

Electronic Load
Control Software



Manual

KEISOKU GIKEN Co., Ltd.

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1. Deletion of exclusion (must read)

This software is charge-free. In case of coming up any accident by some chance, our company does not have any responsibility. And in case of being some trouble about software, our company does not have to repair or support.

2. About this book

E-Load Player specifications are explained in this book.

3. Outline of E-Load Player

E-Load Player is comprehensive utility software that implements the various control functions. It makes you allow easy operation / test using an electronic load. It can control three units by one software.

4. Compatible models

LN-300A-G6, LN-300C-G6, LN-1000A-G6, and LN-1000C-G6

5. Notes

- In case of using GPIB-USB-HS, disconnect the GPIB-USB-HS when this software is no active avoiding the damage of the PC.
- Every saving data is overwritten if the same named file exists.
- Every saving data is opened by Microsoft Excel.
- When you disconnect communication, you must end application, then unplug the connection cable.
- You must load the configuration data which is saved at the same mode (i.e. Dynamic Setting A / Dynamic Setting B / Logger / V-I specification). Otherwise, unexpected behavior will appear.
- Please check the current limit in case of being low current or alarm of current.
- The measurement interval is at least about one second (measured ripple is 3 seconds). They have time lag which is about ± 0.05 second.
- The measurement data can be stored up to 100,000 measurements per individual measurement item. Exceeded 100,000 measurements might corrupt the stored data.
- It can capture waveform data from oscilloscope (Tektronix TDS3014B).
Resistance value, NaN means -0 / 0 and Inf means a (real number) / 0.

6. PC spec.

OS : Windows XP, Vista, Windows7

CPU : Pentium4 or later.

Memory : over 1GByte

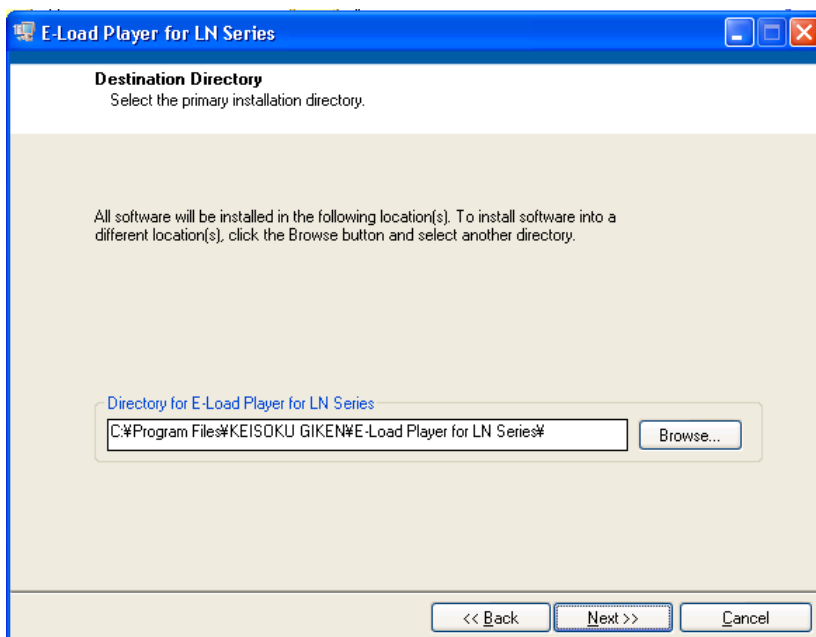
Monitor Resolution : over 1280 × 1024 (recommended)

Blank HD : over 500MByte

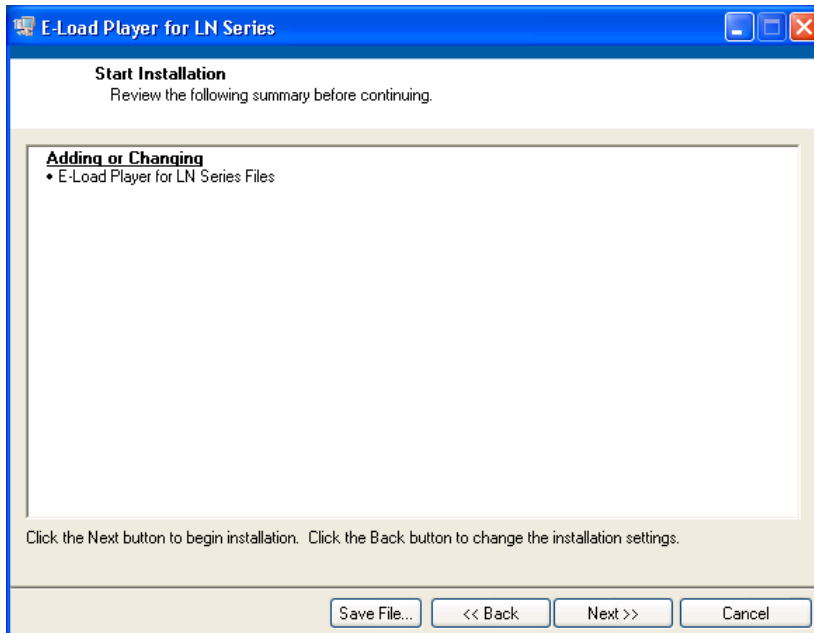
7. Installation

I. Main Software Set Up

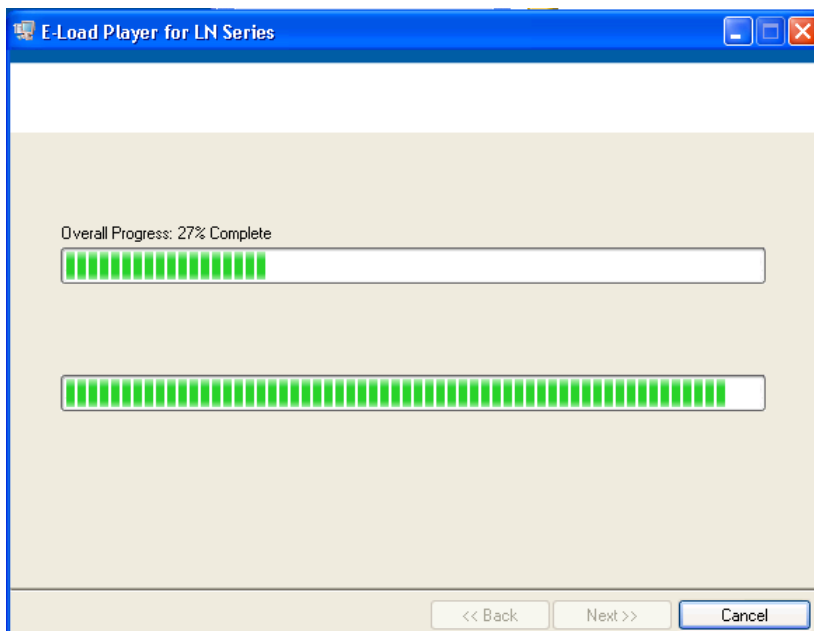
- ① (* If NI-VISA is not installed, install NI-VISA from CD being attached to GPIB-USB-HS)
- ② Execute Setup.exe in unzipping folder.
- ③ Select installed directory, click “Next”.



