# PC Software

LCR-8200Series

## PC Software Guide

**VERSION: 1.00**

ISO-9001 CERTIFIED MANUFACTURER

The information in this manual was correct at the time of printing. However, Good Will continues to improve products and reserves the right to change specifications, equipment, and maintenance procedures at any time without notice.

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# TABLE OF CONTENTS

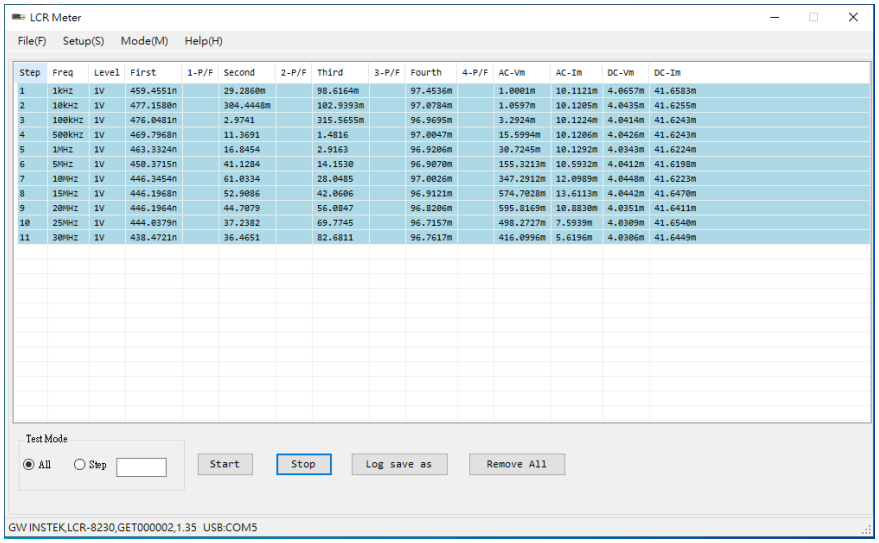
# INTRODUCTION

This manual is suitable for all models in the LCR-8200 Series. The LCR Meter PC Software Guide describes how to use the PC software on Windows OS based computers (Windows 10, Windows 7 supported).

This manual consists of the following chapters:

- Setup: Installation, Configuration, Connection
- TEST MODE/EDIT MODE: Edit step measurement parameters, executing step measurement and logging step measurement results.

## Software Overview



# SETUP

## Install PC software

The following describes how to install the LCR-8200 PC software and software suite on your PC.

PC system requirements:

1. CPU 1GHz
2. LCD: 1024x768
3. HD: 1GB
4. RAM: 4GB
5. OS: Win10/Win7
6. CD-ROM

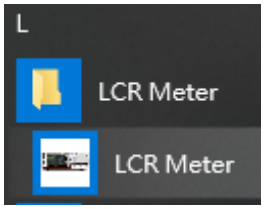
Installing step

1. Go to the PC Software directory on the CD-ROM.
2. Click on setup.exe.


3. The installation wizard will start up. Follow the directions from the installation wizard. When choosing an install location it is recommended that the default location is chosen.

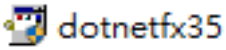
   The default location for the software is C:\LCR Meter.

   A program icon should be available from the Start Menu.



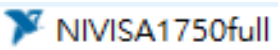
4. After the installation has completed, a shortcut icon for the LCR Meter software will be added to your desktop.


5. Click on dotnetfx35.exe. Setup .NET Framework 3.5 suite. It is unnecessary for additional setting during installation process. Click "Next" to complete.




It is available to download the file from link below: https://www.microsoft.com/en-us/download/developer-tools.aspx

6. Click on NIVISA1750full.exe. Setup NI-VISA17.5 suite. It is unnecessary for additional setting during installation process. Click "Next" to complete.



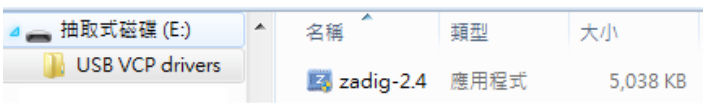

It is available to download the file from link below: https://www.ni.com/zh-tw/support/downloads/drivers/download.ni-visa.html

# Install USB Driver

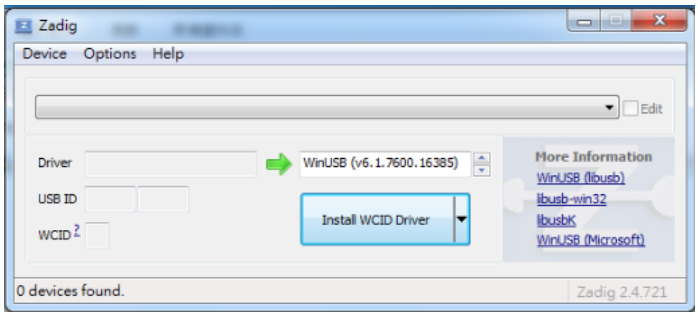
The USB driver needs to be installed when using the USB port for remote control. The USB interface creates a virtual COM port when connected to a PC. Simply skip this installation process if not adopting USB Port for PC connection control.

