BIOEASY FIAscanner

Operation Manual

Model No.: YR-SF21

Content

Section I Introduction

Thanks for choosing the BIOEASY FIAscanner. FIAscanner is developed, designed, manufactured, and sold by Shenzhen Bioeasy Biotechnology Co., Ltd., the analyzer is compact, portable, and easy to operate for fluorescence detection to qualitative/ quantitative various kinds of analytes in Raw milk, Cereals/Feed, Tissue, Serum/Plasma, and Others. FIAscanner can only accept Test Devices that are designed specifically for this analyzer.

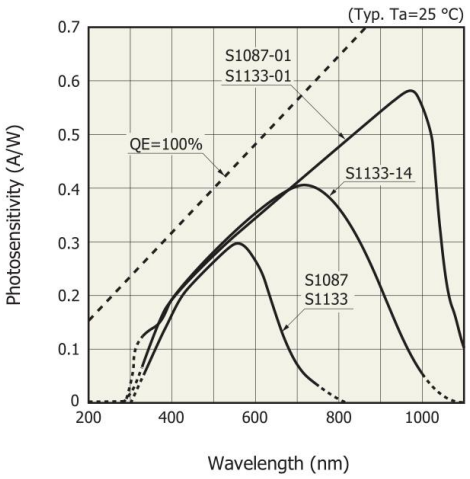
This operation manual introduces the performance and related information of the product and contains graphical procedures for your convenience. Please refer to the manual before testing.

Principle:

FIAscanner uses an LED as the Excitation Light Source. The emitted light from the fluorescence microspheres is collected and converted into an electrical signal using a photosensitive receiving tube. The signals are closely related to the amount of fluorescence dye molecules present on the spot under examination. The concentration of the analyte is calculated according to the scanning signals.

High resolution, narrow band SMD LED was used as light source in the FIAscanner. The central wavelength λ0 of the excitation spectrum is 365nm. The response band of photosensitive receiver is 320~1000nm, central response wavelength is 610nm, and sensitivity is 0.4, the Photometric linearity and accuracy were shown below:

Spectral response



Scope of application:

FIAscanner is for food safety detection and used with the matching test cassette for analysis, which can be used in laboratories and on-site tests.

Section II Components and main structure

2.1 Components

After you open the package, check whether the component is missing or damaged according to the following configuration list.

No.	Name	Quantity
1	BIOEASY FIAscanner	1
2	Power adapter (EU)	1
3	AC power cord (EU)	1
4	Car charger	1
5	Printer paper (already installed in the FIAscanner)	1
6	QC card	1
7	Operation manual	1

8	Warranty card	1
9	Certificate of conformity	1
10	Packing List	1

【Note: If any component is missing or damaged, please contact Shenzhen Bioeasy Biotechnology Co., Ltd. and your local sales representative in time. For detailed contact information, please refer to Section IX of this manual.】

2.2 Main structure

1) FIAscanner

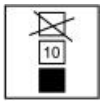
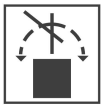
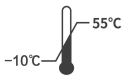
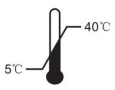
Test chamber

2) EU power adapter

3) Power adaptor for car

4) Labeling

Symbols	Instructions
	Instruction for Use
	Note, Refer to Documents

	Model Number
	Serial Number
	Manufacturing Date
	Manufacturer
	Shock hazard and instrument damage
	The Way Up
	Fragile
	Keep Away from Sunlight
	Keep Dry
	Stacking Layers Limitation
	Not to Be Tipped
	Storage and Transportation Temperature Limitation
	Operation Temperature Limitation

	WEEE (Waste Electrical and Electronic Equipment)

Section III Basic parameters and conditions of use

Basic parameters

Model No.	YR-SF21
Excitation light source	LED
Excitation spectrum	Center wavelength λ_0 = 365nm
Absorption spectrum	Center wavelength λ_1 = 610nm
Sample Type	Raw milk, Cereals/Feed, Tissue, Serum/Plasma, Others
Operation system	Android 4.4 operation system
Software version	V1.0
Interface	USB 2.0
Printer	Built-in thermal printer
Size	248*97*64mm
Weight	1kg ± 100g
Repeatability	CV≤15%
Stability	Relative bias does not exceed ±10%

