



INSTRUCTION MANUAL

IMPULSE NOISE SIMULATOR INS-S420

Remote Control Software

INS-S420 RemoteW

MODEL 14-00062A

NOISE LABORATORY CO., LTD.

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1. SOFTWARE LICENSING TERMS

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.

2. Intended Users

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.

6. Usage Termination Conditions

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.

7. Procedures Upon Usage Termination

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

8. Disclaimer

NoiseKen and its dealers and affiliates will not be liable for any customer damages arising from the use of this software or for claims of damages by third parties against customers except in the case of intentional or gross negligence by NoiseKen, its dealer, or affiliates.

9. Prohibitions

The following actions are prohibited with regard to the Software.

- (1) Modifications, additions, and other alterations to the functionality of the Software
- (2) Any form of reverse engineering, including decompilation and disassembly, of the Software
- (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 performs remote control of the Impulse Noise Simulator INS-S420. Important information for safe operation when controlling the INS-S420 unit using this software is provided below, and so be sure to read it carefully before use.

Also, be sure to carefully read the instruction manual for the INS-S420 unit before using this software.

- 1. Incorrect or careless operation could result in a fatal injury.**
- 2. This may not be used within areas where an open flame is prohibited, such as an induced explosion area. Use of the Unit in such an area is liable to cause combustion or ignition.**
- 3. A person who has a pacemaker on should not operate the Unit and also should not enter the area where it is operating.**
- 4. Avoid use in locations exposed to high humidity and large amounts of dust.**
- 5. When making connections, electric shock can occur due to contact with the supply voltage, and so before performing any connection work, be sure to turn off the power to the main unit, supply voltage, connected simulator and test sample, and check that no power is flowing.**
- 6. Do not turn off the power to the main unit or disconnect any cables while this software is running. This could cause PC operation to become unstable or the OS to malfunction. Be sure to always exit this software before turning off the power to the main unit.**

3. REQUIREMENTS

The following items are required to perform remote control of the INS-S420 using this software.

For use of INS-S420 alone:

- INS-S420 unit1
- OPTICAL INTERFACE UNIT 07-00022A (option)1
- Optical cable1
- USB protect key1
- Digital I/O (option)1
- PC1

For use of INS-S420 and IJ-AT450 (option):

- INS-S420 unit1
- IJ-AT450 unit (option)1
- OPTICAL INTERFACE UNIT 07-00023A (option)1
- Optical cable2
- USB protect key1
- Digital I/O (option)1
- PC1

*The optical cable is supplied with the optical interface unit.

* To use the EUT FAIL signal detection function, NI's digital I/O USB-6501 or USB-6525 is required.

*For details on the required computer specifications, see "8. SYSTEM REQUIREMENTS" on page 60.

4. PREFACE

We thank you very much for your purchase of our Impulse Noise Simulator INS-S420 Remote Control Software. Before using this software, be sure to carefully read this manual to ensure that you maximize its performance when operating this software.

The devices that can be controlled by this software are the impulse noise simulator INS-S420 and the automatic CDN IJ-AT450 (option) for INS.

Please read this manual together with the instruction manuals for the INS-S420 unit and the IJ-AT450 unit.

4-1. Preface

- **This Manual is provided to ensure that people who follow the operating procedures and safety information can safely use INS-S420 unit and this software and maximize their performance.**
- **Place this Manual and the instruction manual for the INS-S420 unit in a location where it is easily accessible whenever operating this software.**

4-2. About This Software

This software is used to provide more features for execution, control, and assistance of the NoiseKen INS-S420.

OPTICAL INTERFACE UNIT (Model: 07-00022A) is used to connect the INS-S420 unit and computer by an optical cable.

If you have an optional CDN IJ-AT450, OPTICAL INTERFACE UNIT (Model: 07-00023A) is used to connect the INS-S420 and IJ-AT450 units and a computer with optical cables.




4-3. Features

- Enables control of the INS-S420 by a computer, making it possible to automatically perform testing. The use of the optional automatic CDN IJ-AT450 allows automatic switching between the injection and return phases.
- The test conditions storage function for enabling testing under identical conditions when needed. The combination of the function with the stored test data allows sequence testing.
- The voltage, pulse width, phase angle and cycle period sweep function for enabling prioritization of which parameter is to sweep first.
- The report export function for enabling the results of testing to be exported to Microsoft Excel (hereinafter "MS Excel"). A report can be output based on any template.
- The use of NI's optional digital I/O allows detection of EUT FAIL signals.

4-4. Notation Used in This Manual

In this manual, button names are indicated by [Button Name], and other ID names and messages displayed on the screen are enclosed in quotations like “Other ID names and messages displayed on the screen”.

The marks used in this manual and their meanings are provided below.

	Provides an additional explanation.
	Indicates a setting restriction.
	Indicates that you must check before usage.

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6. SETUP

6-1. Setup

1) Before setup

Perform setup while the optical interface unit **is disconnected**.

Log into Windows using an ID having administrator privileges.

2) Software setup

(1) Load the setup media and execute [INS-S420_RemoteW_En.msi] in the [INS-S420_RemoteW]-[English] folder.

(2) The installation program is started. Perform the install process by following the on-screen instructions.

(3) After the installation process is complete, the [INS-S420_RemoteW] program is registered to [NoiseKen] under [Start] in the taskbar.

3) Installing the USB protect key driver

(1) Load the setup media and execute [Sentinel System Driver Installer.exe] in the [Sentinel SuperPro] folder.

(2) The installation program is started. Perform the install process by following the on-screen instructions.

4) Installing the optical interface unit driver

To run this software, the optical interface unit driver must be installed. For details on the installation procedure, see the instruction manual supplied with the optical interface unit.

5) Installing the digital I/O driver

To use NI's optional digital I/O, it is necessary to install NI-DAQmx. Select the setup file on the DVD supplied with the digital I/O and perform installation according to the instructions on the screen.



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

● For use of INS-S420 alone:

1) Connecting to INS-S420 unit

(1) Connect the USB cable of the optical interface unit to the computer.

(2) Check that the power of the INS-S420 unit is turned off, and then connect the optical cable supplied with the optical interface unit to the optical interface unit and the remote control port on the rear panel of the INS-S420 unit.

(3) Turn on the power for the LSS-6330 unit.

(4) Start the software.

This completes the connection procedure.

2) Exiting the software and turning off the power

(1) Exit this software.

(2) Turn off the power for the INS-S420 unit.



When exiting, be sure to always exit this software first, and then turn off the power for the INS-S420 unit. Also, if disconnecting the USB cable or optical cable of the optical interface unit, be sure to exit this software before disconnecting any cables. If the power for the INS-S420 unit is turned off or the USB cable or optical cable is disconnected without first exiting this software, PC operation could become unstable or the OS could malfunction.

● For use of INS-S420 and IJ-AT450 (option):

1) **Connecting to INS-S420 unit**

- (1) Connect the USB cable of the optical interface unit to the computer.
- (2) Check that the INS-S420 unit is turned off, and connect one optical cable supplied with the optical interface unit to the REMOTE control port on the rear panel of the INS-S420 unit and to any one of the OPT 1 to 4 optical ports of the optical interface unit.
- (3) Check that the IJ-AT450 unit is turned off, and connect one optical cable supplied with the optical interface unit to the REMOTE control port on the rear panel of the IJ-AT450 unit and to any one of the OPT 1 to 4 optical ports of the optical interface unit.
- (4) Turn on the power for the LSS-6330 unit and the IJ-AT450 unit.
- (5) Press the STANDBY switch of the IJ-AT450 unit.
- (6) Start the software.

This completes the connection procedure.

For details on how to connect a coaxial cable, see the instruction manual of IJ-AT450.

2) **Exiting the software and turning off the power**

- (1) Exit this software.
- (2) Turn off the power for the INS-S420 unit and the IJ-AT450 unit.



When exiting, be sure to always exit this software first, and then turn off the power for the INS-S429 unit and the IJ-AT450 unit. Also, if disconnecting the USB cable or optical cable of the optical interface unit, be sure to exit this software before disconnecting any cables. If the power for the INS-S420 unit or the IJ-AT450 unit is turned off or the USB cable or optical cable is disconnected without first exiting this software, PC operation could become unstable or the OS could malfunction.

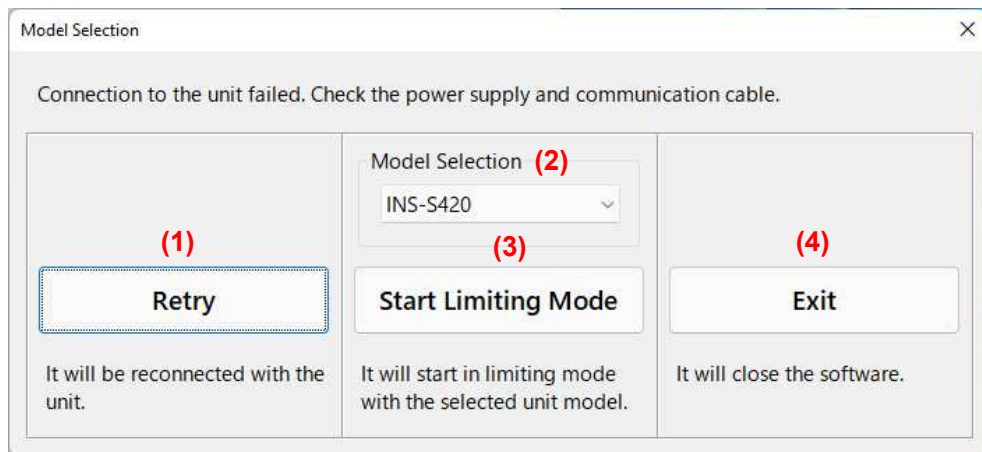
7. OPERATION PROCEDURE

7-1. Starting and Exiting the Software

Starting the Software

To start the software, double-click the INS-S420_RemoteW shortcut icon on the desktop. After starting, a connection check with the unit is performed, and the main screen is displayed.

If the connection fails, the Model Selection screen shown in the figure below appears.



Model Selection Screen

(1) [Retry] button

This performs a communication check again with the unit.

(2) “Model Selection” drop-down list

Select the model name of the unit where remote control will be performed.

(3) [Start Limiting Mode] button

This starts the software in limiting mode for the selected model.

(4) [Exit] button

This cancels startup of the software.

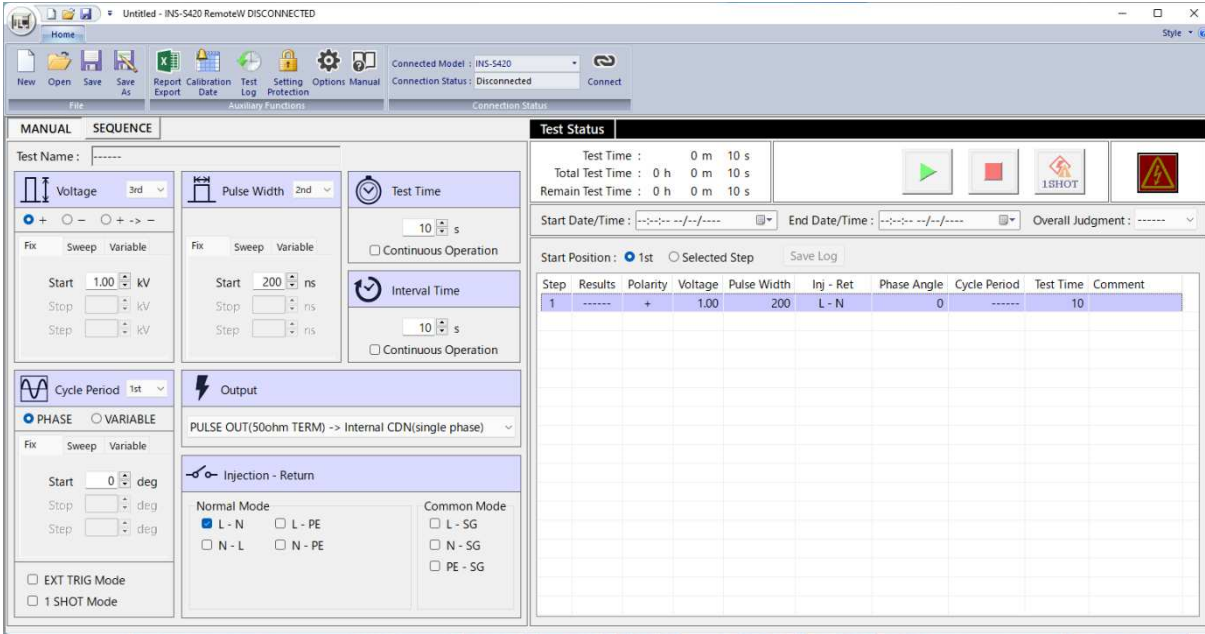


When “Start Limiting Mode” is selected, the software is started, but testing cannot be performed. Either check or make settings only for the testing conditions, or reconnect by referring to the connection status in “7-8. Connection Status” on page 40.

Main Screen

If a connection was successfully established with the INS-S420 unit after starting this software, a main screen like that shown below is displayed.

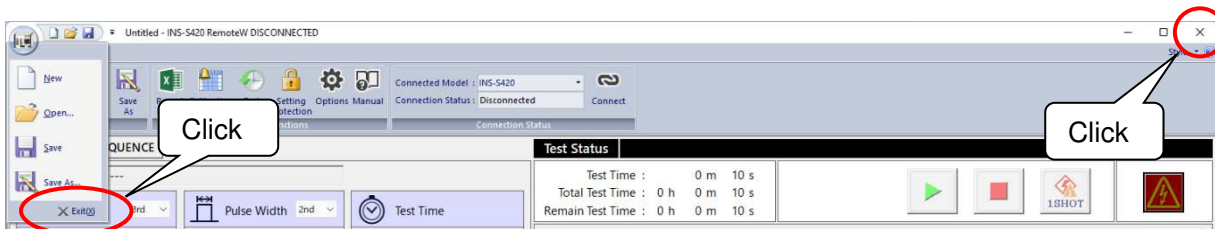
The ribbon at the top of the main screen allows you to load and save files, use auxiliary functions, and check the connection status. In addition, the left side of the screen allows you to set tests, the upper right of the screen allows you to execute tests, and the lower right of the screen allows you to check test details.



