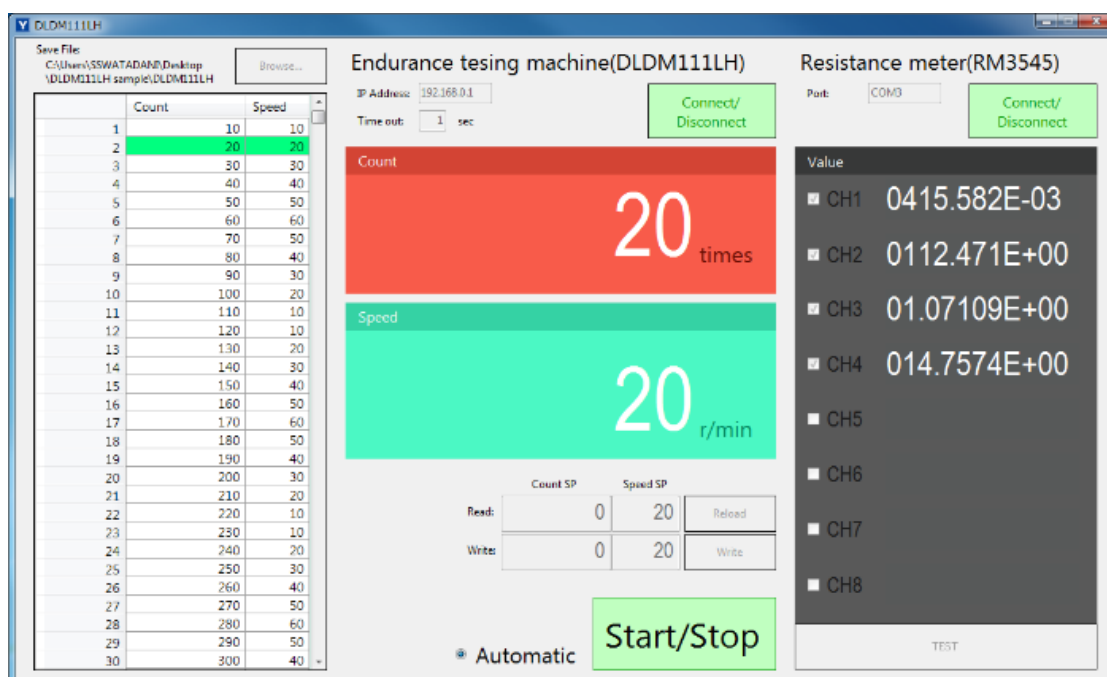


- INSTRUCTION MANUAL -

DLDM111LH resistance measurement Sample Software



Safety precaution are classified into five categories

- WARNING** : Death or serious injury may result from misusing the product without following the instructions.
- CAUTION** : Minor injury, as well as damage to the product may result from misusing the product without following the instructions.
- NOTICE** : Bad influence on test result may result from misusing the product without following the instructions.
- NOTE** : General knowledge.
- INTERLOCK** : Effect of the interlock system for safety.

WARNING : Be sure to read precautions of endurance testing machine when use this software.

WARNING : Do not use products beyond its capacity as specified in the specification.

CAUTION : Immediately stop the machine upon any sign of abnormal operation.

NOTICE : Make sure to tighten the screws as described in the manual.

Icons on this manual.

◇Click or tap on the display



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[- NOTICE -]

This software is sample, YUASA makes no guarantee that this software will complete operation.

We make absolutely sure about the contents of this user manual.

However, if you have some questions or find some incorrect, please contact us.

1. OUTLINE

1.1. SPECIFICATIONS

This software monitor and record the resistance data connect with the endurance testing machine (DLDM111LH) and, the resistance meter. (HIOKI E.E. CORPORATION resistance meter: RM3545-02/multiplexer unit: Z3003)

This software is consists by the following files.

- DLDM111LH_en.exe: program file
- DLDM111LH.exe.config: setting file

1.2. SYSTEM REQUIREMENTS

| | system requirements | recommended system requirements |
|------------------|--------------------------------|--|
| Operating System | Windows 7 | Windows 7(32bit/64bit)/10(32bit/64bit) |
| Resolution | 1366 x 768 | 1920 x 1080 |
| CPU | Operating clock 1GHz or better | Operating clock 1GHz or better |
| Memory | 512MB | 512MB |
| Hard Drive Space | 30MB | 30MB |
| Interface | USB2.0 port /Lan port | USB2.0 port /Lan port |

For more information about RM3545, please see the HIOKI E.E. CORPORATION homepage.

1.3 CONNECTION DEVICES

1.3.1 THE ENDURANCE TESTING MACHINE

- 1) Confirm the following setting before connected to the endurance testing machine.

