

CE

PACKIT  **DUO**

Nucleic Acid Analyzer

User Manual

Manufacturer:

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Symbols

 Conformité Européenne


 Date of manufacturing

 Manufacturer



 Catalogue number

 Serial number

 Direct current

 Caution, consult instructions for use.

This product is required to comply with

 **WEEE** the European Union's Waste Electrical &
 **symbol** Electronic Equipment (WEEE) Directive
2012/19/EU.

Section 1. Introduction

The **POCKIT™ Micro Duo** Nucleic Acid Analyzer (**POCKIT™ Micro Duo**) is developed based on insulated isothermal PCR technology (iiPCR), which is achieved by Rayleigh-Bernard convection in a capillary tube. **POCKIT™ Micro Duo** provides isothermal heating at the bottom of capillary tubes to generate temperature gradients in the capillary tube, inducing a natural thermal convection to drive the PCR reaction.

POCKIT™ Micro Duo is equipped with two optical channels (520 nm, 550 nm) for multiplex qualitative detection of nucleic acid. Up to four reactions are completed in around 45 minutes and the test results are directly displayed on the monitor, and automatically saved in a micro SD card.

1.1. Intended use

The **POCKIT™ Micro Duo** is a nucleic acid amplification and detection device for in vitro qualitative

determination of target nucleic acid via fluorescence-based
iiPCR reagent.

This product is intended for professional use by properly
trained laboratory technicians familiar with molecular biology
techniques.

Section 2. General information

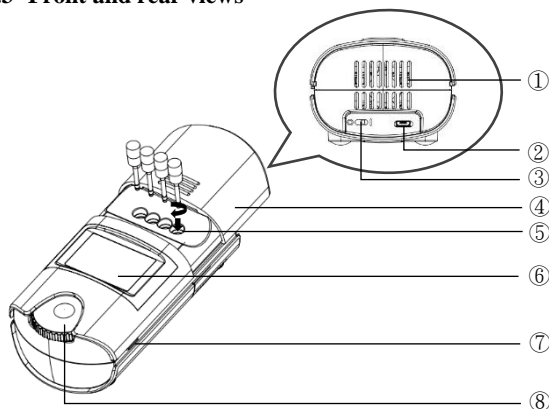
2.1 Product components

- **POCKIT™ Micro Duo** Nucleic Acid Analyzer × 1
- User Manual × 1 copy

2.2 Specification

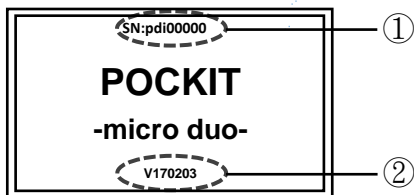
- Dimensions: 78 mm (W) × 55 mm (H) × 160 mm (L)
- Net Weight: 430 g
- Power Supply:
 - ✓ Input: 100-240V~50/60Hz, 0.2A
 - ✓ Output: DC 5V 1A (micro USB mount)
- Operation Temperature: 15-35°C
- Operation Altitude: Up to 5,000 meters
- Transportation Condition: -29-50°C, 55±20% RH
- Storage Condition: 10-40°C, 30-80% RH
- Throughput: 1-4 reactions per run.

2.3 Front and rear views



No	Item	Description
①	Cooling vents	To release the heat generated during the reaction.
②	Power socket	To connect the USB charging cable.
③	Main switch	To turn on/off the main power.
④	Slide lid	To prevent light interference in the reaction chamber.
⑤	Reaction well	To accommodate the R-tubes to perform the amplification.
⑥	Screen monitor	To view the setting options and results.
⑦	Micro SD card slot	To insert a micro SD card to run reaction and save reaction raw data.
⑧	Jog wheel/select button	To select the settings.

2.4 Software version



No.	Item	Description
①	Serial Number	Serial number of POCKIT™ Micro Duo.
②	Software Version	Current software version on POCKIT™ Micro Duo.