Installing step

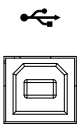
7. Install the USB VCP Driver (zadig-2.4.exe) from the CD



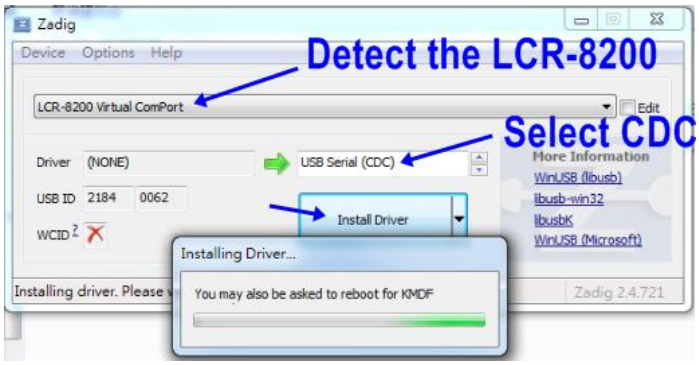
8. Execute the Zadig program.



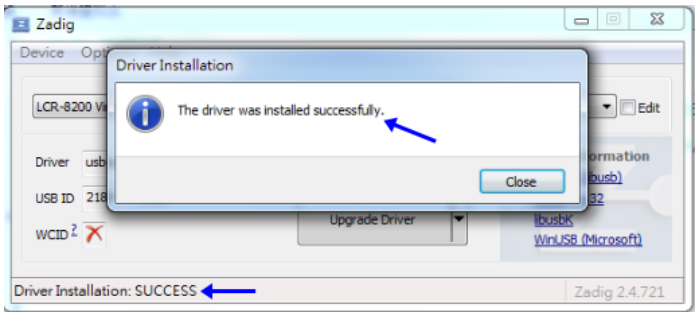

9. Connect the Type A-B USB cable to the rear panel USB B port on the LCR-8200Series. Connect the other end to the Type A port on the PC.



10. The Zadig software will detect the LCR-8200, select CDC, and press "Install Driver" to install the driver.




11. Successful installation.




12. The LCR-8200 and the COM port that it is assigned to will now appear under the Ports (COM & LPT) node.


13. Install the USB VCP Driver (zadig-2.4.exe) from the CD

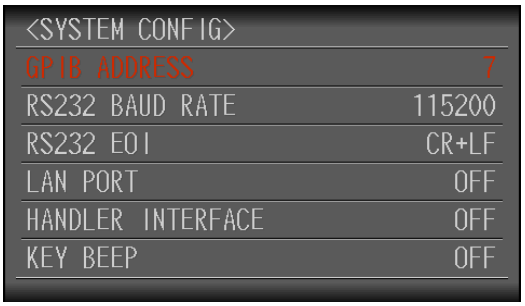
# Configuration

The device uses the GPIB/ LAN/ RS-232/ USB interface to communicate with the computer to complete all devices' functions. Before initiating the PC connection between the PC software and a LCR-8200, first set and confirm the SYSTEM CONFIG interface settings on the LCR-8200.

## GPIB Interface

The computer and the measuring instrument are connected with GPIB cable (such as GW Instek's GTL-248), and the test piece will be tested on the computer through GPIB port, 24 pins.

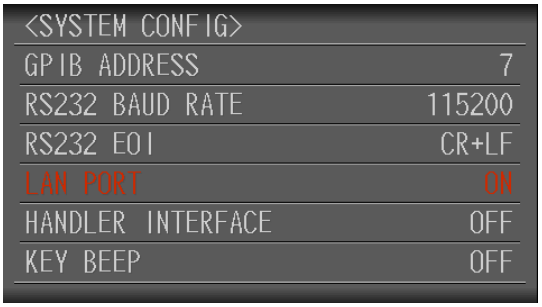
Prior to connection, ensure that GPIB ADDRESS setting is identical to PC software setting

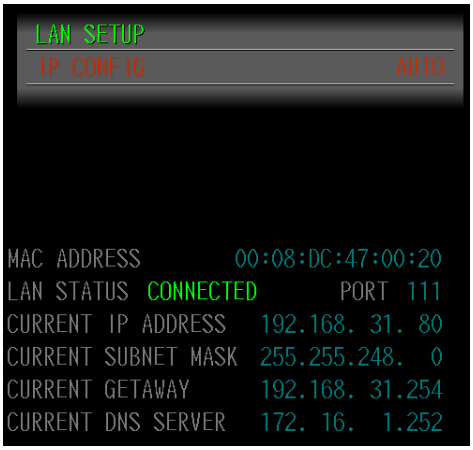



## LAN Interface

10/100 Base Ethernet, 8 pins. The instrument will be connected to the LAN (Local Area Network) ports.

Set ON for LAN PORT and go to LAN SETUP to set network relevant settings. Or use AUTO followed by inserting network cable for auto setup. Prior to connection control, ensure that PC software IP setting is identical to CURRENT IP ADDRESS.

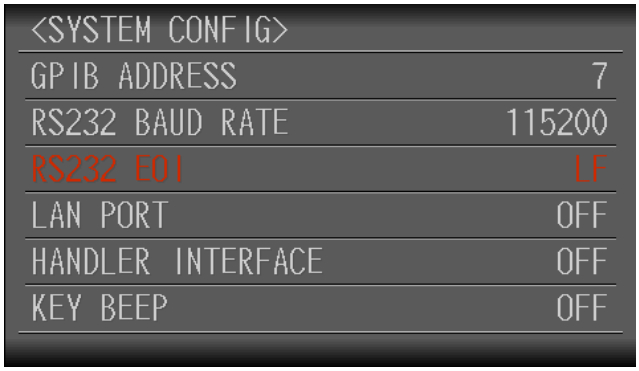


## RS-232C Interface

The RS-232C serial interface can be connected to the serial interface of a controller (PC or IPC) through a RS-232C cable (null modem, such as GW Instek's GTL-232).

