



*Pacific Sun*



# Kore 5th

Ultimate dosing station

User Quick Manual

ver. 1.8

Windows/Mac OS X(Bluetooth interface)

## Preface

Congratulations on your purchase!

**Pacific Sun Kore 5th** dosing stations are made with the highest quality materials, and made to last!

The Pacific Sun Research and Development team are continually testing, developing and releasing new features, and hence the purpose of this document is to touch on the basics of our product and software.

Details about new features will be updated from time to time, but if you have any questions, please contact us at:

[service@pacific-sun.eu](mailto:service@pacific-sun.eu)

### **This document will cover the following topics:**

- 1) Setting up your dosing pump
- 2) Connecting the doser to your computer/mobile device
- 3) Using the control software

## Connecting to your computer

Kore 5th dosers are controlled using a Bluetooth connection between doser and your computer. It is highly recommended that you use an external Bluetooth adapter to ensure a strong signal between the doser and your computer. Bluetooth adapter should be USB compatible with Class 1 specification and output power not less than 14dBm-20dBm.

### Steps:

1) Enable Bluetooth on your computer (or install external USB Bluetooth adapter)

2) Initiate the Pairing process between your doser and your computer

**Tip!** You can do this by going to your Start menu, and selecting Devices and Printers. Once the window opens, click on Add a device button. Your computer will search for all available devices, and will show the available Kore 5th device. Select your doser and click on Next.

3) Select option "Enter the devices pairing code", enter "**1234**" as the pairing code, and click on Next. You will receive a message stating "This device has been successfully added to this computer".

**Tip!** All Pacific Sun devices have the default pairing code of "**1234**".

4) You will see the Kore 5th doser in your "Device list" now.

**Tip!** You can view your Device list by navigating to your Start menu, and selecting Devices and Printers.

Right click on the Kore 5th doser and click on Properties

5) Click on the Services tab, and take note of the COM port that was assigned to your doser

**Tip!** You can increase the transfer rate between your doser and your computer by clicking on the Hardware tab, selecting your COM port, and clicking on Properties. In the new dialog, click on the Port Settings tab, and change the value of "Bits per second" field to 19,200. Click OK and then OK again.

## Using the software Installation

### From CD

1) Insert the CD/Pendrive into your CD-ROM drive

2) Go to My Computer or Computer, and double click on Pacific Sun CD to explore the contents of the disk

3) Double click on Setup.exe and follow the prompts on screen

### From Web

1) Download the software

2) Extract the files to a local folder using the RAR Lab WinRAR unpacking tool

3) Browse through the extracted files, locate Setup.exe and run it

**Tip!** You can also run the software by browsing through the installation disk / extracted folder, and double clicking on the Pacific Sun application.

## Starting the software

The installation creates a shortcut to Pacific Sun software in your Start menu. Click on Start, and run the Pacific Sun software from there.

## Connecting to your doser

To control your doser, you will need to connect it to your computer first. (see Connecting to your computer for further help with this)

1) Start the software

2) Select the COM port for your Kore 5th from the drop down, select Bluetooth in the second drop down, and click on Connect

Tip! You can also type the COM port in manually in the drop down

Tip! Refer to Connecting to your computer to find the COM port for your doser

3) If software is unable to connect to doser at first, try a couple more times – you can also try moving closer to the doser for better signal between the doser and your computer

Once the connection is successfully established, the software will display some basic information regarding your actual doser settings. Information displayed varies in different versions of software.

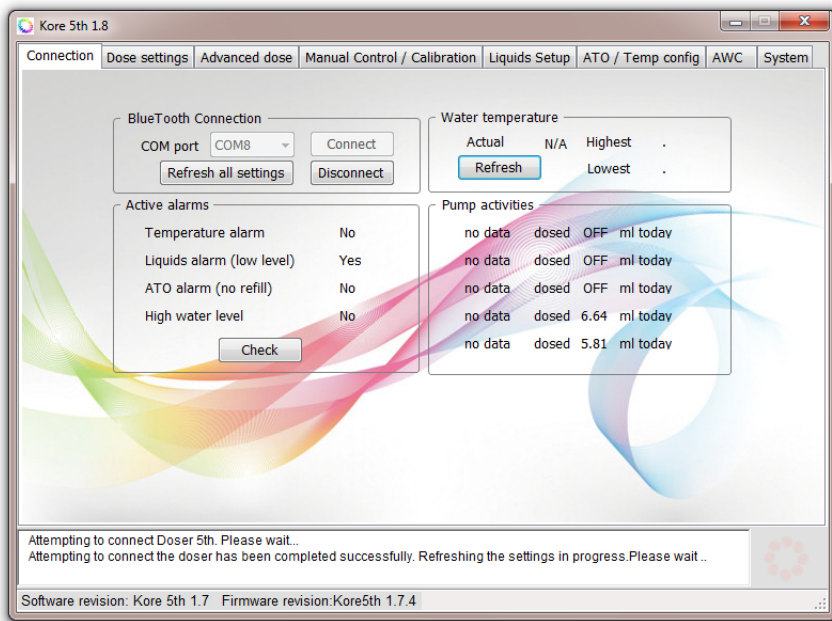
## General information about Kore 5th doser firmware upgrade procedure