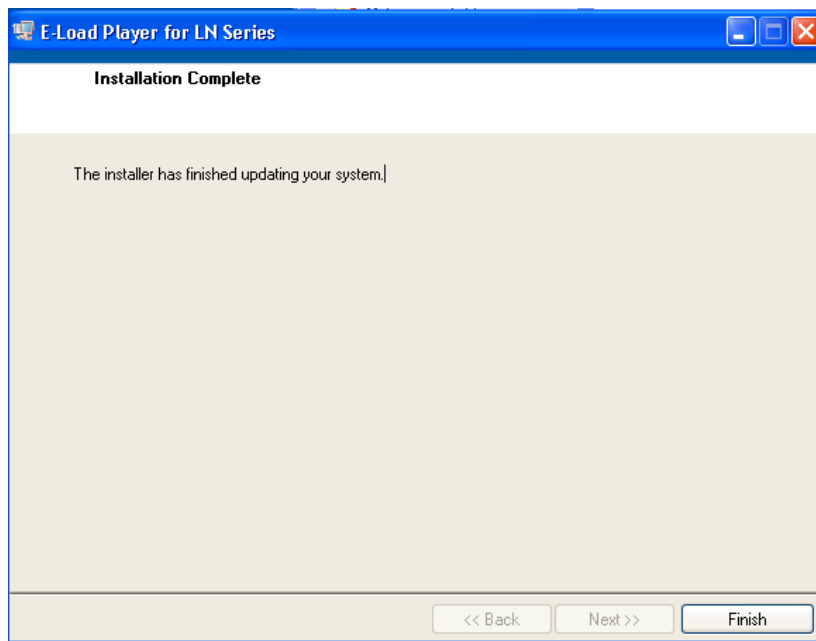
- ④ After checking the files that are installed, click on the "Next".



- ⑤ Please wait while the installation begins.



⑥ Installation is complete when the screen below appeared. Please click on the "Finish".



⑦ If you are prompted to restart, please follow the instructions to reboot.

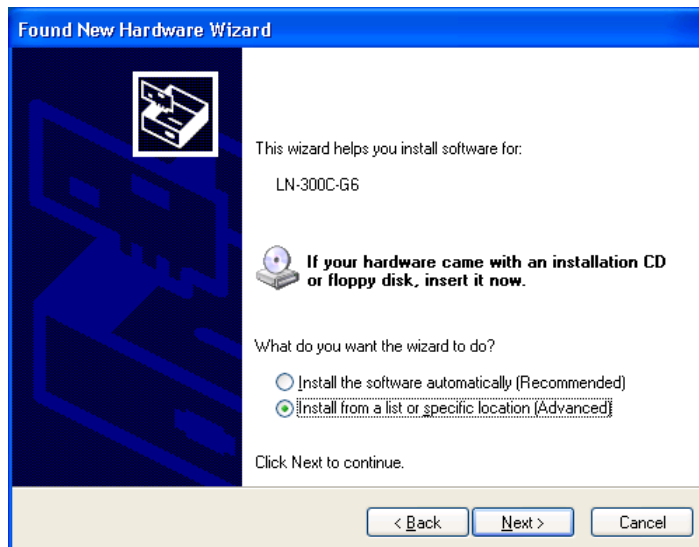
II. USB Driver Set Up

In case of using USB connection between PC and LN Series, you must use driver including your downloaded folder. [Driver]

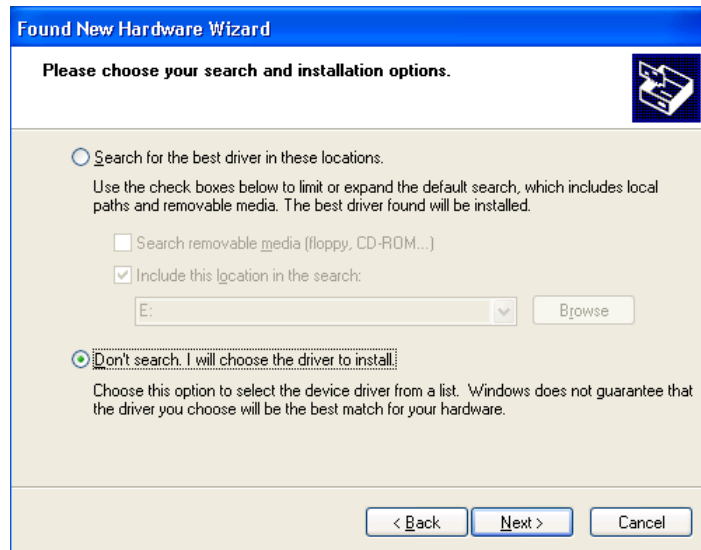
- ① Connect PC and LN Series
- ② Turn on LN Series. After opening window, select [No, not this time] and select [Next >].



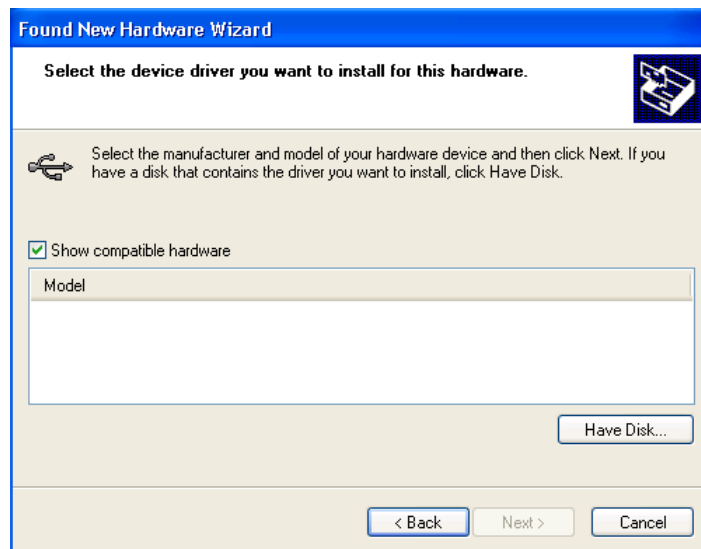
- ③ Select [Install from a list or specific location [Advanced]] and select [Next >].



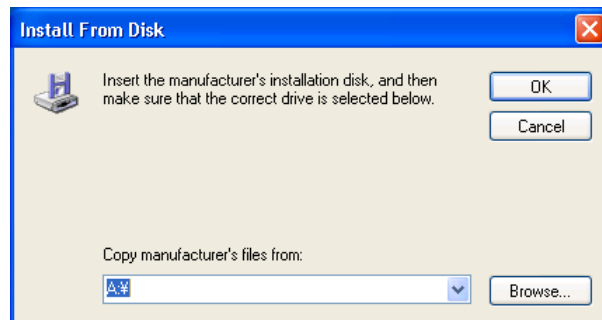
- ④ Select [Don't search. I will choose the driver to install] and select [Next >]



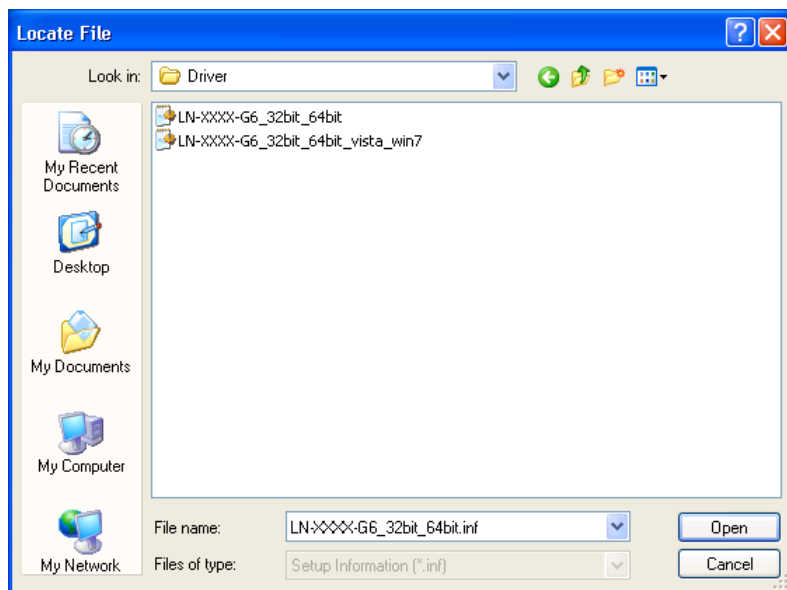
- ⑤ Select [Have Disk...].



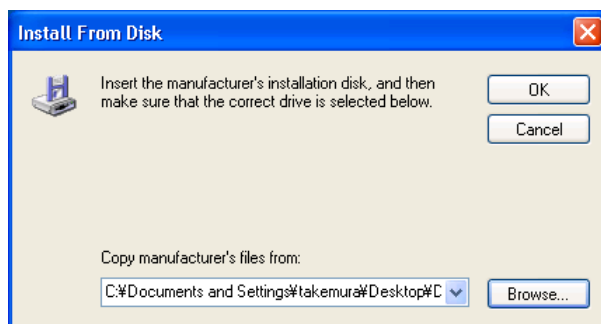
- ⑥ Select [Browse...].



