1341, 1342 and 1133
COR3140 Correlator firmware	PFW0004/2.10	2.00	The default measurement position in the cell is changed from 17% to 50%

See the relevant section for details of these changes.
These products are released on a single CD-ROM

2. Introduction

Version 1.52 replaces version 1.51 and supports all current DTS/PCS instruments as well as all systems that use the 7032 correlator running under the Windows 3.1, 3.11 and Windows95B/C, Windows98, Windows98SE and WindowsNT v4.0 (service pack 6 or later) operating systems.

Version 1.52 Compatibility
The WindowsNT version of the DTS/PCS software is compatible with any instrument that uses the 7132 correlator and the Zetamaster and Zetasizer 2000 which both use the 70128 internal correlator.

The WindowsNT version is **not** compatible with **any** instrument using the **7032** correlator. It is also **not** compatible with the PCS7 or PCS8 temperature control and photomultiplier supplies for the 4600 and 4700. Compatibility with NT requires use of a 7132 correlator and a PCS0078 power supply unit.

The new Autotitrator (DTS5900) is **not** supported on **any** of the Microsoft Windows 3.xx operating system platforms.

System compatibility

This release can be run on the following instruments, provided all other requirements are met or exceeded.

Model and Part Number	Product Name and Description	Correlator	Comments
LOC5011	Lo-C, 90 deg. Single angle size	7032 or 7132	see minimum computer requirements **7032 NOT SUPPORTED under WindowsNT**
4700PS	Autosizer 4700 Spectrometer with manual goniometer and PCS8	7032 or 7132	see minimum computer requirements **NOT SUPPORTED under WindowsNT**
PCS5000 (240V, 50Hz) PCS5004 (110V, 60Hz)	Autosizer 4700PS Spectrometer with motorised goniometer, PCS7, PCS8, 7032 CN correlator	7032 or 7132	see minimum computer requirements **NOT SUPPORTED under WindowsNT**
PCS5001 (240V, 50Hz) PCS5002 (110V, 60Hz)	Autosizer 4700PS Spectrometer with motorised goniometer, PCS7, PCS8, 7032 CE correlator	7032 or 7132	see minimum computer requirements **NOT SUPPORTED under WindowsNT**
PCS5101 (240V, 50Hz) PCS5102 (110V, 60Hz)	Autosizer 4700 Spectrometer with motorised goniometer, PCS7 and PCS8	7032 or 7132	see minimum computer requirements **NOT SUPPORTED under WindowsNT**
PCS5201 (240V, 50Hz) PCS5202 (110V, 60Hz)	Autosizer 4700 Spectrometer with motorised goniometer and PCS0078	7132	see minimum computer requirements
ZEM5000	Zetamaster, zeta potential measurement	Internal 70128	see minimum computer requirements
ZEM5002	Zetamaster S, 90 deg. Single angle size and zeta potential measurement	Internal 70128	see minimum computer requirements
ZET5004	Zetasizer 4, multi-angle size and zeta potential measurement	7032 or 7132	see minimum computer requirements **7032 NOT SUPPORTED under WindowsNT**
ZET5005	Zetasizer 4S, multi-angle size measurement	7032 or 7132	see minimum computer requirements **7032 NOT SUPPORTED under WindowsNT**
DTS5100	Zetasizer 1000, 90 deg. Single angle size	7132	see minimum computer requirements
DTS5101	Zetasizer 1000 HS, 90 deg. Single angle size	7132	see minimum computer requirements
DTS5104	Zetasizer 1000 HS, 90 deg. Single angle size with 532nm laser (50mW)	7132	see minimum computer requirements
DTS5200	Zetasizer 2000, zeta potential measurement	Internal 70128	see minimum computer requirements
DTS5300	Zetasizer 3000, 90 deg. Dual angle size and zeta potential measurement	7132	see minimum computer requirements
DTS5301	Zetasizer 3000 HS, 90 deg. Dual angle size and zeta potential measurement	7132	see minimum computer requirements
DTS5304	Zetasizer 3000 HS, 90 deg. Dual angle size and zeta potential measurement with 532nm laser	7132	see minimum computer requirements

	(50mW)		
DTS5400	Zetasizer 4000, multi-angle size measurement	7132	see minimum computer requirements
DTS5500	Zetasizer 5000, multi-angle size and zeta potential measurement	7132	see minimum computer requirements
DTS5900	Multi Purpose Titrator	7132	see minimum computer requirements **NOT SUPPORTED under Windows 3.xx**

3. PSS0001 – Functional Features

3.1 Table 1 - Additions

Malvern Software Change Request Number (SCR)	Description	Comments
998	Added PSW0008/1.56 (Mettler DL21) macros	Implemented
999	Added Adobe Acrobat 16 bit PDF reader files for all available languages	Implemented
1334 and 1364	Added the M3 and wet pH probe documentation to the \info directory	Implemented

3.2 Table 2 - Deletions

There are no deletions.

