NoiseKen

INSTRUCTION MANUAL

ELECTROSTATIC DISCHARGE SIMULATOR

ESS-S3011 / ESS-S3011A

Remote Control Software

NOISE LABORATORY CO., LTD.

Edition 1.04
AEC00265-00E-0

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1. Usage Limitations
   Please use the Software for the purposes described in the instruction manuals or the specifications. Do not use the Software for purposes other than these.

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   Please ensure that individuals who use the Software have received the appropriate training and practice with regard to the entire system in which the Software runs, including the usage environment, equipment safety, and operating methods.

3. Ability to Make Copies
   The Software may be installed and used on multiple personal computers by individuals who are members of the business location (factory, branch office, business office, etc.) that purchased the Software.

4. Handling of Intellectual Property Rights
   The Software and the intellectual property rights including copyrights for the Software belong to NoiseKen.

5. Usage Period
   The usage period designated by NoiseKen shall take effect when the installation of the Software or the prescribed procedure for use, whichever is later, has been completed by the Customer, and the Customer's right to use the Software shall be deemed to have expired at the end of this usage period.

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   If the Customer has violated any of the provisions in this document, or has infringed on the copyrights or other intellectual property rights of NoiseKen, NoiseKen shall have the ability to revoke the Customer's license to use the Software.

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   The Customer shall promptly uninstall the Software. (If other instructions have been issued by NoiseKen, these shall be followed by the Customer.)

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   (3) Reselling, transferring, redistributing, licensing, etc. of the Software, or the accessories provided by NoiseKen for the Software, to third parties
   (4) Storing the Software, or the information, documentation, and the like provided by NoiseKen for the Software, on a network in a state wherein it may be conveyed to a third party

10. Handling of USB and other protection keys
    The software provided by NoiseKen may require USB or other protection keys.
    (1) If a protection key is included in the accessories, the protection key must be mounted in the computer where the software is used.
    (2) As a general rule, the protection key is not reissued. In the event that the protection key is damaged or lost, please contact the NoiseKen Sales (or Repair) Division.

2. IMPORTANT SAFETY PRECAUTIONS

This software is used to control the Electrostatic Discharge Simulator ESS-S3011 / ESS-S3011A remotely. The following are important precautions for safe handling of ESS-S3011 / ESS-S3011A, when controlling it using this product. Read and understand them before use.
Also read the contents of this document and the instruction manual for the ESS-S3011 / ESS-S3011A main unit before using the product.

1. Incorrect or careless operation could result in a fatal injury.

2. The instrument may not be used in a location where fire is prohibited or there is a risk of explosion. Failure to follow this rule risks igniting a fire due to an electrical discharge.

3. Avoid use in locations exposed to high humidity and large amounts of dust.

4. The instrument may not be used by people fitted with electronic medical devices such as pacemakers and such people may not enter the testing site while the instrument is operating.

5. Before connecting the instrument, turn off the power to the main unit, supply voltage, the simulator to be connected and equipment under test (hereinafter “EUT”), and make sure that no electricity is being supplied.

6. Do not turn off the power to the main unit or unplug the connection cable, while this software is still running. Failure to follow this rule may make the operation of the PC unstable or cause the OS to operate improperly. Always exit this software before turning off the power to the main unit.

7. Before you run the software of this product, close all other application software.

3. TABLE OF CONTENTS

4. PREFACE

4.1. Preface

We thank you very much for purchasing ESS-S3011 / ESS-S3011A. It is recommended that the contents of this manual be thoroughly understood and used as a ready reference for operation.

This manual uses two different types of parentheses to distinguish button names from other identifiers and messages displayed on the screen: <*button name*> and [*other identifiers and messages displayed on the screen*].

Also read the instruction manual for the ESS-S3011 / ESS-S3011A main unit.

- **This Instruction Manual was prepared so that any person who can observe the prescribed instruction method and operating precautions may safely handle and fully utilize the electrostatic simulator ESS-S3011 / ESS-S3011A and the software.**
- **Keep this Instruction Manual and the instruction manual for the ESS-S3011 / ESS-S3011A main unit by your side or other proper location so that they may be readily available when using the ESS-S3011 / ESS-S3011A.**

4.2. About The Product

This software is used to run, control and assist ESS-S3011 / ESS-S3011A, which is a simulator manufactured by Noise Laboratory Co., Ltd.

The simulator is connected to the PC with an optical cable using the optional OPTICAL INTERFACE UNIT (MODEL: 07-00022A).

4.3. Product Features

- A personal computer can be used to control ESS-S3011 / ESS-S3011A.
- It makes it easier to set test conditions based on the IEC61000-4-2 standard.
- It enables electrically-insulated remote control, as the simulator is connected to the PC with an optical cable by connecting the optical interface unit to a USB port of the PC.
- The function to save test conditions allows you to perform tests under the same conditions, whenever required.
- The function to support report creation allows you to output test conditions on MS-Excel. (MS-Excel must be installed before using the report creation support function.)

5. SETUP AND STARTUP

5.1. Setup

(1) Before setup

ESS-S3011 / ESS-S3011A manages the internal supply power including the communication function with the power switch at the back.

Note: The operation of PC may become unstable, if the power to the device is switched off when the software is still running. Always exit the software before turning off the device.

(2) Setting up the software

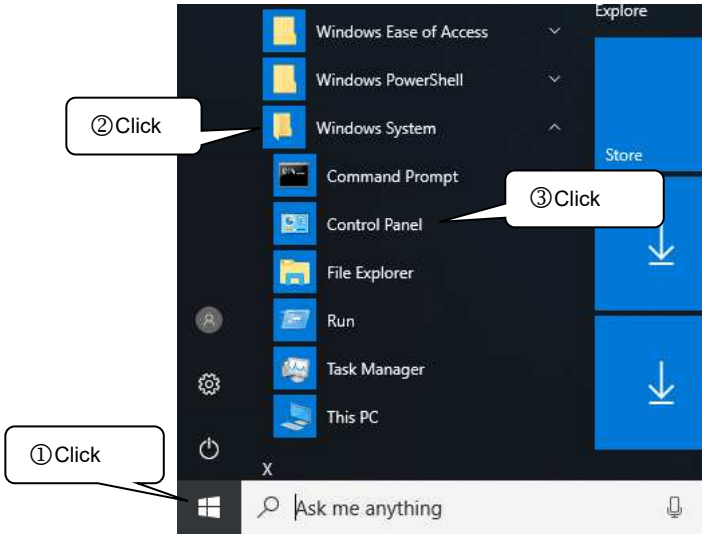
① Log on with the ID that has Administrator privileges for Windows.
② Download the ESS-S3011 remote control software from the NoiseKen website (http://www.noiseken.co.jp/).
③ Extract the downloaded file, and select the [English] folder from the [ESS-S3011] folder.
④ Run the (Setup.exe) or (Setup_EssS3011_English.msi) in the folder.
⑤ The installation program will start. Follow the instructions on the screen to perform the installation.
⑥ Checking the installation
After the installation process is complete, the [ESS-S3011Eng] program is registered to [NoiseKen] in the All Apps list under [Start] in the taskbar.