For more information about setup, refer to [2.3 THE ENDURANCE TESING MACHINE SETTING] of this instruction manual.

PC

- IP address setting

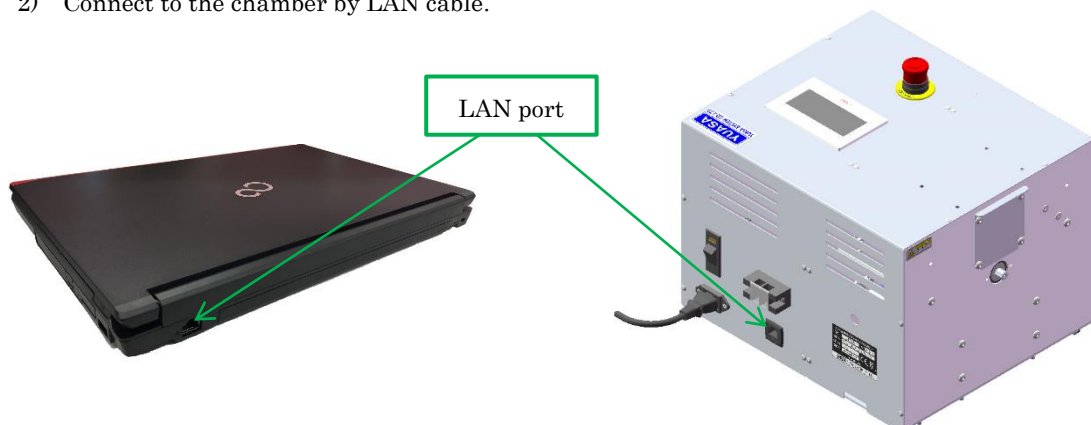
IP address: 192.168.0.5
Subnet mask: 255.255.255.0

Endurance testing machine (DLDM111LH)

- IP address setting

IP address: 192.168.0.1
Subnet mask: 255.255.255.0

- 2) Connect to the chamber by LAN cable.



1.3.2 THE RESISTANCE METER

- 1) Confirm the following setting before connected to the chamber. For more information about setup, refer to [2.4 THE RESISTANCE METER CONNECTION SETTINGS] of this instruction manual.

PC

- Install USB driver
- Check the COM port

Resistance meter (RM3545)

- Check multiplexer unit setting

TERMINAL: MUX

WIRE: 4W

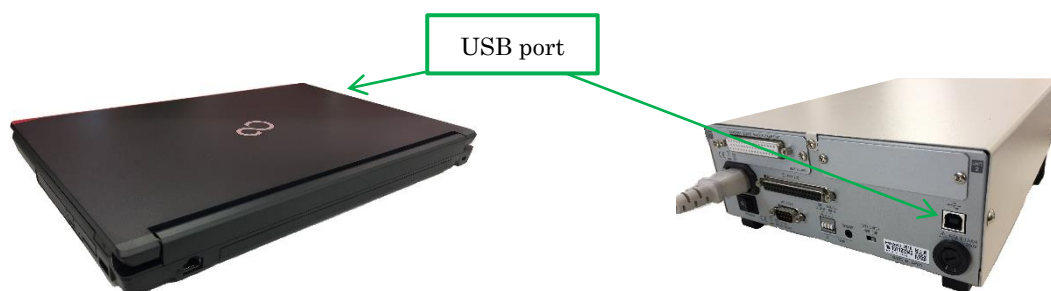
SCAN MODE: AUTO

- Check USB interface setting

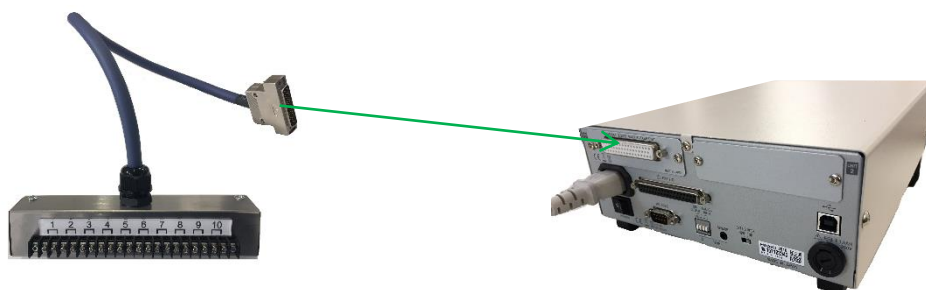
NOTE

Refer to HIOKI E.E. CORPORATION RM3545 INSTRUCTION MANUAL for details of setting.

- 2) Connect to the resistance meter by USB cable.

