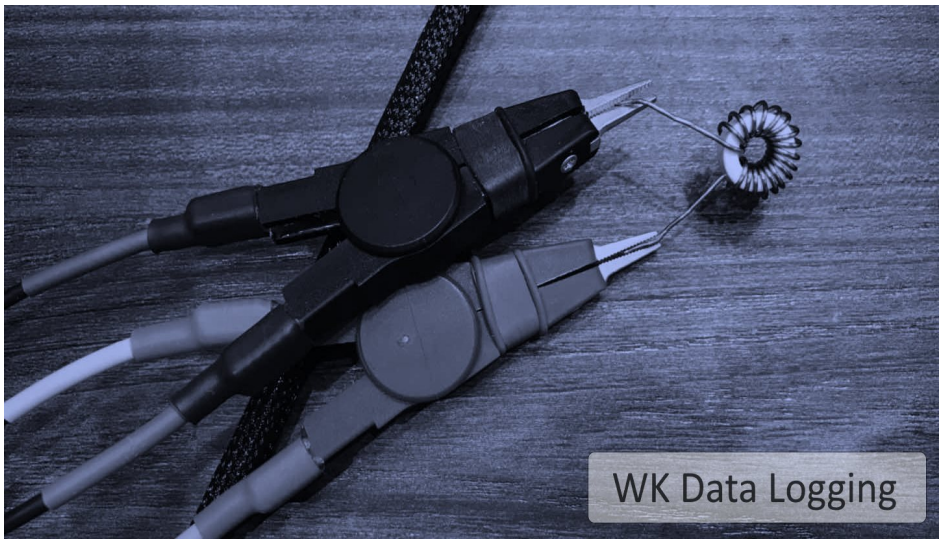
WK Data Logging

Operations Manual



File version : 1.0

Software name : WK Data Logging

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Table of Contents

Table of Contents ii
Figure Table of Contents iv
Table directory v
DISCLAIMER 2
CHAPTER 1 4
SOFTWARE INTRODUCTION 4
1.1 System Ports 4
1.2 Login Screen 4
1.3 USB Key 7
1.4 System Settings 8
1.4.1 Instrument Settings 9
1.4.2 Language Setting 9
CHAPTER 2 10
DASHBOARD MODE 10
2.1 Interface 10
2.2 Setting The Measurement Conditions 12
2.3 Measurement 13
2.4 Save The Measurement Results 13
2.5 Save The Setting Condition 14
2.6 Load Settings Programming 14
2.7 Meter Viewing 14
2.8 Scan The QR Code 15
2.8.1 Measurement Conditions 15
2.8.2 Material Information 15
2.9 Meter Mode Setting 17
2.9.1 Bias Source Setting 17
2.9.2 Offset Value Compensation 18
2.9.3 Material Properties 19
2.9.4 Material Information Setting 20
2.9.5 Other settings 20
CHAPTER 3 22
ANALYSIS MODE 22
3.1 Interface 22

3.2 Function Introduction....24
3.3 Setting The Measurement Conditions....25
3.4 Measurement....26
3.5 View Measurement Data....26
3.6 Save The Measurement Results....27
3.6.1 Save The Picture....27
3.6.2 Store data....27
3.7 Save The Setting Condition....28
3.8 Load Setting Conditions....28
3.9 Resonant Mode....29
3.10 Analysis Mode Setting....29
3.10.1 Bias Source Setting....30
3.10.2 Material Settings....31
3.10.3 Device settings....32

Figure Table of Contents

Figure 1. Connection method 4
Figure 2. Login screen 4
Figure 3. A successful connection to the instrument 6
Figure 4. USB key does not boot 7
Figure 5. USB Key Boot 8
Figure 6. System settings 8
Figure 7. Language settings 9
Figure 8. Dashboard Mode Interface 10
Figure 9. "Edit" interface of analysis mode 22
Figure 10. "Chart" interface of analysis mode 23
Figure 11. Analysis Mode System Setting 29
Figure 12. NI USB-TC01 32

Table Directory

Table 1. Login Screen Feature Introduction.....5
Table 2. Dashboard Mode Feature.....11
Table 3. Analysis Mode Features.....25
Table 4. Thermocouple ypes.....32

DISCLAIMER

This software only provides the convenience of remote measurement, users and their managers should pay attention to the condition of instruments, fixtures and measured objects to avoid damage and disasters.

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2. If pirated software is used and has not been sold and licensed by the Company, the software author and the Company do not provide technical services.
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CHAPTER 1

SOFTWARE INTRODUCTION

1.1 System Ports

This software supports GPIB, USB, LAN ports, choose one to operate. An additional Ext. connection method is available to integrate external instruments.

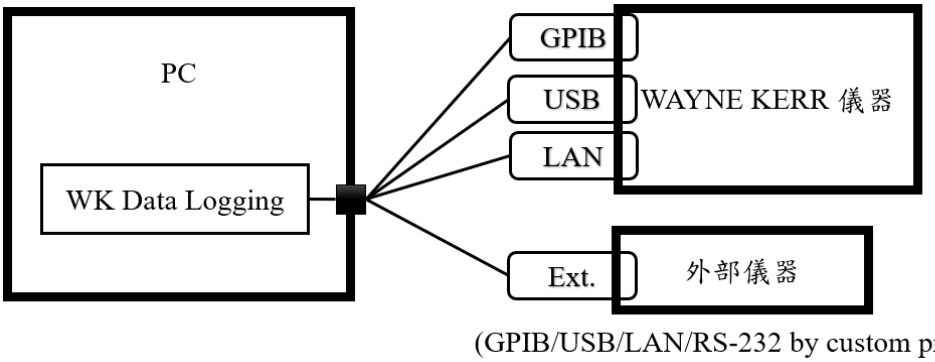


Figure 1. Connection method

Figure 1 shows that the software provides three connection methods, choose the connection method to connect with the Wayne Kerr instrument.