Main Screen

Exiting the Software

To exit the software, click the close button on the right end of the title bar or click Exit from the Application menu.



Exiting the Software



Because the software cannot be closed during testing, finish testing before exiting the software.

7-2. Manual Test Setting

Select the [MANUAL] tab in the main screen left to switch to the Manual Test Setting.

On the manual test screen, you can configure settings for voltage, pulse width, phase angle, cycle period, output destination, injection-return phase, test time, interval time, EXT TRIG mode and 1 SHOT mode, and you can also check the test list and execute a manual test.

A sweep function is available for voltage, pulse width, phase angle and cycle period, and allows you to prioritize which parameter is to sweep. The use of the sweep function allows the test parameters to be changed in a stepwise manner from small to large values during testing.

Manual Test Screen

The Manual Test screen is divided into three areas: (1) "Test Condition Settings", (2) "Test Control Unit", and (3) "Test List".

Step	Results	Polarity	Voltage	Pulse Width	Inj - Ret	Phase Angle	Cycle Period	Test Time	Comment
1	-----	+	1.00	100	L - N	0	-----	10	

Manual Test Screen

(1) Test Condition Settings

You can set manual test conditions.

(2) Test Control Unit

You can check the test status, test time, test dates and overall judgment, and you can also control the simulator. For details, see "7-5. Test Control Unit" on page 31.

(3) Test List

The test steps are displayed in the order in which they are executed, according to the manual test settings. For details, see "7-4. Test List" on page 28.


Test Condition Settings

When the [MANUAL] tab is selected, the manual test conditions can be set. Each setting is described in detail in later sections.

The screenshot shows the 'MANUAL' tab selected. At the top, there is a 'Test Name' field containing '-----'. Below this are several control panels:

- Voltage (3rd):** Includes a waveform icon, a '+' radio button, and 'Fix', 'Sweep', and 'Variable' tabs. The 'Start' value is 1.00 kV.
- Pulse Width (2nd):** Includes a pulse icon and 'Fix', 'Sweep', and 'Variable' tabs. The 'Start' value is 100 ns.
- Test Time:** Shows a value of 10 s and a 'Continuous Operation' checkbox.
- Cycle Period (1st):** Includes a sine wave icon, 'PHASE' and 'VARIABLE' radio buttons, and 'Fix', 'Sweep', and 'Variable' tabs. The 'Start' value is 0 deg.
- Output:** A dropdown menu showing 'PULSE OUT(50ohm TERM) -> Internal CDN(single phase)'.
- Injection - Return:** Divided into 'Normal Mode' (with 'L - N' checked) and 'Common Mode'.
- EXT TRIG Mode** and **1 SHOT Mode** checkboxes are at the bottom left.

Manual Test Condition Settings Screen

 The setting information can be viewed by aligning the mouse cursor with the numeric input location for each setting. This display can be hidden by selecting "Test Setting Function", which is displayed by selecting the [Options] button.

Test Name

The name of the manual test is displayed. It is the name that was given to the manual test when it was saved.

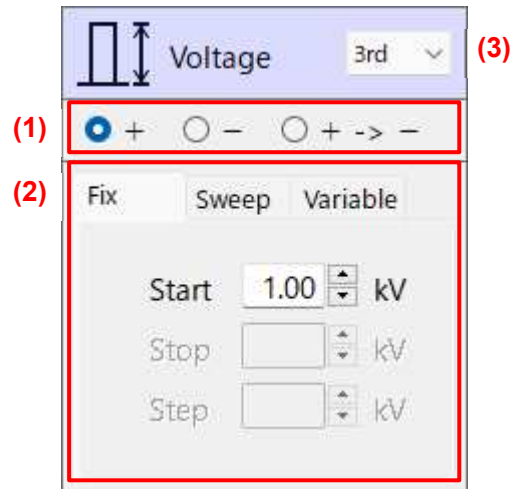
For how to save or load a manual test, see "7-7. New/Open/Save" on page 39.

A close-up of the 'Test Name' field, which is a text input box containing the characters '-----'.

Test Name

Voltage

In [Voltage], set the polarity, voltage and sweep priority level.



Voltage

(1) Polarity

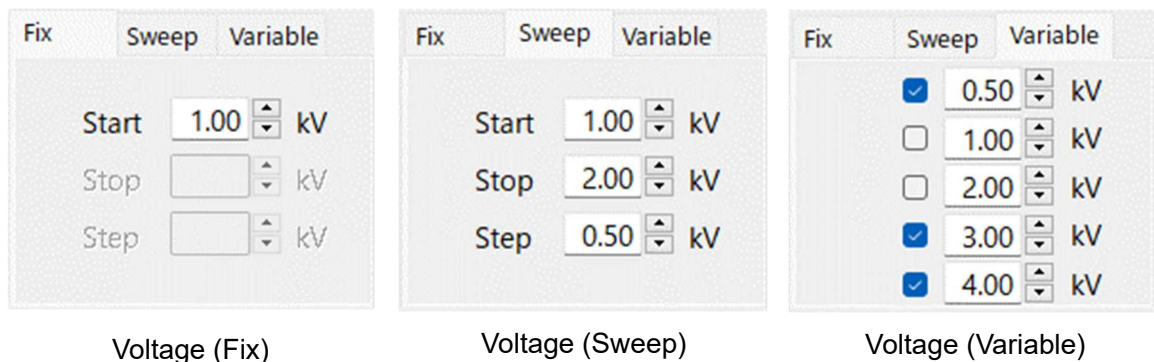
Selecting [+] tests the positive polarity.

Selecting [-] tests the negative polarity.

Selecting [+ -> -] tests the positive polarity first, and then the negative polarity.

(2) Voltage

Set a value within the range from 0.50 kV to 4.00 kV in steps of 0.01 kV.



When the [Fix] tab is selected, testing is conducted using a single voltage setting.

When the [Sweep] tab is selected, testing is conducted by changing the voltage in steps (Step) from the start voltage (Start) to the end voltage (Stop). The value entered for the start voltage cannot be larger than the end voltage.

When the [Variable] tab is selected, testing is conducted at the voltage selected by inserting a check mark into the check box.

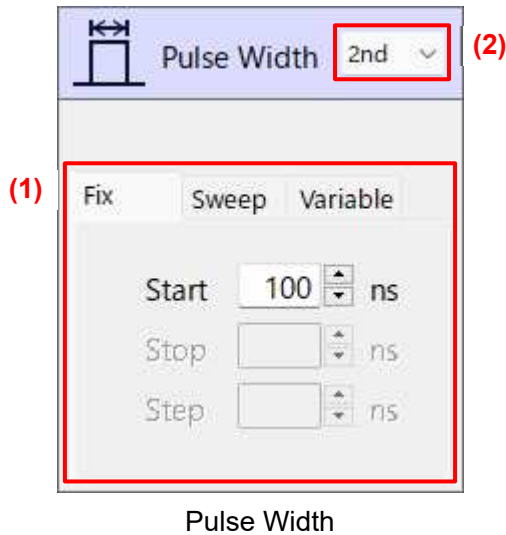
(3) Sweep Priority Level

Among voltage, cycle period (PHASE mode: phase angle; VARIABLE mode: cycle period) and pulse width, set whether voltage sweeps first, second or third.

Select the priority level from [1st.], [2nd.] and [3rd.].

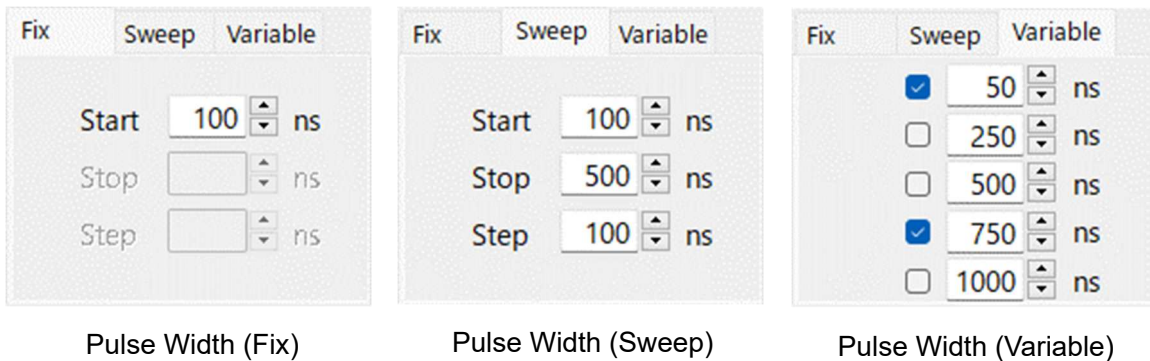
Pulse Width

In [Voltage], set the polarity, voltage and sweep priority level.



(1) Pulse Width

Set a value within the range from 50 ns to 1000 ns in steps of 50 ns.



When the [Fix] tab is selected, testing is conducted using a single pulse width setting.

When the [Sweep] tab is selected, testing is conducted by changing the pulse width in steps (Step) from the start pulse width (Start) to the end pulse width (Stop). The value entered for the start pulse width cannot be larger than the end pulse width.

When the [Variable] tab is selected, testing is conducted at the pulse width selected by inserting a check mark into the check box.

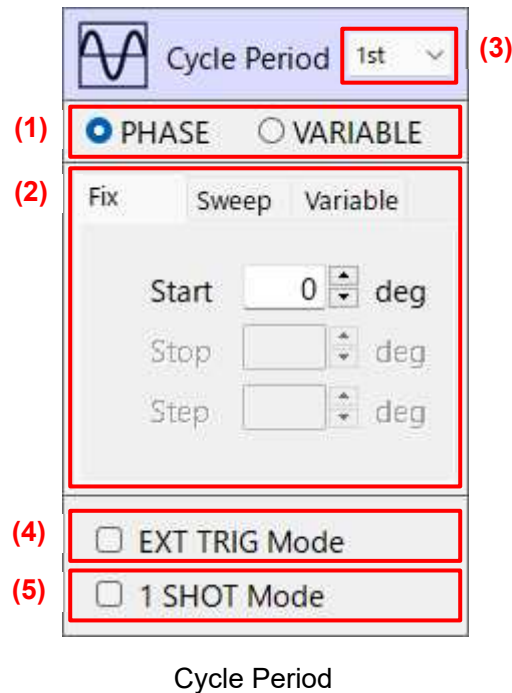
(2) Sweep Priority Level

Among voltage, cycle period (PHASE mode: phase angle; VARIABLE mode: cycle period) and pulse width, set whether pulse width sweeps first, second or third.

Select the priority level from [1st.], [2nd.] and [3rd.].

Cycle Period

In [Cycle Period], set PHASE/VARIABLE mode, phase angle, cycle period, sweep priority level, EXT TRIG mode and 1 SHOT mode.



Cycle Period

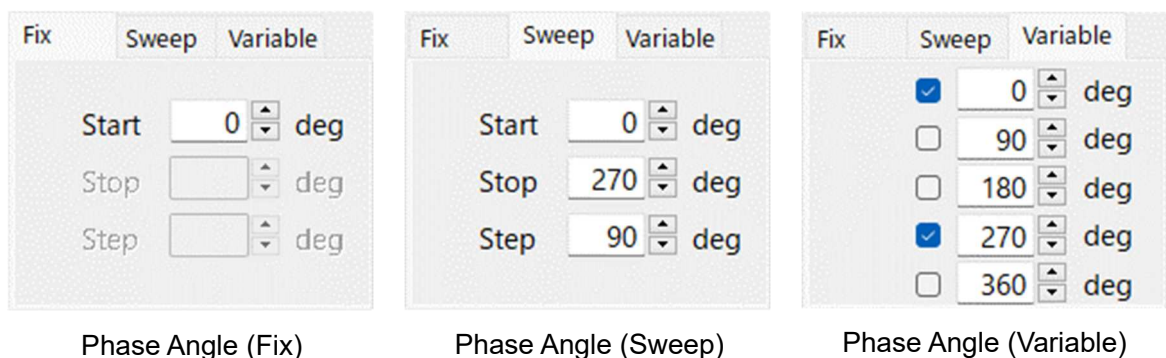
(1) PHASE / VARIABLE mode

To output pulses synchronous with the frequency of the AC supply of the EUT line to any phase, select PHASE mode.

To output pulses with any cycle period, select VARIABLE mode.

(2) Phase Angle / Cycle Period

- In PHASE mode, set the phase angle within the range from 0° to 360° in steps of 1°.

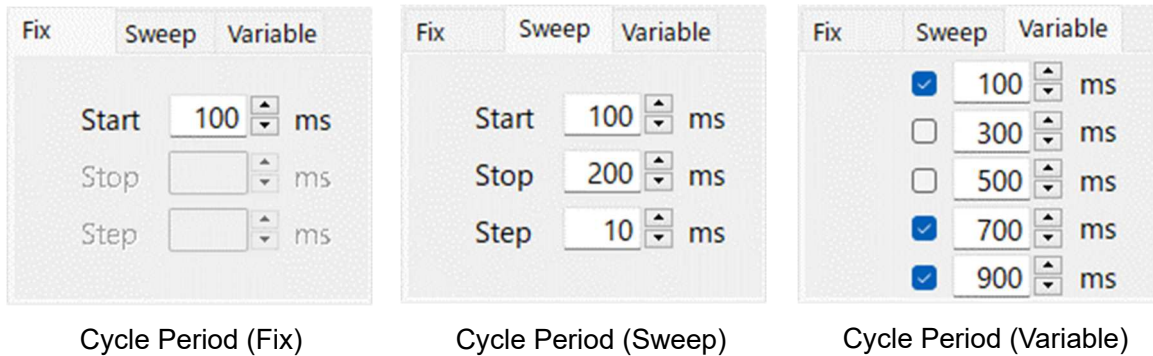


When the [Fix] tab is selected, testing is conducted using a single phase angle setting.