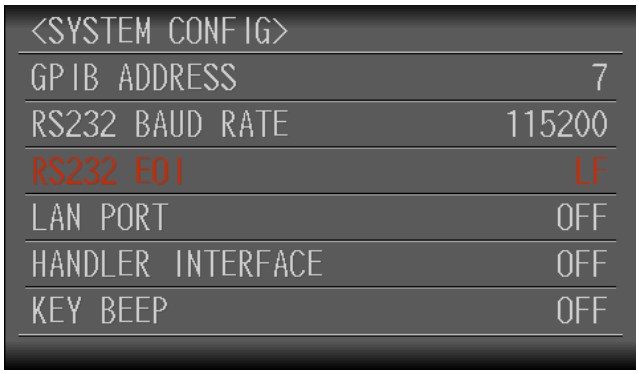
Make sure that parameter of RS232 BAUD RATE setting is identical to PC software. Set RS232 EOI as LF.




## USB Interface

The Type B USB port on the rear panel is used USB cable (A-B type, such as GW Instek's GTL-246) for remote control. This interface creates a virtual COM port (CDC) when connected to a PC.

The EOI of LCR-8200 return info will utilize the RS232 EOI set parameter.



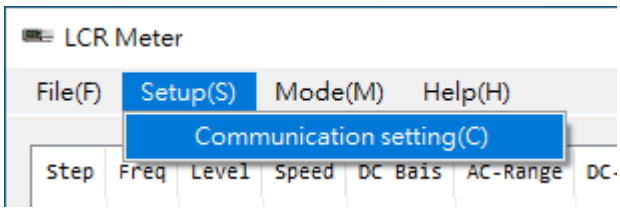
# Connection

Open the PC software and connect the control cord to LCR-8200 in one end and PC side in the other end. Set software connection parameters followed by proceeding to measurement control.

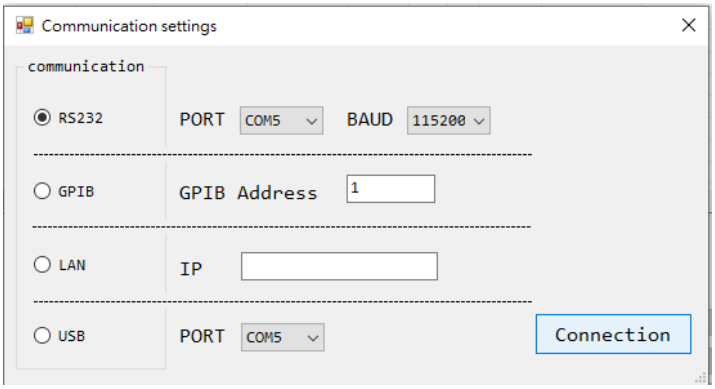
## Configure PC Software

1. Activate the PC software.


2. Click on the Setup/Communication menu and open the setting dialog.

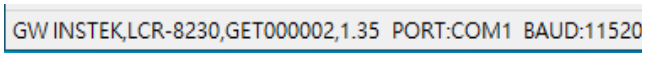



3. Select one of the connection methods to proceed to parameters setup.

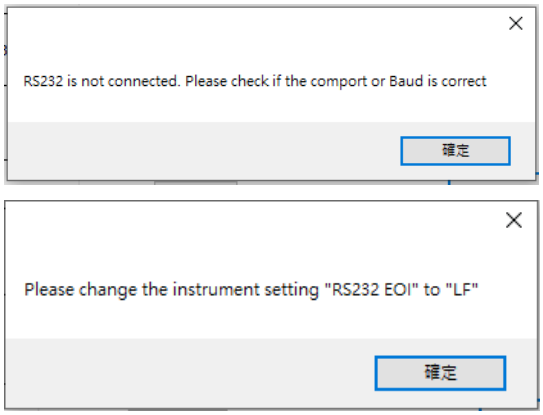



4. Click on the Connection button. The PC software and the LCR-8200 will try to establish a connection (success), or an error message appears (fail).

Success



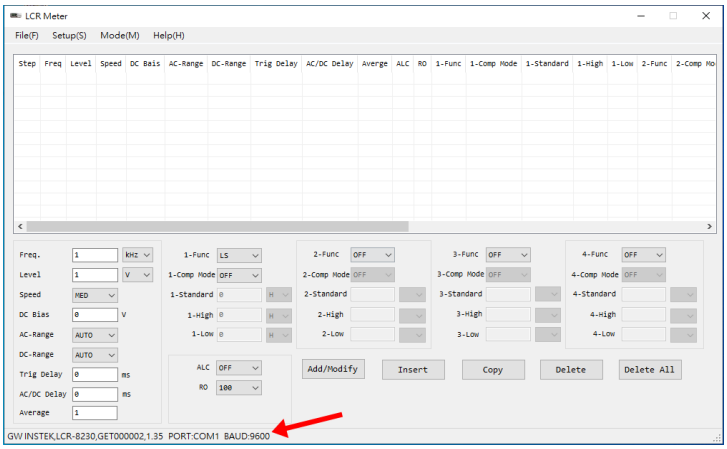
Fail




The possible reasons of connection failure:

- Wrong interface port or patterm settings.
- Wrong wiring in the cable or the connectors of the cable are not well connected.