Conditions of use

Temperature	5°C~40°C（41°F~104°F）
Humidity	10%~80% (No condensation)
Atmospheric pressure	720hPa~1060hPa
Altitude	below 2500m
Power supply voltage	AC100-240V
Power supply frequency	50/60Hz
Power Input	30VA
Transient overvoltage category	Category II

Pollution class	Pollution class II
Network conditions	Can be run offline, no security software required

Storage and Transportation Environment

Temperature	-10°C~55°C
Humidity	≤80%
Other requirements	Clean, dry, well-ventilated, and free of corrosive gases

Section IV Installation

- The instrument can be used both indoors and outdoors. The instrument should be placed on a horizontal and stable workbench, and can also be held in hand for handheld operation.
- The instrument should be placed in a place with low humidity, less dust and far away from water sources (such as pools, water pipes, etc.), well ventilated, and free from corrosive gases or strong magnetic interference. Do not place the instrument in a humid or dusty place.
- Excessive temperature will affect the detection performance of the instrument or cause malfunction. Do not use the instrument in direct sunlight and strong light sources, so as not to affect the fluorescence detection of the instrument, and keep away from heaters, stoves and all other heat sources.
- The power supply voltage must be consistent with the data on the instrument nameplate.
- Power Requirements: FIAscanner can only use the power adapter provided with the instrument. Do not use power adapters from other manufacturers. If the power adapter needs to be replaced, please contact your local sales representative or Shenzhen Bioeasy Biotechnology Co., Ltd. in time.
- Instrument charging: Plug the power adapter into the power input socket to start charging. After charging is complete, just unplug it.
- Recommended usage period: 5 years. (The specific use period is determined according to the actual situation, and the wear and tear of the instrument is different under different use conditions)

Section V Operation Instruction

FIAscanner provides two test modes, including Standard Test and Quick Test mode. Under the standard test mode, FIAscanner serves as an incubation place for test items to provide the required standard countdown. Under the quick test mode, the test item should be completed incubation before the user can directly conduct testing.

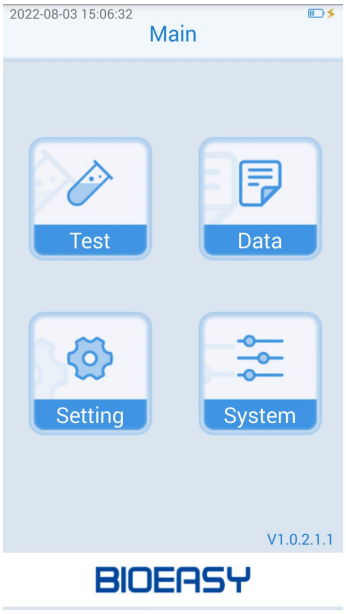
FIAscanner can be operated through screen with finger touch.

FIAscanner needs to use the ID chip matched with the test cassette in the normal test. The ID chip records the production information related to the matching test cassette, which is used for FIAscanner to normally identify the test cassette.

5.1 Start

(1) Press the power switch button on the left side of the instrument for about three seconds to start the instrument.

(2) FIAscanner will load the test system. Waiting about 30 seconds, directly enter the main interface of the software.



The main functions are as follows:

【**Test**】Test main interface

【**Data**】Historical data query, deletion, export, etc.

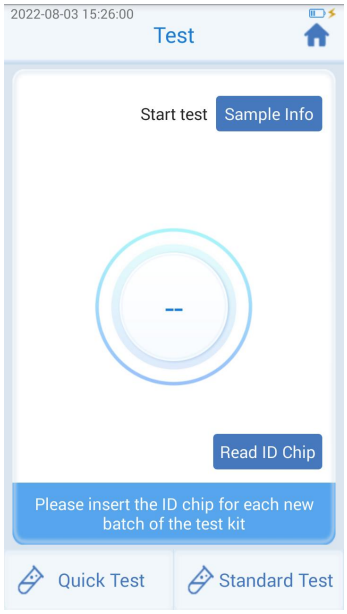
【**Setting**】Time, language, WiFi, Reagent management, LIS, Other, Version information, Self-test, Brightness adjustment

【**System**】Software upgrade, Firmware upgrade

【Note: If the main interface of the software is not displayed after turning on the FIAscanner switch for three minutes, you need to turn off the power and restart the instrument. If the problem still cannot be solved, please contact your local sales representative or Shenzhen Bioeasy Biotechnology Co., Ltd.】

5.2 Test

Please insert the ID chip of corresponding test item before test.

