

# ***PACKIT*** Nucleic Acid Analyzer

## **USER MANUAL**

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## CONTENT

|   |           |
|---|-----------|
| <b>Symbols .....</b>  | <b>1</b>  |
| <b>Section 1. Introduction .....</b>                        | <b>2</b>  |
| 1.1 Intended Use .....                                      | 2         |
| <b>Section 2. General Information.....</b>                  | <b>3</b>  |
| 2.1 Product Components .....                                | 3         |
| 2.2 Specifications .....                                    | 3         |
| 2.3 Testing Capacity.....                                   | 3         |
| 2.4 Equipments and Materials Required But Not Provided..... | 3         |
| 2.5 Front View.....   | 4         |
| 2.6 Rear View.....  | 5         |
| <b>Section 3. Important Notes.....</b>                      | <b>6</b>  |
| 3.1 Safety Information .....                                | 6         |
| <b>Section 4. Operation.....</b>                            | <b>7</b>  |
| 4.1 Switch On.....  | 7         |
| 4.2 Choose Detection Wavelength .....                       | 7         |
| 4.3 Set up Date and Time .....                              | 9         |
| 4.4 Run iiPCR Reaction .....                                | 11        |
| 4.5 Display the Result .....                                | 13        |
| 4.6 Review the Raw Data.....                                | 14        |
| 4.7 Stop during the Reaction.....                           | 14        |
| 4.8 Switch Off .....  | 15        |
| <b>Section 5. Cleaning and Maintenance .....</b>            | <b>16</b> |
| 5.1 General Care .....                                      | 16        |
| 5.2 Dealing with Spills.....                                | 16        |
| <b>Troubleshooting.....</b>                                 | <b>17</b> |

## Symbols



**Date of manufacturing**



**Manufacturer**



**Catalogue number**



**Serial number**



**Alternative current**



**Consult instruction before use**



**Caution**

Risk of personal injury to the operator or a safety hazard to the surrounding area.



**WEEE symbol**

This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2002/96/EC.

## **Section 1. Introduction**

The **POCKIT**<sup>™</sup> Nucleic Acid Analyzer (**POCKIT**) is designed for performing insulated isothermal polymerase chain reaction (iiPCR). It provides iiPCR-based analysis and is equipped with two optical channels (520 nm, 550 nm) for multiplex detection. The qualitative test results are readily displayed on the LCD monitor, and automatically saved in a SD card. It allows a single user to load, amplify and interpret up to 8 nucleic acid samples within 1 hour.

### **1.1 Intended Use**

**POCKIT** is intended to provide qualitative detection of nucleic acid targets using fluorescence-based iiPCR reagents. It is intended for *in-vitro* use only and for research purposes.

## Section 2. General Information

### 2.1 Product Components

- 1 **POCKIT**<sup>TM</sup> Nucleic Acid Analyzer
- 1 Power Cord
- 1 User Manual
- 1 Warranty Card
- 1 Holder