5. When connection is established, the model, serial number, FW version and control interface info of connected unit will be shown from LCR Meter software. The LOCK icon will be displayed in the lower-right corner from LCR-8200 LCD display, which signals that the unit is under connection control and thus the panel keys are not available.


LCR Meter
File(F) Setup(S) Mode(M) Help(H)
Step Freq Level Speed DC Bais AC-Range DC-Range Trig Delay AC/DC Delay Averge ALC RO 1-Func 1-Comp Mode 1-Standard 1-High 1-Low 2-Func 2-Comp Mo
Freq. 1 kHz
Level 1 V
Speed MED
DC Bias 0 V
AC-Range AUTO
DC-Range AUTO
Trig Delay 0 ms
AC/DC Delay 0 ms
Average 1
1-Func LS
1-Comp Mode OFF
2-Func OFF
3-Func OFF
4-Func OFF
ALC OFF
RO 100
Add/Modify
Insert
Copy
Delete
Delete All
GW INSTEK,LCR-8230,GET000002,1.35 PORT:COM1 BAUD:9600


FILE METER01
Ls -2686.15kH
Q 0.93
Rdc 567.867MΩ
SWEEP
LIST SET
LIST RUN
CORR.
FREQ 1.0000kHz
LEVEL 1.000 Vac
RANGE AUTO 30kΩ AC
SPEED MED.
BIAS +0.000 Vdc
RANGE AUTO 30kΩ DC
TRIG REPEAT
COMP OFF
RO 100Ω ALC OFF AVG OFF CORR 0m,OPEN,SHORT,H/F,LCR-05A
LOCK

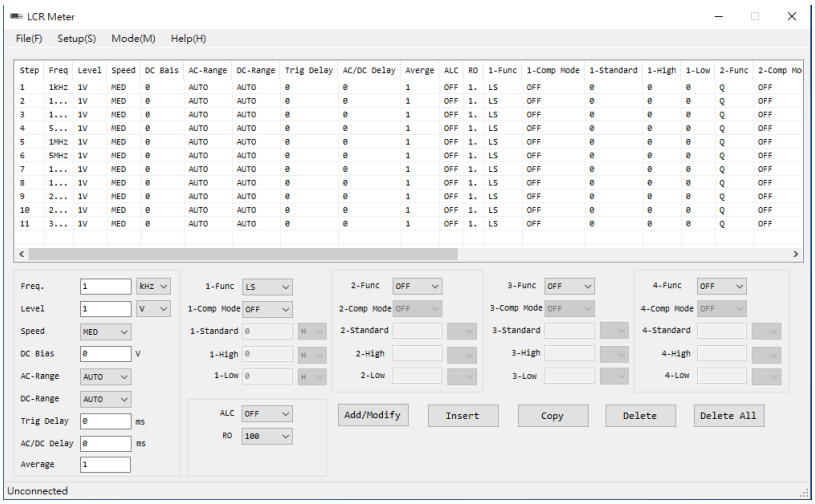
# LCR Meter

The operation setting of PC software is identical with that of LCR-8200. It is the test method which integrates the Meter mode with LIST mode and provides the function of test log recording.

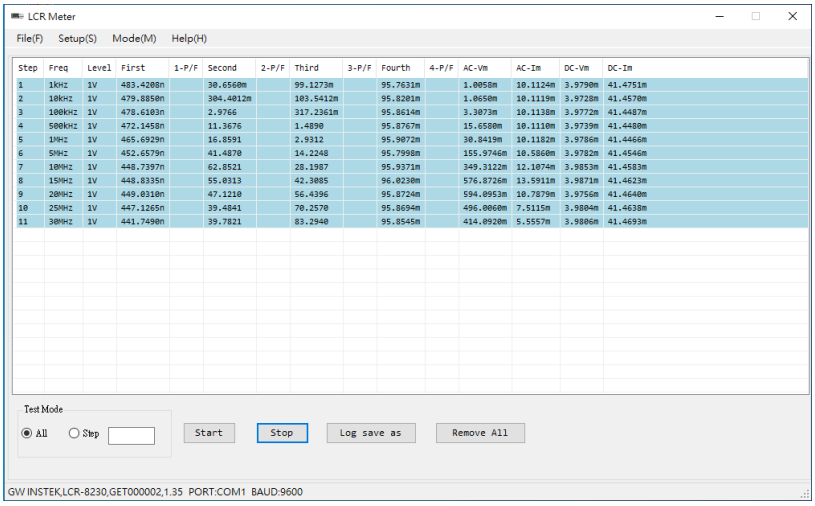
**Note**

Before connecting the LCR meter to the software, remember to perform the Correction first. The PC software doesn't have the ability to perform the Open/Short correction. These functions can only be performed on the meter itself.