1.2 Login Screen

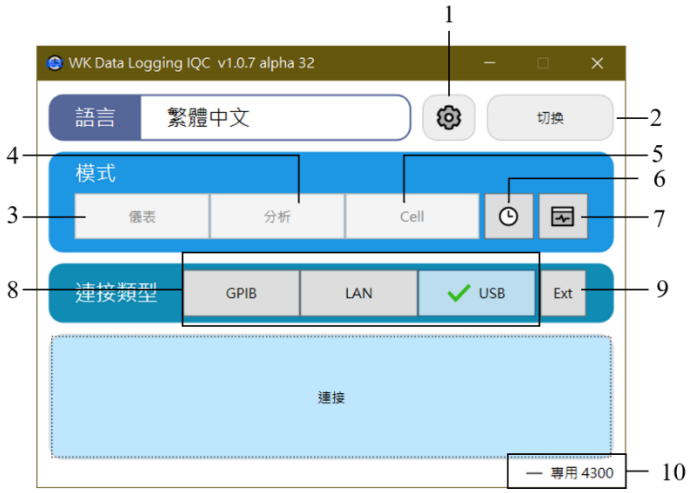


Figure1. Login screen

Figure1shows the software login screen, and the software version number is shown in the upper left corner.

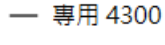
NO.	ICON	DESCRIPTION
1		Master system settings
2		Disconnect from the instrument
3		Dashboard mode
4		Analysis mode
5		Customized projects
6		Measurement data analysis tools
7		Diagnostic window
8		Three types of ports
9		External Connection Settings
10		Specifically designed for WK4300; non-WK4300 instruments will connect the method with the software

Table1. Login screen feature introduction

According to the user's existing connection method, you can select:

GPIB An address number is required.

LAN Enter IP, WK4X series, default IP address is 192.168.1.245.

USB You do not need to enter an address number.

After selecting the connection method, click Here:

連接.

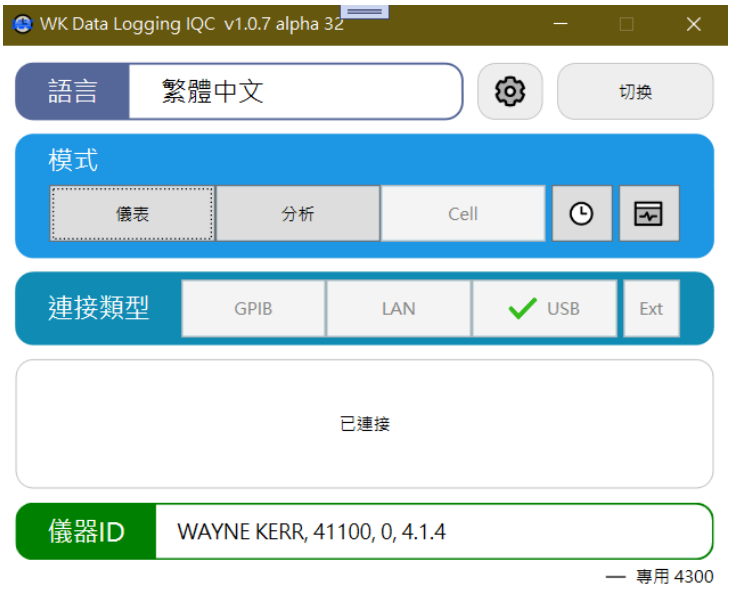


Figure2. A successful connection to the instrument

Figure2shows the screen of successfully connecting to the instrument and displaying the ID of the instrument to enter the mode (Mode). This document lists the USB connection method to connect with WAYNE KERR 41100.

Enter gauge mode, refer to 0.

Enter the analysis mode, refer to 0.

Custom Engineering:

1. WK5400 series, support multiple current modes.
2. WK3260 series, support transformer mode.

To disconnect or reconnect, tap.

1.3 USB Key

※You must insert a USB key before starting this software to activate the data saving function.

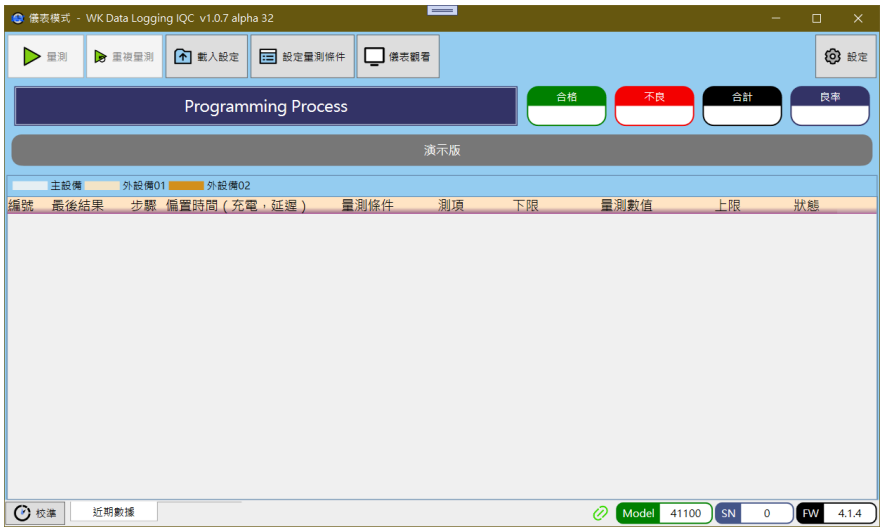


Figure3. USB key does not boot

Figure3 4, the word "Demo Version" appears to indicate that the USB key is not detected.

