GW INSTEK
Simply Reliable

INSTRUCTION MANUAL

LinkVIeW
Control software for Power system

1. Introduction

(1) Summary

This sequence creation software enables you to operate a Power Supply and an Electronic Load as charge/discharge system. A pair of one channel of power supply and one channel of electronic load consist one Channel in LINKVIEW.
Sequence pattern can be created for maximum 12 Channels.

(2) Compatible models

Power Supply

Series	GP-IB	USB	RS-232C
PSU Series	Factory Option	Standard	Standard
PSW Series	GUG-001	Standard	GUR-001
PSB 2000 Series	Factory Option	Standard	Standard

Electronic Load

Series	GP-IB	USB	RS-232C
PEL 3000 Series	PEL-004	Standard	Standard
PEL 3000E Series	PEL-004	Standard	Standard
PEL 2000(A) Series	PEL-001	Standard	Standard

Note: All of the power and electronic load must use the same series.
Note: PEL-2030 is not supported

(3) OS

Windows7+SP1. (32bit / 64bit)
Windows10. (32bit / 64bit)

(4) Interface

GP-IB	GP-IB interface NI-488.2 driver by National Instruments is required.
RS-232C	Windows standard or a USB-RS232C converter.
USB	USB-CDC of GW-Instek USB Driver

(5)Supplied files

The contents of the enclosed disk are as follows:

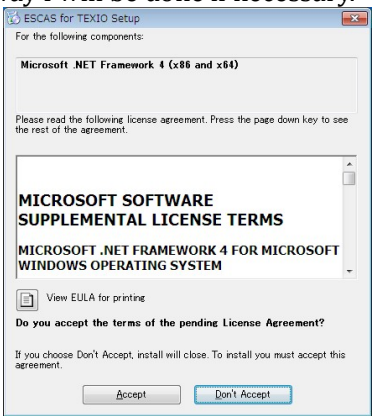
[Folder]	[Contents]
\Release	The folder for LINKVIEW setup
\Release\DotNetFX40	The library 1 for a setup
\Release\WindowsInstaller3_1	The library 2 for a setup

2. Install

(1) Login as administrator and update your Windows. Follow “Windows Update” instruction.

(2) Please install the setup API in the API folder of the CD.Run setup32.exe of API folder .
(for 64bit OS:setup64.exe)
Setup Wizard will open, please proceed with the installation after checking the contents displayed. Be installed. NET Framework 4.0 Client Profile and
Visual C + + 2010 Redistributable Package on the way I will be done if necessary.

Visual C++ 2010 Redistributable Package



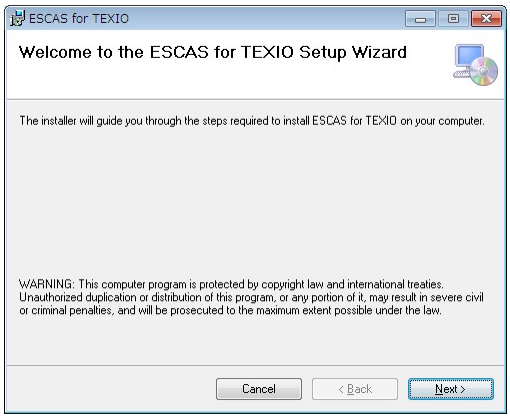
.NETFramework4 install

(3) When you use GP-IB, install National Instruments Corporation GP-IB driver NI-488.2. Install driver which is attached to GP-IB card or download the latest version from National Instruments web site (www.ni.com).

(4) When you use USB, install the USB driver from GWinstek website for the corresponding products.

(5) Connect a power supply and electronic load to PC. Turn on a power supply. If you use USB, driver installation of PC should be performed one by one. Do not connect more than one at the same time such as connecting by Hub. Malfunction may occur.

(6) Right-click the Setup.exe in the folder of Release, select "Run as administrator".
Please follow the instructions to proceed with the setup wizard will start.



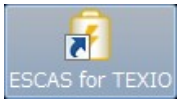
(7) Completing the Installation.

