

BioQuant-96 Fluorescent Quantitative Detection PCR system



User Instructions



Users are recommended to read the contents of this manual thoroughly before operating the Fluorescent Quantitative PCR Detection System.

In order to carefully observe all special Warnings and Cautions outlined in this manual, this manual should be maintained properly in good condition for reference.



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Thank you for your purchase of this product. Before initial use of this instrument, please read this manual thoroughly

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Chapter 1 Important Notes

11 Practice

Very important information is contained within this manual and it should be carefully read before first use of the instrument. Failure to operate instrument according to the instruction could result in damage or abnormal functioning of the instrument.
The warning message requires extremely careful operation of a certain step. If the instrument is not used in the manner prescribed by the manufacturer, the protection provided may be compromised.

1 2 Safety

During operation, maintenance and repair of this instrument, the following basic safety notes must be observed. In case of failure to follow these measures or the warnings or notes indicated herein, the basic protection provided by the instrument, its safety criteria of design and manufacture, and its predicted use range would be impaired.

SIA Biosan shall not be held responsible for any consequences resulting from the user's failure to observe the following requirements.

The instrument, complying with the Standard GB4793.1/IEC61010-1, is a general instrument of class I, the protection degree is IP20. It is intended for indoor use. Note: The instrument complying with the Standard YY0648/IEC61010-2-101 is used for

IVD Medical Equipment.

a) Instrument earth

In order to avoid an electric shock, the input power cable of the instrument must be properly earthed. This instrument uses a 10A 3-core earthed plug, which is provided with a third (earth) pin. It is for use with an earth type power socket and is a safety unit. If the plug cannot be inserted into the socket, the socket must be fixed by a qualified electrician, to maintain the safety function of the plug and the protection it provides.

b) Keeping apart from the live circuit

Operators are not allowed to disassemble instrument protection, replace components or make internal adjustment without authorization. If necessary, it must be completed by certified professional maintenance personnel. It is forbidden to replace components when power supply is connected.

c) Use of power supply

Before connecting to the mains and switching the instrument on, make sure the voltage is consistent with the instrument's requirements (220V~, 50Hz). The rated load for the power socket must not be less than the instruments maximum load of 1000VA

d) Power wire

The instrument is supplied with a power cable, which should be used at all times when operating the instrument. If the power cable is damaged it should be replaced with a new one of the same specifications. When using this instrument, do not press anything on the power cord and do not put the power cord in the traffic area. If the power cord comes in contact with the hot surface, add protection to prevent the insulation from being damaged.

e) Insertion and withdrawal of power cable

At insertion and withdrawal of power cable, the back of the plug shall be firmly held with the hand. The plug must be completely and tightly inserted into the socket and must not be removed by pulling the cable.

f) Placement of instrument

This instrument should not be positioned in a place where it is difficult to cut off the power supply.

This instrument should be placed in a low relative humidity (RH) and low dust environment well away from any water (e.g. sinks and pipes). The room should be well ventilated, and free from corrosive gas, or interference from a strong magnetic field. The instrument should not be placed in a wet or dusty location, but should be positioned on a sturdy, level and secure table appropriate to its weight.

The openings on this instrument are for ventilation purposes and, in order to avoid overheating of the instrument, they shall not be blocked or covered. When a single set or several sets of instruments are used, the space between its ventilation openings and the nearest object should not be less than 30cm. When multiple instruments are used at the same time, the distance between each instrument should not be less than 50cm.

Excessive environmental temperature would impair the test performance and could result in failure of the instrument. This instrument should not be used in locations subjected to direct sunlight or strong radiation or light source, as this could impair the fluorescence detection. The instrument should be kept away from hot gas, furnaces, stoves and all other sources of heat.

When switched off, the power should also be switched off. If the instrument is not going to be used for a long time, the power should be switched off, the power plug withdrawn, and the instrument covered with soft cloth or plastic film to prevent dust or foreign bodies entering the machine.

g) Notes during operation

During test, cares shall be taken to prevent liquid from dropping onto the instrument. The castoff used in test, such as consumables, reagent, and so on, should be treated as require, and should not be thrown away or poured.

During test, if there are hazardous substances, user must be trained before using.

Hazardous substances, which has been used, should be coped with and saved according to direction for use.

User, who operates the instrument, must be trained and has relevant quantification.

Caution:	 If any of the following should occur, you should immediately switch off the power supply, withdraw the power plug from the power socket, and contact the supplier to effect a repair: Repairs can only be carried out by suitably qualified engineers. Liquid gets inside the instrument. The instrument is rained upon or water is spilled over it. The instrument works abnormally, generates abnormal sound/s, or generates a strange odor. The instrument is dropped, or its casing is damaged. There is an obvious change in the function of the instrument.
Caution:	When you deal with potential contagious matter such as body's tissue sample or reagent, which is likely to touch skin, protecting glove or other protecting measures need to be used.

h) Re-transport

If the instrument needs to be transported again, the detection hole position and the instrument should be thoroughly cleaned and sterilized with ultraviolet light before transportation.

i) Warning Sign

Warning identification

DANGER!	\wedge	Area with the mark pasted on the instrument shall avoid improper use and be careful of danger.
SCALDING!		Area with the mark pasted on the instrument causes high temperature and is scalding during use.
BIOHAZARD		Area with the mark pasted on the instrument will caused biohazard during use.
PROTECT CONDUCTOR TERMINAL		PROTECT CONDUCTOR TERMINAL is near to the area with the mark pasted on the instrument

	When HOT SURFACE! warning mark is pasted in the instrument, it means that the metal part (module) near this sign shall not be touched with any part of the body during the operation of the instrument or a period of time immediately after the operation of the program to avoid burns!
Warning:	The operator may come into contact with or remain substances harmful to the organism or infectious substances during the use of the instrument. The operator should be aware of its hazards and strictly comply with the relevant provisions of the national PCR laboratory in accordance with the use environment of the instrument. Operators need to be trained and qualified.

j) Signs on the external packaging

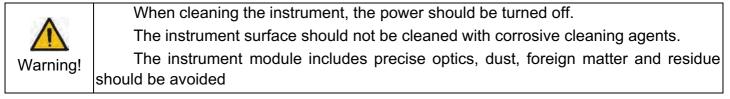
., .		-
Up	<u>11</u>	Indicates that the correct position of the transport package is vertical upward.
Fragile	Ţ	The transport packages contain fragile goods, so they should be handled with care.
Keep dry	Ť	The package should be rainproof.
The limit of stacking layer	2	Maximum stacking layer of the same package is 2.
Temperature limit	-5704	Indicates that the temperature limit of transportation package should be - 20 °C to 55 °C.

13 Maintenance of Instrument

If there is any stain on the surface of the instrument, it can be cleaned with soft cloth and cleaning paste.

Heat conducting oil medium is not allowed in the module hole of this instrument.

The drawer should be closed in time after the normal storage and use of the instrument to prevent dust accumulation.



14 After-sales Services

The warranty content and scope are shown in the warranty sheet.

After unpacking, immediately check the goods against the packing list. If any parts are damaged or missing, please contact the supplier immediately. After qualification of acceptance, complete the product acceptance sheet and send (or fax) the copied sheet to the supplier for filing and maintenance. Before first use of the product, the user shall complete the instrument registration form and send to SIA Biosan, for product registration. After unpacking, the packing box and packing materials should all be kept in case it is required for transportation or service in the future. In the event that a repair is required, the instrument must be disinfected before being sent to the repair department. It is recommended that service personnel disinfect the instrument on receipt in the service department, before commencing any scheduled work. SIA Biosan, shall bear no liability in the event of any damage to the instrument occurring during transportation to the service department due to improper packaging.

Chapter 2 General description

This chapter mainly describes the uses, characteristics, specifications, performance parameters and software functions of 96-well real-time quantitative PCR instrument.

2 1 Scope of Application

The product is based on the principle of fluorescence quantitative polymerase chain reaction (PCR) and is used together with the supporting detection reagent. It is used for qualitative and quantitative detection of the targets in DNA/RNA samples from human nucleic acid samples, including pathogens and human genes.

2 2 Features

- New, user-friendly operation, operation interface, smooth operation
- Fluorescence real-time detection method is adopted to realize simultaneous amplification and detection in the same tube without post-processing
- Advanced thermoelectric refrigeration technology ensures super high-speed heat cycle system heating, fast and stable refrigeration
- Multi-point temperature control ensures higher temperature uniformity of 96 sample wells
- 6 partition temperature control function
- Stable and accurate gradient functions of 1 ~ 36°C ensure optimized PCR conditions
- the thermostatic function of SOAK allows the PCR reagent to be stored at low temperature
- Long life LED excitation light source requires no maintenance
- Advanced fiber conduction technology makes photoelectric detection system more sensitive and reliable
- Real-time dynamic monitoring of the whole process of PCR amplification was carried out Realtime dynamic monitoring of the whole process of PCR amplification was carried out
- Wide linear range, initial DNA copy Numbers up to 10 orders of magnitude do not require gradient dilution

- There is no need to turn on the PCR reaction tube, which can avoid product contamination during and after PCR and ensure the accuracy of the results
- Multi-color fluorescence detection in a single reaction obtains more information
- The application of thermal cover technology has realized the oil-free operation of PCR
- Chinese language interface, flexible program setting, comprehensive analysis and reporting functions, all parameters can be stored
- Multiple or single sample reports can be printed
- The automatic, accurate and timely service of remote network provides the most advanced technical support for the 96-well quantitative PCR instrument

2 3 Product Structure and Composition

This product is mainly composed of control parts, thermal cover parts, thermal cycle parts, photoelectric parts, transmission parts, power parts and software (V1).

Model **BioQuant-96** 96x0.2ml; suitable for single tube, 8 row tube and 96-well plate (no skirt board, Sample size half skirt board) F2 F4 F5 F6 **Detection channel** F1 F3 FAM, SYBR VIC, HEX, ROX, Cy5 Cy5.5 Applicable dye Optional Green I TEXAS-RED | Quasar -670 | Quasar -705 TET, JOE, Module operating 4°C~99.9°C (Minimum setting scale:0.1°C) temperature range Average heating rate When rising from 50°C to 90°C, it should be no less than 3.5°C/s From 90°C to 50°C, should not be less than 3.0°C/s Average cooling rate Module temperature Should be no greater than 0.1 °C control accuracy Temperature uniformity The temperature difference is within ±0.3°C Temperature control 105°C±5°C accuracy of hot cover Fluorescence intensity test CV 3% repeatability Mode of operation Continuous operation Operating system Windows7/Windows8/Windows10 100-240V~ 50Hz 1000VA Input power 490mmx290mmx391mm **Overall dimensions** Weight 28kg

2 4 Performance Parameters

2 5 Production Date and Service Life

Production date: see label for details. Product shelf life: 5 years

2 6 Function Overview of Supporting Software

- Parameter setting function (including temperature, time, cycle number, rise and drop rate, detection channel selection);
- Note function of text content;
- Sample data recording function (sample number, sample name, sample data);
- File operation display function (PCR thermal cycle data display, fluorescence detection data display, real-time display of various data during the operation of the instrument);
- Test data analysis function (analysis function can be used alone without instrument connection);

- Analysis results output function (one can output the analysis results to other types of files, such as: EXCEL, TXT files; be able to query and print the analysis results; one can change the print format and select the print item);
- File storage function (setting data, running data, analysis results);
- Fault protection and alarm function.



The above software functions are for reference only, without prior notice to the change of software functions

27 Product Software Version

Release version of this product software: V1

Chapter 3 Preparations

This chapter mainly introduces the use, transportation and storage conditions, structure composition, software installation/unloading, and preparation before starting up the BioQuant-96fluorescence quantitative PCR instrument.

31 Transportation and Storage Conditions of the Instrument

Ambient temperature: -20°C~55°C Relative humidity: 80 % Atmospheric pressure: 75kPa~106kPa.

3 2 Normal Working Condition

Ambient temperature: 10°C~30°C Relative humidity: 70 % Atmospheric pressure: 100-240V~ 50Hz 1000VA



Before using the instrument, please confirm whether the Working Conditions meet the above requirements. Note that the power socket is a socket with reliable grounding.

3 3 Preparation before the Instrument is Switched on

Power cord connection: the power cord attached to the instrument should be used. When connected, the instrument power switch should be in the closed state. After connecting, check whether the power cord and the instrument socket are too loose, if too loose, it should be replaced.



The attached power cord is reliable but may cause the connection to be too loose after several unplugging. In this case, the power cord should be replaced. The power cord should be replaced with the same specification.

The power cord should be replaced with the same specifi

3 4 Installation of Supporting Software

3.4.1. Selection of a Computer System

- System environment
- Operating system: Windows XP/Windows Vista/Windows7/Windows8
- Operating environment:.Net Framework 4.0
- Other software: PDF reader
- Minimum configuration:

- Processor: Intel Core i3
- Memory: 2GB
- Hard disk: 10GB

3.4.2. BioQuant-96 Software Installation

- Double click PcrServer installation file (PcrServerSetup.exe) ▶ Display the installation interface (select the installation language) ▶ Set installation path ▶ install
- Double click BioQuant-96installation file (BioQuant-96DiagnosisSetup.exe) ► Display the installation interface (select the installation language) ► Set installation path ► install

3.4.3. BioQuant-96 Software Uninstall

- Control panel ►Add/remove programs► PcrServer ►uninstall
- Control panel ►Add/remove programs►BioQuant-96►uninstall

Chapter 4 Start

4 1 Check before Starting

Before putting in the power plug and powering up the detection system, the following contents should be confirmed:

- Whether the power supply is consistent with the voltage required by the system;
- Make sure the power cord plug is correctly and reliably plugged into the power socket;
- Whether the surrounding working environment and equipment placement conditions meet the requirements.

