取 A-0031-04

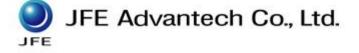
Logger version CTD profiler with optional fast DO sensor RINKO-Profiler

MODEL	ASTD100,101,102,103
WODEL	ASTD150,151,152,153

Operation Manual

For the safe use of this measuring instrument.

- After reading the operation manual and before using the measuring instrument, please use it correctly. Improper handling may lead to an accident.
- Please keep this operation manual safe, so it can be used at any time.



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1. Introduction

1-1. RINKO-Profiler

RINKO-Profiler is a small light water temperature, salinity and depth recorder. It has a small body with 60mm dia., 491mm total length and 1kg weight in water, the titanium case is adopted and the chlorophyll, turbidity and DO (RINKO) sensors are also provided, enabling to measure many water quality parameters. The instrument consists of sensor sonde, interface and transmission cable, and various setups and data processing are done by using a PC.

This RINKO-Profiler has both depth trigger and time trigger functions.

*Depth trigger: Recording into memory every preset depth value according to information from depth sensor.

*Time trigger: Recording into memory every preset interval according to internal timer information.

1-2. Software

This software is designed to be utilized in a series of operations from measurement setup to data post-processing of "RINKO-Profiler".

We recommend you to read this manual in advance for correct use of the instrument.

1-3. Usage environment for software

In order to install this software, the following items are required in hardware and software.

1-3-1. Hardware requirements

CPU: More than Intel Core i5 1.6 GHz Display Resolution: More than 1024×600 Hard disk drive with spare capacity of more than 1 GB. Drive capable of reading a CD-ROM.

1-3-2. Software requirements

OS : Windows XP SP3 (32bit/64bit) Windows Vista SP2 (32bit/64bit) Windows 7 (32bit/64bit) Windows 8 (32bit/64bit) Windows 10 (32bit/64bit)

Microsoft, Windows and Windows Vista are either registered trademarks or trademarks of Microsoft Corporation in the U.S. and /or other countries.

Intel Core is trademark of Intel Corporation in the U.S. and/or other countries.

Memory : Windows XP : More than 512MB Windows Vista : More than 1GB Windows 7: More than 1GB(32bit) / more than 2 GB(64bit) Windows 8: More than 1GB(32bit) / more than 2 GB(64bit) Windows 10: More than 1GB(32bit) / more than 2 GB(64bit)

Follow the steps below to install the .NET Framework before installing each software so that it will work. This section explains the installation procedure of .NET Framework 2.0, 3.5. It is unnecessary if .NET Framework 2.0, 3.5 is already installed on your computer. Although this procedure manual is for Windows 10, you may need to install .NET Framework under the same procedure in Windows 8.1. It supports Windows 10 Home (32 bit / 64 bit) and Windows 10 Pro (32 bit / 64 bit), but procedures and images may be different depending on OS side change.

This is the procedure to install .NET Framework (2.0, 3.5) on Windows 10 of your computer.

2.1 What to prepare

 \cdot Access to the internet.

To install the .NET Framework, you need an internet connection. It cannot be installed offline.

2.2 Installation

(1) Right-click the start button and select [Programs and Functions] from the displayed menu (Fig. 2.1).



Figure 2.1 Select [Programs and Functions]

(2) Click [Activate or deactivate Windows functions] on the upper left of the window (Figure 2.2)

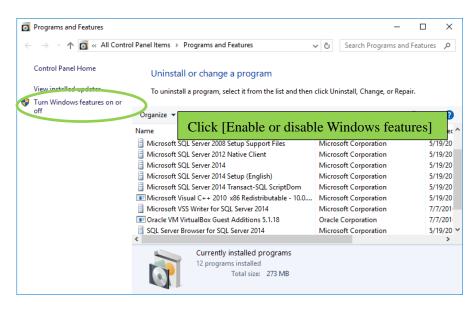


Figure 2.2 Click [Enable or Disable Windows Features]

(3) Check [.NET Framework 3.5 (including .NET 2.0 and 3.0)] and click the [OK] button to start the installation (Fig. 2.3).

· It is not necessary to check all the trees. Please refer to the image.

· If already checked, it is already installed.

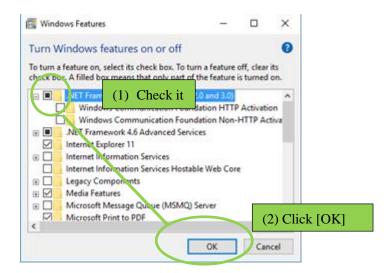


Figure 2.3 Check [.NET Framework 3.5]

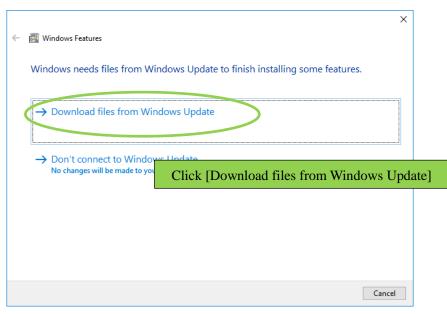
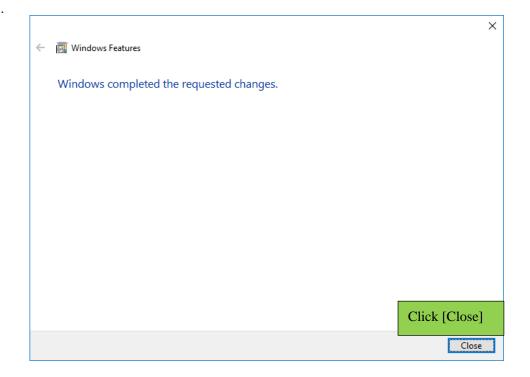


Figure 2.4 Click [Download files from Windows Update]

(4) Please wait until the files are downloaded and installed. You can interrupt at any time with the [Cancel] button (Figure 2.5).

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Downloading required files	Applying changes
Canol	Canel

Figure 2.5 Window displayed during installation



(5) Click [Close] to complete the installation (Fig. 2.6).

(7) Install the RINKO Profiler software.

1-4. Precautions

- It is prohibited to duplicate and make a copy of this product entirely or partially for commercial purposes.
- The contents and specifications of this product are subject to change without notice for improvement and correction.
- We are not responsible for any effect caused by the use of this software and manual.
- Do not hesitate to contact us in case of unclear points or anything that you need to inform us regarding this product.

2. Notes on use

Danger	If you handle it incorrectly, the user is likely to be at risk of death or serious injury.
Warning	If you handle it incorrectly, the user may be minor or seriously injured.
important	If you handle it incorrectly, the instrument may be damaged and unrepairable.
A Caution	If you handle it incorrectly, it is likely to affect the observed data.

- Do not repair or disassemble anything beyond of what is written in this manual.
- When working on water, please ensure the safety of working environment.



Danger

- Be careful when cleaning the sensor. Scratches on the sensor may affect its performance
- The operating temperature range of the instrument is -3°C to 45°C, but please do not store in a freezing environment or perform measurements on temperatures below or higher the operating temperature range.
- Do not drop the equipment; and please protect it from mechanical impacts.
- Do not expose the instrument to direct sunlight. Do not leave the instrument in an environment where the ambient temperature is 45°C or above. Please do not store the instrument in a dusty and/or humid environment.
- Please be careful not to hurt yourself when deploying and retrieving the instrument.



• During deployment and retrieval of the instrument, please avoid mechanical impacts on the instrument.

3. Outline of Instrument

3-1. Instrument specifications & Hardware specifications

Measurement Mode	Depth Trigger Mode Time Trigger Mode				
Measuring Interval	0.1 m 0.2 m 0.5 m 1 m	0.1 to 600 s			
Memory Type	1G byte Built in memory				
Storage Capacity	Approx.1,000 times in 0.1 m pitch 100 m	Approx. 8,000,000 data			
Power Source	Lithium-ion rechargeable battery (continuou	is use for approx. 10 hours).			
Mass	Approx. 2kg in air Approx.1kg in water				
Dimension	ф136mm×491mm				
Material	Titanium Grade 2 (Pressure case)				
Pressure Proof	The maximum range of the depth sensor				

3-2. Instrument specifications & Hardware specifications

Measuring	Туре	Measuring Range	Resolution	Accuracy	(¹)Time
Item					constant
Depth	Semiconductor	0 to 600 m	0.01 m	±0.3%FS	0.2 s.
Deptil	pressure sensor	0 to 1000 m			
Watar tamp	Thermistor	-3 to 45°C	0.001°C	±0.01°C	0.2 s.
Water temp.				(0 to 35°C)	
Conductivity	Electrode	$0.5 \text{ to } 70 \text{ mS cm}^{-1}$	0.001 mS cm ⁻¹	$(^{2}) \pm 0.01 \text{ mS cm}^{-1}$	0.2 s.
Conductivity				$(28 \text{ to } 65 \text{ mS cm}^{-1})$	
Salinity	Practical salinity	2 to 42	0.001		0.2 s
	Backscattered light	0 to 1000FTU	0.03 FTU	±0.3 FTU or ±2 %	0.2 s
Turbidity		(Formazine		of measured value	
		reference)			
	Fluorometric	0 to 400 ppb	0.01 ppb	$\pm 1\%FS$	0.2 s
Chlorophyll		(Uranine		(0 to 200 ppb)	
		reference)			
DO	Phosphorimetric	Phosphorimetric 0 to 20 mg Γ^1 0.001 mg Γ^1 ±2%FS (³	(³)0.4 s		
DO		(0 to 200%)	(0.01 %)	(±2%FS)	

(¹)63.2% Response time

(²)Use sea water for calibration

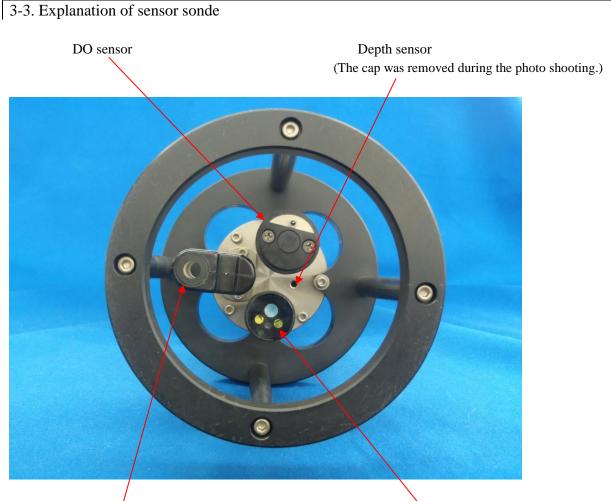
(³)63.2% response standard at 1 atm and 25°C

When a new product is shipped or received for inspection and recalibration, the following measurement setup shall be applied for shipment.

① Depth trigger mode

(2) 0.1 m pitch

③ Density 1.025 (seawater specification)



Water temperature /salinity sensor

Chlorophyll / turbidity sensor

Depth sensor

Because the sensor is a pressure detecting type sensor, it detects any fluctuation in the atmospheric pressure. Also, depending on the environment temperature, the zero point shows a slight fluctuation. In this sensor, the Auto-Zero function to adjust the zero point is provided, therefore, it cancels the error caused due to atmospheric pressure and temperature change.

A white "DURACON (POM)" resin with a small hole is attached to the depth sensor pressure-receiving part. If the hole is clogged, the pressure transmission is affected, therefore, periodical cleaning is recommended.

Water-temperature sensor

It uses a highly reliable thermistor with fast time response. It is integrated with an electric conductivity sensor, with coinciding time responses, and then preventing salinity spikes.

Since it is a very stable sensor, the measured value is not affected, even if there is any dirt attached or biofouling. However, if the sensor is remarkably dirty, the time response becomes slow, therefore, it should be cleaned periodically. The sensor is thin and care should be taken not to break it during cleaning.