When the [Sweep] tab is selected, testing is conducted by changing the phase angle in steps (Step) from the start phase angle (Start) to the end phase angle (Stop). The value entered for the start phase angle cannot be larger than the end phase angle.

When the [Variable] tab is selected, testing is conducted at the phase angle selected by inserting a check mark into the check box.

- In VARIABLE mode, set the cycle period within the range from 10 ms to 999 ms in steps of 1 ms.



When the [Fix] tab is selected, testing is conducted using a single cycle period setting.

When the [Sweep] tab is selected, testing is conducted by changing the cycle period in steps (Step) from the start cycle period (Start) to the end cycle period (Stop). The value entered for the start cycle period cannot be larger than the end cycle period.

When the [Variable] tab is selected, testing is conducted at the cycle period selected by inserting a check mark into the check box.

(3) Sweep Priority Level

Among voltage, cycle period (PHASE mode: phase angle; VARIABLE mode: cycle period) and pulse width, set whether cycle period (PHASE mode: phase angle; VARIABLE mode: cycle period) sweeps first, second or third.

Select the priority level from [1st.], [2nd.] and [3rd.].

(4) EXT TRIG mode

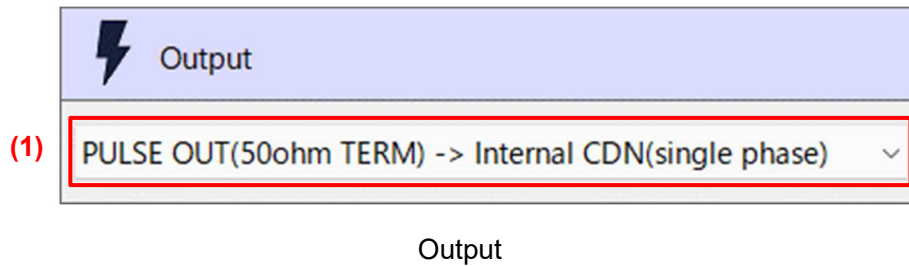
To input external synchronization signals, check the checkbox for EXT TRIG mode. For details on external synchronization signals, see the instruction manual of the INS-S420 unit.

(5) 1 SHOT mode

To manually output a single pulse, check the checkbox for 1 SHOT mode. During testing, a single pulse is output each time the [1 SHOT] button is clicked.

Output

In [Output], select where pulses are to be output from the [50Ω TERM OUT] and [PULSE OUT] connectors of the INS-S420 unit.



(1) Output

- When the connected model is **[INS-S420]:**

Select from [PULSE OUT (50Ω TERM) => Internal CDN (single phase)], [PULSE OUT (50Ω TERM) => Internal CDN (DC)], [PULSE OUT] and [PULSE OUT (50Ω TERM) => External CDN (3-phase 5-wire)].

If [Internal CDN (single phase)] or [Internal CDN (DC)] is selected, connect the [50Ω TERM OUT] and [INJECTION LINE (L/+, N/-, PE)] connectors of the INS-S420 unit with a coaxial cable.

If [PULSE OUT] is selected, connect the [PULSE OUT] connector of the INS-S420 unit, a coupling adaptor and a radiation probe with a coaxial cable.

If [External CDN (3-phase 5-wire)] is selected, connect the [50Ω TERM OUT] connector of the INS-S420 unit and the pulse injection connectors of the IJ-4050 and IJ-5100Z injection units with a coaxial cable.

- When the connected model is **[INS-S420 + IJ-AT450]:**

Select from [PULSE OUT (50Ω TERM) => External CDN (3-phase 4-wire)] and [PULSE OUT (50Ω TERM) => External CDN (DC)].

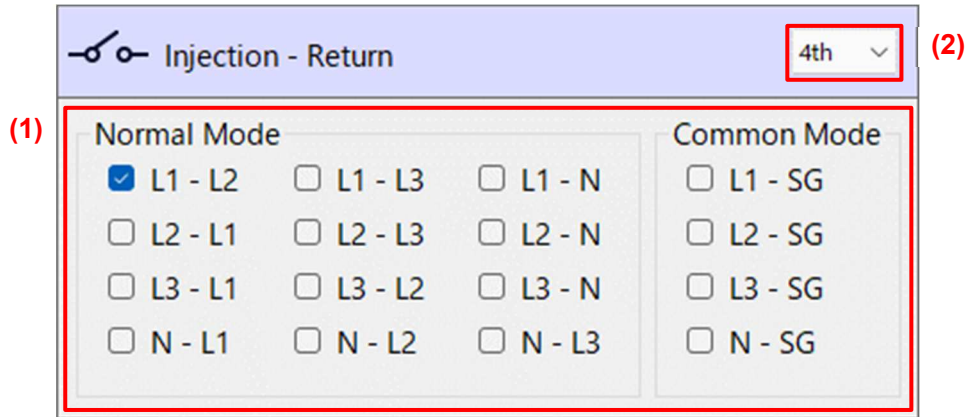
If [External CDN (3-phase 4-wire)] or [External CDN (DC)] is selected, connect the [50Ω TERM OUT] connector of the INS-S420 unit and the [PULSE IN] connector of the IJ-AT450 injection unit with a coaxial cable.



This setting is intended to record which output is used for testing, and the equipment needs to be connected manually. For how to connect the connectors, see the instruction manuals of the INS-S420 unit and optional products.

Injection - Return

In [Injection - Return], set the injection/return phases for normal mode and common mode.

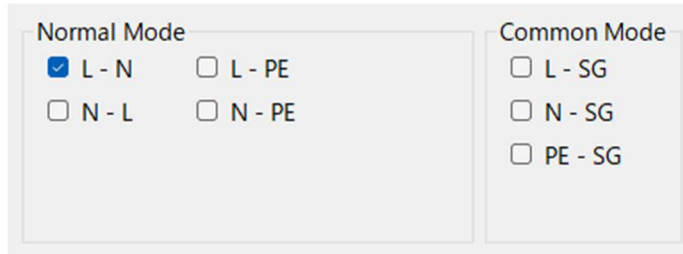


Injection - Return

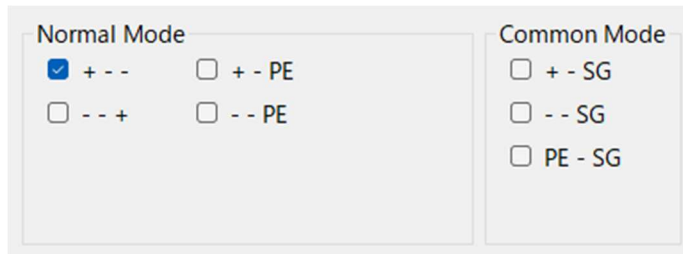
(1) Normal / Common mode

- When the connected model is **[INS-S420]**:

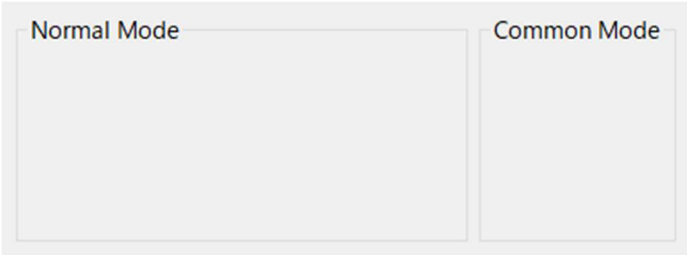
If [Output] is set to [Internal CDN (single phase)], check only one of the checkboxes for the injection/return phases illustrated in the figure below. (You cannot check more than one checkbox.)



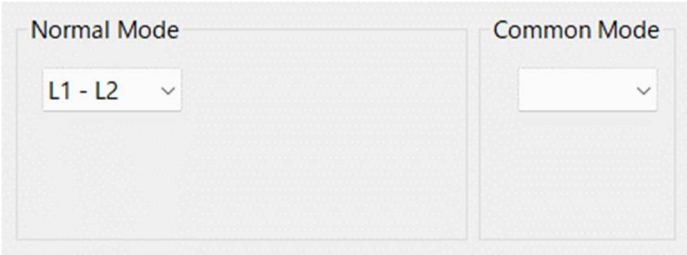
If [Output] is set to [Internal CDN (DC)], check only one of the checkboxes for the injection/return phases illustrated in the figure below. (You cannot check more than one checkbox.)



If [Output] is set to [PULSE OUT], the injection/return phases cannot be selected.

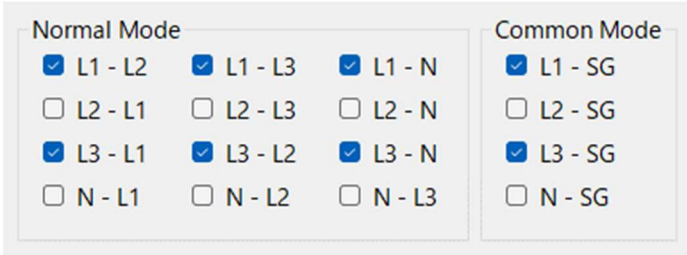


If [Output] is set to [CDN (3-phase 5-wire)], select the injection/return phases from the combo box illustrated in the figure below. (You cannot select both normal mode and common mode.)

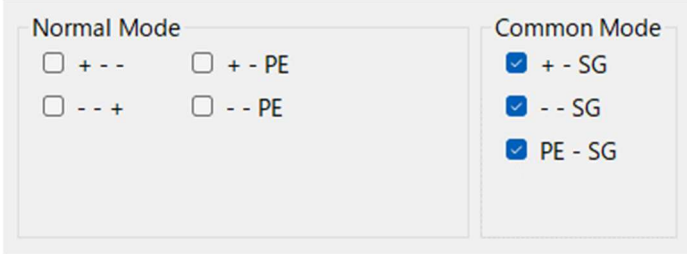


- When the connected model is [INS-S420 + IJ-AT450]:

If [Output] is set to [External CDN (3-phase 4-wire)], check any one or more of the checkboxes for the injection/return phases illustrated in the figure below.



If [Output] is set to [External CDN (DC)], check any one or more of the checkboxes for the injection/return phases illustrated in the figure below.



(2) Sweep Priority Level

- When the connected model is [INS-S420]:

Since you cannot select more than one checkbox for the injection/return phases, the sweep priority level is not shown.

- When the connected model is [INS-S420 + IJ-AT450]:

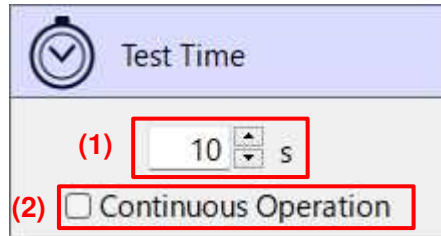
For the injection/return phases, the sweep priority level is fixed at [4th.]. The voltage, cycle period (PHASE mode: phase angle; VARIABLE mode: cycle period) and pulse width will sweep in the set order, and the injection/return phases will sweep fourth (last).

If [Output] is set to [External CDN (3- phase 4-wire)], the injection/return phases for which the checkboxes are checked will sweep in the following order: [L1 - L2] -> [L1 - L3] -> [L1 - N] -> ... -> [N - L1] -> [N - L2] -> [N - L3] -> [L1 - SG] -> [L2 - SG] -> [L3 - SG] -> [N - SG].

If [Output] is set to [External CDN (DC)], the injection/return phases for which the checkboxes are checked will sweep in the following order: [+ - -] -> [+ - PE] -> [- - +] -> [- - PE] -> [+ - SG] -> [- - SG] -> [PE - SG].

Test Time

In [Test Time], set the test time and continuous operation.



Test Time

- (1) Test Time

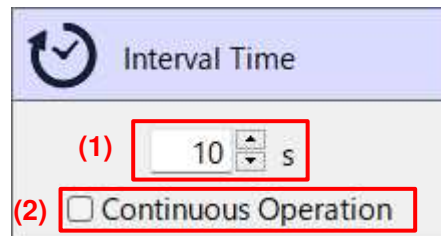
Set a value within the range from 1 to 999 seconds in steps of 1 second.

- (2) Continuous Operation

If this checkbox is checked, continuous operation mode is entered. During testing, pulses continue to be output until the [NEXT] button is clicked.

Interval Time

In [Interval Time], set the interval time and continuous operation. The wait time between tests is set as the interval time.



Interval Time

- (1) Interval Time

Set a value within the range from 1 to 999 seconds in steps of 1 second.

- (2) Continuous Operation

If this checkbox is checked, continuous operation mode is entered. After one test is finished, a continuous interval begins and the next test will not start until the [PAUSE] button is clicked.

7—3. Sequence Test Setting

Select the [SEQUENCE] tab in the main screen left to switch to the Sequence Test Setting.

On the Sequence test screen, you can set the sequence list, check the test list, and execute a sequence test.

The sequence test is a function that executes the settings saved in the file for the manual test in an ordered sequence. The created sequence can be saved to a file.

Sequence Test Screen

The Sequence Test screen is divided into four areas: (1) "Test Condition Indication", (2) "Test Control Unit", (3) "Sequence List Setting", and (4) "Test List".

The screenshot shows the Sequence Test Screen with the following sections:

- (1) Test Condition Indication:** Includes settings for Voltage (3rd), Pulse Width (2nd), Test Time (10 s), and Cycle Period (1st). It also has options for PHASE (PHASE/VARIABLE) and Output (PULSE OUT(50ohm TERM) -> Internal CDN(single phase)).
- (2) Test Control Unit:** Displays Test Status (Test Time: 0 m 10 s, Total Test Time: 0 h 33 m 10 s, Remain Test Time: 1 h 4 m 50 s) and control buttons (Play, Stop, 1SHOT, Warning). It also shows Start/End Date/Time and Overall Judgment.
- (3) Sequence List Setting:** Shows a table for Sequence List Setting with columns: No., Test Name, Results. It includes an 'Add Method' section with options: Overwrite, Insert, End.
- (4) Test List:** Shows a table for Test List with columns: Step, Results, Polarity, Voltage, Pulse Width, Inj - Ret, Phase Angle, Cycle Period, Test Time, Comment.

Sequence Test Screen

(1) Test Condition Preview

This displays the setting content of the manual test selected in the sequence list.

