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# Software Update Notification



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

Product	PartNo./Version
PCS for Windows	PSW0001/1.61
MPT-1 for Windows	PSW0058/1.03
COR3180 Correlator Firmware	PFW0061/1.00



AUTOSIZER



ZETAMASTER



ZETASIZER

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## 1. Scope

This document is the software release note for PCS v1.61 software in accordance with DCO3822.

It also includes a release of firmware for the new correlator board COR3180

Version 1.61 is intended to support all products identified in section 1.1 below. Its primary purpose is to correct errors in release version 1.60. System compatibility is defined below.

### 1.1 System Compatibility

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

<b>Model and Part Number</b>	<b>Product Name and Description (Original Configuration)</b>	<b>Correlator (Currently being used)</b>	<b>Windows Operating System Supported</b>	<b>Comments</b>
4700PS	Autosizer 4700 Spectrometer with manual goniometer and PCS8	7032	Windows98 only	see minimum computer requirements <b>7032 NOT SUPPORTED under WindowsNT/2000</b>
4700PS	Autosizer 4700 Spectrometer with manual goniometer and PCS8	7132	Windows98/NT/2000	see minimum computer requirements
PCS5000 (240V, 50Hz) PCS5004 (110V, 60Hz)	Autosizer 4700PS Spectrometer with motorised goniometer, PCS7, PCS8, 7032 CN correlator	7032	Windows98 only	see minimum computer requirements <b>PCS7 and 7032 NOT SUPPORTED under WindowsNT/2000</b>
PCS5000 (240V, 50Hz) PCS5004 (110V, 60Hz)	Autosizer 4700PS Spectrometer with motorised goniometer, PCS7, PCS8, 7032 CN correlator	7132	Windows98	see minimum computer requirements <b>PCS7 NOT SUPPORTED under WindowsNT/2000</b>
PCS5001 (240V, 50Hz) PCS5002 (110V, 60Hz)	Autosizer 4700PS Spectrometer with motorised goniometer, PCS7, PCS8, 7032 CE correlator	7032	Windows98 only	see minimum computer requirements <b>7032 NOT SUPPORTED under WindowsNT/2000</b>
PCS5001 (240V, 50Hz) PCS5002 (110V, 60Hz)	Autosizer 4700PS Spectrometer with motorised goniometer, PCS7, PCS8, 7032 CE correlator	7132	Windows98	see minimum computer requirements <b>PCS7 NOT SUPPORTED under WindowsNT/2000</b>
PCS5101 (240V, 50Hz) PCS5102 (110V, 60Hz)	Autosizer 4700 Spectrometer with motorised goniometer, PCS7 and PCS8	7032	Windows98 only	see minimum computer requirements <b>7032 NOT SUPPORTED under WindowsNT/2000</b>

PCS5101 (240V, 50Hz) PCS5102 (110V, 60Hz)	Autosizer 4700 Spectrometer with motorised goniometer, PCS7 and PCS8	7132	Windows98	see minimum computer requirements <b>PCS7 NOT SUPPORTED under WindowsNT/2000</b>
PCS5201 (240V, 50Hz) PCS5202 (110V, 60Hz)	Autosizer 4700 Spectrometer with motorised goniometer and PCS0078	7132	Windows98/NT/2000	see minimum computer requirements
PCS5203 (240V, 50Hz) PCS5204 (110V, 60Hz)	Autosizer 4800 Spectrometer with motorised goniometer and PCS0178	7132	Windows98/NT/2000	see minimum computer requirements
ZEM5000	Zetamaster, zeta potential measurement	Internal 70128	Windows98/NT/2000	see minimum computer requirements
ZEM5002	Zetamaster S, 90 deg. Single angle size and zeta potential measurement	Internal 70128	Windows98/NT/2000	see minimum computer requirements
ZET5004	Zetasizer 4, multi- angle size and zeta potential measurement	7032	Windows98 only	see minimum computer requirements <b>7032 NOT SUPPORTED under WindowsNT/2000</b>
ZET5004	Zetasizer 4, multi- angle size and zeta potential measurement	7132	Windows98/NT/2000	see minimum computer requirements
ZET5005	Zetasizer 4S, multi- angle size measurement	7032	Windows98 only	see minimum computer requirements <b>7032 NOT SUPPORTED under WindowsNT/2000</b>
ZET5005	Zetasizer 4S, multi- angle size measurement	7132	Windows98/NT/2000	see minimum computer requirements
DTS5100	Zetasizer 1000, 90 deg. Single angle size	7132	Windows98/NT/2000	see minimum computer requirements
DTS5101	Zetasizer 1000 HS, 90 deg. Single angle size	7132	Windows98/NT/2000	see minimum computer requirements
DTS5104	Zetasizer 1000 HS, 90 deg. Single angle size with 532nm laser (50mW)	7132	Windows98/NT/2000	see minimum computer requirements
DTS5200	Zetasizer 2000, zeta potential measurement	Internal 70128	Windows98/NT/2000	see minimum computer requirements