42 Boot

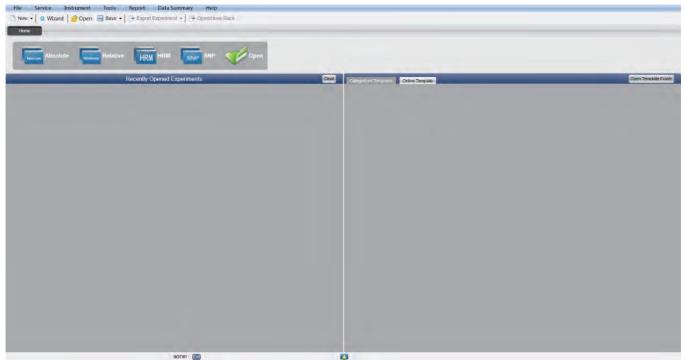
Step 1: turn on the power switch of the backboard of the instrument;

Step 2: after entering the operating system, start the BioQuant-96 real-time fluorescence quantitative PCR instrument.

To start the software, click "BioQuant-96" on the start/program menu or double click on the shortcut icon on the desktop.

4 3 Software Start-up Interface

Double click any software shortcut icon of the BioQuant-96 real-time quantitative PCR instrument on the desktop, the corresponding start-up screen will appear.



The system window consists of the menu bar, the toolbar and the main page.

Chapter 5 Absolute Quantification

5 1 Design Experiment

This section describes how to design a new absolute quantification experiment and covers inspection item setting, sample information setting, reaction plate setting and Program Setting.

5.1.1. Create New Absolute Quantitative Experiment

a) Click build Absolute on the Home interface and this will open the absolute quantitative experiment window.

[The Abs	olute quantitative experiment can be also created by:
	\wedge	Clicking	File ► New ► Absolute on the menu bar
	Note:	Clicking	New ► Absolute on the toolbar

- 5.1.2. Detector Setting
- a) Click Setup ► Detector



b) Input experiment properties. Input the experiment name, user name and any comments in the experiment properties column.



- c) Detector Setting. Set up the Detector, Assay, Dye and Color. If necessary, the user can also:
 - a. Add detector
 - b. Add assay
 - c. Delete detector
 - d. Delete assay

e. Add the detector in the Detector Library: click Add Detector From Library ► the Detector Library window will pop up ► select the Detector in the window to be added. The user can also conduct Add, Modify and Delete operations in the item library.

C Detecto	or Library							
Add	Modify	Delete						
Detector	Reporter	Color	Master Mix	Primer	Probe	Supplies	Batch Number	
Target1	FAM	1						
Target2	FAM	1						
							-	
							Sele	ct Close

Set up the detector, set up the assay, set up the dye name and set up the color

Detectors	Add Detector	Add Assay	Delete Detector	Delete Assay	Add	Detector From Li	brary
Detector	Reporter	Color	Master Mix	Primer	Probe	Supplies	Batch Number
Target1	FAM	-					
Target2	FAM						

d) 4. Set up reference dye

•

.



- 5.1.3. Sample Information Setting
- a) Click Setup ► Sample



- b) Add sample information
 - Itemized addition: input ID in Sample ID ► press Enter ► add information for one sample
 - Batch addition: click Batch Add ► the Batch Add window will pop up

🤻 Batch Add	X
Start Sample Id a	Sample Count 5
	Add Cancel

- c) Delete sample information
 - Itemized deletion: select one sample ► click Delete ► delete the selected sample information
 - Delete all: click Clear All ► delete all sample information
- d) Import/Export sample information
 - Click Import Sample Info ► the File Import window will pop up ► import sample information file in CSV format
 - Click Export Sample Info ► the Save As window will pop up ► the sample information will be exported in CSV file format

Sample ID		Batch Add		Delete Clea	ar All Import Samples	s Info Export Samples Info
Set up sample	informat	tion				
	Samples			-	-	
	Sample Id	Color	Sample Name	Sampling Time	Submitting Date	
	al		Sample1	2013-12-06	2013-12-06	
	a2		Sample2	2013-12-06	2013-12-06	
	a3		Sample3	2013-12-06	2013-12-06	
	a 4		Sample4	2013-12-06	2013-12-06	
	a5		Sample5	2013-12-06	2013-12-06	

- 5.1.4. Reaction Plate Setting
- a) Click Setup ► Plate

e)

Setup	۲
Detector	0
Sample	0
Plate	0
Program	0

- b) Set up the inspection criteria of the reaction plate
- Select reaction plate well site: click Reaction Plate well Site. The user can also right click the reaction plate well site to Copy, Paste and Add New Detector. Adding a new detector will open the Edit Detector Library window.

		ibrary					
tector Nam	e: Target3						
Add	Eames						
Reporter	Color	Master Mix	Primer	Probe	Supplies	Batch Number	
AM	-						

Select Assay item and modify the property, concentration and concentration unit.

Property	Name	Concentration	Concentration unit
U	Unknown	NO	Copies/ml
S	Standard	YES	IU/ml
z	Negative	NO	Fg/ml
P	Positive	NO	Pg/ml

- Select a sample and the list displayed will change
- Zoom-In, Zoom-Out and reset the reaction plate.
- Sample Auto Arrange
- Check Well Table

rget 1 - FAM(G 🕕	perty Con.				Zoom	In Zoom Out	Reset		Sample A	uto Arrang	e		
	-				3 4		6		8	9	10	11	
	-												
Concentration Unit	copies/ml	Α	U Targe										
Samples Show (Columns: Sample Nam												
Sample ID	Sample Name	B	100										
<mark></mark> a1	Sample 1												
a 2	Sample 2												
a 3	Sample 3	с											
a4 a5	Sample 4 Sample 5												
a)	Sample 5		1000										
		D	100										
		Е											
			1.000										
		F											
			100										
		G											
		G											
		G											
		G											
		G	1	1		1	2	-	-	-	-	-	1
	Plate	G H Setup	The second s	Tab	le	1	2	-	-		-	-	1
	Plate #	And the second second second	Well		Contraction of the local division of the	Property	Dye	Con.	-	-	-		1
	and the second se	And the second second second	Well	Id	Assay Item	Property	Dye	Con.	1	ì	-	-	1
	#	Well	Well	Id	Contraction of the local division of the			Con.	-	ì	-	-	
	# 1 2	Well A01 A02	Well	Id	Assay Item			Con.		-			
	# 1 2 3	Well A01 A02 A03	Well	Id	Assay Item			Con.	-	-			
	# 1 2 3 4	Well A01 A02 A03 A04	Well	Id	Assay Item			Con.		-			
	# 2 3 4 5	Well A01 A02 A03 A04 A05	Well	Id	Assay Item			Con.		0			
	# 2 3 4 5 6	Well A01 A02 A03 A04 A05 A06	Well	Id	Assay Item			Con.		0			
	# 2 3 4 5 6 7	Well A01 A02 A03 A04 A05 A06 A07	Well	Id	Assay Item			Con.		8			
	# 2 3 4 5 6 7 8	Well A01 A02 A03 A04 A05 A06 A07 A08	Well	Id	Assay Item			Con.		8			
	# 2 3 4 5 6 7 8 9	Well A01 A02 A03 A04 A05 A06 A07 A08 A09	Well	Id	Assay Item			Con.					
	# 2 3 4 5 6 7 8	Well A01 A02 A03 A04 A05 A06 A07 A08	Well	Id	Assay Item			Con.					

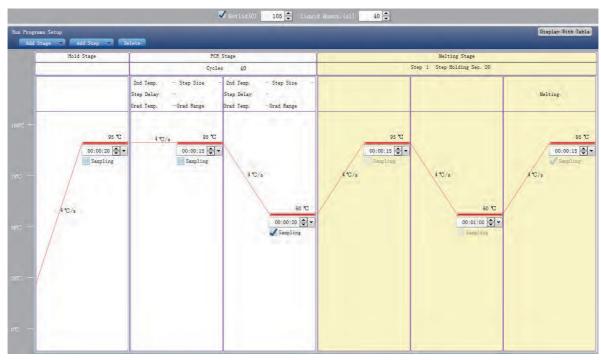
5.1.5. Program Setting

a) Click Setup ► Program

Setup	•
Detector	0
Sample	0
Plate	0
Program	0

- b) Run Program Setup
 - Create new stage: the user can create a new Hold Stage, Cycling Stage or Melting Stage. The user can also click Add Stage directly and the default will be creating a new Cycling Stage.
 - Create new step: the user can create a new step Before or After the currently selected step. The user can also click Add Step and the default will be adding a new Step at the end of the currently selected stage or after the currently selected step.
 - Delete: the user can delete the currently selected step or stage

- Display form: click Display with Table ► new window will pop up ► the details of the current experiment will be displayed in a table.
- Set up the experimental data of the hold stage, cycling stage and melting stage melting section
- Set up the hot-lid temperature and liquid volume



5 2 Prepare for Reaction

The user should make full preparations prior to the experiment:

- Ensure appropriate materials are used.
- Ensure the arrangement of the PCR reaction plate is consistent with the setting layout of the reaction plate in Section 2.4.

5 3 Run the Experiment

This section describes how to run/operate the experiment after loading the reaction plate and includes how to operate the fluorescence curve, the temperature curve and programming

Caution: Before starting the machine, please confirm that you have completed the inspection before starting the machine and carry out the correct operation according to the starting steps. Turn on the system, and the system is in running state.

5.3.1. Preparation for reagent sample

Prepare reagent: BioQuant-96 real-time fluorescence quantitative PCR instrument adopts 0.2ml centrifuge tube to place reagent samples, and 10µl~50µl is recommended for the best reaction system for samples.

The instrument allows the use of standard single tube, rack tube, skirt-free plate and other types of top optical transparent tube.

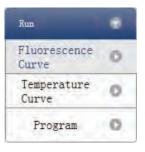
Centrifugal operation: Before placing reactions into the instrument, it is recommended that a short centrifugal spin is used to ensure that the reagent is at the bottom of the reaction tube and the reagent/sample mix is free from bubbles.

Placement of test tubes: if the number of samples is less than the number of holes in the module, try to distribute the sample tubes evenly in the holes of the module during the placement of test tubes, so as to ensure the smooth pressure of hot cover on the top of the tube during operation. Meanwhile, the load of the module is uniform, and the temperature change of each test tube is uniform.

	T	-
		Y
Correct	Incor	rrect
The sample is at the bottom of the PCR tube	Requires a greater spin speed	Requires a longer spin time

5.3.2. Run Fluorescence Curve

a) Click Run ► Fluorescence Curve



b) Click Start Run



- c) Operating confirmation. Modify hot-lid temperature and liquid quantity (sample volume).
- d) After it starts operating, the user can:
 - Skip the current stage
 - Add a cycle
 - Delete a cycle
 - Stop run

- e) Plot display setting
 - Assay item
 - Plot color



- 5.3.3. Run Temperature Curve
- a) Click Run ► Temperature Curve

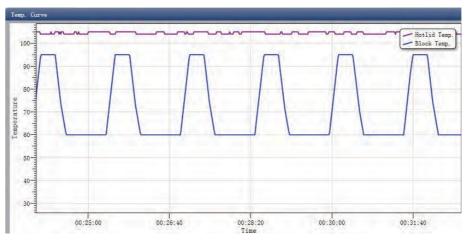
Run	0
Fluorescence Curve	0
Temperature Curve	0
Program	0

b) Click Start Run



c) Operating confirmation. Modify hot-lid temperature and liquid quantity (sample volume).

- d) After it starts running, the user can:
 - Skip the current stage
 - Add a cycle
 - Delete a cycle
 - Stop run



5.3.4. Program Setting

The user can only check the Program Setting but cannot make modifications.

5.3.5. Prompts which may occur during running:

- Hot-lid temperature sensor alarm prompt
- Sink temperature sensor alarm prompt
- Environmental temperature sensor alarm prompt
- Module temperature sensor alarm prompt
- Module sensor short-circuit or short-circuit alarm prompt

Caution: In case the temperature alarm displays during the running of a Program, the PCR detection system will terminate the current Program. The instrument should be switched off and then re-started.

54 Experiment Analysis

This section describes how to view the experiment analysis results after running an experiment and adjusting parameters for re-analysis.

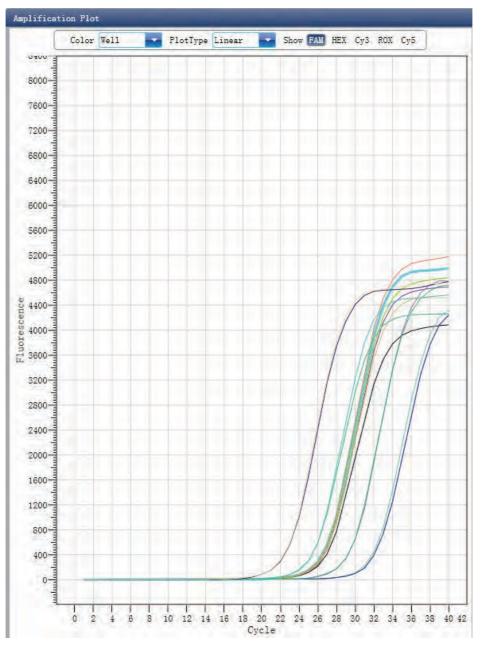
5.4.1. Check Results

- a) Check the Amplification Plot
 - Click Analysis ► Amplification Plot



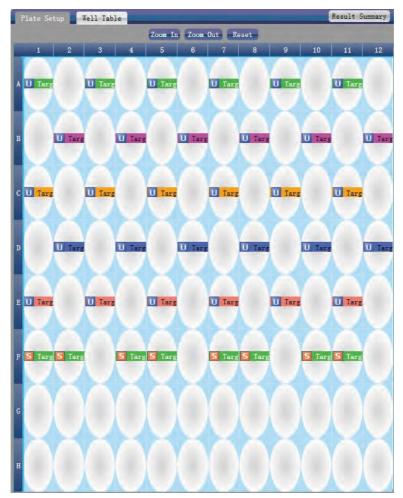
- Check the amplification curve
- Set up color
- Set up plot type

Set up show dye. When the background color of a dye name is blue, it will be displayed; while white indicates it will not be displayed.