This completes the setup of the software.

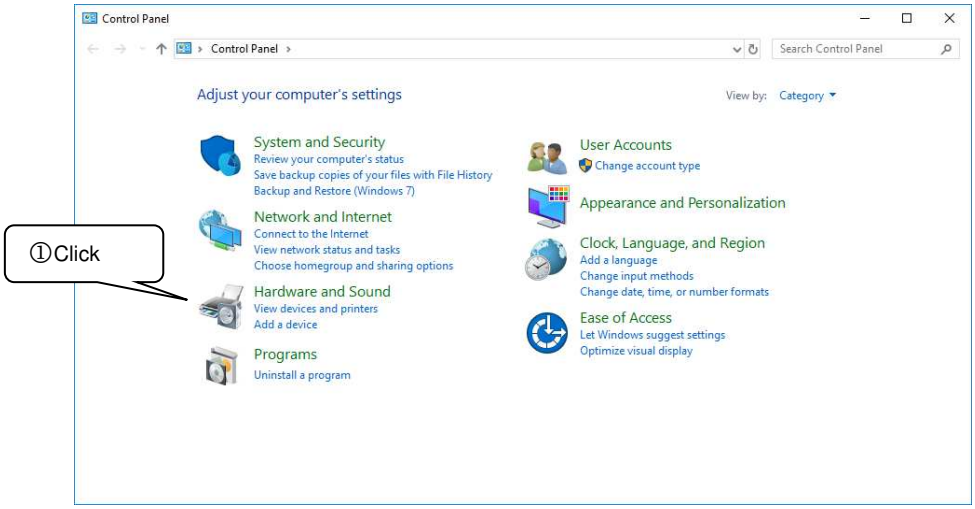
(3) Installing the driver

The driver must be installed to run this software.

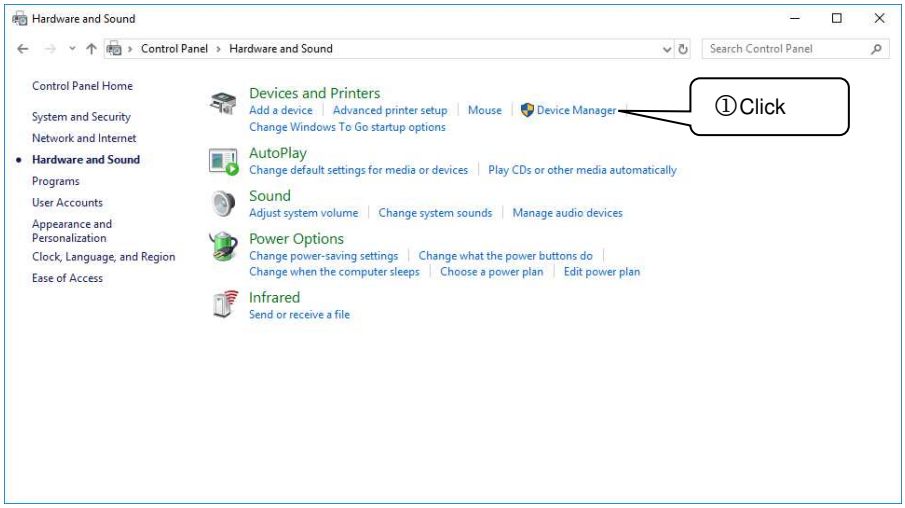
① Log on with the ID that has Administrator privileges for Windows, and insert the setup CD of the optical interface unit into the CD-ROM drive.
② Connect the optical interface unit to a USB port of the PC.
③ Open Device Manager..
Click the <Start> button. In the All Apps list, and scroll down to the [Windows System] folder and open it. Click [Control Panel].



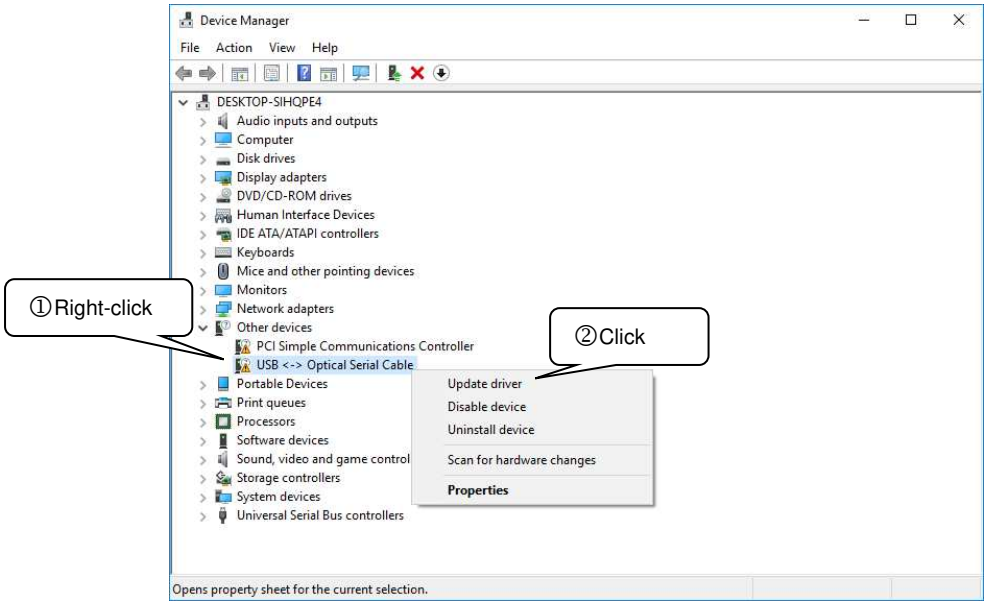
In [Control Panel], click [Hardware and Sound].



