Guardian Workstation

（GUAR-WSTN-01）

User Manual

Software version: V1

Genea Biomedx Pty Ltd

GENERAL INFORMATION

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Technical Support

Manufacturer

If any serious incident has occurred in relation to this device, it should be reported to directly to the manufacturer.

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Chapter one Attention

This chapter describes the precautions for using the instrument. Before using the instrument, read the contents carefully to ensure that the instrument is used correctly.

1.1 Important reminder

In these instructions, some of the text is preceded by the following symbols for warnings and special reminders of the following use.

Project	Description
Warning	The operator is instructed to follow the instructions, otherwise personal injury may result.
Be careful	The operator is prompted to follow the instructions, otherwise the instrument may malfunction or be damaged.

1.2 Safety tips

1.2.1 General security

Warning

- Do not operate the instrument before reading the instructions to avoid damage to the instrument or personal injury.
- This instrument must be operated by a trained physician or laboratory technician.
- Do not place the instrument in a damp or near water place to avoid leakage and electric shock due to low insulation.
- Do not use this instrument in flammable or explosive environments as this may cause personal injury.
- When the power of this instrument is turned on, non-authorized personnel should not disassemble the instrument shell to avoid personal injury.

Be careful

- This instrument may only be disassembled, commissioned and serviced by our authorized and trained technical support personnel. Improper operation may affect the stability of the instrument or damage the instrument.
- This instrument is not waterproof, so do not spray liquid on the instrument. Otherwise, parts may be damaged.
- If liquid enters the instrument, turn off the power immediately and contact a technician.
- Do not use accessories and consumables other than those specified.

1.2.2 Electrical safety

Warning

- It is prohibited to use the instrument next to a strong radiation source (e.g. unshielded high power RF source). Otherwise, it may interfere with the normal operation of the instrument.
- Do not remove the case of the instrument to expose the internal parts. Otherwise, there is a risk of electric shock.
- If the power cord is damaged, worn, cracked or damaged, please replace it immediately.
- Do not use an underrated power cord to replace the dedicated power cord of this instrument. Otherwise, it may lead to heat and fire, which may lead to fire.

Be careful

- Please ensure that the input voltage meets the requirements of this instrument.
- Please use the power cord provided by this instrument to connect to the power supply.

1.2.3 Accessory safety

- Do not uninstall the App software of this instrument. Please contact technical support personnel if there are any problems in the operation of the software.

1.3 Identification Explanation

The instrument body, label and outer box contain the following symbols, and their names and explanations are described in the following table.

symbol	name	explain
	Manufacturer	Name and address of manufacturer
	Manufacturing date	Date of manufacture of this instrument
SN	Serial Number	Serial number of this instrument.
	Instructions	Product specification
	Up	Keep the arrow up when handling the instrument transport package.
	Breakables	Fragile articles should be handled with care.
	Afraid of the rain	Instrument transport packages shall be protected from rain, moisture and dryness.
	Afraid of sun exposure	The instrument transportation package is afraid of sunlight, avoid direct sunlight
RFID	RFID	High-frequency RFID identification of the induction zone
	Power button	Instrument power on/off, instrument restart, light up/off the screen, the
	Sound+button	Increase the sound of the instrument
	Sound-buttons	Reducing the sound of the instrument

symbol	name	explain
	Temperature limits	The temperature range to be maintained in the instrument's transportation package
	Humidity limits	The range of humidity that should be maintained in the transportation package of the instrument
FC	Federal Communications Commission	FCC Compliant
CE	CE	Product complies with applicable European Union (EU) regulations

Chapter two Instrument overview

2.1 General

The name of the product: Guardian Workstation

Model:GUAR-WSTN-01

Software name: Guardian

Version:1

Intended use: for sample verification in medical laboratories

Contraindications:None

2.2 product overview

Guardian Workstation is an all-in-one sample verification device developed by Genea Biomedx, integrating sensors and display, utilizing RFID (Radio Frequency Identification) technology for tag comparison and identification, seamlessly interfacing with business systems, displaying relevant information about the patient to whom the sample belongs, and realizing sample-to-patient or sample-to-sample verification in multiple segments. Verification. If sample matching error or patient matching error is found during the verification process, the system will alarm and interrupt the operation process to effectively reduce human errors. At the same time, it supports the functions of to-do task tracking and history query.

2.3 Technical specifications

Project	Description
Dimensions	210mm (L) × 70mm (W) × 220mm (H)
Net weight	1.4kg
operating systems	Android11
Memory	4+32G
Touchscreen	Type:capacitive touch screen Size:8 in Resolution:1280×800

Camera	13 megapixels on the front
Audio	Speakers
RFID distance recognition	0~70mm, depending on label size and type
RFID	Operating frequency band: 13.56MHz Supported protocols: HF ISO15693
Power Adapter	Input:100-240V~ USB port output: 5VDC 3A Frequency: 50/60 Hz
enclosure protection class (IP code)	IPX0
operating environment	Ambient temperature:5℃~40℃. Relative Humidity:20% RH ~ 80% RH, non-condensing Atmospheric pressure range:70 kpa~106 kpa Maximum altitude: 2000 m
storage/transportation environment	Ambient temperature:-20℃~50℃. Relative Humidity:15% RH ~ 90% RH, non-condensing

2.4 Structural components

This product consists of a Guardian Workstation host, power cord, power adapter, and Guardian software. The Guardian Workstation host is shown in Fig. 1.

Fig. 1 Basic hardware components

2.5 Conformity with standards

Project	Description
electromagnetic compatibility	IEC 61326-1:2020 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
electrical safety	IEC 61010-1 Edition 3.1 2017-01 CONSOLIDATED VERSION Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements [Including: Corrigendum 1 (2019)] EN 61010-1:2010+A1:2019Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements
FCC	FCC PART 15B，FCC PART 15.247
ROHS 2.0	2011/65/EU

2.6 Transportation, unpacking and inspection

The Guardian Workstation from Genea Biomedx are supplied in new condition. For your own protection, schedule enough time to check for any external damage on delivery. Mishandling of the equipment, including transport and shipping of units in non-approved orientations, may damage the product and contents.If the instrument is subjected to a sufficiently severe drop or impact, this may cause the instrument to malfunction.

When opening the outer box, please check all items against the packing list for completeness. If there are signs of transportation damage or any item damage, please contact the logistics carrier and your local Genea Biomedx distributor/representative.

Chapter three　Instrument installation

Instrument installation needs to be prepared in advance, including the preparation of the laboratory before the installation of the instrument and the preparation of the instrument before use.

3.1　Installation space

Be careful

- This instrument is for indoor use only,do not use it near water or heat sources.
- The instrument should be placed on a flat and stable table.
- Please do not place the instrument in a position that is difficult to operate, in order to facilitate the safe operation and use of the instrument, it is recommended that a gap of not less than 50mm be left at the top of the instrument, or if placed on a desktop, the instrument should be placed at a distance of not less than 100mm from the edge of the desktop at the front and back of the instrument, and at a distance of not less than 50mm from the edge of the desktop at the two sides of the instrument, as shown in Figs. 2 and 3.

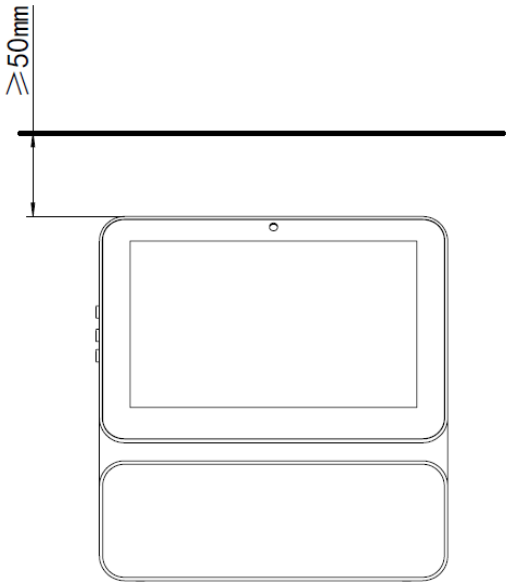

Fig. 2　Schematic diagram of top reserved space

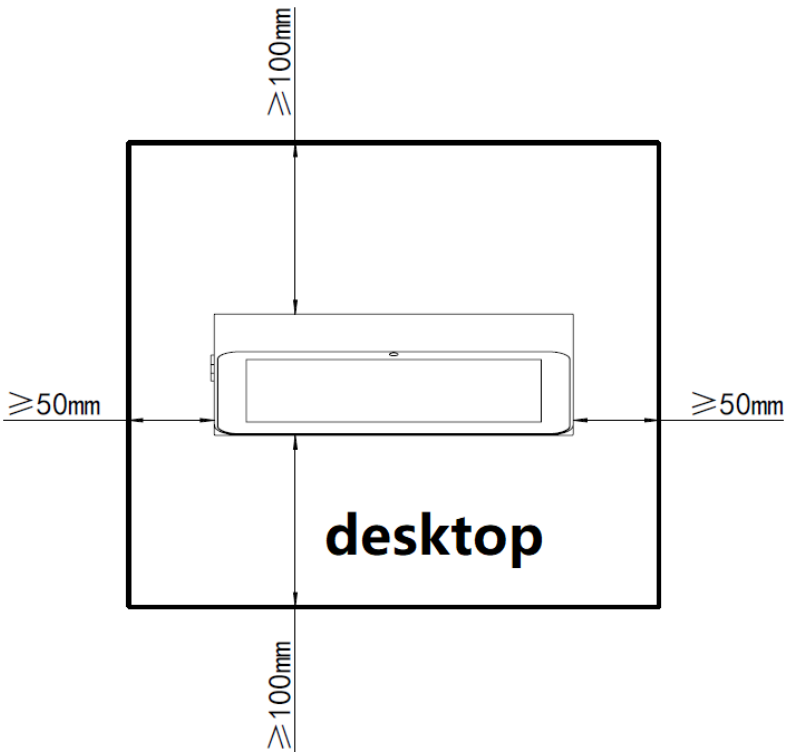

Fig. 3 Schematic diagram of distance from desktop edge

3.2 Network requirements

Warning

WARNING:This device may only install and run software provided by our company. Installation or operation of software from any other source may result in data loss, equipment failure, or failure of the software to operate properly. In order to ensure the stable operation of the equipment and data security, please strictly comply with the relevant requirements.