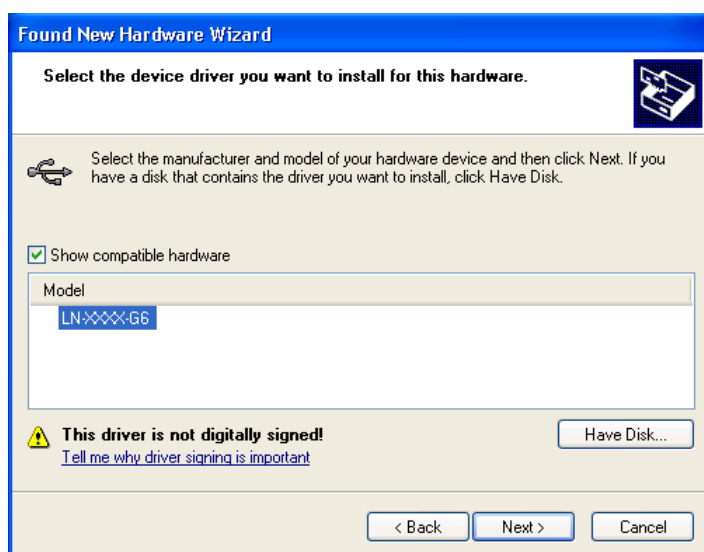
- ⑦ Select downloaded driver, LN-XXXX-G6_32bit_64bit. Then select [Open].



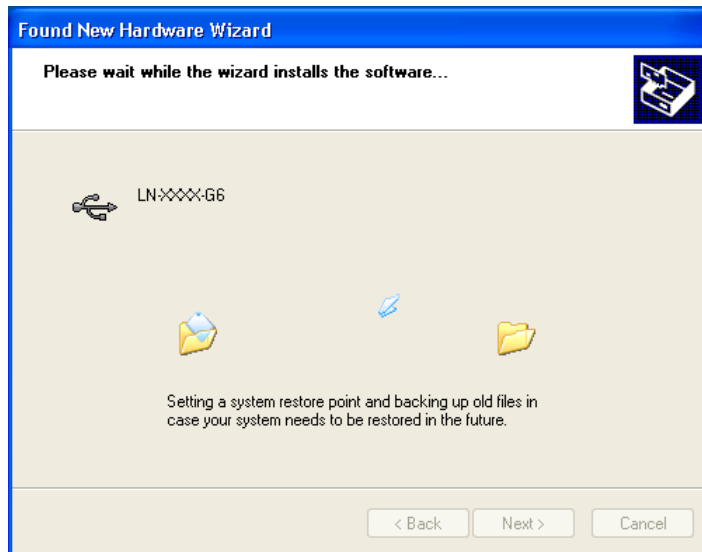
- ⑧ Select [OK]



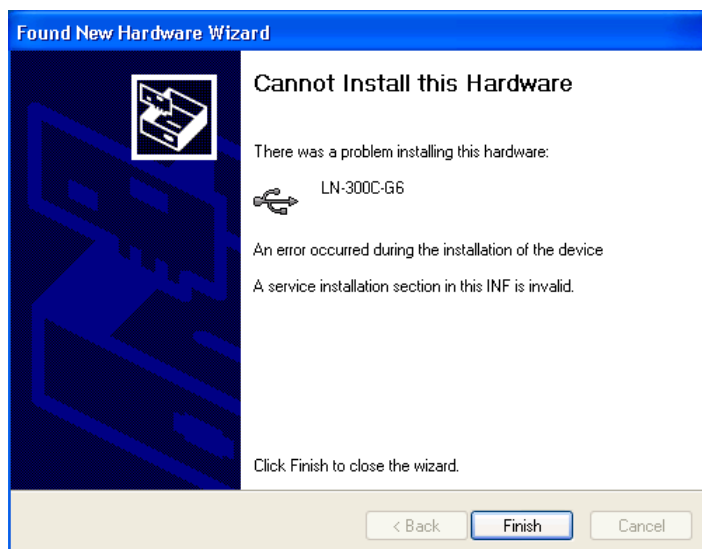
- ⑨ Select [LN-XXXX-G6] and select [Next >].



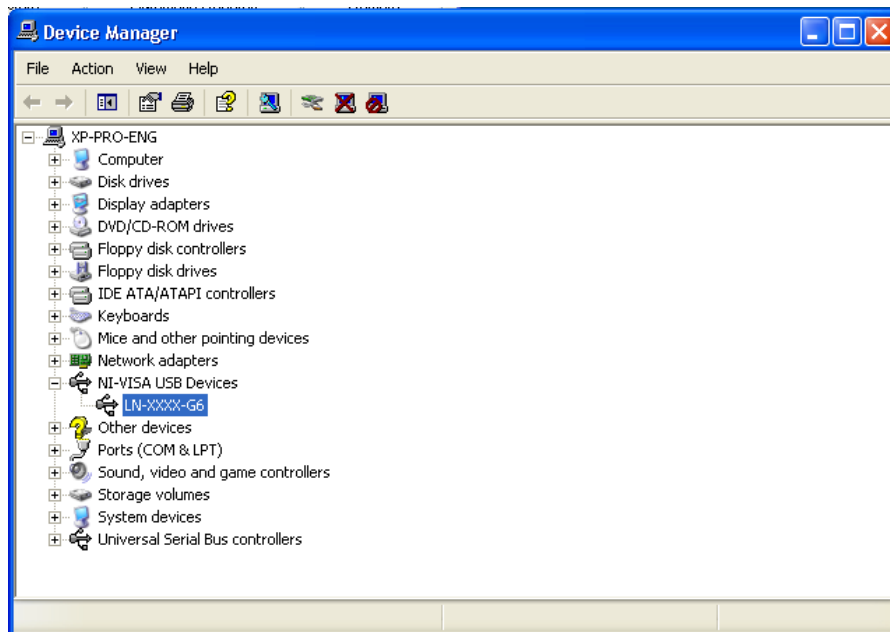
- ⑩ Installation will start.



- ⑪ Installation is finished.



- ⑫ Check the device manager for confirmation.



8. Overview of functions

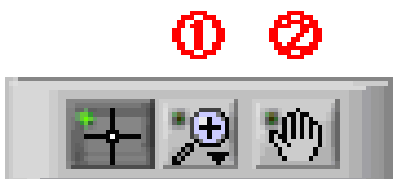
E-Load Player has the following features.

- Connect : Establish a connection to the device.
- Setting/Measurement : Load and range can be set.
- Dynamic Setting A : Dynamic Setting of 16 steps can be set.
- Dynamic Setting B : Dynamic Setting of pulse pattern can be set.
- Big Express : the measurements show bigger.
- Measurement Log : Record the measurement.
- V-I Specification : V-I characteristics can be measured
- Ripple Measurement : Ripple voltage measurements can be recorded.