### 2.2 Specifications

Dimensions (W × D × H): 280 mm × 250 mm × 85 mm

Net Weight: 2.1 kg

Power Supply: 100-120/200-240 V AC, 50/60 Hz, 2A

Operating Temperature: 15-35°C

### 2.3 Testing Capacity

Number of samples per run: 1-8

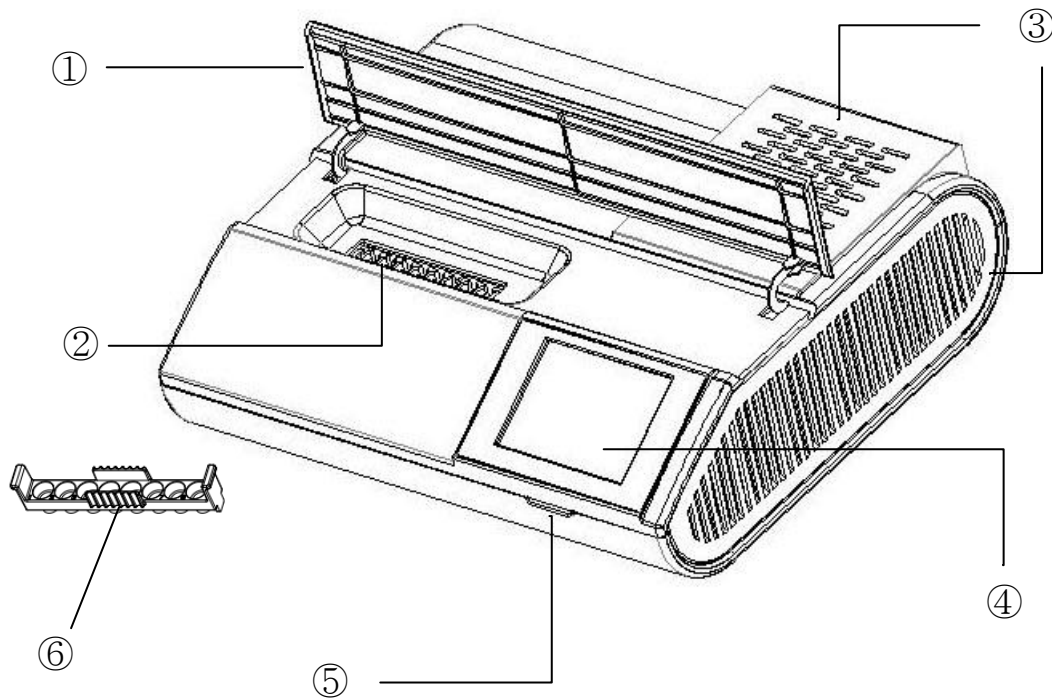
Reaction volume: 45-55 µl per reaction

### 2.4 Equipments and Materials Required But Not Provided

- Nucleic acid extraction kit
- Nucleic acid amplification reagents and kits
- 200 µl and 1000 µl tips, and 1.5 ml tubes
- R-tubes and Caps
- cubee<sup>TM</sup> mini-centrifuge
- Disposable gloves

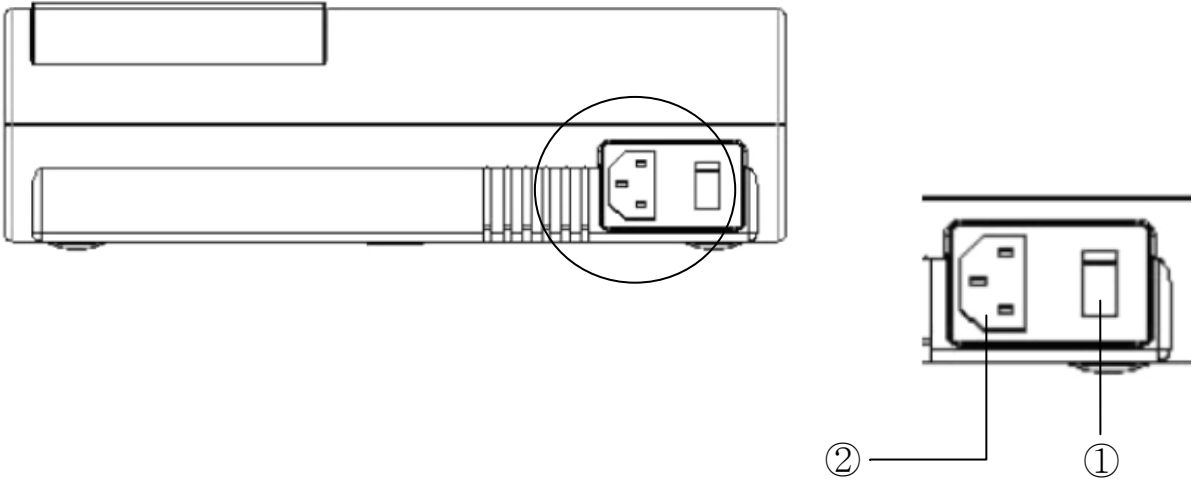
**Note:** To avoid power failure, connecting **POCKIT** to an uninterrupted power system (UPS) and/or voltage regulator is highly recommended.