**Caution:** Switching off the power supply during updating process may damage your doser CPU. Recommended distance between the doser and the computer that you are using to update firmware is between 1-2 meters. If you are using a laptop with bluetooth module built-in, please use an external USB bluetooth module for better signal strength.

## Bluetooth module Class 1 is strongly recommended.

Uploading wrong firmware may damage your doser and void your warranty. The damage may require returning the doser to our service department to restore its original functionality.

Use only **dedicated firmware upgrade software** available for download on [www.Pacific-Sun.eu](http://www.Pacific-Sun.eu) in **Download** section.



### In the Connection tab you will find:

Connection group box:

**Connect button** – allow establish connection with doser on choosed COM port(this port is assigned to doser in installation process)

**Disconnect** – close connection with doser

**Refresh all settings** – by pressing this button you can refresh/load all important doser settings. It can take up to two-three minutes

**Water temperature** – if your temperature sensor is connected properly, you will see your actual, lowest and highest temperature measured by the sensor. By using Refresh button you can read actual temperature settings.

**Active Alarms** – this group box show all active alarms on doser:

– temperature alarm – if that alarm is active it mean that your water temperature is above or below maximum/minimum settings(check this on ATO/Temp config)

– liquids alarm – if active – liquid level (in any container) reached minimum level(configured in ATO/Temp config)

– ATO alarm – active when ATO tried refill four times without success. Check that your DC pump is working or refill container isn't empty

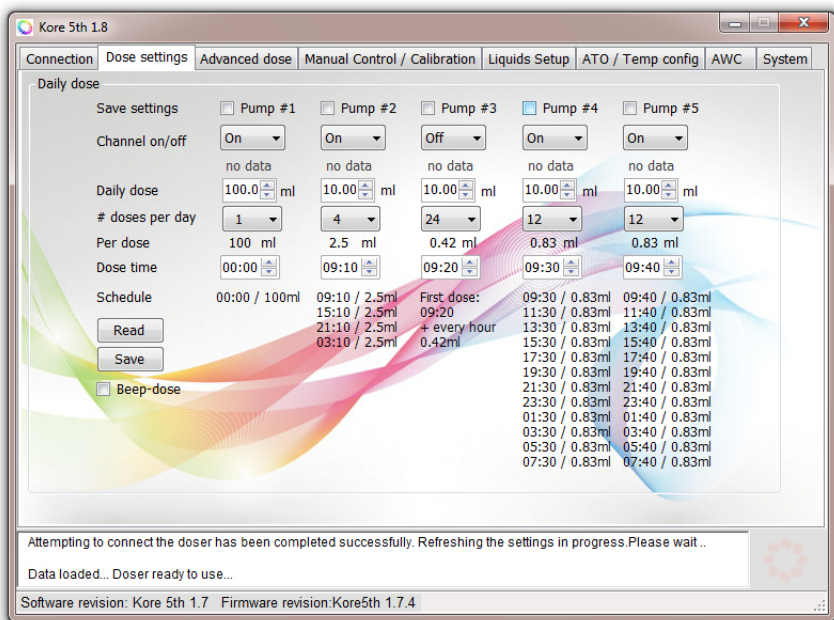
– High water level – your sump water level is too high(above top floating level switch). It can be also activated by optical sensor working as safety sensor(you can set working mode for optical sensor in last Service Tab)

**Pump activities** – there you can see information about pump activities in actual day(from 00:01 time to now).

To initialize connection with doser you should choose proper COM port and push **Connect button**.