Chlorophyll sensor

The chlorophyll sensor holds a LED (Light Emitting Diode) which has 470 nm peak light-emitting wavelength at the source of the light-emitting part, and the light-receiving part consists of a photodiode and optical filter, and the light-receiving band is approx. 640 to 980 nm. The chlorophyll-a in phytoplankton can have its concentration estimated by fluorescence intensity. However, fluorescence intensity differs depending on the species and growing process of phytoplankton.

If chlorophyll-a concentration is needed in μ g L-1, it will be required to analyze water samples by another method (e.g. acetone extraction method), and to prepare a calibration curve. In order to represent the fluorescence intensity, the output signal (N value) from the sensor may be used as it is, and also in place of actual chlorophyll pigment, other fluorescence substance (e.g. uranine reference) may be used for verification, and the value may be represented as a fluorescence intensity value.

In any case, the values are not actual chlorophyll-a concentration, therefore, they can be used as a comparison of relative values, but you are kindly requested to utilize as fluorescence intensity values. If the chlorophyll-a concentration is necessary, you can pour the field water sample into the attached verification pail, and make a regression calculation with the fluorescence intensity and sampling water analysis (obtained in situ) and compensate for use. In addition, if there is an obstruction in front of the light-emitting part, the sensor may be influenced by reflected light and outputting higher than the actual value. If the verification pail is used, the sensor light-emitting part should be kept away from the bottom by more than 10cm. In this case, care should be taken not to allow bubbles to attach onto the sensor surface. Otherwise, it will cause errors.

The chlorophyll sensor is an optical sensor. Therefore, if the sensor surface is dirty, the measured value will be affected. To prevent this from happening, the sensor should be washed with water after use, and cleaned with soft cloth (the use of solvent such as thinner is prohibited).

Turbidity sensor

This sensor is integrated with the chlorophyll sensor. Suspended particles in the water are irradiated with infrared light on 880 nm wavelength, then the reflected/scattered light intensity is measured by the light receiver, that is, the sensor uses backscatter light to measure turbidity. When shipped from the factory, the sensor is comparison-calibrated using a standard Formazine reference based on JIS, and the unit shown is FTU (Formazine Turbidity Units). If the actual suspended particles concentration (SS) is required, it is necessary to prepare a calibration curve using water samples in the same way as chlorophyll. Since dirt affects the measurements, it is required to keep the sensor clean, same as the chlorophyll sensor.

DO sensor (RINKO)

The oxygen detection film is covered with a phosphorescent substance. When the excitation light pulse is radiated from inside, the red phosphorescence is discharged and the phosphorescence time and intensity are inverse correlated to the water oxygen partial pressure (concentration). Under anoxic conditions, the phosphorescence time is long, and on the contrary, when oxygen partial pressure is increased, the phosphorescence time is short.

The phosphorescence time, different from the phosphorescence intensity, is not easily affected by dirt on the sensor surface, therefore, this detection method ensures stable measurements. In addition, during the phosphorescence emitting process, the oxygen is not consumed; therefore, stirring of water sample (which is essential for galvanic electrode sensors) is not necessary. Because the oxygen detection film is very delicate, scrubbing it with hard brush must be avoided. After use, it should be washed with water, and wiped off with a soft cloth, and covered by a protective cap when stored. When measuring, the protective cap needs to be removed.

3-4. Precautions

- Do not place the DO sensor under temperatures higher than 50°C. Otherwise, the sensor sensing foil may be deteriorated. Pay full attention to the ambient temperature for temporary storage (on board or in the car).
- If bubbles are attached in the DO sensor, the data will be affected. When deploying into the water, remove bubbles by swinging the sensor.
- If the DO sensor surface is damaged, the data is not only deteriorated, but the sensing foil needs to be replaced. Pay full attention to any measurement near the bottom.

For use and recovering, care should be taken to prevent excessive mechanical impact on the instrument. •Please set the sensor sonde descending speed to less than 50 cm s⁻¹.

4. Installation & Un-installation of this software

4-1. Installation of this software

The setup.exe included in this software is an installation program. Follow the procedure below for the installation. The screens shown below are for Windows 8 and might be different in case of other Windows OS versions.

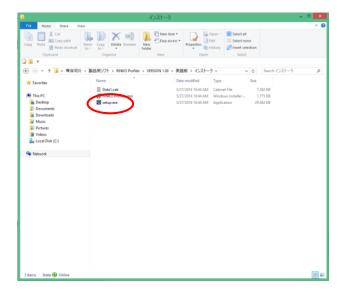
* At least, NET Framework 3.5 SP1 needs to be installed; otherwise the software will not run properly. If NET Framework 3.5 SP1 is not installed, it will be installed automatically during this software installation. In this case, it might take a few minutes to complete installing the software.

- 1) Boot up the Windows OS.
- 2) Insert the software disc into the CD drive.
- 3) Click [START] button on the taskbar and choose [this PC] from the menu.
- 4) Choose CD-ROM.

Apps by na						
😤 Microsoft Office 2010 言語設定	Oracle Objects for OLE Readme	😥 Calendar එ#*-ト	III Steps Recorder	File Explorer	日本hao123 hao123 Hao123	
Microsoft Office Picture Manager		Calendar 107#°-1	Sticky Notes	Help and Support	113012.3	
	<u> </u>					
Microsoft OneNote 2010	Gracle ODBCヘルプ(日本語版)	Directory	Windows Fax and Scan	Run		
Microsoft Outlook 2010	Oracle Provider for OLE DB Rea	Forum	Windows Journal	Task Manager		
Microsoft PowerPoint 2010	SQL Developer	Library	Vindows Media Player	This PC		
Microsoft Publisher 2010	SQL Plus	Notifier	WordPad	Windows Defender		
Microsoft Word 2010	Universal Installer	+ WindowsHealth	XPS Viewer	Windows Easy Transfer		
▋ Microsoft クリップ オーガナイザー	😽 Wallet Manager			Windows PowerShell		
🗼 VBA プロジェクトのデジタル証明書		Calculator	Magnifier			
	Renee PDF Aide	Character Map	😼 Narrator	🔯 アドインの修復		
Microsoft Silverlight	Renee PDF Aide - ヘルプ	Math Input Panel	On-Screen Keyboard	📓 ログイン設定の初期化		
		Notepad	Windows Speech Recognition	🧾 共通設定		
Microsoft ODBC Administrator	Symantec Endpoint Protection	🔿 Paint		「「「」 違印ツール		
Net Configuration Assistant	Symantec Endpoint Protection A	Remote Desktop Connection	Command Prompt			
Net Manager	TeamWARE Office 200X	Snipping Tool	Control Panel	🔁 捺印ツールのマニュアル		
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• 🗣 Network			
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	(D:)		
			11

5) Double-click on setup. exe button to start the installation.

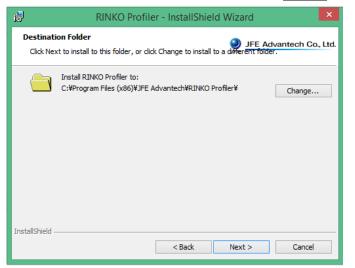




The following screens will appear in the same order as below. Follow the instruction shown on each screen. Click on Cancel button to interrupt the software installation.

🛃 RINKO	Profiler - InstallShield Wizard
2	Welcome to the InstallShield Wizard for RINKO Profiler
JFE Advantech Co., Ltd.	The InstallShield(R) Wizard will install RINKO Profiler on your computer. To continue, click Next.
	WARNING: This program is protected by copyright law and international treaties.
120	
	< Back Next > Cancel

In the [Install Shield Wizard] window, click on Next> button.



By clicking on **Change** button, you can change the installing path. After deciding in which folder you will install the software, click on **Next>** button.

ī	ø	RINKO Profiler - InstallShield Wizard	×
-	R	The wizard is ready to begin installation.	Ltd.
		If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.	
		Setup Type: Typical	
		Destination Folder: C:¥Program Files (x86)¥JFE Advantech¥RINKO Profiler¥	
		User Information: Name: JacSystemGr Company:	
	Inst	allShield < Back @Install Cancel	

Click on <Back button for any configuration modification on the setup. Click on Install button after confirming the installation path and setup settings. The installation will start automatically.

RINKC	Profiler - InstallShield Wizard	×
N.	InstallShield Wizard Completed	
JFE Advantech Co. Ltd.	The InstallShield Wizard has successfully installed RINKO Profiler. Click Finish to exit the wizard.	
	< Back Finish Cance	

When the installation is successfully completed, the above screen will appear. Click on Finish button to end the installation process.

This acquisition tools is installed as default at :

C:\Program Files\JFE Advantech\RINKO Profiler\RINKO_Profiler.exe (Default)

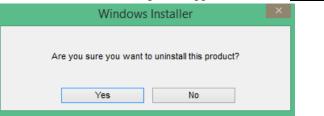
4-2. Uninstalling this software

When this software is not needed anymore, it can be deleted by the uninstalling program. Also, in case you receive an updated version of this software, you will be asked to install it after deleting the old version.

1) "RINKO Profiler uninstall" item is created on the start menu after you have completed the installation. "Apps" -> [Uninstall RINKO Profiler].

Apps by name					
Acrobat Reader DC	People	<u>≥</u> <i>x</i> ≠r>	🞧 E2-549	biheart	Microsoft Excel 20
	Photos	🕎 スポーツ			Microsoft Office 2
Camera			JI-k 🔀	CubePDF Utility	Microsoft Office 2
D	Skype	17764 III		CubePDF Utility on the Web	Microsoft Office Pi
Desktop	Store		リーディングリスト アプリ		Microsoft OneNot
		۲−۲ 💼	漢字/汉字	Inkscape 0.91	Microsoft Outlook
Google Chrome			地图	Inkscape Homepage	Microsoft PowerPr
Google Earth		💷 धन्न	天気		Microsoft Publishi
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Mozilla Thunderbird				通信処理ソフト	
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CneDrive					
	サウンドレコーダー	** -		PmicsWin4	Microsoft ODBC J
PC settings					Net Configuration

2) When the confirmation message box appears, click on Yes to carry out the uninstallation.



The uninstallation process is then initiated.

RINKO Profiler
Please wait while Windows configures RINKO Profiler
Gathering required information
Cancel

The software uninstallation has been completed when the above screen disappears. Uninstallation can be carried out by [Add or remove programs] in [Control panel] as well.

5. Boot-up & exit of this software

5-1. Boot-up of this software

In order to boot up this software, find [RINKO Profiler] on "Apps".

Apps by name					
Acrobat Reader DC	People	24FX	1445-12 🕡	biheart	Microsoft Excel
	Photos	🕎 スポーツ			Microsoft Office
Camera			i x-n	CubePDF Utility	Microsoft Office
D	Skype	107E 1570E		CubePDF Utility on the Web	Microsoft Office
Desktop	🛅 Store		🧮 リーディングリスト アプリ		Microsoft One
		<u>■</u> ====,	漢字/汉字	Inkscape 0.91	Microsoft Outle
Google Chrome	10 アップグレード アシスタ		🏭 地图	Inkscape Homepage	Microsoft Powe
Google Earth		🖸 EF#	🔆 7.%	JFE Advantech	Microsoft Publi
	<u>тэ-ь</u>			RINKO Profiler	Microsoft Word
internet Explorer		7-18655		RINKO Profilerのアンインストール	📓 Microsoft クリッ:
м	11.ンダー			Uninstall RINKO Profiler	UBA JUSIDH
Mozilla Thunderbird				通信処理ソフト	
0	<u>у</u> -г			🥳 通信処理ソフトのアンインストール	Microsoft Silver
OneDrive					
	サウンドレコーダー	₹*-		PmicsWin4	Microsoft ODB
PC settings					10 Net Configurat

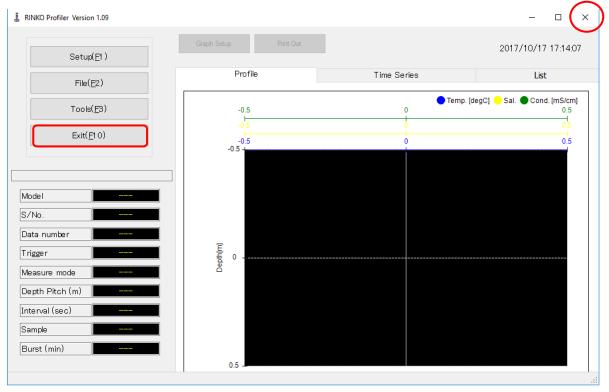
Or, double-click on the following icon on the desktop.