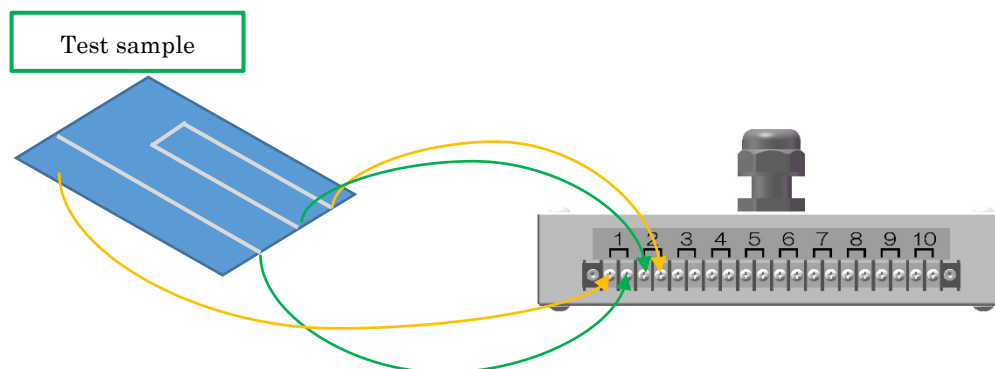


- 3) Connect terminal box to the resistance meter.



1.3.3 TEST SAMPLE's

- 1) Connect test samples each ends to terminal box, then resistance values is measured.
Terminal box number is equal resistance meter channel number.

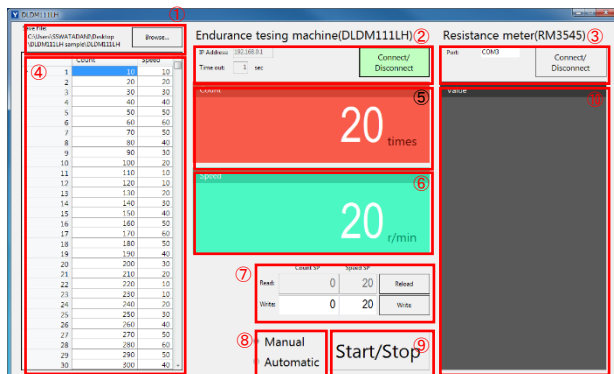


2. GENERAL OPERATION

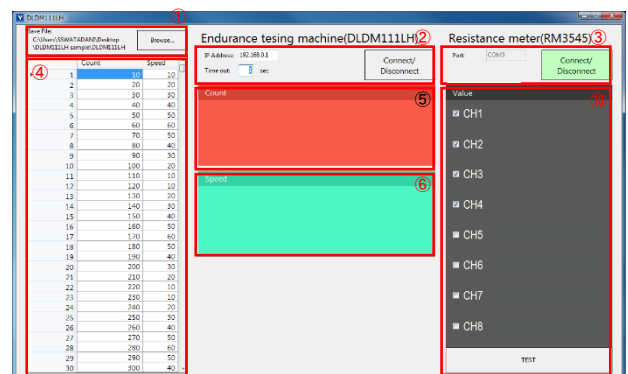
2.1 SCREEN DESCRIPTION

1) Screen description is shown below.

- Connected to the endurance testing machine (DLDM111LH)



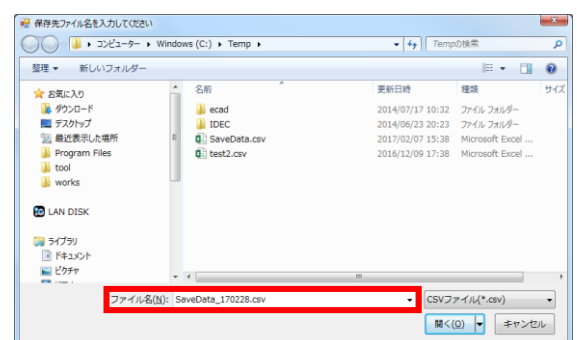
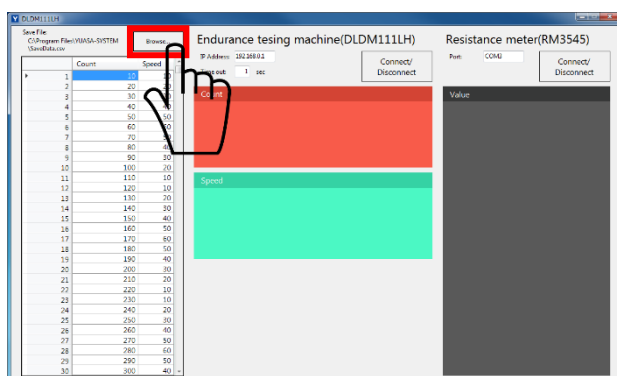
- Connected to the resistance meter (RM3545)