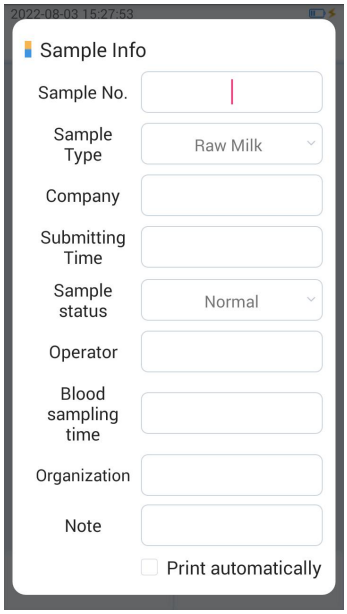


Operating steps:

(1) Insert the ID chip and click “Read ID Chip” button.

【Note: If the test cassette of this lot is tested for the first time, the ID chip needs to be inserted. The instrument will save the ID chip information to the local database. After this, you don’t need to read the ID chip when you test the same lot test cassette.】

(2) Click the "Sample Info" button to enter the information.

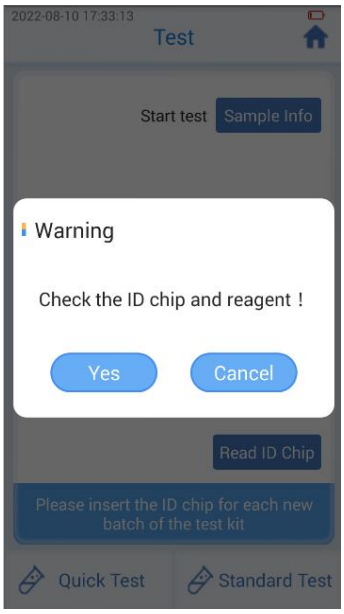


(3) Insert the test cassette. Click the “Quick Test” or “Standard Test” button.

(4) The instrument will automatically identify the test items, lot number and gives the

detection conclusion.

【Note: If the lot number of the test cassette and the lot number of the ID chip do not match when first time using the test cassette, the instrument will show "Check the ID chip and reagent! ". If it is found that the ID chip does not match the test cassette lot, click the "Yes" button on the dialog box, the instrument will stop detection.】



(5) The corresponding test results are displayed at the interface "Result".

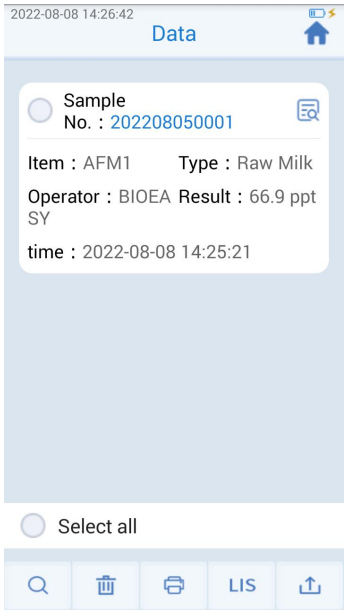
(6) Click “Print” to print the test results.

【Note: The test result will be printed automatically after choosing the “Print automatically” in the "Sample Info" interface.】

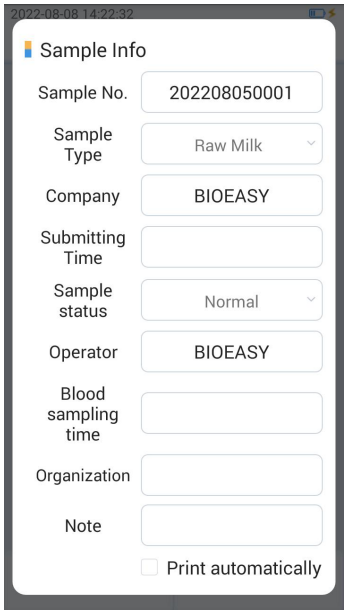
(7) After all tests are completed, long press the power switch button for three seconds to release, and the pop-box prompts " Are you sure to switch off? ". Click "Yes", the instrument will off.