3.2.1 Network conditions

- Network architecture: In order to ensure the smooth operation of the software and the safe transmission of data, it is recommended to adopt a stable and reliable network architecture. According to the specific environment and needs of the laboratory, you can choose wired or wireless network connection.

- Network type: This device supports a variety of network types, including but not limited to Local Area Network (LAN), Wide Area Network (WAN) and Virtual Private Network (VPN). Please select the appropriate network type for connection according to the actual situation.

- Network bandwidth: In order to ensure the fast response of the software and efficient data transmission, it is recommended that the network bandwidth should not be less than 100 Mbps. If the bandwidth is insufficient, it may lead to slow running of the software, delayed data transmission and other problems.

3.2.2 Access rights

Access rights are strictly controlled based on user roles and responsibilities. Only authorized users are allowed to use the relevant software.

3.3 Prepare the power supply

- Wall socket, power supply voltage: 100-240V~, 50/60Hz, power supply voltage fluctuation should not exceed ±10% of the nominal voltage.
- Transient overvoltage category:II

3.4 Installation of instruments

This instrument needs to be installed by professional personnel, and random accessories such as power cord and power adapter will also be installed and connected together.

Chapter four Interface description

This chapter is used for an introduction to the main interface of Guardian, the software built into Guardian Workstation.

4.1 Initialization

After the Guardian Workstation device is powered on, as shown in Fig. 4, it enters the software self-startup interface:

Fig. 4 Software self-startup interface

The default home page is the Active interface, as shown in Fig. 5:

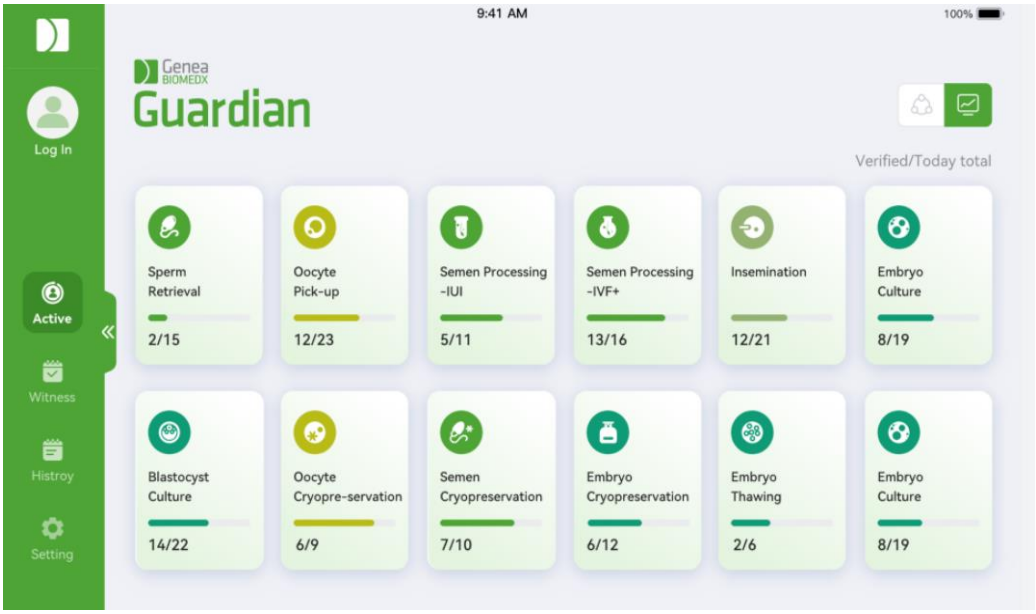

Fig. 5 Active interface

4.2 Log in

Select the login user, as shown in Fig. 6.

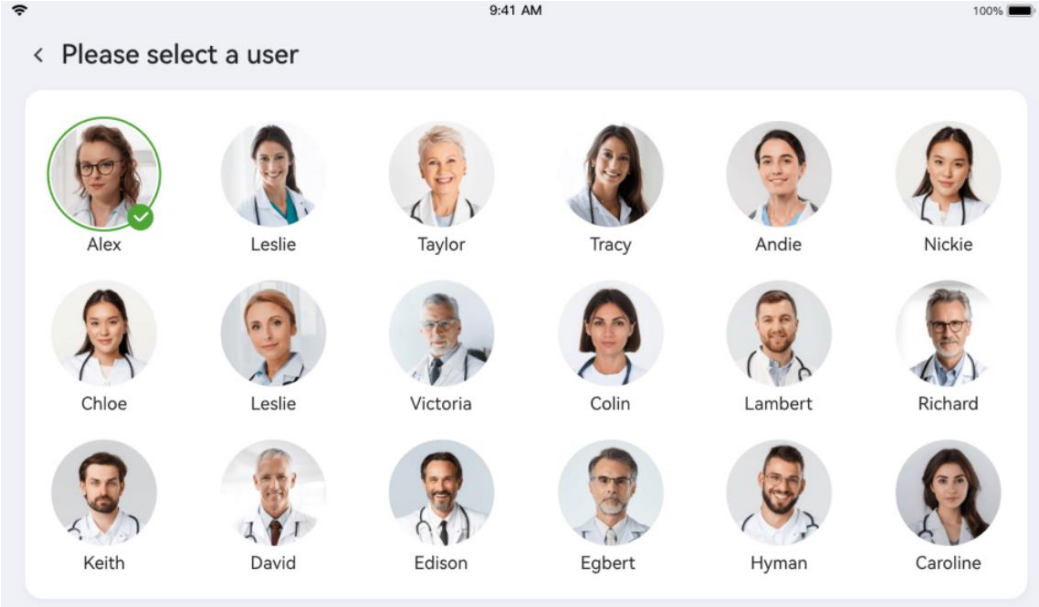

Fig. 6 Selecting the login user interface

Input the password, as in Fig. 7.

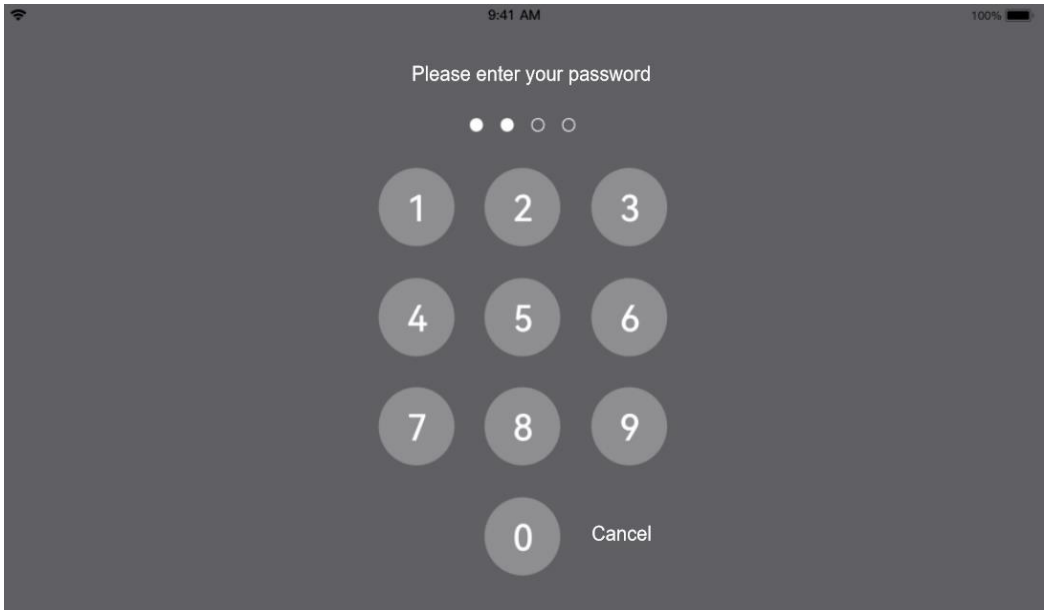

Fig. 7 Input password interface

4.3 Viewing the active cycle

The Active module is used to view an overview of the day's pending tasks and cycle details, and is divided into three levels.The first level is the task overview, which shows the day cycle task situation in two dimensions: D0~D7 cycle day and operation session.