Within a few seconds your computer should establish connection with your doser( you will see "Connected and settings refreshed. Doser ready to use. ..." in the Status window.)

Now you are connected to the doser and can program and modify settings..



**Dose settings** – here you can set daily amount of dosed liquid for each pump.

**Channel on/off** – turns off / on the corresponding channel

**Daily dose** - determine the appropriate daily dose which will be divided into a number of dosing (depending on the doses per day). Minimum single dose – 0.01ml (for channel #1 – 0.1ml)

# doses per day – you can set 1,2,4,6,12, or 24 doses per day.

Additional special dosing programs:

- **C5** – 5 doses hour by hour etc

- **144** – only pump #1 – 144 doses during the day (each dose every 10 minutes).

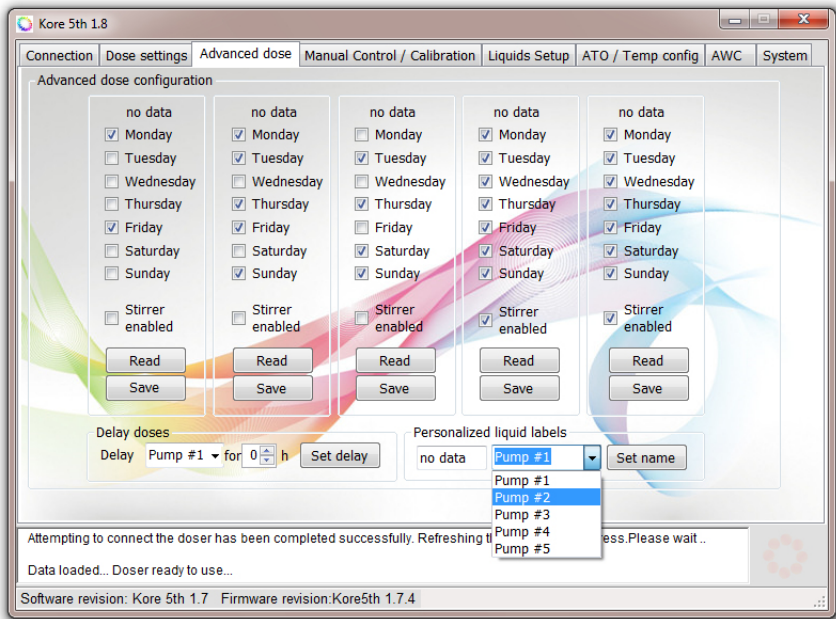
**Per dose** – single dose of fluid [in ml]

**Dose time** – Initial dosing time for each pump. PacificSun software will automatically calculate the following times to dose the liquids.

**Read** – read pump setting from doser memory

**Save** – save pump settings (daily dose, doses per day, time schedule) to doser internal memory for each pump where checkbox in Save settings row is checked. Example: Checked Pump#1 checkbox only will overwrite pump #1 settings.

**Beep-dose** – if checked - doser will generate short “beep” signal (sound type configured in ATO/Temp config tab) after each single dose.



**Advanced Dose tab** - Allows you to set which days of the week each pump have to work.

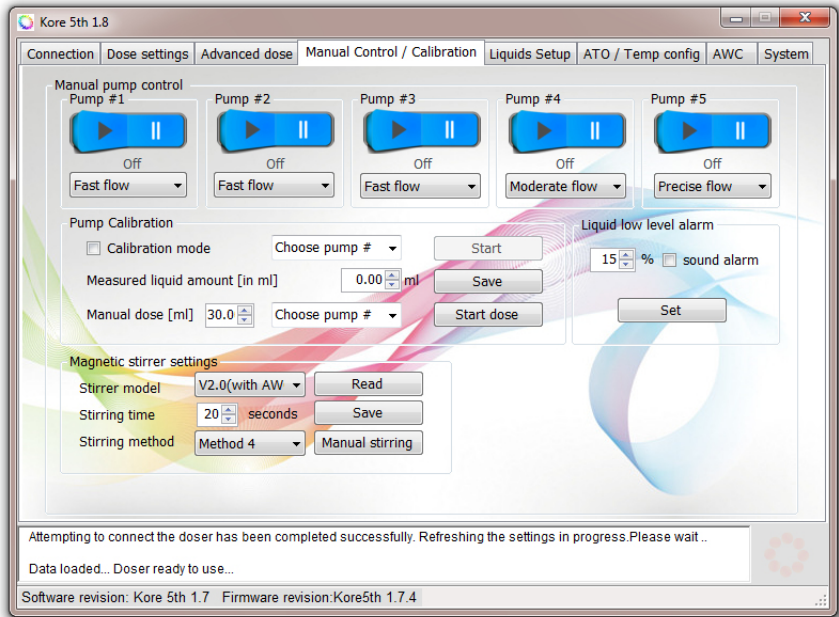
By pressing:

**Set schedule** – you can save schedule to doser memory. It should be done for each channel separately.

**Read** – you can read schedule from doser memory.

**Personalized liquid labels** - You can give your own name for the dispensed fluids. This names are written in doser RAM memory so after power failure they will be lost. Maximum lenght – 16 chars.

**Delay doses** - You can set delay time(in hours) how long pumps/exact channels will be turned off. After this time doser will start scheduled doses automatically.



This tab allows you to manually control the various pumps and their calibration.

**Pump flow** – there are three modes to choose:

- fast flow
- moderate flow
- precise flow

Depending on the tubing used, you have the option to achieve the following performance:

**a) high flow Pharmed/Viton/Santoprene**

Fast flow - maximum average flow 110ml/min

Moderate flow - maximum average flow 60ml/min

Precise flow - not suggested (irregular flow depending from material hardness). The best for precise dose is silicone tubing.

**b) high flow special silicone tube (thick)**

Fast flow - maximum average flow 140ml/min

Moderate flow - maximum average flow 110ml/min

Precise flow - maximum average flow 50ml/min

**c) precise flow special silicone tube (thin)**

Fast flow - maximum average flow 600ml/min

Moderate flow - maximum average flow 26ml/min

Precise flow - maximum average flow 10ml/min(!)



### **Pump calibration procedure:**

1. Connect tubes to the pump entrance and pump exit and then place the pump entrance tube in the proportioned liquid.
2. Remove air from the tubes by manual activation of the pump.
3. Set up proportioning velocity (it is recommended to use **Fast Flow** for hoses typically embedded in the pump heads).
4. Select the calibration mode.
5. Select a number of the pump that is to be calibrated.
6. Arrange a proportioning vessel, preferably a measuring cylinder.
7. Press **Start** button.
8. Upon completion, read accurate amount of the liquid in the measuring cylinder and then enter its amount to the Measured liquid amount field [ml].
9. Save the calibration by pressing **Save** button.
10. Use **Manual dose** option to check the calibration correctness.
11. Should the amount of proportioned liquid differ from the value that has been saved during the calibration check, it will be necessary to repeat calibration paying attention to air bubbles in the tubes; the entire tube shall be filled in with the liquid.
12. Calibration shall be carried out for all the pumps individually and the results shall be entered upon its completion.

**Manual liquid dose** - allows manual dispensing of a specified quantity of fluid.

**Magnetic Stirrer settings** - allows for configure proper version of Magnetic Stirrer and set stirring time before doses.

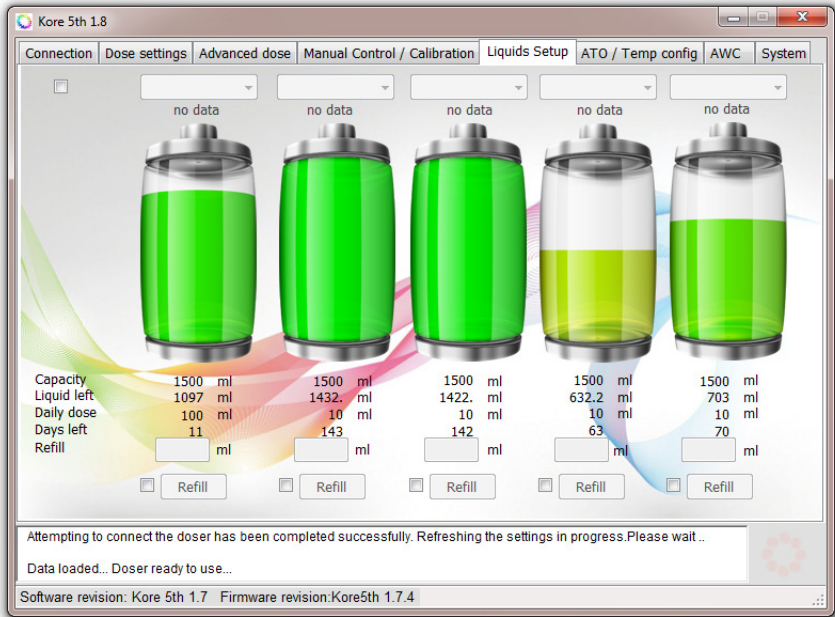
Stirrer model - V1.0 – it is first generation of stirrers without external power supply(power taken from Kore 5th). V2.0 – is new stirrer, with own power supply.