(2) Test Control Unit

You can check the test status, test time, test dates and overall judgment, and you can also control the simulator. For details, see "7—5. Test Control Unit" on page 31.

(3) Sequence List Setting

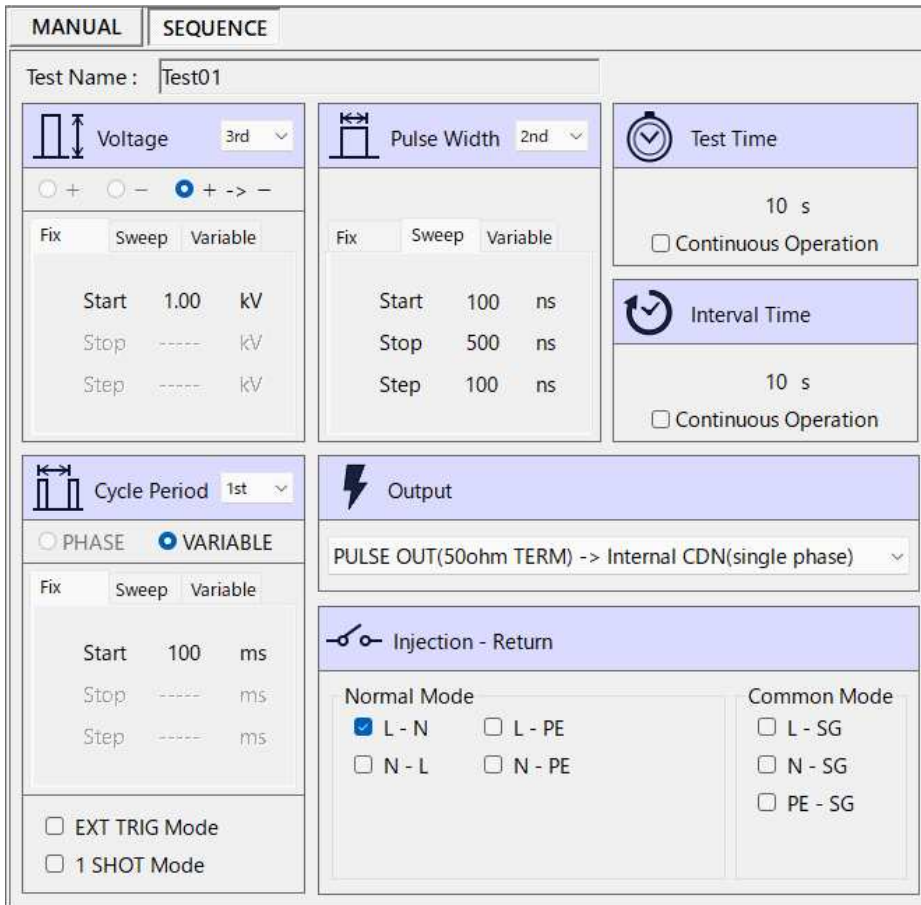
Files saved for the manual test can be added to the sequence list.

(4) Test List

This displays the test list of the manual test selected in the sequence list. For details, see "7—4. Test List" on page 28.

Test Condition Preview

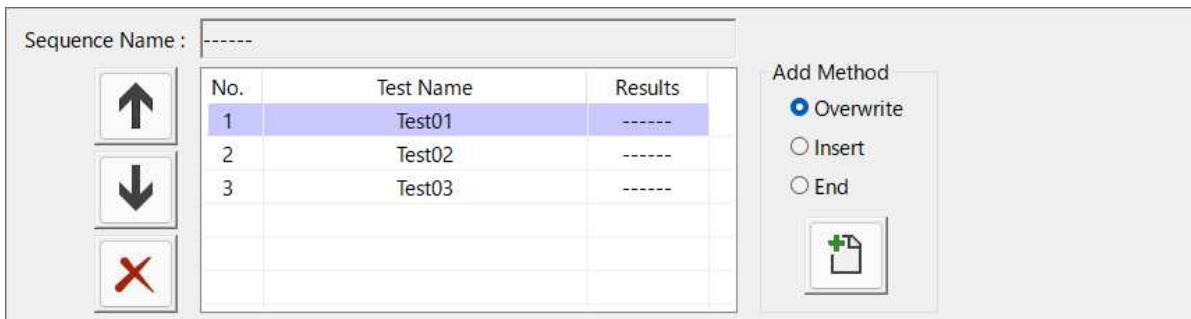
The manual condition settings that were loaded can be viewed on the left side of the screen. This displays the setting content of the test selected in the sequence list.



Test Condition Preview

Sequence List Setting

In the Sequence Test screen, a sequence list can be created in the right center of the screen. Each setting is described in detail in later sections.



Sequence List Setting

Sequence Name

The name of the sequence test is displayed. It is the name that was given to the sequence test when it was saved.

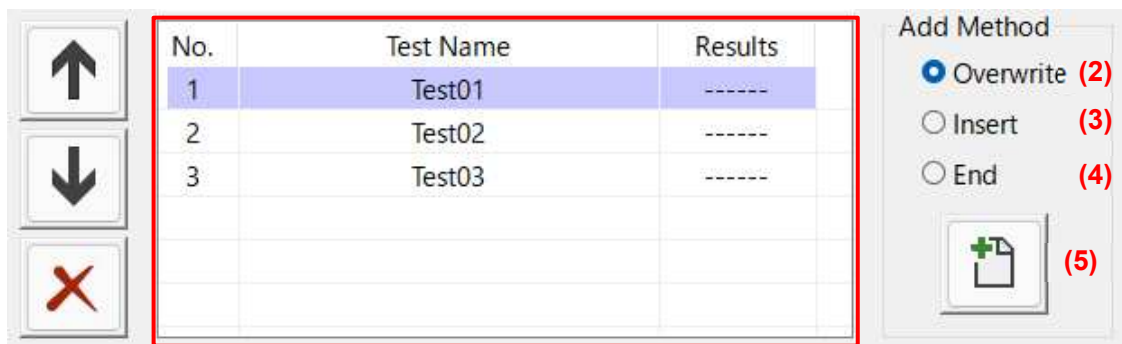
For how to save or load a sequence test, see "7 – 7. New/Open/Save" on page 39.

Sequence Name :

Sequence Name

Adding Manual Test

Files saved for the manual test can be added to the sequence list from the "Add Method" section on the right side of the sequence list.



(1)

Adding Manual Test

(1) Sequence List

This displays the created sequence list.

(2) [Overwrite] button

This adds by overwriting the selected list row.

(3) [Insert] button

This adds by inserting above the selected list row.

(4) [End] button

This adds by adding to the end of the list.

(5) [Adding Manual Test] button

Clicking opens a dialog box where the test settings that were saved for manual test can be added to the sequence list. This is added using the method selected in (2), (3), or (4).

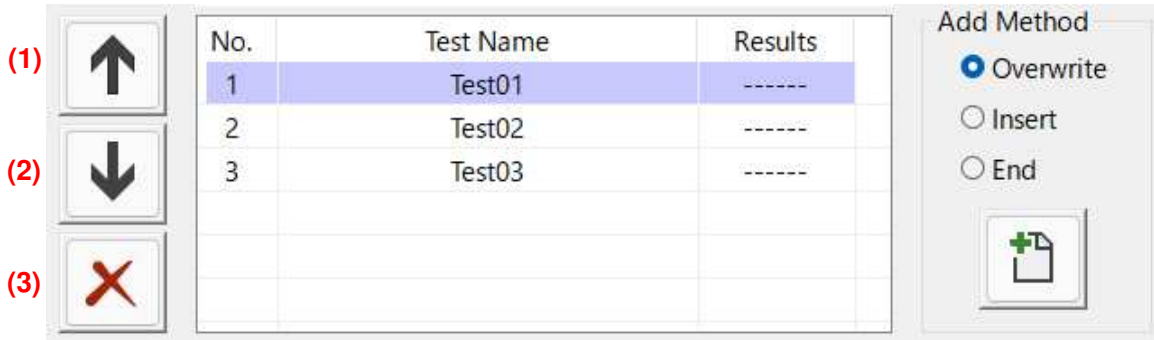


Files that can be added are INS-S420 Data files (*.idf). Files can be added only if the model of the currently connected simulator is the same as that of the simulator used when they were saved.

When INS-S420 Data files (*.idf) are changed in manual test screen, the changes aren't reflected on the sequence list. If you want to reflect the changes, the files must be added again.

Editing Sequence Test

The sequence list that was created by pressing the buttons on the left side of the sequence list can be edited.



Editing Sequence Test

(1) [Up] button

Clicking this moves the test in the selected list row up by one.

(2) [Down] button

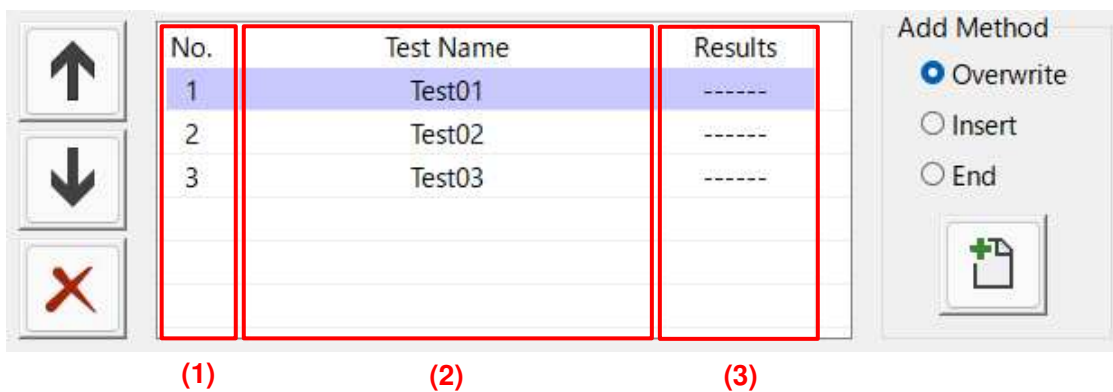
Clicking this moves the test in the selected list row down by one.

(3) [Delete] button

Clicking this deletes the test in the selected list row.

Description of the Sequence List

This explains the content in the sequence list.



Sequence List

(1) Test Number

This is the order of the manual test setting files that were loaded. The test is conducted starting from the selected line in the arranged number order.

(2) Test Name

The file name of the loaded manual test is displayed as a test name.

(3) Pass/Fail Results

The pass/fail results are displayed automatically based on the pass/fail results of the test list. The pass/fail criteria are shown below.

Not determined (-----): When the test list contains one or more undetermined results.

PASS: When all tests in the test list have a pass result.

FAIL: When the test list has a fail result and no undetermined result.

Start Position

“Start Position” at the top of the list sets the start position of a test.

(1) (2)

Start Position : 1st Selected Step

Step	Results	Polarity	Voltage	Pulse Width	Inj - Ret	Phase
1	-----	+	1.00	100	PE - SG	
2	-----	-	1.00	100	PE - SG	
3	-----	.	1.50	100	PE - SG	

Start Position

(1) 1st

A test starts from the first step regardless of the selected step in the list.

(2) Selected Step

A test starts from the selected step.

Save Log

This is used for the test log function. For details on the test log, see "7—11. Test Log" on page 46.

Start Position : 1st Selected Step

Step	Results	Polarity	Voltage	Pulse Width	Inj - Ret	Phase
1	-----	+	1.00	100	PE - SG	
2	-----	-	1.00	100	PE - SG	
3	-----	.	1.50	100	PE - SG	

Save Log



The [Save Log] button is not shown if the [Select Save Log Button] checkbox is unchecked for the logging timing of the test log function. Also, if no tests have been performed, the [Save Log] button cannot be clicked.

Test List Menu

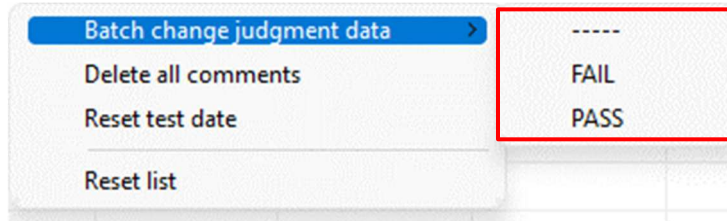
Right-clicking on the test list shows the menu, allowing you to select [Batch change judgment data], [Delete all comments], [Reset test date] and [Reset list]. This menu is not shown during testing.

(1) Batch change judgment data >
 (2) Delete all comments
 (3) Reset test date
 (4) Reset list

Test List Menu

(1) [Batch change judgment data]

Selecting the result from [-----], [FAIL] and [PASS] changes all results in the test list to the selected result.



(2) [Delete all comments]

This deletes all comments entered in the test list.

(3) [Reset test date]

This initializes the start and end dates and times of testing.

(4) [Reset list]

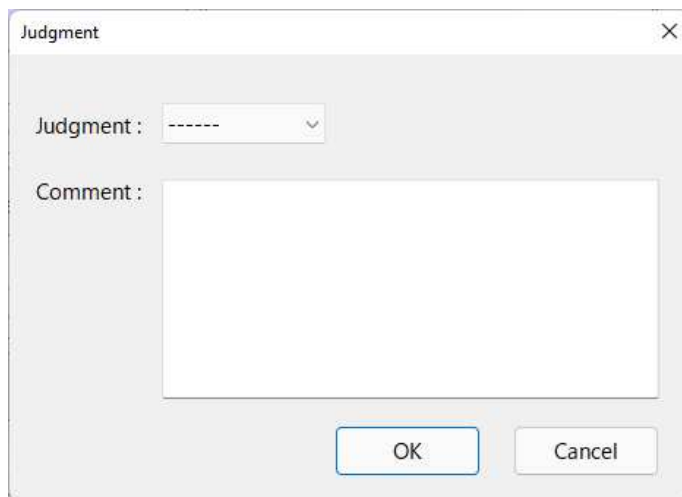
This initializes the results, comments and test dates.



“-----” indicates not executed, and in the initial test list, the judgment results for all steps are set to “-----”.