5.3 Data

In the data interface, you can search, delete, print, and export historical detection data. Click “Data” to enter the historical data interface and display the test results of the day.

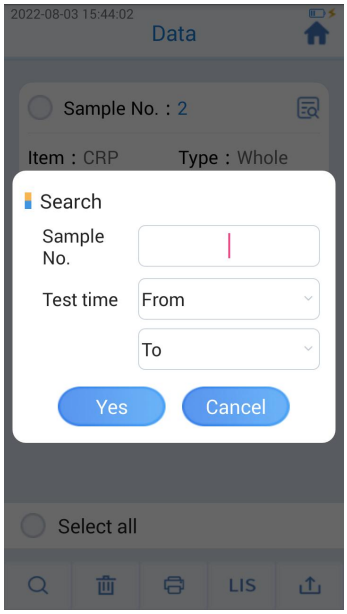


(1) Click button to display the details of the selected data.



(2) Click the button to search the historical detection data by sample number

or test time. To search all data stored in the current instrument, fill in the latest date in the To, and click "Yes".



(3) Select all or specific data records and click the button to delete the corresponding records.

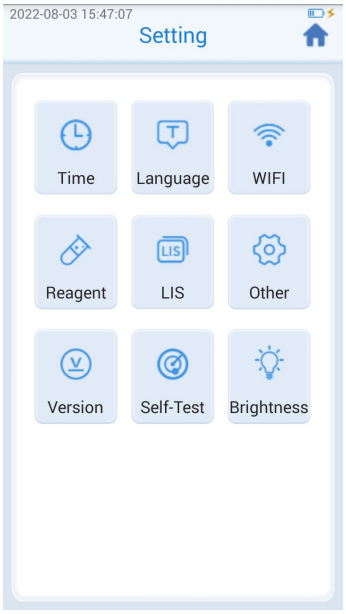
(4) Select all or specific data records and click the button to print the corresponding records.

(5) LIS (Optional, to be developed.)

(6) Insert the U disk (FAT 32 format) into the instrument, click the button, you can choose to export all data or data of a certain time period. Select the corresponding method to export the corresponding data to the U disk.

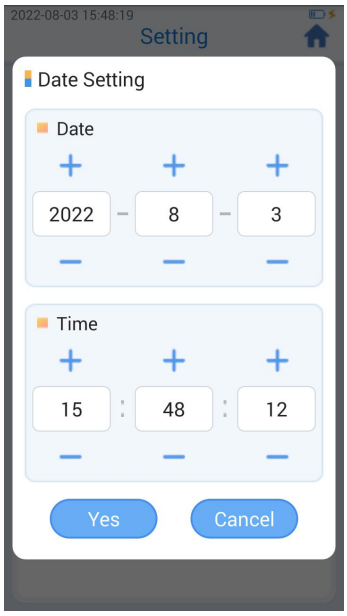
5.4 Setting

The setting interface provides functions for setting instrument parameters, including Time, Language, WiFi, Reagent management, LIS, Other, Version information, Self-test, Brightness adjustment.



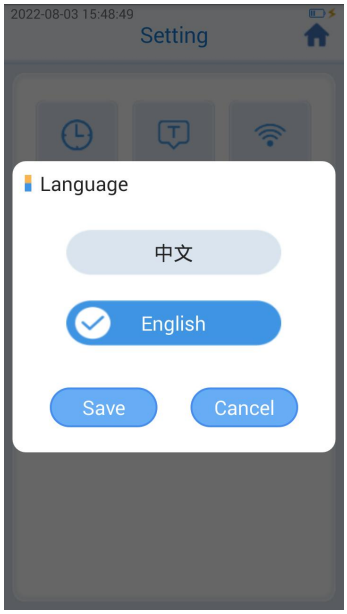
(1) Time

Users can set the system time for the instrument.