| | | |
|---|---------------------------------------|---|
| ① | Save file | Set save file name and location. |
| ② | The endurance testing machine setting | The connection setting of endurance testing machine. |
| ③ | The resistance meter setting | The connection setting of resistance meter. |
| ④ | Automatic operation program | The endurance testing is operated according to this program in automatic operation. |
| ⑤ | Count | Show the count of the chamber drive unit. |
| ⑥ | Speed | Show the speed of the chamber drive unit. |
| ⑦ | Manual operation setting | The endurance testing is operated according to this program in manual operation. |
| ⑧ | Operation select Manual/Automatic | Select the kind of operation. |
| ⑨ | START/STOP | Start or stop operation. |
| ⑩ | The resistance meter information | Set parameter or show result of the resistance meter. |

2.2. THE SAVE FILE LOCATION SETTING

- This software output CSV file which measurement result is saved in automatic operation.
Default output location is same as software file location.
Click "Browse..." button and input new file name and location or select an existing file in file dialog, if change the setting.



2.3 THE ENDURANCE TESTING MACHINE CONNECTION SETTING

2.3.1 CONNECTION METHOD

- 1) Turn on the endurance testing machine (DLDM111LH).

NOTE Refer to 『2.1 BOOT UP』 on the instruction manual of the DLDM111LH.

- 2) Connect to the endurance testing machine by LAN cable.
- 3) Set IP address.

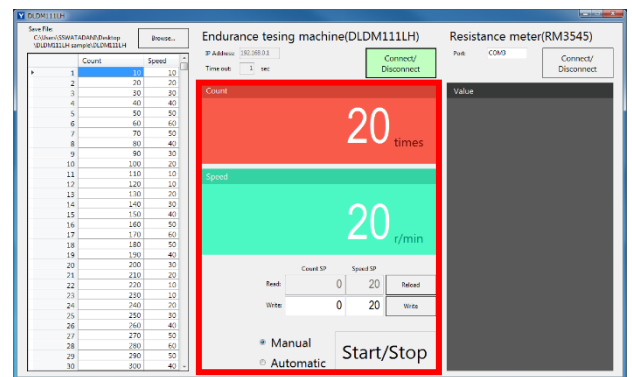
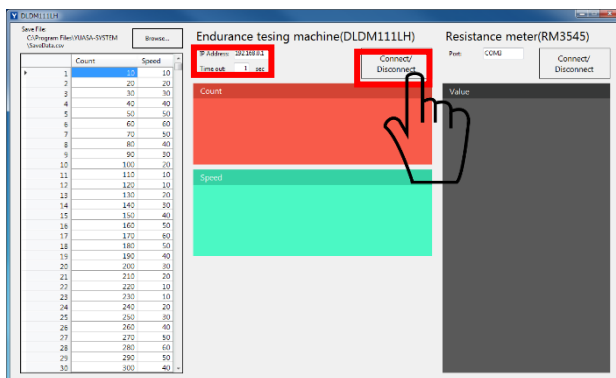
NOTE Refer to 『5.3 IP ADDRESS』 on the instruction manual of the DLDM111LH.

2.3.2 PC SETTING

- 1) Set IP address.

NOTE Refer to 『4.1 IP ADDRESS』 on this instruction manual.

- 2) Show error message when not connected to the endurance testing machine.
- 2) Show error message when not connected to the endurance testing machine.
- 3) When the “Connect/Disconnect” button is clicked, disconnect to the endurance testing machine during connected.



2.4 THE RESISTANCE METER CONNECTION SETTING

2.4.1 CONNECTION METHOD

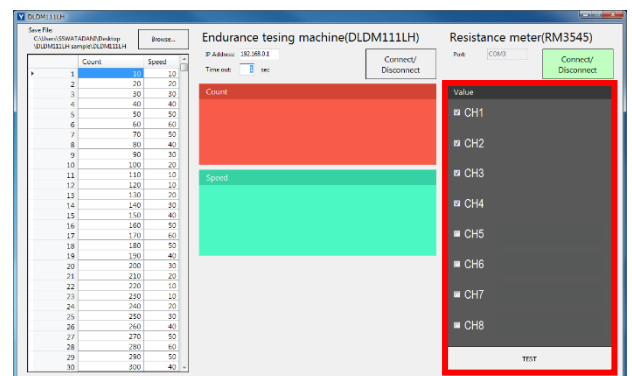
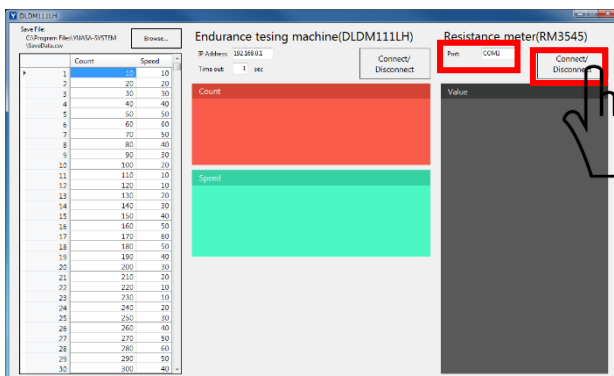
- 1) Turn on the resistance meter.
- 2) Connect to the resistance meter by USB cable.