The desktop shortcut of "LINKVIEW" will be created when the installation is complete.

3. Setup LinkVIeW

3-1. Start-up

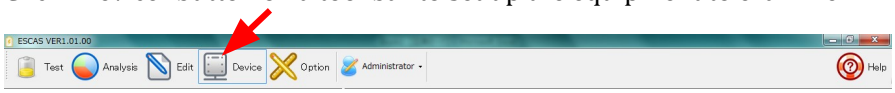
Double-click "LinKVIeW " icon on the disk top. LinKVIeW will start.



LINKVIEW starts and “Test” screen is displayed.

3-2. Device settings

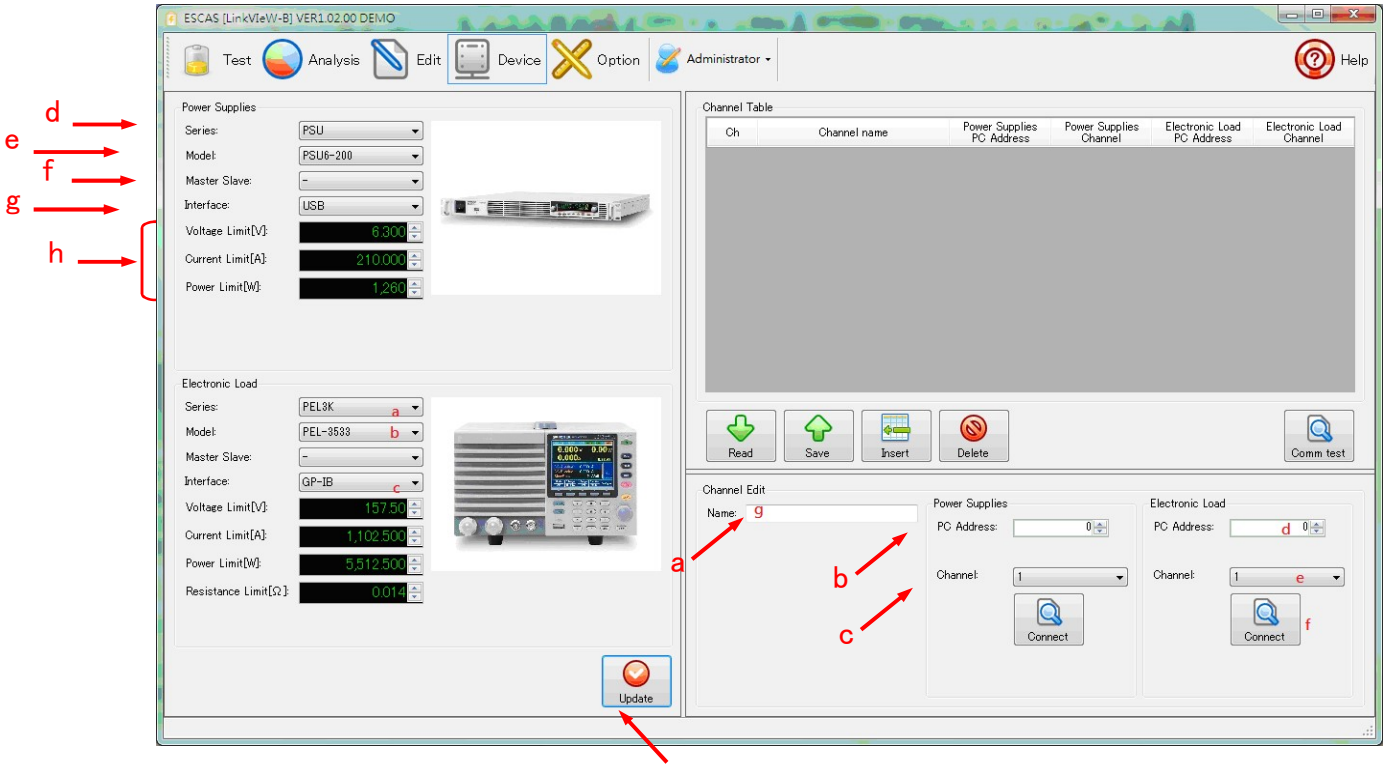
Click "Device" button on a tool bar to set up the equipment to examine.