RINKO Profiler software will be initiated.

5-2. Exit out of this software

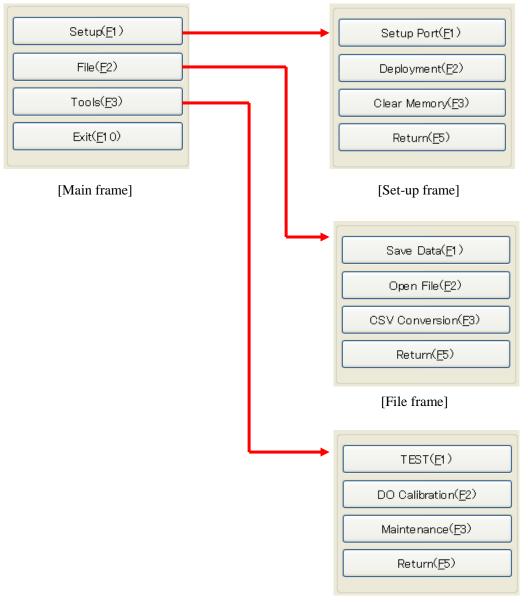
In order to quit the software, click on [X] button or click on Exit (F10) button located on the left in the screen.



6. Description of frames

6-1. Outline of frames

All functions from this software are operated from the buttons located to upper-left frame. You can see the whole schematic functions of RINKO Profiler software below.



[Tool frame]

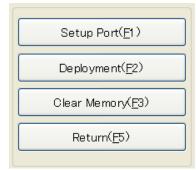
6-1-1. Detailed explanation of each frame

(1) Main frame



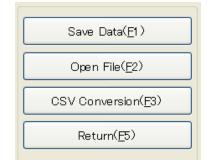
Setup	-to move to [Set-up frame]
File	-to move to [File frame]
Tools	-to move to [Tool frame]
Exit	-to quit the program

(2) Set-up frame



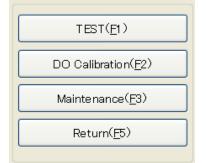
Setup Port	-to set serial ports	
Deployment	-to set and input measurement settings	on the
	instrument	
Clear Memory	-to format the instrument memory.	
Return	-to return to [Main frame]	

(3) File frame



Save Data	-to transfer data from the instrument to a PC	
Open File -to read out the measurement data and Display them the graph or their list.		
CSV Conversion	-to convert the measurement data (RAW file) into physical unit file (CSV file)	
Return	eturn -to return to [Main frame]	

(4) Tool frame



TEST	-to communicate with the instrument and to confirm N-value / physical value output from each sensor.	
DO Calibration	-to calibrate DO sensor	
Maintenance	-to confirm coefficients and firmware version for instrument maintenance	
Return	-to return to [Main frame]	

7. Measurement

Follow the procedure below to set up the instrument for observation.

7-1. Preparation of instrument and interface

 In case AC power is supplied, connect the power cable to the Connector (2 pins) where is written "AC100 to 240V" on the back of the interface (IF).

* Use batteries (AA battery \times 4) when AC power source is not available (it is not possible to charge the instrument when using batteries)

Connect RS-232C cable with the connector indicated as "RS-232C" on the back of the IF and with the serial port in your PC.

Plug the communication cable in the connector where is written "SENSOR" at the front panel of the IF and connect the other end with the upper connector in the instrument (3 pins).

(2) Push POWER button to power up the interface.

(3) Turn on the wheeling switch on the top of the instrument, so that you can communicate with the instrument.

Note: Be sure to power IF first and then to turn the wheel switch on. If the order is in reverse, you will not be able to communicate with the instrument.









ACTD-I



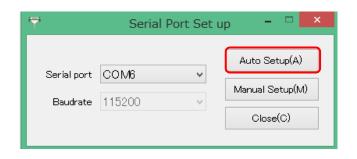


7-2. Serial port setting up

Move to set-up frame by clicking on <u>Setup</u> in the main frame at the top left of the software window. Then, click on <u>Setup Port(F1)</u> [port setting] in the set-up frame (or click F1 key) to open a serial port setting window. The serial port number in use of your PC is recognized automatically and it is shown in the Serial Port Combo-box. Click on <u>Close</u> button to close the Serial Port setting window.

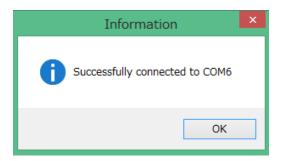
7-2-1. Automatic connection

The serial port number connected to the instrument is searched by pressing the Auto setup button



Baud rate is fixed at 115200 bps

Connect your PC with the instrument and make it available for communication. Click on Auto Setup to search the COM number being connected with the instrument (COM1 to COM32). When automatic searching is completed, message box below appears.



7-2-2. Manual connection

In case that the above auto searching fails, select manually the port number to be connected with the instrument and click on Manual Setup button.

T	Serial Port Se	t up	o – 🗆 🗙
			Auto Setup(A)
Serial port	COM6 V	ſ	10 . 44
Baudrate	COM1 COMB	l	Manual Setup(M)
2000/010	COM6		Close(C)

When the connection succeeds, the box below appears and the designated port number used for communication is displayed.

Information
Successfully connected to COM6
ОК

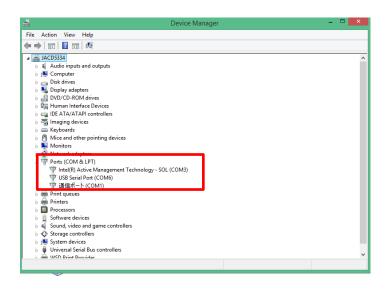
When you are unaware of the serial port number connected with the instrument, right-click on "My Computer" and select properties from the output menu.

Apps by n	ame 🗸				م
Microsoft Office		TeamWARE Office 200X			日本hao123
Microsoft Excel 2010	Net Manager	S Calendar	Sound Recorder	Default Programs	100 Hao123
Microsoft Office 2010 アップロード	Oracle Objects for OLE C++クラ	🧟 Calendar ለ)#°−ト	Steps Recorder	File Explorer	
Microsoft Office 2010 言語設定	Oracle Objects for OLE Readme	Calendar 1078° ->	Sticky Notes	Help and Support	
Microsoft Office Picture Manager	Oracle ODBCへルプ	Directory	Windows Fax and Scan	700 Run	
Microsoft OneNote 2010	Oracle ODBCへルプ(日本語版)	Forum	Windows Journal	Task Manager	
Microsoft Outlook 2010	Oracle Provider for OLE DB Rea	Library	Vindows Media Player	This PC	
Microsoft PowerPoint 2010	SQL Developer	Notifier	WordPad	Windows Defender	
Microsoft Publisher 2010	SQL Plus	WindowsHealth	XPS Viewer	Windows Easy Transfer	
Microsoft Word 2010	Universal Installer			Windows PowerShell	
▲ Microsoft クリップ オーガナイザー	Wallet Manager	Calculator	Magnifier		
VBA プロジェクトのデジタル証明書		Character Map	Narrator	アドインの修復	
Microsoft Silverlight	Renee PDF Aide	Math Input Panel	On-Screen Keyboard	🛐 ログイン設定の初期化	
Microsoft Silverlight	Renee PDF Aide - ヘルプ	Notepad	Windows Speech Recognition	🧾 共通股定	
Oracle - OraClient11g_home1		🧭 Paint		「」 捻印ツール	
Microsoft ODBC Administrator	Symantec Endpoint Protection	Remote Desktop Connection	Command Prompt	寝る 捺印ツールのアンインストール	
Net Configuration Assistant	Symantec Endpoint Protection A	Snipping Tool	Control Panel	🄁 捺印ツールのマニュアル	
۲					

In the system properties window, select the hardware tab and click on <device manager>.

;		All Control Panel Item	15	💌
🔄 🍥 🕤 🕇 😽 🛛 Control Panel 🕨	All Control Panel Items >			v 🖒 Search Control Panel 🔎
Adjust your computer's settings				View by: Large icons 🝷
Y Action Center	Add features to Windows 8.1	Administrative Tools	AutoPlay	RitLocker Drive Encryption
🔂 Color Management	👸 Credential Manager	Date and Time	Default Programs	Device Manager
Devices and Printers	Display	🚱 Ease of Access Center	File History	Flash Player (32-bit)
Folder Options	Konts	🦓 HomeGroup	Indexing Options	Intel® HD Graphics
Part Internet Options	Keyboard	📌 Language	Location Settings	I Mouse
Network and Sharing Center	Notification Area Icons	Personalization	Phone and Modern	Power Options
Programs and Features	Recovery	Region	RemoteApp and Desktop Connections	Sound
Speech Recognition	Storage Spaces	Sync Center	💐 System	Taskbar and Navigation
Troubleshooting	User Accounts	Windows Defender	Windows Firewall	Windows Update
Work Folders	🥡 メール (32-bit)			

In the device manager window, check the COM & LPT ports.



In case you are using USB serial port, you may see a yellow question mark in the device manager window. That means USB Serial Port Adapter driver could not be installed correctly.

Therefore, you are asked to install the attached driver into your PC in accordance with the instruction handbook.



(the driver is installed correctly)

7-3. Deployment Setup

Click on Setup at the upper left on the software window to move to the setup frame. Then, click on Deployment and the following window will show up.

💝 Deplo	yment Setup 🗕 🗆 🗙
1. Instrument Clock: 2016/09/02 11:57:43 ✓ Save clock(S) ✓	
2. Deployment Setup: Model ASTD1 02-ALC-R02 S/No.	0087 Available 954.79 MB
⊖ Depth Trigger	⊙ Time Trigger
Depth Pitch (m) 0.1 V	Mode O Continuous
Density Constant : 1.0000 1.0000	2016/09/02 • • • • • • • • • • • • • • • • • • •
Reading setup(F2)	Start(F1) Close(F5)

The setup window, while communicating with the instrument, shows the previous deployment plan (when the communication fails, the default values will be shown instead)

Clicking on Reading setup, the system information as well as registered deployment plan will be shown.

◆ System information				
Model	Instrument model is shown			
S/No.	Serial number of the instrument is shown			
Available	Remaining capacity (MB) of the internal memory is shown			

7-3-1. Calendar setting

In the [1. Instrument Clock:] frame, the detailed calendar information (date/time information) stored in the instrument can be read and re-written.

∩1. Instrument Clock:	
2009/10/01 💌	Read clock (<u>R</u>)
00:00:00	Save clock(<u>S</u>)
✓ Synchronize to PC	

While "Synchronize to PC" is checked, click on <u>Save clock</u> button so that the time synchronized to the PC is written into the instrument. In case an arbitrary calendar information is needed to be registered into the instrument, uncheck "Synchronize to PC", and manually input the date/time on the "Instrument Clock", then click on <u>Save clock</u> button. The date/time information you have set up will be written into the built-in calendar of the instrument.

Click on **Read clock** button to read the calendar information in the instrument, which is related to the frame above. Always, verify whether the calendar of the instrument is correct before starting an observation.

7-3-2. Depth trigger setting

This instrument has two types of measuring mode, [depth trigger] and [time trigger].

Using the [depth trigger] you can measure every datum at designated depth rate (m) for vertical profiling. Checking the mark of [depth trigger] allows you to change the depth pitch rate (m).