Editing Judgment Results and Comments

Double-clicking any line on the test list shows the dialog box where you can edit the judgment results and comments. Clicking the [OK] button applies the edited judgment results and comments to the line double-clicked on the list.



Editing Judgment Results and Comments



During testing, double-clicking the line selected on the test list allows you to edit the result/comment only during a pause. For details, see “7–5. Test Control Unit” - “PAUSE Button” on page 33.

7—5. Test Control Unit

The test control unit on the top right of the screen allows you to do the following: (1) Checking the test status, (2) Checking the test time, (3) Controlling the simulator, (4) Setting test dates and times and (5) Setting the overall judgment.

(1)



(4)

(5)

Test Control Unit

(1) Checking the test status

You can check the status of the ongoing testing.

(2) Checking the test time

You can check the test time, total test time and remaining test time (rough estimate).

(3) Controlling the simulator

You can start and stop testing.

If the connected model is **[INS-S420 + IJ-AT450]**, the EUT LINE switch is shown.

(4) Setting test dates and times

The start and end dates and times of testing are displayed.

(5) Setting the overall judgment

The overall judgment is automatically displayed based on the results in the test list.

Test Status

When the simulator is connected, the test statuses are displayed:

[Stopped], [Outputting pulses], [Continuing to output pulses], [Doing 1 SHOT test], [During interval], [During continuous interval], [Paused] and [Switching phase]

When [Outputting pulses], [Continuing to output pulses], [Doing 1 SHOT test] or [During interval] is displayed, the elapsed time or the number of times of testing is also displayed.

Test Status	Outputting pulses (4 / 10 s)
Test Status	Continuing to output pulses (12 s)
Test Status	Doing 1 SHOT test (25 times)
Test Status	During interval (3 / 10 s)

Test Time

The test time, total time and remaining time for the test conditions that were set can be confirmed.

(1)	Test Time :	0 m	10 s
(2)	Total Test Time :	0 h	1 m 20 s
(3)	Remain Test Time :	0 h	2 m 30 s

Test Time

(1) Test Time

This is the test time for one step of the test that is displayed.

(2) Total Test Time

This is the total time from the step from which the test starts to the end of the last step in the test list. The interval time is not included.

The total test time is not displayed during a continuous test-time operation or 1 SHOT testing.

(3) Remaining Test Time

The remaining test time that is roughly estimated based on the total test time from the test execution step to the last step in the test list, along with the interval time. The remaining test time decreases as the testing proceeds.

The remaining test time is not displayed during continuous test-time operation, continuous interval-time operation, or 1 SHOT testing.



If the display time exceeds 24 hours, it appears as "More than 24 hours".

EUT LINE Switch

Switch to turn on and off EUT LINE.

- When the connected model is **[INS-S420]**:

The EUT LINE switch is not available, so it is impossible to turn on or off EUT LINE. The EUT LINE switch is not shown on the test control unit.

- When the connected model is **[INS-S420 + IJ-AT450]**:

By clicking the EUT LINE switch, you can turn on and off EUT LINE. The figures on the left and right show EUT LINE being turned off and on, respectively. If the switch is grayed out, check the connection with the INS-S420 unit and IJ-AT450.

During testing, turning off the EUT LINE switch stops the testing.



Note that turning on the EUT LINE switch causes the line power to be output to the output terminal of the EUT LINE OUTPUT panel.

START / STOP Button

Clicking the [START] button starts testing. For how to perform tests, see "7-6. Test Execution" on page 35.

After testing is started, the [START] button turns to the [PAUSE] button, and the [STOP] button is enabled. During testing, clicking the [STOP] button stops the testing.



PAUSE Button

The [PAUSE] button can be clicked during an interval. It cannot be clicked during testing.

When the [PAUSE] button is clicked, a pause begins, and the [PAUSE] button blinks. To exit the pause, click the [PAUSE] button again.

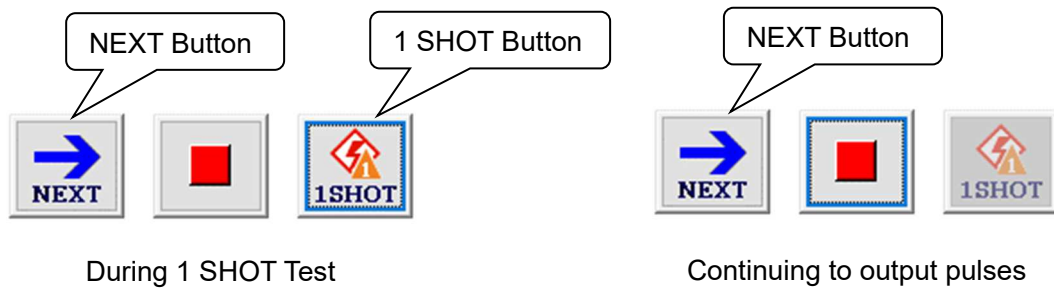


During a pause, double-clicking the line selected on the test list allows you to edit the result/comment.

1 SHOT / NEXT Button

During 1 SHOT testing, clicking the [1 SHOT] button causes a single pulse to be output.

To move onto the next step in the test list during 1 SHOT testing or continuous test-time operation, click the [NEXT] button.



Start Date/Time / End Date/Time

In “Start Date/Time”, click the [Start] button to display the date and time when the test started. “End Date/Time” displays the date and time when the test was completed to the final step, or the date and time when the [Stop] button was pressed or when an error occurred.

The date and time can be changed by clicking “Start Date/Time” and “End Date/Time”.

Overall Judgment

[Overall Judgment] is automatically displayed based on the results in the test list when testing is finished.

If the test list includes one or more undetermined results, [-----] is displayed. If the test list includes one or more fails and does not include any undetermined result, [FAIL] is displayed. If all results in the test list are passes, [PASS] is displayed.

You can make changes by clicking [Overall judgment]. This only changes the overall judgment without changing the result in each step in the test list.

7-6. Test Execution

Starting Testing

Clicking the [START] button starts testing. If the [START] button is shaded, check the connection with the INS-S420 unit.



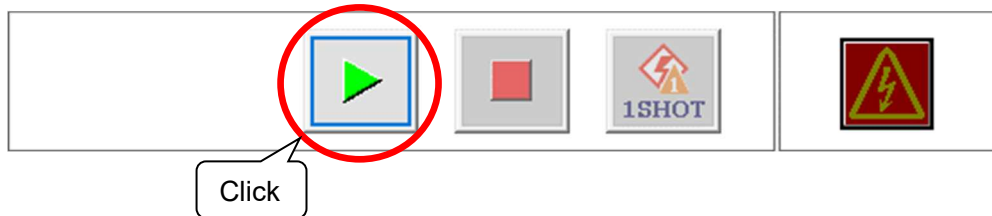
Once a test starts, high voltage impulse noise is output. Incorrect or careless operation could result in a fatal injury.



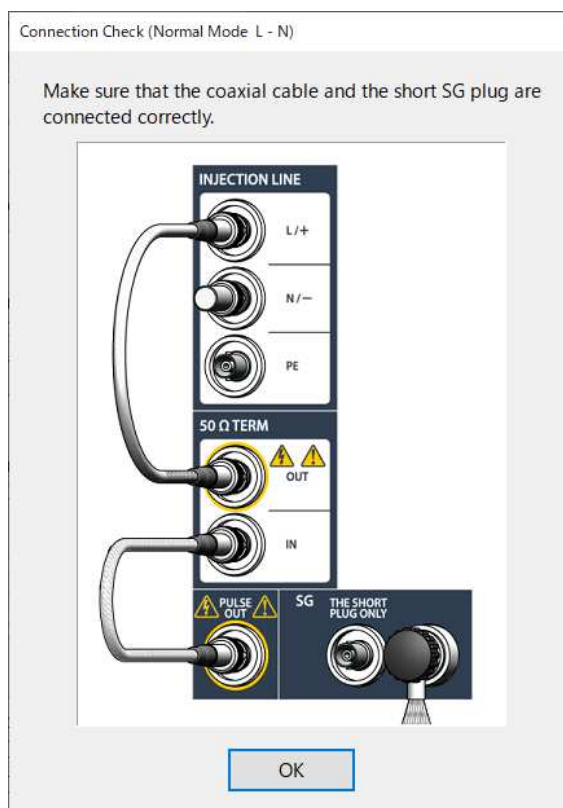
This software cannot be exited while a test is being executed. To exit, stop the test first.

- When the connected model is [INS-S420]:

- Click the [START] button.



- The connection check diagram will be displayed. Check the connections and click the [OK] button.

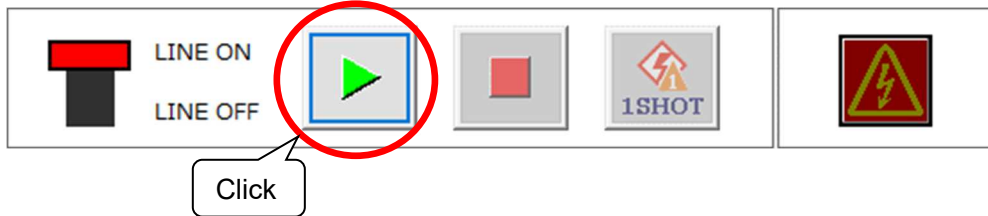


connection check diagram

- (3) A start position confirmation message will be displayed. If there are no problems, click the [OK] button.
- (4) Start the set testing.

- When the connected model is [INS-S420 + IJ-AT450]:

- (1) Make sure that EUT LINE is ON, and click the [START] button.



- (2) A start position confirmation message will be displayed. If there are no problems, click the [OK] button.
- (3) The injection/return phases of IJ-AT450 are automatically switched.
- (4) Start the set testing.



During testing, turning off the EUT LINE switch stops the testing.

Manual Test

- (1) After testing is started, the start date and time of testing are set automatically, and the testing begins with Step 1. If [Start Position] is set to [Selected Step], the testing begins with the selected line.

Start Date/Time :	13:06:29 09/30/2022	End Date/Time :	--:--:--/--/----	Overall Judgment :	-----				
Start Position :	<input checked="" type="radio"/> 1st	<input type="radio"/> Selected Step	Save Log						
Step	Results	Polarity	Voltage	Pulse Width	Inj - Ret	Phase Angle	Cycle Period	Test Time	Comment
1	-----	+	1.00	100	L - N	-----	100	10	
2	-----	+	1.00	200	L - N	-----	100	10	
3	-----	+	1.00	300	L - N	-----	100	10	
4	-----	+	1.00	400	L - N	-----	100	10	

- (2) After the test in Step 1 is finished, wait until the result turns to [PASS] and the interval time elapses.

Start Date/Time :	13:06:29 09/30/2022	End Date/Time :	--:--:--/--/----	Overall Judgment :	-----				
Start Position :	<input checked="" type="radio"/> 1st	<input type="radio"/> Selected Step	Save Log						
Step	Results	Polarity	Voltage	Pulse Width	Inj - Ret	Phase Angle	Cycle Period	Test Time	Comment
1	PASS	+	1.00	100	L - N	-----	100	10	
2	-----	+	1.00	200	L - N	-----	100	10	
3	-----	+	1.00	300	L - N	-----	100	10	
4	-----	+	1.00	400	L - N	-----	100	10	

- (3) After the interval time in Step 1 elapses, the test in Step 2 is performed.

Start Date/Time : 13:06:29 09/30/2022 End Date/Time : ---:---:---/--/---- Overall Judgment : -----

Start Position : 1st Selected Step Save Log

Step	Results	Polarity	Voltage	Pulse Width	Inj - Ret	Phase Angle	Cycle Period	Test Time	Comment
1	PASS	+	1.00	100	L - N	-----	100	10	
2	-----	+	1.00	200	L - N	-----	100	10	
3	-----	+	1.00	300	L - N	-----	100	10	
4	-----	+	1.00	400	L - N	-----	100	10	
5	-----	+	1.00	500	L - N	-----	100	10	

- (4) When the test in the last step is finished, the end date and time of testing and the overall judgment are set automatically, and the testing is finished.

Start Date/Time : 13:06:29 09/30/2022 End Date/Time : 13:19:40 09/30/2022 Overall Judgment : PASS

Start Position : 1st Selected Step Save Log

Step	Results	Polarity	Voltage	Pulse Width	Inj - Ret	Phase Angle	Cycle Period	Test Time	Comment
1	PASS	+	1.00	100	L - N	-----	100	10	
2	PASS	+	1.00	200	L - N	-----	100	10	
3	PASS	+	1.00	300	L - N	-----	100	10	
4	PASS	+	1.00	400	L - N	-----	100	10	

Sequence Test

- (1) After testing is started, the start date and time of testing are set automatically, and the testing begins with Step 1 in the sequence list No. 1. If [Start Position] is set to [Selected Step], the testing begins with the selected line.

Start Date/Time : 14:30:05 09/30/2022 End Date/Time : ---:---:---/--/---- Overall Judgment : -----

Sequence Name : S420-01

No.	Test Name	Results
1	Test01	-----
2	Test02	-----
3	Test03	-----

Add Method
 Overwrite
 Insert
 End

Start Position : 1st Selected Step Save Log

Step	Results	Polarity	Voltage	Pulse Width	Inj - Ret	Phase Angle	Cycle Period	Test Time	Comment
1	-----	+	1.00	100	L - N	0	-----	10	
2	-----	+	1.00	100	L - N	180	-----	10	
3	-----	-	1.00	100	L - N	0	-----	10	
4	-----	-	1.00	100	L - N	180	-----	10	

(2) After the test in the last step of the sequence list No. 1 is finished, wait until the result for the sequence list No. 1 turns to [PASS] and the interval time elapses.

Start Date/Time : 14:30:05 09/30/2022 End Date/Time : --:--:-- --/--/-- Overall Judgment : -----

Sequence Name : S420-01

No.	Test Name	Results
1	Test01	PASS
2	Test02	-----
3	Test03	-----

Add Method
 Overwrite
 Insert
 End

Start Position : 1st Selected Step Save Log

Step	Results	Polarity	Voltage	Pulse Width	Inj - Ret	Phase Angle	Cycle Period	Test Time	Comment
1	PASS	+	1.00	100	L - N	0	-----	10	
2	PASS	+	1.00	100	L - N	180	-----	10	
3	PASS	-	1.00	100	L - N	0	-----	10	
4	PASS	-	1.00	100	L - N	180	-----	10	

(3) After the interval time elapses, the tests in the sequence list No. 2 are performed. If the sequence lists No. 1 and No. 2 differ in injection/return phases, it is necessary to switch the phase.