9. Function Chart

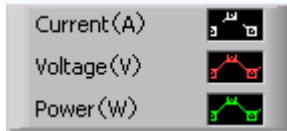
We'll describe the function graph. For more information, please refer to technical books. (Reference : Learning with LabVIEW 2009 Author : Robert H.Bishop)

a. Operation of Chart



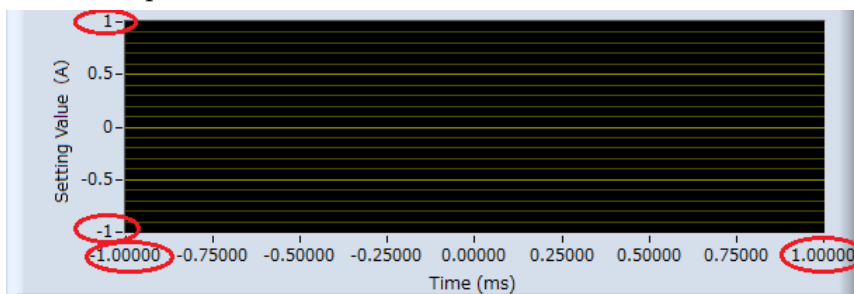
- ① You can zoom the screen. You can expand the area whom you want to see
- ② By dragging on the graph, you can move the graph.

b. Waveform Description



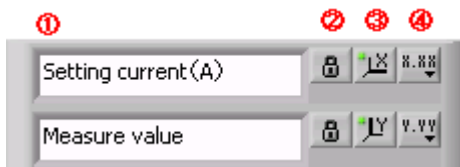
It displays a description of each graph.

c. Description of the axis



Maximum and minimum values for each axis (above, circled in red) can be changed by left-clicking.

d. Description of the annotation graph

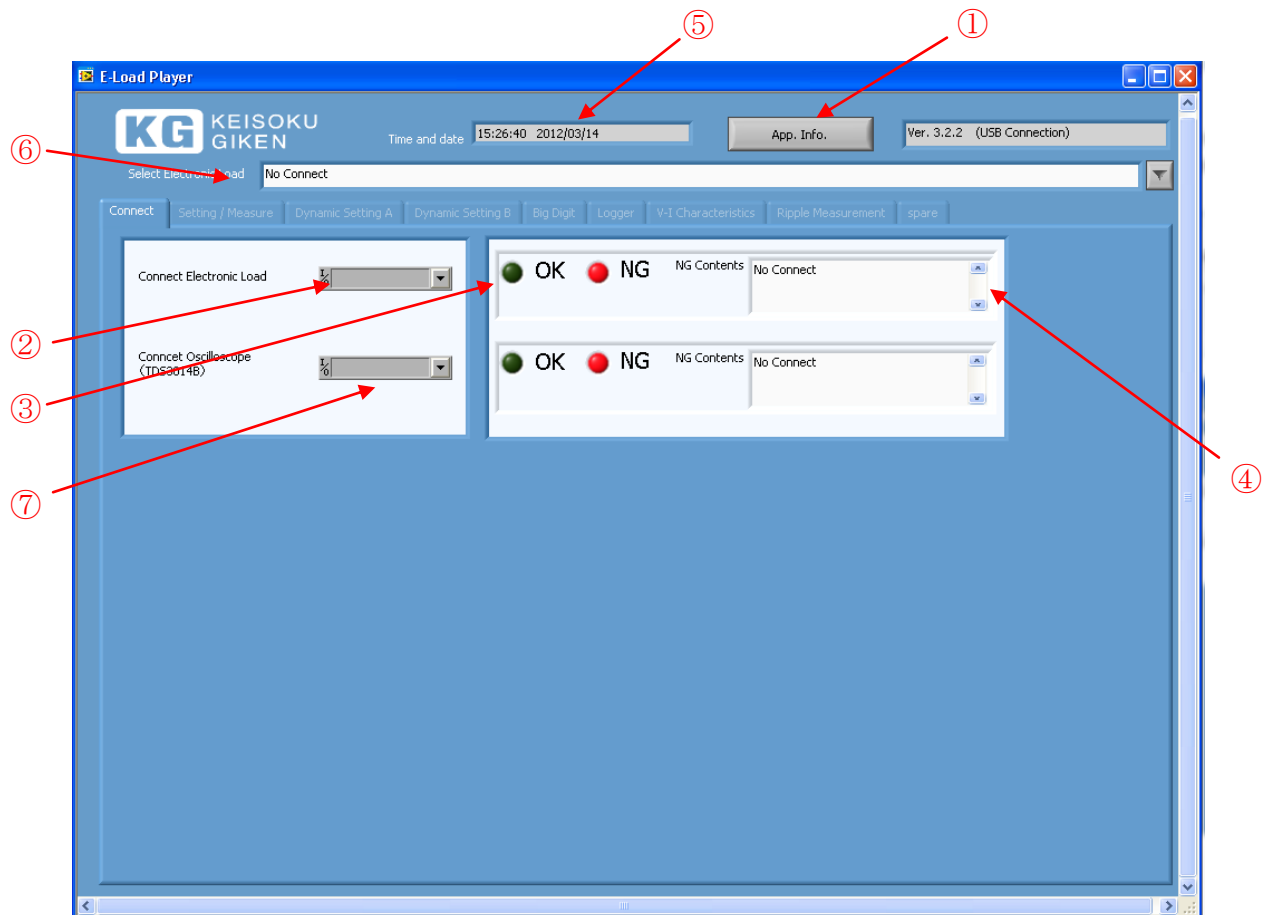


- ① You can enter a description of the X and Y axes.
- ② If you leave this lock button ON, the graph axes are updated automatically.
- ③ The scale is set automatically.
- ④ You can select the number format for each axis

10. Instructions for each function more

Describe each part.

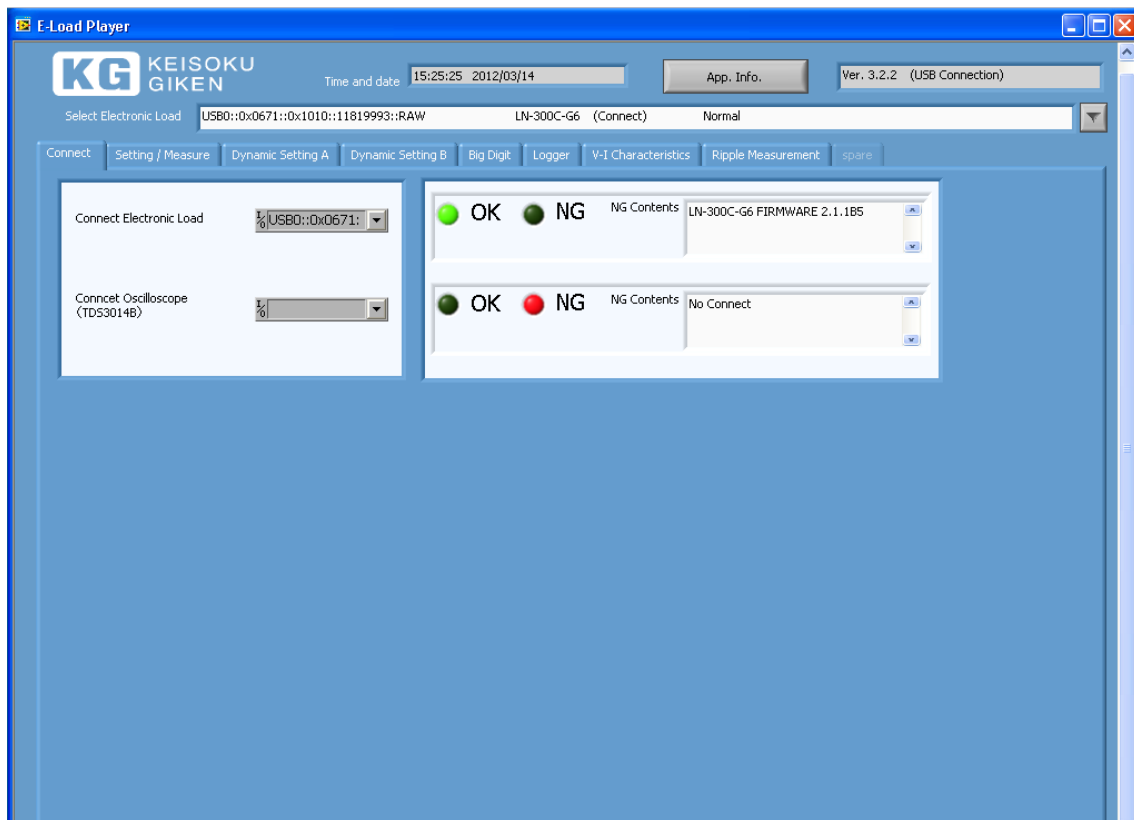
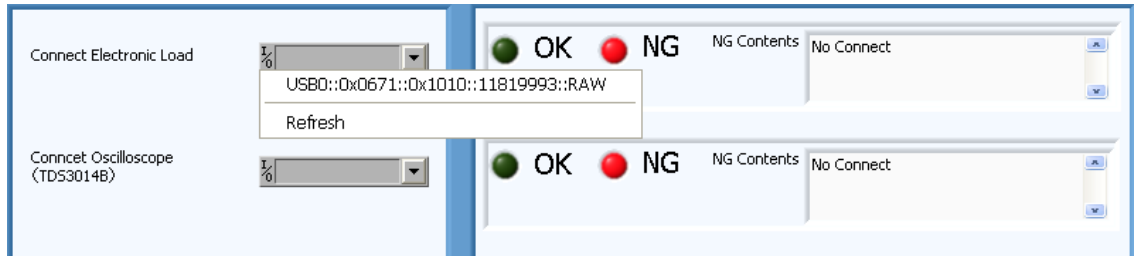
I. Connect



