WHALETEQ

Test Solutions for
Medical Device Manufacturers

WECG400

Parallel Testing ECG Tester
for wearable device production lines

Quick Start Guide

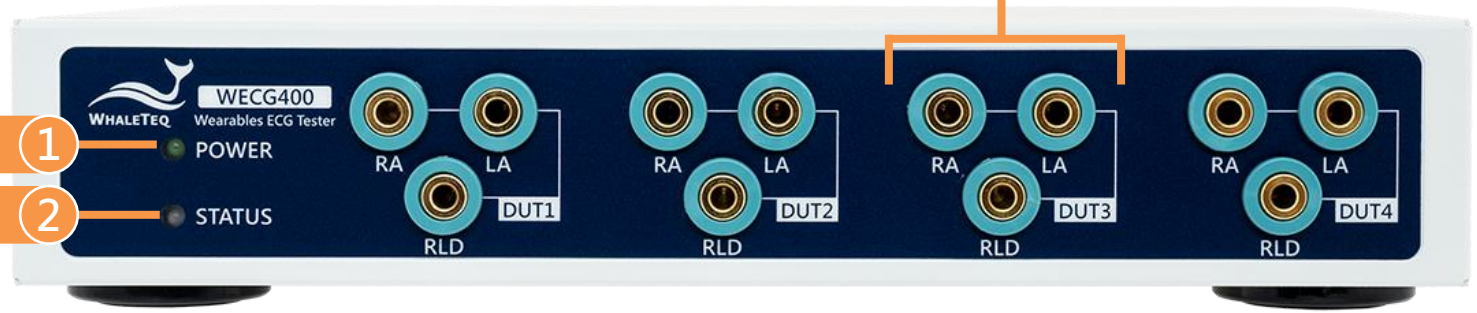
Released: 2024-10-16

- Hardware Overview
- Installation
- Operation
- Notes for Installation – Reduce environmental noise interference
- LED Description
- Performance Test Software* – Manual Mode
- Performance Test Software – Quick Mode: IEC 60601-2-47 test items
- Performance Test Software – Quick Mode: Play raw data

Note: This software is for quickly verifying the WECG400 performance only,
not the actual test software on production lines.