2.4.2 PC SETTING

- 1) Check the used port number for the resistance meter connection.

NOTE Refer to 『4.2 COM PORT』 on this instruction manual.

- 2) Change the value: Port for the checked port number.
- 3) When the “Connect/Disconnect” is clicked, disconnect to the chamber during connected.



3. MEASUREMENT

3.1 MANUAL OPERATION

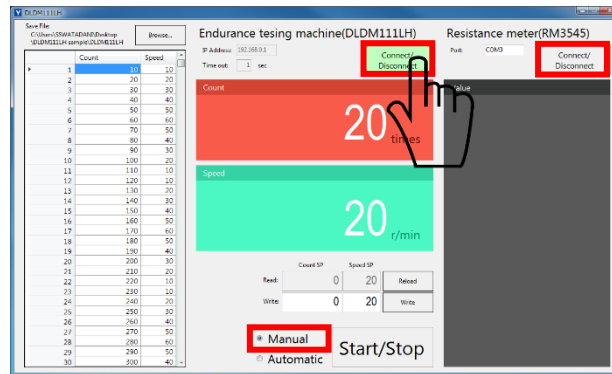
Manual operation mode is measured according to set count and speed in manually. This software logging the data using the chamber function of automatic operation.

1) Connect to the endurance testing machine following as procedure of “2.3”.

Show information of the endurance testing machine.

2) Disconnect to the resistance meter.

3) Select manual operation.



3.1.1 OPERATION SETTING

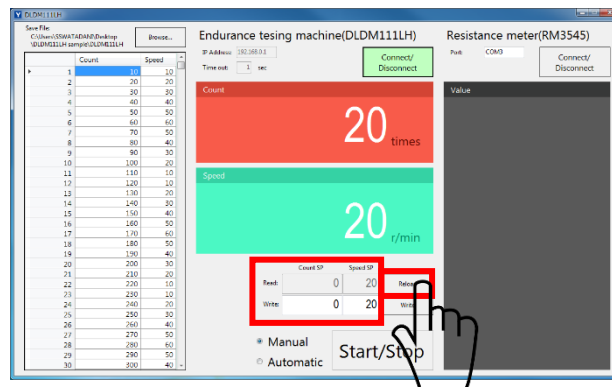
When connect to the endurance testing machine of click “Reload” button, show set value of count and speed.

Count SP(preset count): Manual operation will be stop when active at this count.

Speed SP(operation speed): Manual operation will be move this speed.

NOTE Input “0” if you do not wish to use preset count.

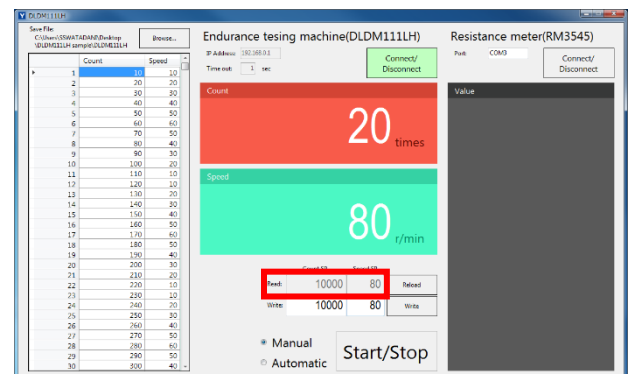
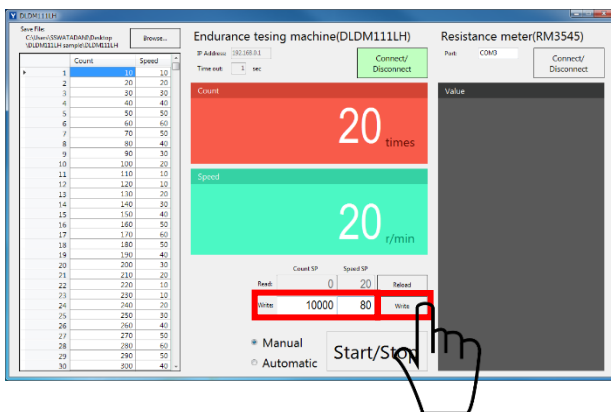
CAUTION Speed range is 10 to 120.