🂝 Deplo	yment Setup	- 🗆 🗮 ×
1. Instrument Clock: 2016/09/02 Read clock(R)		
11:57:43 ♥ Synchronize to PC		Select which trigger you will use (depth or time trigger)
2. Deployment Setup:		
Model ASTD102-ALC-R02 S/No.	0087 Available	954.79 MB
Depth Trigger	O Time Trigger	Select the desired depth pitch in depth (0.1/0.2/0.5/1.0m)
Depth Pitch (m) 0.1	Continuous	Burst
Density Constant :		
1.0000	2016/09/0 1157:44 Current time	Set density correction for the calculation: 1.0250 (seawater) 1.0125(brackish water) 1.0000(freshwater)
	Interval (sec) : 0.1	
	Sample : 10 Burst (min) : 1	
Reading setup(F2)	Start(F1)	Close(F5)

Depth pitch setting (m)

Depth pitch (m) can be selected among 0.1m/0.2m/0.5m/1.0m. Select desired depth pitch rate.

Density correction value for depth calculation

You can select among 1.0250/1.0125/1.0000. Apply 1.0250 when the deployment is in the sea, 1.0125 for brackish water and 1.0000 for freshwater measurements.

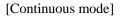
7-3-3. Time trigger setting

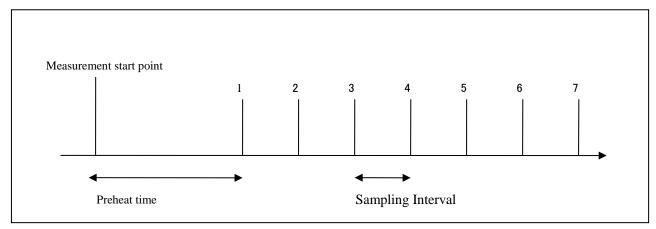
Time trigger mode allows you to collect the data during designated start time to end time. By checking [time trigger], you will be allowed to insert the desired time.

Deployment Setup		Select witch trigger you use (depth or time trigger)
201 6/09/02		
11:57:43 ♥ Synchronize to PC		Select deployment mode
2. Deployment Setup:		(continuous or burst mode)
Model ASTD102 ALC-R02 S/No.	0087 Available 954.79	иВ
Depth Pitch (m) 0.1	Mode O Continuous	Set interval (0.1-600sec)
Density Constant : 1.0000 V	2016/09/02	
	11:57:44	Set sample number (1-18000)
	Current time + 10 min	
	Interval (sec) : 0.1 Sample : 10	
	Burst (min) : 1	Set the burst interval (1-1440 minutes)
Reading setup(F2)	Start(F1) Close(F5)	

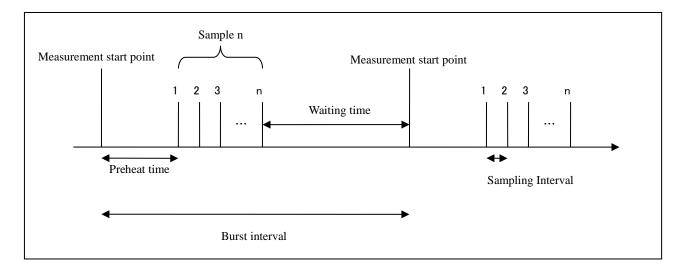
Measurement Mode

There are two types of measurement modes in this instrument, Continuous and Burst modes. Continuous mode allows you to do measurements at the interval being set by you. Burst mode allows you to do measurements at every burst interval (minute) that you have set.





[Burst mode]



Measurement start time



Measurements start at the time you have set in the window showed in the left. (The instrument is powered at the pre-heat time earlier than the time you have set and it will start at the appointed time). Minimum 1 minute time allowance is recommended before start measuring.

Clicking on [Current time] button allows you to change the displayed time to current time and [+10 min] button allows to

advance the current time by 10 minutes.

For example, the time is shown as 12:34:56, if you click on [+10 min] button, time will show 12:40:00. Another click will advance more 10 minutes and so on, 12:50:00, 13:00:00, 13:10:00.

Sampling Interval setting (seconds)

You can select the interval from 0.1 seconds to 10 minutes.

- . For less than 1 second interval; input the value at every 0.1 second (e.g.0.1 or 0.2). (×0.12 second is not valid)
- . For more than 1 second; input the value at every 1 second. 100 ms setting is not accepted. (×10.5 second is not valid)

Sample setting

Sample number can be selected from 1 to18000. (Only available on burst mode)

Burst setting (min)

Burst interval can be selected from 1 to 1440 minutes (only available on burst mode).

Density correction for depth calculation

Density correction is also available as in depth trigger mode.

7-3-4. Start the measurement

Once the setup by depth trigger mode or time trigger mode is completed, you can start measuring by clicking on [Start] button. After the measuring parameter settings are transferred to the instrument, the confirming pop-up windows below will appear. Verify and confirm the contents and click on [exit] button.

Now that you have completed the deployment setup, the measurements will start at the previously designated time.

A measurement setup log file is created at the same time and its information is stored at

C:¥Documents and Setting¥Username¥My Documents¥JFE Advantech¥RINKOProfiler¥DEPLOY¥yyyymmdd.log

😬 Measurement setup	o log information 🛛 🗕		Measurement setup	o log information 🛛 – 🗖 🗙
	measurement setup are register ent setup has been completed.	red		neasurement setup are registered ent setup has been completed.
Model:	ASTD102-ALC-R02		Model:	ASTD102-ALC-R02
Serial#	87		Serial#	87
Setup Time:	2016/09/02 12:56:29		Setup Time:	2016/09/02 12:59:28
Start Time:	2016/09/02 14:57:44		Start Time:	
Trigger:	Time-Trigger		Trigger:	Depth-Trigger
Measure Mode:	Burst mode		Measure Mode:	
Density Constant:	1.0000		Density Constant:	1.0000
Depth Pitch(m):		(Depth Pitch(m):	0.1
Interval(sec):	0.1		Interval(sec):	
Sample:	10		Sample:	
Burst(min):	1		Burst(min):	
	Close(C)		Close(C)

8. Start Measuring

Measuring by Depth Trigger

Disconnect the communication cable from the Interface unit while the instrument power is ON. The LED (red) will flash for 20 seconds and then remain lit. The measurement will start as soon as the LED stops flashing.

*Please note that zero adjustment has started when the LED starts flashing. Therefore, please keep the instrument at the sea surface until the LED stops flashing. The measurement can be started as soon as the LED stops flashing.

•Please set sensor sonde descending speed to (less than 50 cm s⁻¹).

*Turn off the instrument power after the observation is completed. If you will conduct the next observation with the same measuring settings, turn on the instrument power and wait for 20 seconds, until the LED stops flashing.

Measuring by Time Trigger

Disconnect the communication cable from the Interface unit while the instrument power is ON. The red LED will turn off automatically and it will remain in this condition until the exact time you have set for start the measurements. When the time for starting measurements has come, the LED starts lightening and the measurements start.

•Please set sensor sonde descending speed to (less than 50 cm s⁻¹).

If you would like to start to measure immediately, turn off the instrument power and turn it on again after you setup the measuring condition. The instrument will start measuring after 5 s of pre-heating time.

The time trigger measurement requires 5 seconds of pre-heating time after the lightening starts. The optional Chlorophyll/Turbidity sensors require 10 seconds of pre-heating time. On the other hand, the pre-heating time is included in the LED flashing duration (20 seconds) when the measuring is conducted by depth trigger method.

Max Recordable Data

The max recordable data vary depending on the interval/sampling/Burst setting condition.

Max Burst Cycles = Battery Capacity \times 3600 / {(Interval \times Sampling Number+10) \times Consumption A when active + (Burst - Interval \times Sampling Number - 10) \times Consumption Amp while stalling} (Example) Interval: 0.5s, Sampling Number: 20, Burst Time: 1 hour(3600s) Consumption Amp when active: 120 mA, Consumption Amp while stalling: 1.8 mA Battery Capacity: 1500 mAh, Safety Factor: 0.8 Max Burst Cycles =1500 \times 0.8 \times 3600 / {(0.5 \times 20 + 10) \times 120 + (3600 - 0.5 \times 20 - 10) \times 1.8} = 610 So 610 hours deployment can be conducted from this calculation, however, please note that this cannot be guaranteed due to battery deterioration.

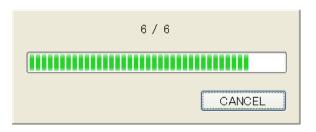
9. Data Transfer

This section describes how to transfer the measured data from the instrument to your PC.

9-1. File List in the instrument

Click on File button in the main frame on the upper-left side of the software window to move to the file frame. Next, click on Save Data in the file frame to show the data transfer window.

When you click on [Save Data] button while the instrument is communicating with the PC, the data retrieval window appears and shows the data logged in the instrument automatically.



List Memory(R)	File header information :	
201406231005 ASTD102-ALC-R02 0087 1 201406231021 ASTD102-ALC-R02 0087 1 201406231054 ASTD102-ALC-R02 0087 1 2014062311054 ASTD102-ALC-R02 0087 1 201406231136 ASTD102-ALC-R02 0087 1 201406231136 ASTD102-ALC-R02 0087 1 201406231145 ASTD102-ALC-R02 0087 1 201406231145 ASTD102-ALC-R02 0087 1 201406231417 ASTD102-ALC-R02 0087 1 201406231417 ASTD102-ALC-R02 0087 1 201406231417 ASTD102-ALC-R02 0087 1 201406231457 ASTD102-ALC-R02 0087 1 201406231457 ASTD102-ALC-R02 0087 1 20140623151 ASTD102-ALC-R02 0087 1 20140623150 ASTD102-ALC-R02 0087 1 20140623150 ASTD102-ALC-R02 0087 1 20140623175 ASTD102-ALC-R02 0087 1 201406231450 ASTD102-ALC-R02 0087 1 201406231450 ASTD102-ALC-R02 0087 1 201406231450 ASTD102-ALC-R02 0087 1 201406231450 ASTD102-ALC-R02 0087 1	22158 raw [Size=12 KB] 30757 raw [Size=16 KB] 30545 raw [Size=16 KB] 1238 raw [Size=16 KB] 1238 raw [Size=16 KB] 13602 raw [Size=16 KB] 13602 raw [Size=6 KB] 14744 raw [Size=9 KB] 14744 raw [Size=6 KB] 14744 raw [Size=6 KB] 14744 raw [Size=6 KB] 14744 raw [Size=6 KB] 15152 raw [Size=7 KB] 51152 raw [Size=7 KB] 53153 raw [Size=10 KB] 53153 raw [Size=13 KB] 50146 raw [Size=13 KB] 50146 raw [Size=13 KB] 5052 raw [Size=11 KB] 5052 raw [Size=11 KB] 71537 raw [Size=11 KB] 71537 raw [Size=21 KB]	
Select all	Download damaged files	
Save to C:¥Users¥007108¥Documents	JFE Advantech¥RINKO Profiler¥DATA	

ist of data files on memory :	To show the first in the	
201406231005 ASTD102-ALC-R02 0087 100543 raw 201406231021 ASTD102-ALC-R02 0087 103757 raw 201406231037 ASTD102-ALC-R02 0087 103757 raw 201406231108 ASTD102-ALC-R02 0087 113681 raw 201406231108 ASTD102-ALC-R02 0087 113681 raw 201406231136 ASTD102-ALC-R02 0087 113682 raw 201406231145 ASTD102-ALC-R02 0087 113682 raw 201406231145 ASTD102-ALC-R02 0087 114534 raw 201406231404 ASTD102-ALC-R02 0087 114534 raw 201406231417 ASTD102-ALC-R02 0087 114548 raw 201406231429 ASTD102-ALC-R02 0087 114548 raw 201406231437 ASTD102-ALC-R02 0087 114295 raw 201406231437 ASTD102-ALC-R02 0087 144956 raw 201406231438 ASTD102-ALC-R02 0087 144856 raw 20140623151 ASTD102-ALC-R02 0087 151152 raw 20140623151 ASTD102-ALC-R02 0087 151152 raw 20140623152 ASTD102-ALC-R02 0087 151152 raw 2014062315348 ASTD102-ALC-R02 0087 151152 raw 201406231548 ASTD102-ALC-R02 0087 161111 raw 201406231548 ASTD102-ALC-R02 0087 161111 raw 20140623161 ASTD102-ALC-R02 0087 1611614 raw 201406231635 ASTD102-ALC-R02 0087 161014 raw 201406231635 ASTD102-ALC-R02 0087 161014 raw 201406231635 ASTD102-ALC-R02 0087 163531 raw	Size=11 KB //Infinity SDlogger Size=12 KB //Ver0 25 Size=16 KB SondeName=ASTD102-ALC-R02 Size=16 KB SondeNo=0087 Size=10 KB SondeNo=0087 Size=5 KB Channel=10 Size=9 KB DelayTime=0 Size=6 KB MeasMode=2 Size=7 KB BurstTime=1 Size=6 KB BurstTime=1 Size=5 KB SampleCnt=109 Size=6 KB SampleCnt=109 Size=70 KB ChartTime=2014/06/23 10:05:48 Size=70 KB ECB=1 ECS=13 KB ECB=1 Size=8 KB ECB=1 Size=11 KB CoefDate=2014/04/24 Size=11 KB CoefDate=2014/04/24 Size=20 KB V	
Select all C#Users¥007108¥Documents¥JFE Advan Download(F1)	Download damaged files The file list Close(F5)	