## 2.5 Front View



| No | Item          | Description   |
|----|---------------|---|
| 1  | Lid           | Isolates the heat source, and prevents light interference on the reaction chamber         |
| 2  | Reaction well | Connects the R-tube holder to perform the amplification                                   |
| 3  | Cooling vents | Releases the heat generated during reaction   |
| 4  | Control panel | A touchscreen where users input the operation commands and view the results               |
| 5  | SD card slot  | A slot where users insert the SD card to operate <b>POCKIT</b> and save reaction raw data |
| 6  | Holder        | Loads R-tubes into the reaction wells   |

**2.6 Rear View**



| No. | Item        | Description                   |
|-----|-------------|-------------------------------|
| 1   | Main switch | To turn on/off the main power |
| 2   | Socket      | To connect to the power cord  |

## Section 3. Important Notes

Check the device upon receiving. If any items are missing or harmed, please contact your local distributor or GeneReach immediately for replacement. Do not use any damaged items as they may lead to poor performance of the test or harm the user.

### 3.1 Safety Information



- Do not touch any plug and electric switch with wet hands.
- Make sure to keep the device away from water.
- Switch off and unplug the device before moving it.
- Pack the device carefully before moving and delivering. Vibration or crash may cause damage.
- Do not look into the LED light directly from reaction wells.
- Only use consumables and accessories provided from GeneReach.
- Make sure the ambient temperature during reaction is kept at 15-35°C.
- SD card should not be removed until the device is switched off.
- Hold the plug while pulling it out from the electrical outlet. Do not pull the power cord directly.
- Do not place the power cord on any subject with high temperature.
- User should revalidate the device if it has been moved.
- Do not disassemble the device if any problem occurs. Contact your local distributor or GeneReach directly for troubleshooting.



## Section 4. Operation

### 4.1 Switch On

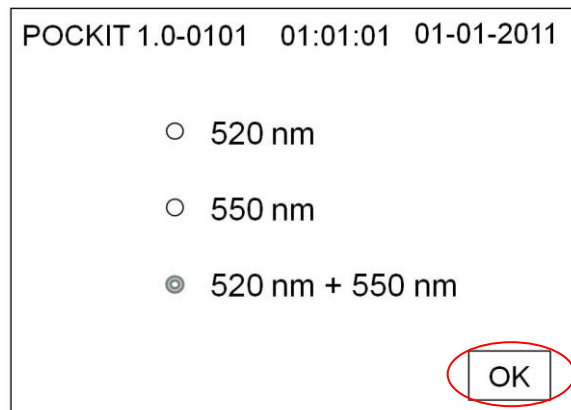
- Plug in the **POCKIT** and switch on the main power located in the back. The device will complete self-testing within 5 minutes.



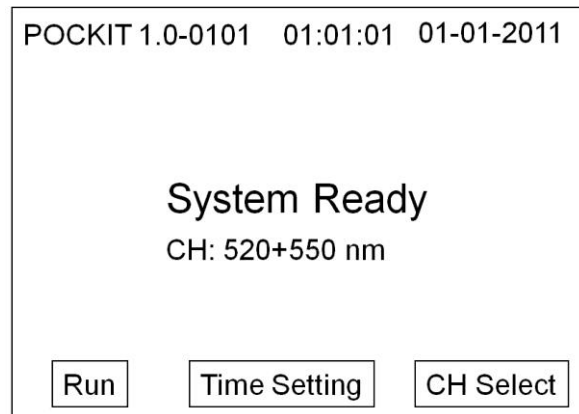
**Note:** If self-testing runs more than 5 minutes, please see **Troubleshooting**.