1) Input set value of count and speed.

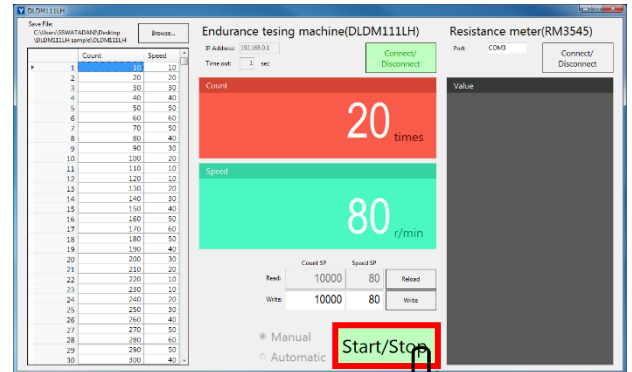
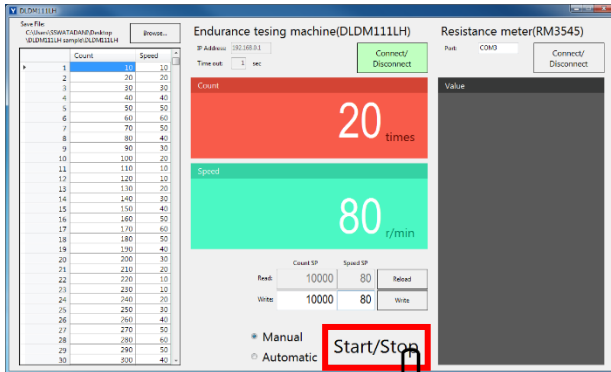
2) Check the correct value is entered, click “Write” button.

3) If the reading field has been changed to the input set value, it is completed.



3.1.2 START/STOP

- 1) Click the “Reload” button and check set value.
- 2) Start operation when click the “START/STOP” button.
- 3) Operation will be stop when active at count set value or click the “START/STOP” button during operating.



3.2 AUTOMATIC OPERATION

Automatic operation mode is measured according to set program.

Set count and speed in each steps. Proceed to the next step when active at count set value.

Complete the final step, automatic operation will be finish.

Output CSV file of measured data during automatic operation.

NOTE Touch the “RESET” button on the main unit to count to “0” before automatic operation start.

3.2.1 PROGRAM

This software read the default program when software startup.

You can change the initial value by editing the “ProgramData.csv” file.

3.2.1.1 READ OUT PROGRAM

1) Shutdown this software.

2) Open the “ProgramData.csv” file.

Input set value in each row. Step number is same as row Number.

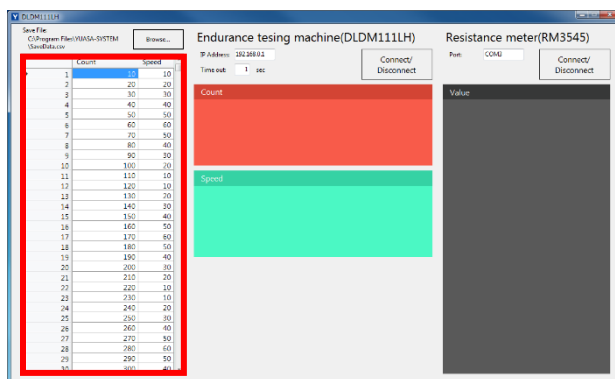
A column is count, B column is speed.

CAUTION Do not set “0” in count set value.

CAUTION Do not set the smaller count value than the previous row.

CAUTION Speed can be set from 10 to 120. Do not set a value outside the range.

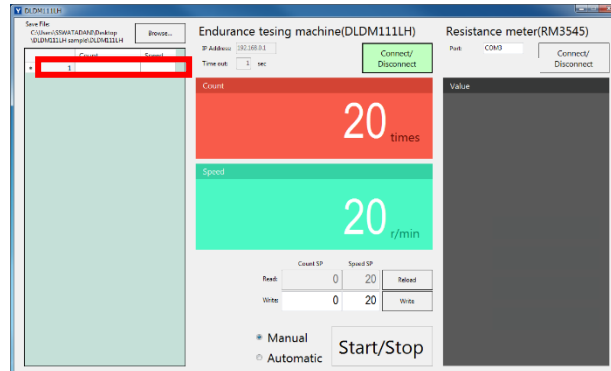
3) Startup this software.