DTS5300	Zetasizer 3000, 90 deg. Dual angle size and zeta potential measurement	7132	Windows98/NT/2000	see minimum computer requirements
DTS5301	Zetasizer 3000 HS, 90 deg. Dual angle size and zeta potential measurement	7132	Windows98/NT/2000	see minimum computer requirements
DTS5304	Zetasizer 3000 HS, 90 deg. Dual angle size and zeta potential measurement with 532nm laser (50mW)	7132	Windows98/NT/2000	see minimum computer requirements
DTS5400	Zetasizer 4000, multi-angle size measurement	7132	Windows98/NT/2000	see minimum computer requirements
DTS5500	Zetasizer 5000, multi-angle size and zeta potential measurement	7132	Windows98/NT/2000	see minimum computer requirements
DTS5900	Multi Purpose Titrator	7132	Windows98/NT/2000	see minimum computer requirements

## 2. Introduction

The following paragraph text applies only to Zetasizer 1000, 2000, 3000 series (DTS510x/520x/530x). The PCS7132 correlator requires a PC with a full length ISA slot in order to install it. Computers with this facility are becoming rare, so the correlator has been redesigned and integrated into the optics unit. The specifications of this new internal integrated correlator, COR3180 are identical to the PCS7132 correlator. This change means that the only connection to the PC now, is a standard RS232C cable. The BNC lead is not required, even though the BNC connector is left on the backplate of the unit. This is used for test purposes.

For upgrades to existing systems, please contact the Malvern UK helpdesk.

There are no changes in the operation or functionality of the system.

Please note the minimum computer specification has changed, and a minimum speed of 266MHz is now required, and the software is only supported by Windows98, WindowsNT v4.0 and Windows2000 Professional operating systems. New systems should normally be purchased with the current specification PC that is available. (Typically a Pentium 4 at 2GHz. Please note that a Pentium 4 processor motherboard design **does not** support ISA slot technology, so it is impossible to use any PCS/DTS product, which requires an ISA slot interface card.)

### 3. PSW0001/1.61

#### 3.1 Additions

SCR	Description
2005	Add support for Windows98 Add support for Zetasizer 4000, Zetasizer 5000 and Autosizer 4800

#### 3.2 Deletions

None

#### 3.3 Changes

SCR	Description
1969	Change duration for FFR part of the measurement in M3
1970	Change enable history on M3 measurement
2006	Improve measurements of high conductivity samples
2010	Add temperature readback in simulate mode

#### 3.4 Bug Fixes

2009	Correct errors in ISO13321 macro
2011	Correct operation of valve commands

#### 3.5 Known Bugs

The following is a list of known bugs (to date) in this and previous releases of software. The bugs are 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. It is unlikely to be a limitation in normal use.	Limitation in current version, but unlikely to cause any user problems.
1144	The result displayed will be correct if the measurement is allowed to complete. Any interruption of the software operation may cause an incorrect result to be displayed	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. PSW0058/1.03**

### **4.1 Additions**

None

### **4.2 Deletions**

None

### **4.3 Changes**

None

### **4.4 Bug Fixes**

None

### **4.5 Known Bugs**

None

## **5. Updating existing systems**

A distinction must be made between updating the software to measure zeta potential at the stationary layer, and updating to enable use of the M3 method.

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 used and it is assumed the M3 cell (PCS0100) is fitted.

### **5.1 Updating an existing system (Zetasizer 1000, 2000 or 3000 only) to use the M3 method**

To update an existing system to use the M3 method, version 1.61 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 that 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)

## **5.2 Updating an existing system to use version 1.61 and measure using the traditional stationary layer method**

To update an existing system to use this version, 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%.

## **5.3 Product format**

When purchasing a brand new system, the customer will receive one CD-ROM containing the entire DTS product software suite. The disk is labelled PSS0001, Issue 6.

If required, floppy disk sets can be generated. For details see contents.txt on the CD-ROM.