The full process mode displayed in the daily dimension of cycle D0~D7, as shown in Figure 8:

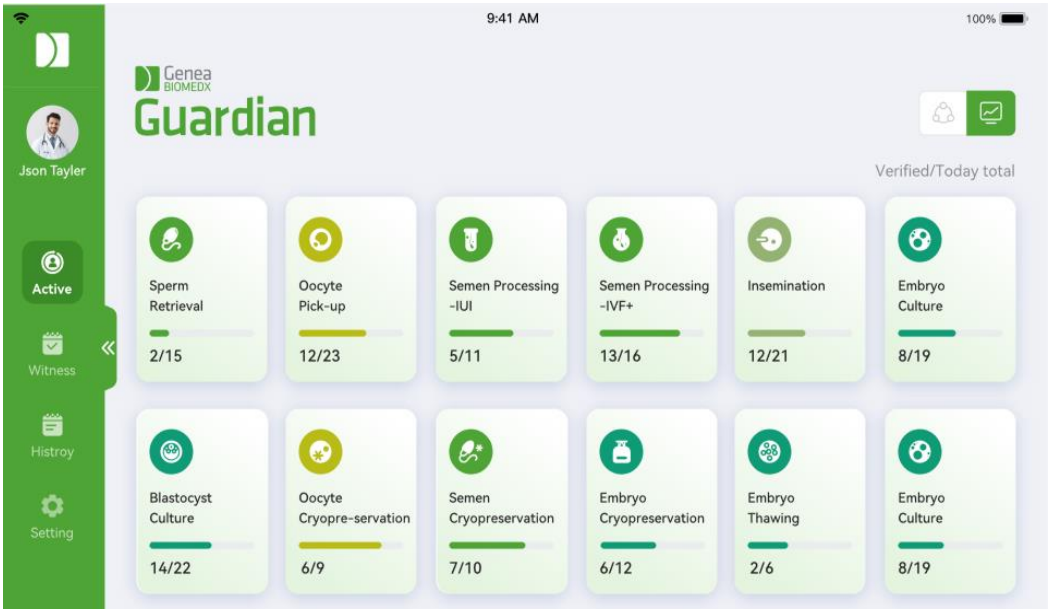

Fig. 8 Workstation mode interface

Console mode displayed in the dimension of operational steps, as shown in Fig. 9.

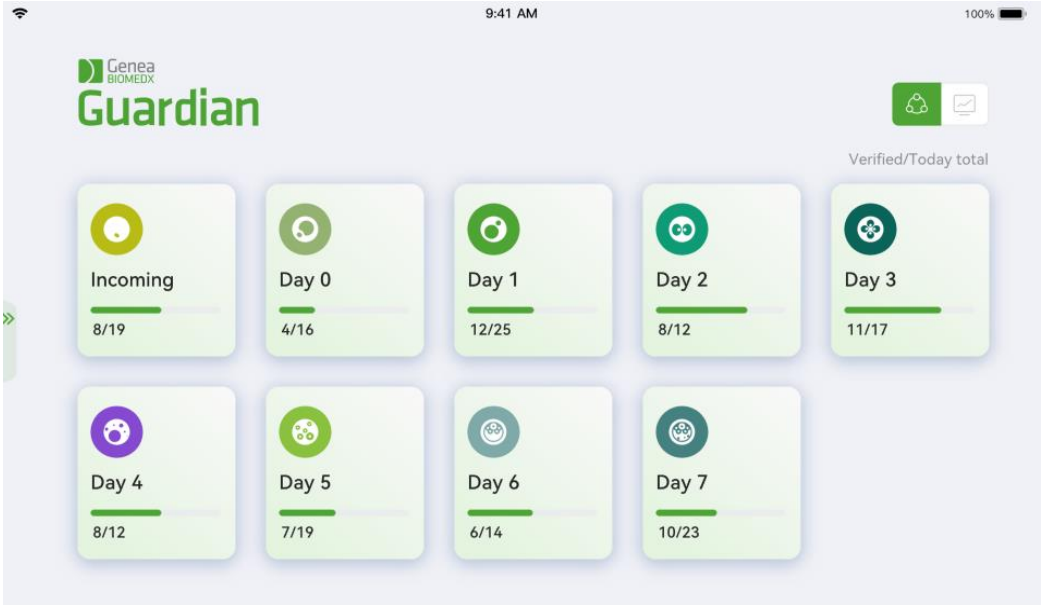

Fig. 9 D0~D7 mode interface

Clicking on the first level card jumps to the second level interface, as shown in Fig. 10, which shows the list of cycles under the first level card, which is categorized into three statuses, verified, unverified, and abnormal.

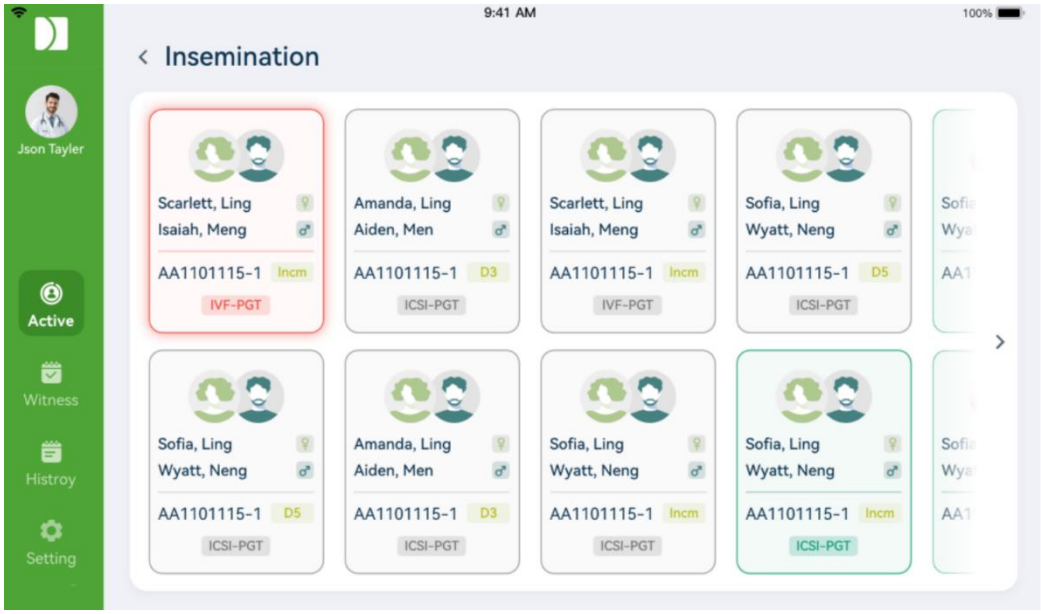

Fig. 10 Cycle card interface

Click on the secondary card, jump to the cycle details interface, such as Fig. 11, you can view the current cycle status, verification records, you can operate the end of the day task, you can also operate the end of the cycle.

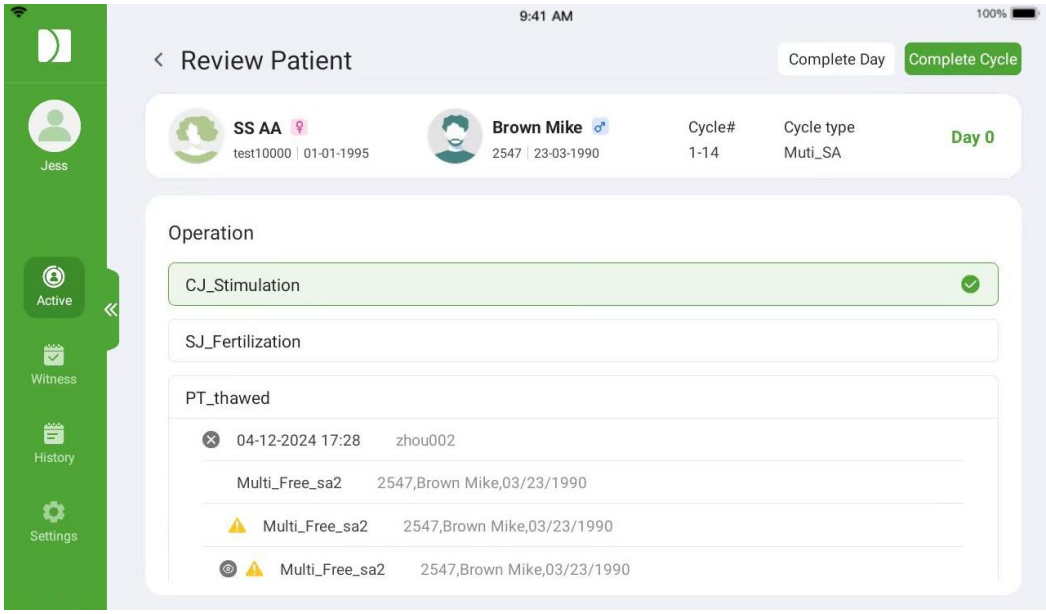

Fig. 11 Cycle details interface

4.4 Verification

The system switches to the Witness menu, puts the tag close to the RFID induction area, if the verification is successful, it will display the cycle information, verification progress, the current sample information to be verified samples, etc., if the sample is abnormal, it will display the corresponding error report pop-up box.

The effect of the unread tag interface, as shown in Fig. 12.

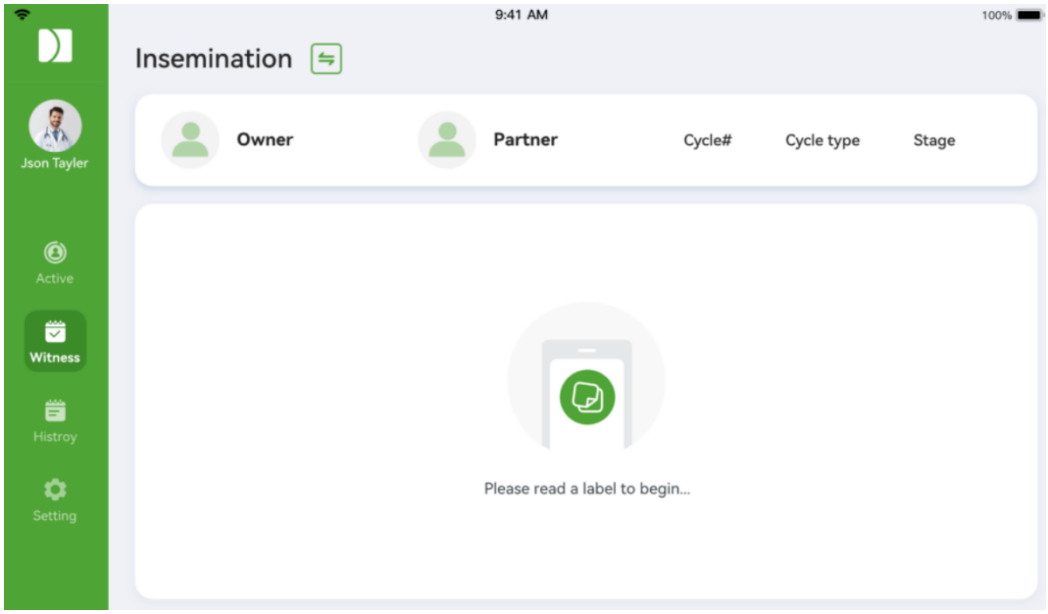

Fig. 12 Unread tag interface

Successfully read the label interface effect, such as Fig. 13.