**Stirring time** – stirring time before starting dose. Minimum 5s – maximum 60s. We suggest between 30 and 40 seconds(depend from liquid density/type)

**Stirring method** – 7 different stirring programs. Different speed and variable „pulsations“ mode. Help choose the best one for used bottle type and liquid density. Test before the save – magnetic pellet should should spin without any obstacles or bouncing.

### **Liquid low level alarm**

Allows you to set an alarm for a minimum level of dispensed liquids. You can also turn on/off sound alarm for low level of liquid in bottles.



By clicking on each of the bottles, you can check the current level of the fluid. Below you will find information about:

**Capacity** – initial bottle capacity

**Liquid left** – calculated actual liquid level(in ml)

**Daily dose** – information about daily dose from each bottle(for each pump)

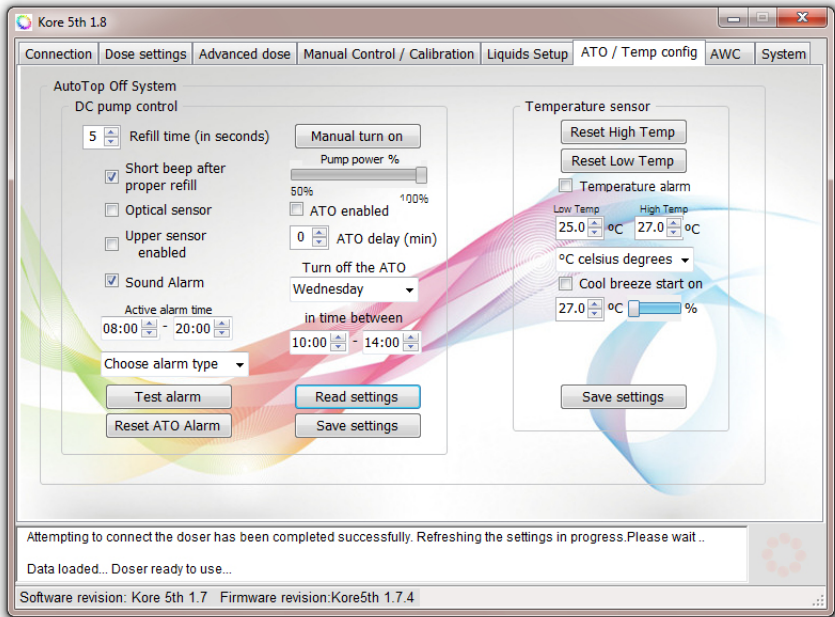
**Days left** – approx. time left to empty bottle(in days)

Here you can refill bottles.

There is text box below each bottle:

**Refill** – how much liquid is this container. If you have 3 liters container – put there 3000 (in ml)

The setting is saved by pressing **Refill** button.



DC pump control box.

**Refill time(in seconds)** – time in seconds defining how long the DC pump will work when water low level sensor is activated. After four unsuccessful attempts the pump will be turned off (to prevent damage). It is highly advised to select „Unsuccessful water refill Alarm checkbox so you can be notified upon failure.