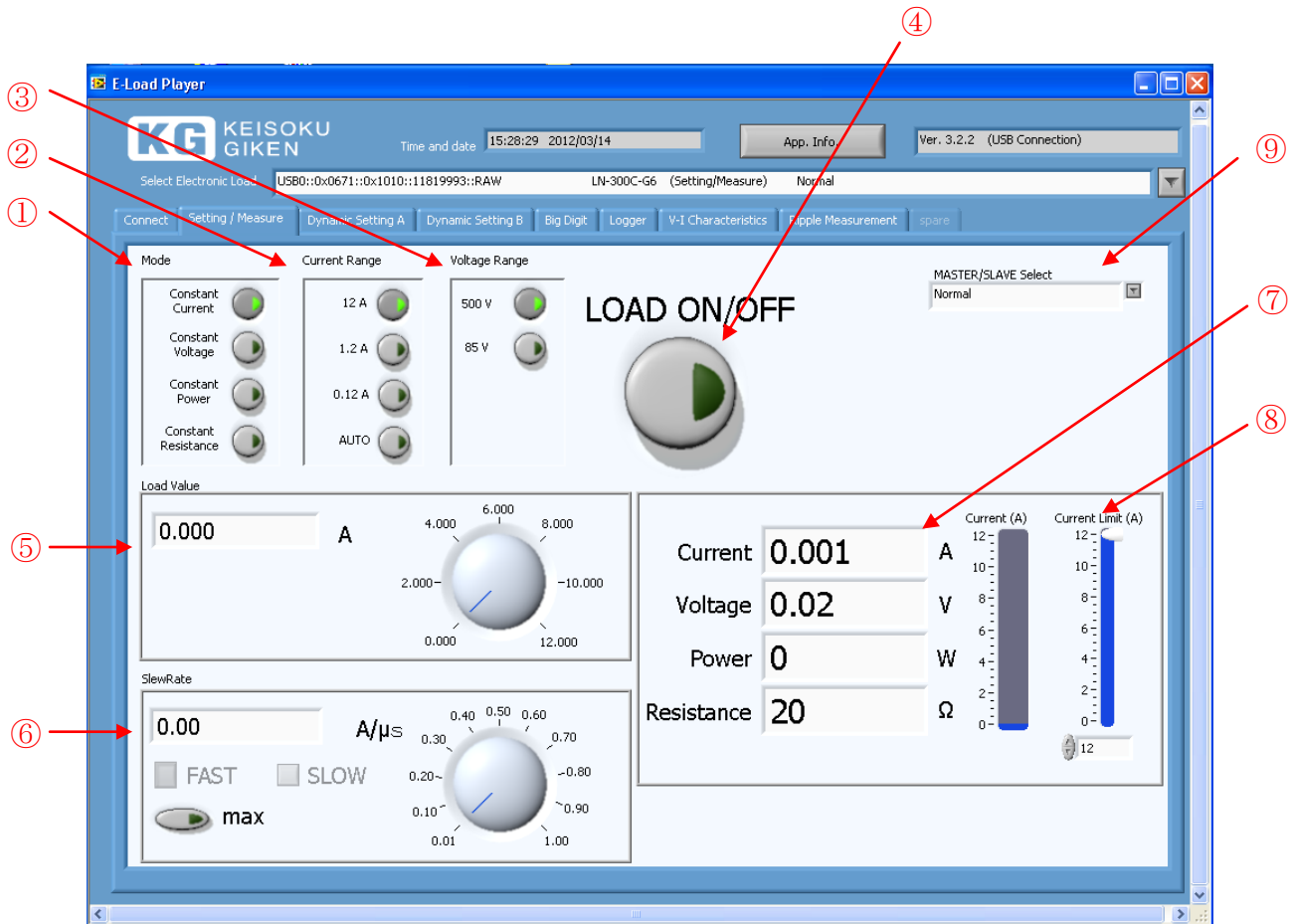
- ① Displays a description of the E-Load Player.
- ② Make a connection with the electronic load.
- ③ If connection becomes successful, the OK lamp turns ON and the NG lamp turns OFF.
- ④ When you can not connect with the electronic load, the reason will be displayed.
- ⑤ Displays the current time.
- ⑥ Displays the connected electronic load. In case of connecting to other electronic loads, change this part.
- ⑦ If you get the waveform from the oscilloscope (TDS3014B), you can select this dialog.

<Operation>

Please select the device address by pressing the right side button on the box. If a device address is not displayed, please press the "Update". If the OK lamp turns, connection is completed.



II. Setting / Measure



- ① Select the operating mode of the load.
- ② Set the load current range. (* CV mode of electronic loads has no automatic range. And CR and CP mode has no low range. Nonexistent range is not selectable automatically.)
- ③ Set the load voltage range.
- ④ Set load ON / OFF.
- ⑤ Sets the load. Turn the dial or enter a value directly.
- ⑥ Set the slewrate. Turn the dial or enter a value directly. The Max button makes it become a maximum speed slewrate regardless of setting slew rate. Slewrate setting is valid only when the CC mode is selected. When the CV mode is selected, FAST · SLOW button is enabled.
- ⑦ Displays the value of the measured current and voltage. Power and resistance value are calculated from the measured current and voltage.
- ⑧ Set the current limit.

- ⑨ Set the Master / Slave (you can choice only multi mode). When you select the Multi, all other equipment that is physically connected will automatically become Slave.

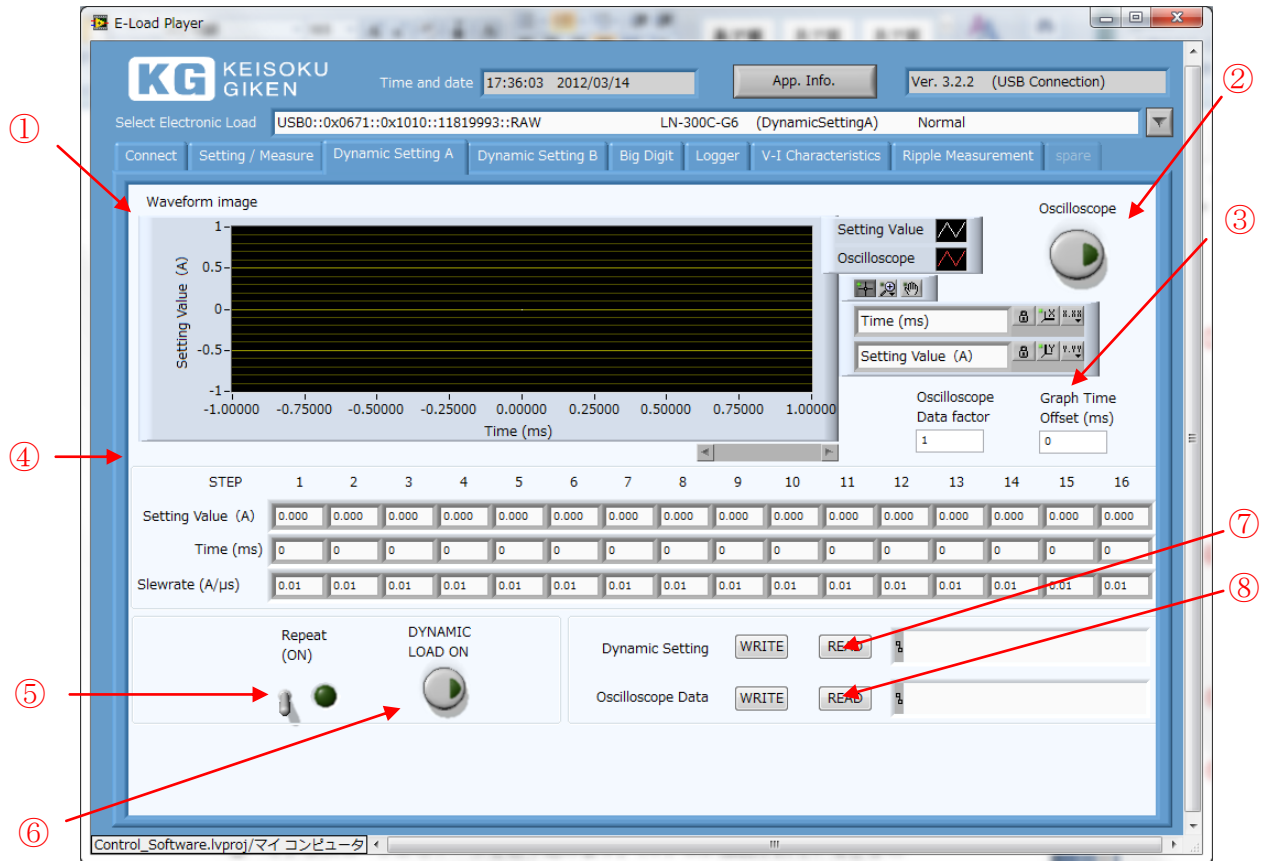
(Note)