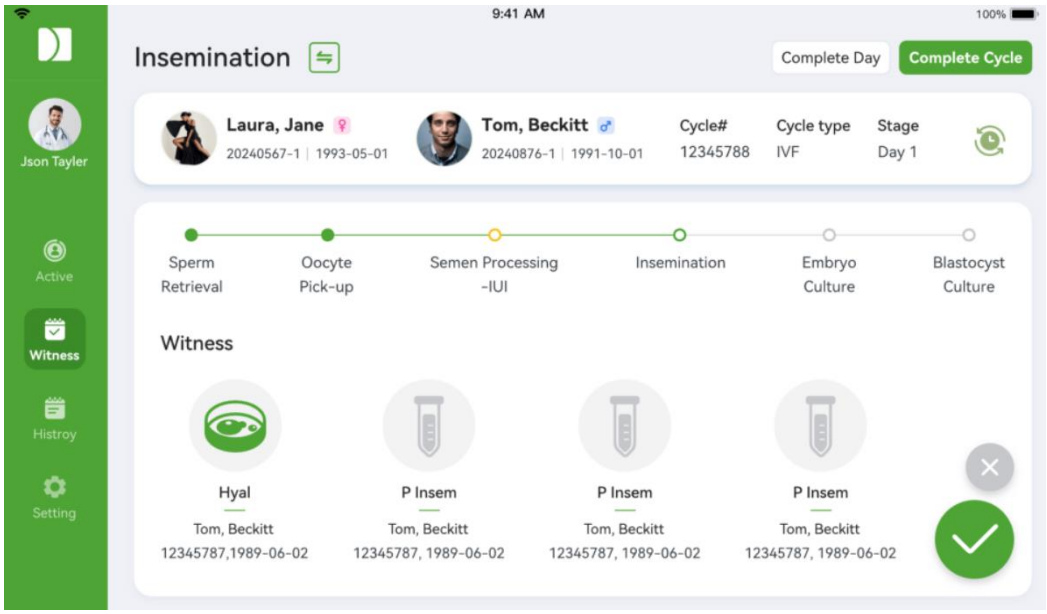

Fig. 13 Successfully read label interface

The interface after submitting verification information is shown in Fig. 14:

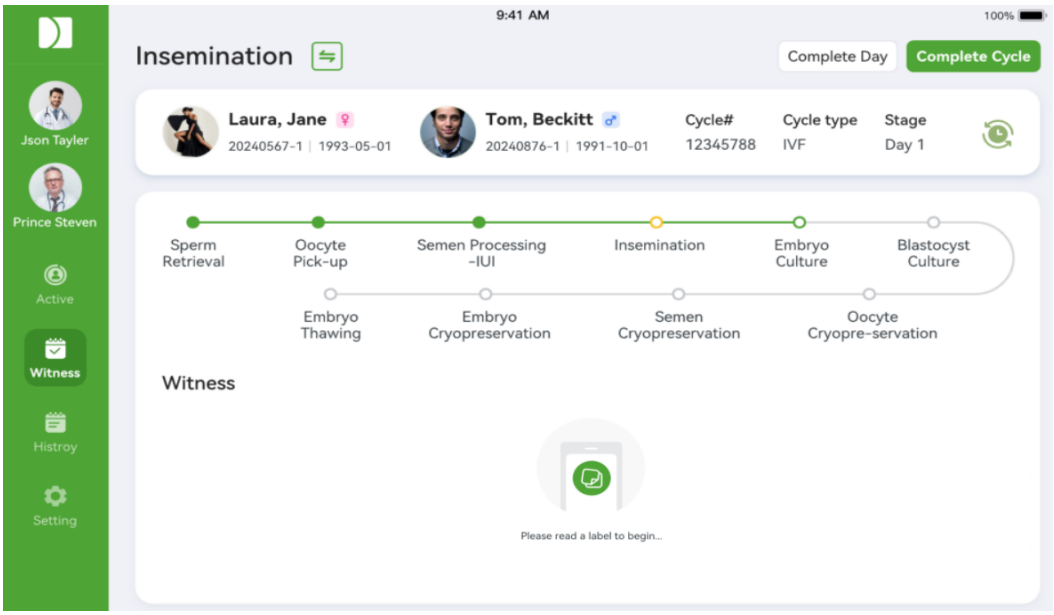

Fig. 14 Interface after submitting verification information

Verification exception reminder interface, as shown in Fig. 15:

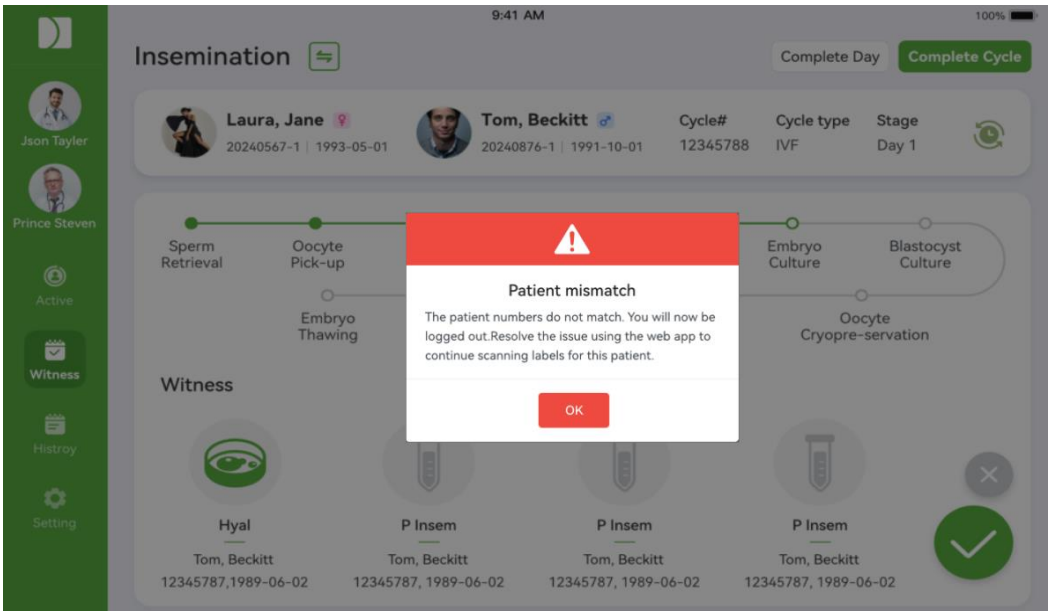

Fig. 15 Verification Exception Reminder Interface

4.5 Viewing historical verification records

Switch to the History menu, as shown in Fig. 16, and put the tag close to the RFID sensing area. After successfully reading the tag, the periodic information, verification progress and verification records will be displayed.

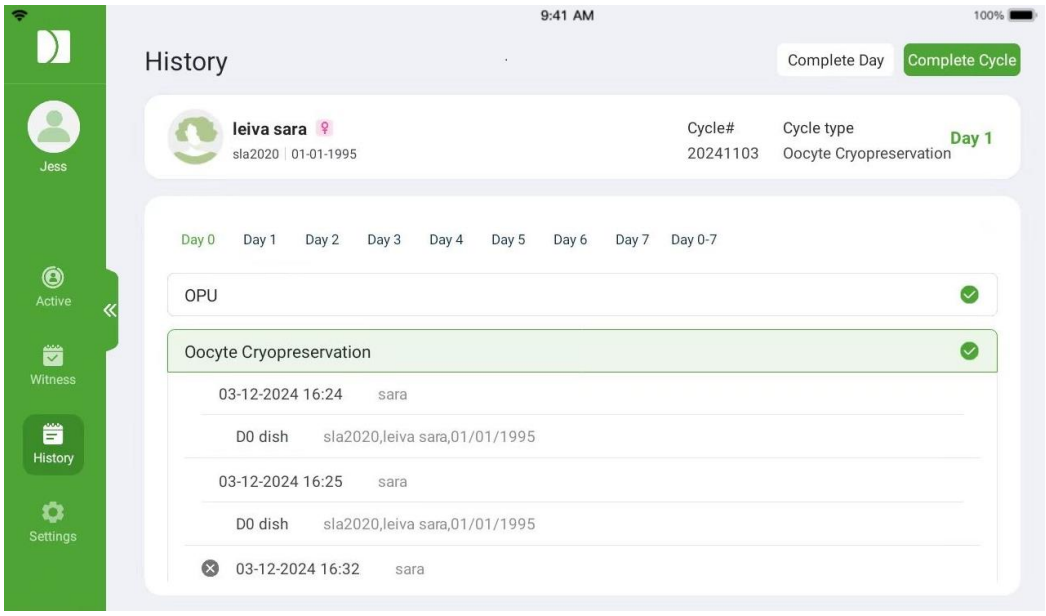

Fig. 16 History menu

4.6 Setting

Change the password, as shown in Fig. 17:

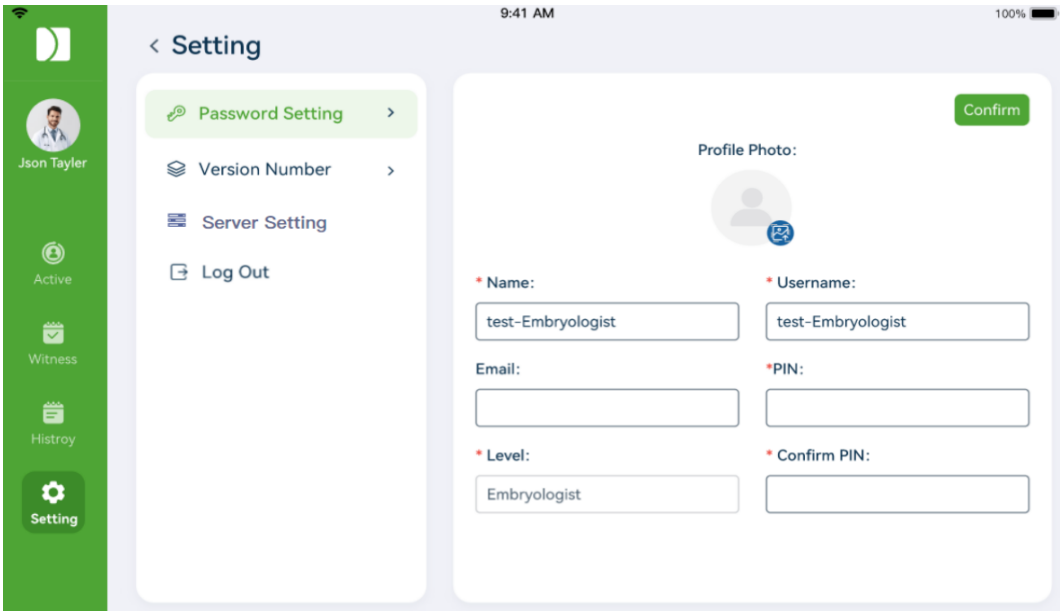

Fig. 17 Change password

View version and automatic update, as shown in Fig. 18:

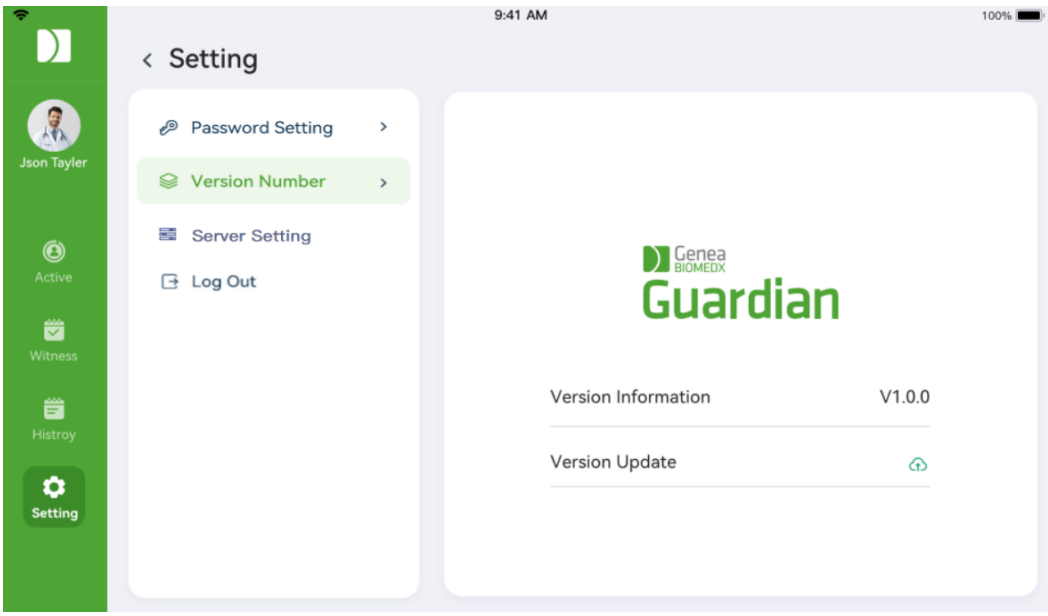

Fig. 18 Version and Update

Modify the server address, as shown in Fig. 19:

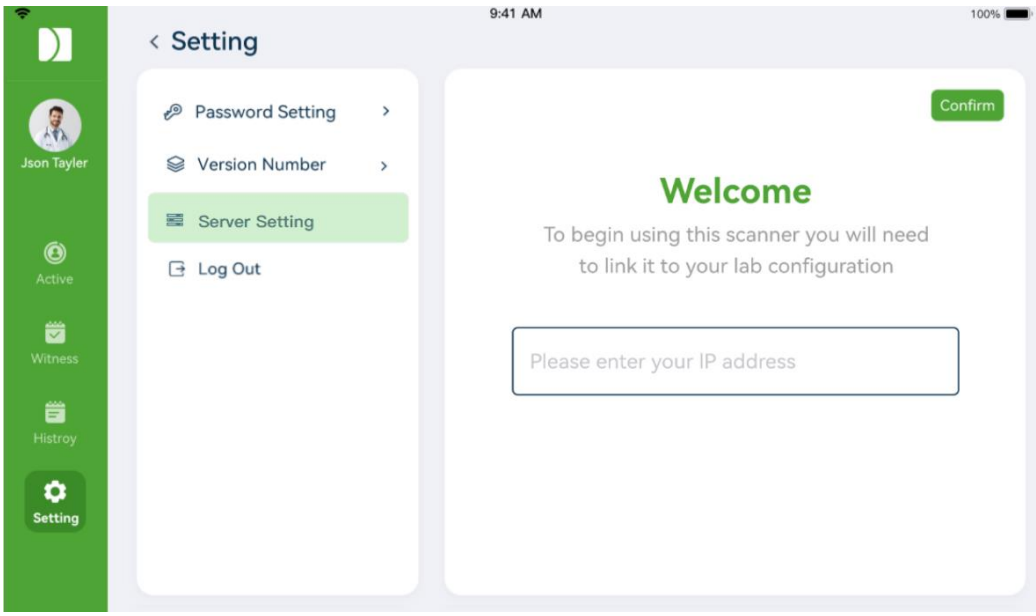

Fig. 19 Modify the server address

Click Log Out to log out.

Chapter five Instrument operation

This chapter introduces how to use the instrument. To ensure the normal operation of the instrument, please operate as required.

5.1 Energizing and de-energizing

Be careful

- It is recommended to use the company's power cord and power adapter to connect to the power supply.

5.1.1 Energized

On the back of the fuselage of the instrument, there is a type-c power interface. The specific operation steps are as follows:

1) connect the type-c terminal of the random power cord to the type-c power interface on the back of the instrument;

2) Connect the usb end of the power cord to usb interface of the random power adapter;

3) Insert the plug of the power adapter into the laboratory socket.

After power-on, the instrument screen lights up, and the App software is started.

5.1.2 De-energizd

If the instrument is not use for a long time, please turn off the power. The specific operation steps are as follows:

1) Unplug the power adapter from the socket;

2) Unplug the type-c end of the power cord from the back of the instrument.

5.2 Rebooting and Power on and off

Be careful

- Although plugging and unplugging the power cord will restart the instrument and turn it on and off, it is not always a safe and recommended method.
- In the context of "1.3 Identification Explanation" and "2.4 Structural components", please

understand the function of the three buttons on the left side of the instrument.

5.2.1 Reboot

If the instrument is connected to the power state need to restart. The procedure is as follows.

1) Press and hold the "Power Button" on the top of the 3 buttons on the left side of the instrument, which corresponds to the logo.

2) Click the "Restart" icon in the upper right corner of the screen.

3) Wait for a moment, the instrument will restart and automatically start the App software.

5.2.2 Power on and off

If the instrument needs to be turned on and off when it is connected to the power supply. The procedure is as follows.

1) Press and hold the "Power Button" at the top of the 3 buttons on the left side of the instrument, corresponding to the logo.

2) Click on the "Shutdown" icon in the upper center of the screen and the instrument will shut down.

3) Press and hold the "Power Button" at the top of the 3 buttons on the left side of the instrument.

4) Wait for a moment, the instrument will restart and automatically start the App software.