## Edit Mode




## Test Mode

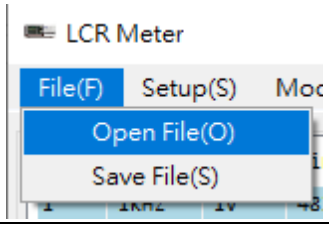


# File

## Test procedure management

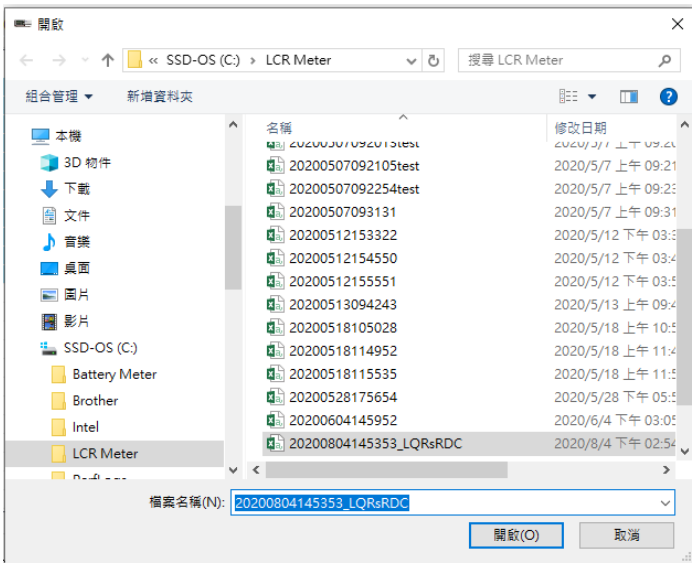
**Open File/Save File**

It loads test procedure from PC and also saves current test procedure.



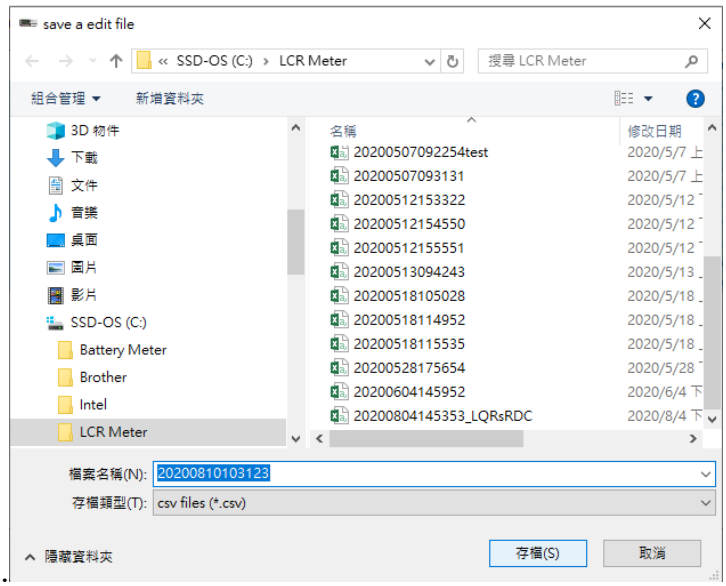

**Open File**

When loading test procedure, the default directory is C:\LCR Meter. It only supports the file format (csv) saved by LCR Meter software.



## Save File

When saving the currently edited test procedure, the default directory is C:\LCR Meter. The file format to save is csv file.




Test procedure file (csv).

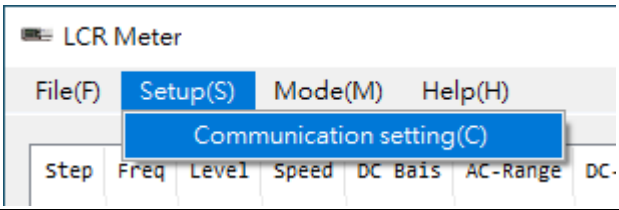
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Date:2020/08/04 | | | | | | | | | | | | | | | | | | |
| 2 | Time:14:54:17 | | | | | | | | | | | | | | | | | | |
| 3 | File_name:C:\LCR Meter\20200804145353_LQRsRDC.csv | | | | | | | | | | | | | | | | | | |
| 4 | Version:1.210 | | | | | | | | | | | | | | | | | | |
| 5 | Instrument Version:1.35 | | | | | | | | | | | | | | | | | | |
| 6 | **********LIST SETUP********** | | | | | | | | | | | | | | | | | | |
| 7 | Step | Freq | Level | speed | DC Bais | AC-Range | DC-Range | Trig Delay | AC/DC De | Average | ALC | RO | 1-Func | 1-Comp M | 1-Standard | 1-High | 1-Low | 2-Func | 2-Con |
| 8 | 1 | 1kHz | 1V | MED | 0 | AUTO | AUTO | 0 | 0 | 1 | OFF | | 100 LS | OFF | 0 | 0 | 0 | Q | OFF |
| 9 | 2 | 10kHz | 1V | MED | 0 | AUTO | AUTO | 0 | 0 | 1 | OFF | | 100 LS | OFF | 0 | 0 | 0 | Q | OFF |
| 10 | 3 | 100kHz | 1V | MED | 0 | AUTO | AUTO | 0 | 0 | 1 | OFF | | 100 LS | OFF | 0 | 0 | 0 | Q | OFF |
| 11 | 4 | 500kHz | 1V | MED | 0 | AUTO | AUTO | 0 | 0 | 1 | OFF | | 100 LS | OFF | 0 | 0 | 0 | Q | OFF |
| 12 | 5 | 1MHz | 1V | MED | 0 | AUTO | AUTO | 0 | 0 | 1 | OFF | | 100 LS | OFF | 0 | 0 | 0 | Q | OFF |
| 13 | 6 | 5MHz | 1V | MED | 0 | AUTO | AUTO | 0 | 0 | 1 | OFF | | 100 LS | OFF | 0 | 0 | 0 | Q | OFF |
| 14 | 7 | 10MHz | 1V | MED | 0 | AUTO | AUTO | 0 | 0 | 1 | OFF | | 100 LS | OFF | 0 | 0 | 0 | Q | OFF |
| 15 | 8 | 15MHz | 1V | MED | 0 | AUTO | AUTO | 0 | 0 | 1 | OFF | | 100 LS | OFF | 0 | 0 | 0 | Q | OFF |
| 16 | 9 | 20MHz | 1V | MED | 0 | AUTO | AUTO | 0 | 0 | 1 | OFF | | 100 LS | OFF | 0 | 0 | 0 | Q | OFF |
| 17 | 10 | 25MHz | 1V | MED | 0 | AUTO | AUTO | 0 | 0 | 1 | OFF | | 100 LS | OFF | 0 | 0 | 0 | Q | OFF |
| 18 | 11 | 30MHz | 1V | MED | 0 | AUTO | AUTO | 0 | 0 | 1 | OFF | | 100 LS | OFF | 0 | 0 | 0 | Q | OFF |