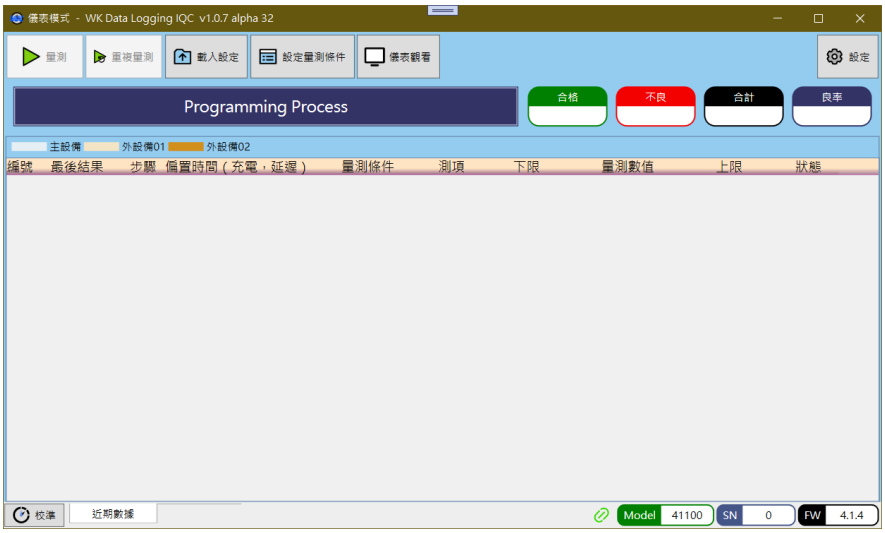


Figure4. USB Key Boot

Figure4Demo Version" does not appear, indicating that the USB key has been started.

1.4 System Settings

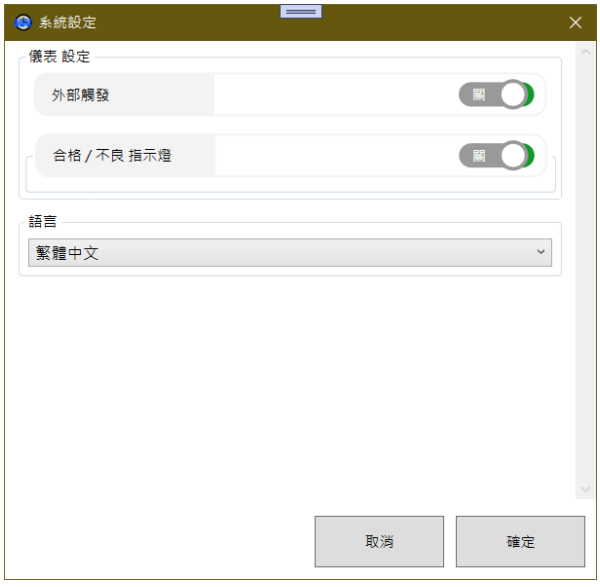
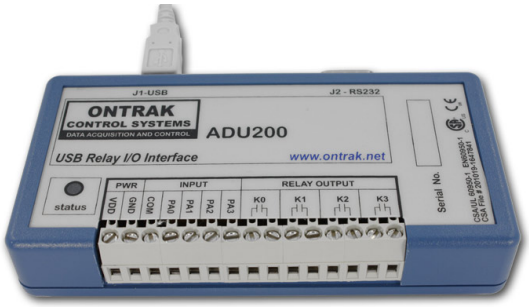


Figure5 System settings

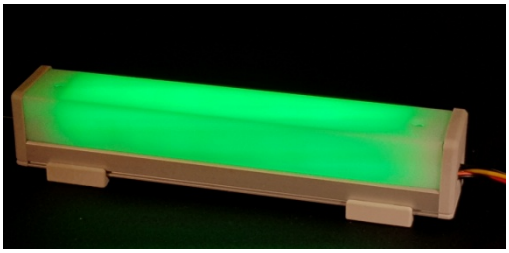
Figure5 6, the system settings include: meter settings and language.

1.4.1 Instrument Settings

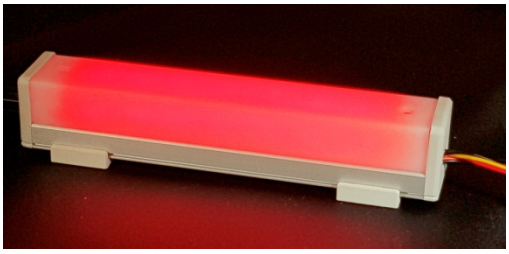
1. External triggering: This system integrates the ADU200 for external triggering and does not require driver installation.



2. Pass/Defect LED: Additional 2021DLB purchase, no driver installation required.



Qualified light number



Bad light number

1.4.2 Language Setting

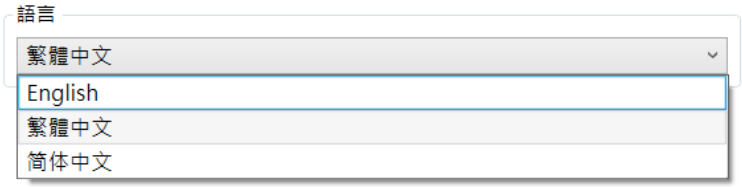


Figure6. Language settings

Figure6As Figure 7 show, three languages are currently supported.

CHAPTER 2
DASHBOARD MODE

Function:

1. Single measurement.
2. Repeat measurements.
3. Save measurement data (USB key required).
4. Scan 2D barcode, new incremental measurement conditions, material information

Quick Setup:

Setting The Measurement Conditionsfirst (Chapter 2.22.2 and then measure MeasuSection 2.32.3