•

- Check the reaction plate
- Select reaction plate well site and check corresponding well site curve. The default is all wells are selected
- · Zoom-In, Zoom-Out and reset the reaction plate
- Check well table
- Check results summary



- Set up assay
- Set up assay
- · Set up threshold
- Set up automatic baseline. When the threshold value is not automatic, the user cannot set up the automatic baseline



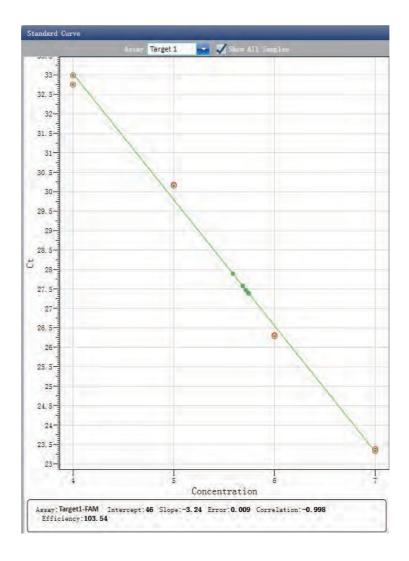
b) Check Standard Curve

Assay

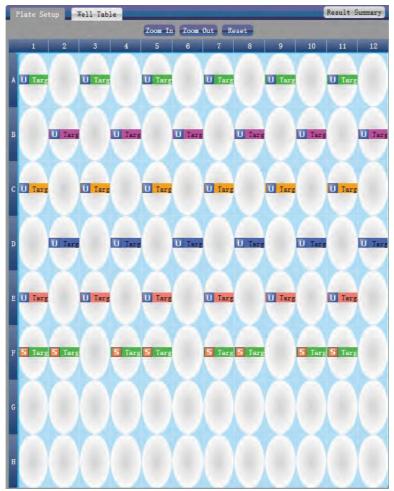
• Click Analysis ► Standard Curve



- Check standard curve
- Set up assay



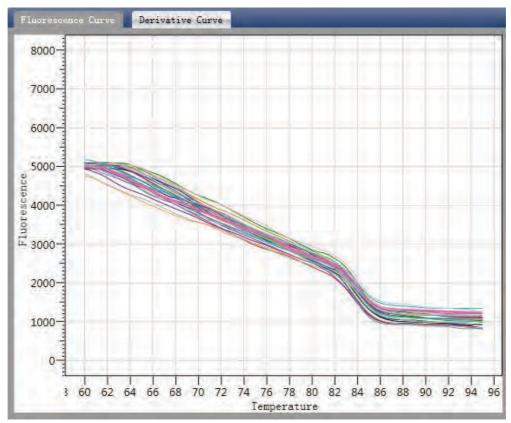
- Check the reaction plate
- Select reaction plate well site and check corresponding well site curve. The default is all wells are selected
- · Zoom-In, Zoom-Out and reset the reaction plate
- Check well table information
- Check results summary



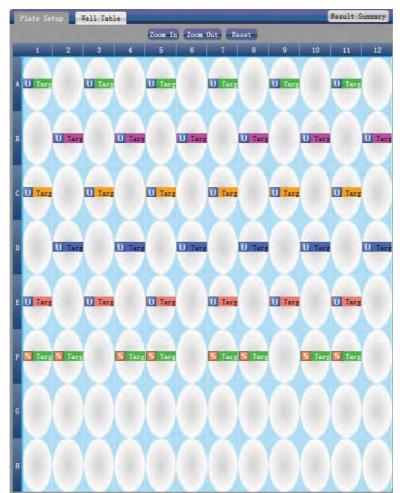
- c) Check Melting Curve
 - Click Analysis ► Melting Curve



- Check the melting curve
- Check the fluorescence curve
- Check the derivative curve
- Set up color



- Check the reaction plate
- Select reaction plate well site and check corresponding well site curve. The default is all wells are selected
- · Zoom-In, Zoom-Out and reset the reaction plate
- Check well table information
- Check results summary



- Set up assay
- Set up color



5.4.2. Adjusting Parameters and Re-analysis

- a) Click Analysis Settings ► the Analysis Settings dialog box will pop up
 - Adjust the start cycle and end cycle of the baseline
 - Adjust Ct analysis algorithm
 - Set up the use of S fitting
 - Set up the stage to use for Ct analysis
 - · Set up the automatic threshold value
 - Advanced setting
 - Standard curve setting

t Settings	dvanced Settin	gs Standard	Curve Settings	
The stage to use	for Ct analys	is: Stage 2		
The algorithm to	calculate Ct:	Baseline Thr	eshold 🔽 🔲 S	Fitting
Assay Item Larget1 - STBR	Threshold Auto	Start Cycle Auto	End Cycle Auto	target1 - SYER Auto Threshold Threshold: 293.41 Auto Enseline Start Cycle: 3 End Cycle: 15

5 5 Experiment Report

This section describes how to print an experiment report and covers designing of a report template and print settings.

5.5.1. Designing a Report Template

Click Report ► Report Template Editor ► the Report Designer window will pop up.

The report consists of controls and the user can add, modify and delete controls. Available controls include Static Text, Dynamic Text, Line, Static Image, Amplification curve and Quantification Analysis Results.

Available controls	Used controls		
E Common Co Static Te Dynamic Static In Line Amplifica	ext Text	[Hospital] [Report]	
Quantifi	cation Analysis Result	Name: [Name] Sex: [Sex] Age: [Age] HospitalNo.[HospitalNo.J
	rols ext Controls Text Controls	Test Item Test Result Reference Conclusion 5000	Implification Curve
		4000 -	
		4000	
		TU 3000 -	
Appearance			
Alignment	MiddleRight	1 ⁸ 2000 -	
BackColor	White		
] Border	Solid, 1, False, False, False		
Color	Black	1000	
Font	Tahoma, 8.25pt		
Text			
Data			
Tag	-	0 5 10	15 20 25 30 35 40 45 Cycle
Design DesignVisible	1-	Commences and the second secon	in the second se
Name	True:	Annual state design and state barriers and state and all	The strength of the second
Layout	Laberro	[Submitting Date] Report Date: [ReportDate] Tester: [Tester]	Checker: [Checker]
Location	93, 62	annannannan 27444444. Serier ann an a' sa	man and a construction of the second se
Padding	0, 0, 0, 0		
Size	100, 20		
Type	Label		
Text			
ext of the element	nt		

5.5.2. Print Setting

Click Report ► Print Template Setting ► the Print Template Setting window will open The user can set up the laboratory name, report name, reference value, tester, checker, amplification plot, default report template and paper size.

Template Setu	p	
Hospital		
Report		
Reference	100	
Tester		
Checker		
	Plot Setup lor © LineStyle	
Legend; 🔘 Co		
Print Setup -		
Legend: 🖲 Co Print Setup -	lor 🔘 LineStyle t Template default	
Legend: Co Print Setup Default Repor	lor 🔘 LineStyle t Template default	
Legend: () Co Print Setup Default Repor Paper Size A	lor O lineStyle t Template default	
Legend: Co Print Setup Default Repor Paper Size A Printer	lor OlineStyle t Template default i 1t Frinter	

5.5.3. Comprehensive Report

Click Report ► Consolidated Reports ► the Consolidated Report window will pop up

The Consolidated Report includes the basic information, sample information, amplification curve, standard curve, plate information, etc.

5.5.4. Report Printing

a) Click Report ► Report Print



- b) Report print setting
 - Set up report template
 - Print setting (please refer to 5.5.2)
 - Select items to print
 - Print preview
 - Print the report



5.5.5. QC Summary

a) Click Report ► QC Summary



b) Check the QC summary

Amp	olificatio	n Plot										QC Summary			
1.	Well		Pl	otType	e Line	ar	-	Show	FI F	2 F3	F4	Description	Value	Use	Result
-	्रा	1			1 Canada							Negative control with a Ct less than	38	1	
-	5000-	1							1	A		Positive control with a Ct greater than	30	1	
a 4	+000-							/	1	F	1	Unknown without a Ct	N/A	1	
Fluorescence	3000									11		Standard without a Ct	N/A	1	
171	2000 1000	1 0 A03	1 4 A04	1 8 405	1 12 1 406	6 2 Cyc		1 28 409	1 32 A10	36.	40 A12				
B01	B02	B03	A04 B04	A05	B06	B07	808 B08	809 B09	B10	B11	B12				
	DOT	203	DOI	000	Dec	201	500				and an other designs of the				
and the second second	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	L1Z				
C01 D01	C02 D02	C03 D03	C04 D04	C05 D05	C06 D06	C07 D07	C08 D08	C09 D09	C10 D10	C11 D11	C12 D12				
C01											and and and and and				
C01 D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12				
C01 D01 E01	D02 E02	D03 E03	D04 E04	D05 E05	D06 E06	D07 E07	D08 E08	D09 E09	D10 E10	D11 E11	D12 E12				

56 Data Export

This section describes how to export data and covers exporting to a database, Experiment Saving and exporting the experiment data to EXCEL.

5.6.1. Export to Database

Click Data Summary ► Export to Database ► the Save File dialog box will pop up ► save the exported database file

5.6.2. Experiment Saving

- a) Click Data Summary ► Archived Experiment Directory ► the Experimental archive storage directory window will pop up ► set up the storage path of file.
- b) Experiment Saving. Click Data Summary ► Archived Experiment ► export the saved experiment file. The suffix of the saved experiment file is.fqh

5.6.3. Export Experiment Data to EXCEL

Click Data Summary ► Export Experiment ► Export Experiment to Excel ► the experiment data will generate EXCEL file

5.6.4. Export Experiment Data to TEXT

Click Data Summary ► Export Experiment ► Export Experiment to Text ► the exported eprimet data will generate TEXT file

Chapter 6 Relative Quantitative

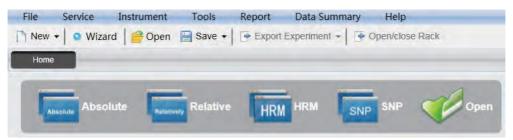
61 Design Experiment

This section describes how to design a relative quantitative experiment and covers creating new relative quantitative experiment, inspection item setting, sample information setting, reaction plate setting and Program Setting

6.1.1. Create New Relative Quantitative Experiment

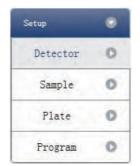
Click Relative on Home interface and create Relative Quantitative Experiment window. Relative quantitative experiment can be also created by:

- Clicking New ► Relative on the toolbar
- Clicking File ► New ► Relative on the menu bar



6.1.2. Detector Setting

a) Click Setup ► Detector



- b) Input Experiment Properties. Input the Experiment name, Username and Comment in the basic information column.
- c) Inspection Item Setting
 - Set up the Detector, Assay, Dye and Color.
 - Add detector
 - Delete detector
 - Add detector from library. The user can also conduct Add, Modify and Delete operations in the item library.

	R Detector	Library						
	Add Detector Target1	Modify Delete Reporter Color FAX	and the same of	imer Probe	Supplies	Batch Number	_	
	Target2	FAX						
etectors	Add Detector	Delete Dete	ector Add I	Detector From Libra	RV.	Select	Close	
Detector	Reporter	Color	Endogenous	Contro Master Mi	x Primer	Probe	Supplies	Batch Nur
Target1	FAM	·						
Target2	HEX							

d) Set up reference dye

Reference Dye		
VIC		

6.1.3. Sample Information Setting

a) Click Setup ► Sample



- b) Add sample information
 - Itemized addition: input ID in Sample ID ► press Enter ► add information for one sample.
 - Batch addition: click Batch Add ► the Batch Add window will pop up

Batch Add	×
Start Sample Id a	Sample Count 5 💌
	Add Cancel

- c) Delete sample information
 - Itemized deletion: select one sample ► click Delete ► delete the selected sample information
 - Delete all: click Clear All ► delete all sample information
- d) Import/Export sample information
 - Click Import Sample Info ► the File Import window will pop up ► import sample information file in CSV format
 - Click Export Sample Info ► the Save As window will pop up ► the sample information will be exported in CSV file format

ple informa	ition			
Samples			-	
Sample Id	Color	Sample Name	Sampling Time	Submitting Date
al		110000	2013-12-06	2013-12-06
a2			2013-12-06	2013-12-06
a3			2013-12-06	2013-12-06
a4	1	10	2013-12-06	2013-12-06
aõ	and the second second		2013-12-06	2013-12-06

- 6.1.4. Reaction Plate Setting
- a) Click Setup ► Plate

e)

•

Setup	۲
Detector	0
Sample	0
Plate	0
Program	0

b) Set up the inspection criteria of the reaction plate

Select reaction plate well site: click Reaction Plate well Site. The user can also right click the reaction plate well site to Copy, Paste and Add New Detector. Adding a new detector will open the Edit Detector Library window.

Detector Name:	Target3						
Reporter	Color	Master Mix	Primer	Probe	Supplies	Batch Number	
FAM S	-						

• Select inspection item and modify the property, concentration and concentration unit.