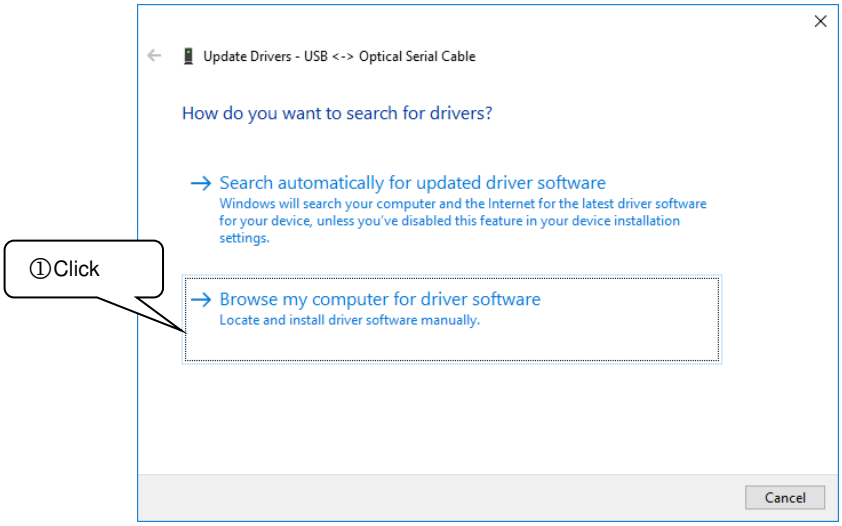
In [Devices and Printers], click [Device Manager].



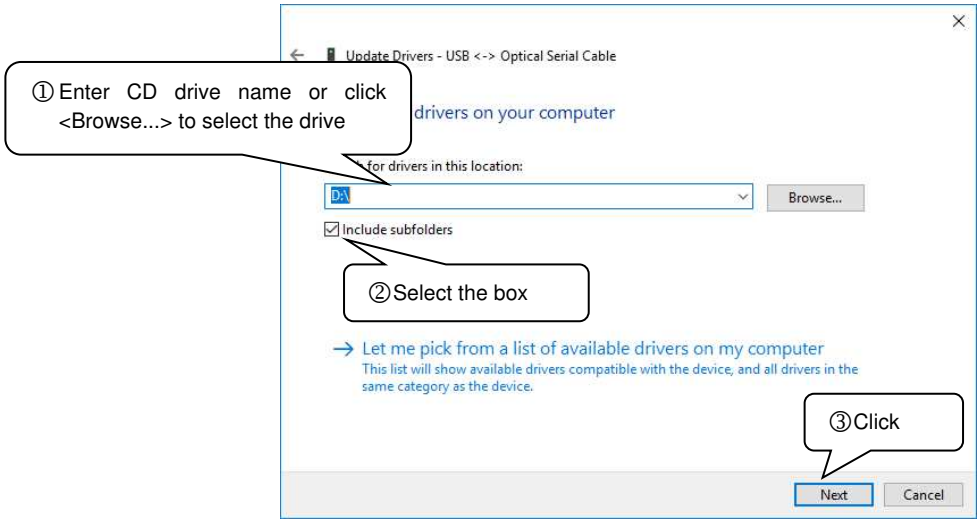
④ If [Other devices] shows [USB <-> Optical Serial Cable] marked with "!", right-click [USB <-> Optical Serial Cable] and click [Update driver] with the mouse.



⑤ When the [Update Drivers - USB <-> Optical Serial Cable] screen appears, click [Browse my computer for driver software].

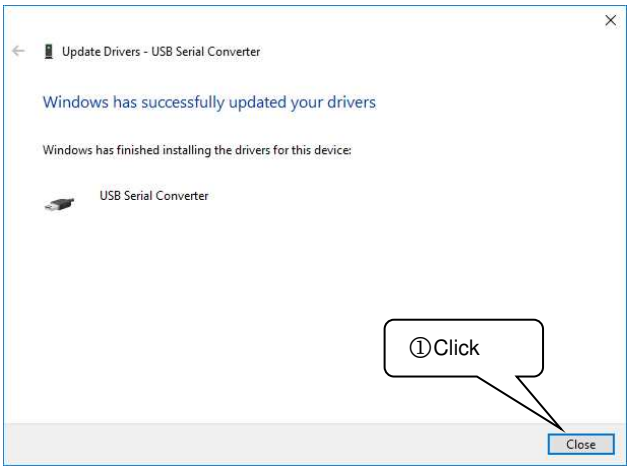


⑥ Specify the name of the drive into which you inserted the driver CD, and select the checkbox for [Include subfolders].

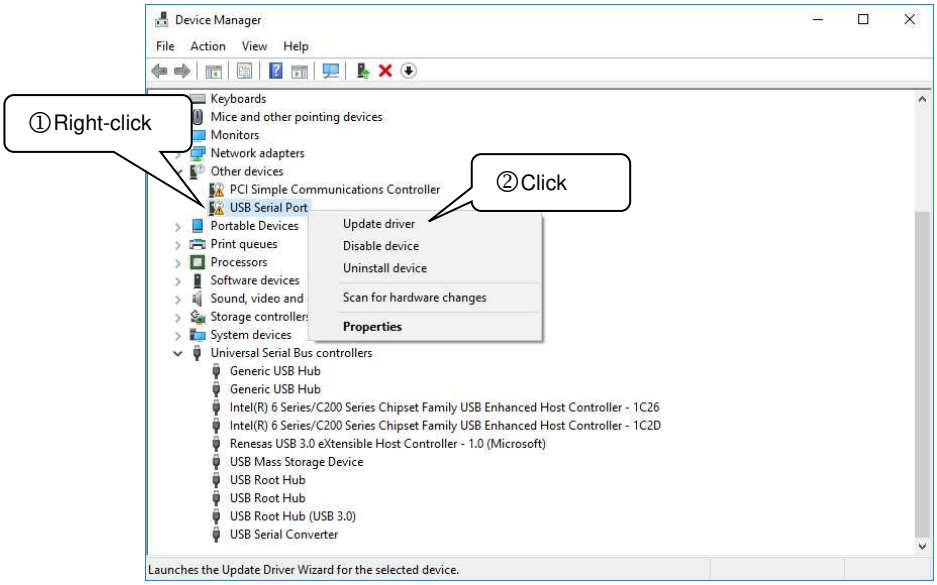


⑦ When the [Windows Security] screen appears, click [Install this driver software anyway].

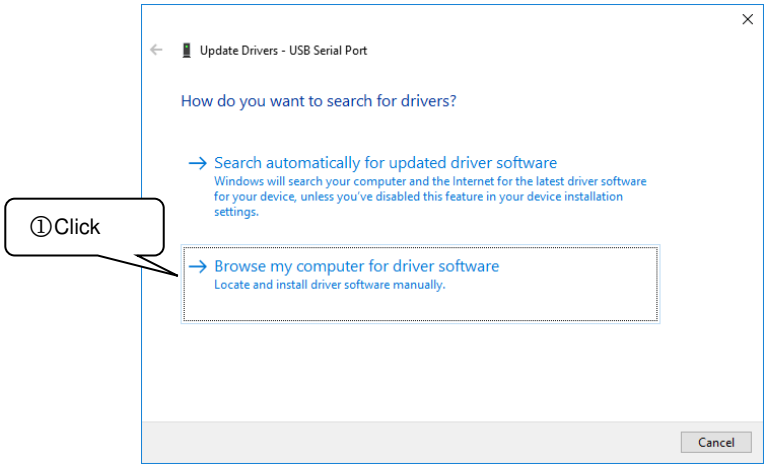
⑧ Once the USB Serial Converter is installed successfully, the completion screen appears.