### 4.2 Choose Detection Wavelength

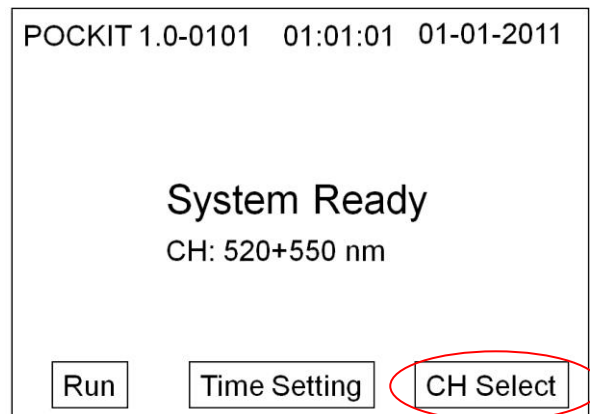
- After the self-testing, choose the detection wavelength according to the kits or methods used and press “**OK**”.



- “**System Ready**” will be shown after choosing the detection wavelength.

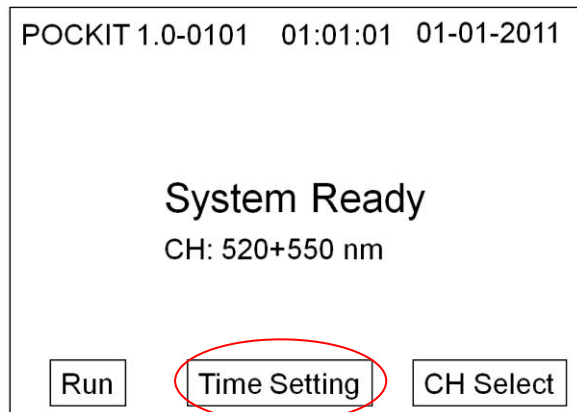


- Before the reaction starts, if the user wants to change the detection wavelength, press “**CH Select**” and choose again.



### 4.3 Set up Date and Time

- Press “**Time Setting**”.



- Touch the numbers that needs to be changed on the screen. Press “**Up**” and “**Down**” to select the desired number. Press “**OK**” to confirm and return to the “**System Ready**” screen. Press “**Cancel**” to quit and leave the “**Time Setting**” screen.



**Note:** The data derived from each test is stored in the SD card and in a folder named according to the corrected (if applicable) date and time when the user switches on the analyzer.

- If any **Errors** listed below are shown, please see **Troubleshooting**.

POCKIT 1.0-0101 01:01:01 01-01-2011

### Temperature Error

please check the environmental temperature

POCKIT 1.0-0101 01:01:01 01-01-2011

### SD Card Error

please check SD card and press OK

OK

POCKIT 1.0-0101 01:01:01 01-01-2011

### Camera Error

please call for service

POCKIT 1.0-0101 01:01:01 01-01-2011

### System Error

please call for service

POCKIT 1.0-0101 01:01:01 01-01-2011

### Times Sequencing Error

please call for service

POCKIT 1.0-0101 01:01:01 01-01-2011

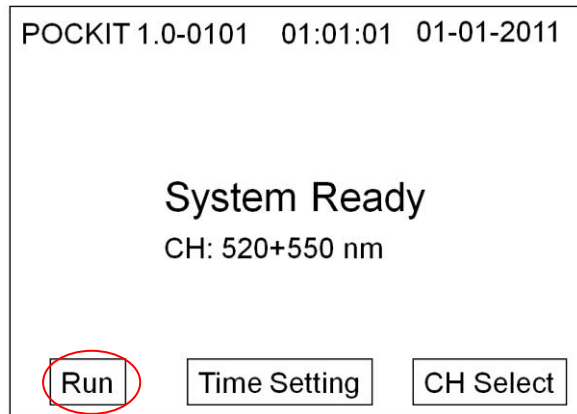
### Create Data Directory Error

please check SD card and press OK

OK

## 4.4 Run iiPCR Reaction

- Place the holder containing R-tubes into the reaction well. Close the lid and press “**Run**” to start the reaction.