Section 3. Important notes

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

3.1 Safety information

- Electromagnetic compatibility: This product complies with the emissions and immunity requirements of IEC 61326. Do not use this device in close proximity to sources of strong electromagnetic radiation (for example, unshielded intentional radio frequency (RF) sources). Strong electromagnetic radiation may interfere with the operation of the device.
- Do not touch any plugs and electric switches with wet hands. Make sure to keep the device away from water and corrosive chemicals.
- Do not disassemble the device (including changing battery) when any problem occurs. Contact your local distributor or

GeneReach directly for troubleshooting.

- To ensure safety, the device has an auto cutoff mechanism for overcharge/ over discharge/overcurrent protection.

➤ **Operation**

- Please carefully read these warnings, precautions and safety/operating instructions before operating.
- Only use consumables and accessories provided from GeneReach.
- Do not move the device during the reaction. Switch off the device before moving it.
- Do not look directly into the LED light in the reaction wells when the LED lights are on.
- Make sure the ambient temperatures during reaction are kept at 15-35°C.
- Waste materials, such as gloves and R-tubes, may lead to cross-contamination of other experiments. Dispose of waste in accordance with local regulation.

➤ **Shipping and transportation**

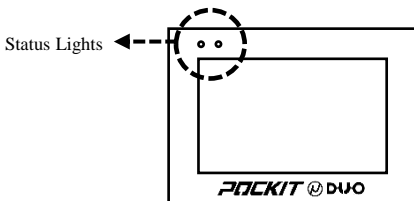
- It is strongly recommended to put the device in the box

for shipping/long-distance transportation. Pack the device carefully. Vibration or crash may cause damage.

Section 4. Operation

4.1 Charge the POCKIT™ Micro Duo

- (1) Charge the **POCKIT™ Micro Duo**.
- (2) **POCKIT™ Micro Duo** has two status lights. Red indicates the battery is charging, and green indicates the battery is fully charged.



***Note:** Always switch off **POCKIT™ Micro Duo** while charging.

***Note:** Before the first use, be sure to charge the battery for 10-12 hours.

***Note:** Make sure the red status light is displayed while charging.

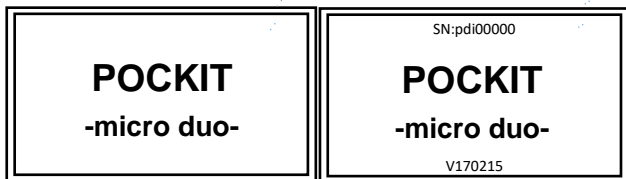
***Note:** Make sure **POCKIT™ Micro Duo** is properly charged before use. Due to risks of current instability in

different areas, DO NOT run the reaction while charging the battery to ensure smooth operation.

*Note: If the charging status lights do not work, please re-plug the USB charging cable. If the same problem occurs again, please contact your local distributor or GeneReach for assistance.

4.2 Switch on

Switch on the main power located in the back. The following device information will be displayed on the screen.

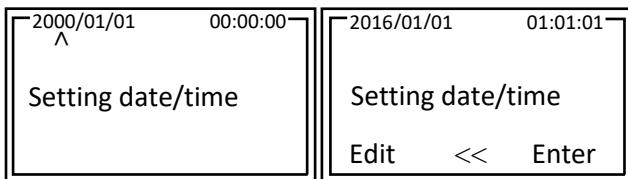


*Note: Do not remove the micro SD card until the device is switched off.

4.3 Setting date and time

*Note: After the device is turned on, users need to set the date and time.

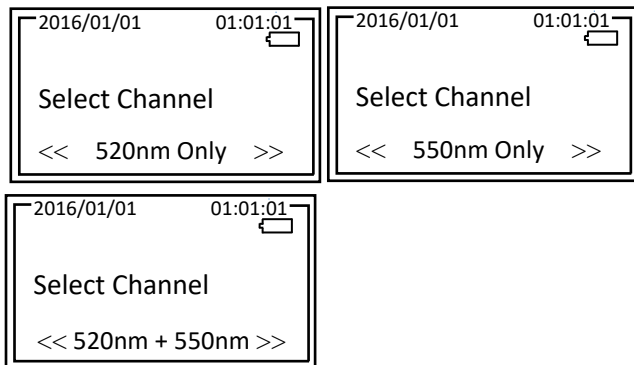
To set up the date and time, press the jog wheel button to select the desired number. Make sure the number is correct and select "**Enter**" to confirm. To edit the information, select "**Edit**" to correct.