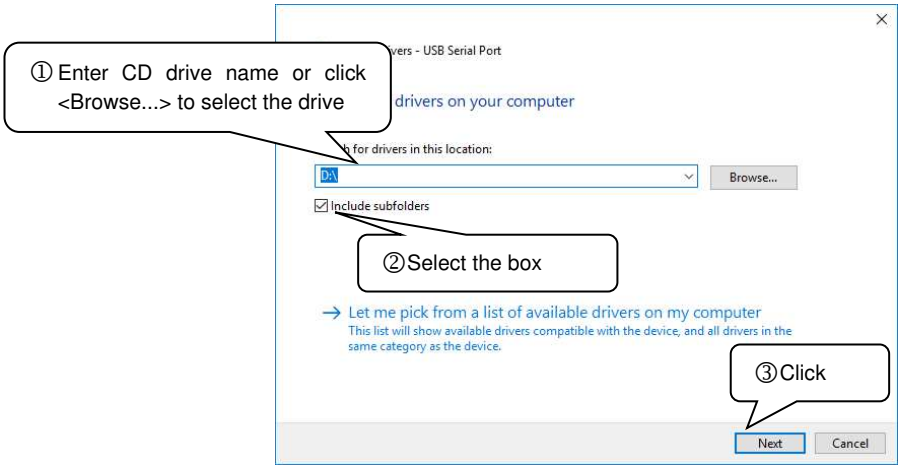
⑨ Install the driver software for the USB Serial Port.
If [Other devices] shows [USB Serial Port] marked with "!", right-click [USB Serial Port] and click [Update driver] with the mouse.



⑩ When the [Update Driver Software - USB Serial Port] screen appears, click [Browse my computer for driver software].

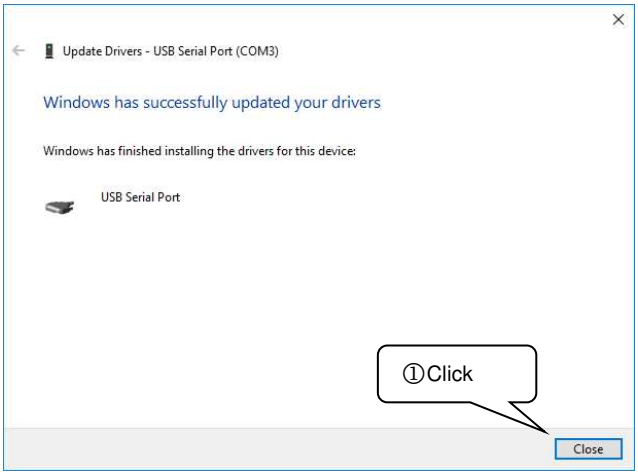


⑪ Specify the name of the drive into which you inserted the driver CD, and select the checkbox for [Include subfolders].



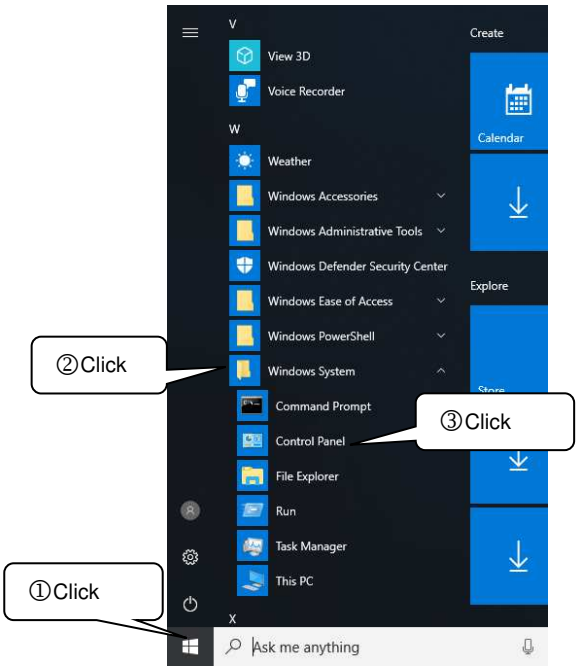
⑫ When the [Windows Security] screen appears, click [Install this driver software anyway].

⑬ Once the USB Serial Port is installed successfully, the completion screen appears.