- When the connected model is **[INS-S420]**:
 A connection check diagram will be displayed. Check the connections and click the [OK] button.
- When the connected model is **[INS-S420 + IJ-AT450]**:
 The injection/return phases are switched automatically.

(4) When the test at the end of the sequence list is finished, the end date and time of testing and the overall judgment are set automatically, and the testing is finished.

Start Date/Time : 14:30:05 09/30/2022 End Date/Time : 15:35:40 09/30/2022 Overall Judgment : PASS

Sequence Name : S420-01

No.	Test Name	Results
1	Test01	PASS
2	Test02	PASS
3	Test03	PASS

Add Method
 Overwrite
 Insert
 End

Start Position : 1st Selected Step Save Log

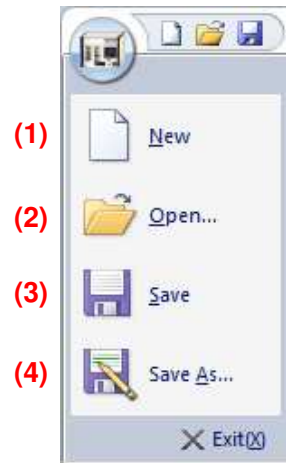
Step	Results	Polarity	Voltage	Pulse Width	Inj - Ret	Phase Angle	Cycle Period	Test Time	Comment
1	PASS	+	1.00	100	L - N	0	-----	10	
2	PASS	+	1.00	100	L - N	180	-----	10	
3	PASS	-	1.00	100	L - N	0	-----	10	
4	PASS	-	1.00	100	L - N	180	-----	10	

7-7. New/Open/Save

Files can be created, loaded, and saved from the ribbon and from the application menu displayed when the application button is selected.



Ribbon



Application menu

(1) New

If the [MANUAL] tab is selected, the start and end dates and times, overall judgment, test settings and test list for manual testing are initialized.

If the [SEQUENCE] tab is selected, the start and end dates and times, overall judgment, sequence list and test list for sequence testing are initialized.

(2) Open

If the [MANUAL] tab is selected, the contents of manual testing are loaded. The files that can be loaded are INS-S420 Data Files (*.idf).

If the [SEQUENCE] tab is selected, the contents of sequence testing are loaded. The files that can be loaded are INS-S420 Sequence Files (*.isf).



Files can be loaded only if the model of the currently connected simulator is the same as that of the simulator used when they were saved.

(3) Save

If the [MANUAL] tab is selected, the start and end dates and times, overall judgment, test settings and test list for manual testing are overwritten.

If the [SEQUENCE] tab is selected, the start and end dates and times, overall judgment, sequence list and test list for sequence testing are overwritten.

(4) Save As

If the [MANUAL] tab is selected, the start and end dates and times, overall judgment, test settings and test list for manual testing are saved into a new file.

If the [SEQUENCE] tab is selected, the start and end dates and times, overall judgment, sequence list and test list for sequence testing are saved into a new file.

7—8. Connection Status

The status of connection with the main unit can be checked in “Connection Status” on the ribbon.



Connection Status(Disconnected)



Connection Status(Connected)

(1) Connected Model

This displays the currently connected model.

(2) Connection Status

When no model is connected to the main unit, this displays the “Disconnected”. When a model is connected, this displays the “Connected”.

(3) [Connect/Disconnect] button

When no model is connected to the main unit, this serves as the [Connect] button and selecting it attempts to establish a connection. When a model is connected, it serves as the [Disconnect] button and selecting it disconnects the model from the main unit.

7—9. Report Export

Clicking [Report Export] on the ribbon shows the report export screen. The report export function can export test information, test conditions and test lists to Excel. By loading a template file, you can export the data entered on the report export screen in any format.



Ribbon

Report Export

(4) (5)

(1) Template File

Select the template file based on which test information is to be exported.

By entering the special character strings ($\{\text{****}\}$) shown below items into cells in the template file, you can export the data entered on the report export screen to the cells.

Test Report			
			sign
Company	:	$\{\text{Company}\}$	
Operator	:	$\{\text{Operator}\}$	
Test Place	:	$\{\text{Place}\}$	
Test Date/Time	:	$\{\text{Start_Time}\}$	- $\{\text{End_Time}\}$

Example Of Template File

Test Report			
			sign
Company	:	Noise Laboratory co., Ltd.	
Operator	:		
Test Place	:	Test Lab. Funabashi	
Test Date/Time	:	15:31:56 09/25/2022	- 15:44:02 09/25/2022

Example Of Report Export

(2) Test Information

Enter test information. The start and end dates and times of testing shown in [Start Date/Time] and [End Date/Time] on the main screen are displayed. Also, there are 12 free comment sections where you can enter comments freely.

(3) Simulator/Option

Enter information on the simulator and options.

(4) [Export Report] button

If MS Excel is installed in the computer, MS Excel is started to output the contents of the test information, test conditions and test list. If MS Excel is not installed in the computer, a report cannot be exported.

(5) [Close] button

Close the report export screen.



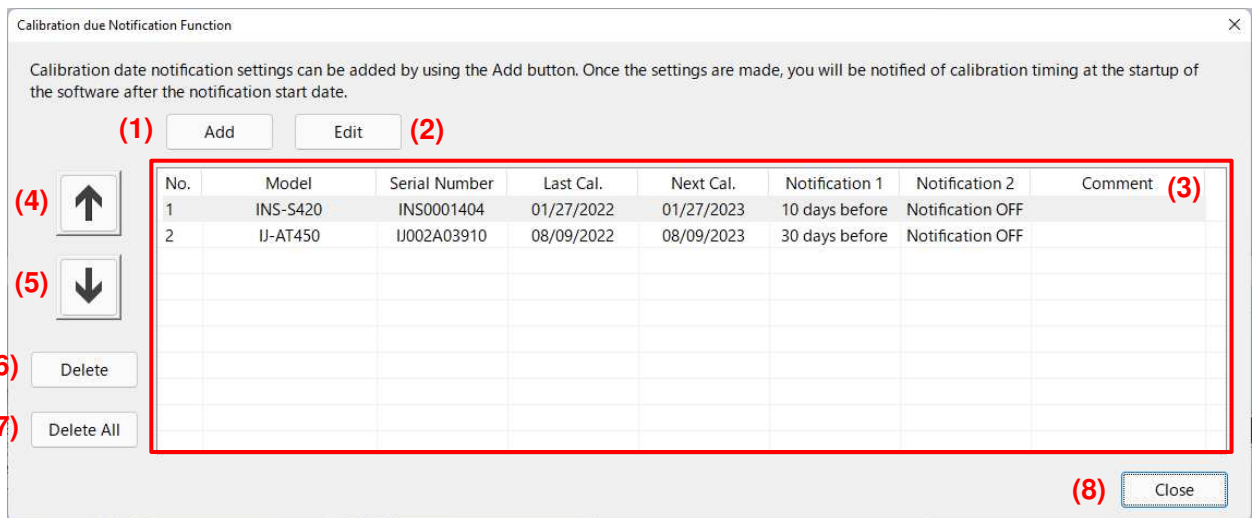
It may take considerable time to export a test data depending on your operating environment and the number of steps in a test.

7—10. Calibration due Notification

Selecting [Calibration Date] on the ribbon displays the calibration due notification function screen. The calibration due notification function allows you to set a Unit calibration notification date to display a notification screen at the startup of the software after the notification date.



Ribbon



Calibration due Notification Function Screen

(1) [Add] button

This displays the calibration due notification setting screen and adds the set information to the end of the list. The calibration due notification setting screen is described in detail in later sections.

(2) [Edit] button

This displays the calibration due notification setting screen and edits the selected list item. The calibration due notification setting screen is described in detail in later sections.

(3) Calibration due Notification List

This displays the set calibration due notification information in the list format.

(4) [↑] button

This moves the selected list item upward by one row.

(5) [↓] button

This moves the selected list item downward by one row.

(6) [Delete] button

This deletes the selected list item.

(7) [Delete All] button

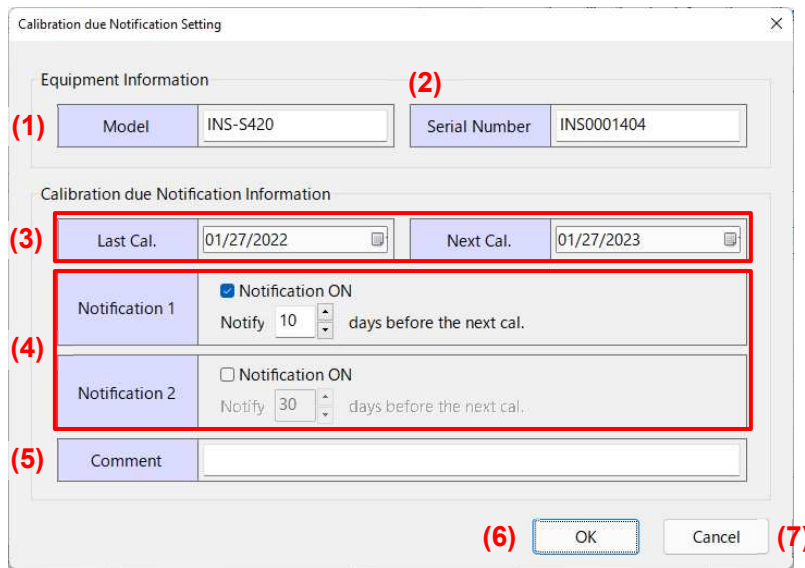
This deletes the all list items.

(8) [Close] button

This closes the Calibration due Notification Function Screen.

Calibration due Notification Setting Screen

With the calibration due notification function, selecting the [Add] button or the [Edit] button displays the calibration due information setting screen. When the [Edit] button is selected, the calibration due information setting screen displays details of the selected list item.



Calibration due Notification Setting Screen

(1) Model

Enter the model to be displayed at the time of notification.

(2) Serial Number

Enter the serial number to be displayed at the time of notification.

(3) Last Cal. / Next Cal.

Enter the previous calibration date and next planned calibration date. Selecting the calendar symbol allows you to select a date from the calendar. If the previous calibration date is selected via the calendar symbol, a message appears to allow you to set the next planned calibration date to one year later automatically.



(4) Notification 1 / Notification 2

This sets how many days before the planned calibration date a notification should be made. Placing a checkmark in the checkbox enables the notification.

(5) Comment

Enter a comment that will be displayed at the time of notification.

(6) [OK] button

Selecting this allows you to add the set information to the calibration due notification list in the case of Add, or edit the items selected from the calibration due notification list, based on the set information, in the case of Edit.

(7) [Cancel] button

This closes the calibration due information setting screen without adding or editing information.

Calibration due Notification Screen

If any equipment is beyond a notification date, the calibration due notification screen is displayed at the startup of the software. The calibration due notification screen displays in the list format the equipments that are beyond notification dates.

Cancel notification	No.	Model	Serial Number	Last Cal.	Next Cal.	Comment
<input type="checkbox"/>	1	INS-S420	INS0001404	10/05/2021	10/05/2022	

Calibration due Notification Screen

(1) Cancel notification

Placing a checkmark for Cancel notification cancels the notification for the corresponding equipment. If different dates are set in Notification 1 and 2, it is displayed again, when either of the notification dates arrives.

(2) [Close] button

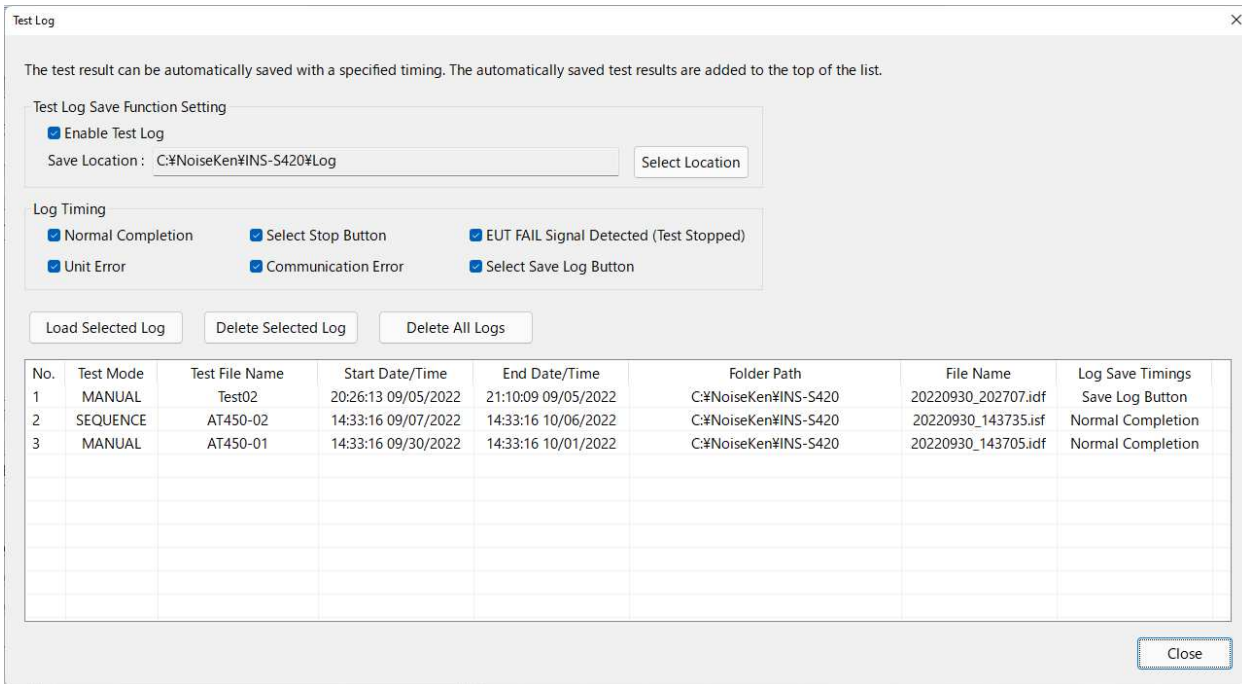
This closes the Calibration due Notification screen.