5.3 Screen brightness adjustment

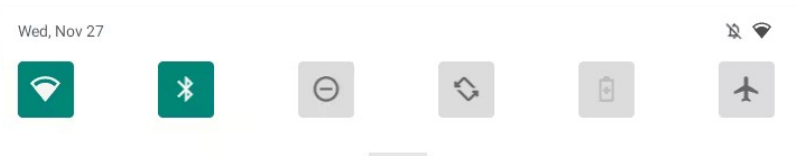

Fig. 20 Status box

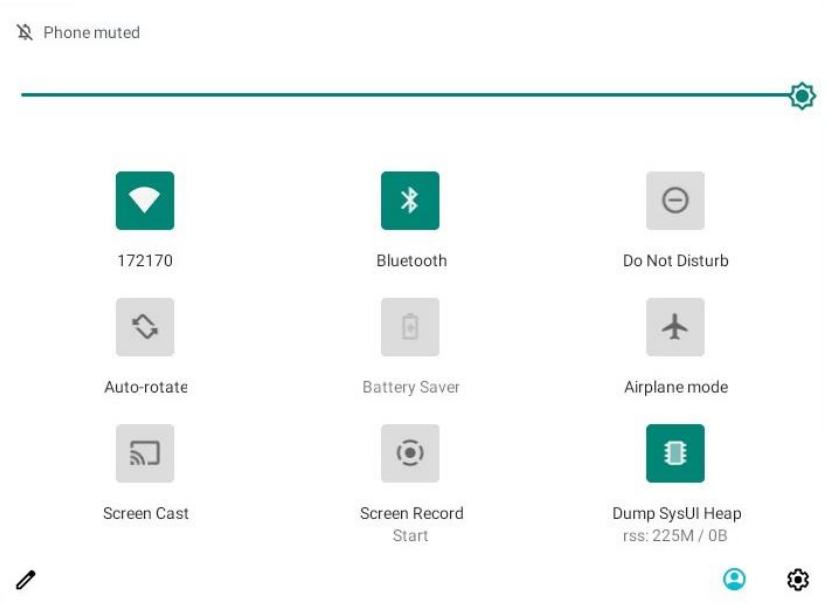

Fig. 21 Control Center

If the instrument needs to adjust the brightness of the screen. The procedure is as follows.

1) Slide your finger down from the top of the screen, and a status box will appear, as in Fig. 20.

2) Press and hold the status box, and slide down, the "Control Center" interface, such as Fig. 21.

3) Slide the top progress bar to adjust the brightness.

5.4 Connect Wifi

1) Slide down at the top of the screen to see the Wifi icon , as shown in Fig. 20;

2) Long press the Wifi icon to enter the Wifi connection interface, select the name of the Wifi you want to connect, enter the password, and then connect.

5.5 Language settings

The factory default language of the device is English, if you want to change the language, you need to follow the instructions below to change.

1) Slide your finger down from the top of the screen, and a status box will appear, as in Fig. 20;

2) Press and hold the status box, and slide down, the "Control Center" interface, such as Fig.21;

3) Select the icon in the lower right corner and click on it to enter the Settings screen, slide up the screen and find System;

4) Click Languages&input, then click Languages, click + Add a language, add the language you want to set, as in Fig. 22;

5) Serial number 1 is the default current system language, press and hold the = icon on the right side of the voice you want to set, and move up to serial number 1 to complete the language setting.

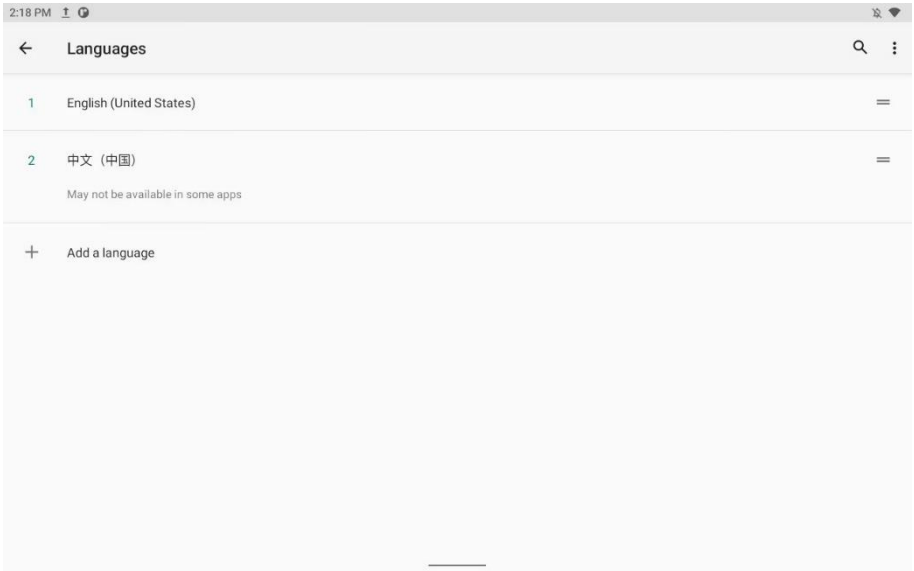

Fig. 22 Language setting screen

5.6 App Action

5.6.1 Log in

Guardian Workstation device boot, App software automatically start, start the default is not logged in, you need to log in, click on the left side of the avatar box, pop-up box to select the log-in user, click to select the user to enter the password interface, enter the correct password after logging in successfully, the operation of the instrument App's part of the function, you need to be affixed with the RFID tags Petri dish, as shown in Fig. 23.

Fig. 23 Instrument and petri dish with RFID tags attached

5.6.2 Viewing the active cycle

Click Active to open the task overview interface, which can display the day cycle task situation through the two dimensions of Workstation and D0~D7 cycle day, as shown in Figs. 24 and 25.

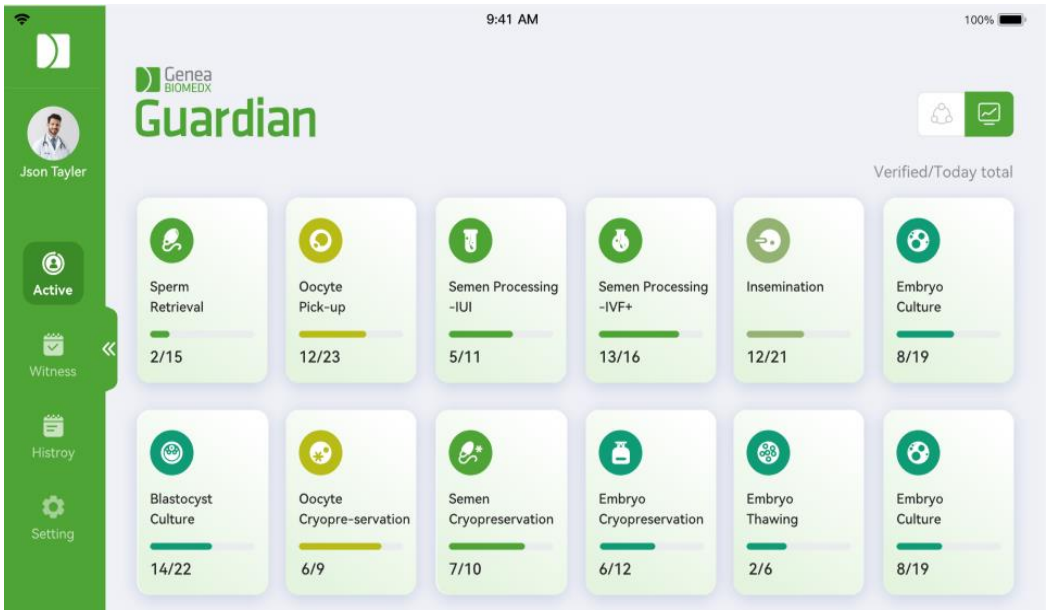

Fig. 24 Workstation mode

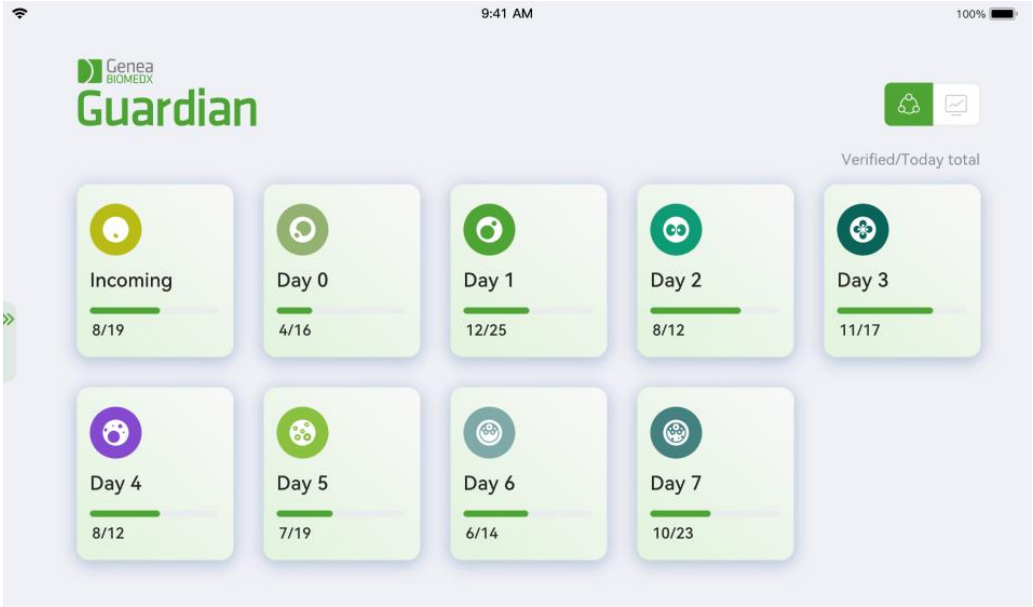

Fig. 25 D0 to D7 modes

Click on the card, jump to the cycle card interface, as in Fig. 26, the cycle interface display belongs to the previous level of the card cycle, the cycle is divided into three kinds of status, respectively, has been verified status, not verified status, abnormal status.