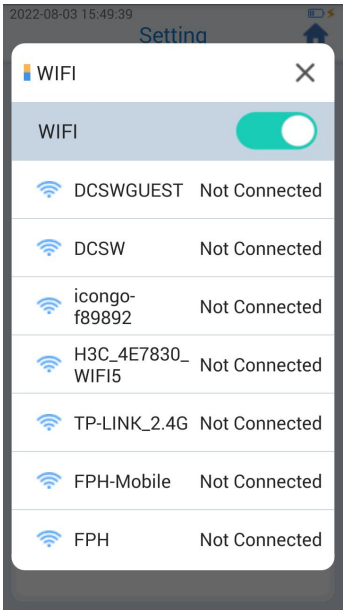
(2) Language

Users can set the system language to Chinese or English.



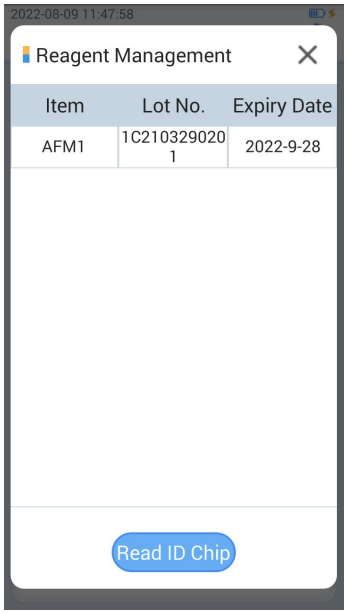
(3) WIFI

Users can search and connect to nearby Wi-Fi.



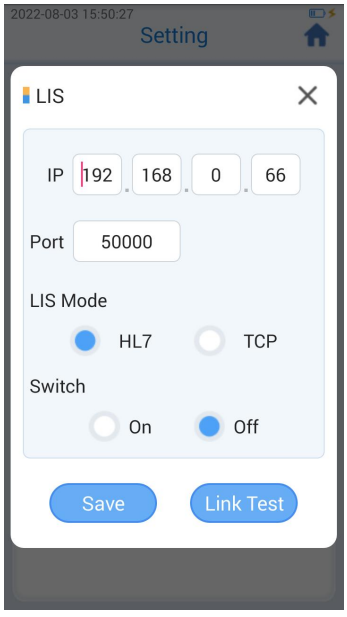
(4) Reagent management

User can view and delete local storage of ID chip information. Click the lot number information, and a pop-up box prompts "Are you sure you to delete the selected batch number?", click "Yes" to delete the corresponding ID chip information.



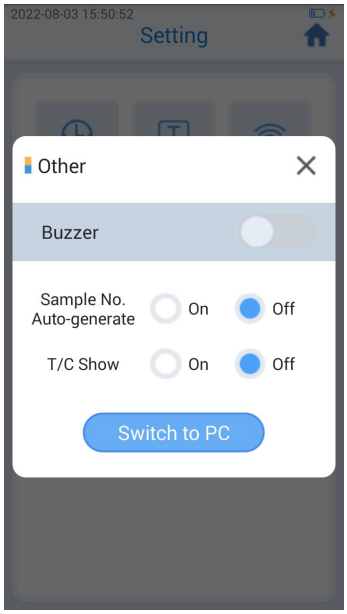
(5) LIS (Optional, to be developed.)

FIAscanner can be connected to LIS server through network cable. After setting up the server and the local IP address and port, the data can be transferred to the server.



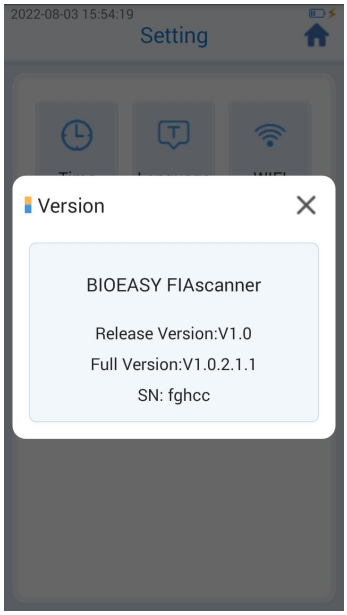
(6) Other

On/Off of【Buzzer】, On/Off of【Sample No. Auto-generate】, On/Off of【T/C Show】. The function of 【Switch to PC】is to be developed.