Property	Name	Concentration	Concentration unit
U	Unknown	NO	Copies/ml
S	Standard	YES	IU/ml Fg/ml
N	Negative	NO	Pg/ml

- Select a sample and the list displayed will change
- Zoom-In, Zoom-Out and reset the reaction plate.
- Sample Auto Arrange
- Check Well Table

- De	etectors				Plate	Setup	Well Tab	le	-			-				
Assa	y Item	Property	Con.					Zoom In	Zoom Out	Reset		Sample a	luto Arran	ige		
Targ	et1 - FAM(GOI)				1	. 2	3	4	5	6	7	8	9	10	11	12
Targ	etl - HEX(HRG)				A U TA	arge										
	oncentration U				В											
_ Sε	Sample ID	ow Columns Sample	Name	Name -	с											
	a1	Sample														
	a2	Sample														
	a3	Sample			D											
	a4	Sample														
	a5	Sample	1		E											
					F											
					G											
					н											
			and the second second	And in case of the local division of the loc	Statement of the local division of the local	Well		1000	tem P							

#	Well	Sample Id	Assay Item Target1	Property Unknown	Dye FAM	Con
1	A01		Target2	Unknown	HEX	
2	A02			O LINE IN MAR		
3	A03					
4	A04					
5	A05					
6	A06					
7	A07					
8	A08					
9	A09					
10	A10					
11	A11					
12	A12					

6.1.5. Program Setting

a) Click Setup ► Program



- b) Run Program Setup
 - Create new stage: the user can create a new Hold Stage, Cycling Stage or Melting Stage. The user can also click Add Stage directly and the default will be creating a new Cycling Stage.
 - Create new step: the user can create a new step Before or After the currently selected step. The user can also click Add Step and the default will be adding a new Step at the end of the currently selected stage or after the currently selected step.
 - Delete: the user can delete the currently selected step or stage
 - Display form: click Display with Table ► new window will pop up ► the details of the current experiment will be displayed in a table.
 - Set up the experimental data of the hold stage, cycling stage and melting stage melting section
 - Set up the hot-lid temperature and liquid volume

-	💙 Hot	flid(C) 105 🚔 Liquid Q	uant. (ul) 40 🚔	
Run Progr		elete		Display With Table
Ī	Hold Stage	PC	'R Stage	
		Cyc	les 40	
		2nd Temp Step Size Step Delay - Grad Temp Grad Range	- 2nd Temp Step Size Step Delay - Grad Temp Grad Range	
100°C —	95 °C 00:00:20 🔍	4 °C/s 95 °C 00:00:15 💭 Sampling		
50°C —	4 °C/2		60 °C 00:00:20 😴 Sampling	Y
250 — 070 —				

6 2 Prepare for Reaction

The user should make full preparations prior to the experiment

- Ensure appropriate materials are used.
- Ensure the arrangement of the PCR reaction plate is consistent with the setting layout of the reaction plate in Section 2.4.

6 3 Run the Experiment

This section describes how to run/operate the experiment after loading the reaction plate and includes how to operate the fluorescence curve, the temperature curve and programming

6.3.1. Run Fluorescence Curve

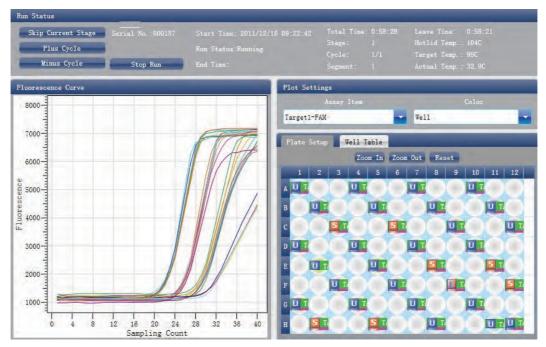
a) Click Run ► Fluorescence Curve



- b) Click Start Run
- c) Operating confirmation. Modify hot-lid temperature and liquid quantity (sample volume)

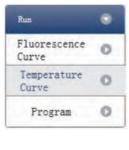
Start Rur

- d) After it starts running, the user can:
 - Skip the current stage
 - Add a cycle
 - Delete a cycle
 - Stop run
- e) 5. Plot display setting
 - Assay item
 - Plot color



6.3.2. Run Temperature Curve

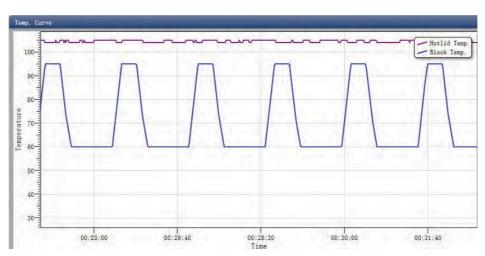
a) Click Run ► Temperature Curve



b) Click Run ► Start



- c) Operating confirmation. Modify hot-lid temperature and liquid quantity (sample volume)
- d) After it starts running, the user can:
 - Skip the current stage
 - · Add a cycle
 - Delete a cycle
 - Stop run



6.3.3. Program Setting

The user can only check the Program Setting but cannot make modifications.

64 Experiment Analysis

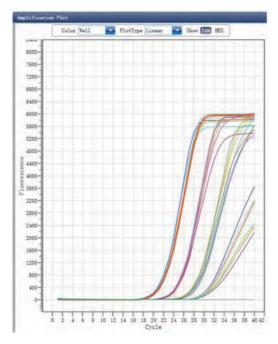
This section describes how to view the experiment analysis results after running an experiment and adjusting parameters for re-analysis.

6.4.1. Check Results

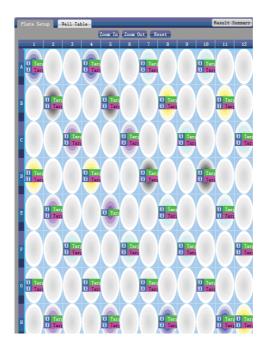
a) Check the Amplification Plot. Click Analysis ► Amplification Plot



- b) Check the amplification curve
 - Set up color
 - Set up plot type
 - Set up show dye. When the background color of a dye name is blue, it will be displayed; while white indicates it will not be displayed.

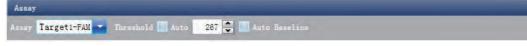


- c) Check the reaction plate
 - Select reaction plate well site and check corresponding well site curve. The default is all wells are selected
 - · Zoom-In, Zoom-Out and reset the reaction plate
 - Check well table
 - Check results summary



- d) Set up assay
 - Set up assay
 - Set up threshold

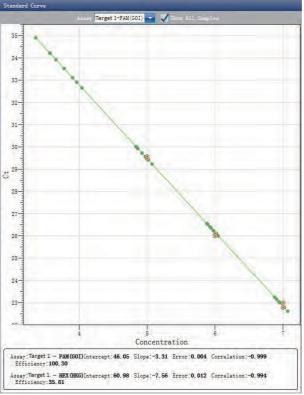
• Set up automatic baseline. When the threshold value is not automatic, the user cannot set up the automatic Baseline



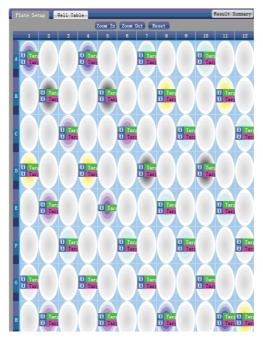
e) Check Standard Curve. Click Analysis ► Standard Curve



f) Check standard curve. Set up assay



- g) Check the reaction plate
 - Select reaction plate well site and check corresponding well site curve. The default is all wells are selected
 - · Zoom-In, Zoom-Out and reset the reaction plate
 - Check well table
 - Check results summary



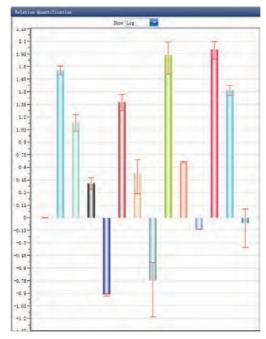
6.4.2. Check Relative Quantification.

a) Click Analysis ► Relative Quantification



b) Check relative quantitative

• Set up the show type



Check the analysis results

Result									
Sample Id	Assay Item	Property	GOI Aver. Con.	GOI Con. SD	HKG Aver. Con.	HKG Con. SD	Max	Min	Aver.
	target1	Comparison	7.99e+03	0.00e+00	1.37e+04	0.00e+00	1	1	1
01	target1	Unknown	1.10e+07	1.05e+06	1.93e+05	1.48e+04	63.92	49.95	56.94
02	target1	Unknown	8.48e+05	1.31e+05	6.14e+04	9.61e+03	16.84	10.78	13.81
03	target1	Unknown	9.40e+04	1.40e+04	3.67e+04	2.06e+03	2.97	2.15	2.56
04	target1	Unknown	3.72e+03	2.66e+01	3.08e+04	8.82e+02	0.12	0.12	0.12
06	target1	Unknown	9.44e+05	1.43e+05	3.95e+04	6.33e+03	29.18	18.63	23. 9
07	target1	Unknown	9.33e+04	3.53e+04	2.73e+04	5.86e+03	4.9	1.93	3.41
08	target1	Unknown	4.14e+03	2.62e+03	2. 33e+04	8.42e+02	0.29	0.07	0.18
09	target1	Unknown	8.44e+06	5.34e+05	9.71e+04	3.93e+04	122.5	51.28	86.89
11	target1	Unknown	7.21e+04	1.20e+03	1.57e+04	2.97e+02	4.7	4.47	4.58
12	target1	Unknown	1.10e+04	0.00e+00	1.51e+04	0.00e+00	0.73	0.73	0.73
13	target1	Unknown	8.12e+06	8.33e+05	8.05e+04	1.74e+04	125.02	76.77	100.8
14	target1	Unknown	8.25e+05	6.25e+04	2.50e+04	2.87e+03	37.59	28.5	33. 05
16	target1	Unknown	6.87e+03	3.28e+03	8.01e+03	4.28e+02	1.27	0.45	0.86

6.4.3. Adjust Parameter Reanalysis

Click Analysis Settings ► the Analysis Settings dialog box will pop up

- Adjust the start cycle and end cycle of the baseline
- Adjust Ct analysis algorithm
- Set up the use of S fitting
- Set up the stage to use for Ct analysis
- Set up the automatic threshold value
- Advanced setting
- Standard curve setting
- Relative quantification setting

The stage to use for Ct analysis: Stage 2				Standard	vanced Setting	t Settings Ad
target1 - SYBR target1 - SYBR 230.6 Auto Auto target1 - HEX Auto Auto Auto		1.0		: Stage 2	for Ct analysi	he stage to use
sarget1 - HEX Auto Auto Inreshold Threshold target1 - HEX Auto Auto Inreshold 230.6		S Fitting	shold	Baseline Thre	calculate Ct:	he algorithm to
target1 - HEX Auto Auto Auto Threshold: 230.6				AND LOCAL STREET, SALES	Fore experience	
	6 •		Contraction of the second s	1980 S 79 10	1000 M	and the second

6 5 Experiment Report

This section describes how to print experiment report and covers report template designing and print setting.

6.5.1. Comprehensive Report

Click Report ► Consolidated Reports ► the Consolidated Report window will pop up. The Consolidated Report includes the basic information, sample information, amplification curve, standard curve, plate information, etc.

6.5.2. QC Summary

a) Click Report ► QC Summary



b) Check the QC summary

	plificatio	n Plot										QC Summary			
	Color	Well		- P	otTyp	e Line	ar	- 3	Show	EI F	2	Description	Value	Use	Result
-	3000-T		-								4	Negative control with a Ct less than	38	1	
	7000											Positive control with a Ct greater than	30	V	
0	5000-		-					1	-		2	Unknown without a Ct	N/A	1	项目1-FAM:A01, A
Fluoresce	5000 4000 3000 2000							1	1	T/	5	Standard without a Ct	N/A	1	项目1-FAM:CO3,C
	0-	1	1	1 8 1	1			1 28	1 32	1 36	1 40				
101	107	102	-			Сус	-	100			447		_		
	A02	A03	A04	A05	A06	A07	A08	A09	A10 B10	A11 511	A12 B12		_		_
301	B02	B03	A04 B04	A05 B05	A06 B06	A07 B07	-	B09	A10 B10 C10	B11	A12 B12 C12		-	_	-
B01 C01			A04	A05	A06	A07	A08 B08		B10		B12				-
B01 C01 D01	B02 C02	B03 C03	A04 B04 C04	A05 B05 C05	A06 B06 C06	A07 B07 C07	A08 B08 C08	B09 C09	B10 C10	B11 C11	B12 C12			_	
501 C01 D01 E01	B02 C02 D02	B03 C03 D03	A04 B04 C04 D04	A05 B05 C05 D05	A06 B06 C06 D06	A07 B07 C07 D07	A08 B08 C08 D08	B09 C09 D09	B10 C10 D10	B11 C11 D11	B12 C12 D12		_		
A01 E01 D01 E01 F01 G01	E02 C02 D02 E02	803 C03 D03 E03	A04 B04 C04 D04 E04	A05 B05 C05 D05 E05	A06 B06 C06 D06 E06	A07 B07 C07 D07 E07	A08 B08 C08 D08 E08	B09 C09 D09 E09	B10 C10 D10 E10	B11 C11 D11 E11	B12 C12 D12 E12				

6 6 Data Export

This section describes how to export data and covers exporting to a database, Experiment Saving and exporting the experiment data to EXCEL

6.6.1. Export to Database

Click Data Summary ► Export to Database ► the Save File dialog box will pop up ► save the exported database file

6.6.2. Experiment Saving

- a) Click Data Summary ► Archived Experiment Directory ► the Experimental archive storage directory window will pop up ► set up the storage path of file
- b) Experiment Saving. Click Data Summary ► Archived Experiment ► export the saved experiment file

The suffix of the saved experiment file is.fqh

6.6.3. Export Experiment Data to EXCEL

Click Data Summary ► Export Experiment ► Export Experiment to Excel ► the experiment data will generate EXCEL file

6.6.4. Export Experiment Data to TEXT

Click Data Summary ► Export Experiment ► Export Experiment to Text ► the exported epeinet data will generate TEXT file

Chapter 7 SNP

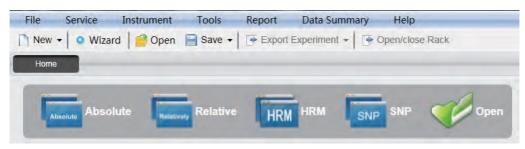
7 1 Design Experiment

This section describes how to design an SNP experiment and covers creating a new SNP experiment, inspection item setting, sample information setting, reaction plate setting and Program Setting.