On software, the all devices that software is recognized are set down to a Multi regardless of the actual hardware connection. After all device is recognized, please set someone to the Multi mode

<Operation>

After “Connect”, Select mode (①) then select the current range (②) and select a voltage range (③). Then determine the value of the load (⑤) and slewrate (⑥). Finally set the current limit (⑧), then please press the load ON (④).

III. Dynamic Setting A

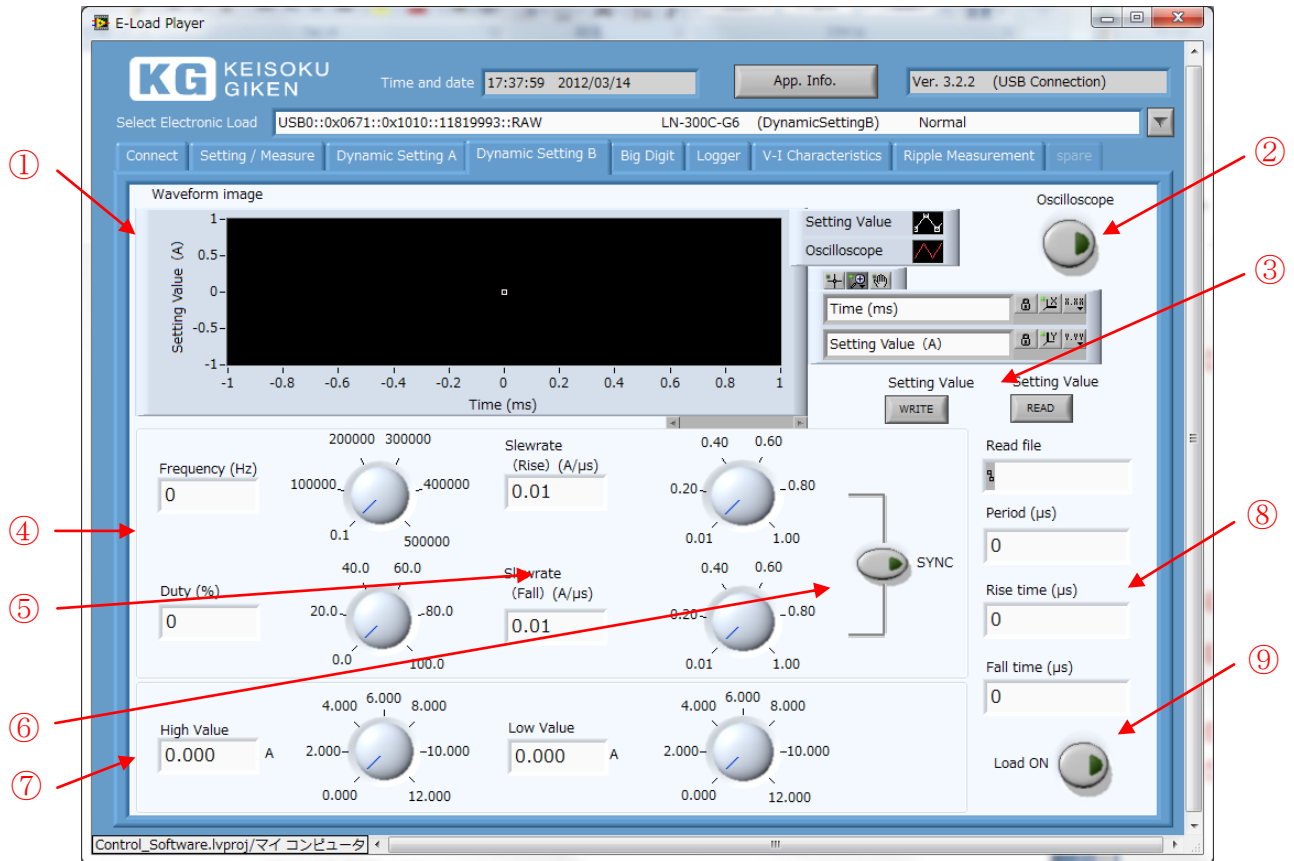


- ① Displays the current waveform set and the oscilloscope data.
- ② Captures data from the oscilloscope. (in case of connecting the oscilloscope)
- ③ "OSC factor" value is multiplied by the value of the oscilloscope data. And "Graph time offset" is added to the value of the graph time. By changing these values, the Graph data can be shifted. By default, "OSC factor" value is 1 and Graph time offset" is zero.
- ④ You can make a set of dynamic modes.
- ⑤ Set the repeat ON / OFF of the load pattern.
- ⑥ Set load ON / OFF.
- ⑦ Reads / Save dynamic mode settings.
- ⑧ Reads / Save the data measured by the oscilloscope.

<Operation>

After "Connect", set dynamic load (④). You can also do WRITE / READ settings (⑦). Finally push DYNAMIC LOAD ON (⑥).