# Setup

## System setup

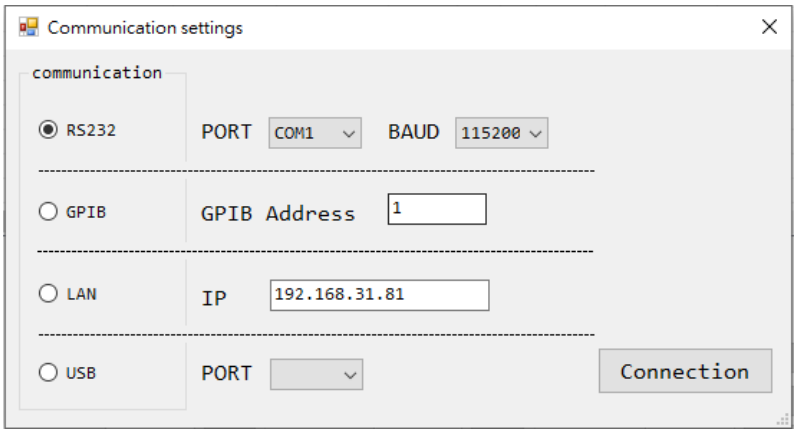
**Communication Setting**

Connection communication interface parameters setting.




**Setting**

Select communication interface of connection and set the relevant parameters.

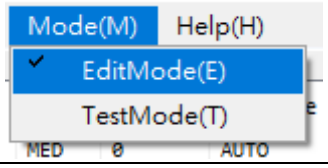


# Mode

PC software controls LRC-8200 to utilize Meter mode for measurement.

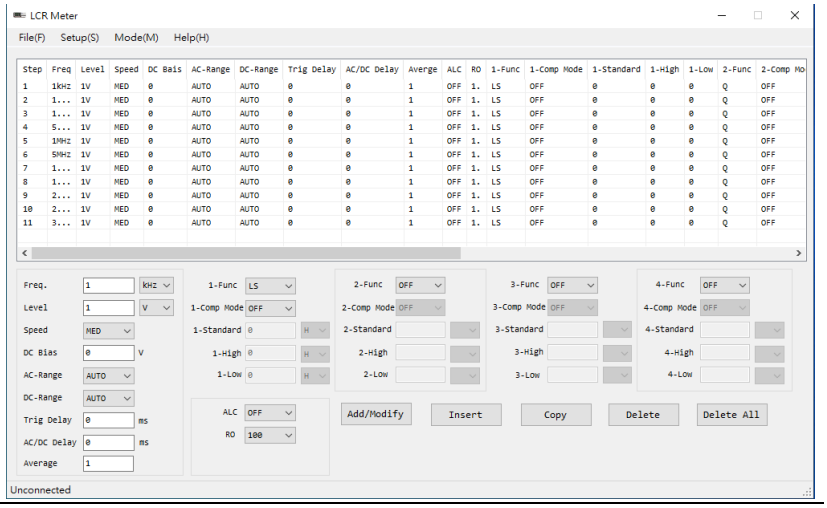
**Edit Mode/Test Mode**

Click Edit Mode to enter the test steps editing page. Click Test Mode to enter the test procedure measurement page.



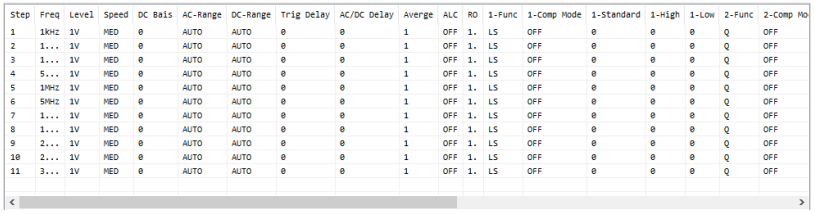

**Edit Mode**

Identical to the operation of LCR-8200, up to 4 test items and test parameters can be set for each test step, which can set range judgment for measured value. While measuring, it will follow steps order for measurement.