7.1.1. Create SNP Experiment

Click SNP on Home interface and create SNP Experiment window. An SNP experiment can be also created by:

- Clicking New ► SNP on the toolbar
- Clicking File ► New ► SNP on the menu bar



7.1.2. Detector Setting

a) Click Setup ► Detector

Setup	
Detector	0
Sample	O
Plate	0
Program	0

b) Input basic information. Input the experiment name, username and any comments in the experiment properties column.

Experiment Prop	erties	the second s	
Experiment Name:	20111117_Experiment	remark	
	user		

- c) Inspection Item Setting. Set up the Detector, Allele, Dye and Color. If necessary, the user can also:
 - Add Detector
 - Delete Detector
 - Add the Detector in the Detector library: click Add Detector from Library ► the Detector Library window will pop up ► select the Detector on the window to be added. The user can also conduct Add, Modify and Delete operations in the item library.

Detector Allele Reporter Color Master Mix Primer Probe Supplies Batch Number Target1 Allele1 FAM Image: Color Image: Color	Add	Modify	Delete						
Allele2 HEX Farget2 Allele1 FAM	Detector	Allele	Reporter	Color	Master Mix	Primer	Probe	Supplies	Batch Number
Target2 Allele1 FAM	Target1	Allelel	FAM	1					
		Allele2	HEX	1	100				
AlleleZ HEX	Target2	Allele1	FAM	1	0				
		Allele2	HEX		1 Participant				

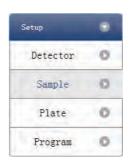
Set up the item name, set up the dye name and set up the color

Detectors	Add Detector	Delete Detector	Add	Detector From Libra	ary			
Detector	Allele	Reporter	Color	Master Mix	Primer	Probe	Supplies	Batch Number
Target1	Allele1	FAM						
	Allele2	HEX	-					

d) Set up reference dye

Reference Dye
VIC 💽

- 7.1.3. Sample Information Setting
- a) Click Setup ► Sample



- b) Add sample information
 - Itemized addition: input ID in Sample ID ► press Enter ► add information for one sample
 - Batch addition: click Batch Add ► the Batch Add window will pop up

Batch Add	×
Start Sample Id a	Sample Count 5
	Add Cancel

- c) Delete sample information
 - Itemized deletion: select one sample ► click Delete ► delete the selected sample information
 - Delete all: click Clear All ► delete all sample information

- d) Import/Export sample information
 - Click Import Sample Info ► the File Import window will pop up ► import sample information file in CSV format
 - Click Export Sample Info ► the Save As window will pop up ► the sample information will be exported in CSV file format

Sample ID		Batch Add		Delete Clear	All Import Samples Info Export Samples Info
Set up sample	e informa	tion			
	Samples				
	Sample Id	Color	Sample Name	Sampling Time	Submitting Date
	al		Sample1	2013-12-06	2013-12-06
	a2		Sample2	2013-12-06	2013-12-06
	a3		Sample3	2013-12-06	2013-12-06
	a4		Sample4	2013-12-06	2013-12-06
	a5	10	Sample5	2013-12-06	2013-12-06

7.1.4. Reaction Plate Setting

a) Click Setup ► Plate

e)

Setup	
Detector	0
Sample	0
Plate	0
Program	0

- b) Set up the inspection criteria of the reaction plate
 - Select reaction plate well site: click Reaction Plate well Site. The user can also right click the reaction plate well site to Copy, Paste and Add New Detector. Adding a new detector will open the Edit Detector Library window.

etector Nar	ne: Target2						
Allele	Reporter	Color	Master Mix	Primer	Probe	Supplies	Batch Number
Allelel	FAM	-					
Allele2	HEX	-					

• Select inspection item and modify the property, concentration and concentration unit.

Property	Name	Concentration	Concentration unit
U	Unknown	NO	
Z	Negative	NO	Copies/ml
1	Positive Allelic gene 1	NO	IU/ml Fg/ml
2	Positive Heterozygous	NO	Pg/ml
22	Positive Allelic gene 2	NO	

- Select a sample and the list displayed will change
- Zoom-In, Zoom-Out and reset the reaction plate.
- Sample Auto Arrange
- c) Check Well Table

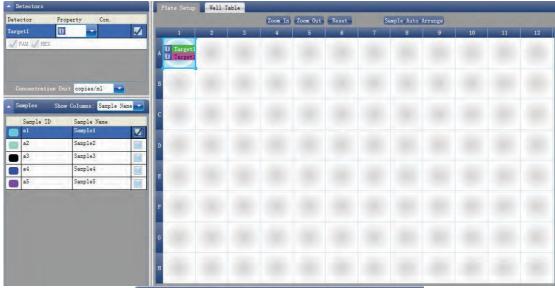


Plate	Setup	Weli Ta	ble		
#	Well	Sample Id	Assay Item Target1	Property Unknown	Dye FAM
1	A01	al	Target1	Unknown	HEX
2	A02				
3	A03				
4	A04				
5	A05				
6	A06				
7	A07				
8	A08				

7.1.5. Program Setting

a) Click Setup ► Program



- b) Run Program Setup
 - Create new stage: the user can create a new Hold Stage, Cycling Stage or Melting Stage. The user can also click Add Stage directly and the default will be creating a new Cycling Stage.
 - Create new step: the user can create a new step Before or After the currently selected step. The user can also click Add Step and the default will be adding a new Step at the end of the currently selected stage or after the currently selected step.
 - Delete: the user can delete the currently selected step or stage
 - Display form: click Display with Table ► new window will pop up ► the details of the current experiment will be displayed in a table.
 - Set up the experimental data of the hold stage, cycling stage and melting stage melting section
 - · Set up the hot-lid temperature and liquid volume

	🗸 Hor	lıd(C) 105 🊔 Liquid Qu	ant. (ul) 40 🚔	and the second second
Run Progra		lete		Display With Table
	Hold Stage	PCR	Stage].
		Cycle	s 40	
-		2nd Temp Step Size Step Delay Grad Temp Grad Range	2nd Temp Step Size - Step Delay - Grad Temp Grad Range	
10073	95 °C	4°C/s 95°C		
757 —	00:00:20 💭 🔪	00:00:15 💽 🗸	4°C/s 60°C	
50°C — 25°C —			00:00:20 💭 🗸	
orc —				

7 2 Prepare for Reaction

The user should make full preparations prior to the experiment:

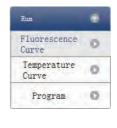
- Ensure appropriate materials are used.
- Ensure the arrangement of the PCR reaction plate is consistent with the setting layout of reaction plate in Section 2.4.

7 3 Run the Experiment

This section describes how to run/operate the experiment after loading the reaction plate and includes how to operate the fluorescence curve, the temperature curve and programming

7.3.1. Run Fluorescence Curve

a) Click Run ► Fluorescence Curve



b) Click Start Run



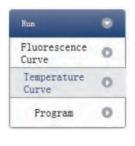
- c) Operating confirmation. Modify hot-lid temperature and liquid quantity (sample volume).
- d) After it starts running, the user can:
 - Skip the current stage
 - Add a cycle
 - Delete a cycle
 - Stop run

- e) Plot display setting
 - Assay item
 - Plot color

Run Status						
Skip Current Stage Plus Cycle Minus Cycle	Serial No. :600187 Stop Run	Start Time: 2011/12/ Run Status:Running End Time:	16 09:22:42	Total Time: 0:58:28 Stage: 1 Cycle: 1/1 Segment: 1	Leave Time: 0:58:21 Hotlid Temp. : 104C Target Temp. : 95C Actual Temp. : 32.9C	
Fluorescence Curve			Plot Sett:			
5000-		(Target1-F	Assay Item AM	Color Well	
	12 16 20 24 Sampling Count		A B		Som Out Reset 6 7 8 9 10 22 14 2 14 2 14 2 14 2 14 7 14 2 14 2 14 2 14 2 14 7 14 2 14 2 14 2 14 2 14	

7.3.2. Run Temperature Curve

a) Click Run ► Temperature Curve

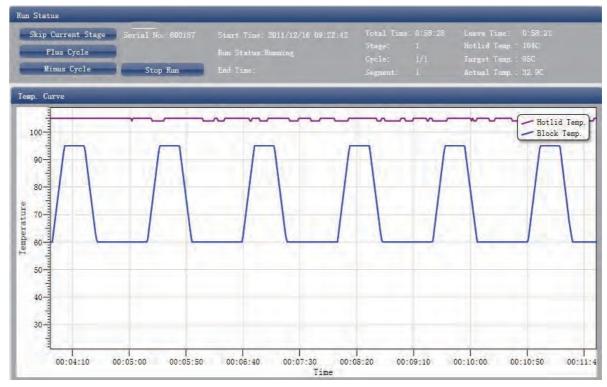


- b) Click Start Run
- c) Operating confirmation. Modify hot-lid temperature and liquid quantity (sample volume).

Start Run

n Status

- d) After it starts running, the user can:
 - Skip the current stage
 - Add a cycle
 - Delete a cycle
 - Stop run



7.3.3. Program Setting

The user can only check the Program Setting but cannot make modifications.

74 Experiment Analysis

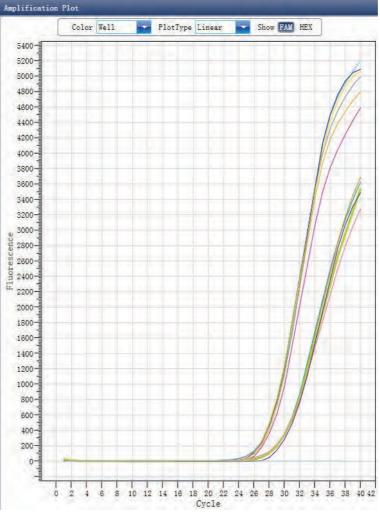
This section covers the analysis of amplification curves and standard curves, adjusting parameters for re-analysis and importing parameters.

7.4.1. Check Results

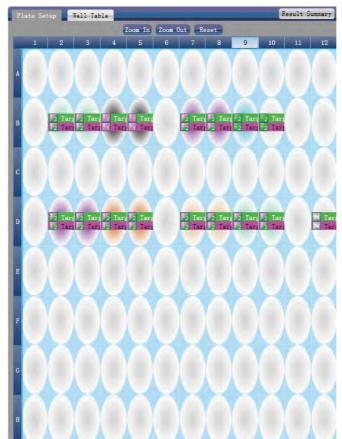
- a) Check the Amplification Plot
 - Click Analysis ► Amplification Plot



- b) Check the amplification curve
 - a. Set up color
 - b. Set up plot type
 - c. Set up show dye. When the background color of a dye name is blue, it will be displayed; while white indicates it will not be displayed.



- c) Check the reaction plate
 - Select reaction plate well site and check corresponding well site curve. The default is all wells are selected
 - · Zoom-In, Zoom-Out and reset the reaction plate
 - Check well table
 - Check results summary



- d) Set up inspection item
 - Set up assay

e)

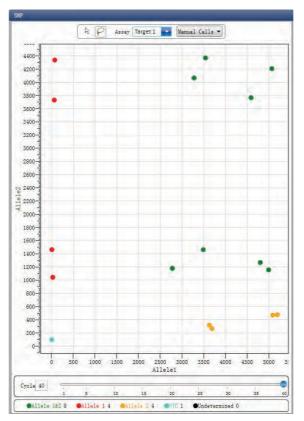
- · Set up threshold
- Set up automatic baseline. When the threshold value is not automatic, the user cannot set up the automatic baseline





Check SNP

- Select well site. The user can select well site by dragging a rectangle with the mouse around the wells of interest or select wells one by one.
- Set up Assay
- Set up manual calls



- f) Check the reaction plate
 - Select reaction plate well site and check corresponding well site curve. The default is all wells are selected
 - · Zoom-In, Zoom-Out and reset the reaction plate
 - Check well table information
 - Check results summary

7.4.2. Adjust Parameter Re-analysis

Click Analysis Settings ► the Analysis Settings dialog box will pop up

- Adjust analysis data
- Adjust whether the inspection item will retain manual recognition genotype

	Settings		
Ct Settings	Advanced Settings	SNP Settings	
Data Analysi	s Settings Sample Flo	ucrescence	
Assay Item	Keep Manual Calls		
Target 1			

7 5 Experiment Report

This section describes how to print an experiment report and covers designing of a report template and print setting.

7.5.1. Designing a Report Template

Click Report ► Report Template Editor ► the Report Designer window will pop up

The report consists of controls and the user can add, modify and delete controls. Available controls include Static Text, Dynamic Text, Line, Static Image and SNP Typing Curve.