7-11. Test Log

Selecting [Test Log] on the ribbon displays the test log screen. The test log function saves a log of test information automatically at a set timing.



Ribbon



Test Log Screen

Test Log Save Function Setting

Set the test log save function.



Test Log Save Function Setting

(1) Enable Test Log

Checking the checkbox enables the test log save function. This allows you to save test results with the specified timing.

(2) Save Location

Specify the folder in which logs are to be automatically saved.

(1) [Load Selected Log] button

This loads the saved file selected from the test log list.



A file can be loaded only if the model connected when the log was saved matches the model that is currently connected.

(2) [Delete Selected Log] button

This deletes the log selected from the test log list.

(3) [Delete All Logs] button

This deletes the all logs.



Note that deleting a log also deletes its log file saved in the folder.

(4) Test log list

[No.], [Test Mode], [Test File Name], [Start Date/Time], [End Date/Time], [Folder Path], [File Name] and [Log Save Timings] are displayed.

The logs are given a number in the order opposite to that in which they were saved.



The log files are automatically named after the end date and time of testing.

7-12. Setting Protection

Selecting [Setting Protection] on the ribbon displays the settings protection screen. The settings protection function restricts setting changes of the manual test data, the sequence test data, the test log, the calibration due notification, the report export and the options.



Ribbon

Settings Protection

Setting changes can be managed for each user. Only the Administrator can change each permission status.

Password Change

Administrator

User 1

User Change

Administrator

User 1

User 2 (Passwordless)

Default User at Startup

Administrator

User 1

User 2 (Passwordless)

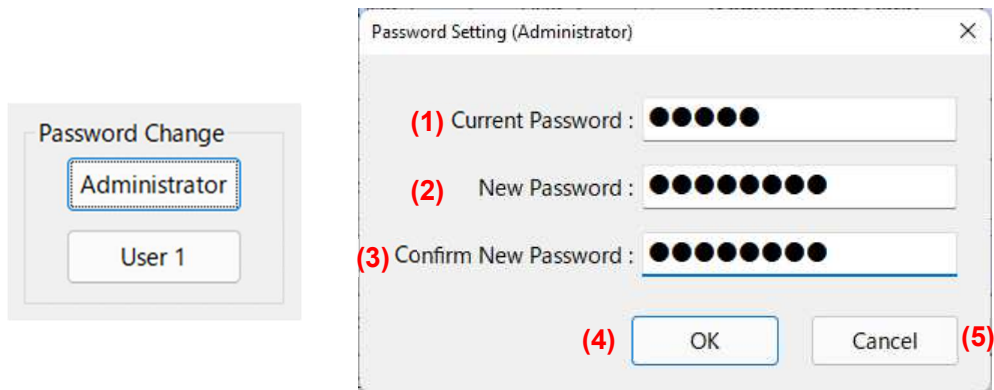
[Manual Test Data]	Administrator	User 1	User 2	[Sequence Test Data]	Administrator	User 1	User 2
Create New	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission	Create New	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
Change Data	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission	Change Data	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
Save	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission	Save	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
[Test Log]	Administrator	User 1	User 2	[Calibration due Notification]	Administrator	User 1	User 2
ON/OFF	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission	Add Notification	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
Change Save Folder	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission	Edit/Delete Notification	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
Delete Log	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission	Notification Off	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
[Report Export]	Administrator	User 1	User 2	[Options]	Administrator	User 1	User 2
Change Template	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission	Change Test Settings	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
Change Data	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission	Change Digital I/O Settings	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission

Close

Settings Protection

Password Setting

Password setting allows you to set passwords for the Administrator and User 1. These passwords are required to change a user or set a user at startup. In the initial state, no password is set.



Password Setting Screen

(1) Current Password

Enter the current password. Since no password is set in the initial state, there is no need to fill-in this field.

(2) New Password

Enter a new password by using up to 15 characters.

(3) Confirm New Password

Confirm the new password. Enter the same password as in (2).

(4) [OK] button

The password change is confirmed when there is no problem with the entered password.

(5) [Cancel] button

This closes the Password Setting screen.



If you have forgotten your password, open the "INS-S420_RemoteW.ini" file located in the folder below, and delete the following two lines: "ADMIN_PASS" and "USER_PASS". Deleting these lines clears the password.

C:\Users\UserName\AppData\Local\NoiseKen\INS-S420_RemoteW

"UserName" varies depending on the login user. Also, as the AppData folder is a hidden folder, Explorer settings are required to display the hidden folder.

INS-S420_RemoteW.ini is configured as read-only. To make changes to the file, close this software and disable the read-only option of INI files. Then, delete "ADMIN_PASS" and "USER_PASS".

User Change / Default User at Startup

“User Change” allows you to change the current users. “Default User at Startup” allows you to set users at the startup of the software.

For Administrator and User 1, the passwords set in Password setting are required at setting changes. However, the passwords are not required at startup.

Password Confirmation Screen

Restriction on Manual Test Data

Removing checkmarks from checkboxes in [Manual Test Data] allows you to restrict setting changes related to the manual test data for each of Administrator, User 1, and User 2 separately. For details on the test log, see "7—11. Test Log" on page 46. Only the Administrator can change each permission status.

	[Manual Test Data]	Administrator	User 1	User 2
(1)	Create New	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
(2)	Change Data	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
(3)	Save	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission

(1) Create New

Creating a new manual test is restricted.

(2) Change Data

Changing data on manual tests is restricted.

(3) Save

Saving a manual test is restricted.

Restriction on Sequence Test Data

Removing checkmarks from checkboxes in [Sequence Test Data] allows you to restrict setting changes related to the sequence test data for each of Administrator, User 1, and User 2 separately. For details on the test log, see "7 – 11. Test Log" on page 46. Only the Administrator can change each permission status.

	[Sequence Test Data]	Administrator	User 1	User 2
(1)	Create New	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
(2)	Change Data	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
(3)	Save	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission

(1) Create New

Creating a new sequence test is restricted.

(2) Change Data

Changing data on sequence tests is restricted.

(3) Save

Saving a sequence test is restricted.

Restriction on Test Log

Removing checkmarks from checkboxes in [Test Log] allows you to restrict setting changes related to the test log function for each of Administrator, User 1, and User 2 separately. For details on the test log, see "7 – 11. Test Log" on page 46. Only the Administrator can change each permission status.

	[Test Log]	Administrator	User 1	User 2
(1)	ON/OFF	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
(2)	Change Save Folder	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
(3)	Delete Log	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission

(1) ON/OFF

This restricts the ON/OFF selection of the test log save function and changes to log save timings.

(2) Change Save Folder

This restricts the changes to save location.

(3) Delete Log

This restricts log deletion using the [Delete Selected Log] button and the [Delete All Logs] button.

Restriction on Calibration due Notification

Removing checkmarks from checkboxes in [Calibration due Notification] allows you to restrict setting changes related to the calibration due notification function for each of Administrator, User 1, and User 2 separately. For details on the calibration due notification, see "7 – 10. Calibration due Notification" on page 43. Only the Administrator can change each permission status.

	[Calibration due Notification]	Administrator	User 1	User 2
(1)	Add Notification	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
(2)	Edit/Delete Notification	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
(3)	Notification Off	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission

(1) Add Notification

This restricts the adding of notification settings.

(2) Edit/Delete Notification

This restricts the editing, moving, and deletion of notification settings.

(3) Notification Off

This restricts the cancellation of notifications, when the calibration due notification screen is displayed at the startup of the software.

Restriction on Report Export

Removing checkmarks from checkboxes in [Report Export] allows you to restrict setting changes related to the report export function for each of Administrator, User 1, and User 2 separately. For details on the report export, see "7 – 10. Calibration due Notification" on page 43. Only the Administrator can change each permission status.

	[Report Export]	Administrator	User 1	User 2
(1)	Change Template	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
(2)	Change Data	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission

(1) Change Template

Changing the template file is restricted.

(2) Change Data

Changing the test information, simulator or options is restricted.

Restriction on Option Setting

Removing checkmarks from checkboxes in [Options] allows you to restrict setting changes related to the option setting for each of Administrator, User 1, and User 2 separately. For details on the option setting, see "7 – 10. Calibration due Notification" on page 43. Only the Administrator can change each permission status.

	[Options]	Administrator	User 1	User 2
(1)	Change Test Settings	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission
(2)	Change Digital I/O Settings	<input checked="" type="checkbox"/> Permission	<input checked="" type="checkbox"/> Permission	<input type="checkbox"/> Permission

(1) Change Test Settings

Changing the contents of the [Test Settings] tab is restricted.

(2) Change Digital I/O Settings

Changing the contents of the [Digital I/O Settings] tab is restricted.

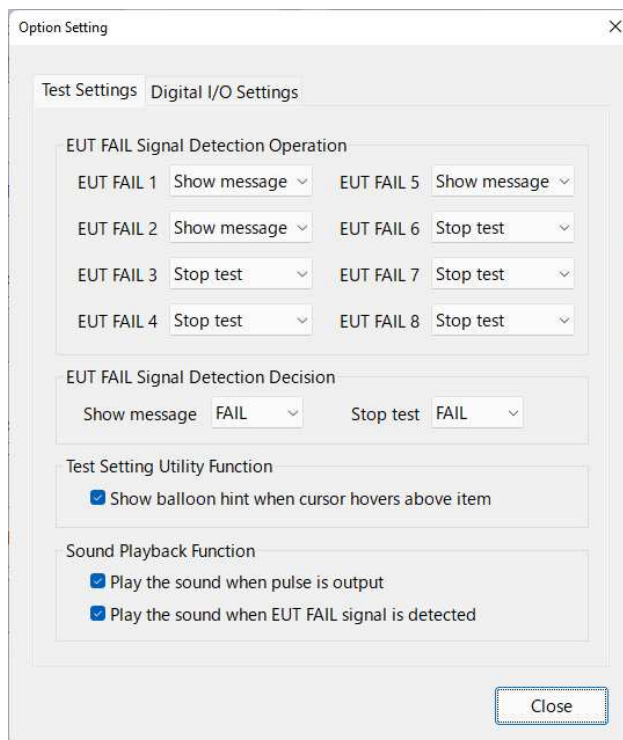
7—13.Options

Clicking [Options] on the ribbon shows the option setting screen. The option setting screen has the [Test Settings] and [Digital I/O Settings] tabs.

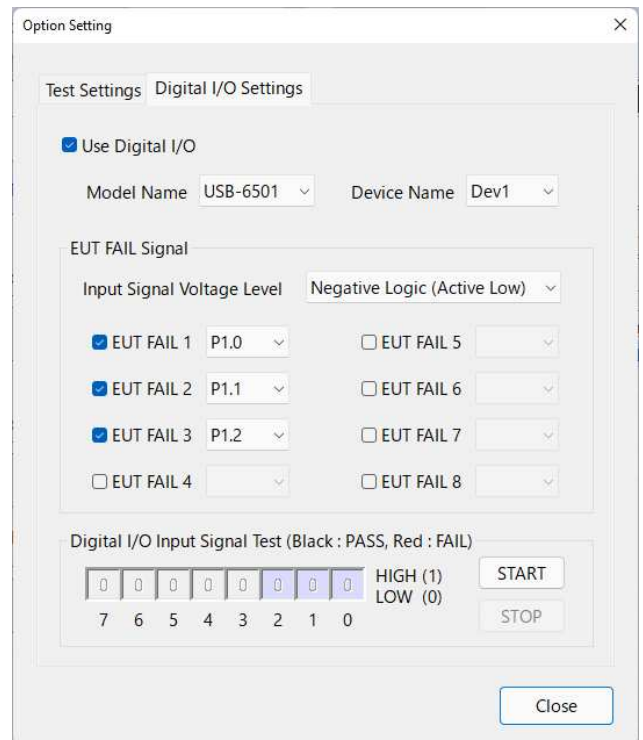
On the [Test Settings] tab, you can configure settings for operations at the time of EUT FAIL signal detection and auxiliary functions. On the [Digital I/O Settings] tab, you can configure settings for the digital I/O model and EUT FAIL signals.



Ribbon



Option Setting Screen (Test Settings)

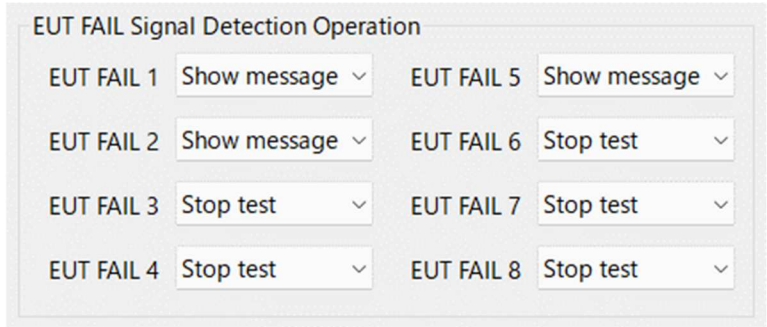


Option Setting Screen (Digital I/O Settings)

EUT FAIL Signal Detection Operation

In [EUT FAIL Signal Detection Operation] of the [Test Settings] tab, you can select the operation to be performed upon detection of a EUT FAIL signal (EUT FAIL 1 to EUT FAIL 8) from [Show message] and [Stop test].


For details on EUT FAIL signal settings, see "7– 13. Options" - "EUT FAIL Signal" on page 57.



If [Show message] is selected, the EUT FAIL signal detected is indicated on a message box without stopping testing.

If [Stop test] is selected, the testing is stopped and the EUT FAIL signal detected is indicated on a message box.