3.3 Table 3 - Changes

Malvern Software Change Request Number (SCR)	Description	Comments
1366	Changed the update.exe to a new 'Zetamaster proof' version which displays a warning to prevent customers installing on the wrong products	Implemented

4. PCS - Functional Features

4.1 Table 1 - Additions

There are no additions.

4.2 Table 2 - Deletions

There are no deletions.

4.3 Table 3 - Changes

Malvern Software Change Request Number (SCR)	Description	Comments
1159	If high zeta potentials are being measured in a cell with a high wall charge, the analysis limits of -150, 150 can be exceeded. This results in a failed analysis with usually a zero zeta potential.	The default analysis range is now –200mV to +200mV
1295	The temperature stabilisation message can be displayed for a long time on the Zetasizer 4000/5000 and Zetasizer 4/4S	The message has been removed for these systems
1327	The second virial coefficient is incorrectly calculated at double its correct value.	This is corrected
746	The default font sizes selected when the software is running under NT could be displayed as too small	This is corrected
1414	The frequency calculated during the M3 measurement is only to the nearest 1Hz	The frequency is now calculated to full precision
922	The count rate set by the auto attenuator is lower than optimum	The rules for the auto attenuator have been altered to give a count rate that lies between 200Kcps and 400Kcps
1368	The ability to set and report back in the macro language the commands for dilation, smoothing and point weighting in the sizing algorithms has been requested	Added to software
1433	A warning is required when updating the firmware to alert the user whether the version is compatible with the Zetamaster systems	Warning added

4.4 Table 4 - Bug Fixes

Malvern Software Change Request Number (SCR)	Description	Comments
1367	Removing data files can cause an error to be displayed when rebooting	This is corrected

4.5 Table 5 - Known Bugs

The following is a list of known bugs (to date) in this and previous releases of software. The bug is generic to all versions of applicable DTS/PCS products unless the entry states otherwise.

Malvern Software Change Request Number (SCR)	Description	Comments
	During any one operating session of the Malvern application software, data files can be opened and closed a maximum number of 58 times before an error occurs. This is due to a Microsoft Windows memory limitation in the way files are currently accessed, and has only been reported during internal testing at Malvern. It is unlikely to be a limitation in normal customer use.	Limitation in current version, but extremely unlikely to cause any user problems.
1144	If there is any interaction with the software during a measurement which uses the M3 technique, a wrong result can be displayed for that measurement.	This is most likely to occur during a repeat series of measurements. It should be very obvious that the result calculated following the program interruption is very different to the other results

4.6 Updating existing systems (v1.41 or earlier)

A distinction must be made between updating an older system (v1.41 or earlier) to use version 1.52 and measure zeta potential at the stationary layer, and updating to enable use of the M3 method. If the system has already been updated to use v1.51 then all that is required is to install the new software version 1.52.
Use of the new sizing algorithms requires no hardware or firmware change.

The cell position indicated in the measurement parameters dialog indicates to the software which method will be used.
If it reads 17%, the standard method of measurement at the stationary layer will be done and it is assumed that the standard ZEM0165 capillary is fitted.
If it reads 50% the new M3 method will be done and it is assumed the M3 cell (PCS0100) is fitted.

4.6.1 Updating an existing system (v1.41 or earlier) to use the M3 method

To update an existing system to use the M3 method, Version 1.52 software and an M3 cell (P/N PCS0100) must be installed and a macro program called cellpos.pcm must be run. This is available in the standard PCS directory which is available after the software has been installed.
To run the macro, go to the menu item *'Control', 'Run program'*, highlight the cellpos.pcm macro program, and then select 'Run'. There will be a series of 3 messages informing the operator of the current and new cell positions, select 'OK' in each case. This will be followed by a request to save the configuration in an .ini file. The currently used .ini file is displayed, select 'OK'.
When this has been done, the cell position in the measurement parameters dialog will read 50%. Details of the software changes for this method are in the latest Software reference manual (MAN0160 Issue 2)

4.6.2 Updating an existing system (v1.41 or earlier) to use Version 1.52 and measure using the traditional stationary layer method

To update an existing system to use version 1.52 software, and use the existing method of zeta potential at the stationary layer, the software is installed as described in section 5 and the standard quartz capillary (ZEM0165) used.
The cell position in the measurement parameters dialog will read 17%.

4.7 Product format

The customer will receive one CD-ROM with the entire DTS product software suite on. The disk is labelled PSS0001 Issue 4.
If required, floppy disk sets can be generated. For details see contents.txt on the CD-ROM.