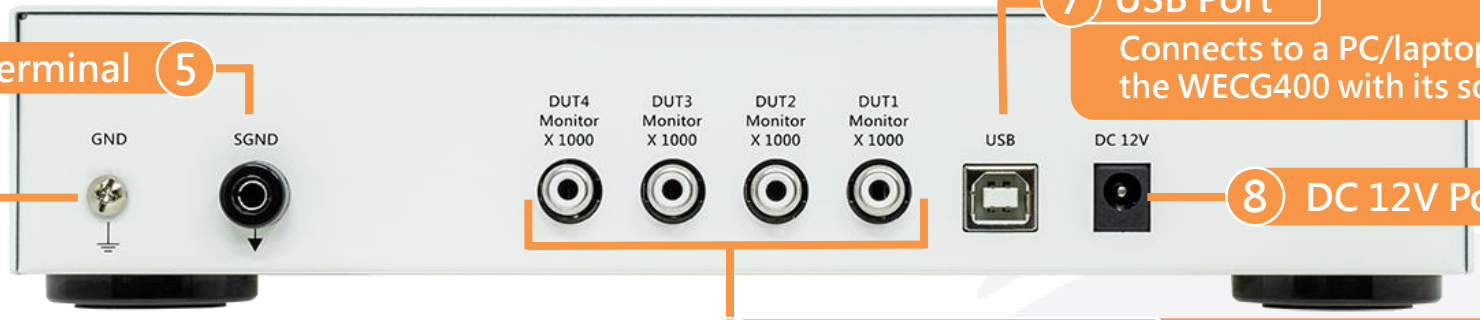
Hardware Overview

Front View



1. Power LED
2. Status LED
3. RA / LA / RLD Electrode Terminals (4 sets in total)

Rear View

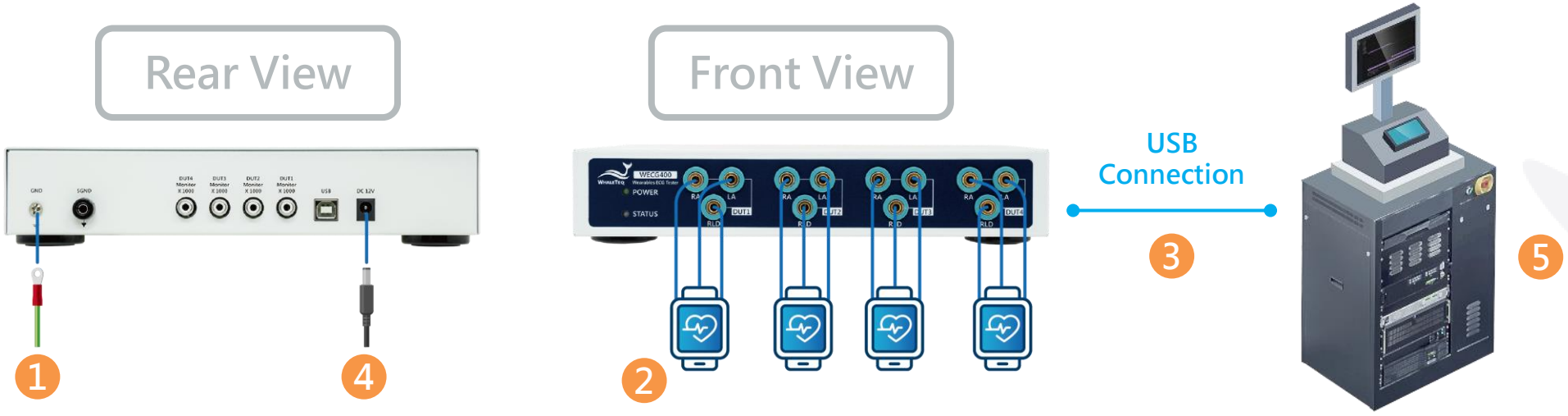


4. GND Terminal
5. SGND Terminal
6. DUT Monitor Ports
   Connects to an oscilloscope to monitor the amplified ECG signal output (1mV=1000mV output)
7. USB Port
   Connects to a PC/laptop to control the WECG400 with its software
8. DC 12V Power Jack

Dimensions (W x L x H): 270 x 225 x 50 mm

Note: The WECG400 is rack-mountable with the 1U height (excluding the foot pads) design.

Installation



① (Optional) Ground the WECG400 by connecting one end of a grounding wire to the GND terminal and the other end to a suitable grounded object [1].

② Connect the RA, LA, and RLD electrodes of DUTs respectively to the RA, LA, and RLD electrode terminals on the WECG400.

③ Connect a computer to the WECG400 using a USB Type-A to USB Type-B cable.

④ Plug a power adapter into an AC power source, then plug the power adapter cable into the WECG400's power jack. Now the WECG400 is powered on.

⑤ Activate the installed WECG400 software to conduct parallel or sequential testing[2].

Note: 1. For more information on grounding, please refer to Notes for Installation – Reduce environmental noise interference.

2. For more information on testing, please refer to Operation.

Operation

Before starting the testing:

- The WECG400 supports both parallel and sequential testing, and users can develop programs by using SDK to set up suitable testing methods.
- The WECG400 is not a standalone model. Please connect the WECG400 to a PC/laptop to conduct testing.

- **Parallel testing**

1. Set the input impedance of the WECG400 to 10MΩ through PC.
2. After connecting 4 DUTs to the WECG400, switch the WECG400 to the desired input impedance value and choose the test item.
3. The WECG400 will simultaneously send signals to the 4 DUTs. After the test is complete, switch the input impedance of the WECG400 back to 10MΩ.
4. Disconnect the tested DUTs and repeat the above steps for further testing.

Note: Set the input impedance of the WECG400 to 10MΩ before each test can minimize the impact of electrostatic discharge (ESD) and surges from DUTs on the WECG400 and test results.

- **Sequential testing**

1. Connect the first DUT, then choose the test items and the DUT through PC to send signals to it.
2. Connect the second and third DUTs, then choose the DUTs through PC while the first DUT is under testing.
3. After completing testing on the first DUT, the WECG400 tests other DUTs one at a time by users' designated order.
4. Disconnect the tested DUTs, then connect new DUTs to the WECG400 and repeat the above steps.

Note: If there is excessive noise during sequential testing, parallel testing is recommended.

Notes for Installation – Reduce environmental noise interference

- Use short cables to connect the WECG400 and DUTs[1].
- Use shielded cables to avoid environmental radiation interference.
- Avoid cables overlapping or crossing each other when testing.

- Put a metal plate under the WECG400 and the PC, then ground the WECG400 by connecting its GND terminal to the metal plate.[2]

Note:
1. Shorter cables are recommended by bringing a closer connection between the WECG400 and DUTs to reduce possible interference.
2. The metal plate's size should cover the WECG400 and the PC at least. It's unnecessary to ground the metal plate itself.