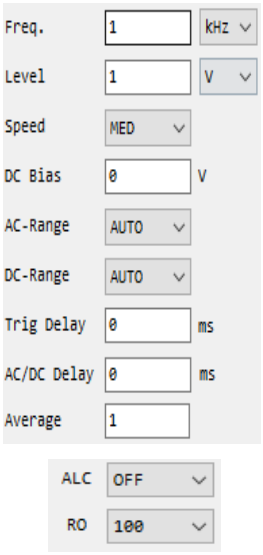

**Step display**

At the maximum of 200 steps can be set for test steps display area.



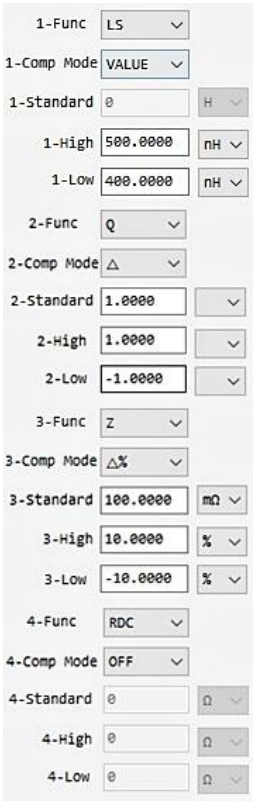
## Setup

Refer to the user manual of LCR-8200 for more detailed info of each parameter.




- Freq.: measure frequency.
- Level: measure signal voltage/current level.
- Speed: measure speed.
- DC BIAS: DC Bias value.
- AC-Range: AC measure range.
- DC-Range: DC measure range.
- Trig Delay: delay time before each measure.
- AC/DC Delay: delay time before each RDC measure.
- Average: multiple measurements and take an average result.
- ALC: automatic level control on/off.
- RO: output impedance.

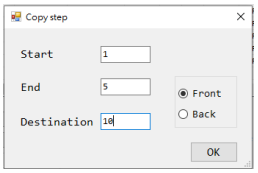
## Function/Comparison




- 1~4-Func: measure parameter item.
- 1~4-Comp Mode: comparison function. (values, Δ tolerance values and Δ tolerance %)
- 1~4-standard: compare nominal values. Set only in the Δ and Δ% modes.
- 1~4-High: comparison of upper limit.
- 1~4-Low: comparison of lower limit.

Button

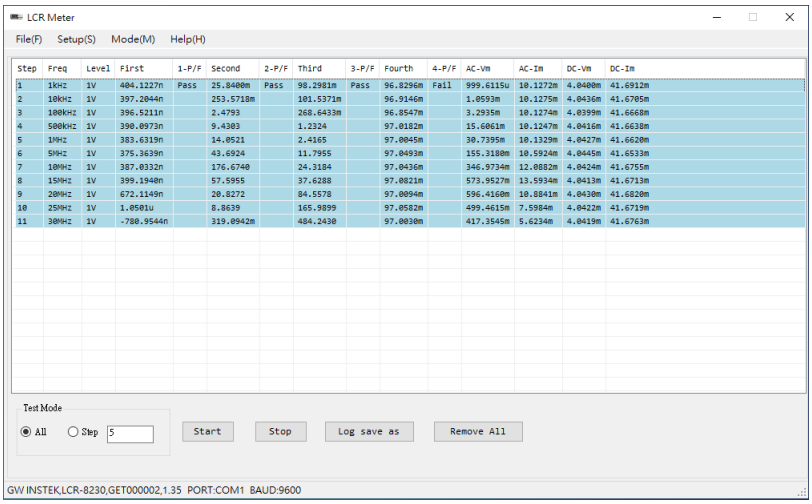

- Add step: if not selecting edited step from the test steps display area, a test step will be newly added from set parameter when clicking button.
- Modify step: if selecting edited step from the test steps display area, each parameter of the selected step will be shown in the set area. After setting new parameters, click the button to take the test step setting into effect.
- Insert step: Click to select a step in the test steps display area. After setting parameters, click the button to insert a test step before the selected step.




- Copy step: Click the button to show the copy steps window. After setting, click OK button to create a copied step.
- Start: Start step
- End: End step
- Destination: Target step
- Front: Create copied step before the target step.
- Back: Create copied step after the target step.
- Delete step: Click to select a step in the test steps display area. Click the button to delete the selected step.
- Delete All: Delete all steps.

## Test Mode

Connect to LRC-8200 to utilize Meter mode for measurement. It follows the steps order when measurement is ongoing.