By clicking on List Memory , you can read out the file list in the instrument. If the instrument is not connected to your PC, you will see a blank file list. Click on List Memory button after confirming that the communication with the instrument has been established. The file list in the instrument is shown as above.

A double click on a file in the list shows you the file header information on the right screen.

9-2. File Selection

Choose a data file to be transferred from the file list. Only the chosen file will be transferred to your PC. (For multi-file selection, choose while pressing the Ctrl key)

200909201244_ASTD102-ALC-R02_0002_124412.raw	[Size=3 KB] 🕜
200909201244_ASTD102-ALC-R02_0002_124436.raw	[Size=3 KB]
200909201248_ASTD102-ALC-R02_0002_124837.raw	[Size=4 KB]
200909201309_ASTD102-ALC-R02_0002_130917.raw	[Size=3 KB]
200909201339_ASTD102-ALC-R02_0002_133907.raw	[Size=4 KB]
200909201359_ASTD102-ALC-R02_0002_135956.raw	[Size=311 KB
200909201851_ASTD102-ALC-R02_0002_185120.raw	Size=29581 F
200909212331 ASTD102-ALC-R02 0002 233150.raw	[Size=29 KB]
200909212333 ASTD102-ALC-R02 0002 233310.raw	[Size=10 KB]
200909212333 ASTD102-ALC-R02 0002 233328.raw	[Size=10 KB]
200909212333 ASTD102-ALC-R02 0002 233346.raw	[Size=156 KB
200909212342 ASTD102-ALC-R02 0002 234213.raw	[Size=10 KB]
200909212342 ASTD102-ALC-R02 0002 234231.raw	[Size=10 KB]
200909212342 ASTD102-ALC-R02 0002 234249.raw	[Size=10 KB]
200909212343 ASTD102-ALC-R02 0002 234307.raw	[Size=69 KB]
200909212346 ASTD102-ALC-R02 0002 234633.raw	Size=10 KB
200909212346 ASTD102-ALC-R02 0002 234651.raw	[Size=69 KB]
200909212350 ASTD102-ALC-R02 0002 235018.raw	[Size=24 KB]
200909212351 ASTD102-ALC-R02 0002 235132.raw	[Size=76 KB]
200909212355 ASTD102-ALC-R02 0002 235546.raw	[Size=69 KB]
200909212359 ASTD102-ALC-R02 0002 235912.raw	[Size=88 KB]
	[0.00 00.00]
🔲 Select all	
Save to C:\Documents and Settings\USER\My Doc	uments\JEE Adv;
Download(F1)	

If you want to have the entire set of files in the file list to be transferred to your PC, put a check-mark on "Select all" and execute the data transfer procedure.

9-3. Download path

The file transfer path can be changed with the **Save to** button.

Clicking on **Save to** button will open the "Browse For Folder" dialog box. Choose the destination where the selected file is to be transferred. The path information of current destination is shown at the right side of the "Save to" button.

🔲 Select all		Downl
Save to C:\Documents and Settings Download(E1)	Browse For Folder Select a folder.	*
	Make New Folder	OK Cancel

9-4. Download	1	
Select a	all 🗌 Downl	
Save to	C:\Documents and Settings\USER\My Documents\JFE Advantech\RINKC	
Dow	vnload(E1)	
When the file and	d the path are decided, click on Download button.	
L	Transferring data. Wait for a while.	

The "download" procedure will start. To cancel it, click on **Stop** button.

9-5. Download damaged files

When the file transfer fails, the data file may be damaged. In this case, put a checkmark on "Download damaged files" to force the transfer procedure. Since the data are forced to be transferred per block unit in the memory media, the format of the transferred RAW file may be damaged as well.

Select all	Download damaged files
Save to C:\Documents and Settings\USER\My Documents\JFE Adva	ntech\RINKO Profiler\DATA
Download(<u>E</u> 1)	

In case of downloading only the successful data files, uncheck "Download damaged files" before starting the data transfer, otherwise, there might be a possibility of damaging the .RAW data files.

10. Opening a file

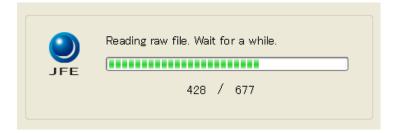
10-1. Open file

Here we open the retrieved RAW file and display data through graphs.

Click on File on main frame located at the upper left of the software window to shift to file frame. Next, click on Open File.

🔄 🏵 🔹 🕇 🕌 «	Users ▶ 007108 ▶ Document				✓ Ċ Sear	rch DATA	م ر
Organize 🔻 New fo						8== •	· 🔲 🤅
🔆 Favorites	Name	Date	Туре	Size	Tags		
	201006210932_AST	6/23/2010 4:13 PM	RAW File	12 KB			
🏴 This PC	201406231021_AST	7/25/2016 11:52 AM	RAW File	22 KB			
🛛 隆 Desktop	201406231037_AST	7/25/2016 12:48 PM	RAW File	13 KB			
Documents	201607221528_AST	7/22/2016 3:59 PM	RAW File	8 KB			
🛛 🚺 Downloads	201607221529_AST	7/22/2016 3:59 PM	RAW File	14 KB			
🛛 🚺 Music	201607221532_AST	7/22/2016 3:59 PM	RAW File	27 KB			
🛛 📄 Pictures	201607221538_AST	7/22/2016 3:59 PM	RAW File	16 KB			
🛛 📑 Videos	201607221542_AST	7/22/2016 4:00 PM	RAW File	19 KB			
🛛 🚢 Local Disk (C:)	201607221546_AST	7/22/2016 4:00 PM	RAW File	15 KB			
📬 Network	arg_1 .raw	7/22/2016 5:27 PM	RAW File	963 KB			
THERE							
File	e name: 201006210932_ASTD15	R-ALC-R02 0001 093229 raw	,		✓ Ray	v File(*.raw)	~

As the [ASTD RAW file] dialog box appears, specify the file and click on **Open**. The reading of the RAW file will start and plots as well as data list will be displayed.



In case of time trigger measurements, vertical profiling plot time series plot and data list are shown. If depth trigger measurement is applied, vertical profiling plot and data list are shown.Click on each tab to shift between the options.