Available controls	Used controls		
Common Con Static Te Dynamic Static Im Line	xt Text	[Hospital] [Report]	
SNP Typi		Name: [Name] Sex: [Sex] Age: [Age] HospitalNo.: [HospitalNo.]	
😥 Static Te		Test Item: [Test Item] Gene Typing: [GeneTyping]	*****
∰2↓ ©		5	
E Appearance		0 5 10 15 20 25 Allele, 2	30
Alignment	MiddleLeft		
BackColor	White	Submitting Date: [Submitting Date] Report Date: ReportDate] Tester: Tester] Checker: [Checker]	concel
Border	Solid, 1, False, False, False	Spontania Detersonational Detersonation and the second sec	izozozoz
Color	Black		
Font	Tahoma, 8.25pt		
🗄 Data			
DataField	Sex		
Tag			
 Design DesignVisible 	True		
Vene	DataField6		
E Layout	Topter prov		
E Location	266, 109		
⊞ Padding	0,0,0,0		
E Size	49, 20		
Туре	DataField		
DataField data field of the el	ement	*	

7.5.2. Print Setting

Click Report ► Print Template Setting ► the Print Template Setting window will pop up The user can set up the laboratory name, report name, reference value, tester, checker, amplification plot set up, default report template and paper size.

Template Setup Höspital Report Tester Checker Print Setup Default Report Template default Paper Size A4 Printer © Use Default Frinter © Use Custon Frinter	Print 1	[emplate S	ettings(SNP)	<u>n</u>	
Report Tester Checker Print Setup Default Report Template default Paper Size A4 Printer © Use Default Printer © Use Custor Frinter	Template S	etup			
Tester Checker Print Setup Default Report Template default Paper Size A4 Printer © Use Default Printer © Use Custor Frinter	Hospital				
Checker Print Setup Default Report Template default Paper Size A4 Printer @ Use Default Printer @ Use Custon Printer	Report				
Print Setup Default Report Template default Paper Size A4 Printer © Use Default Printer © Use Custon Printer	Tester				
Default Report Template default Paper Size A4 Printer © Use Default Frinter © Use Custon Frinter	Checker				
Default Report Femplate default Paper Size A4 Printer © Use Default Frinter © Use Custon Frinter					
Default Report Template default					
Default Report Template default					
Default Report Template default					
Paper Size A4	Print Setu	p			
Printer © Use Default Printer © Use Custon Printer	Default Re	port Template	default		-
Use Default Frinter Use Custon Frinter	Paper Size	44			
🖉 Use Custon Frinter	Printer				
	🔘 Use De	fault Printer	0		
	🔘 Use Cu	stom Printer			

7.5.3. Comprehensive Report

Click Report ► Consolidated Reports ► the Consolidated Report window will pop up.

The Consolidated Report includes the basic information, sample information, amplification curve, SNP, plate information, etc.

7.5.4. Report Printing

a) Click Report ► Report Print



- b) Report print setting
 - Set up report template
 - Print setting (please refer to Section 5.2)
 - Select print items
 - Print preview
 - Print the report

Select/	UnSelect	Select All Sa	mples													III Print One Assay PerRepo
Print	Sample Id	Sample Name	Test Item	Name	Sex	Age	Case No.	Outpatient No.	Bed No.	Hospital No.	Nationality	Sampling Time	Diagnosis	Notes	l.	
	04		target1									2011/12/15	1000	100		

7.5.5. QC Summary

a) Click Report ► QC Summary



b) Check the QC summary

	olificatio	on Plot								-		QC Summary			
1	Color	Well	1	P	otType	e Line	ar	-	Show	FI F	2	Description	Value	Use	Result
-	7000-	(pores)	-			- <u>Leve</u>					2	Negative control with a Ct less than	38	1	
	5000										-	Positive control with a Ct greater than	30	1	
0 5	5000											Unknown without a Ct	N/A	1	
Ĕ	1000									1		Standard without a Ct	N/A	1	
2	2000							1	1	//					
2	000	9 1	2 1	5 1	8 2:			30	33	36	39				
2	000	9 1	2 1	5 1	B 2:	1 24 Cyc		30	33	36	39				
1	000	9 1 A03	2 1 A04	5 1: A05	B 2: A06			30 A09	33 A10	36 A11	39 A12				
2 1 A01	000	21				Cyc	le		- 52						
2 1 A01 B01	1000 0	A03	A04	A05	A06	Cyc 407	A03	A09	A10	A11	A12				
2 1 A01 B01 C01	A02 B02	A03 B03	A04 B04	A05 B05	A06 B06	Cyc A07 B07	A08 B08	A09 B09	A10 B10	A11 B11	A12 B12				_
2 1 A01 B01 C01 D01	A02 62 202	A03 B03 C03	A04 B04 C04	A05 B05 C05	A06 B06 C06	Cyc A07 B07 C07	A08 B08 C08	A09 B09 C09	A10 B10 C10	A11 B11 C11	A12 B12 C12				_
2 1 A01 B01 C01 D01 E01	A02 A02 C02 D02	A03 B03 C03 D03	A04 B04 C04 D04	A05 B05 C05 D05	A06 B06 C06 D06	A07 B07 C07 D07	A08 B08 C08 D08	A09 B09 C09 D09	A10 B10 C10 D10	A11 B11 C11 D11	A12 B12 C12 D12				_
2	A02 B02 C02 D02 E02	A03 B03 C03 D03 E03	A04 B04 C04 D04 E04	A05 B05 C05 D05 E05	A06 B06 C06 D06 E06	Cyc A07 B07 C07 D07 E07	A08 B08 C08 D08 E08	A09 B09 C09 D09 E09	A10 B10 C10 D10 E10	A11 B11 C11 D11 E11	A12 B12 C12 D12 E12				_

7 6 Data Export

This section describes how to export data and covers exporting to a database, Experiment Saving and exporting the experiment data to EXCEL.

7.6.1. Export to Database

Click Data Summary ► Export to Database ► the Save File dialog box will pop up ► save the exported database file

7.6.2. Experiment Saving

- a) Click Data Summary ► Archived Experiment Directory ► the Experimental archive storage directory window will pop up ► set up the storage path of file
- b) Experiment Saving. Click Data Summary ► Archived Experiment ► export the saved experiment file

The suffix of saved experiment file is.fqh

7.6.3. Export Experiment Data to EXCEL

Click Data Summary ► Export Experiment ► Export Experiment to Excel ► the experiment data will generate EXCEL file.

7.6.4. Export Experiment Data to TEXT

Click Data Summary ► Export Experiment ► Export Experiment to Text ► the exported eprimet data will generate TEXT file.

Chapter 8 High Resolution Melting

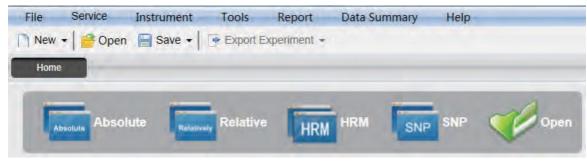
8 1 Design Experiment

This section describes how to design an SNP experiment and covers creating a new SNP experiment, inspection item setting, sample information setting, reaction plate setting and Program Setting.

8.1.1. Create High Resolution Melting Experiment

Click HRM on Home interface and create SNP Experiment window. An SNP experiment can be also created by:

- Clicking New ► HRM on the toolbar
- Clicking File ► New ► HRM on the menu bar



8.1.2. Detector Setting

a) Click Setup ► Detector

Setup	
Detector	0
Sample	O
Plate	0
Program	0

b) Input basic information. Input the experiment name, user name and any comments in the experiment properties column.

Experiment Prop	erties	and the second	
Experiment Name	20111117_Experiment	Poment remark	1.11
	user		

- c) Inspection Item Setting. Set up the Detector, Allele, Dye and Color. If necessary, the user can also:
 - Add Detector
 - Delete Detector
 - Add the Detector in the Detector library: click Add Detector From Library ► the Detector Library window will pop up ► select the Detector on the window to be added

The user can also conduct Add, Modify and Delete operations in the item library.

dd Modify De	lete		
Detector	Assay	Dye	Color
Target3	GOI	FAM	1
	HKG	HEX	10000
Targeti		FAM	
		HEX	The second se

Set up the item name, set up the dye name and set up the color

Detectors	Add Detector Add Assay	Delete Detector	Delete Assay	Add Detector From Library
Detector	Assay	Dye	Color	
Target1	GOI	FAM	••	

d) Set up reference dye

.



8.1.3. Sample Information Setting

a) Click Setup ► Sample



- b) Add sample information
 - Itemized addition: input ID in Sample ID ► press Enter ► add information for one sample
 - Batch addition: click Batch Add ► the Batch Add window will pop up



- c) Delete sample information
 - Itemized deletion: select one sample ► click Delete ► delete the selected sample information
 - Delete all: click Clear All ► delete all sample information
- d) Import/Export sample information
 - Click Import Sample Info ► the File Import window will pop up ► import sample information file in CSV format
 - Click Export Sample Info ► the Save As window will pop up ► the sample information will be exported in CSV file format

Sample	Batch Add	Delete	Clear All	Import Samples Info	Export Samples Info
sam	ple information				

Samples								
Sample Id Color	Sample Name	Sampling Time	Submitting Date					
al	Sample1	2013-12-06	2013-12-06					
a2	Sample2	2013-12-06	2013-12-06					
a3	Sample3	2013-12-06	2013-12-06					
a4	Sample4	2013-12-06	2013-12-06					
a5	Sample5	2013-12-06	2013-12-06					

- 8.1.4. Reaction Plate Setting
- a) Click Setup ► Plate

Set up

e)

Setup	
Detector	0
Sample	0
Plate	0
Program	O

- b) Set up the inspection criteria of the reaction plate
 - Select reaction plate well site: click Reaction Plate well Site. The user can also right click the reaction plate well site to Copy, Paste and Add New Detector. Adding a new detector will open the Edit Detector Library window.

Ser Contract	: Target4		
Add	1		
Assay	Dye	Color	
	FAM		

• Select inspection item and modify the property, concentration and concentration unit.

Property	Name	Concentration	Concentration unit
U	Unknown	NO	Copies/ml
S	Standard	YES	IU/ml
Z	Negative	NO	Fg/ml
P	Positive	NO	Pg/ml

- Select a sample and the list displayed will change
- Zoom-In, Zoom-Out and reset the reaction plate.
- Sample Auto Arrange
- Check Well Table

- Deteo	ctors			Plate Se	tup Wel	l Table								-	
Detector		erty Con.					Zoom In	Zoom Out	Reset	Se	umple Auto	Arrange			
Target1		-		1	2	3	4	5	6	7	8	9	10	11	12
V FAM	HEX			A U Targ	eti										
		t copies/ml		в											
▲ Sampl		Columns: Sample	Name	с											
Sar	mple ID	Sample Name Sample1	1000												
a2		Sample2													
a2		Sample3		D											
	-	1 and and the													
a 4		Sample4		E											
a 5		Sample5													
				F											
				G											
				H											

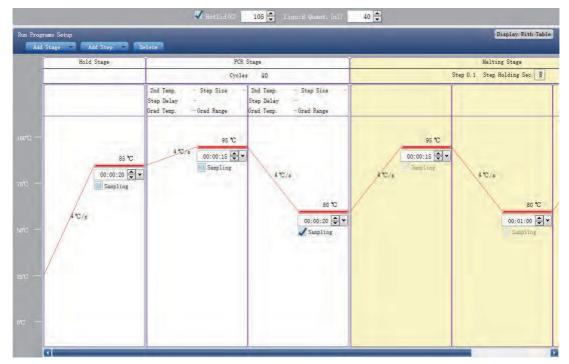
#	Well	Sample Id	Assay Item	Property	Dye
1	A01	al	Target1	Unknown	FAM
1	A01	al	Target1	Unknown	HEX
2	A02				
3	A03				
4	A04				
5	A05				
6	A06				
7	A07				
8	A08				

8.1.5. Program Setting

a) Click Setup ► Program



- b) Run Program Setup
 - Create new stage: the user can create a new Hold Stage, Cycling Stage or Melting Stage. The user can also click Add Stage directly and the default will be creating a new Cycling Stage.
 - Create new step: the user can create a new step Before or After the currently selected step. The user can also click Add Step and the default will be adding a new Step at the end of the currently selected stage or after the currently selected step.
 - Delete: the user can delete the currently selected step or stage
 - Display form: click Display With Table ► new window will pop up ► the details of the current experiment will be displayed in a table.
 - Set up the experimental data of the hold stage, cycling stage and melting stage melting section
 - Set up the hot-lid temperature and liquid volume



8 2 Prepare for Reaction

The user should make full preparations prior to the experiment:

- Ensure appropriate materials are used.
- Ensure the arrangement of the PCR reaction plate is consistent with the setting layout of reaction plate in Section 2.4.

8 3 Run the Experiment

This section describes how to run the experiment after loading the reaction plate and covers the operating of fluorescence curve, the operating of temperature curve and Program Setting.