IV. Dynamic Setting B

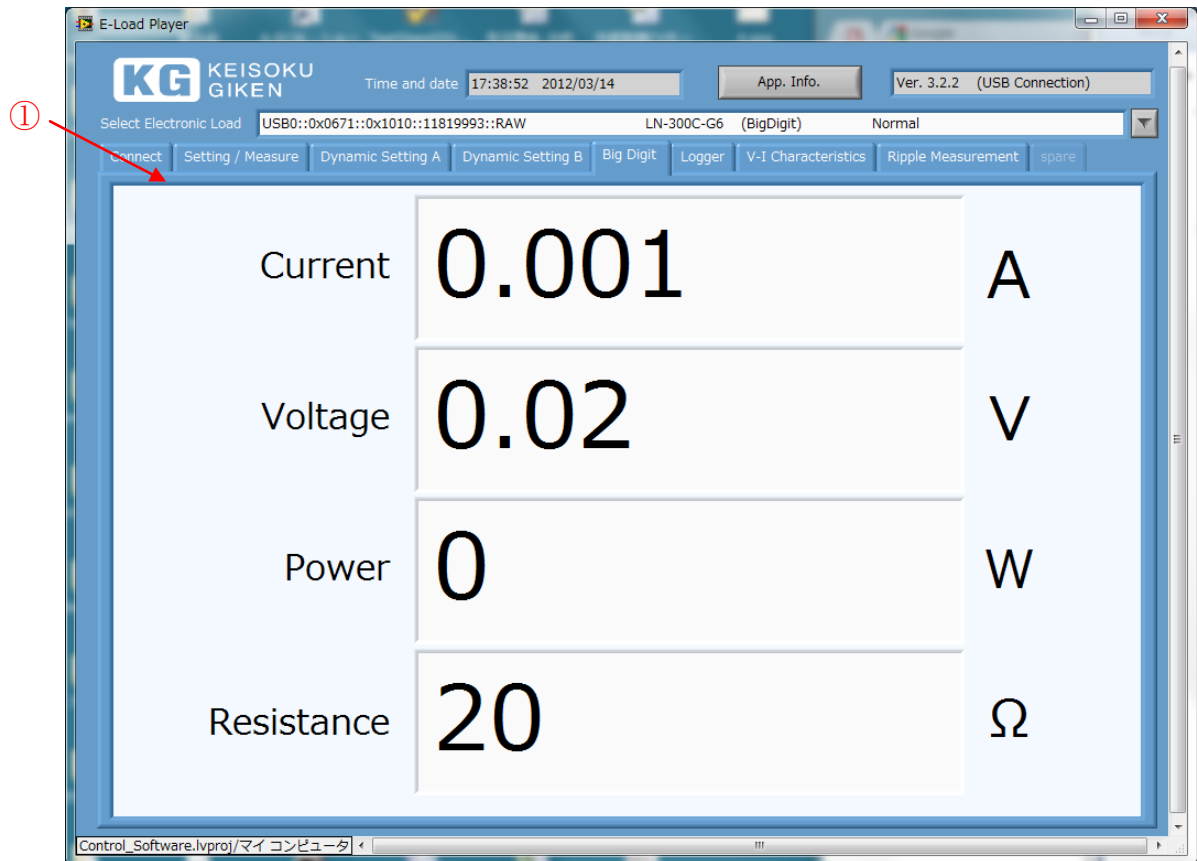


- ① Set the image displayed on the pulse waveform.
- ② Acquire data from OSC (it's valid if the OSC is attached).
- ③ Write or read settings
- ④ Sets the frequency and duty.
- ⑤ Set the slewrate.
- ⑥ You can change rising and falling slew rate all together.
- ⑦ The upper limit of pulse (High) and lower limit (Low) can be set.
- ⑧ Shows the value calculated by ④, ⑤, and ⑦.
- ⑨ Sets load ON/OFF.

<Operation>

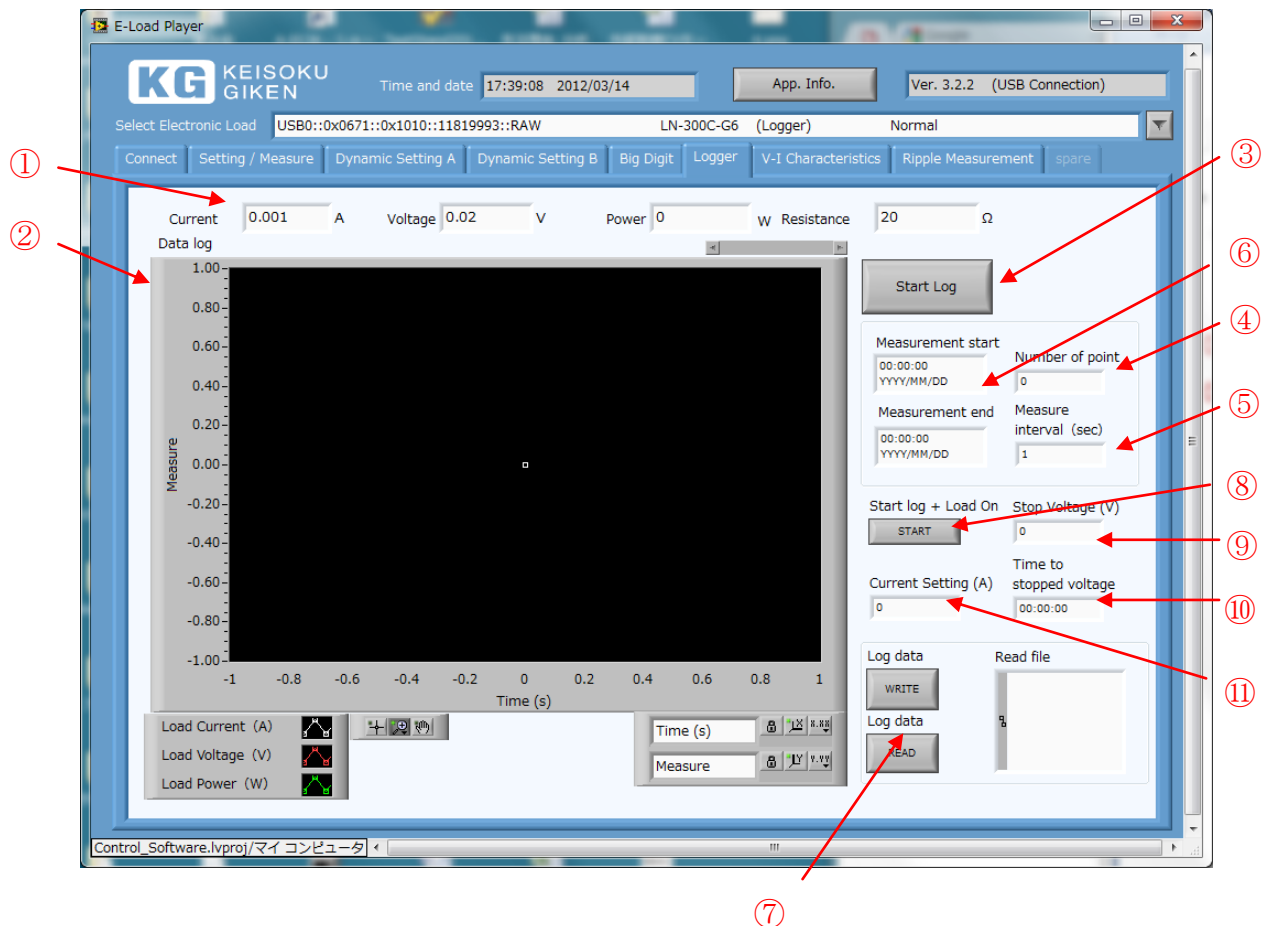
After "Connect", Input setting value (④, ⑤, ⑦) and push load ON.

V. Big Express



- ① Make a larger measure. The measurements order is fixed.