	_							
Save Data(<u>F</u> 1)		Graph Setup		Print Out				2017/10/17 17
Open File(<u>F</u> 2)		F	Profile			Time Serie	s	List
CSV Conversion(<u>F</u> 3)			0		20		Temp. [deg	C] 💛 Sal. 🔵 Cond. [m
Return(<u>F</u> 5)			10	1		20		25
		0		I	5 	20		
1311181730_ASTD151-ALC-R02_0104_1730	000raw							
Model ASTD151-AL	C							
S/No. 0104								
Data number 1412		10)			· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
Trigger Time Trigger	-	Depth[m]			_			
Measure mode Continuous		Det						
Depth Pitch (m)							/	
Interval (sec)		20)					
Sample								
But 🜡 RINKO Profiler Version 1.09								- □ >
		Graph Setup		Print Out				2017/10/17 17:14:53
Save Data(<u>F</u> 1)			Profile		т.	ne Series		
Open File(<u>F</u> 2)			FIULIE		11	S USING		List
CSV Conversion(<u>F</u> 3)		300 250						
Return(<u>F</u> 5)		200 Depth 150 [m] 100						
		50	-					
201311181730_ASTD151-ALC-R02_0104	_173000raw	0 -50						
Model ASTD151-	-ALC	30 -	.					
S/No. 0104	<mark>1</mark>	25 -						
Data number 1412	2	Temp. 20 - [degC]		كسديهم				
Trigger Time Tri		15 -						
Depth Pitch (m)	ious	10 -		* . * .	₽ . ₽ .		• • • • • •	• • • • • • •
Interval (sec)		35						
Sample		25						
Prof Burst (min)		Sal. 20 [] 15 10						
		5-						
Save Data(<u>F</u> 1)	L	5-						0/ 1/ 1/ 10.1L
Save Data(<u>F</u> 1) Open File(<u>F</u> 2)		Profile			Time Serie	s		List
Open File(<u>F</u> 2)	Sample	Profile Date	Time		Temp. [degC]	Sal.	Cond. [mS/cm]	List EC25 [u8/cm^
	Sample 1 2	Profile	Time 17:30:05 17:30:06	Depth [m] -0.2291 -0.2062				List
Open File(<u>F</u> 2)	1	Profile Date 2013/11/18	17:30:05	-0.2291	Temp. [degC] 27.406	Sal. 0.021	Cond. [mS/cm] 0.028	List EC25 [uS/cm ^ 26.657
Open File(<u>F</u> 2) CSV Conversion(<u>F</u> 3)	1 2 3 4	Profile Date 2013/11/18 2013/11/18 2013/11/18 2013/11/18	17:30:05 17:30:06 17:30:07 17:30:08	-0.2291 -0.2062 -0.2291 -0.2062	Temp. [degC] 27.406 27.414 27.397 27.402	Sal. 0.021 0.021 0.021 0.021	Cond. [mS/cm] 0.028 0.028 0.028 0.028 0.028	List EC25 [uS/cm ^ 26.657 26.691 26.676 26.665
Open File(E2) CSV Conversion(E3) Return(E5)	1 2 3 4 5	Profile Date 2013/11/18 2013/11/11/18 2013/11/11/18 2013/11/11/18 2013/11/11/18 2013/11/11/18 2013/11/11/18 2013/11/11/18 2013/11/11/18 2013/11/11/11/18 2013/11/11/11/11/11/11/11/11/11/11/11/11/1	17:30:05 17:30:06 17:30:07 17:30:08 17:30:09	-0.2291 -0.2062 -0.2291 -0.2062 -0.2291	Temp. [degC] 27.406 27.414 27.397 27.402 27.365	Sal. 0.021 0.021 0.021 0.021 0.021	Cond. [mS/cm] 0.028 0.028 0.028 0.028 0.028 0.028	List EC25 [uS/cm ^ 26.657 26.691 26.676 26.665 26.675
Open File(E2) CSV Conversion(E3) Return(E5)	1 2 3 4	Profile Date 2013/11/18 2013/11/18 2013/11/18 2013/11/18	17:30:05 17:30:06 17:30:07 17:30:08	-0.2291 -0.2062 -0.2291 -0.2062	Temp. [degC] 27.406 27.414 27.397 27.402	Sal. 0.021 0.021 0.021 0.021	Cond. [mS/cm] 0.028 0.028 0.028 0.028 0.028	List EC25 [uS/cm ^ 26.657 26.691 26.676 26.665
Open File(E2) CSV Conversion(E3) Return(E5)	1 2 3 4 5 6 7 8	Profile Date 2013/11/18 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 2	17:30:05 17:30:06 17:30:07 17:30:08 17:30:09 17:30:10 17:30:11 17:30:12	-0.2291 -0.2062 -0.2291 -0.2062 -0.2291 -0.2062 0.5040 1.0538	Temp. [degC] 27,406 27,414 27,397 27,402 27,365 27,365 28,135 28,193	Sal. 0.021 0.021 0.021 0.021 0.021 0.021 31.821 31.989	Cond. [mS/cm] 0.028 0.028 0.028 0.028 0.028 0.028 0.028 51.798 52.094	List EC25 [uS/cm ^ 26.657 26.691 26.676 26.675 26.675 26.730 48451.196 48674.259
Open File(E2) CSV Conversion(E3) Return(E5) 30_ASTD151-ALC-R02_0104_173000raw ASTD151-ALC 0104	1 2 3 4 5 6 7 8 9	Profile Date 2013/11/18 20110 201110 2011 2013/11/18 2011 20118 2011 20118 2011 20118 2011 2011	17:30:05 17:30:06 17:30:07 17:30:08 17:30:09 17:30:10 17:30:11 17:30:12 17:30:13	-0.2291 -0.2062 -0.2291 -0.2062 -0.2291 -0.2062 0.5040 1.0538 1.1225	Temp. [degC] 27,406 27,414 27,397 27,402 27,365 27,365 28,135 28,135 28,193 28,183	Sal. 0.021 0.021 0.021 0.021 0.021 0.021 31.821 31.989 32.460	Cond. [mS/cm] 0.028 0.028 0.028 0.028 0.028 0.028 0.028 51.793 52.094 52.767	List EC25 [uS/cm ^ 26.657 26.691 26.676 26.675 26.750 48451.196 48674.259 49313.177
Open File(E2) CSV Conversion(E3) Return(E5) 30_ASTD151-ALC-R02_0104_173000raw ASTD151-ALC 0104 umber 1412	1 2 3 4 5 6 7 8	Profile Date 2013/11/18 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 20118 2	17:30:05 17:30:06 17:30:07 17:30:08 17:30:09 17:30:10 17:30:11 17:30:12	-0.2291 -0.2062 -0.2291 -0.2062 -0.2291 -0.2062 0.5040 1.0538	Temp. [degC] 27,406 27,414 27,397 27,402 27,365 27,365 28,135 28,193	Sal. 0.021 0.021 0.021 0.021 0.021 0.021 31.821 31.989	Cond. [mS/cm] 0.028 0.028 0.028 0.028 0.028 0.028 0.028 51.798 52.094	List EC25 [uS/cm ^ 26.657 26.691 26.676 26.675 26.675 26.730 48451.196 48674.259
Open File(E2) CSV Conversion(E3) Return(E5) '30_ASTD151-ALC-R02_0104_178000raw ASTD151-ALC 0104 umber 1412 Time Trigger	1 2 3 4 5 6 7 8 9 10	Profile Date 2013/11/18 20118 20118 20118 2013/11/18 20118 20118 20118 20118 20118 20118 20118 2018	17:30:05 17:30:06 17:30:07 17:30:08 17:30:09 17:30:10 17:30:11 17:30:12 17:30:13 17:30:14	-0.2291 -0.2062 -0.2291 -0.2062 -0.2291 -0.2062 0.5040 1.0538 1.1225 1.4432	Temp. [desC] 27,406 27,414 27,397 27,402 27,365 27,353 28,135 28,135 28,193 28,183 28,196	Sal. 0.021 0.021 0.021 0.021 0.021 31.821 31.989 32.460 32.515	Cond. [mS/cm] 0.028 0.028 0.028 0.028 0.028 0.028 0.028 51.793 52.094 52.767 52.859	List EC25 [uS/cm 26.657 26.691 26.675 26.675 26.730 48451.196 49674.259 49313.177 49386.665
Open File(E2) CSV Conversion(E3) Return(E5) '30_ASTD 151-ALC-R02_0104_178000 raw ASTD151-ALC 0104 umber 1412 Time Trigger re mode	1 2 3 4 5 6 7 7 8 9 10 11 11 12 13	Profile Date 2013/11/18 201118 2013/11/18 2013/11/18 2013/11/18 2013/11/18 20	17:30:05 17:30:06 17:30:07 17:30:09 17:30:09 17:30:10 17:30:11 17:30:12 17:30:13 17:30:14 17:30:15 17:30:16 17:30:17	-0.2291 -0.2062 -0.2291 -0.2062 -0.2291 -0.2062 0.5040 1.0538 1.1225 1.4432 2.6115 4.0318 5.6125	Temp. [desC] 27,406 27,414 27,397 27,402 27,365 27,353 28,135 28,135 28,193 28,193 28,196 28,197 28,201 28,204	Sal. 0.021 0.021 0.021 0.021 31.821 31.989 32.460 32.515 32.522 32.523	Cond. [mS/cm] 0.028 0.028 0.028 0.028 0.028 0.028 0.028 0.028 51.793 52.094 52.767 52.859 52.859 52.871 52.878 52.878	List EC25 [LS/cm ^ 26.657 26.691 26.675 26.675 26.675 26.675 26.675 26.730 48451.196 48674.259 48936.425 49396.685 49396.685 49396.003 49398.303
Open File(E2) CSV Conversion(E3) Return(E5) 30_ASTD151-ALC-R02_0104_173000raw ASTD151-ALC 0104 umber 1412 Time Trigger e mode Continuous Pitch (m)	1 2 3 4 5 6 7 8 9 10 11 11 12	Profile Date 2013/11/18 20110 201111/18 201111/18 20111 2011111 2011111/18 2011111/18 2	17:30:05 17:30:06 17:30:07 17:30:08 17:30:09 17:30:10 17:30:11 17:30:12 17:30:13 17:30:14 17:30:15 17:30:16	-0.2291 -0.2062 -0.2291 -0.2062 -0.2291 -0.2062 0.5040 1.0538 1.1225 1.4432 2.6115 4.0318	Temp. [desC] 27,406 27,414 27,397 27,402 27,365 27,353 28,135 28,135 28,193 28,183 28,196 28,197 28,201	Sal. 0.021 0.021 0.021 0.021 31.821 31.989 32.460 32.515 32.522 32.524	Cond. [mS/cm] 0.028 0.028 0.028 0.028 0.028 0.028 0.028 51.793 52.094 52.767 52.859 52.871 52.878	List EC25 [JJS/cm ^ 26.657 26.691 26.675 26.675 26.730 48451.196 48674.259 49313.177 49386.685 49396.644 49399.003
Open File(E2) CSV Conversion(E3) Return(E5) '30_ASTD151-ALC-R02_0104_178000raw ASTD151-ALC 0104 umber 1412 Time Trigger	1 2 3 4 5 6 7 8 9 10 11 11 2 13 14	Profile 2013/11/18 201118 2013/11/18 2013/11/18 2013/11/18 2013/11/18 2013/1	17:30:05 17:30:06 17:30:07 17:30:09 17:30:09 17:30:10 17:30:11 17:30:12 17:30:13 17:30:14 17:30:15 17:30:16 17:30:17 17:30:18	-0.2291 -0.2062 -0.2291 -0.2062 -0.2291 -0.2062 0.5040 1.0538 1.1225 1.4432 2.6115 4.0318 5.6125 7.0786	Temp. [desC] 27,406 27,414 27,397 27,402 27,365 27,353 28,135 28,135 28,193 28,193 28,196 28,197 28,201 28,204 28,203	Sal. 0.021 0.021 0.021 0.021 31.821 31.821 32.460 32.515 32.523 32.523	Cond. [mS/cm] 0.028 0.028 0.028 0.028 0.028 0.028 0.028 51.793 52.094 52.767 52.859 52.871 52.859 52.871 52.878 52.878	List EC25 [LS/cm ^ 26.657 26.691 26.675 26.675 26.675 26.730 48451.196 48651.197 48306.685 49396.444 49399.003 49398.303 49399.823

11. Graph Settings

11-1. Graph settings

Displayed vertical graphs as well as time series graphs RAW can be specified by the graph settings window in order to adjust the plot max & minimum values, color and sensors.

Graph Setup Print Out	
Profile	Time Se
ę	
0	10 :
0	10 :

Click on [Graph Setup] to open graph settings window.

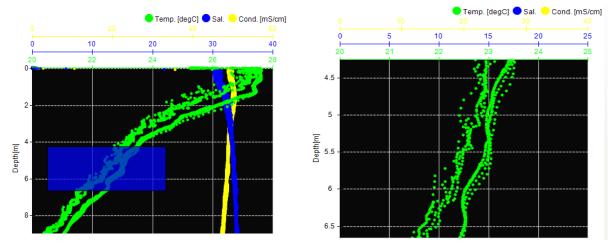
		Set	up Graph				
Sensor	Min.	Max.	Variation	Ti Up	me Series Mid Down	Prof.	Color
				🖌 Aut	to Scale	🖌 Auto Sca	ale
Depth [m]		100 🗘	10	~			
Temp. [degC]	5	35 🛊	10 🛊		 Image: A start of the start of	~	
Sal. 🛛	0	35 🗧	10 🗧				
Cond. [mS/cm]	5 🗧	60 🗧	10 🗧			 Image: A set of the set of the	
EC25 [uS/cm]	4000 🗘	6000 🖨	10 🗧				
Density [kg/m^3]	800 🗧	1200 🖨	10 🗧				
SigmaT 🛛	5 🗧	30 🗧	10 🗧				
DO [%]	0	150 🖨	10 🗧				
DO [mg/l]	0	30 🗘	10 🗧				
Batt. [V]	0	50 🛟	10 🗧				
					Setu	ip(S)	Close(C)

Min. value	Set up minimum value of the graph. Directly input the value to be set or set it up scrolling the Up Down button located on the right.
Max. value	Set up maximum value of the graph. Directly input the value to be set or set it up scrolling the Up Down button located on the right.
Variation	Increase or decrease the value scrolling the Up Down button on the right side. After setting up min. & max. values, set the steps to be used in the graph.
Up, Mid, Down	Check-mark the graph you desire to be shown. Three types of graph display are available in the time series graph settings.
Vertical Profiling	Check-mark the graph you desire to be shown. Three types of graph display are available in vertical profiling graph settings.
Color	Set up color for each parameter plotted in the graph. Click on the color button to set it up. As "color setup" dialog box is shown, select a preferred color.
Auto Scale	If [Auto Scale] is check-marked in time series graph or in vertical profiling graph settings, maximum and minimum values are automatically detected and graph ranges are shifted so that all data points can be displayed.

11-2. Zoom and un-zoom

11-2-1. Zoom on a vertical profile graph

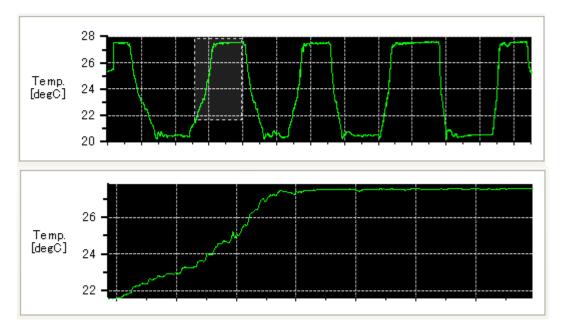
If you want to zoom a certain part on a vertical profiling graph, drag your mouse to specify the region you want to zoom. (You must drag your mouse from upper right to lower left)



When the selected area is zoomed up, right click on the graph to return to the original range.