LED Description

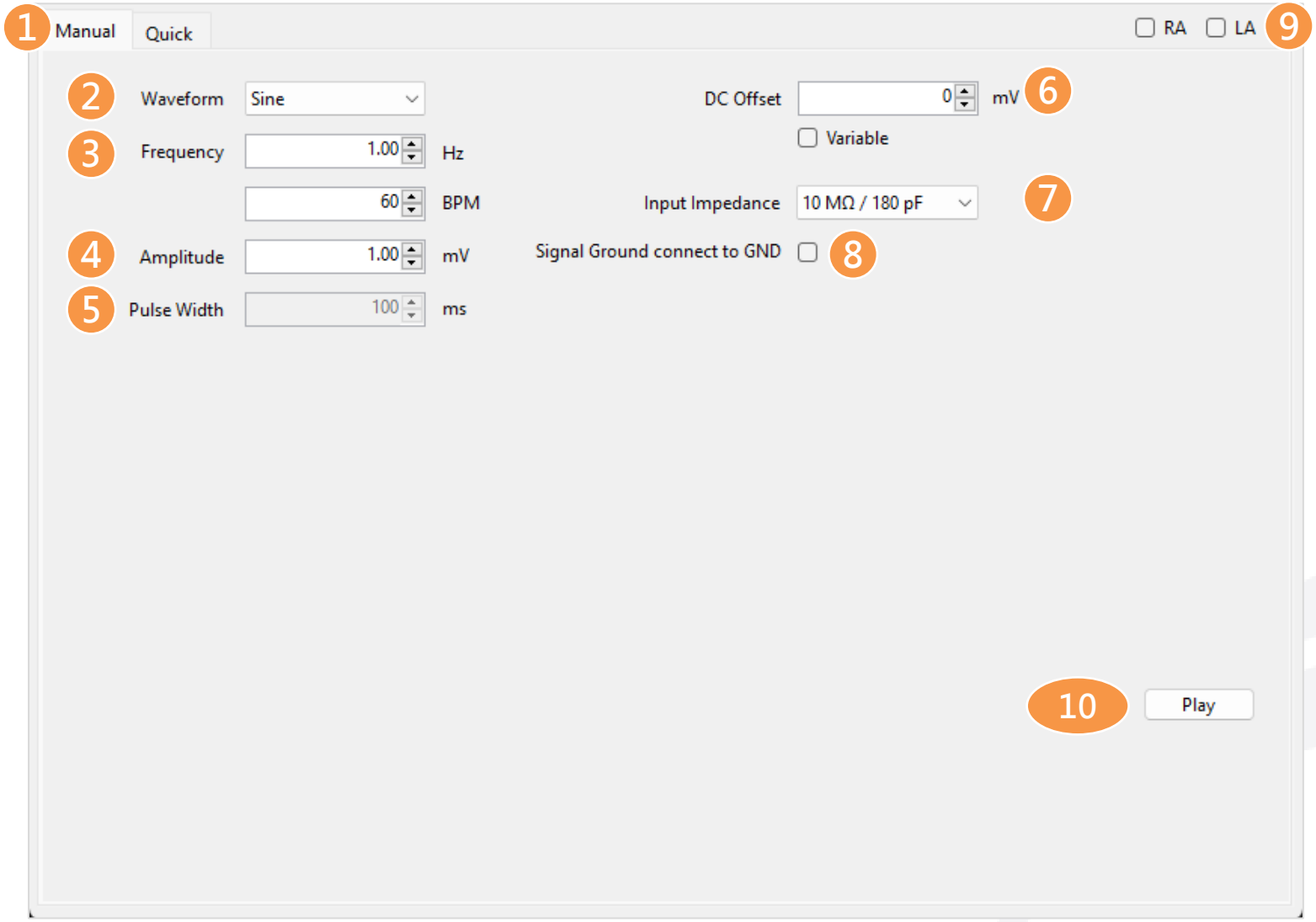
Power LED

- **Lights green**: The WECG400 is powered on.
- **Off**: The WECG400 is powered off.

Status LED

- **Flashes green:** The WECG400 connects to a computer (flashes every 2 seconds).
- **Flashes red:** The WECG400 is powered on but disconnects to a computer (flashes every 2 seconds).

Performance Test Software – Manual Mode



① Click the ''Manual'' tab.

② Select the desired waveform.

③ Set the frequency.

④ Set the amplitude.

⑤ Set the pulse width*.

⑥ Set the DC offset.

⑦ Select desired input impedance.