3-2-1. Edit channel

Power Supply parameters and Electric Load parameters are set at “Edit channel”. You can edit “Channel” parameters, too. You can edit Channel which is consisted one channel of Power Supply and one channel of Electronic Load.

* “Channel” consist one channel of Power supply and one channel of Electronic Load.

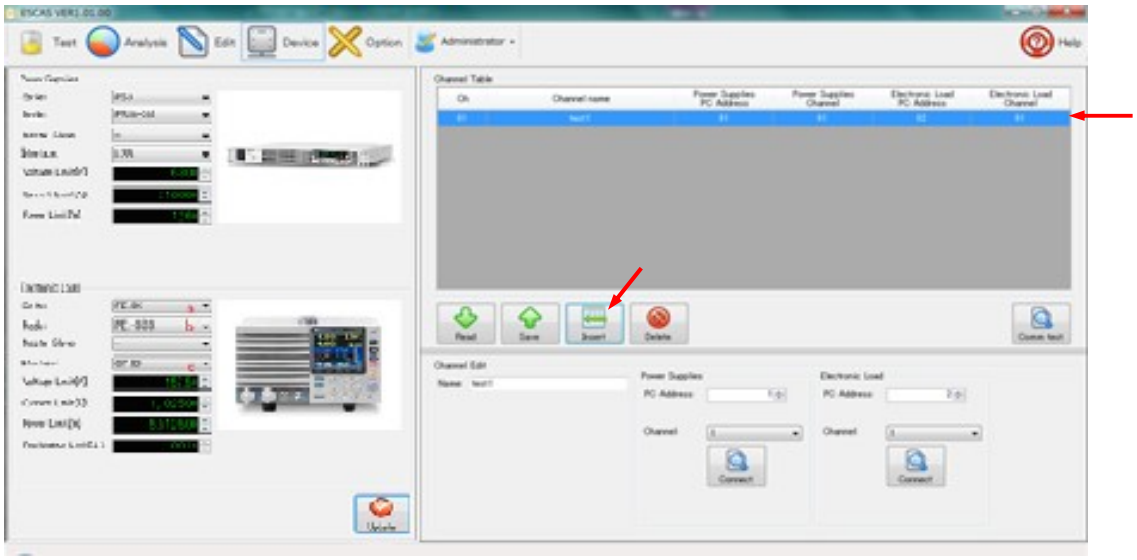


Set up PC address of equipment which will be examined and a channel of Power Supply or Electronic Load.

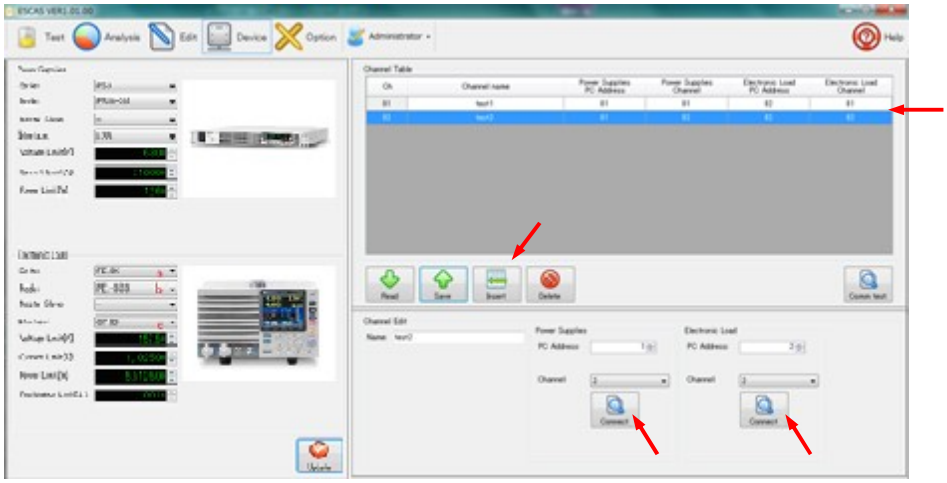
a. Name.	Name for each “Channel”.(Example: “The battery A”, “The battery B”)
b. PC address	Set up PC address of equipment. Or comport No.
c. Channel	Set channel number if Power Supply/Electronic Load to be used have two or more.
d. Series to be used.	Set up the series name of Power Supply/Electronic Load
e. Model to be used.	Set up the model name of Power Supply/Electronic Load
f. Master Slaves machine.	Set up the number of the slaves linked to a master
g. Interface	Select the interface to be used.
h. Limit value	Set up the limit value of the voltage, current, power and resistance of Power Supply and Electronic Load to be used.