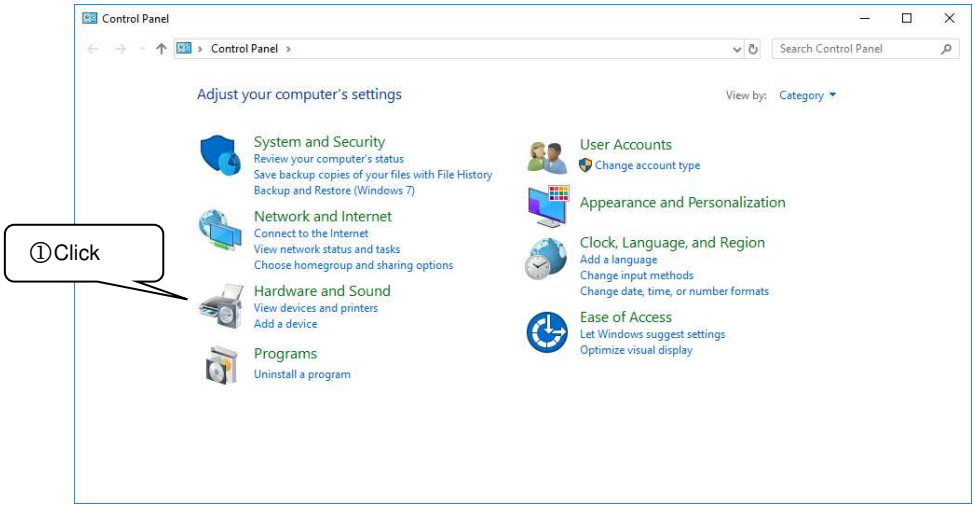


(4) **Checking the installation**

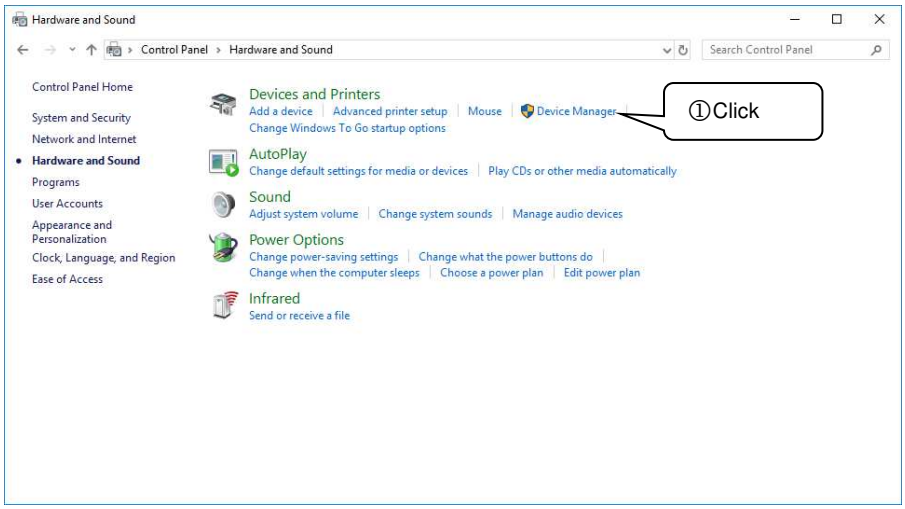
① Click the <Start> button. In the All Apps list, and scroll down to the [Windows System] folder and open it. Click [Control Panel].



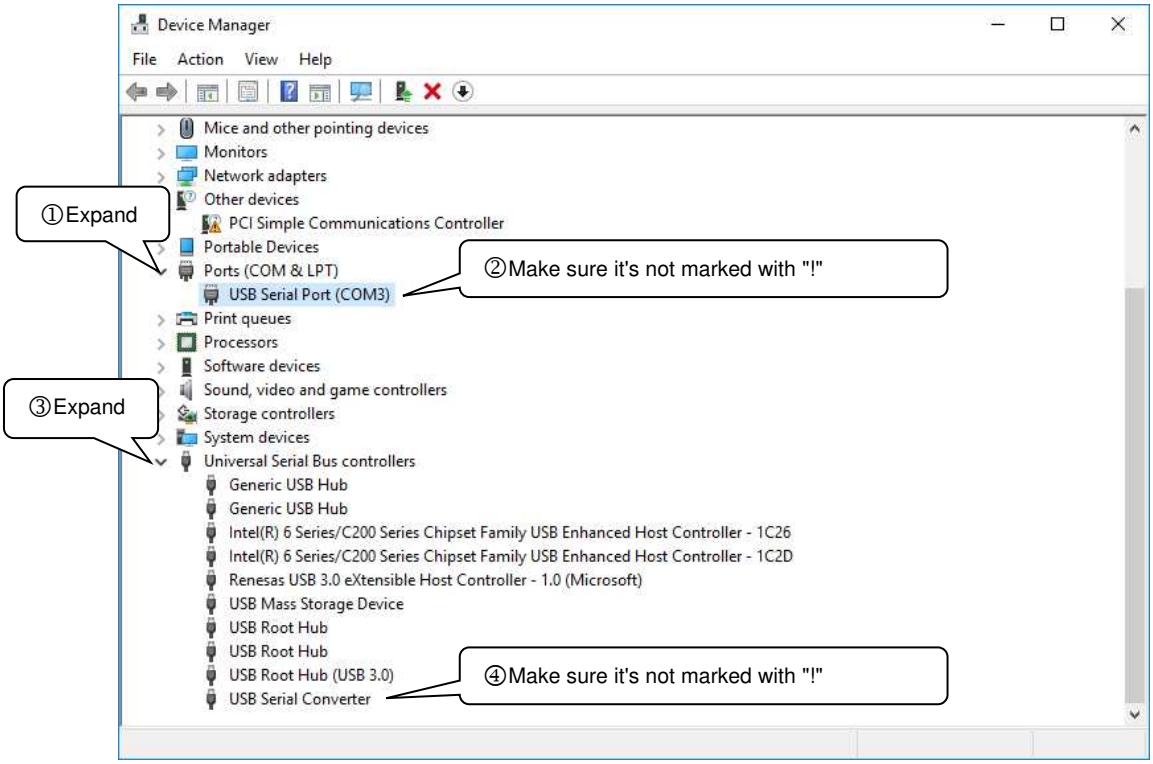
② In [Control Panel], click [Hardware and Sound].



③ In [Devices and Printers], click [Device Manager].



④ In [Device Manager], expand [Ports] and check to make sure that [USB Serial Port(COMx)] is not marked with "!" or "×".
(The number following COM varies depending on the PC environment.)
Also expand [Universal Serial Bus controllers] and check to make sure that [USB Serial Converter] is not marked with "!" or "×".



(5) Uninstallation

Click the <Start> button on the taskbar. In the All Apps list, and scroll down to the [Windows System] folder and open it. Click [Control Panel], and click [Uninstall a program]. Double-click [ESS-S3011Eng] from the displayed list. When the user account control appears, click <YES>. Follow the instructions on the screen to continue the uninstallation.

(6) Connecting to ESS-S3011 / ESS-S3011A

① Connect the USB cable of the optical interface unit to the PC.
② Connect the optical cable that comes with the optical interface unit to the REMOTE control port at the front of the device and the optical interface unit.
③ Turn on the power to the device.
④ Start the software.

This completes the connection procedure.
When starting it, **always** turn on the power to the simulator before starting the software.

(7) Exiting the software and turning off the power

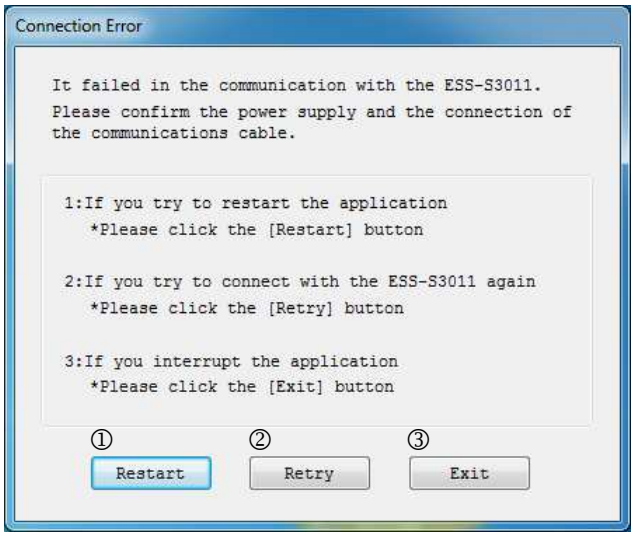
① Exit the software.
② Turn off the power to the device.

When exiting it, **always** exit the software before turning off the power to the device.
When disconnecting the connection cable, also exit the control software before disconnecting it.
If the device is turned off or the connection cable is disconnected without exiting the software, the operation of the PC may become unstable or the OS may stop running.

Depending on your OS version and settings, the screens and operating methods may differ.