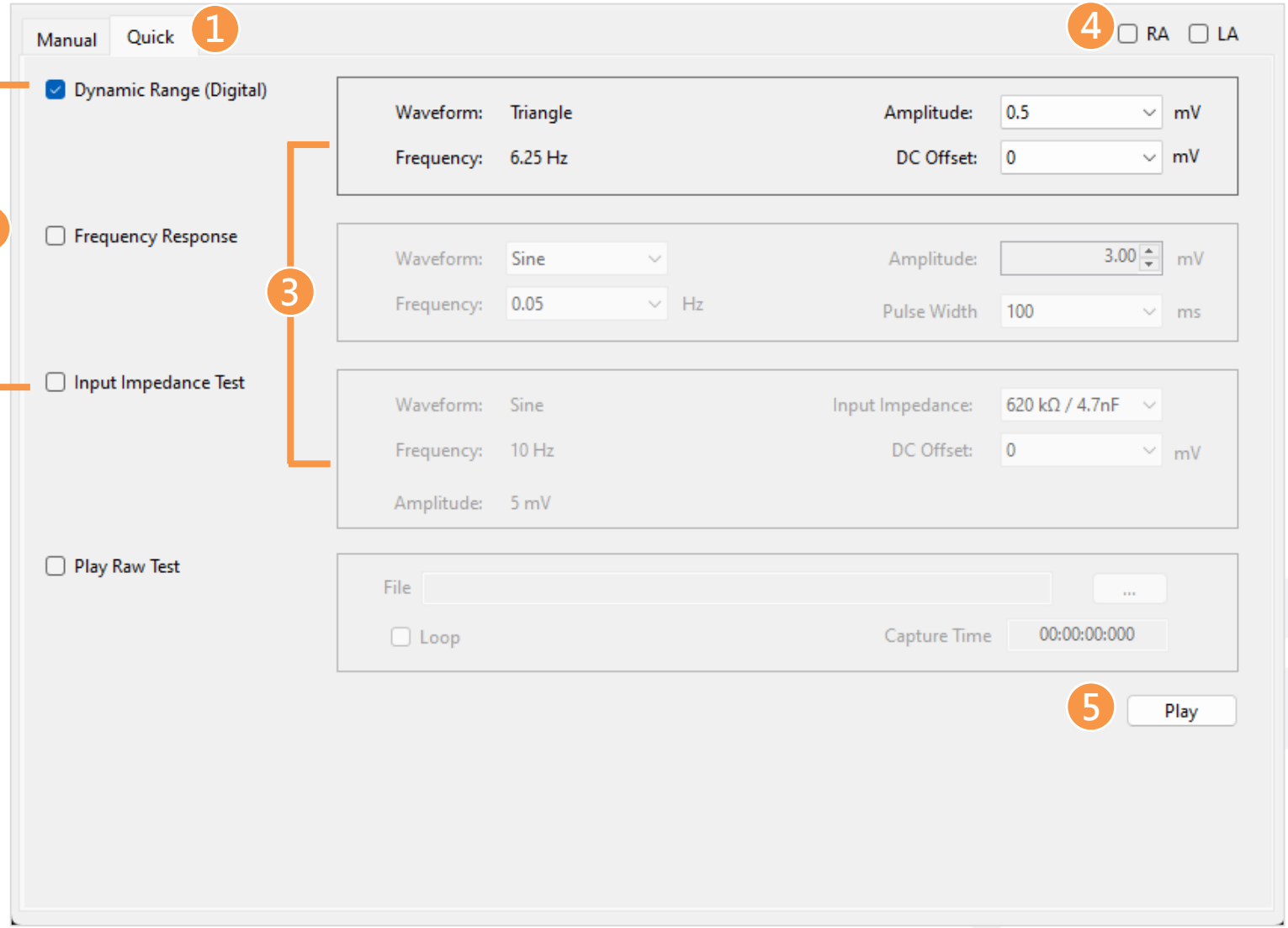
⑧ (Optional) Connect the signal ground inside the WECG400 to the chassis ground.

⑨ Check RA or LA for testing.

⑩ Click ''Play'' to output configured signals.

*Note: Pulse width is only available when Rectangle Pulse or Triangle Pulse is selected in the Waveform section.

Performance Test Software – Quick Mode: IEC 60601-2-47 test items



① Click the ''Quick '' tab.

② Select the desired test item (dynamic range, frequency response, or input impedance).

