

Thermo Scientific Orion

AquaMate Spectrophotometer External Device Interfacing and Data Transfer Guide

The following instructions describe how to interface a Thermo Scientific[™] Orion[™] AquaMate[™] spectrophotometer with an external device, transfer the data and save the data as a Microsoft[®] Excel[®], Word[®] or Notepad file. The operator must set the AquaMate spectrophotometer settings to allow data to be sent to an external device, install the AquaMate USB driver on the computer, and install a computer program for a data collection program such as Realterm or HyperTerminal.

AquaMate Spectrophotometer Setup for Computer Interfacing



- 1. Power on the Orion AquaMate spectrophotometer.
- 2. Press the *utility* key to acess the instrument utility menu.



3. Press the ▲ or ▼ key to highlight the **Printer** option and press the *enter* key to open the printer menu.

Utility	11:55am 23Jun14
Software Revision: Instrument Serial Number: Pointer Date/Time Setup Baseline Expiration (hr:m Beeper Language % of lamp life used Screen Contrast Printout Contrast Printout Contrast Stored Tests Directory USB Drive Files Calculator	UM 11:55am 23Jun14 30 min
Press † or ↓ to select pa	irameter.

4. Press the ▲ or ▼ key to highlight the **PC** option and press the *enter* key to set the PC option to **On**.

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Press ↑ or ↓ to	select para	meter.

5. Press the *esc* key until the instrument returns to the main measurement screen.



USB Computer Cable Interfacing and USB Driver Installation



USB communication port

- 1. Connect the USB computer cable to the USB communication port on the back of the AquaMate spectrophotometer.
- 2. Insert the Orion AquaMate Documentation DVD into the computer CD/DVD drive.
- 3. Connect the USB computer cable to a USB port on the computer.
- 4. Open the computer Device Manager.
 - a. Click the Start icon.



b. Right-click the **Computer** button.



c. Click the Properties button.



d. Click the Device Manager button.

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	System		
	Ratings	Window Esperiment Index	
	Processor	Intel(R) Core(TM) IS CPU M 520 @ 2400Hz 240 GHz	
	Installed memory (RAM):	4.00 GB (3.24 GD usable)	
	System type:	12-bit Operating System	
Seg and Performance Information and Tools	Pen and Touch:	No Pen or Touch Input is available for this Display	
	Computer name, domain, and	understand sections	

5. Double-click the **Spectrophotometer** button on the Device Manager window.



6. Click the **Update Driver** button on the Spectrophotometer Properties window.

Seneral	Driver Details		
1	Spectrophotome	ter	
	Device type:	Other devices	
	Manufacturer	Unknown	
	Location	Port_#0003.Hub_#0004	
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			*
		Update Driver_	_
		OK	lance

7. Click the **Browse my computer for driver** software button.



8. Click the Browse button.



- 9. Select the appropriate USB driver folder from the Orion AquaMate Documentation DVD in the computer CD/DVD drive and click the OK button.
 - a. Select the **Vista32** folder when using a computer with 32-bit Microsoft 7 or Vista operating system.
 - b. Select the **Vista64** folder when using a computer with 64-bit Microsoft 7 or Vista operating system.
 - c. Select the **XP32** folder when using a computer with Microsoft XP operating system.

Browse For Folder	×
Select the folder that contains drivers for you	r hardware.
4 🎼 Computer	
> 🥾 OSDisk (C:)	
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D Thermo Scientific	
Uista32	
Uista64	=
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Falders Vista32	
Eolder: Vista32	
ОК	Cancel

10. Click the Next button.



11. Wait while the USB driver software is located and installed.

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Searching DWistal2 for software_		Installing driver software	_
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12. Approve any security messages by clicking the **Install** button.