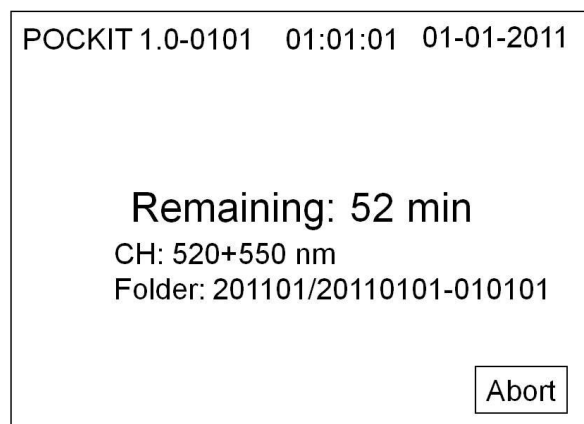


Note: Ensure the holder containing R-tubes fit the reaction wells completely.



Caution: Do not look into the LED light directly from reaction wells.

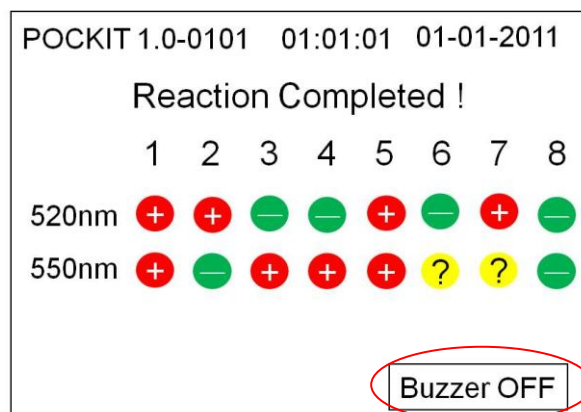
- The screen will display the remaining reaction time and the folder name of the reaction.



Caution: Should any of the circumstance below occurs, the result will be unreliable:

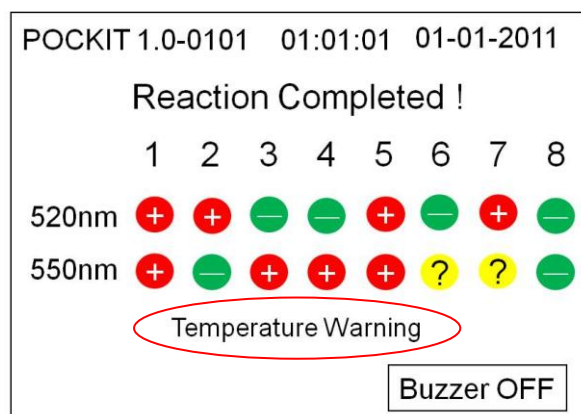
- The lid was opened or the SD card was removed during the **POCKIT** reaction.
- The ambient temperature of the reaction was not in the range of 15-35°C.
- The variation of ambient temperature was greater than 5°C during the reaction.

- When the reaction is complete, there will be beep sound from **POCKIT**. Press “**Buzzer OFF**” to turn off the sound.



**Note:** If there is no beep sound after the completion of the reaction, please see **Troubleshooting**.

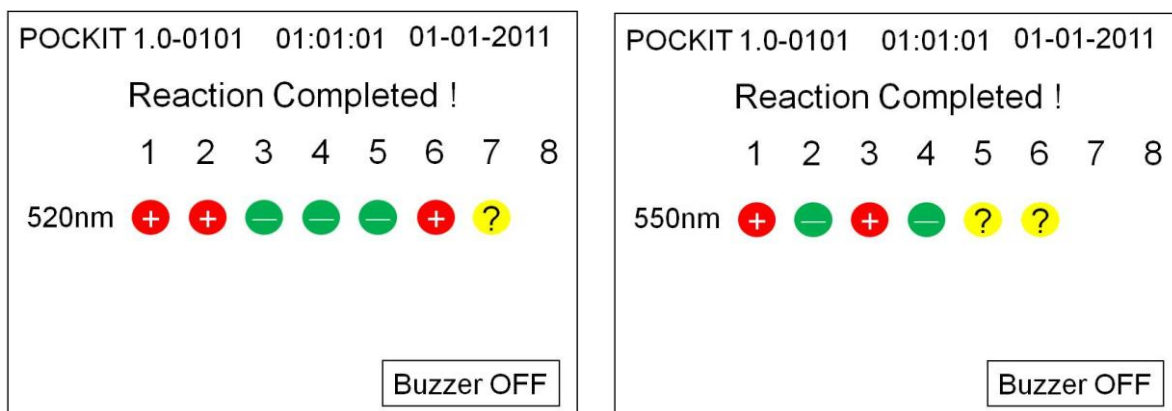
- If the reaction temperature is abnormal during the reaction, it will show “**Temperature Warning**” on the screen.