* Click “Update” button to finish setup

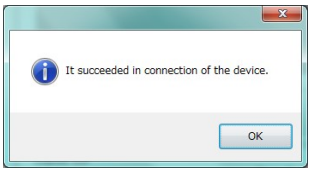
. When setup of name, PC address and channel finishes, click "Insert" button.
The set-up contents are inserted in a channel table.



When you setup two or more channels, setup the name of channel to add, PC address, and channel of equipment. If “Insert” button is clicked after set-up, a new channel will be inserted under the channel set as the point of a channel table.



If a setup of all the channels finishes, click "Connect" button.
If there is no problem in connection, the message “It succeeded in connection of the device.” will be displayed. When there was a problem in connection after checking connection, the message “Connection of the device went wrong. Please perform again after checking connection” is displayed. Check the “Channel” parameter of the equipment’s channel, address and equipment itself etc.



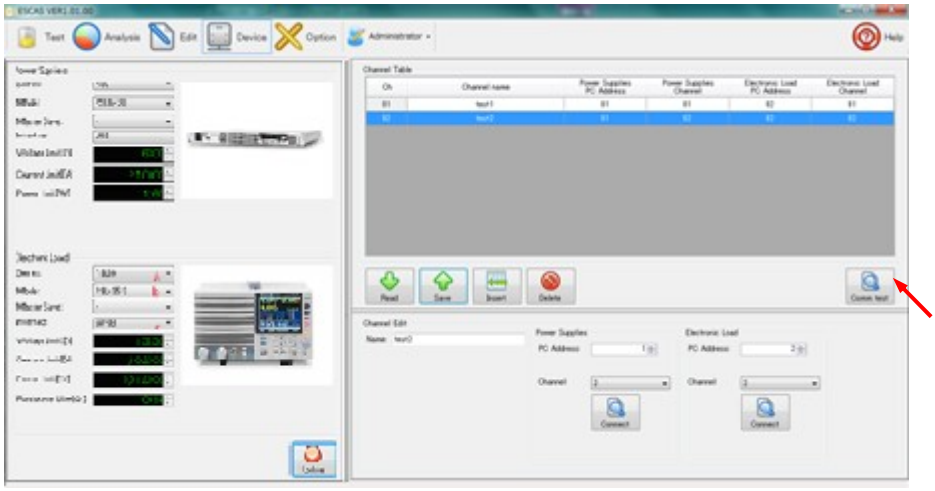
Succeed

NG

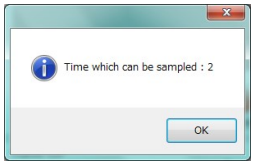
If the connection was disconnect during the test bus is unstable connection, you may need to restart the application. Please restart because the application is terminated.

3-2-2. Check of Setting

If there is no problem in a connection test, click "Comm test" button and check the length of sampling time. If the number of channels to be examined will increase, the sampling time per channel will increase due to the communication time.



The time which can be sampled is displayed after measuring of sampling time.



The minimum time is 1 second channel 1.If more than one channel is required each time.

Channel table

When the channel of “Channel table” is clicked, color of line which is chosen changes to blue.

The selected channel can be operated by the following buttons.

Contents of the selected channel are read into “Channel edit”.
The read contents are correctable.
Contents corrected by “Channel edit” are overwritten to the chosen channel.

Insert a created channel by “Channel edit” to under the existing channel.