For those customers downloading software from the Malvern web site ([www.malvern.co.uk](http://www.malvern.co.uk)) the zipped file contains most of the components from the CD-ROM. (It does not include all the Adobe Acrobat Reader software.)

## **6. Minimum computer requirements**

### **6.1 Operation with computer connected to optics unit**

IBM PC-AT compatible, Pentium 266MHz processor, 32MByte RAM (128Mbyte RAM minimum recommended for WindowsNT or Windows2000 Professional), 30 Mbytes free disk space, one free RS232C communications port, 3.5" disk drive, CD-ROM drive.

Windows98, Windows98SE, WindowsNT v4.0 (sp6a or later) or Windows2000 Professional (sp3 or later) installed. 800\*600 resolution 256 colour monitor (2 Mbytes video card)

A full length ISA slot will be required (see 1.1 System Compatibility) if a 7032 or 7132 correlator is part of the system configuration.

**Note:** Use with a titrator requires two free RS232C communication ports

### **6.2 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.

## **7. PCS Software Installation Notes**

### **7.1 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 be 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.

If this procedure is not followed it is necessary that the existing software be removed using the Add/remove programs facility in Control panel.

### **7.2 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 1.61 and can be displayed, edited and re-analysed.

### **7.3 Installation from CD ROM**

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



## 7.4 Creation of 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.

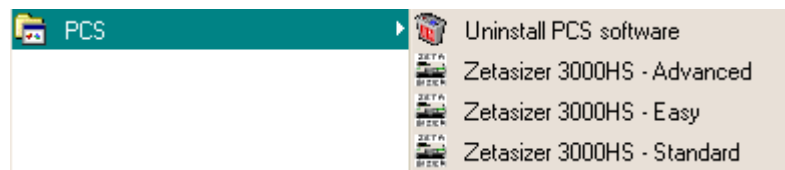
## 7.5 Installation from Floppy disk with Windows98/Windows98SE

Insert the diskette labelled DTS/PCS v1.61, Disk 1 of 3 into the A: drive on your computer.

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 four shortcuts in the program directory C:\PCS\PCS.EXE, an uninstall application plus three different access levels of operating software.

For example:



The default directory structure produced should be:

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

## 7.6 Floppy disk installation with WindowsNT v4.0 or Windows2000 operating systems

The setup program will automatically detect WindowsNT and Windows2000 systems and install the appropriate driver. You should log on 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\Correlat using the Registry Editor tool.

### 7.6.1 Re-install WindowsNT service pack 6a (or later)

Microsoft specify that "if you change or add new software or hardware components to your system after you have installed service pack 6a, then you'll need to install service pack 6a again." (See 3.2 Adding New Components to the System, Windows NT4.0 Service Pack 6a 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.

### 7.6.2 Checking that the correlator driver has installed correctly

Reboot the computer, and re-log on.

From the Devices control panel applet, check that the driver "correlat.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.

## **8. Customer deliverables**

### **8.1.1 User Manual**

This consists of a software reference guide and is part of the set of manuals supplied with a new system. Online help (user manual) is provided within the software application.

### **8.1.2 Application Software**

When purchasing a brand new system, the customer will receive one CD-ROM containing the DTS product software suite. The software requires about 3Mbytes of hard disk space.

## **9. Firmware PFW 0061/1.00 for correlator COR3180**

### **9.1 Introduction**

This section describes the use of version PFW0061/1.00 release of product firmware for programming the COR3180/PMA3020 card combination. The devices to be programmed are the on board flash memory on the daughter board.

### **9.2 Distribution Media**

The firmware is distributed with the release of PSW0001/1.60

### **9.3 Installing PSW0061 firmware**

The firmware for the Zetasizer instrument is contained in the \Firmware\PFW0061\1.00\disk 1\setup.exe directory of the CD-ROM.

Once installed, Firmware Update will appear on the Start Menu under

Program Files\Malvern Instruments\PFW0061\FirmwareUpdate. Ensure that the PCS application software is not running, the communications cables are connected, and the instrument and accessory are turned on.

On running the firmware update application, you will be prompted to enter a password to allow firmware updating as well a verification. This password is 'flash'.

Follow the on screen instructions to install the firmware found in the CD-ROM Firmware directory, not the firmware found on the computers hard disk.

### **9.4 Additions**

None

### **9.5 Deletions**

None

### **9.6 Changes**

None

### **9.7 Bug Fixes**

None

### **9.8 Known Bugs**

None