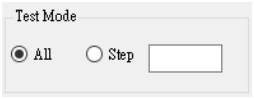

| Step | Freq | Level | First | 1-P/F | Second | 2-P/F | Third | 3-P/F | Fourth | 4-P/F | AC-Vm | AC-Im | DC-Vm | DC-Im |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1kHz | 1V | 404.1227n | Pass | 25.8400m | Pass | 98.2981m | Pass | 96.8296m | Fail | 999.6115u | 10.1272m | 4.0400m | 41.6912m |
| 2 | 10kHz | 1V | 397.2044n | | 253.5718m | | 101.5371m | | 96.9146m | | 1.0593m | 10.1275m | 4.0436m | 41.6705m |
| 3 | 100kHz | 1V | 396.5211n | | 2.4793 | | 268.6433m | | 96.8547m | | 3.2935m | 10.1274m | 4.0399m | 41.6668m |
| 4 | 500kHz | 1V | 390.0973n | | 9.4303 | | 1.2324 | | 97.0182m | | 15.6061m | 10.1247m | 4.0416m | 41.6638m |
| 5 | 1MHz | 1V | 383.6319n | | 14.0521 | | 2.4165 | | 97.0045m | | 30.7395m | 10.1329m | 4.0427m | 41.6620m |
| 6 | 5MHz | 1V | 375.3639n | | 43.6924 | | 11.7955 | | 97.0493m | | 155.3180m | 10.5924m | 4.0445m | 41.6533m |
| 7 | 10MHz | 1V | 387.0332n | | 176.6740 | | 24.3184 | | 97.0436m | | 346.9734m | 12.0882m | 4.0424m | 41.6755m |
| 8 | 15MHz | 1V | 399.1940n | | 57.5955 | | 37.6288 | | 97.0821m | | 573.9527m | 13.5934m | 4.0413m | 41.6713m |
| 9 | 20MHz | 1V | 672.1149n | | 20.8272 | | 84.5578 | | 97.0094m | | 596.4160m | 10.8841m | 4.0430m | 41.6820m |
| 10 | 25MHz | 1V | 1.0501u | | 8.8639 | | 165.9899 | | 97.0582m | | 499.4615m | 7.5984m | 4.0422m | 41.6719m |
| 11 | 30MHz | 1V | -780.9544n | | 319.0942m | | 484.2430 | | 97.0030m | | 417.3545m | 5.6234m | 4.0419m | 41.6763m |

## Test result

When test finishes, the test row shows value with blue in background to indicate the value has been updated from the test result display area.

| Step | Freq | Level | First | 1-P/F | Second | 2-P/F | Third | 3-P/F | Fourth | 4-P/F | AC-Vm | AC-Im | DC-Vm | DC-Im |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1kHz | 1V | 404.1227n | Pass | 25.8400m | Pass | 98.2981m | Pass | 96.8296m | Fail | 999.6115u | 10.1272m | 4.0400m | 41.6912m |
| 2 | 10kHz | 1V | 397.2044n | | 253.5718m | | 101.5371m | | 96.9146m | | 1.0593m | 10.1275m | 4.0436m | 41.6705m |
| 3 | 100kHz | 1V | 396.5211n | | 2.4793 | | 268.6433m | | 96.8547m | | 3.2935m | 10.1274m | 4.0399m | 41.6668m |
| 4 | 500kHz | 1V | 390.0973n | | 9.4303 | | 1.2324 | | 97.0182m | | 15.6061m | 10.1247m | 4.0416m | 41.6638m |
| 5 | 1MHz | 1V | 383.6319n | | 14.0521 | | 2.4165 | | 97.0045m | | 30.7395m | 10.1329m | 4.0427m | 41.6620m |
| 6 | 5MHz | 1V | 375.3639n | | 43.6924 | | 11.7955 | | 97.0493m | | 155.3180m | 10.5924m | 4.0445m | 41.6533m |
| 7 | 10MHz | 1V | 387.0332n | | 176.6740 | | 24.3184 | | 97.0436m | | 346.9734m | 12.0882m | 4.0424m | 41.6755m |
| 8 | 15MHz | 1V | 399.1940n | | 57.5955 | | 37.6288 | | 97.0821m | | 573.9527m | 13.5934m | 4.0413m | 41.6713m |
| 9 | 20MHz | 1V | 672.1149n | | 20.8272 | | 84.5578 | | 97.0094m | | 596.4160m | 10.8841m | 4.0430m | 41.6820m |
| 10 | 25MHz | 1V | 1.0501u | | 8.8639 | | 165.9899 | | 97.0582m | | 499.4615m | 7.5984m | 4.0422m | 41.6719m |
| 11 | 30MHz | 1V | -780.9544n | | 319.0942m | | 484.2430 | | 97.0030m | | 417.3545m | 5.6234m | 4.0419m | 41.6763m |

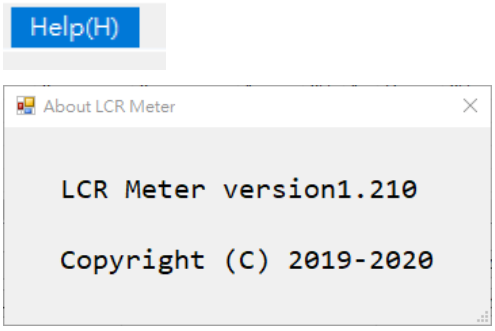
Freq.: measure frequency.
Level: measure signal voltage/current level.
First~Fourth: measured value of 1~4-Func.
1~4-P/F: Comparing results of 1~4-Func.
AC-Vm/Im: test signal voltage/current of the AC on the test object..
DC--Vm/Im: test signal voltage/current of the DC on the test object..

| | | |
|---|---|---|
| Test Mode/Button | ▪ Test Mode: Test mode for step(s).<br>▪ All: The entire steps.<br>▪ Step: Input a designated step in the blank box for test<br>▪ Start: Start test.<br>▪ Stop: Finish test.<br>▪ Log save as: Save measured value and test steps as .csv file.<br>▪ Remove All: Erase the entire measured values. |  <br>  <br>  |

# Help

About

Version number of the LCR Meter software.



# Quit

Click the X sign in the upper-right corner from LCR Meter software to finish and exit. The software will reconfirm again with prompt message.