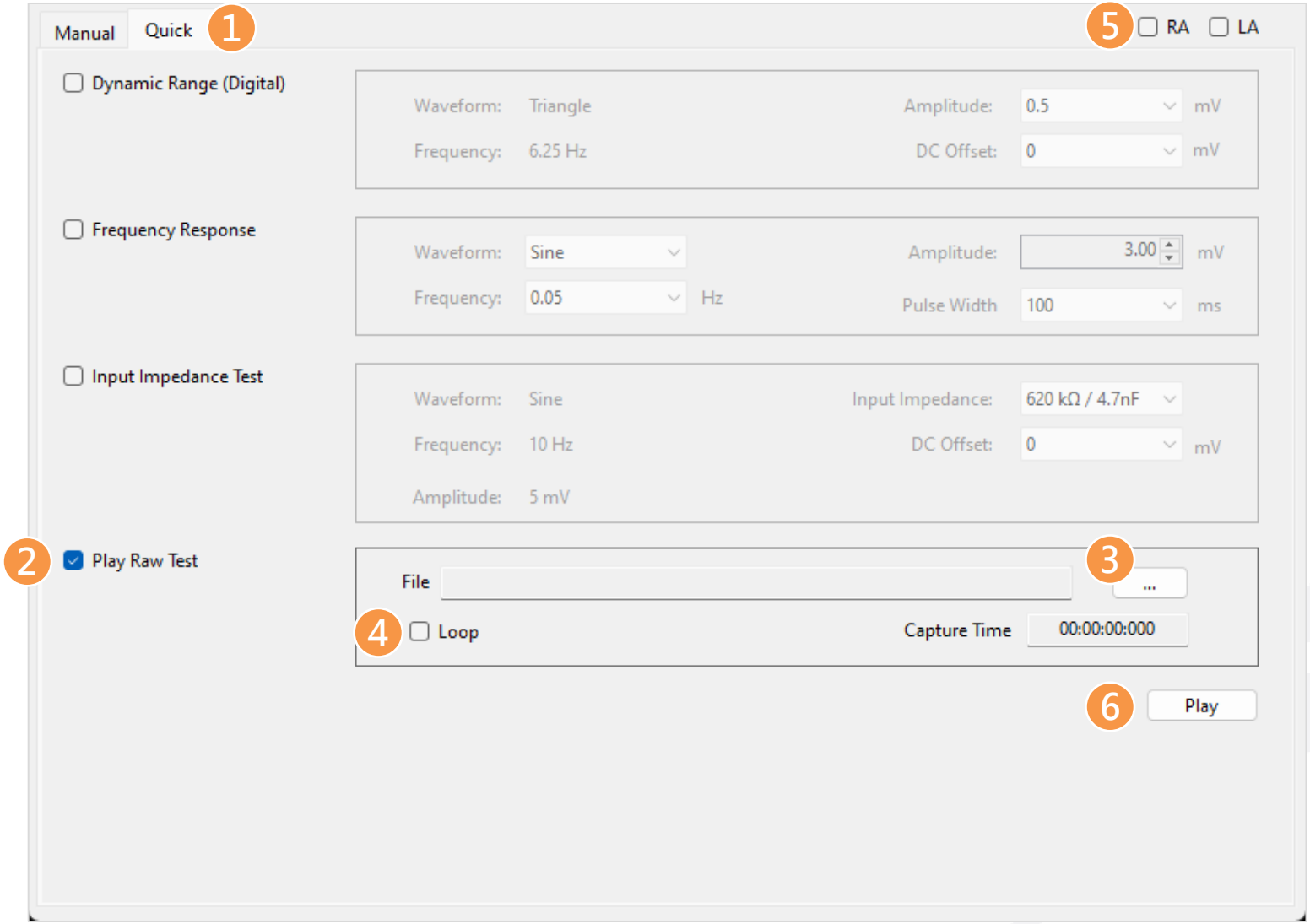
③ Set the values on the selected test item*.

④ Check RA or LA for testing.

⑤ Click ''Play'' to output configured signals.

*Note: Dropdown lists showing in light gray provide selectable values.

Performance Test Software – Quick Mode: Play raw data



① Click the "Quick" tab.

② Check "Play Raw Test".

③ Click the "..." button to select a raw data file.

④ (Optional) Check "Loop" to play the raw data in a loop.

⑤ Check RA or LA for testing.

⑥ Click "Play" to output raw data signals.

WHALETEQ

Test Solutions for

Medical Device Manufacturers

www.whaleteq.com
service@whaleteq.com

8F., No. 125 Songjiang Rd., Zhongshan Dist., Taipei City 104474, Taiwan

+886-2-2517-6255

+886-2-2596-0702

All information, documentation, firmware, software utilities, and specifications are subject to change without prior notification by the manufacturer.