11-2-2. Zoom on a time series graph

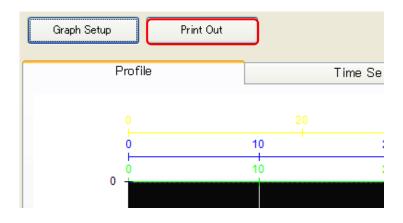
You can also zoom on a time series graph by specifying the region you want. In this case there is no restriction to move your mouse for selecting the area to be zoomed.



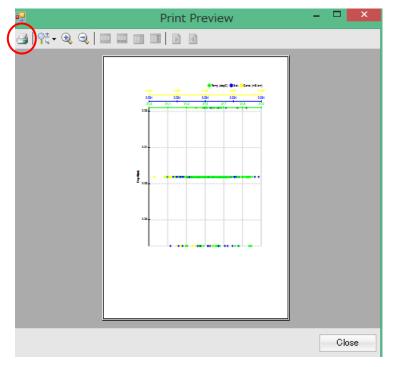
When the selected area is zoomed, right click on graph to return to the original range.

12. Print

Here you are instructed how to print vertical profiling and time series graphs. First, open the RAW file and display the desired graph. Then, click on [Print out] button.

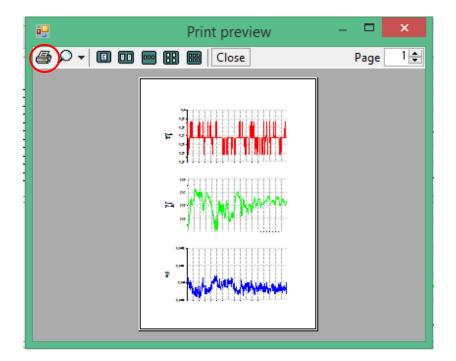


When you click on **Print Out** button while displaying a vertical profiling graph (the vertical profiling tab is being selected), the print-preview window of vertical profiling graphs appears, as shown below.



By clicking on the printer-icon so you can start printing.

A time series graph is displayed (time series graph tab is being selected).



By clicking the icon of the printer you can start printing.

13. Converting to CSV files

This chapter describes how to convert the measured data (RAW file) into the physical data (CSV file). Click on File button at main frame located in the upper left on the software window, shifting to the file frame. Then, click on Convert to CSV button on the file frame to open the CSV conversion window.

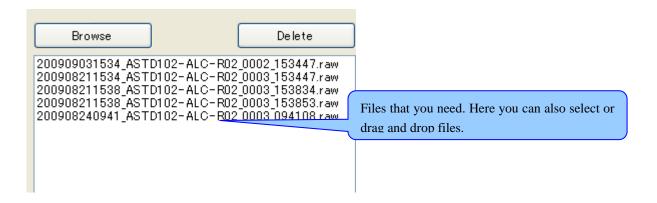
CSV Co	onversion	- • ×
Browse Delete Cor	nversion Inputs :	
] Density Constant	1.0250 kg/m [°] 3
	EC Coeff. ECA	0
	ECB	1
	EC Temp.	25
	EC 2% factor	0.022
C] Chl-a Coeff. (ppb->ug/l) SWA	0
	SWB	1
Save to C:#Users#007108#Documents#JFE Advantech#RINK0 Save with N-value data Crop CSV file by None Convert to CSV	O Profiler¥DATA	Close

13-1. Selecting RAW files

Choose the RAW file to be converted into CSV format by click on **Browse** button.

Browse			
	e ASTD Raw file		×
) 🛞 🧼 ↑ 🕌 « Users → 007108 → Documents → JFE Advantech → RINKO Profiler → DATA	✓ C Search DATA	,p
	Organize 🔻 New folder	88 -	
	** Favorites 201008210932_ASTD153-ALC-R02_0001_093229.raw ** This PC 2014083102_ASTD162-ALC-R02_007_10275.raw ** Desktop 20160721538_ASTD153-ALC-R02_0021_13295.raw ** Documents 20160721538_ASTD153-ALC-R02_0021_15295.raw ** Documents 20160721538_ASTD153-ALC-R02_0021_15295.raw ** Music 20160721538_ASTD153-ALC-R02_0021_15325.raw ** Pictures 20160721538_ASTD153-ALC-R02_0021_15325.raw ** Undeos 20160721538_ASTD153-ALC-R02_0021_15325.raw ** Documents 20160721538_ASTD153-ALC-R02_0021_15325.raw ** Difference 20160721538_ASTD153-ALC-R02_0024_15329.raw ** Difference 20160721538_ASTD153-ALC-R02_0024_15429.raw ** Local Disk (C.) org_11 raw		
	File name:	✓ Raw file(*.Raw)	~
Save to C:\Documents and S		Open Can	

In the "Open" dialog box, choose the desired RAW file. Multiple files can also be chosen. Click on Open button to add the into the file conversion list. Drag and drop files also allows you to add them into the file conversion list.



13-2. Destination path of CSV files

Here we describe how to choose the destination path to save the CSV files.

Save to C:\Documents and Settings\	USER\My Documents\JFE Advantech\RINK(
Save with N-value data Crop CSV fi	ile bv None 🔽 Lines	
	Browse For Folder	×
	Select a folder. This PC Desktop Documents Select a folder. Select a folder.	Cancel

Click on **Save to** button to show "Browse For Folder" dialog box and specify the destination path to save the CSV file. The chosen save path will appear on the right side of the save button.

13-3. Conversion to CSV format

When the CSV conversion is carried out while check marking the "Save with N-value data", the CSV file includes the physical value and N-value information.

In case of "Crop CSV file" is set, the CSV file is divided per the specified number of lines.

Save to C:\Documents a	and Settings\USER\	My Documents\JFE A	.d∨antech\R	INK
📃 Save with N-value data	Crop CSV file bv	None	 Lines 	
		None		
		30,000		
Convert to CSV		60,000		

After the setup above is completed, click on <u>Convert to CSV</u> button. The CSV file will be created and saved in the specified folder.

DO values will be exported along when exporting CSV files ⁽¹⁾ using the software version 1.09 or later if instruments with RINKO sensor was used.

Please refer to "16-2. DO post processing selection" for changing [mg/l] and [µmol/l].

Line Name	Description
Weiss-DO[mg/l]	Ordinary DO value.
Weiss-DO [µmol/l]	Calculate using Weiss equation.
G&G-DO[mg/l]	Added as new feature from Ver.1.09
G&G-DO [µmol/l]	Calculate using Garcia & Gordon equation.
B&K-DO[mg/l] B&K-DO [μmol/l]	Added as new feature from Ver.1.09 Calculate Benson & Krause equation.

(¹) Above will be exported as CSV files but only Weiss values will be displayed.

[Output Example]: In case of using ASTD102

[Item]

Depth [m],Temp. [deg C],Sal. [],Cond. [mS/cm],EC25 [µS/cm],Density [kg/m³],SigmaT [],Chl-Flu. [ppb],Chl-a [µg/l],Turb-M [FTU],DO [%],Weiss-DO [mg/l],Batt. [V],G&G-DO [mg/l],B&K-DO [mg/l],Pressure,Temp. for depth,Temp.,Cond.,Cond1,Cond2,Chl-Flu.,Turb. -M,DO,Temp. for DO,Battery,

13-4. Conversion input

Here we describe how to set up the conversion inputs for physical values. Please put a checkmark on the necessary items. When the data are converted to the physical values, the coefficient factors set up herewith are applied for the check marked items.

In case of no checkmark, the conversion is made by the default factors that are registered in the instrument.

Conversion Inputs:		
🗹 Density Constant		1.0250 kg/m ⁻ 3
🗹 EC Coeff.	ECA	0
	ECB	1
	EC Temp.	25
	EC 2% factor	0.022
☑ Chl-a Coeff. (ppb->ug/l)	SWA	0
	SWB	1

The density compensation constant is applied when converting from pressure (MPa) to depth (m).

For measurements in sea water : 1.0250 For measurements in brackish water : 1.0125 For measurements in fresh water : 1.0000

As an approximated standard, input one of these density compensation constants.

$$Dep = \frac{MPa \times 101.9716}{\rho_D}$$

 $\begin{array}{l} Dep: Depth \ (m) \\ MPa: Pressure \ (MPa) \\ \rho_D \quad : Density \ compensation \ constant \end{array}$

13-4-2. EC compensation coefficient

The EC compensation coefficient is applied to estimate EC at standard water temperature.

$$EC = \frac{COND \times ECB \times 1000}{(TEMP - TEMP_{EC}) \times EC2P} + ECA$$

EC	:	EC value at standard water temperature (μ S/cm)
COND	:	Electric conductivity (mS/cm)
ECA	:	Compensation factor (Default factor : 0)
ECB	:	Compensation factor (Default factor : 1)
TEMP	:	Water temperature value (°C)
TEMP _{EC}	:	Standard water temperature (°C) (Default factor : 25)
EC2P	:	EC2% factor (Default factor : 0.022)

13-4-3. Chl-a Conversion Coefficient (ppb \rightarrow µg/l)

The coefficient is applied when fluorescence intensity is converted from ppb to $\mu g/l$ of chlorophyll-a (Chl-a).

 $Chl-a = SWA + Chl-Flu. \times SWB$

SWA: Conversion coefficient A / SWB: Conversion coefficient B

14. Cleaning memory

Click on <u>Setup</u> of the main frame on upper-right in the software window, shifting to the setup frame. Next, click on <u>Clear Memory</u> and then, the following window will show up. Click on <u>OK</u> button. (Click on Cancel button if you want to stop the procedure)



A second verification window will appear, click on **OK** to continue. If you want to stop the procedure, click on **Cancel**.

Verify		×
?	Are you sure to erase memory ? All data will be lost.	
	OK Cancel	

When the cleaning memory process starts, the following pop-up window appears.



After the memory is completely erased, the following window and message appears.



15. Real-time communication

You can display the information from all sensors in real-time and verify if there is any abnormal indication on the sensors before starting a deployment.

Click on **Tools** button on the upper-right main frame of the software to shift to the tool frame. Click on **TEST** to open the real-time communication window.

÷	Realtime – 🗆 🗖
Instrument information :	
Model	Serial#
N-Value Physical Unit	
Channel 1	Channel 2
Channel 3	Channel 4
Channel 5	Channel 6
Channel 7	Channel 8
Channel 9	Channel 10
Channel 11	Channel 12
Channel 13	Channel 14
Channel 15	Channel 16
	Start(R) Stop(S) Close(C)
● N-Value	O Physical Unit

When the communication with the instrument is established, click on **Start** button to obtain the instrument information (model/serial number). In case of [N-value] is check-marked, N values of each sensor are displayed in real-time and in case of [Physical Unit] is check-marked, the physical values are displayed in real-time.

Instrument information :		Itime	- • <mark>×</mark>	P Instrument information :		altime	_ 0
Model ASTD102-A	LC-R02 Serial#	0087		Nodel ASTD102-Al	LC-R02 Serial#	0087	
Pressure	03135	Temp. for depth	51804	Pressure [MPa]	-0.005476	Temp. for depth	0.0000000
Temp.	36348.8	Cond.	0.268053	Depth [m]	-0.5584	Temp. [degC]	25.928
Cond1	25850211	Cond2	6929237	Sal.	0.000	Cond. [mS/cm]	-0.135
ChI-Flu.	00823	T urb.=M	09618	EC25 [uS/cm]	-132.566	Density [kg/m^3]	996.802
DO	18539	Temp. for DO	36020	SigmaT 🛙	-3.196	ChI-Flu. [ppb]	1.26
Batt.	02287			Chi-a [ug/i]	1.26	Turb-M [FTU]	130.88
				DO [%]	106.07	DO [mg/1]	8.603
				Temp. for DO [degC]	25.869	Batt. [V]	7.97
	Start	(R) Stop(S)	Close(C)		Star	(R) Stop(S)	Close(C)

Click on **Stop** button to stop the real-time communication.