Delete the selected channel.

3-3. Edit

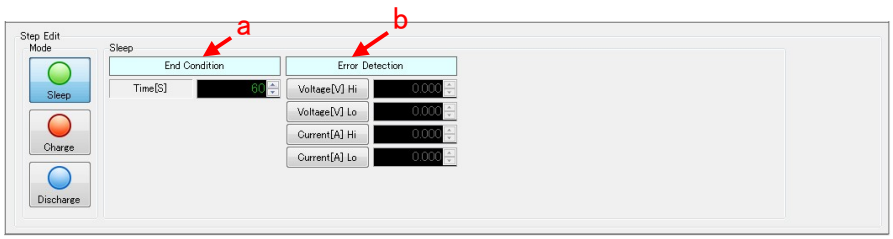
Examination pattern are created. Click “Edit” button in the tool bar.

3-3-1. Editing steps

A test condition is setup by “Step Edit” of "Edit" screen.

* Note that setting contents will be differ depends on the equipment to be used.

(1) Sleep

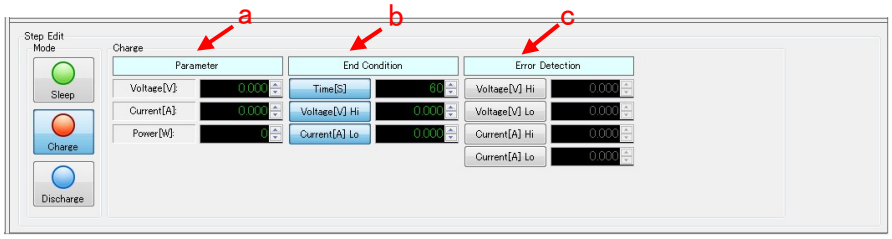


a. End Condition	Set pausing time.
b. Error Detection	Error will occur when setting maximum/minimum voltage or current is detected.

(2) Charge

Setup the power supply.

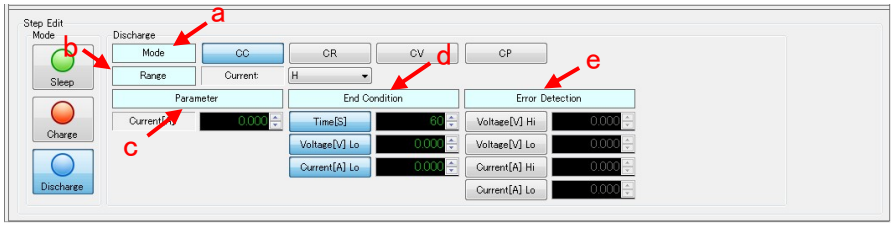
(This setting will be available when PSF-400L2 is used.)



a. Parameter	Setup the condition of charge. Setup voltage, current and electric power.
b. End Conditions	Setup the charge-stop condition. Charging time, maximum voltage, and minimum current can be set as “End Conditions”. Priority is given to the contents to which end conditions are met first.
c. Error detection	Error will be detected when the over/under setting voltage or current is detected.

(3) Discharge

Setup the electronic load (Example: LSA-165). Setting parameter are depends on the model.