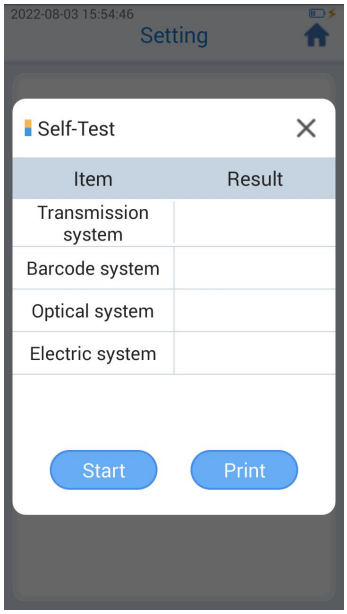
(7) Version

Users can view the software version information.



(8) Self-Test

Users can self-test the transmission system, barcode system, optical system and electric system, and print the results.



Self-Test steps:

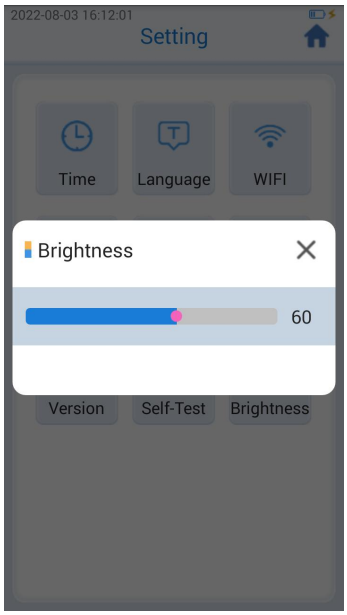
a) Insert the quality control card (or reagent test cassette) and click “Start”

b) The instrument will run and display the self-test result.

c) Users can click “Print” button to print the self-test result.

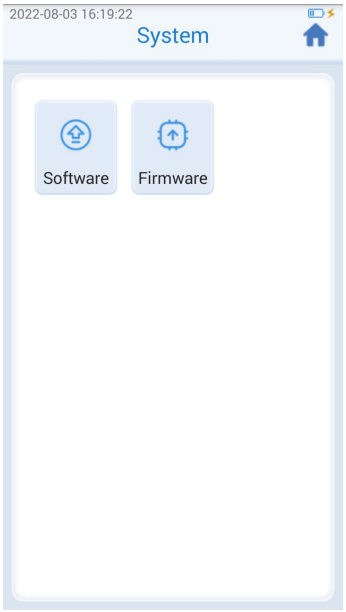
(9) Brightness

Users can adjust the display brightness.



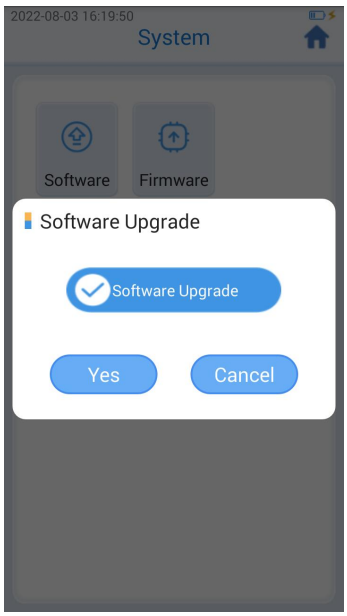
5.5 System

The setting interface provides functions for software upgrade, firmware upgrade.