Windows Security	×
Would you like to install this device softwa	ire?
Name: Thermo Scientific, Inc. Ports (COM & L	PT
Aways trust software from "Thermo Fisher Scientific Inc.".	install Dog't install
You should only install driver software from publish device software is safe to install?	ers you trust. How can I decide which

13. Once the installation of the USB driver software is complete, click the **Close** button.



14. Record the COM port number of the Spectrophotometer USB connection in the Device Manager window.

Device Manager	- • • ×		
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Bluetooth Radios			
I M Computer			
E ControlVault Device			
Disk drives			
Display adapters			
DVD/CD-ROM drives			
> 0 Human Interface Devices			
IDE ATA/ATAPI controllers			
IEEE 1394 Bus host controllers	1		
> 🖨 Keyboards			
If the and other pointing devices			
) 🖧 Moderns			
Monitors			
> 🖗 Network adapters			
Ports (COM & EPT)			
- T ECP Printer Port (LPT1)			
Spectrophotometer (COM9)			
> Processors			
> go Smart card readers			

Example Data Collection Program

The AquaMate communcation settings are as follows:

- Bits per second: 19200
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None
- Select a computer program for data collection and make sure the program, including device drivers and plug-ins, is fully installed. Realterm data collection software can be downloaded from their website and is used in the following instructions as an example.
- 2. Open the data collection software program by clicking the Realterm icon on the computer desktop.



3. Click the **Port** tab on the RealTerm window. Confirm that the RealTerm communication settings match the appropriate AquaMate communcation settings.

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4. Click the **Port** dropdown menu and select the COM port number of the Spectrophotometer USB connection.

RealTerrit Serial Capture Program 2.0.0.70	(C) (C) X
inplay PDM Capture IV-s Seed EctoPot	In Clear Freeze 1

5. Click the **Baud** dropdown menu and select **19200**.

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6. Click the **Change** button to save the port settings.



7. Click the **Display** tab on the RealTerm window. Select the **Ascii** option under the **Display As** field.



- 8. When data from the AquaMate spectrophotometer is ready to be sent to the computer, first test the connection between the spectrophotometer and data collection program.
 - a. Press the *print* key on the AquaMate spectrophotometer. The data from the AquaMate spectrophotometer should appear on the program display.

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Display Fox Display As C Ass C	Bytes		004xc 4xc (n) Clear Freeze 1 004xc -000x -000 -

- 9. Once the connection has been validated, select the type, name and location of the file the data will be saved as.
 - a. Click the **Capture** tab on the RealTerm window.



b. Click the ... button next to the File field and set the file type, name and location. For example, use Microsoft Excel (.xls) file type, name the file AQ8000-Data.xls and save the file to the computer desktop.

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Save js	E Desktop		•	****	
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10. Click the **Start: Overwrite** button on the Capture tab of the RealTerm window. The program is now ready to receive data from the AquaMate spectrophotometer and export the data to the selected file type, name and location.

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- 11. Press the *print* key on the AquaMate spectrophotometer to send the data from the instrument to the data collection program.
- 12. Once all data has been sent from the instrument to the computer and data collection program, click the **Stop Capture** button on the Capture tab of the RealTerm window.
- 13. Open the data file, for example AQ8000-Data.xls, and format the data as needed.

AquaMate Spectrophotometer Setup for Printer Interfacing

The AquaMate printer compatibility requirements are as follows:

- Printer must be PCL5 or PCL6
- Printer must be a printer only, not a multi-function printer
- For this example, a PCL5 HP Laser Jet 1300 printer is used
- HP 2055D and Office jet 6000 printers have been used in the past
- 1. Power on the Orion AquaMate spectrophotometer.



- 2. Press the *utility* key to acess the instrument utility menu.
- 3. Press the ▲ or ▼ key to highlight the **Printer** option and press the *enter* key to open the printer menu.



4. Press the ▲ or ▼ key to highlight the **External** option and press the *enter* key to set the External printer option to **On**.

Software Revisi Instrument Seri		1.00
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Stored Tests Di USB Drive Files Calculator		

5. Press the *esc* key until the instrument returns to the main measurement screen.



USB Printer Cable Interfacing and Printing Data

1. Connect the USB cable to the USB printer port on the back of the AquaMate spectrophotometer.



- 2. Connect the USB printer cable to the USB port on the printer.
- 3. When data from the AquaMate spectrophotometer is ready to be sent to the printer, press the *print* key on the AquaMate spectrophotometer.

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