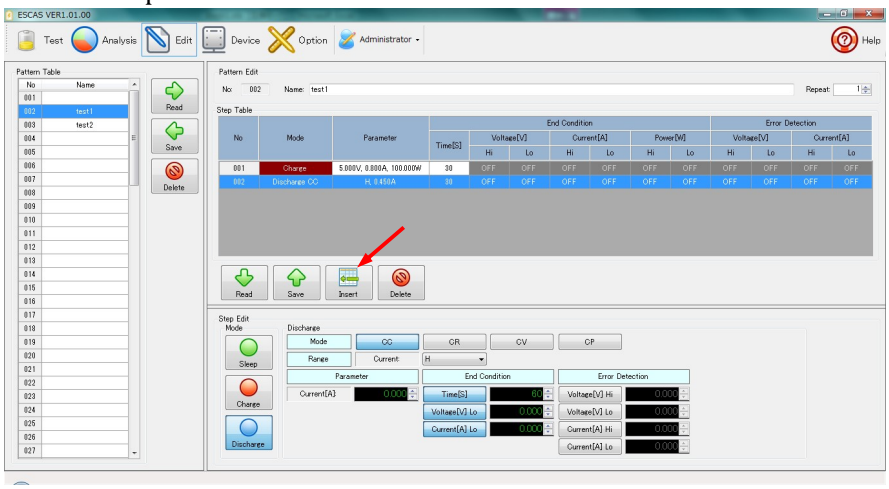


a.Mode	The mode of electric discharge is chosen. Choose one of “CC”, “CR”, “CRx10”, “CP”, “CV+CC” or “CV+CR”.
b.Range	Current range. Choose one of “L”, “M” or “H”.
c.Parameter	Parameter of charge conditions of voltage, current and electric power.
d.End Conditions	Discharge stop condition can be set. You can set “Discharge Time”, “Discharge Voltage” and “Discharge Current”. Priority is given to the contents to which end conditions are met first.

e.Error Detection　　Error will be detected when the over/under setting voltage or current is detected.

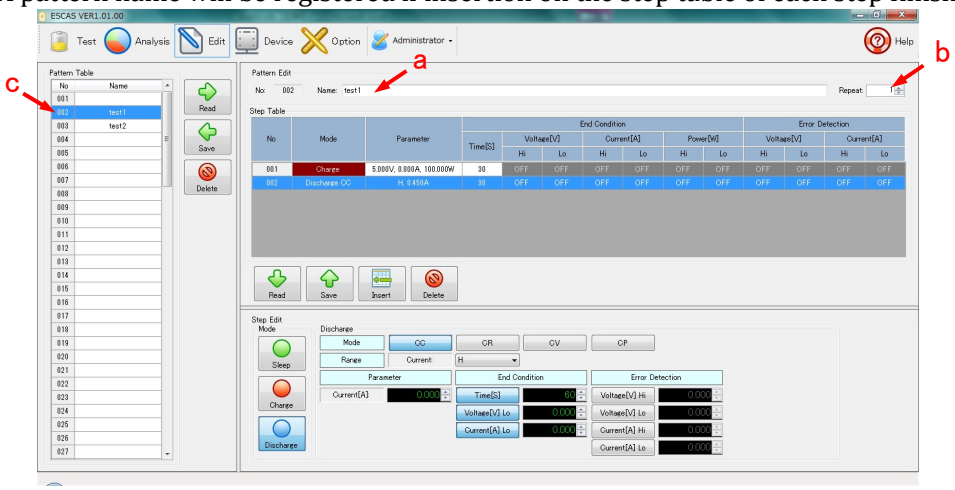
3-3-2. Step insertion into the table

When you finish editing of steps, click “Insertion” button and the step will be inserted to step table. One or more steps can be inserted to step table. The step table is performed in an order from the top inserted step.



3-3-3. Pattern editing

A pattern name will be registered if insertion on the step table of each step finishes.



a.Name:　　A pattern name is attached to a series of steps in a step table.

b.Repetition:　　Setup the repeat count of a series of steps. Repeat count will be registered to pattern name.

c.Pattern table:　　Click "Overwriting" button and the pattern will be registered to the place you want. Select line and click “Overwritten” button then data will be overwritten.

Click “Save” button and pattern will be registered to pattern table.
If pattern table already has registered, data will be overwritten.

Click “Read” button and selected pattern will be read to table.

Click “Delete” button and pattern name and all step data will be deleted.