2.1 Interface

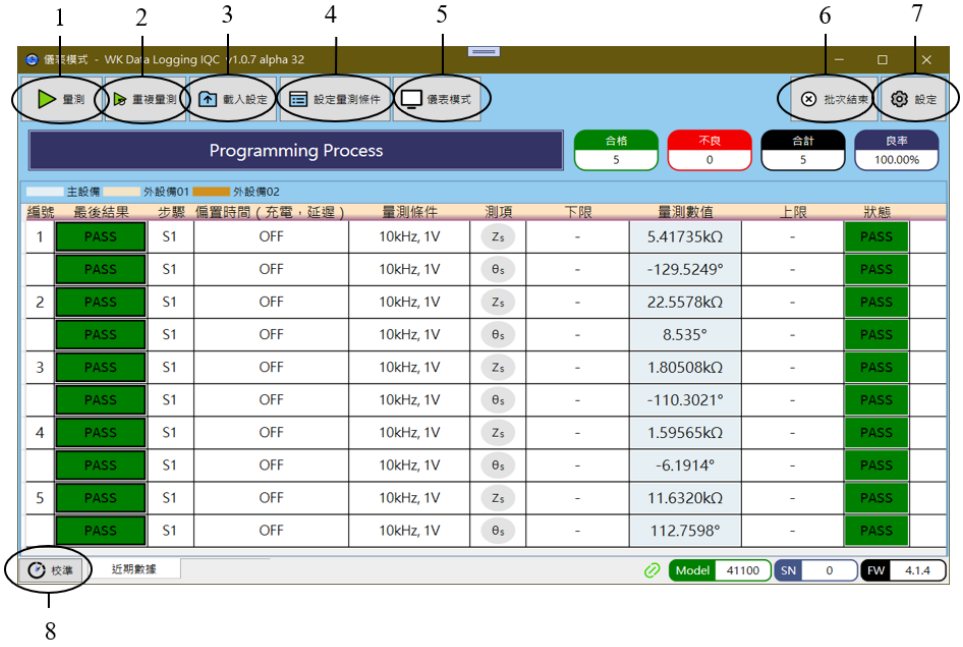


Figure7. Dashboard Mode Interface

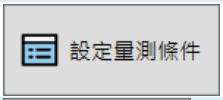
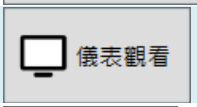
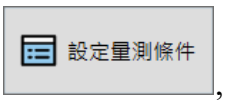
No.	Icon	Description
1		Single-step measurement
2		Repeat measurements
3		Load the programming settings
4		Installation Edition Installation
5		Instrument viewing
6	 	End of batch measurement Export Survey Results
7		Measure mode setting
8		Zero calibration

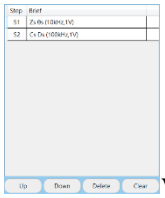
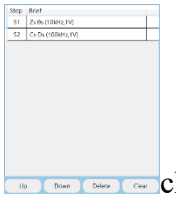
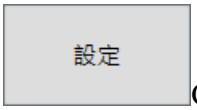
Table2. Dashboard Mode feature

Table2shows the functions of the meter mode, and the details are as follows.

2.2 Setting The Measurement Conditions



, set the test conditions of Test1/Test2, Term1, Term2, Frequency, Level, etc. and you can modify the content.

Added test conditions, 
which lists the measurement conditions. To modify the measurement conditions, first click the item you want to change, 
change the item, and then click Modify 

Change.

Set upper and lower limits to determine whether the measurement is good or bad. When this function is set, it will be linked if there is a pass/ bad indicator light for connection. See Section 1.4.1Subsection II.

- After setting the measurement conditions, you can measure it, refer to Section 2.3
- Save the test conditions, refer to Section 2.5
- Load test conditions, refer to Section 2.6

2.3 Measurement

r

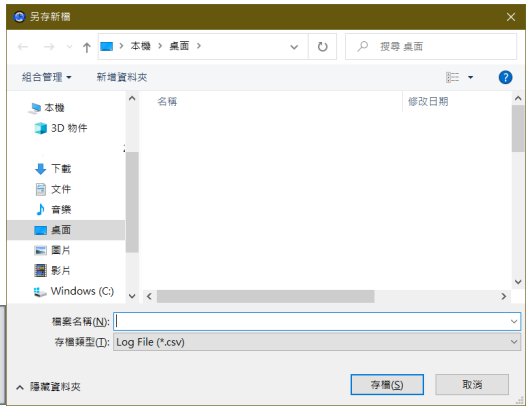
take measurements.

, which is the measurement result.

- If you need to save the test results, refer to Section 2.4
- To change the format of the measured values, refer to Section 2.9 Subsection 5.

2.4 Save The Measurement Results

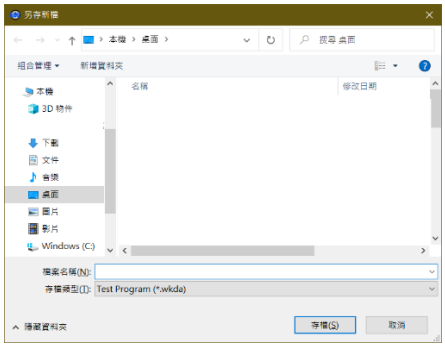
End the measurement and output (save) the measurement results.



Select the save path, enter the file name, and archive. The output file format is CSV.

2.5 Save The Setting Condition

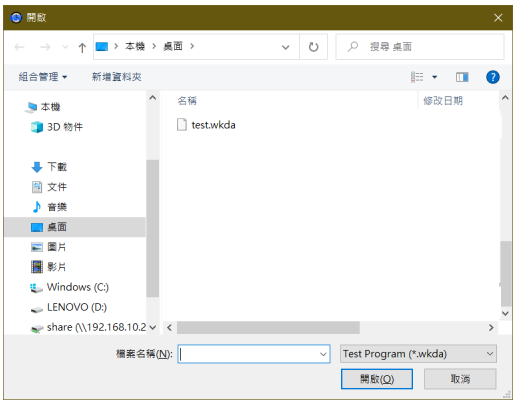
Save the setting conditions,



select the save path, enter the file name, archive. The output file format is wkda.

2.6 Load Settings Programming

Loading settings programmatically, select the file



with the extension wkda, and load.

2.7 Meter Viewing

This function observes the change in the measured object (DUT) measurement relative to the real-time measurement on the meter.

2.8 Scan The QR Code

The software supports scanning the QR code and entering the measurement conditions or material information. For barcode setting rules, please refer to the manual.

2.8.1 Measurement Conditions

※You need to set the interface in this condition to scan the input measurement conditions.