5.2. Startup

Click [start] - [All Programs] - [NoiseKen] - [ESS-S3011], and select [ESS-S3011] to start the software. After it is started, check the connection with ESS-S3011 / ESS-S3011A. The main screen (explained in the next chapter) will appear.
If there is a communication error, the following model name selection screen appears.



[Connection Error] Screen

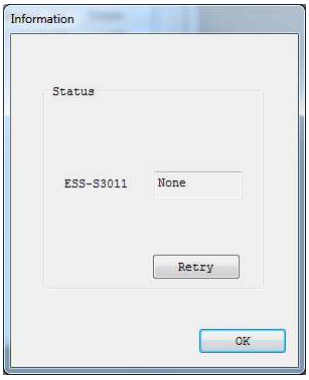
① <Restart> button
Starts the software without communicating with ESS-S3011 / ESS-S3011A.

② <Retry> button
Checks the communication with ESS-S3011 / ESS-S3011A again.

③ <Exit> button
Stops starting up the software.

* When <Restart> is selected, the software is started without allowing any test to be performed. Use this option to check test conditions or settings only.

When connecting to ESS-S3011 after this application is started, check to make sure that ESS-S3011 is turned on. Then select [Option] - [Connect...] to open the simulator connection status dialog box. The box shows <Connect> when it is successfully connected to ESS-S3011, and shows <None> when it is not connected. The connection takes several seconds to be established, as it attempts to communicate with the simulator.

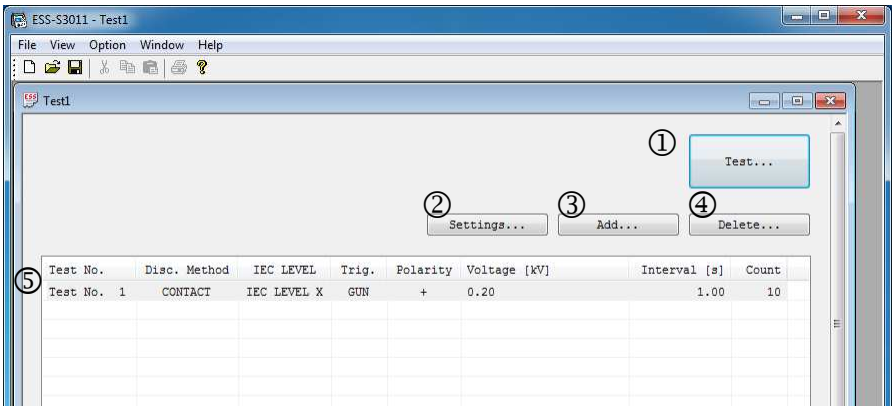


Simulator Connection Status Dialog Box

6. OPERATION

6.1. Main Screen

In this software, the smallest testing unit is called “Step”.
The following screen is the main screen that shows test conditions.



Main Screen

① <Test...> button
Opens the test environment dialog box and the test execution dialog box.

② <Settings...> button
Opens the test condition settings dialog box.

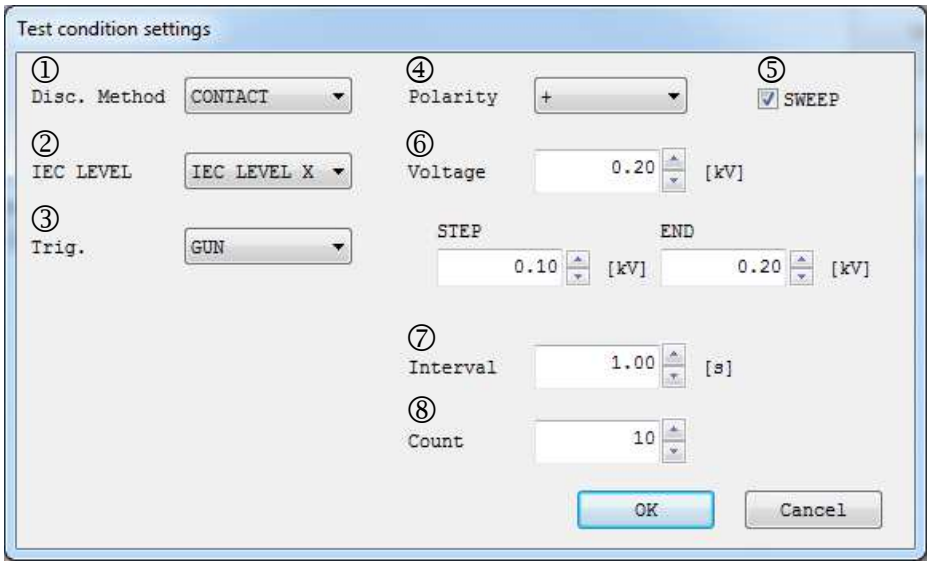
③ <Add...> button
Adds tests to the [Test No.] list.

④ <Delete...> button
Deletes tests registered on the [Test No.] list.

⑤ <Test No.> list
Displays test details.

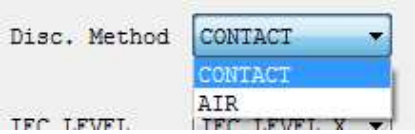
6.1.1. Test Condition Settings

Test conditions are set.



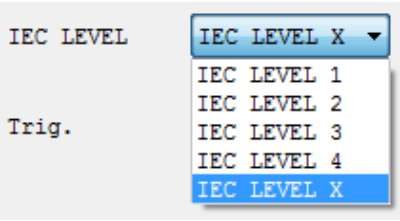
[Test condition settings] Screen

① Disc. Method



Selecting <CONTACT> performs a contact discharge test.
Selecting <AIR> performs an air discharge test.

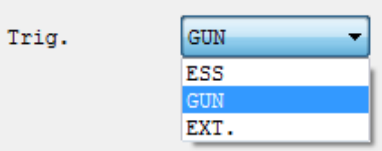
② IEC LEVEL



In [IEC LEVEL], different voltages are set between contact and air discharge tests.

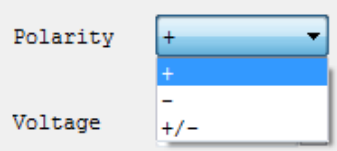
IEC LEVEL	Contact discharge (CONTACT)	Air discharge (AIR)
IEC LEVEL 1	2 kV	2 kV
IEC LEVEL 2	4 kV	4 kV
IEC LEVEL 3	6 kV	8 kV
IEC LEVEL 4	8 kV	15 kV
IEC LEVEL X	Any voltage	Any voltage

③ Trig.



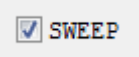
Discharge triggers are selected.
Selecting <ESS> enables the trigger button on the ESS-S3011 / ESS-S3011A main unit.
Selecting <GUN> enables the trigger button on the discharge gun.
Selecting <EXT.> enables an external trigger.
Whichever trigger is selected, the trigger button on the remote software screen is enabled to discharge.