**Manual turn on/off** – allows selecting the flow rate manually(flow adjust in 40-100% range).

**Short beep after proper refill** - enabling this option will cause a beep after each refill of water.

**Sound alarm** – turn on/off sound alarm when high level sensor is activated.

**Choose alarm type** - allows you to select sound signal generated by the doser.

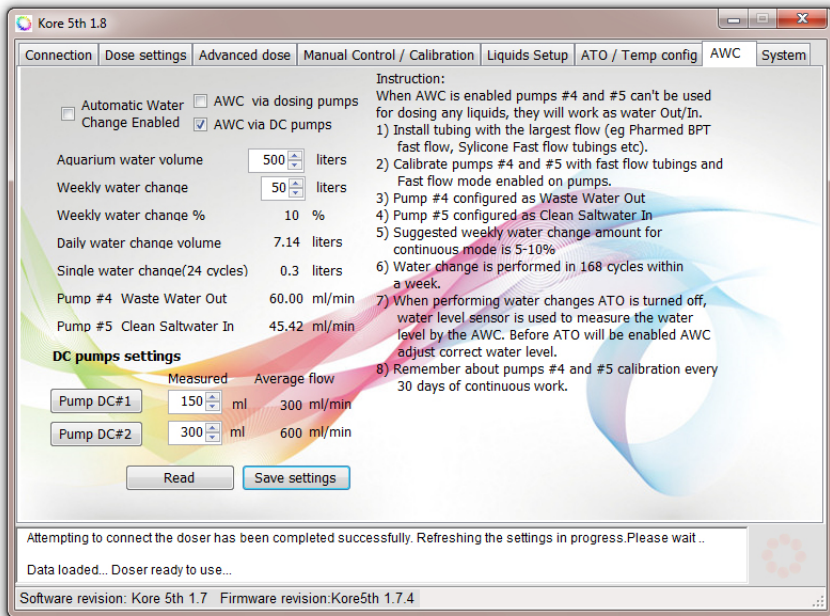
**Test alarm** – test sound alarm.

**Reset ATO alarm** – allows resetting the ATO after four unsuccessful refills.

Temperature sensor box

**Reset High/Low temp** – erase highest/lowest temperature record from doser memory

**Temperature alarm** – turn on/off sound alarm for temperature settings



AWC allows you to program automatic water changes. To configure AWC enter the following data: Aquarium water volume – your aquarium water volume together with sump

**Weekly water change** – we suggest 5-7% changes

AWC will perform 24 water changes daily(168 weekly). AWC allows maintaining stable water parameters due to constant swapping on fresh saltwater.

**Pumps connection:**

pump #4 – waste water out

pump #5 – fresh water in

When AWC is enabled pumps #4 and #5 can't be used as dosing pumps(will be disabled).

Use **Save button** to write settings in doser memory and Read when you want load it from memory to application.

When water change procedure start(waste water out) ATO will be disabled. After succesfull fresh water refill ATO will be enabled again.

You can also configure AWC using additional **AWC DC pump set**. It allow for much faster water change(up to 250l/h) and with that set your pumps from channel #4 and #5 can still be used as dosing pumps.

Connect DC Pumps to output port on back side of doser. Using two attached tubings connect pump #1 to drain(waste water out) and pump #2 as „fresh“ water refill

**DC Pump #1** – Waste water out

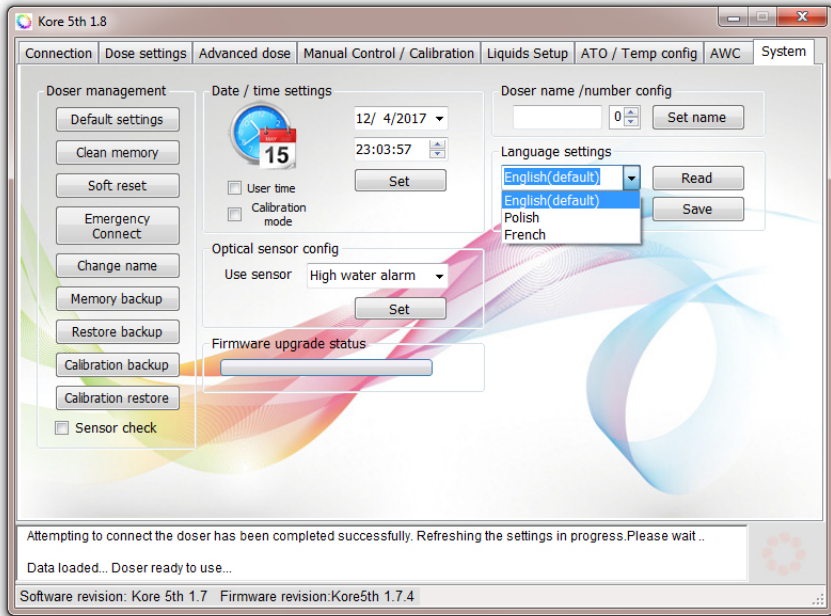
**DC Pump #2** – Fresh water in

You can test/recognise them using test buttons(Test DC#1/Test DC#2).