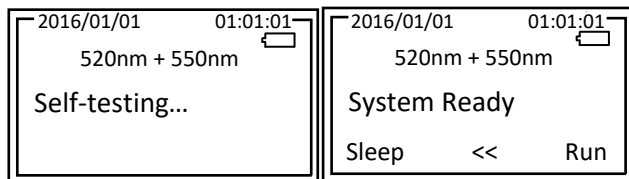
To select "**Edit**" or "**Enter**", turn the jog wheel to change the direction of the double arrows on the screen. Press down the jog wheel when the arrows are pointing to the desired option.

4.4 Select channel

- (1) Turn the jog wheel to choose detection wavelength according to the reagent's instruction and press the jog wheel to select.



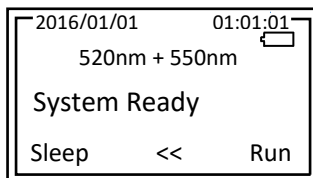
(2) The device initiates self-testing, and “System Ready” shows on screen after several minutes.



*Note: When self-testing runs longer than 15 minutes, the system will show “System Time Out” on the screen. Please see Troubleshooting for more details.

4.5 Sleep mode

- (1) After setting the date and time, **POCKIT™ Micro Duo** will enter sleep mode automatically after 10 minutes without activities, or after the “**Sleep**” action is selected.



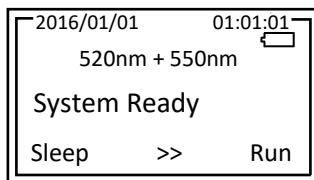
- (2) To wake up **POCKIT™ Micro Duo**, press the jog wheel again.

***Note:** In the case that the main power is switched off during the sleep mode, wait for at least 1 minute before switching it on.

4.6 Run ii-PCR reaction

***Note:** DO NOT operate under direct sunlight.

- (1) Place the R-tubes into the reaction well. Close the lid and select “**Run**” to start the reaction.



***Note:** DO NOT run the reaction while charging the battery to ensure smooth operation.

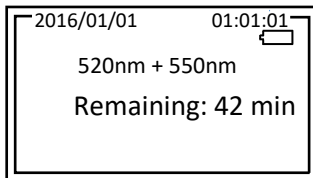
***Note:** Make sure the R-tubes are completely fit into the reaction chamber and the lid of POCKIT Micro Duo is closed tightly before starting the reaction.

***Note:** DO NOT look directly into the LED lights in the reaction chamber.

***Note:** DO NOT open the lid during the reaction.

***Note:** DO NOT operate the **POCKIT™ Micro Duo** next to any air vents to prevent the ambient temperature from fluctuating greater than 5°C during the reaction.

(2) The screen displays the remaining reaction time.



Caution: Should any of the circumstances below occurs, the results are unreliable:

- The lid is opened during the **POCKIT™ Micro Duo** reaction.
- The reaction is not performed at ambient temperatures (15-35°C).
- The ambient temperatures fluctuate greater than 5°C during the reaction.

4.7 Display the result

- (1) When the reaction is done, **POCKIT™ Micro Duo** makes a beep tone to alert the user.
- (2) Results are displayed on the screen and saved to the micro USB card automatically after the reaction.

Please see an example below.

CH	1	2	3	4
520	⊖	⊕	⊖	□
550	⊖	⊕	⊖	□

***Note:** Please record the results immediately when the reaction is done, to avoid losing the data in case the device runs out of battery.

4.8 Results interpretation

Results	Description
+	Positive
—	Negative
□	No R-tube inside
?	Undetermined
!	Warning

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

***Note:** When you see a “!” symbol, please refer to the *Troubleshooting*.

***Note:** After the reaction, DO NOT touch the bottom of the R-tube because it might be hot.

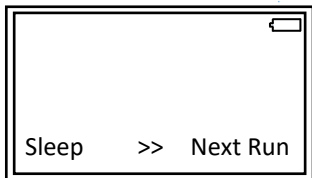
***Note:** After the reaction, DO NOT open the cap of R-tube, as that may lead to cross-contamination.