④ Polarity



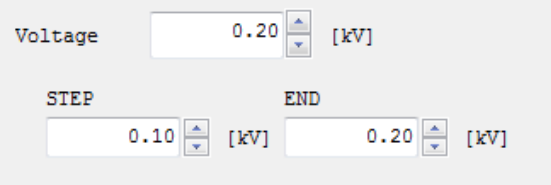
Selecting <+> outputs a + waveform.
Selecting <-> outputs a - waveform.
Selecting <+/-> discharges a + waveform for the specified number of times, and then outputs a – waveform.
(<+/-> appears, only when the checkbox for [SWEEP] is selected.)

⑤ SWEEP



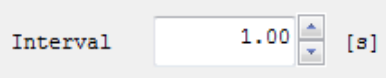
When the checkbox is selected, <+/-> appears in the [Polarity] dropdown list and [STEP] and [END] appear in [Voltage].

⑥ Voltage



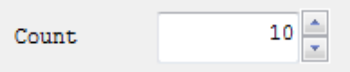
Test voltage is set within the range from 0.20 kV to 30.5 kV, and in steps of 0.01 kV.
([STEP] and [END] appear, only when the checkbox for [SWEEP] is selected.)

⑦ Interval (it can be set only for contact discharge)



The discharge interval is set within the range from 0.05 sec to 600 sec.
It is set in steps of 0.01 sec from 0.05 sec to 1 sec. It is set in steps of 0.1 sec from 1 sec to 600 sec.
The discharge interval cannot be set for air discharge.

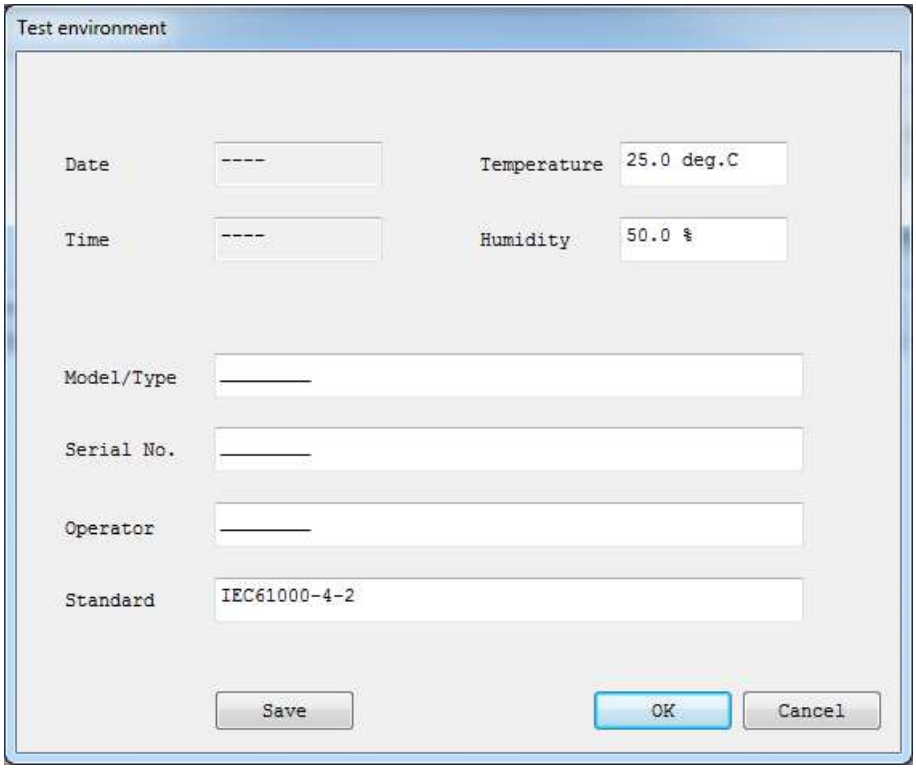
⑧ Count



The discharge count is set within the range from 1 to 60000 times, and in steps of 1 time.

6.1.2. Test Environment Settings

The test environment is set.
The settings are reflected on the contents of the report.
If the settings are not saved by pressing the <Save> button, the described contents are cleared when the software is exited.

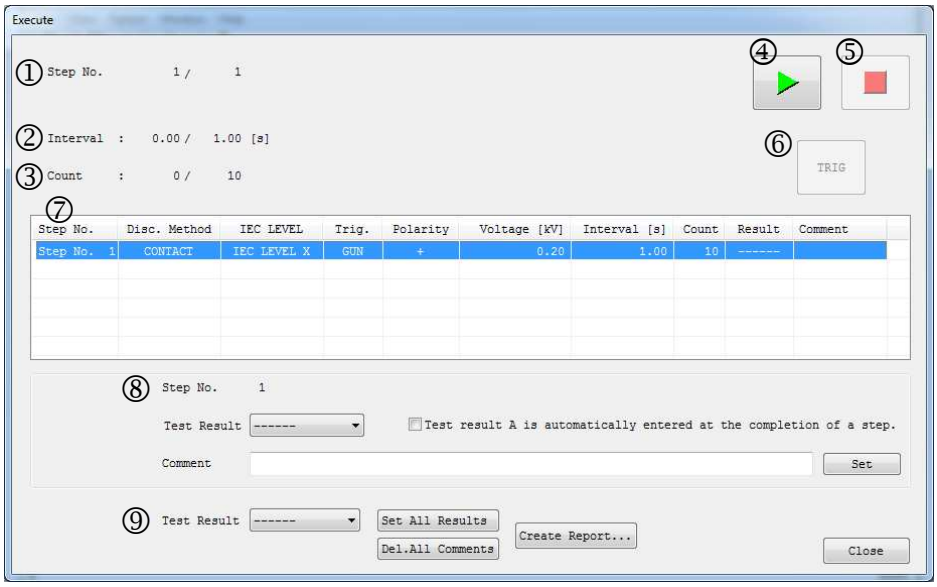


[Test environment] Screen

Date	Press the <Test...> button on the main screen and display the date on which the preparation for starting the test was completed. The test date cannot be changed.
Time	Press the <Test...> button on the main screen and display the time at which the preparation for starting the test was completed. The test time cannot be changed.
Temperature	Enter the test environment temperature.
Humidity	Enter the test environment humidity.
Motel/Type	Enter the model name/type of the EUT.
Serial No.	Enter the serial number of the EUT.
Operator	Enter the name of the operator.
Standard	Enter the name of the standard.
<Save> button	The entered details can be saved. The entered details are used as future default values. However, the test date and test time are not saved.

6.1.3. Execute

The simulator is controlled.
It performs the test that is set on the test setting screen.