5. Minimum computer requirements

5.1 Operation with computer connected to optics unit

IBM PC-AT compatible, Pentium 166MHz processor, 32MByte RAM, (64MB for Windows NT) 30 Mbytes free disk space, one free full length 16 bit ISA type slot, one free RS232C communications port, 3.5" disk drive, CD-ROM drive.
Windows 3.1, 3.11, 95, 98, or NT4 (service pack 6 or later) installed. 800*600 resolution 256 colour monitor (2 Mbytes video card)

Note: 1. A laptop computer without a free ISA slot is not suitable,
2. Use with a titrator or autosampler requires two free RS232C communication ports
3. The MPT-1 autotitrator is not compatible with Windows 3.1 and 3.11 operating systems.

5.2 Operation with stand alone computer system

For data re-analysis, result printing etc., the software can be installed on a stand alone PC. The computer requirements are as above except that an ISA slot and a communications port is not required.

Note: In this case a notebook computer can be used.

6. DTS/PCS Software Installation Notes

6.1 Installing over a previously installed version

Before installing the new application software version, it is recommended that if the existing version is installed in the default directory \PCS and \PCS\BMP, then these are copied into a new directory, e.g. \PCSOLD and \PCSOLD\BMP.

This ensures that any customisation of the existing system, saved into the configuration (.ini) files, is preserved. Any changes required can then be made by comparing the new installation with the customised installation in the \PCSOLD directory.

6.2 Existing data

Data in the installation directory will not be affected by the installation procedure.

All data collected using a Windows™ version of PCS/DTS software is compatible with version 1.52 and can be displayed, edited and re-analysed.

6.3 Installation from CD-ROM

Follow the instructions in the 'Contents.txt' file on the CD-ROM.

6.4 Installation from floppy disk set

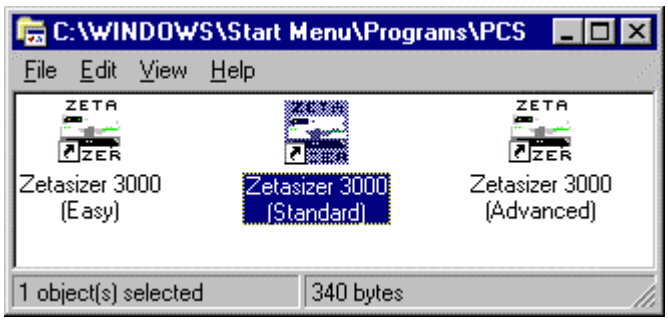
To create a floppy disk from CD-ROM, follow the instructions in the 'Contents.txt' file on the CD-ROM. Then follow the instructions below.

6.5 Floppy disk Installation with Windows 3.1, 3.11, Windows95 and Windows98 operating systems

Insert the diskette labelled DTS/PCS v1.52, Disk 1 of 1, for Windows 3.1, 3.11 & Windows '95 & '98, PSW0001/1.52 Disk 1 of 3 into the A: drive on your computer.
In Windows 3.1, 3.11 type A:\setup into the File Run dialog in program manager and press enter.
In Windows 95 & 98 type A:\setup into the Run dialog of the start menu and press enter.

Follow the Install wizard selecting the directory and system type as required. Choose the default C:\pcs. Choosing a different directory will require a modification of the Contin.pif file.

The installation should produce three icons in a PCS group, the actual icons installed will depend on the system selected:



The default directory structure produced should be:

C:\PCS	Malvern application software
C:\PCS\BMP	Icon bitmaps

6.6 Floppy disk installation with WindowsNT 4.0 operating systems

The setup program will automatically detect NT systems and install the appropriate driver. You should log on to the Windows NT workstation in Administrator mode.

Note that the uninstall facility cannot remove the driver. The driver may be completely uninstalled by stopping it from the Devices control panel applet, deleting the single driver file correla.sys from the Windows NT System32\Drivers directory, and deleting the registry key HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Correla using the Registry Editor tool.

6.6.1 Re-install WindowsNT service pack 6 (or later)

Microsoft specify that “if you change or add new software or hardware components to your system after you have installed service pack 6, then you’ll need to install service pack 6 again.” (See 3.2 Adding New Components to the System, Windows NT4.0 Service Pack 6 Readme.text file.) Since this is what has just been done, you should perform this step now. Re-install your service pack accepting the defaults.

6.6.2 Checking that the correlator (7132) driver has installed correctly

Reboot the computer, and re-log on.
From the Devices control panel applet, check that the driver “correla.sys” is present in the list of resident drivers.
Start the PCS Windows software, and load the corrtest.pcm macro.
Run the macro and check that all tests pass.

7. Customer deliverables

7.1.1 User Manual

This comprises two sections, the software reference guide and a Basic user’s programming guide. If the software is supplied as part of a complete new system the manual is incorporated as part of the users manual.