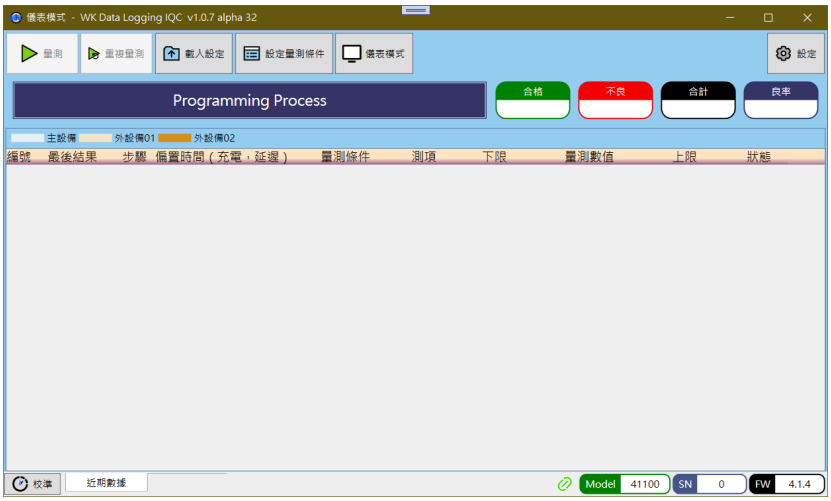
When the barcode is set incorrectly or the conditions are incorrect,

a prompt window is displayed.

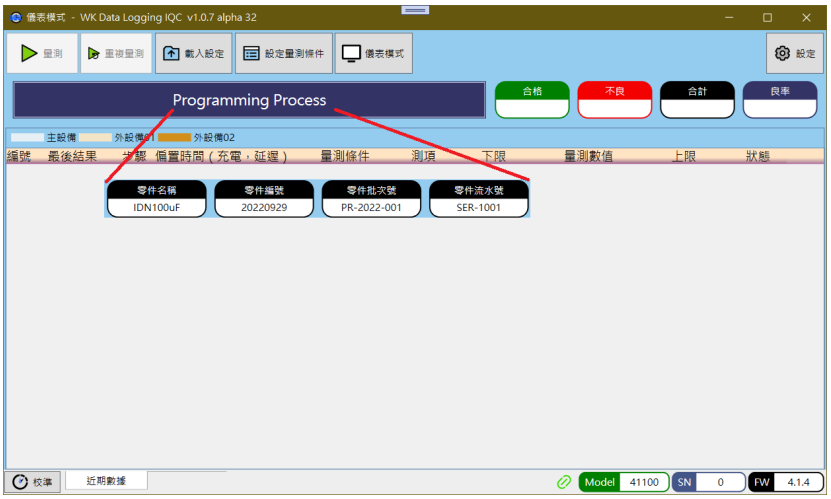
2.8.2 Material Information

※You need to be in the instrument mode interface to scan and input material information.

If there is material information, it will be recorded in the measurement results when it is saved.



After scanning the QR code, the display of data will change from "Programming Process" to "Material Information".



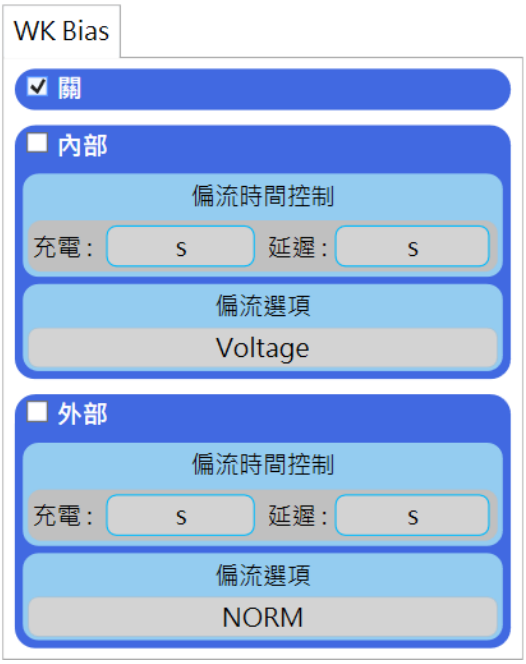
Manual material information is provided as described in Section 2.9.4

2.9 Meter Mode Setting

Settings: bias source, deviation compensation, material properties, material information and other settings. The above setting function will have different settings according to different instruments, and the details are as follows:

2.9.1 Bias Source Setting

Supports WK6500 series, WK3260 series and WK5400 series. Additional purchase of biased sources is required.



The initial setting of WK Bias is turned off to prevent burst current when the function is turned on.

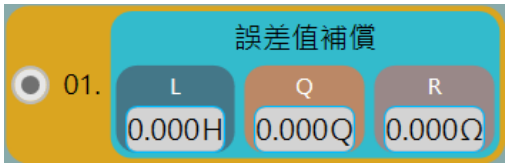
Off: Turn off DC Bias.

Internal: Use internal bias.

External: To use external bias current, it needs to be connected to the WK instrument to enable the function of the bias source. Such as WK6565, WK3265.

2.9.2 Offset Value Compensation

Only support WK3260 + WK3265 (need to start), when the measured value has an error value, according to the input value to add or subtract and provide six sets of setting columns, only one group can be used at a time.



Add or subtract according to the value entered by the user.

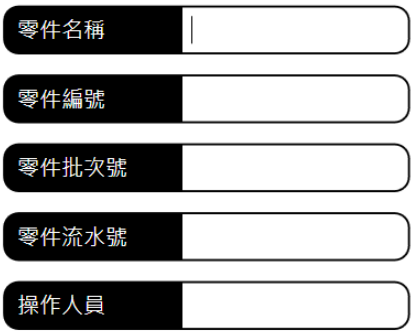
Example 1Q is set to -0.1Q, the equivalent value is 10.1Q, and the measurement result will be displayed as 10Q.

2.9.3 Material Properties

Only WK6500 is supported, testing the dielectric constant and permeability of the material.

2.9.4 Material Information Setting

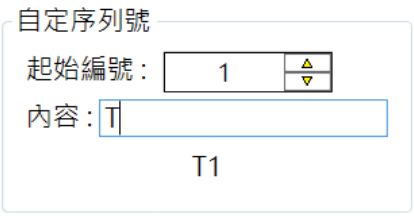
Manually fill in the information, and the measurement results will be recorded when they are saved.