[Execute] Screen

① Step No.

Displays the test step number.

② Interval

It functions, only when the contact discharge is selected.
Discharge occurs, when it counts down to 0.
It outputs only the first discharge in the minimum time, regardless of the discharge interval setting.

③ Count

It counts up from 0. The test is finished, when the specified count is reached.

④ <START> button

It turns on the high-voltage power to enter the discharge trigger wait state.
When the high-voltage power is turned on, the <TRIG> button is enabled.

⑤ <STOP> button

It turns off the high-voltage power to enter the discharge-disabled state.

⑥ <TRIG> button

It turns on or off the discharge trigger.

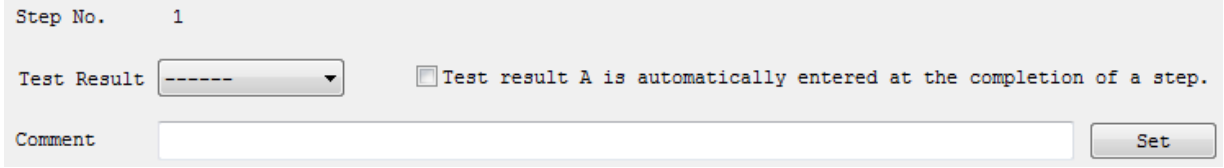
Contact discharge (CONTACT)	Continues to discharge for the specified number of times, based on the set discharge interval. Pressing the <TRIG> button again suspends the discharge.
Air discharge (AIR)	While <TRIG> is on, the discharge tip at the end of the discharge gun remains charged. Pressing the <TRIG> button again terminates the discharge and counts up the discharge count.

⑦ Test execution list

Step No.	Disc. Method	IEC LEVEL	Trig.	Polarity	Voltage [kV]	Interval [s]	Count	Result	Comment
Step No. 1	CONTACT	IEC LEVEL X	GUN	+	0.20	1.00	10	------	

It displays the contents of the test settings.
When any [Step No.] is clicked while the test is stopped, it can be executed starting from that test.
Double-clicking any [Step No.] allows you to edit its result and comment.

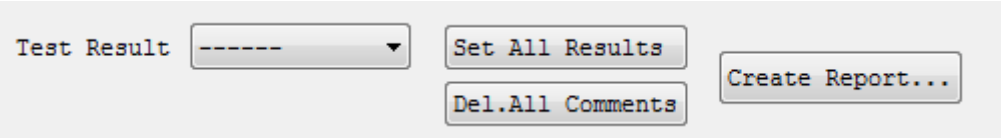
⑧ Test result entry field



It allows you to change the result of the test displayed in [Step No.].
It can also be used for writing a memo during the execution of the test.

When the checkbox for <Test result A is automatically entered at the completion of step.> is selected, the result A is automatically entered, every time the Step is completed during the execution of the test.

⑨ Batch result setting and report creation



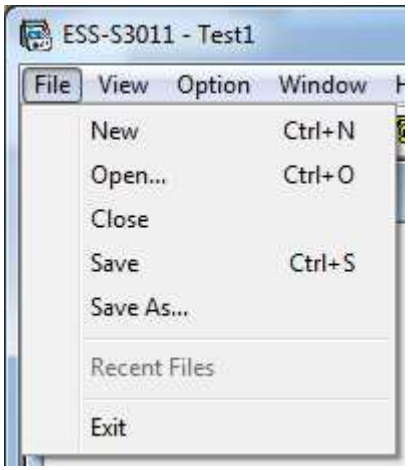
Clicking the <Set All Results> button allows all test results to be set at once.
Clicking the <Del. All Comments> button allows all comments to be deleted at once.

Clicking the <Create Reports...> button starts MS-Excel and displays test details.
(MS-Excel must be installed to the PC beforehand.)
Tables are created in a plain form without any change to the CELL format for easier processing.
Therefore, process them as required before use.
* Use the functions of MS-Excel to save and print test results, if needed.

6.2. Others

This section explains other functions.

6.2.1. File Menu



New	Creates a new test window.
Open...	Opens saved test settings.
Close	Closes the test setting window that is currently displayed.
Save	Overwrites and saves the test setting window that is currently being edited.
Save As...	Saves the test setting window that is currently being edited by adding a new name.
Exit	Exits the application.

6.2.2. Option Menu

Option Settings...	Opens the option settings screen. The options to be entered include a company name, test location, simulator model name, simulator serial No., discharge gun model name, discharge gun serial No., discharge cup model name, discharge cup serial No., CR unit model name, and CR unit serial No. The entered details are reflected on the report. The contents of the option settings are saved to the system drive.
Information...	Opens the test environment settings screen. The information to be entered for the test environment includes temperature, humidity and test target. For more details, refer to the [Test environment] Screen. The contents of test environment settings are saved to the system drive, only when the <Save> button is pressed. If the settings are not saved by pressing the <Save> button, they are cleared when the software is exited.
Connect...	Checks the status of the connection with ESS-S3011 / ESS-S3011A.

6.2.3. Version Information Menu

It displays the version confirmation screen of the application.

7. OPERATING ENVIRONMENT

OS	:	Microsoft Windows 10 (Japanese / English version) Microsoft Windows 11 (Japanese / English version)
CPU	:	Dual Core 2.4 GHz or faster recommended
Main memory	:	8 GB or more recommended
Storage	:	5 GB or more free space
Display		SXGA (1280*1024 : 32767 colors) or higher supported

In addition to the above, the following conditions also apply:

- Operation cannot be guaranteed when using online storage or software that uses cloud services.
- To use the report creation support function, Microsoft Excel, which is compatible with the OS and within the support period, must be installed. (The store app version will not work properly. Please use the desktop version.)
- OPTICAL INTERFACE UNIT (Model: 07-00022A)
- 1 empty USB port
- A CD-ROM or DVD-ROM drive is required for installing the OPTICAL INTERFACE UNIT driver.
- The PC is connected to the simulator before the remote control program is started. (If not connected, no communication can be established.)

8. WARRANTY

Warranty

A warranty is provided for the software produced by NoiseKen and its update files under the following terms and conditions. This warranty is valid in Japan only.

1. Scope of Warranty
   This warranty applies to the software produced by NoiseKen and its update files.

2. Free Support
   Generally, no free support is provided.

3. Total Maximum Liability
   NoiseKen assumes no liability for any losses or damages incurred by the customer due to faults arising from this software by NoiseKen, including but not limited to, direct or indirect potential lost earnings and direct or indirect damages due to third party claims for compensation against the customer.

9. NOISE LABORATORY SUPPORT NETWORK

- If a symptom which seems a trouble is found, check the symptom, software version, model name of connected device, and serial number, and inform this information to Noise Laboratory or your nearest sales agent of Noise Laboratory.

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