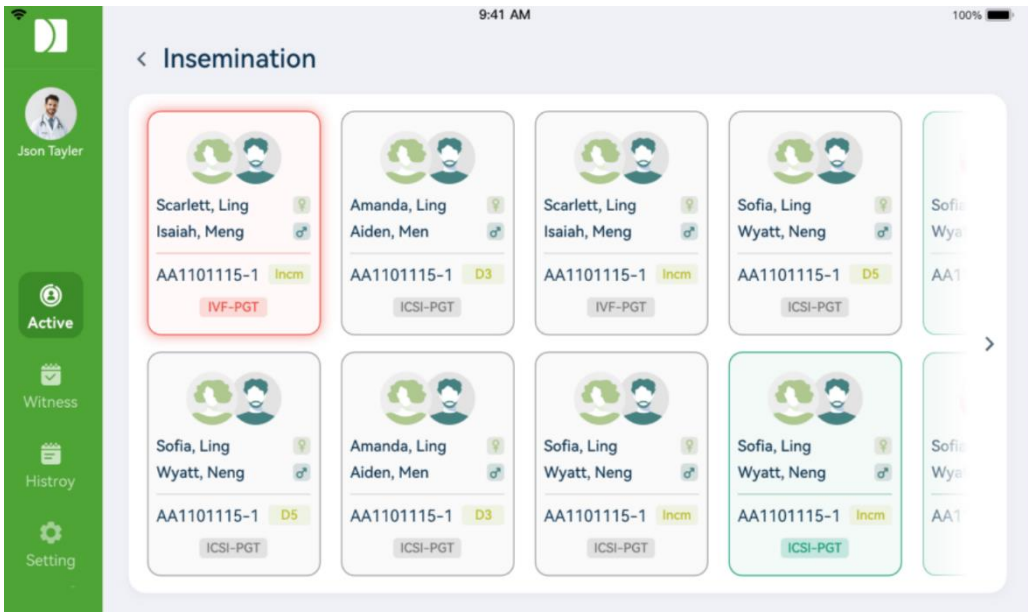

Fig. 26 Cycle card interface

Click the cycle card, jump to the cycle details interface, you can view the current cycle status, verification records, you can operate the end of the day task, you can also operate the end of the cycle, such as Fig. 27.

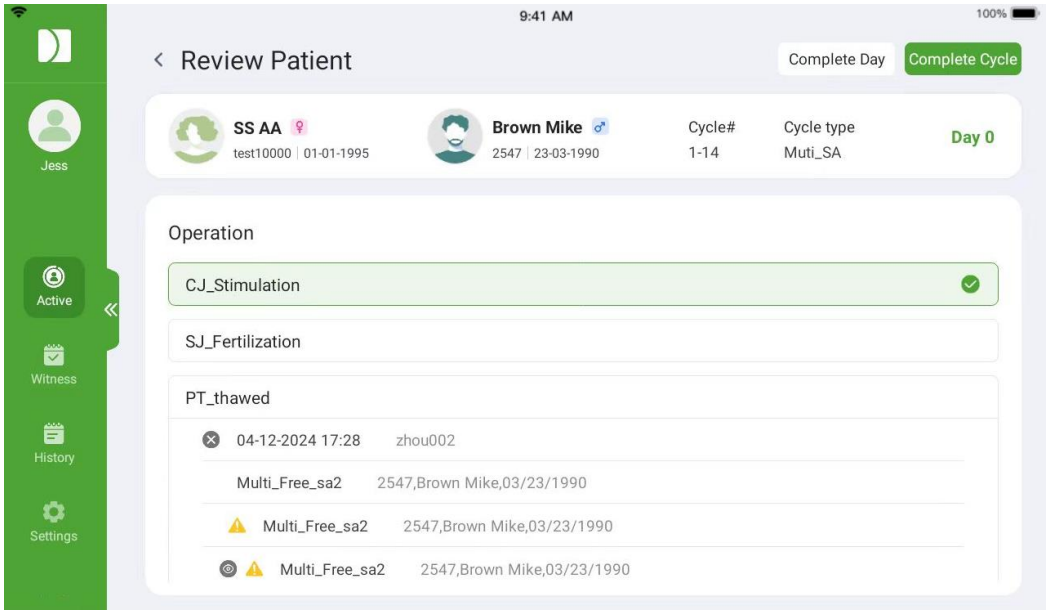

Fig. 27 Cycle details screen

5.6.3 Verification

The system switches to the Witness menu, the tag close to the RFID induction area, if the verification is successful, it will display the periodic information, verification progress, the current sample information, to be verified samples, etc., if the sample is abnormal, display the corresponding error report pop-up box, such as Fig. 28and Fig. 29.

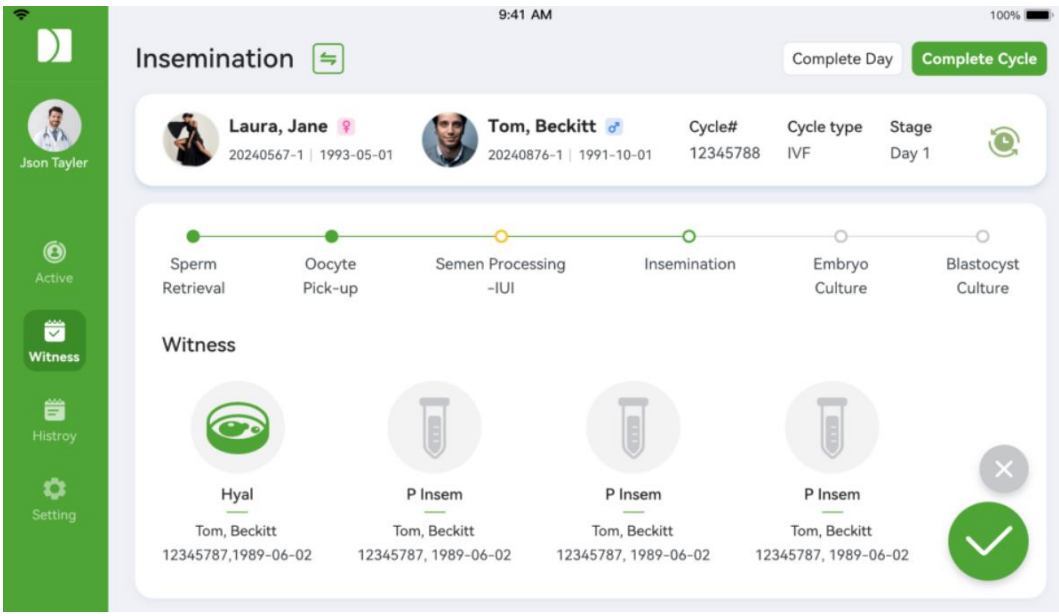

Fig. 28 Successfully read label

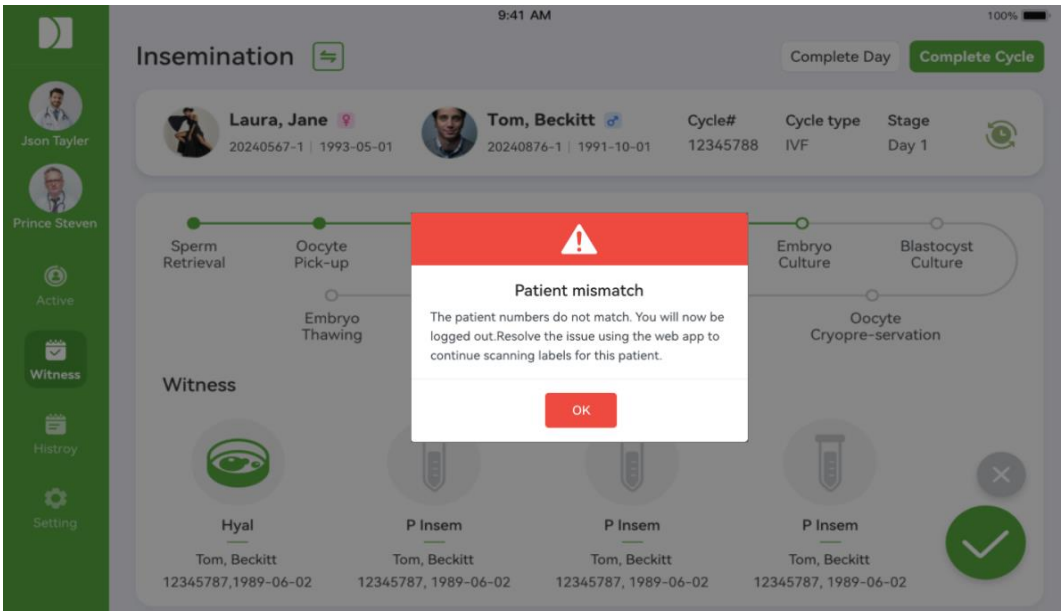

Fig.29 Verification exception reminder

5.6.4 Viewing historical verification records

Switch to the History menu, the tag close to the RFID induction area, if read successfully will display periodic information, verification progress, verification records, etc., such as Fig. 30.

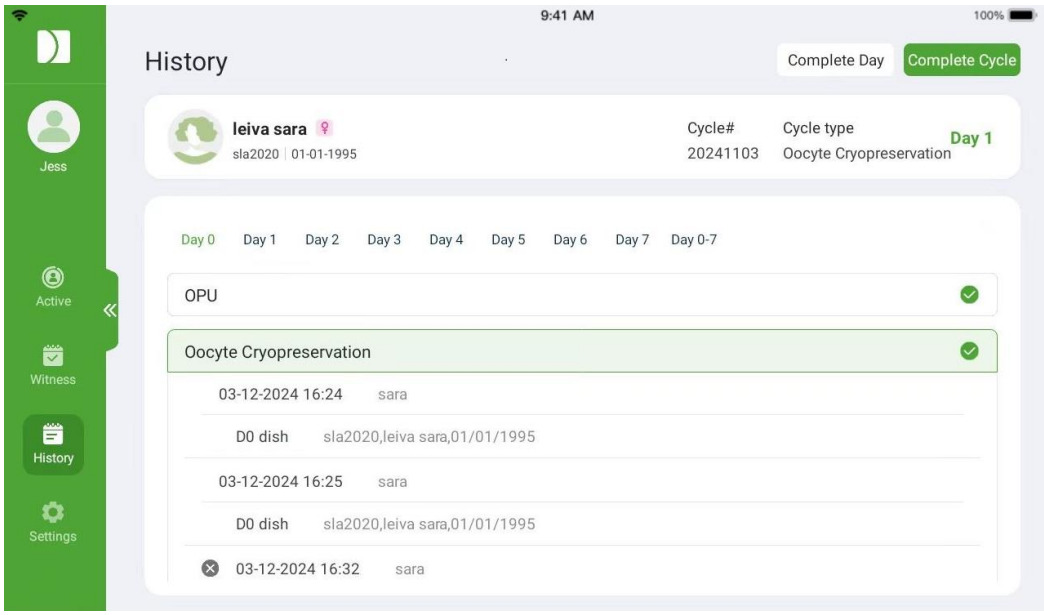

Fig. 30 Verification history

5.6.5 Setting

Click Setting, then click Password Setting to change your password, as in Fig. 31.