| | A | B | C | D |
|----|-----|----|---|---|
| 1 | 10 | 10 | | |
| 2 | 20 | 20 | | |
| 3 | 30 | 30 | | |
| 4 | 40 | 40 | | |
| 5 | 50 | 50 | | |
| 6 | 60 | 60 | | |
| 7 | 70 | 50 | | |
| 8 | 80 | 40 | | |
| 9 | 90 | 30 | | |
| 10 | 100 | 20 | | |
| 11 | 110 | 10 | | |
| 12 | 120 | 10 | | |
| 13 | 130 | 20 | | |
| 14 | 140 | 30 | | |
| 15 | 150 | 40 | | |
| 16 | 160 | 50 | | |
| 17 | 170 | 60 | | |
| 18 | 180 | 50 | | |
| 19 | 190 | 40 | | |
| 20 | 200 | 30 | | |
| 21 | 210 | 20 | | |
| 22 | 220 | 10 | | |
| 23 | 230 | 10 | | |
| 24 | 240 | 20 | | |
| 25 | 250 | 30 | | |
| 26 | 260 | 40 | | |
| 27 | 270 | 50 | | |
| 28 | 280 | 60 | | |
| 29 | 290 | 50 | | |
| 30 | 300 | 40 | | |
| 31 | 310 | 30 | | |
| 32 | 320 | 20 | | |
| 33 | 330 | 10 | | |

3.2.1.2 INPUT PROGRAM

- 1) Program input field is shown during connect to the endurance testing machine.
- 2) Input count and speed in order from first step.
 - CAUTION** Do not set "0" in count set value.
 - CAUTION** Do not set the smaller count value than the previous row.
 - CAUTION** Speed can be set from 10 to 120. Do not set a value outside the range.

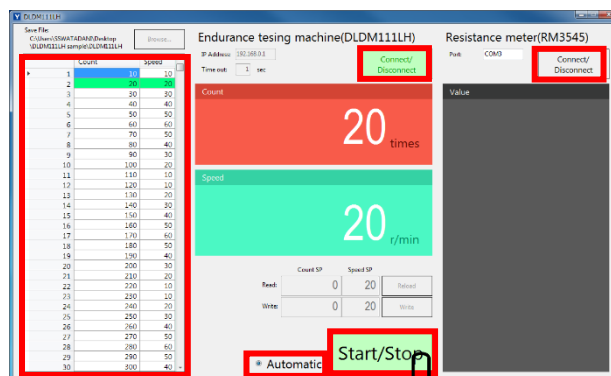


3.2.2 NOT USE THE RESISTANCE METER

The endurance testing machine is operated no use the resistance meter at the set speed when active at set count in each steps.

The current Step background color is changed during execution.

- 1) The endurance testing machine information is shown during connect.
- 2) Disconnect to the resistance meter.
- 3) Select "Automatic" operation.
- 4) Confirm the program is set.
- 5) Click the "START/STOP" button.



- 6) Automatic operation will be stop when active at final step.
 - Click the "START/STOP" button, when you want to stop operation.
 - The current step is reset if change the program during operation is stop.

3.2.3 USE THE RESISTANCE METER

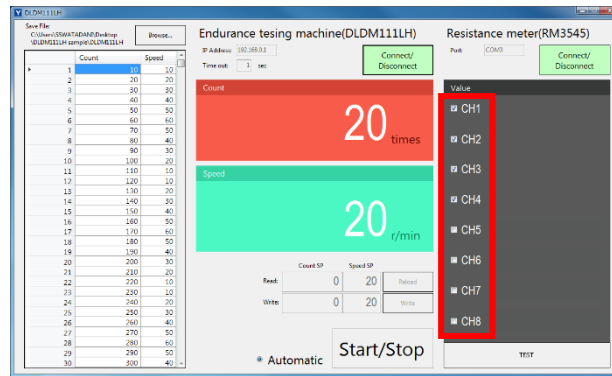
The endurance testing machine is operated use the resistance meter at the set speed when active at set count in each steps. Decelerate before the count set value. (10r/min)

Operation is paused at count set value, then measure the resistance value.

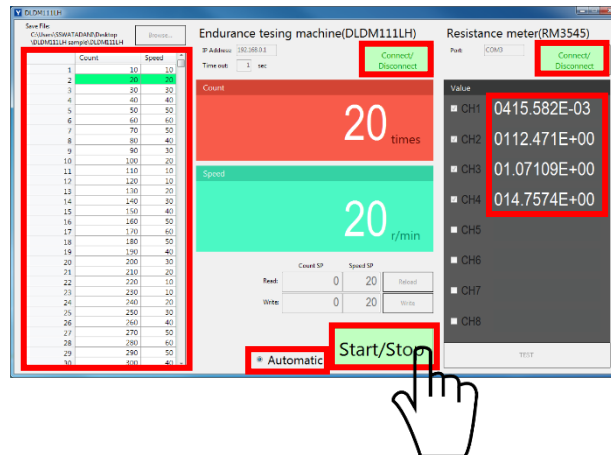
Proceed to the next step when finish resistance measurement.