16. Maintenance

You can verify the calibration coefficients of the sensors, select DO concentration output (mg/l or μ mol/l) and update the instrument firmware.

Click on **Tools** button of the main frame located at upper right of the software window to shift to tools frame. Then, click on **Maintenance** button in the tools frame to open the maintenance window.

e ^{ia}		Maint	enance	-	
Parameter Misc.					
- Calibration coefficie	ents:				
Channel1	A	в	c	D	
	E	F	G	H	
Channel2	A	в	c	D	
	E	F	G	н	
Channel3	A	в	С	D	
	E	F	G	н	
Channel4	A	в	c	D	
Chamory	E	F	G	Н	
Channel5	A	в	c	D	
Channels	E	F	G	н	
				Read Ch1-5 Read Ch6-	10
				Close	

16-1. Verifying the calibration coefficients

Select the [Parameter] tab.

Parameter Misc.	s:							
Pressure	А	-3.78817500e-01	в	1.190501000e-04	с	0.00000000e00	D	0.00000000e00
rressure	E	0.000000000e00	F	0.00000000e00	G	0.00000000e00	Н	0.000000000e00
Temp. for depth	А	0.000000000e00	в	0.00000000e00	С	0.000000000e00	D	0.00000000e00
	E	0.00000000e00	F	0.00000000e00	G	0.00000000e00	н	0.00000000e00
Temp.	A	-5.72307600e00	В	1.068791000e-03	С	-1.25688300e-08	D	2.899630000e-13
	Е	-3.52112300e-18	F	2.549181000e-23	G	0.00000000e00	н	0.00000000e00
Cond.	A	-576.2352000000	В	2167.9780000000	С	-70.06301000000	D	0.00000000e00
	Е	0.00000000e00	F	0.00000000e00	G	0.00000000e00	н	0.00000000e00
Channel5	A	0.00000000e00	В	1.0000000000000	С	0.00000000e00	D	0.00000000e00
	Е	0.00000000e00	F	0.00000000e00	G	0.00000000e00	н	0.00000000e00
						Read	Ch1-5	i Read Ch6-10

The calibration coefficients from channel 1 to 5 are displayed by clicking on [Read Ch1-5], and from channel 6 to 10 by clicking on [Read ch6-10]

16-2. DO post processing selection

Press [Misc] tab on Maintenance window.

Maintenance		×	
Parameter Misc. D0 Output Image: A state and state and a state and a state and a state ande			
	Close		

You can select which post processing unit will be displayed, mg l^{-1} or μ mol l^{-1} . Check the desired unit to be displayed and click on OK.

Once you open a RAW file, the selected unit will be applied.

16-3. Firmware update

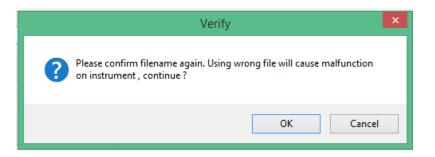
The firmware update procedure can be done by "Firmware update" frame in the [Misc.] tab.

-Firmware update	
Firmware Version	Ver0.11
Read	Update

Click on **Read** button to read and display the firmware version of the instrument. Click on **Update** button to display a dialog box that allows you to select the firmware file.

d ^a		Firmware update	
🔄 🏵 🗉 🕈 📕 «	Local Disk (C:) → Users → 007108 → Docum	ts → JFE Advantech → RINKO Profiler → v C Search RINKO Prof	ler 🔎
Organize 👻 New fo	lder	8=	• 🔟 🌘
★ Favorites This PC Desktop Documents Documents Music Pictures Videos Local Disk (C:) Network	Name	Dete modia. Type Size 7/25/2016 File folder 7/19/2016 File folder 7/19/2016 File folder 9/15/2016 File folder 9/15/2016 A43 File 1 KB	
File	e name:	v Program File(*.a4) V Cancel

Click on Open button.



A confirmation message will appear and prompt you to select **OK** or **Cancel**. Click on **OK** button if you have selected the correct firmware file for RINKO Profiler.



The firmware update starts.

• Never interrupt the communication during the update. It may cause problems on your instrument.

)	Firmware update completed.
JFE	Firmware Version Ver0.12

The message above appears when update process is completed and informs you the updated firmware version.

We recommend you to verify if the displayed firmware version is updated.

Firmware update						
Firmware Version	Ver0.12					
Read	Update					

17. DO Calibration

17-1. Calibration

We highly recommend having the DO output checked in 0 and 100% of DO saturation before and after deployments.

17-2.Calibration preparation

We recommend conducting two points calibration (0 and 100% of DO saturation). However, one point calibration (0 or 100% of DO saturation) is also acceptable.

0%: Sodium sulfite solution 100%-oxygen water: Air-saturated solution (air-bubbled water)

17-3. Calibration Procedure

1. Preparation

Open the bubbling set and connect each component



Fill the calibration pale with tap water.

(Fill up to almost half of the pale)



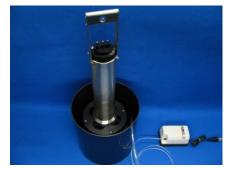




Put the bubbling head into the pale.



Put the sonde into the pale slowly. Turn on the bubbling kit. Start the measurements after 30 minutes.



- 1 Connect the instrument and the interface with the transfer cable.
- ② Connect the interface and PC with the dedicated cable.
- ③ Start the software.
- ④ Click on Tools button and DO Calibration button. A new pop-up window will appear (see below).
- Input the atmospheric pressure (default: 1013.25hPa). Click on Next to proceed.
 * In case the value is unknown, use the default value. However, we recommend to measure the actual atmospheric pressure in order to achieve accurate data.

3	DO Ca	libration	_ 🗆 🗙	
		Atmospheric pressure	1013.25 [hPa]	5
	-	ir Saturated Water	[%]	
	Select ● Zero-oxygen / Air-saturated solution ○ Zero-oxygen solution ○ Air-saturated solution	Temperature D0	[Deg]	
		Connect	Stop) ⑦, ①
	Zero-oxygen solution: Temperature [Deg] DO [%] Pick	Air-saturated solution: Temperature DO	[Deg] [X] Pick	9
	Default		Calibrate/Write Close	1
		Calibration Processing: A Select 2 ero-oxygen / Air-saturated solution C air-saturated solution Zero-oxygen solution: Temperature DO Pick Pick	Calibration Processing Air Saturated Water Calibration Processing Air Saturated Water Select Temperature 2 ero-oxygen / Air-saturated solution Do Zero-oxygen solution Connect Zero-oxygen solution Air-saturated solution Temperature Do Zero-oxygen solution: Temperature solution: Temperature Do Pick Do	Atmospheric pressure 1013.25 hPa] Next Calibration Processing: Air Saturated Water [%] Select [%] Deg] Zero-oxygen solution Do [%] Do [%] Deg] Default (2allbrate/Write

- 6 Select the calibration process to be performed (zero, span or zero and span)
- ⑦ Connect to the instrument with the Connect button.
- Insert the instruments into the pale to perform the span calibration and wait until the value stabilizes.
 Please stop bubbling during measuring. Also measure just after bubbling for more than 30 minutes.
 Please homogenize the water during bubbling (use of stirrer is recommended).
- (9) When the value has stabilized, click **Pick** button.
- Next, for zero calibration, insert the sensor into the sodium sulfite aqueous solution and obtain the value in the same way.
- When all the values are acquired, a new coefficient is calculated. After ending the communication clicking on Stop button, write the coefficient in the instrument by clicking on the Calibration / Write button.
- 2 Return to the initial settings by clicking on Default.





A 500ml beaker



- When using sodium sulfite, do it using impervious gloves and safety goggles.
- If your eyes have contact with sodium sulfite wash your eyes with clean water for at least 15 minutes and consult a physician immediately.
- If you swallowed sodium sulfite, you should wash your mouth with water and consult a physician immediately.
- If your skin has contact with sodium sulfite, please wash it immediately by pouring plenty of water.
- Please read the MSDS (Material Safety Data Sheet).



• After zero calibration, please rinse off from the sensor the sodium sulfite aqueous solution thoroughly with tap water.

18. Charging

The instrument unit has a built in rechargeable lithium-ion battery. If this battery is fully charged, continuous measurement are allowed for approx. 10 hours using the depth trigger mode. The instrument and interface (charger) should be connected by the communication cable. The power switch of the instrument should be turned "OFF". (Although recharging can be done even when the instrument is switched "ON", it will take longer and we recommend you to switch power off while recharging the battery.



During recharging, the LED lamp of the sensor unit is turned ON (when the battery is fully charged the LED turns OFF). If the battery is completely discharged, complete recharging will take about 3 hours. After recharging the instrument, turn OFF the interface "CHARGE" switch. However, even if the "CHARGE" switch is kept ON, the instrument will not be overcharged.

If the sensor unit is not used for a long period, the built-in battery may discharge. Therefore, recharging the batteries at least every 6 months is required. If a fully charged battery can be used only for a short time, it should be considered that the battery life has ended, and you should send the instrument to the manufacturer in order to replace the battery.

*The battery capacity deteriorates to approx. half (1/2) after 300 recharging and discharging cycles. You can plan a battery replacement based on that information.

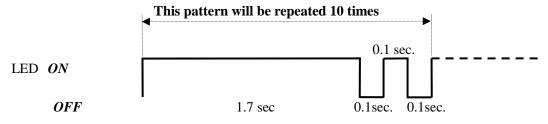
19. Pilot Lamp

The red LED (pilot lamp) has the following flashing patterns shown below.



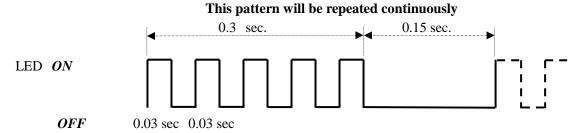
1. For Depth trigger mode settings:

There will be a 20 seconds period before starting measurements, where the flickering pattern below will be repeated.



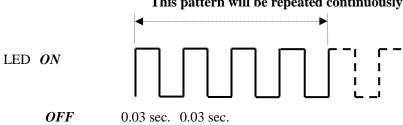
2. When the memory is full:

When the internal memory is full and do not accept data recording, the LED repeats the following flickering pattern.



3. When there is a voltage drop:

When the battery voltage is less than 7.0V, the LED repeats the following quick flickering pattern.



This pattern will be repeated continuously

20. After Use

- ① After using the instrument, clean the sensors with freshwater such as tap water.
- 2 Clean the sensor side of the transmission cable with water and remove any salt content.

*Care should be taken not to allow the connector side of the cable transmission cable to be wet.



Attach the DO sensor protective cap, and store the instrument where there is no direct exposition to sunlight.

21. Warranty

The following warranty is provided for this product.

- (1) The warranty period is defined to be <u>1 year</u> after the delivery of the product. During this period, if a problem is considered to be a design or manufacturing defect or malfunction upon a normal condition, JFE Advantech will repair the product free of charge.
- (2) Scratches, stain, rust etc. on accessories, expendables, package, and exterior are out of warranty.
- (3) Note that fees are applied in the cases listed below even within the warranty period.
 - a. Damage during installment, mooring, and storage
 - b. Malfunction and damage caused by wrong operation or carelessness
 - c. Malfunction and damage caused by improper repair and modification
 - d. Malfunction and damage caused by shipment, fall, and impact after purchase
 - e. Malfunction and damage due to external causes such as fire, earthquake, flood, lightening, other natural disasters, public nuisance, and abnormal voltage.
 - f. Malfunction and damage caused by abnormality in other devices connected to the product.
 - g. For replacing the expendables
- (4) Note that JFE Advantech will not be held liable for damage caused by the use of the product, profit loss, or any claim by a third party.
- (5) Damage during installment or shipment is out of warranty. Consider obtaining insurance if such damage is of concern.



取A-0031-04

Manufacturer



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