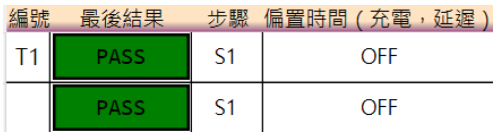
After entering data, all field information is synchronized with it.

2.9.5 Other settings

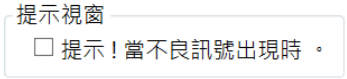
1. The sequence number or name of the measurement result.



Example: Content is T; The starting number is 1, and the measurement result is numbered T1.



2. Display a prompt window when the measurement result fail.

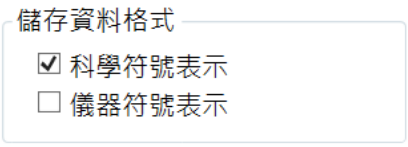


Tick to launch this feature.

3. Automatic measurement

Tick to launch this feature; If the measured value meets the threshold value, it is measured.

4. The format in which the data is saved.



Scientific Symbols: 10E3; Instrument symbol: 1000

CHAPTER 3
ANALYSIS MODE

Support :

1. Multiple sets of scan conditions.
2. The way to draw a picture is to present the measured values.
3. Frequency, voltage, current, time, and temperature sweep point (Sweep).
4. Compare differences under the same measurement conditions.

Quick Setup :

Set the measurement conditions first (Chapter 3.3) Setting The Measurement Conditions3.3 3.4).

3.1 Interface

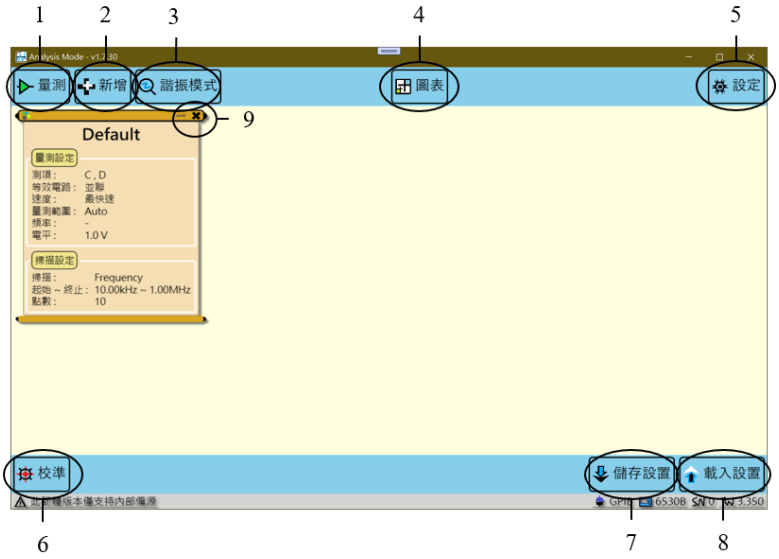


Figure 9. “Edit” Interface of Analysis Mode

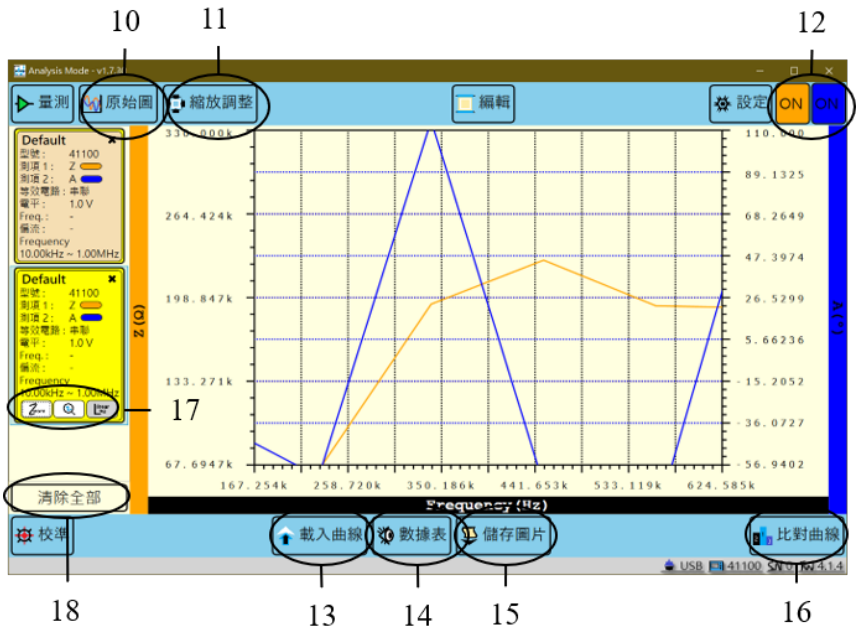
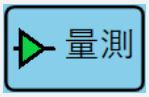
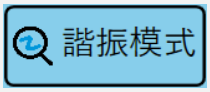
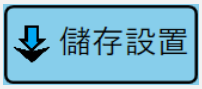
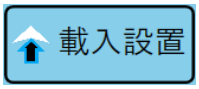
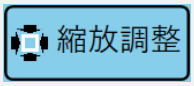
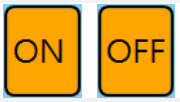
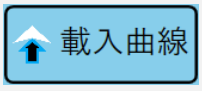


Figure8"Chart" interface of analysis mode

FigureFigure 10 show the analysis mode interface Figure8K Data Logging, the information in the upper left corner is the version number of the analysis mode, and the

information in the upper right corner is the instrument model and the interface type connected to the instrument.