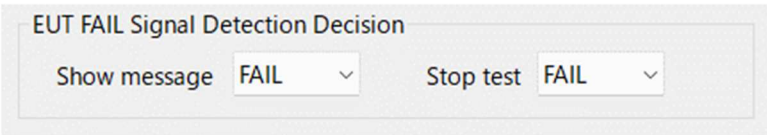
EUT FAIL signals detected are additionally indicated in comments in the test list.

 If a EUT FAIL signal for which [Show message] is selected is detected together with one for which [Stop test] is selected, [Stop test] is given priority.

EUT FAIL Signal Detection Decision

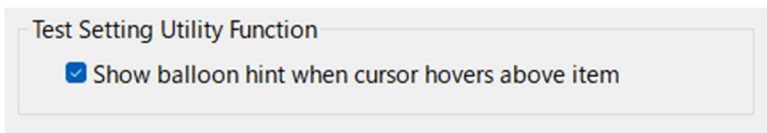
In [EUT FAIL Signal Detection Decision] of the [Test Settings] tab, you can set the result to be chosen when a message is shown or testing is stopped due to EUT FAIL signal detection. Select the result from [-----], [FAIL] and [PASS].

For details on EUT FAIL signal settings, see "7– 13. Options" - "EUT FAIL Signal" on page 57.



Test Setting Utility Function

In [Test Setting Utility Function] of the [Test Settings] tab, you can enable tooltips showing input restrictions and setting information.



Sound Playback Function

In [Sound Playback Function] of the [Test Settings] tab, you can set whether to play a sound when a pulse is output or a EUT FAIL signal is detected.



Sound Playback Function

- Play the sound when pulse is output
- Play the sound when EUT FAIL signal is detected

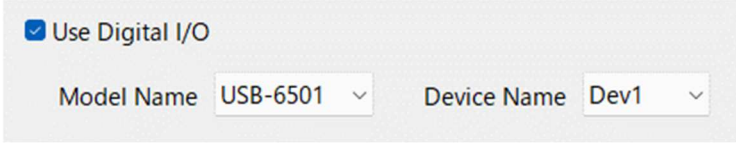


A WAV sound file is placed in the Sound folder in the installation folder of this software. Note that if the WAV file is deleted or moved to another folder, the sound playback function cannot be used.

Use of Digital I/O

Checking the [Use digital I/O] checkbox on the [Digital I/O Settings] tab allows you to use digital I/O to detect EUT FAIL signals.

After checking the checkbox, select the model name and device name of your digital I/O.

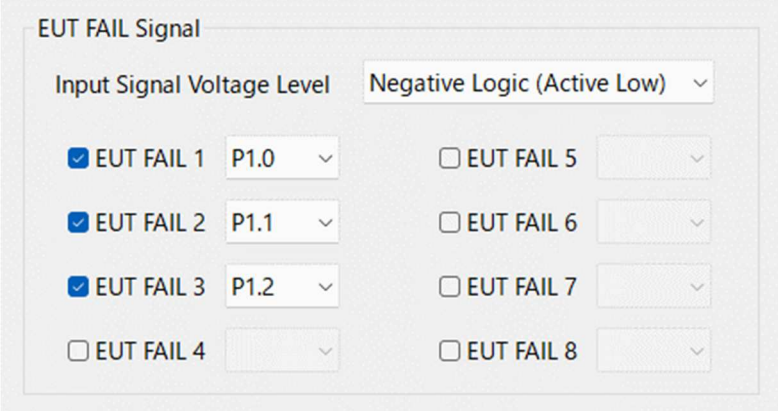


Use Digital I/O

Model Name Device Name

EUT FAIL Signal

In [EUT FAIL Signal] of the [Digital I/O Settings] tab, set the input signal voltage level, the EUT FAIL numbers to be used, and their respective input terminals.



EUT FAIL Signal

Input Signal Voltage Level

<input checked="" type="checkbox"/> EUT FAIL 1 <input type="text" value="P1.0"/>	<input type="checkbox"/> EUT FAIL 5 <input type="text"/>
<input checked="" type="checkbox"/> EUT FAIL 2 <input type="text" value="P1.1"/>	<input type="checkbox"/> EUT FAIL 6 <input type="text"/>
<input checked="" type="checkbox"/> EUT FAIL 3 <input type="text" value="P1.2"/>	<input type="checkbox"/> EUT FAIL 7 <input type="text"/>
<input type="checkbox"/> EUT FAIL 4 <input type="text"/>	<input type="checkbox"/> EUT FAIL 8 <input type="text"/>

Select the input signal voltage level from [Positive logic (active high)] and [Negative logic (active low)]. Select the setting suitable for your digital I/O and EUT FAIL signals.

Check checkboxes of EUT FAIL 1 to EUT FAIL 8 only if you use them. After checking the checkboxes, assign EUT FAIL numbers to input terminals of the digital I/O. Select the input terminals of the digital I/O from [P1.0] to [P1.7].

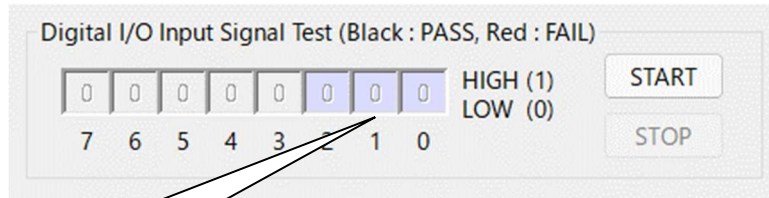
For details on the input signal voltage level and input terminals, see the instruction manual of your digital I/O.

During testing, input signals of the digital I/O are monitored at intervals of 50 ms. In order to avoid undetected input signals, EUT FAIL signals should be input for 100 ms or more.

I/O Input Signal Test

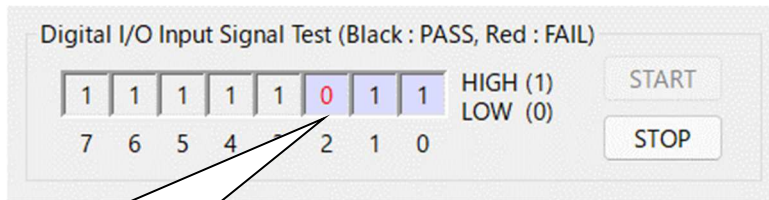
In [Digital I/O Input Signal Test] of the [Digital I/O Settings] tab, you can check operations when EUT FAIL signals are input into the digital I/O.

The EUT FAIL numbers for which the checkboxes were checked during EUT FAIL signal configuration are shown in purple.



Using P1.0, P1.1, and P1.2

Clicking the [Start] button starts communication with the digital I/O. When a EUT FAIL signal is detected, the relevant input terminal is indicated in red.



EUT FAIL signal detected at P1.2

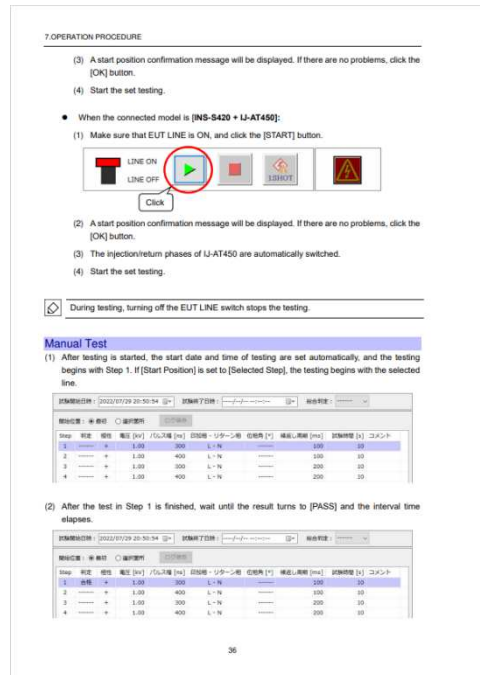
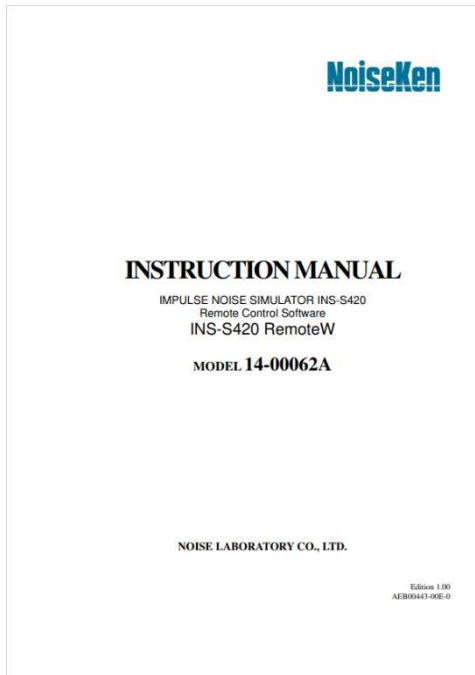
If an input terminal is indicated in red (FAIL) without any EUT FAIL signal being input, check the setting of the input signal voltage level.

7—14. Manual

Selecting [Manual] on the ribbon displays the manual.

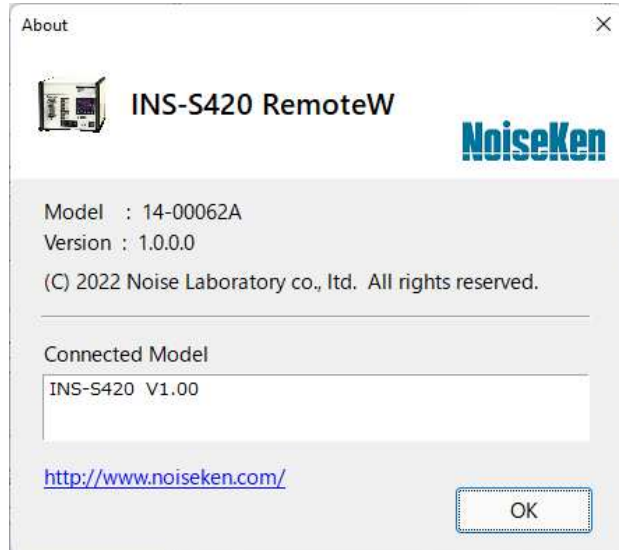


Ribbon



7—15. Version Information

The version of this software can be checked from [?] at the top right of the main screen.



Version Information

8. SYSTEM REQUIREMENTS

8-1. System Requirements

OS	: Microsoft Windows 10 (Japanese / English version) Microsoft Windows 11 (Japanese / English version)
CPU	: Dual Core 2.4 GHz or faster recommended
Memory	: 8 GB or more recommended
Storage	: 5 GB or more free space
Display	: 1920 × 1080 dots or more recommended

Other requirements:

- Operation cannot be guaranteed when using online storage or software that uses cloud services.
- To use the report export 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 or 07-00023A)
- 2 or 3 empty USB port
- A CD-ROM or DVD-ROM drive is required for installing the OPTICAL INTERFACE UNIT driver.

9. TROUBLESHOOTING

This section describes the troubleshooting procedures when the INS-S420 is not working properly. If the procedures below still do not resolve the problem even after trying to connect or start testing several times, request servicing using the contact information in "11. NOISE LABORATORY SUPPORT NETWORK" on page 63.

9—1. Unable To Connect to INS-S420 Unit

After performing the corrective action in the table below, check that the power for the INS-S420 is turned on, and connect again.

Cause	Corrective Action
The OPTICAL INTERFACE UNIT driver isn't installed	For details on the installation procedure, see the instruction manual supplied with the OPTICAL INTERFACE UNIT.
There are problems with the connection.	Check that the computer and the OPTICAL INTERFACE UNIT are connected.
	Check that the OPTICAL INTERFACE UNIT and remote control port on the INS-S420 unit rear panel are connected by an optical cable.
	If the bend angle of the optical cable is large, reduce the bending angle. The optical cable may have broken wires if it was bent too sharply.

9—2. Unable To Connect to IJ-AT450 Unit

After performing the corrective action in the table below, check that the power for the IJ-AT450 is turned on, and connect again.

Cause	Corrective Action
The STANDBY switch is not pressed.	Press the STANDBY switch to initialize the IJ-AT450 unit.
The emergency stop button is pressed.	Release the emergency stop button.
The ERR RESET switch is lighting up.	Long-press the ERR RESET switch for 1 second or more.
The OPTICAL INTERFACE UNIT driver isn't installed	For details on the installation procedure, see the instruction manual supplied with the OPTICAL INTERFACE UNIT.
There are problems with the connection.	Check that the computer and the OPTICAL INTERFACE UNIT are connected.
	Check that the OPTICAL INTERFACE UNIT and remote control port on the IJ-AT450 unit rear panel are connected by an optical cable.
	If the bend angle of the optical cable is large, reduce the bending angle. The optical cable may have broken wires if it was bent too sharply.

10. 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

If a fault occurs in the system as a result of this software by NoiseKen, NoiseKen will provide support free of charge through software fixes and updates or other means only within the warranty period. However, please be aware that we may discuss when to implement corrective measures for minor issues.

3. Total Maximum Liability

If the customer incurs losses or damages due to a fault of this NoiseKen software purchased by the customer, unless the losses or damages are the result of willful or negligent actions, the maximum amount of NoiseKen's liability for compensation for these losses or damages to the customer is equal to the amount that the customer paid for this NoiseKen software. But, 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.

4. Warranty Period

The warranty period is the support period of the OS by the provider (including extended support periods) for the OS where operation is guaranteed by NoiseKen. When the support period of this OS ends, support for this software in this OS will also come to an end.

The after service of the software ends support when the production and sales of the specific control equipment are discontinued.

5. Exclusions

These terms and conditions do not constitute a full and complete guarantee of operation or compatibility with the customer's system. Also, the following situations are outside the scope of support.

[Combining with products]

Although every effort will be made to provide comprehensive software support, in combination with products other than those recommended by NoiseKen, some faults may be unable to be resolved due to lack of compatibility or conflicts with PCs, peripherals, and other hardware, and OS and other software. In addition, even in combination with products recommended by NoiseKen, faults may be unable to be resolved due to serious defects occurring in the recommended products.

[Added functions and OS upgrades]

Please note that support for added functions and OS upgrades are outside the scope of free support.

11. 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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