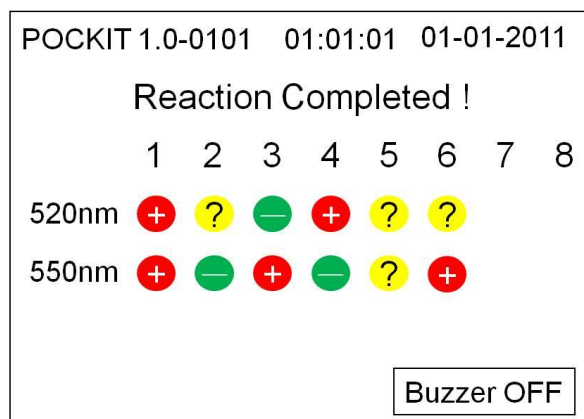
**Caution:** The variation of ambient temperature cannot be more than 5°C during the reaction.

## 4.5 Display the Result

- If a single detection wavelength (either **520 nm** or **550 nm**) is chosen in the beginning, the screen will display the result as the examples shown below.



- If both detection wavelengths (**520 nm+550 nm**) are chosen in the beginning, the screen will display the result as the example shown below.



- Description of the results:

| Results | Description  |
|---------|--------------|
| +       | Positive     |
| -       | Negative     |
| ?       | Undetermined |

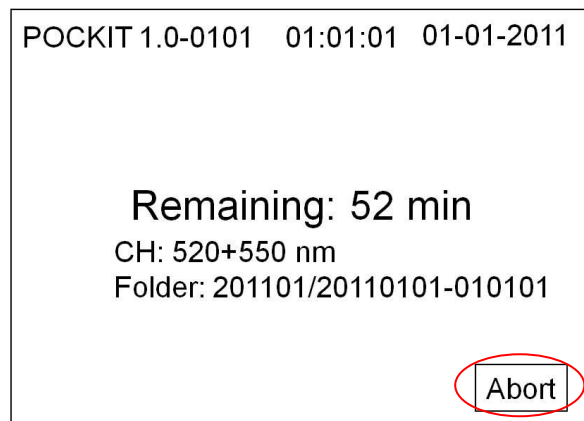
**Note:** Please interpret the results according to the user manual of the kits used.

## 4.6 Review the Raw Data

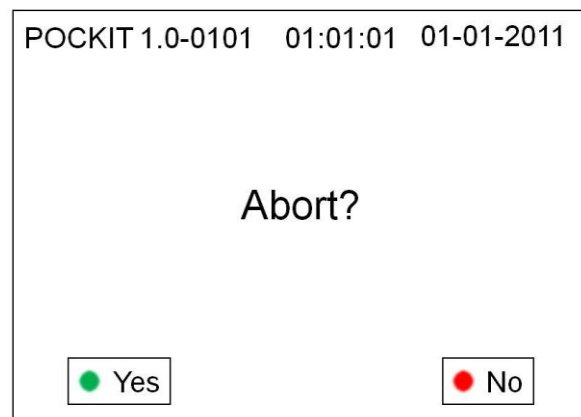
- Insert the SD card on a PC or Mac. Find the folder of the reaction and a file named **raw.csv**.
- Please refer to the kit manual for data interpretation.

## 4.7 Stop during the Reaction

- Press “**Abort**” to stop the reaction.



- Press “**Yes**” to confirm and return to the self-testing screen, or pressing “**No**” to continue the reaction.