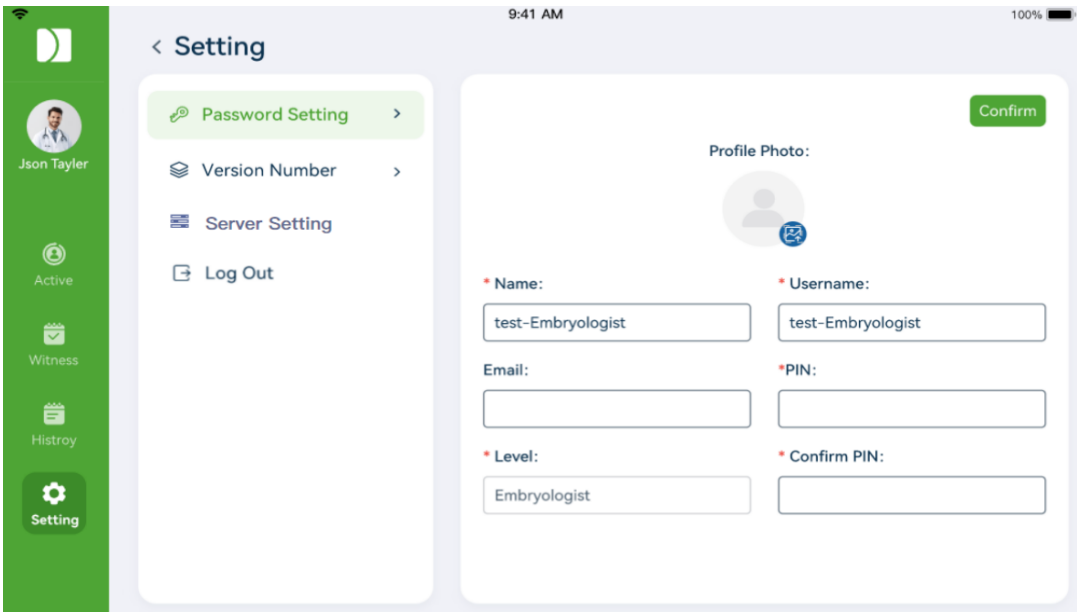

Fig. 31 Change password

Click Version Number to view the version and automatic updates, as in Figure 32.

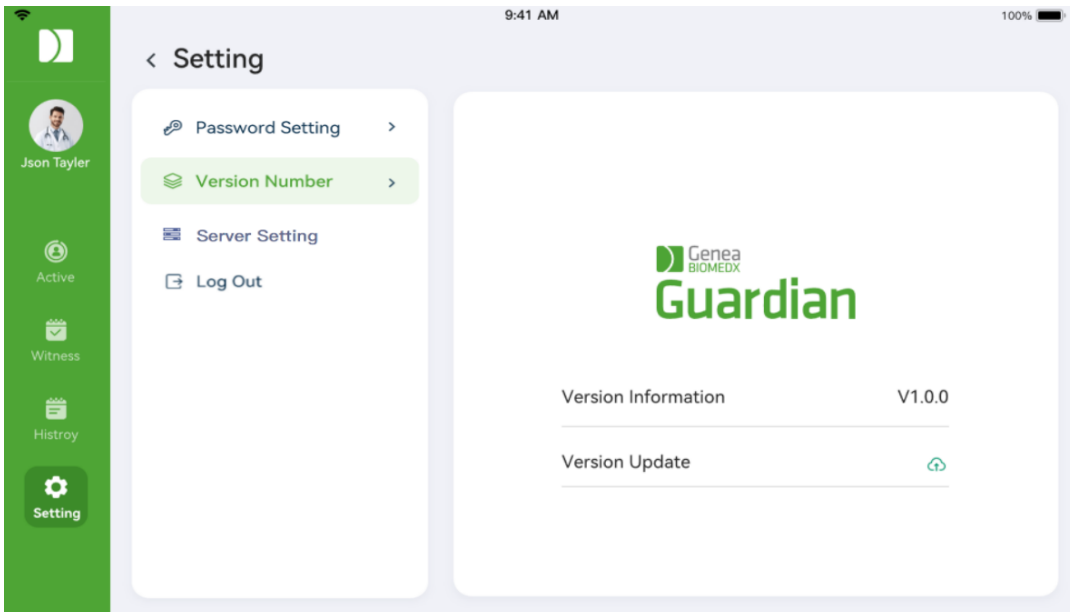

Fig.32 Version and update

Click Server Setting to open the Modify Server Address page, you can modify the server address, as shown in Fig. 33.

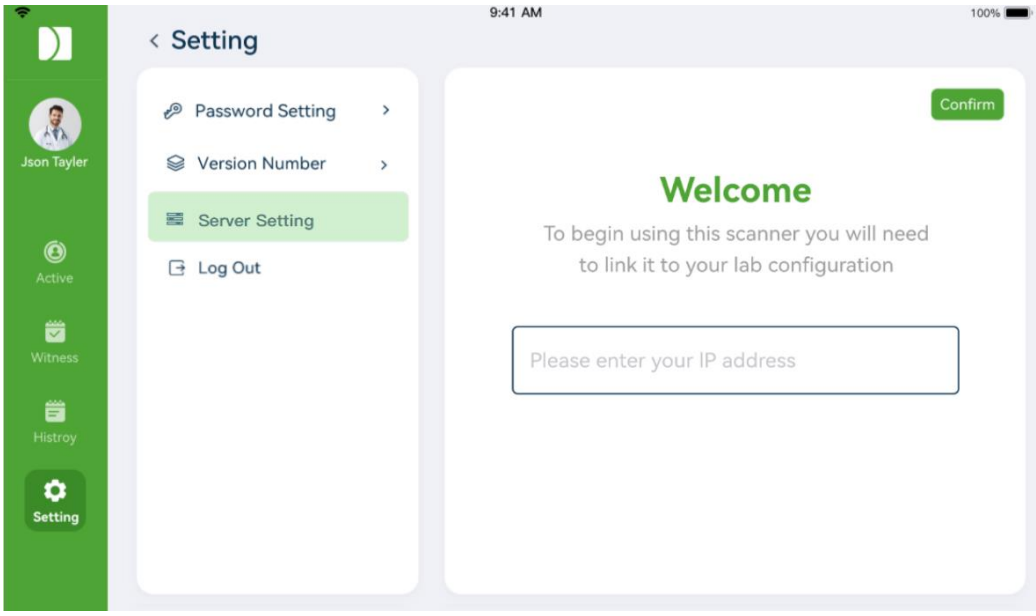

Fig. 33 Modify the server address

Click Log Out to log out.

Chapter six Maintenance and upkeep

6.1 Mainframe maintenance

With the power off, perform the following maintenance.

- Once a month, it is recommended to wipe the instrument case (including the touch screen) with a dust-free cloth；
- Use a small brush to remove the dust in the 6 holes on the right side of the instrument to ensure that the instrument sounds normal.

6.2 Power supply maintenance

- When the instrument is not used for more than 7 days, turn off the power and disconnect the power adapter from the socket.
- Before each use, check the power cord and power adapter to make sure they are connected correctly and the cable is intact. If they are damaged, please replace them promptly.

6.3 Software maintenance

Maintenance and update of the built-in software of this instrument should be operated by professional technicians or under the guidance of technicians. If there is any abnormality in the operation of the software, please contact the technician in time.

6.4 Transportation and storage

Store and transport the instrument in accordance with the environmental requirements specified in "2.3 Technical Specifications".

Chapter seven Common malfunctions and methods of dealing with them

During the working process of this instrument, if there is a malfunction, the operator can follow the prompts to carry out the primary troubleshooting and processing. The following table lists some of the faults and methods of treatment, if there are other faults not mentioned in this manual, please contact the technical staff.

Failure phenomena	Failure analysis	Processing methods
It won't turn on	without the power cord connected	Connect the power cord securely to the power adapter and then plug the power adapter into an outlet.
	the power adapter is not plugged into an outlet	
Unable to connect to the server	server address is incorrect	Enter the correct server address on the Settings page.
	Unable to access the server	DNS misconfiguration or firewall restrictions.
Label recognition failed	The scanning frequency is too fast	Rescan the label.
	Damaged labels	Replace other labels.
App is slow to respond	network latency	Replace the network or wait for the network to stabilize.
There's no sound from the instrument	Damage to the built-in speaker	Contact technical support staff.
Other	/	In addition to the above, if you have any questions, please contact our technical support staff.

Chapter eight The list of accessories

Below are the random accessories of this product, please make sure they are complete before installing. If any of them are missing or damaged, please contact your dealer immediately.

Serial number	name	Quantity
1	Power cord	1 root
2	Power adapter	1 piece

FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.