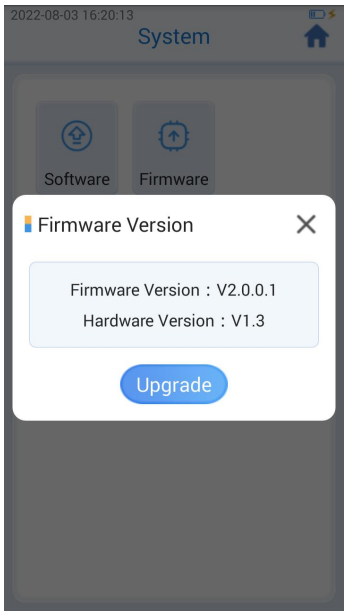
(1) Software upgrade

Put the upgrade file into the USB disk (FAT 32 format), click “Software Upgrade”, and follow the prompts to continue the next step to complete the software upgrading. Click "Open" to restart the instrument after upgrading.



(2) Firmware upgrade

Put the upgrade file into the USB disk (FAT 32 format), click “Upgrade”, it can automatically complete the upgrading. Restart the instrument after upgrading.



Section VI Precautions

Shenzhen Bioeasy Biotechnology Co., Ltd. declares that it can only be guaranteed if you fully comply with this operation manual. The following basic safety precautions must be observed during all phases of operation, maintenance, and repair of this instrument. Failure to comply with these measures or the warnings and precautions indicated in this manual may affect the basic protection provided by the instrument. It also undermines the safety standards for instrument design and manufacture and the intended range of use of the instrument. Shenzhen Bioeasy Biotechnology Co., Ltd will not be responsible for any indirect or corresponding damage caused otherwise.

(1) Keep away from live circuits

Operators are not allowed to disassemble the instrument protection, replace components or make adjustments to the instrument without authorization.

(2) Pay attention to the use of power

Before connecting the AC power supply, make sure that the voltage of the power supply is consistent with the voltage required by the instrument (220V~ 50Hz), and ensure that the rated load of the power socket is not less than the maximum

load of 30VA required by the instrument.

(3) Pay attention to the power cord

When using the power cord supplied with this instrument, if the power cord is damaged, it must be replaced with a power cord of the same type and specification. When using this instrument, do not press anything on the power cord, and do not place the power cord in a place where people move around.

(4) Plug and unplug the power cord

When inserting and unplugging the power cord, be sure to hold the operating part of the plug correctly. When inserting the plug, make sure that the plug is fully and firmly inserted into the socket. Do not pull the power cord hard when pulling out the plug.

(5) Pay attention to the placement of the instrument

1) When the instrument is connected to the power cord, the instrument should be placed in such a way that the power supply can be easily turned on or off and the power cord can be easily switched inserted or unplugged.

2) The instrument should be placed in a place with low humidity, less dust and far away from water sources (such as pools, water pipes, etc.), well ventilated, and free from corrosive gases or strong magnetic interference. Do not place the instrument in a humid or dusty place.

3) Excessive temperature will affect the detection performance of the instrument or cause malfunction. Do not use the instrument in direct sunlight and strong light sources, so as not to affect the fluorescence detection of the instrument, and keep away from heaters, stoves and all other heat sources.

4) Turn off the power when the instrument stops working. When not using the instrument for a long time, cut off the power, unplug the power plug, and cover the instrument with a soft cloth or plastic film to prevent dust and foreign objects from entering.

(6) Operation attention

1) During the operation, avoid liquid dripping on the instrument. Consumables, reagents, and other wastes used in the test should be disposed of in

accordance with relevant requirements, and should not be discarded or dumped at will.

2) If there are hazardous substances in the test, you must go through relevant training before use.

3) Hazardous substances after use should be properly handled and stored in strict accordance with their instructions for use.

4) Operators should read the operation manual of the instrument carefully, and use the instrument after the professional training of Shenzhen Bioeasy Biotechnology Co., Ltd.

5) If connected to external circuits, the instrument should:

   a) make accessible parts of external circuits hazardous live under normal conditions and single fault conditions.

   b) or make accessible parts of the equipment hazardous live under normal conditions and single fault conditions.

(7) In the following cases, immediately cut off the power supply, unplug the power plug of the instrument from the power outlet, and contact your local sales representative or Shenzhen Bioeasy Biotechnology Co., Ltd.

   a) Liquid spilled into the instrument.

   b) The instrument has been exposed to rain or water.

   c) The instrument is not working properly, especially if there is any abnormal sound or smell.

   d) The instrument has been dropped or the casing has been damaged.

   e) Instrument functionality has changed significantly.