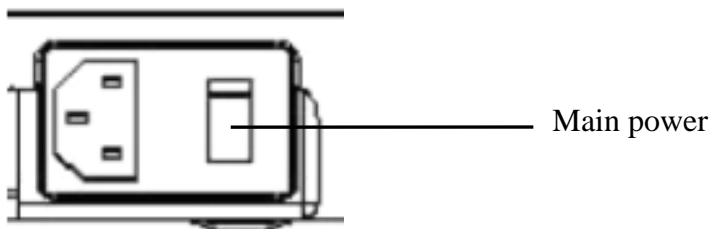




## 4.8 Switch Off

- After the reaction, switch off the main power and unplug the SD card to read the raw data on a PC or Mac.

|                                     |   |   |   |   |   |   |   |            |
|-------------------------------------|---|---|---|---|---|---|---|------------|
| POCKIT 1.0-0101 01:01:01 01-01-2011 |   |   |   |   |   |   |   |            |
| Reaction Completed !                |   |   |   |   |   |   |   |            |
|                                     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8          |
| 520nm                               | + | + | - | - | + | - | + | -          |
| 550nm                               | + | - | + | + | + | ? | ? | -          |
|                                     |   |   |   |   |   |   |   | Buzzer OFF |



**Caution:** Ensure the reaction has been completed before shutting down the device.

## Section 5. Cleaning and Maintenance

### 5.1 General Care

Use only clean and wet paper towel or cotton to wipe out stains in the reaction chamber. Do not disassemble the **POCKIT** for cleaning as it will void the warranty. Do not use solvent, detergent or bleach to clean the **POCKIT** surface.

Note: Always wear gloves, and always switch off and unplug the **POCKIT** before cleaning.

### 5.2 Dealing with Spills

- Wipe out visible spills with disposable paper towel immediately, and contact your local distributor or GeneReach directly for further assistance.
- Do not use UV light to disinfect **POCKIT** as it will cause device damage.

## Troubleshooting

| Observation or Problems                | Comments and Suggestions   |
|--|--|
| (a) Self test runs more than 5 minutes | <ul style="list-style-type: none"><li>• Re-start the device.</li><li>• Contact your local distributors or GeneReach for assistance.</li></ul>  |
| (b) System crash                       | <ul style="list-style-type: none"><li>• Discard current batch of R-tube with reagents.</li><li>• Re-start the device, prepare new reaction reagents and R-tube, and repeat the reaction.</li><li>• If any further problems occur, please contact your local distributors of GeneReach for assistance</li></ul> |
| (c) SD card reading error              | <ul style="list-style-type: none"><li>• Insert SD card, turn off POCKIT, and restart.</li><li>• Contact your local distributors or GeneReach for assistance if the problem persists.</li></ul>   |
| (d) No display on screen               | <ul style="list-style-type: none"><li>• Check the plug to see if it has been connected to the power system.</li><li>• Check the fuse to see if it is overloaded.</li><li>• Contact your local distributor or GeneReach for assistance.</li></ul>   |
| (e) System error                       | <ul style="list-style-type: none"><li>• Contact your local distributors or GeneReach for assistance.</li></ul>   |
| (f) Temperature error                  | <ul style="list-style-type: none"><li>• Check the ambient temperature to be kept at 15-35°C.</li><li>• Contact your local distributors or GeneReach for assistance.</li></ul>  |
| (g) Camera error                       | <ul style="list-style-type: none"><li>• Contact your local distributors or GeneReach for assistance.</li></ul>   |
| (h) Time sequencing error              | <ul style="list-style-type: none"><li>• Contact your local distributors or GeneReach for assistance.</li></ul>   |
| (i) Create data directory error        | <ul style="list-style-type: none"><li>• Check storage space of SD card.</li><li>• Check the file/folder number is within 512 in each directory.</li><li>• Contact your local distributors or GeneReach for assistance.</li></ul>   |
| (j) No beep sound                      | <ul style="list-style-type: none"><li>• Contact your local distributors or GeneReach for assistance.</li></ul>   |