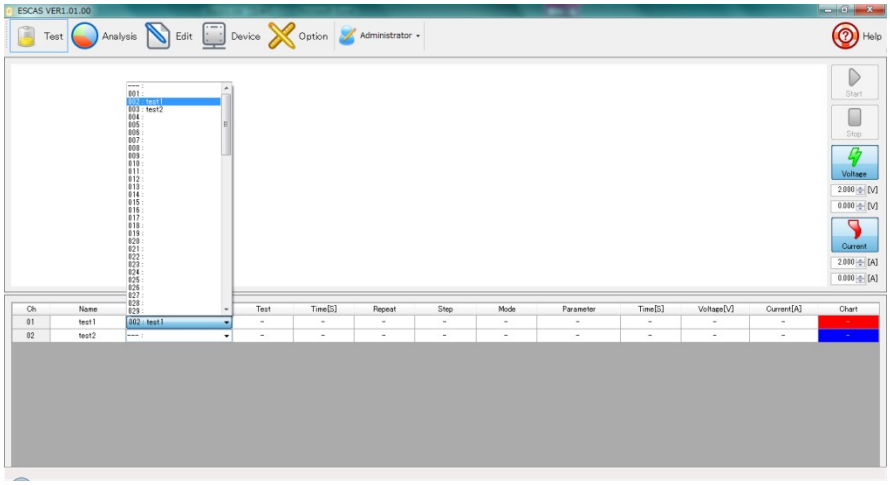
4. Executing of LINKVIEW

4-1. Testing

A channel is examined by the set-up pattern.

4-1-1. Pattern selection

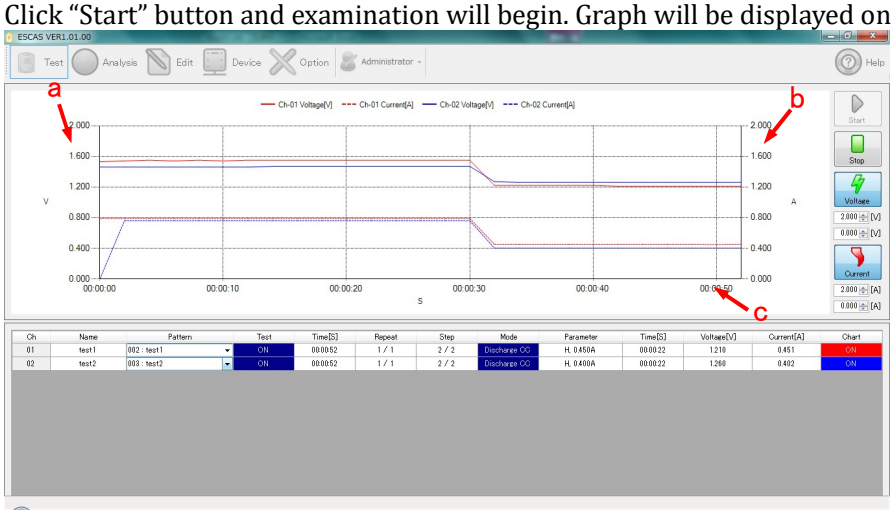
Select a pattern to be examined. The channels are displayed in the lower part of the “Examination” screen.



a. Selection of a pattern The pattern registered beforehand is chosen.

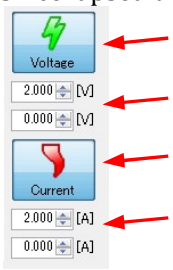
4-1-2. Start testing

Click “Start” button and examination will begin. Graph will be displayed on the screen.



a. Voltage axis Unit voltage (V)
b. Current axis Unit ampere (A)
c. Time-axis Unit Sec(s)

A graphical representation is updated for every sample time at communication test.
Since lapsed time becomes a full scale, the graph seems to be shortened with time progress.



It determines whether display or hide the voltage graph. Whenever it pushes, display or hide changes.

The numerical value of the upper / lower limit of a voltage axis is set up.