VI. Logger



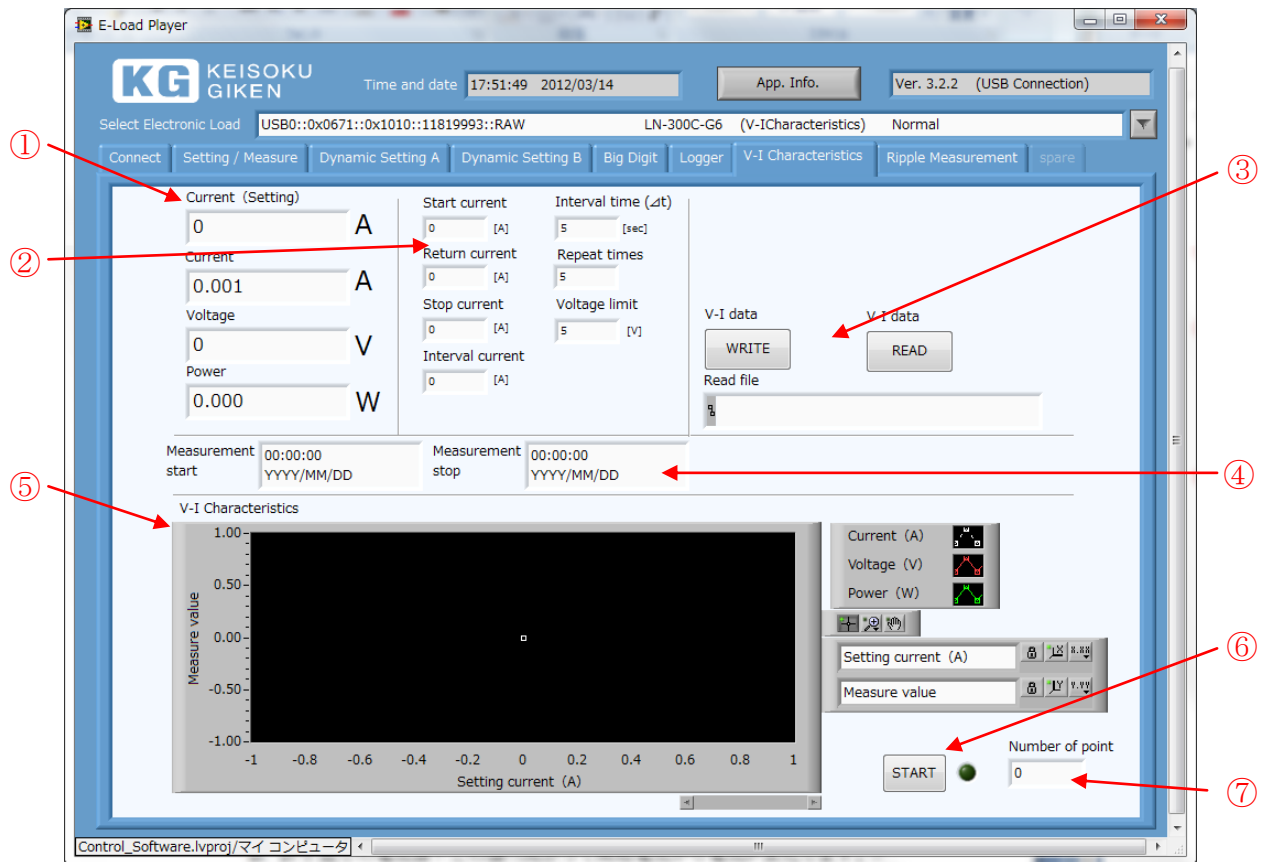
- ① Displays the measured value.
- ② Displays a log of measurements. It appears the current measurement, power measurement and voltage measurement.
- ③ Start or Stop the log action.
- ④ Indicates the present number of measurements.
- ⑤ Indicates the interval time. You can set in the range of 1 to 3600 seconds per a second.
- ⑥ Shows the measurement start time and the measurement end time.
- ⑦ You can save or read log data.
- ⑧ Start Log and load on at same time. Value (⑪) is set when selecting ⑧. If measured voltage is lower than stop voltage (⑨), Load turns off and log will stop automatically.

- ⑨ Displays stop voltage.
- ⑩ Displays start current.
- ⑪ Displays the time to load off.

<Operation>

After “Connect” then "measurements / Preferences" and then select the voltage range, the current range and mode, then please push the LOAD ON. click the “Logger” tab and starts logging by clicking “Start log”.

VII. V-I Specification

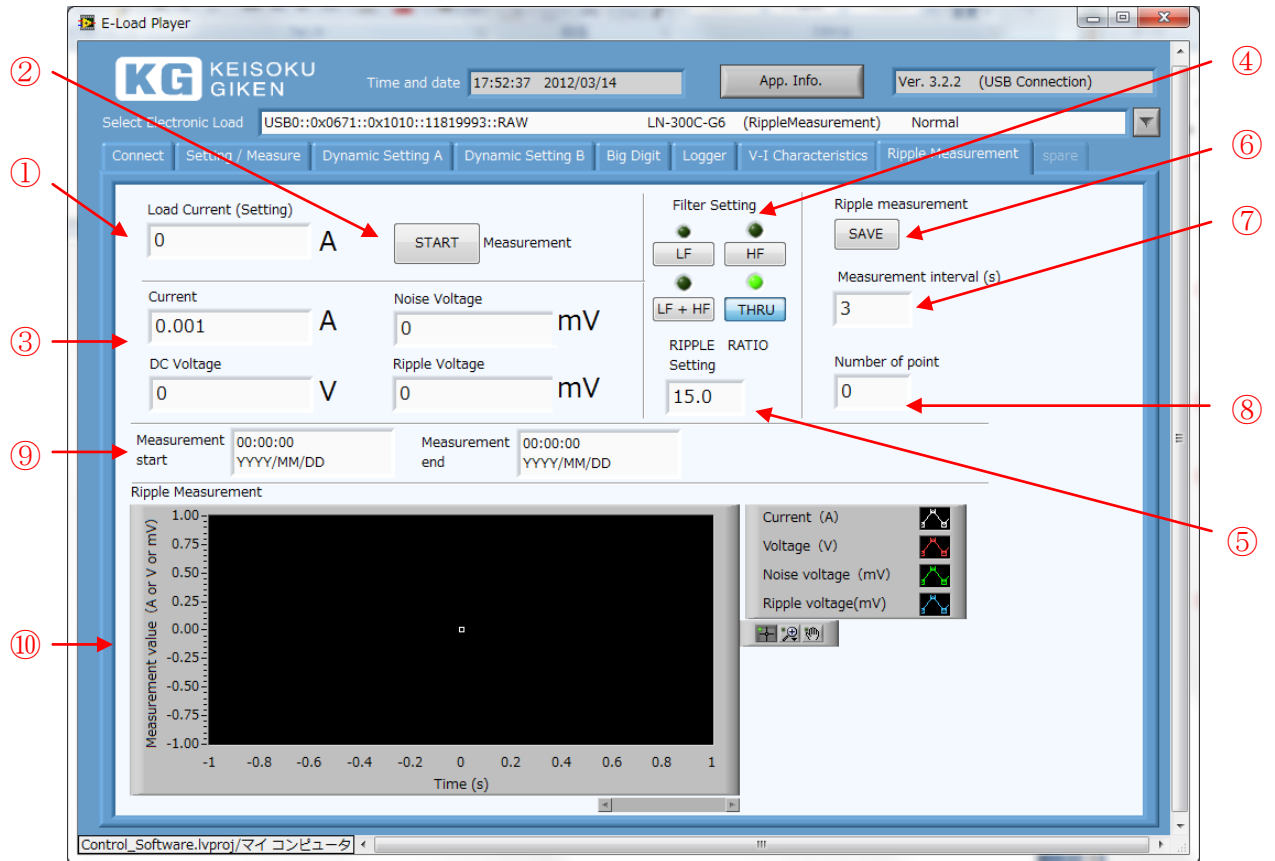


- ① Shows the measured value and setting value.
- ② You can enter each parameter.
 - A. Start current [A] : This value is set at first.
 - B. Return current [A] : Start current changes towards this value.
 - C. Stop Current [A] : After reaching this value, the measurement ends.
 - D. Interval current [A] : Set increment or decrement of the current.
 - E. Interval time [s] : Set interval time.
 - F. Repeat times [回] : repeat this time.
 - G. Voltage limit [V] : When the voltage falls below this value,
load turned OFF. Measurement continues.
- ③ You can save or load settings.
- ④ Display measurement start time and measurement end time.
- ⑤ Draw a V-I graph. A type of the vertical axis is measured voltage. A type of the horizontal axis is setting current value.
- ⑥ Start the measurement. The load button becomes ON.
- ⑦ Indicates the number of measurement points

<Operation>

After "Connect", enter the required values, please click the **START**.

VIII. Ripple Measurement



- ① Sets the load current.
- ② Measurement starts ②.
- ③ Displays the value of each measure ③.
- ④ Filters can be set ④.
- ⑤ Ripple ratio can be set.
- ⑥ Save ripple measurement data.
- ⑦ Measurement interval can be set. You can set the interval time per a second between 3 second to 1000 second.
- ⑧ Show the current number of measurement.
- ⑨ Shows the measurement start time and end time.
- ⑩ Shows the log of the ripple measurement.

<Operation>

After "Connect", click the START.

11. Others

If you have any questions, please contact the following.

E-mail: PW-support@hq.keisoku.co.jp

KEISOKU GIKEN Co., Ltd.
Address: 2-12-2, Chigasaki-minami, Tsuzuki-ku,
Yokohama 224-0037, Japan
URL <http://www.keisoku.co.jp/>