4.9 Review the raw data

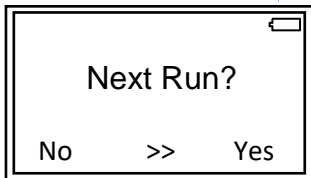
- (1) Insert the micro SD card on a PC or Mac. Find the date according to the reaction time file in the folder.
- (2) Please refer to the iiPCR reagent manual for data interpretation.

4.10 Restart POCKIT™ Micro Duo

- (1) After an iiPCR run is completed, press the jog wheel button to restart.
- (2) Select “**Sleep**” to sleep mode, or select “**Next Run**” to reset the next run.



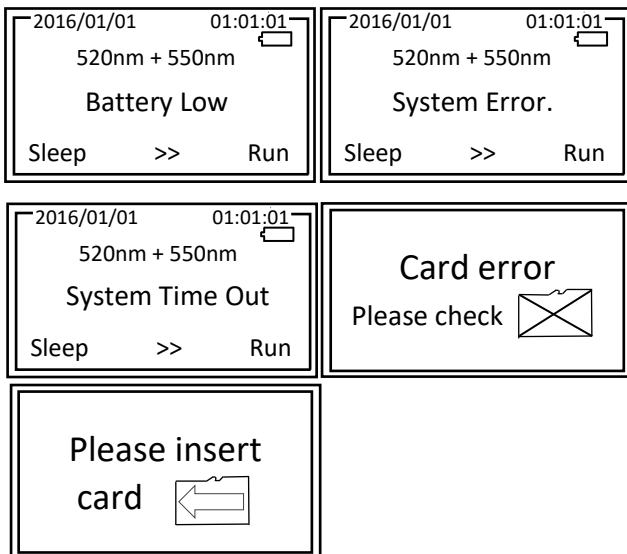
- (3) Select “**Yes**” to confirm, or select “**No**” to return to the results screen of the last run.



4.11 Error messages

For any error messages listed below, please see

Troubleshooting.



Section 5. Cleaning and maintenance

5.1 General care

*Note: Before cleaning, wear gloves and always switch off the **POCKIT™ Micro Duo**.

Do not disassemble **POCKIT™ Micro Duo** for cleaning as it will void the warranty. Use only clean and wet paper towel to wipe off any stains on the exterior surfaces. Do not use any solvents, detergents or bleach to clean the **POCKIT™ Micro Duo** surfaces.


5.2 Dealing with liquid spills

- Wipe off visible liquid spills with paper towels immediately and discard the used towels properly to avoid cross-contamination. Contact your local distributor or **GeneReach** directly for further assistance.

- Expose the outside of the device with the lid open to UV light, if available, for 15 minutes to minimize cross-contamination.

***Note: Avoid direct exposure to the UV light.**

Troubleshooting

Problems	Comments and Suggestions
(a) System time out	<ul style="list-style-type: none"> Restart the device.
(b) System error	<ul style="list-style-type: none"> Restart the device.
(c) Battery low	<ul style="list-style-type: none"> Switch off the device, and make sure the POCKIT™ Micro Duo is charged for at least one hour before use.
(d) "  " symbol shown after the run	<ul style="list-style-type: none"> Prepare and run a new reaction of the same sample in the same well. Make sure the operating procedures are followed correctly.
(e) No display on screen.	<ul style="list-style-type: none"> Check whether the device is in the sleep mode. If not, switch off the device, and charge the POCKIT™ Micro Duo.

- (f) Card error
- Remove and insert the micro SD card. If the problem recurs, use a different micro SD card.
-

- (g) Please insert card
- Switch off the device, and insert the micro SD card.
-

* If your **POCKIT™ Micro Duo** malfunctions or operates unusually in any way, please contact your local distributor or GeneReach for assistance.

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GeneReach Biotechnology Corp.
Limited One (1) year Warranty

Product Name: POCKIT Micro Duo	Serial No.: pd
Model:	Date of Purchase:
Customer Name:	Distributor Confirmation:
Telephone:	
Address:	

*Please refer to the website (www.genereach.com) for more details.