8.3.1. Run Fluorescence Curve

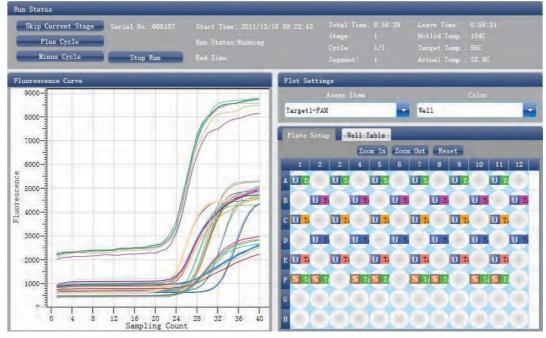
a) Click Run ► Fluorescence Curve



b) Click Start Run

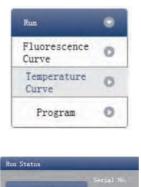


- c) Operating confirmation. Modify hot-lid temperature and liquid quantity (sample volume).
- d) After it starts running, the user can:
 - Skip the current stage
 - Add a cycle
 - Delete a cycle
 - Stop run
- e) Plot display setting
 - Assay item
 - Plot color



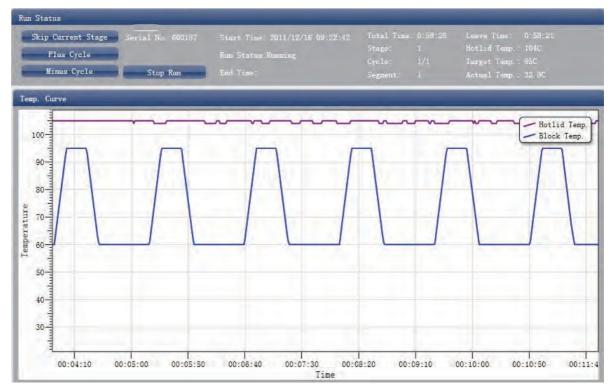
8.3.2. Run Temperature Curve

a) Click Run ► Temperature Curve



b) Click Start Run

- c) Operating confirmation. Modify hot-lid temperature and liquid quantity (sample volume).
- d) After it starts running, the user can:
 - Skip the current stage
 - Add a cycle
 - Delete a cycle
 - Stop run



8.3.3. Program Setting

The user can only check the Program Setting but cannot make modifications.

8 4 Experiment Analysis

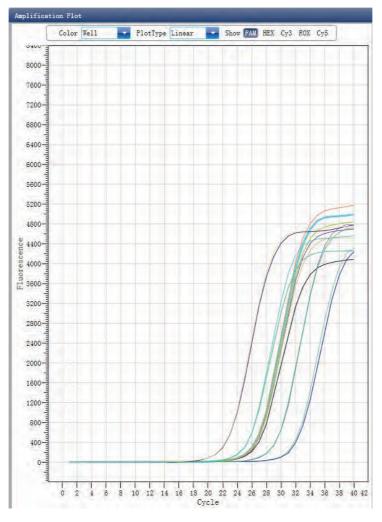
This section covers the analysis of amplification curves and standard curves, adjusting parameters for re-analysis and importing parameters.

8.4.1. Check Results

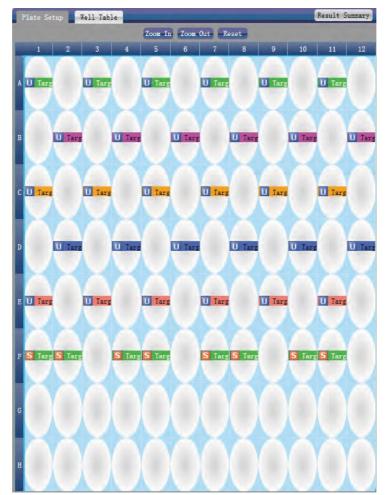
a) Check the Amplification Plot. Click Analysis ► Amplification Plot



- b) Check the amplification curve
 - Set up color
 - Set up plot type
 - Set up show dye. When the background color of a dye name is blue, it will be displayed; while white indicates it will not be displayed.



- c) Check the reaction plate
 - Select reaction plate well site and check corresponding well site curve. The default is all wells are selected
 - · Zoom-In, Zoom-Out and reset the reaction plate
 - Check well table
 - Check results summary



- d) Set up inspection item
 - Set up assay
 - Set up threshold
 - Set up automatic baseline. When the threshold value is not automatic, the user cannot set up the automatic baseline

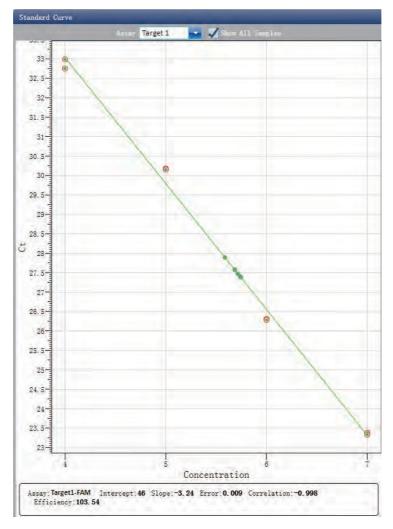


e) Check the Standard Curve. Click Analysis ► Standard Curve

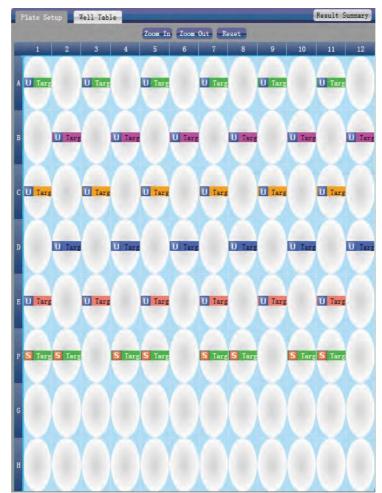


Check the Standard Curve. Set up array

٠



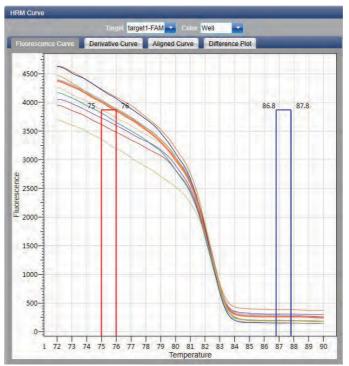
- f) Check the reaction plate.
 - Select reaction plate well site and check corresponding well site curve. The default is all wells are selected
 - · Zoom-In, Zoom-Out and reset the reaction plate
 - Check well table
 - Check results summary



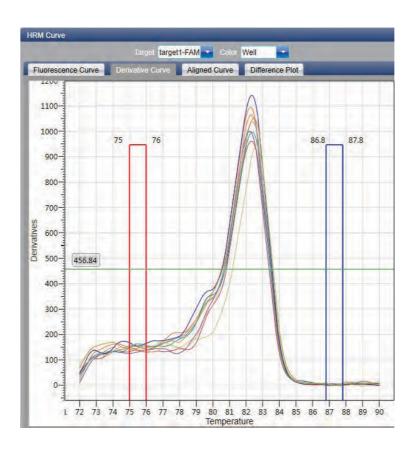
g) Check HRM. Click Analysis ► HRM Curve



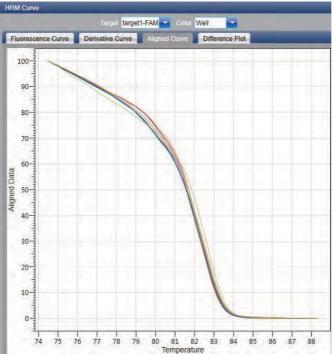
- h) Check the fluorescence curve
 - Set up target
 - Set up color



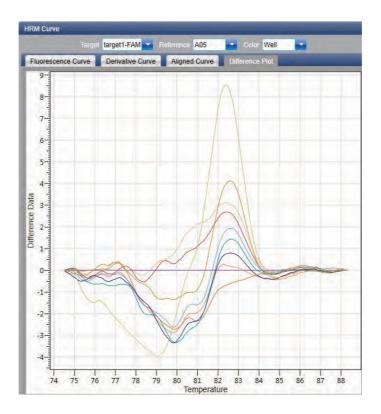
- i) Check the derivative curve
 - Set up target
 - Set up color



- j) Check the aligned curve
 - Set up target
 - Set up color



- k) Check the Different Pilot
 - Set up target
 - Set up color



- I) Check the reaction plate
 - Select reaction plate well site and check corresponding well site curve. The default is all wells are selected
 - · Zoom-In, Zoom-Out and reset the reaction plate
 - Check well table



8.4.2. Adjust Parameter Re-analysis

- a) Click Analysis Settings ► the Analysis Settings dialog box will pop up
 - Adjust analysis data
 - · Adjust whether the inspection item will retain manual recognition genotype

Ct Settings Advanced Settings S Data Analysis Settings Sample Fluere Assay Iten Keep Manual Calls Target 1	SNF Settings	
Assay Item Keep Manual Calls		
Target 1		
1.000		
		Cancel

8 5 Experiment Report

This section describes how to print an experiment report and covers designing of a report template and print setting.

8.5.1. Comprehensive Report

a) Click Report ► Consolidated Reports ► the Consolidated Report window will pop up.

The Consolidated Report includes the basic information, sample information, amplification curve, HRM curve, plate information, etc.

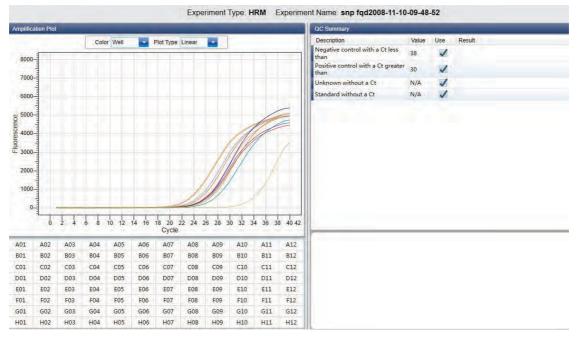
	Plo	ot Plate			C	onsolid	lated R	eport			8	Run Program Detectors Plot Plate
A B C D F G H	2	3 agett - FAM U			11 - FAM U 13	6 Ingel - FAM (7 I targeti - FAM	8 1 1) targett - Fr	10 arget1 - FAM(U	11 Jarget1 - FA		 Plot Plate Table Plate Amplification Curve Plot Type Linear Quan. Analysis Result Melting Curve Melting Curve(Derivative) Melting Analysis Result Melting Analysis Result Melting Analysis Result Melting Curve(Derivative) Melting Analysis Result Melting Curve(Derivative) Melting Curve(Derivative)
-	Tat	ole Plate	-		-	_					-	
#		Assay Item	Property	Dye	Std. Con.	Sample						
5		target1	Unknown									
			Unknown									
6			Unknown		-							
7		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Unknown									
7 10		tarnet1	Unknown	FAM								
7 10 11	A11											
7 10 11 12	A11 A12	target1	Unknown	FAM							_	
7 10 11 12 15	A11 A12 B03	target1 target1	Unknown Unknown	FAM FAM								
7 10 11 12 15 16	A11 A12 B03 B04	target1 target1 target1	Unknown Unknown Unknown	FAM FAM FAM								
7 10 11 12 15 16 17	A11 A12 B03 B04 B05	target1 target1 target1 target1 target1	Unknown Unknown	FAM FAM FAM FAM								

8.5.2. QC Summary

a) Click Report ► QC Summary



b) Check the QC summary



8 6 Data Export

This section describes how to export data and covers exporting to a database, Experiment Saving and exporting the experiment data to EXCEL.

8.6.1. Export to Database

Click Data Summary ► Export to Database ► the Save File dialog box will pop up ► save the exported database file

8.6.2. Experiment Saving

- a) Click Data Summary ► Archived Experiment Directory ► the Experimental archive storage directory window will pop up ► set up the storage path of file
- b) Experiment Saving. Click Data Summary ► Archived Experiment ► export the saved experiment file. The suffix of saved experiment file is.fqh

8.6.3. Export Experiment Data to EXCEL

Click Data Summary ► Export Experiment ► Export Experiment to Excel ► the experiment data will generate EXCEL file.

8.6.4. Export Experiment Data to TEXT

Click Data Summary ► Export Experiment ► Export Experiment to Text ► the exported expriment data will generate TEXT file.

Chapter 9 Service

91 User Management

User management is used to manage user information

Click Service►User Ma	anagement on the menu bar
-----------------------	---------------------------

						Delete Upd	te Change P	Add	
User ID	User Name	Disabled	Locked	CreateTime	Last Login Time	Last Login Addre	s Last Locked Time	Failed Count	Permission
1	admin	NO	NO	2014-04-29	2014-05-06	127.0.0.1	0001-01-01	0	Manage experiment, Run experiment, View experiment, Use
2	aaa	NO	NO	2014-05-04	1 - 1		1	0	Manage experiment, Run experiment, View experiment, Use
3	bbb	NO	NO	2014-05-04			1	0	

The user can:

- delete user
- update user



change password

Change password	X
Old password:	
New password:	
Confirm new password:	
OK Reset Cancel	

add user

User name:
Password:
Confirm password:
Permission: User manage Run experiment View experiment Manage experiment
OK Cancel

9 2 Experiment Management

Experiment Management is used to manage experiment information and deleted experiment information.