### **DC AWC pump calibration procedure.**

1. Connect tubes to AWC pump set.
2. Immerse both pumps into water.
3. Activate the pump by pressing DC#1 and DC#2 to remove air from the pumps and tubes.
4. Arrange an accurate measuring vessel and then insert the exit tube from DC 1 pump into it.
5. Press DC#1 again, wait until proportioning is complete and then read amount of measured water.
6. Amount of water shall be entered into Measured upper field [mL].
7. Evacuate the measuring vessel and place the tube from the other pump into it.
8. Press DC#2 again, wait until proportioning is complete, and read amount of measured water.
9. Amount of measured water shall be entered into Measured lower field [mL].
10. Save the calibration by pressing **Save** settings.

If you need technical support - please contact with [service@pacific-sun.eu](mailto:service@pacific-sun.eu)!



## Service tab

**Default settings** – program doser with default settings. We suggest use this button if your doser after firmware upgrade not work properly.

**Clean memory** – erase doser memory. Should be only performed after Pacific Sun Service request.

**Soft reset** – generate reset signal for doser

**Emergency connect** – should be performed if software can't connect with doser due firmware incompatibility. After connection firmware update (with proper corresponding to software firmware) should be performed.

**Memory backup** – generate .mbf file (memory backup file). This file can be send to our service for diagnose (if something not work properly).

**Restore backup** – allow import .mbf file to doser memory.

**Calibration backup** – generate file with pump calibration config.

**Restore calibration** – allow import calibration backup file to doser memory

**Sensor check (checkbox)** – when enabled on LCD screen show floating level sensor status. Can be used for diagnose proper switch connection/readings.

## Date/time settings:

Once software is connected to the doser:

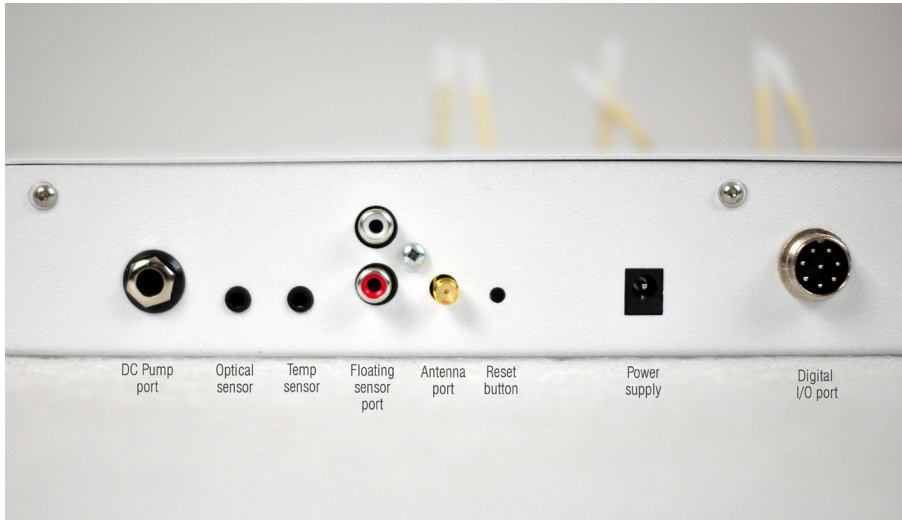
1) By default, the system date and time is displayed. Click on Set date/time to set the same date and time on your doser

2) To select a date and time other than system date and time, check the box next to User time, and type the date and time you would like to set. Click on Set date/time to save these settings to your doser

**Calibration mode** – show actual time (hours/hh:mm:ss format). To back for normal dose mode – uncheck box.

## Connection ports

Description of connection ports on backside panel Kore 5th dosing station.



**DC pump** – port for DC pump(ATO refill pump)

**Optical sensor** - connection port for optical sensor(used for ATO/AWC)

**Temp sensor** - digital temperature sensor port.

**Floating sensors port** - not used in newest version of software/firmware and designe dfo future applications(alkalinity module etc)

**Antenna port** - external antenna port(required for proper work!)

**Reset button** - hardware reset switch(short push generate reset signal to main CPU)

**Power supply port** - required 12V 1A/2A power supply with 2.1mm plug.

**Digital I/O port** - used for connection Magnetic Stirrer, DC AWC pump etc.



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If you need technical support - please contact with [service@pacific-sun.eu](mailto:service@pacific-sun.eu)!

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