3.2 Function Introduction

No.	Icon	Description
1		Set measurement conditions and perform measurement
2		New delta testing conditions
3		Look for the resonant frequency
4		Toggle chart | Edit"
5		Supports setting of WK6565 as well as external power supply
6		Zero calibration
7		Save the scan condition settings
8		Load scan condition settings
9	 	Modify the measurement conditions Delete a measurement condition
10		After scaling, it reverts back to the original curve
11		After the adjustment is scaled, the curve no longer appears in range
12		Display | Hide curves
13		Load stored data and present it as a curve
14		View the measured values
15		Save the graph

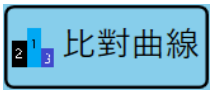
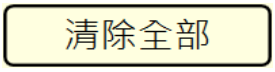
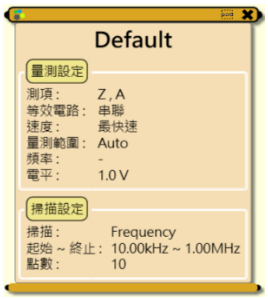
16		Alignment curve
		Curve reduction/enlargement
17		Search for the peak value of the curve
		The scale shows lg(x) / Linear
18		Clear all measurement results

Table3. Analysis Mode Features

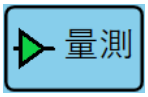
Table3shows the functions of the meter mode, as follows.

3.3 Setting The Measurement Conditions

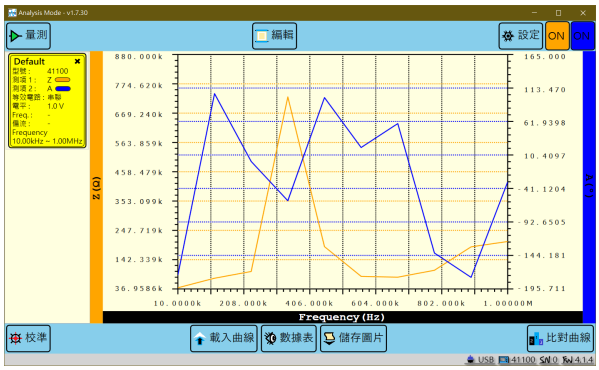
Add a new set of measurement conditions, which can be modified or deleted ; 

This is a set of measurement conditions, including measurement settings and scan settings.

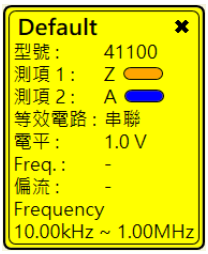
3.4 Measurement



After measurement, the points are connected with lines to form,



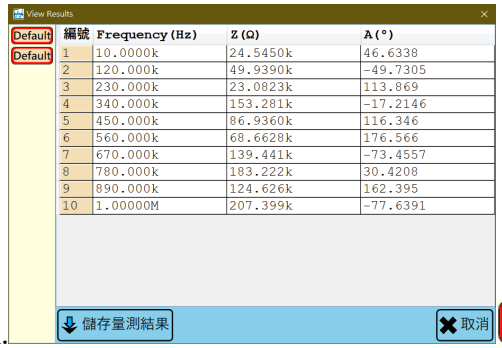
click the left field to

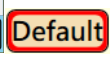


view the curve of this pen, the background is yellow to represent the data that has been selected so far.

3.5 View Measurement Data

To view the data of each measurement, click the field on the left to view the measurement data of this transaction.



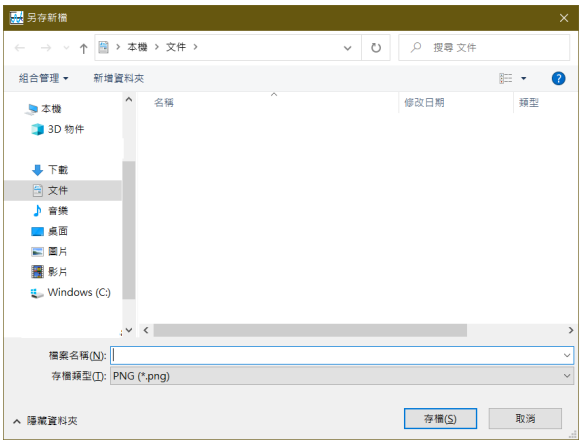


To save data, refer to Section 3.6.2

3.6 Save The Measurement Results

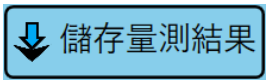
3.6.1 Save The Picture

Save the graph,

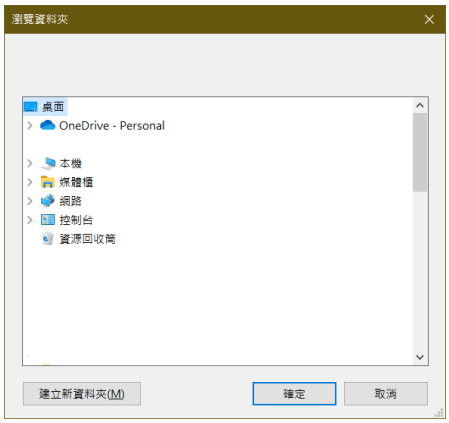


select the save path, enter the file name, archive; The output file format is png.

3.6.2 Store data

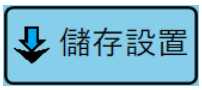


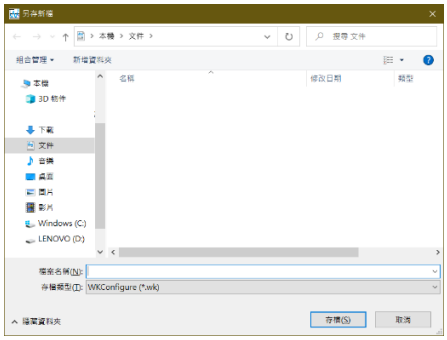
To save data, you need to create a folder first,



select the created folder, and archive; The output file format is CSV.

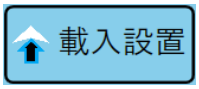
3.7 Save The Setting Condition

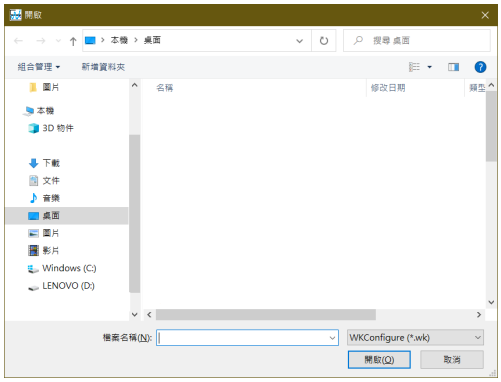


Save the setting conditions, 

select the save path, enter the file name, archive; The output file format is wk.