9.2.1. Experiment Management

Click Service ► Experiment management ► Experiment management on the menu baThe user can:

- clear query condition
- set query condition
- query
- delete experiment
- download experiment
- edit experiment

Experiment ma	nagement								-				_ D _ X
查询条件		-					E						Clear query condi
		-					E		-				Query
							Delete	Downloa	Editor				
Experiment type	Experiment name	Executor	Notes \$	Serial No	Start time	End time	Purpose	Provide State	Creator name	Create time	Updater name	Update time	
Absolute	2_20140504_141016	admin	1	123456	2014-05-04 14:10:26	2014-05-04 14:16:55	Normal I	Experiment	admin	2014-05-04 14:10:27	admin	2014-05-04 14:16:55	
Absolute	2_20140504_142708	admin	1	123456	2014-05-04 14:27:18	2014-05-04 14:28:04	Normal	Experiment	admin	2014-05-04 14:27:19	admin	2014-05-04 14:28:04	

9.2.2. Deleted Experiment Management

Click Service ► Experiment Management ► Deleted Experiment Management on the menu baThe user can:

- clear query condition
- set query condition
- query
- · delete experiment
- recover experiment
- clear experiment

查询条件 				T			Li.		Clear Condition
[-		(Lin (Query
				Delete	Recover	Clear			
xperiment type	Experiment name	Executor Note	es Serial No Sta	art time End time	Purpose Creato	or name Create time	Updater name	Jpdate time	

9 3 Template Management

Template Management is used to manage template information. Click Service ► Template Management on the menu bar. The user can:

- download template
- delete template

				Downlos	
Template category	Template name	Create user r	name CreateTime	Real Property lies	
48	20140416_135107	admin	2014-05-04		
48	参考增益测量	admin	2014-05-04		
96	2	admin	2014-05-04		
96	20140428_155955	admin	2014-05-04		
96	3	admin	2014-05-04		
96	7项 20120522_123347	admin	2014-05-04		

94 User Login

Click Service ► User Login on the menu bar

🗈 User Login	×
Upper Service:	127.0.0.1
UserName:	admin
Password:	
VI	Automatic login
ок	Cancel

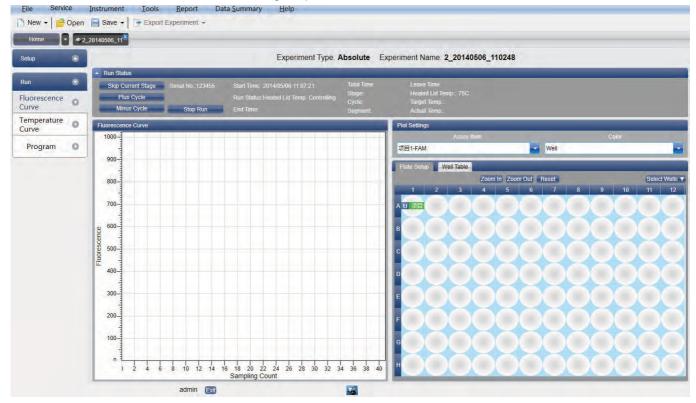
9 5 Change Password

Click Service ► Change Password on the menu bar

Change password	X
Old password:	-
New password:	-
Confirm new password:	
OK Reset Canc	el

96 See Running Experiment

See Running Experiment is used to see running experiment, which is running on connected instrument. Click Service ► See Running Experiment on the menu bar



Chapter 10 Tool Usage

10 1 Gain Setting

Instrument is the automatic gain version, and there is no need to set the gain manually.

10 2 Block Scan Method

There is no need to set Block Scan Method

10 3 Detector Library

The Detector Library tool is used to set up the inspection libraries of absolute quantitative, relative quantitative and SNP analysis.

Click Tools ► Detector Library ► (Absolute /Relative/SNP) ► open the following window The user can:

- Add Detector
- Modify Detector
- Delete Detector

C Detecto	or Library	t l						
Add	Modify	Delete						
Detector	Reporter	Color	Master Mix	Primer	Probe	Supplies	Batch Number	
Target1	FAM							
Target2	FAM	Terrar and						
								Close

10 4 Customized Dyes

The Customized Dyes tool is used to set up existing dyes and newly added dyes. Click Tools ► Customize Dyes ► open the following window. The user can:

- Create dye
- Modify dye name and channel
- Delete dye
- Move dye upward
- Move dye downward

After adding new dyes or modifying dyes, the user should conduct crosstalk parameter measurements.

Dye	Channel	
FAM	1	Dye
SYBR	1	FAM
HEX	2	
TET	2	Channel
VIC	2	1 (470nm -525nm)
JOE	2	
Cy3	3	Delete
TAMRA	3	
NED	3	
ROX	4	
TexRed	4	
Cy5	5	
LCRed	6	
1.00		MoveUp
		MoveDown
ve after you a easurement.	dd or modify para	meters for crosstalk

10 5 Customize Columns

Click Tools ► Customize Columns ► the following window will pop up The user can:

- Add columns
- Delete columns
- Modify column name

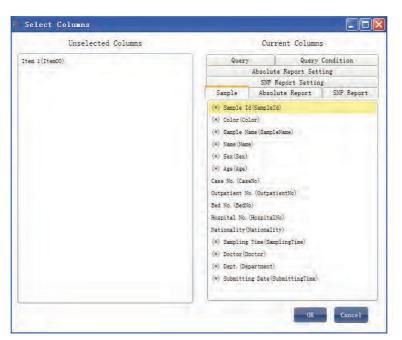
Column Name	
New Item	
	in the second
	Add
	Delete
	ОК

10 6 Column Selection

The Select Columns tool is used to add the new columns in above section into current existing columns, or remove existing columns in current column.

Click Tools ► Select Columns ► the following window will pop up

- Current existing column items include sample, report, report setting, query and query condition
- Double click column can add or remove a column
- Column with (*) indicates it cannot be removed

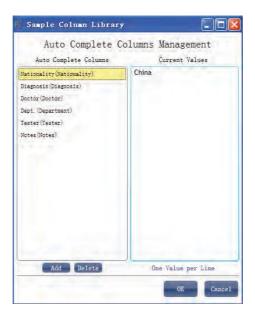


107 Sample Column Library

The Sample Column Library tool is used in the experiment design phase. The user can select the definition of contents in the drop-down box when setting up sample information.

Click Tools ► Sample Column Library ► the following window will pop up The user can:

- Add columns
- Delete columns
- Edit the columns content



10 8 Instrument Calibration Parameters

The Instrument Calibration Parameters tool is used to calibrate the instrument parameters. Click Tools ► Instrument Calibration Parameters ► the following window will pop up

Sel	ect Instrument 600254
Baseline Parameters	Measured
Reference Gain Parame	Cy3,Cy5,FAM,HEX,ROX
Proportion Parameters	Measured
Crosstalk Correction Pa	Cy5,FAM,HEX,ROX,TAMRA
Crosstalk Gain Paramet	F1,F2,F3,F4,F5

10 9 Measure Crosstalk Calibration Parameters

The Measure Crosstalk Calibration Parameters tool is used to measure crosstalk correction parameters.

Click Tools ► Measure Crosstalk Calibration Parameters ► the following window will pop up

The user can add and modify the channels to be tested and dyes according to his needs; upload corresponding reaction plates and operate the experiment. When the experiment is over, the system will automatically save the crosstalk correction parameters.

Experiment Prop speriment Name User Name	Crosstalk Pa	rameter Meası	urement		Comment:		
etectors A	dd Detector	Add Reser	Delete Detector	Delete Ass	Add	Detector From Li	brary
Detector F1 F2	Reporter FAM HEX		Master Mix	Primer	Probe	Supplies	Batch Number
ference Dye		_	_	-	_	_	_

10 10 Crosstalk Gain Parameter Measurement

The Crosstalk Gain Parameter Measurement tool is used to measure crosstalk gain parameters. Click Tools ► Measure Crosstalk Gain Parameters ► the following window will pop up.

The user can add and modify the channels to be tested and dyes according to his needs; upload corresponding reaction plates and operate the experiment. When the experiment is over, the system will automatically save the crosstalk gain parameters.

	Experir	nent Type:	Absolute Exp	eriment N	ame: Cross	talk Gain M	leasurement	
Experiment Prop	perties				-			-
Experiment Name User Name	100.000	Gain Measurei	nent		Comment:		-	
Detectors	dd Detector	Add Second	Cales: Ostector	Denne Ann	Add	Detector From Li	brary	
Detector F1 F2	Reporter FAM HEX	Color	Master Mix	Primer	Probe	Supplies	Batch Number	
Reference Dye		-	_	-	-	-	_	

10 11 System Maintenance

The System Maintenance tools are used for system maintenance.

Click Tools ► System Maintenance ► the Password Input box will pop up

T Password	
Please input password	[
OK	Cancel

Input the correct Password conduct the following settings:

- Y-axis commissioning
- X-axis origin calibration
- · Machine serial number setting
- Photomultiplier setting
- Runtime zero clearing
- Background measurement
- Reference gain measurement
- Fluorescence incremental calibration

10 12 Firmware Upgrades

Firmware Upgrade tools are used to upgrade the firmware.

Click Tools ► System Maintenance ► Firmware Upgrade ► the following window will pop up. The user can:

- Select serial ports
- Select the BIN file to be upgraded
- Upgrade

hoose Fort: COM1	
Upgrade File	
E:\PCR.bin	Select
	Upgrade

10 13 Upgrade Experiment File Format

The Upgrade Experiment File Format tools are used to convert old files with the suffix of.fqj or.fqs into new files with the suffix of.fqd.

Click Tools ► Upgrade Experiment File Format ► the following window will pop up. The user can:

- Add files to be upgraded
- Remove selected files
- · Select the output directory of new files
- Upgrade

Upgrade fqj/fqs file		E
Upgrading files		
File	State	
Add upgrading files Remove selected f	les	
Output directory		
		Browse
		Upgrade

10 14 Ta Calculator

Click Tools \blacktriangleright Ta Calculator \blacktriangleright the following window will pop up.

Input Forward Primer and Reverse Primer, click Calculate to gain Forward Temperature, Reverse Temperature, Average Temperature and Annealing Temperature.

Forward Primer	
Reverse Primer	
Forward Temperature	c
Reverse Temperature	c
Average Temperature	¢
Anneling Temperature	C

Chapter 11 Other Functions

11 1 Instrument Operation

The Instruments operations include Connect instrument, Disconnect instrument and Instrument Information.

11.1.1. Connect

Click Instrument ► Connect ► select port number or select automatic port matching.

onne	cting to ins	strument		x
	Connecting	to instrument,	Please wait.	
C				

When the instrument is connected, the icon on the status bar will be \square ; if the instrument is disconnected, the icon on the status bar will be \square

11.1.2. Disconnect

Click Instrument ► Disconnect ► disconnect currently connected instrument

11.1.3. Instrument Information

When the instrument is connected, the user can check the instrument information.

Click Instrument ► Instrument Information ► the following dialog box will pop up

Instrument information includes instrument serial number, runtime, currently connected ports, and whether an experiment is in operation.

SerialNo:	600187
Your Instrument has Run f	or:11hours49Minutes
Current Connected Port:	COM3
Experiment Running:	Yes

11 2 Data Query

Data Query is used to query the data already exported to the database. Click Data Summary ► Data Query ► the following window will pop up. The user can:

- Select database files
- Set up query condition
- Query
- Clear all query conditions

Data Query	
Path:	Browser
- Query Condition	
	Clear Condition
	Query
Query Result	
# File Name Sample Id Sample Name Test Item Name Sex Age Case No. Outpa	tient No. Bed No. Hospital No. Nationality Sampling Time Diagnosis Doctor Dept. Test Result F

11 3 System Help

Click Help ► Help Topics

Chapter 12 Maintenance

12 1 Regular cleaning

In order to ensure the normal operation and test use of the instrument, it is suggested to clean the instrument regularly.

- Surface cleaning: use a soft cloth to clean; If necessary, dip in alcohol, distilled water or clean paste to clean;
- Cleaning of module hole: clean cotton swabs with dust-free and dip a small amount of 95% medical anhydrous ethanol or distilled water when necessary.

	When cleaning the instrument, the power must be cut off.
Warning!	Corrosive cleaning agent is strictly prohibited on the surface of this instrument. If in doubt, please consult the manufacturer or its agent.
Caution:	During the warranty period, users are forbidden to open the expansion instrument shell for self-inspection. If there is a fault in the above table that requires the instrument shell to be opened for inspection, timely contact with the supplier or manufacturer. Users are strictly forbidden to inspect or replace parts without permission. Only manufacturers or agencies can inspect or provide parts.

12 2 Analysis and Troubleshooting

SN	Fault Phenomenon	Cause Analysis	Way of Handling	
1	The power switch behind the instrument has been set ON, but the instrument is not responsive	The RUN SWITCH in front of the instrument is not pressed.	Press RUN SWITCH.	
2	System parameters menu shows that "password" needs to be entered.	The system parameters are used for internal calibration of the instrument manufacturer and need special password to enter.	Users do not need to use this feature. For calibration, please contact the manufacturer's service personnel.	
3	The rising and cooling speed	The vent is blocked	Remove obstructions from vents	
		Loose connection		
	3	of module obviously slows down or the temperature	Refrigeration piece is damaged	Contact with the supplier or manufacturer
	control is inaccurate	Fan is damaged or doesn't work		
		Temperature sensor is damaged		
4	The modules are neither heated nor cooled	Internal instrument fault	Contact with the supplier or manufacturer	
		Refrigeration piece is damaged	Contact with the supplier or manufacturer	
		Hot cover heating process	When the hot cover temperature of the instrument reaches the target value. The module temperature is automatically controlled at 30°C when it stops running	
5	Temperature or Fluorescence Curve Exception: straight line,	The Run Program was infected with a virus and the computer CPU was severely occupied.	After antivirus, reinstall the application software.	
		Thermal fuse is damaged		
6		Connector is loose		
	6	The hot cover won't heat	The heating element in the hot cover is damaged	Contact with the supplier or manufacturer
			Temperature sensor in hot cover is damaged	
7	The fluorescence value of each hole increased, or the background was very large without test tube	Contamination of test tube holes or hot covers; Baseline background parameters are misused.	Depollution, each instrument should correspond to Baseline File. After long-term use, the optical element is offset. Please contact the manufacturer to recalibrate the background.	
8	Reagent evaporation	Tube quality problems, loose seal; Tube cover or film is not correct, not appropriate.	Select suitable consumables with better sealing performance	
9	Signal crosstalk between channels	There is crosstalk between dye signals in different channels objectively.	It can be measured by "crosstalk coefficient measurement" function in the software, and the calibration parameters can be saved for correction.	
10	Abnormal fluorescence	External strong light irradiation	Turn off external light source	
	detection values	Photovoltaic system is damaged	Contact with the supplier or manufacturer	

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