7.1.2 Application Software

The software is contained on one CD-ROM. The installed software requires about 3Mbytes of hard disk space.

8. Autotitrator DTS5900 – MPT-1 Application Software.

This is the release information for the MPT-1 (Multi Purpose Titrator) software, version 1.02. The software is designed to be used in conjunction with DTS/PCS software v1.41 or higher, and with an instrument from the Zetasizer 1000, 2000 or 3000 series ONLY.

8.1 MPT-1 Functional Features

This software allows the user to measure Zeta Potential, Size and Intensity (or combinations of these) as a function of pH, Conductivity or Additive concentration
Functions are also supplied to calibrate the pH and conductivity measuring systems, prime and flush the hydraulic system, dispense fluids, save measurement records and print measurement reports.
This software is for use with Windows 95B/C, Windows98, Windows98SE or Windows NT4.0 service pack 6 and above only.

This software will not work on Windows 3.1x.

8.2 Table 1 – Additions

SCR Number	Details	Comment
1133	Measurement timeout	A new setting has been added to the titrator.ini file, in the [Measurement] section, of MeasurementTimeout=n, will set the measurement DDE timeout to n seconds. This overrides the default calculation. 1<n<6553.

8.3 Table 2 - Deletions

None

8.4 Table 3 – Changes

SCR Number	Details	Comment
739	Non fullstop (period) decimal separators broke the numerical input routines	The software now tries the regional settings first, and then falls back on using fullstop (period) as a decimal separator. This allows input of decimal numbers in local or English formats.
1003	Complete printout of titrator parameters not possible once the titration is history	The titration parameters are now stored in a subdirectory of the “pagepath”. These are identified by an 8 digit number that is near unique. This number is also stored at the beginning of the Note2 field in each measurement record. The titrator report macros read this to identify the correct file to read.
1127	Recalculation of Isoelectric points	The installation now includes the findzero.pcm macro. This can be used to recalculate the isoelectric points. **NB:** the results from this macro may differ slightly from the results calculated by the Titrator software.
1133	M3 measurements cause timeout	Zeta measurement timeout increased from 5 minutes total, to 10 minutes per repeat measurement.
1183	Extra point on the graph	The correct number of points is now displayed
1228	Both measurement and instrument settings are stored in the Top files	The settings for the Flush, Dispense, and Configuration tabs are now stored in an INI file in the program directory, not in the Top files. Old TOP files will still work correctly, but they will not change the settings in these tabs.
1340	Incompatible Titrants	The titrants set on the system are stored in each TOP for reference. When the Start button is pressed, the titrants on the system are checked against the reference in the TOP. If the names and concentrations do not match (case insensitive), the user is asked whether to continue or not.
1341	Store calibration information	The results of Conductivity and pH calibrations are now stored in C:\PCS\cond_cals.log and C:\PCS\ph_cals.log
1342	Minimum temperature limit	The temperature range was set to ambient ±5°C, ambient being 25°C. Since ambient is often less than this, a new range is defined as 15-30°C

8.5 Distribution Media

One CD-ROM

9. MPT-1 Autotitrator Software installation notes

DTS/PCS version 1.41 or greater must be installed before this software is installed. This is handled automatically if both PCS and Autotitrator software are selected when installing from CD-ROM.

9.1 Installation from CD-ROM

The CD will auto-play in most systems. If it doesn't, run Setup.exe from the root directory of the CD.
For more information follow the instructions in the 'Contents.txt' file on the CD-ROM.

9.2 Installation from floppy disk set

To create a floppy disk from CD-ROM, follow the instructions in the 'Contents.txt' file on the CD-ROM. Then place disk 1 in the floppy drive and run setup by selecting Run… from the Start Menu and typing "a:\setup" in the box.

Follow the instructions on screen. When confirmation of the path to the PCS software is asked for, this must be the path to PCS v1.41 or greater.

10. COR3140 Firmware

10.1 Changes

Malvern Software Change Request Number (SCR)	Description	Comments
1129	This changes the default cell position to 50%. Updating a system with this firmware will not change the cell position in the cell array. See section 6.5 for details on updating	Implemented

10.2 Installation from CD-ROM

1. Ensure the Zetasizer is powered-up and connected via the RS-232 cable to the PC.
2. From Explorer or File Manager open the following directory on the CD-ROM:

   \Firmware\v2.10
3. Run the UPDATE.EXE program by double-clicking on it.
4. On the dialog that appears, click on the 

button. The firmware update will commence. This takes about 20 minutes.
5. On terminating, you will be prompted by a message box stating that the board has programmed successfully.

10.3 Installation from floppy disk set

To create a floppy disk from CD-ROM, copy the contents of the v2.10 folder identified above to a floppy disk. Insert the disk in Drive A: of the system PC and follow the instructions above.