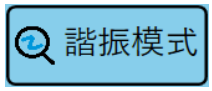
3.8 Load Setting Conditions

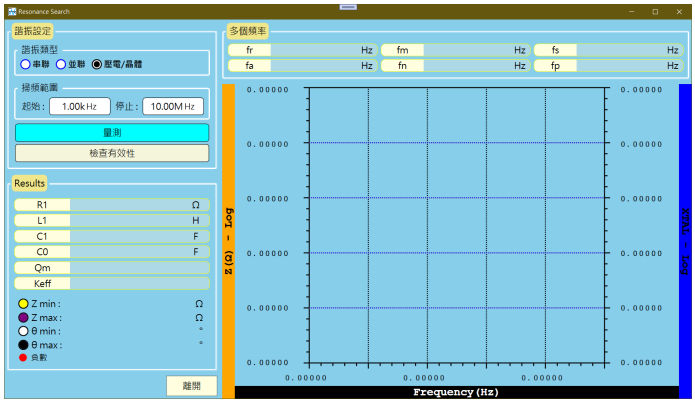


Set the conditions for loading, select the file 

with the extension wk, and load.

3.9 Resonant Mode



, only support WK6500 series and WK6400 series to select resonance type, given the sweep frequency range; After measurement, the resonant frequency and graph  (displayed in Log) will be displayed.

3.10 Analysis Mode Setting

Settings: Partial source, material and device. The above setting function will have different settings according to different instruments, and the details are as follows:

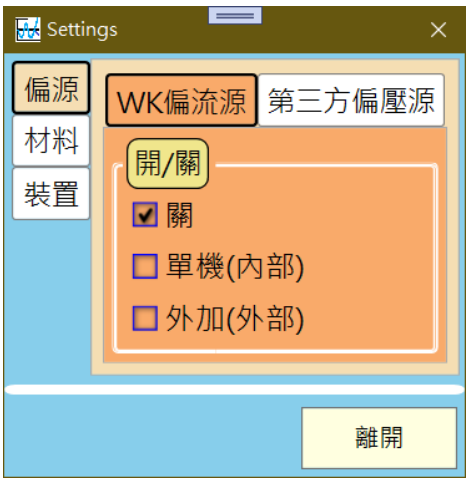
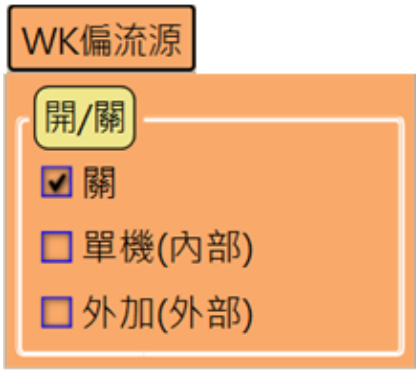


Figure 11. Analysis Mode System Settings

3.10.1 Bias Source Setting

1. WK bias source

Only supports WK 6500 series, WK3260 series and WK 5400 series. An additional bias current source is required.



The "WK bias source" is initially set to off to prevent burst current when the function is turned on.

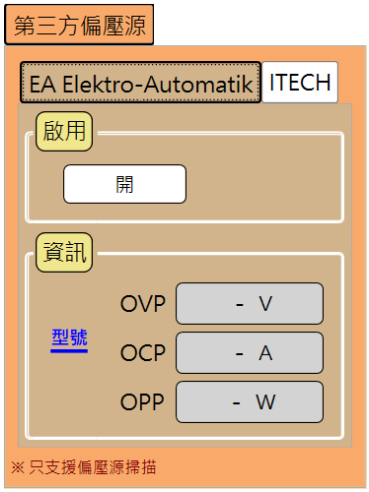
Off: Turn off DC Bias.

Stand-alone (Internal): Uses internal bias.

External: To use an external bias current, it needs to be connected to the WK instrument to enable the function of the bias source. Such as WK6565, WK3265.

2. Third-party bias source

Only the EA system and ITECH systems are integrated and an additional bias sources are required. If the WK bias source is supported, the third-party bias source cannot be turned on.



OVP: Over set voltage protection.

OCP: Over set current protection.

OPP: Over set wattage protection.

When measuring:

Condition 1. The set voltage value exceeds the OVP

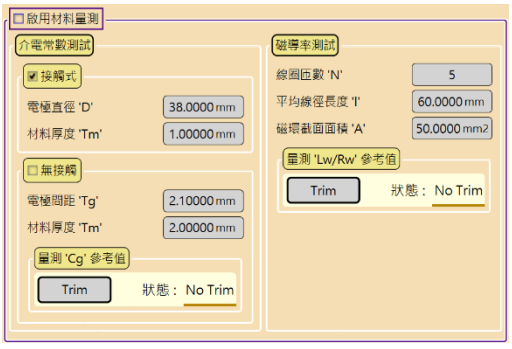
Condition 2. The set current value exceeds the OCP

Condition 3. The set wattage value exceeds the OPP

When either condition is met, the measurement stops.

3.10.2 Material Settings

Only WK6500 is supported, testing the dielectric constant and permeability of the material. Tick off with this feature.



3.10.3 Device settings

It is necessary to measure the temperature of the measured object as the current changes, and an additional NI USB-TC01 device needs to be purchased.

Figure9. NI USB-TC01

Thermocouple type	Wire(+)	Pipe(-)
J	Iron	Nickel-copper alloy
K	Nichrome	Nichrome
N	Nichrome silicon alloy	Nickel-silicon-magnesium alloy
R	White gold 13% rhodium	platinum
S	White gold 10% rhodium	platinum
T	Copper	Nickel-copper alloy
B	White gold 30% rhodium	White gold 6% rhodium
E	Nichrome	Nickel-copper alloy

Table4. Thermocouple types.