The current Step background color is changed during execution.

- 1) Connect to the endurance testing machine and the resistance meter.
- 2) These information is shown during connect.
- 3) Select use channel of the resistance meter.



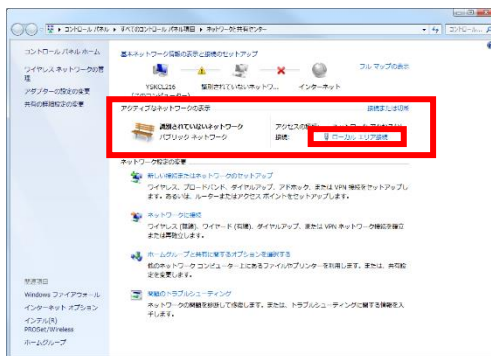
- 4) Select “Automatic” operation.
- 5) Confirm the program is set.
- 6) Click the “START/STOP” button.
- 7) Resistance value is measured active at count set value in each steps.



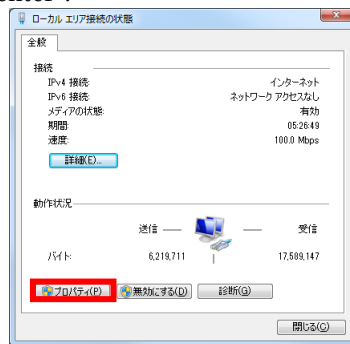
4. PC SETTING

4.1 IP ADDRESS

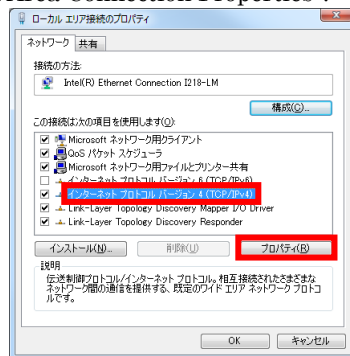
- 1) Connect to the chamber. Turn on the chamber before connect.
- 2) Open windows start menu.
- 3) Input “Network and Sharing Center” in “Search programs and files”.
Open “Network and Sharing Center”.



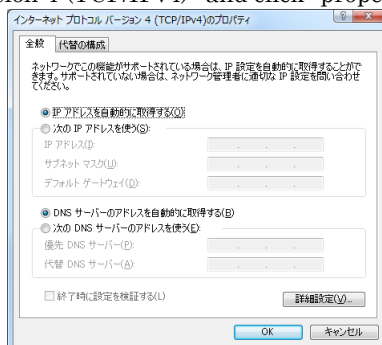
- 4) Click “Local Area Connection” displayed in “View your active networks”.
Open “Network and Sharing Center”.



- 5) Click “property” to open “Local Area Connection Properties”.



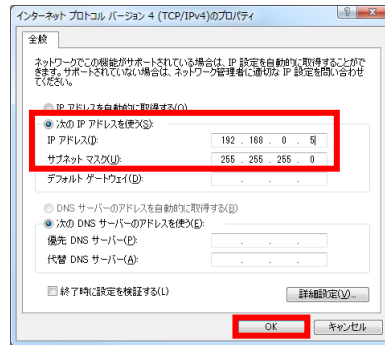
- 6) Select “Internet Protocol Version 4 (TCP/IPv4)” and click “property”.



7) Check “Use the fooling IP address” and input IP address and subnet mask.

IP address: 192.168.10.5

Subnet mask: 255.255.255.0



8) Click “OK” to close “Internet Protocol Version 4 (TCP/IPv4) Properties”.

9) Close “Local Area Connection Properties”.

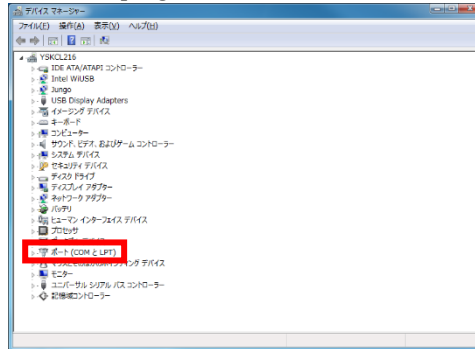
10) Close “Network and Sharing Center”.

4.2 COM PORT

1) Connect to the resistance meter. Turn on the resistance meter before connect.

2) Open windows start menu.

3) Input “Device Manager” in “Search programs and files”.



4) Select “Ports (COM & LPT)”. Check “HIOKI USB Device (COM~)” in this list.

Use port number is “COM21” in the reference image.