(8) When handling potentially infectious materials, protective gloves or other protective measures are required if skin contact is possible.

Section VII Troubleshooting

Phenomena	Probable Cause	Recommended Measures

The instrument does not response	Power failure	Check the power plug
	Poor connection between the Power Adapter and the Cord.	Pull out the Cord and re-connect firmly
	Power switch is off	Turn on the power switch
	Power Adapter is broken	Call Customer Service
Run finished but no result returned	Excessive Computation Load	Wait till the computation is finished
	Computational Abnormality	Turn off the power and re-inspect
	Mechanical Failure (Buzzing Noise)	Call Customer Service
Display screen not working properly	Electrostatic Influence	Discharge static electricity, reboot the system
	Electric Circuit Failure	Call Customer Service

Section VIII Service, Maintenance and Disposal

Please contact BIOEASY if you need service or maintenance. Except for replacing print paper and cleaning regularly, FIAscanner doesn't require special maintenance. Wipe the external surface with a soft dry cloth to ensure the normal operation of the instrument.

8.1 External cleaning

Use a damp cloth with 0.5% bleach, 70% isopropyl alcohol, or 70% ethanol to clean the external surface of FIAscanner. To prevent damage to external surface and screen, strong bleach (bleach concentration of more than 0.5%), oxidizing substances, and solvents are prohibited.

8.2 Decontamination

If FIAscanner needs maintenance or replacement after use, decontamination and

disinfection should be done before repacking and transporting. Use disinfectant (including bleach with concentration of less than 0.1%) and cloth to thoroughly scrub the external surface of the instrument. To prevent damage to internal components of the device, spray-washing, cleaning any internal parts, and inner surface with disinfectant is prohibited.

8.3 Maintenance

(1) During daily use of the instrument, care should be taken to clean the inserted reagent test cassette to prevent contaminants from entering the test chamber or the inside of the instrument.

(2) The professional maintenance of the instrument must be carried out by the BIOEASY engineers or authorized sales representatives, and other personnel is not allowed to disassemble the instrument.

(3) If hazardous substances leak on the surface of the instrument or enter the inside of the instrument, appropriate disinfection should be taken.

(4) Do not use cleaning agents or disinfectants that chemically react with instrument parts or materials contained in the instrument and cause danger.

(5) If in doubt about the compatibility of disinfectants or cleaning agents with instrument parts or materials contained within the instrument, please contact your local sales representative or Shenzhen Bioeasy Biotechnology Co., Ltd.

8.4 Return Procedure

If FIAscanner happened to malfunction, please contact your local sales representative or Shenzhen Bioeasy Biotechnology Co., Ltd. at first. If it were determined that the unit will be returned to the manufacturer, a return authorization number will be issued, then Shenzhen Bioeasy Biotechnology Co., Ltd. will send a FIAscanner for replacement. The user is expected to utilize the packaging supplies accompanying the replacement to ship the malfunctioning unit. Verify the return authorization number on

the package and send the unit to Shenzhen Bioeasy Biotechnology Co., Ltd. upon receiving the replacement FIAscanner.

8.5 Transportation

The packaged instrument can be transported by general tools, and attention should be paid to moisture-proof, sun-proof, shock-proof, and transportation requirements according to the order contract.

8.6 Storage

The packaged instrument should be stored in a temperature of -10℃~55℃, relative humidity no more than 85%, no corrosive gas, and well ventilated room.

8.7 Destruction

If for any reason, the user wants to destroy the instrument, it is recommended that the user destroy it in accordance with the Class B electronic instrument regulations.

Section IX Contact Information

For technical questions, please contact:

FMCG Industry Solutions Pty

E-mail: info@fmcgis.com.au

Telephone: (02) 9540 2288 or 1300 628 104

Fax: (02) 9012 0320

Address: Unit 11A, 1 – 3 Endeavour Road Caringbah NSW 2229 AUSTRALIA

Mailing Address: PO Box 4109 Bexley North NSW 2207 AUSTRALIA