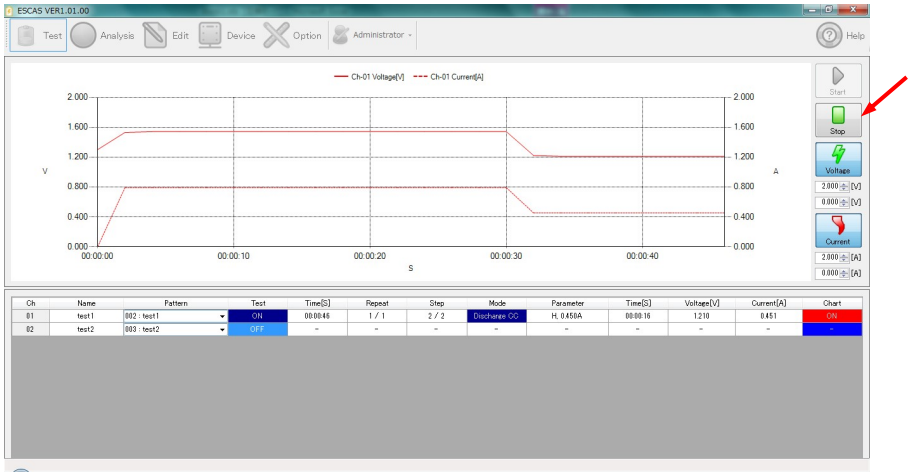
It determines whether display or hide the current graph. Whenever it pushes, display or hide changes.

The numerical value of the upper / lower limit of a current axis is set up.

4-1-3. Stop testing

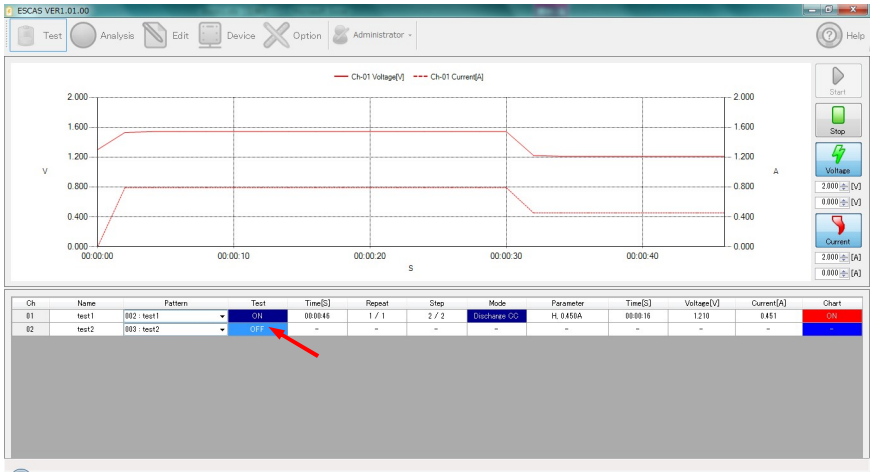
When you suspend all the examinations on the way, click "Stop" button.

All the examinations will stop irrespective of the situation of each channel.



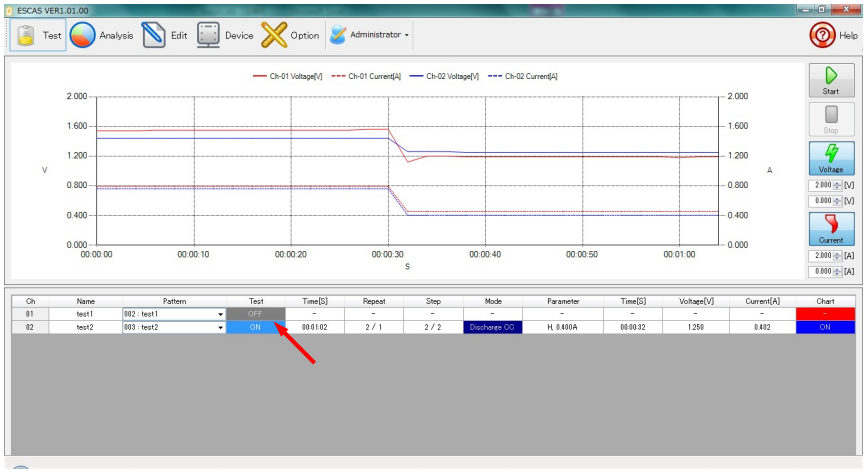
4-1-4. The end of the test

Each channel will be “OFF” when one of the “End Condition” will be met.
The examination will finish. Even all the channels become "end conditions" and are "OFF", an examination does not stop. If you want to stop examination manually, double-click “Examination” button. Please return to the idle state, press the stop test is finished.



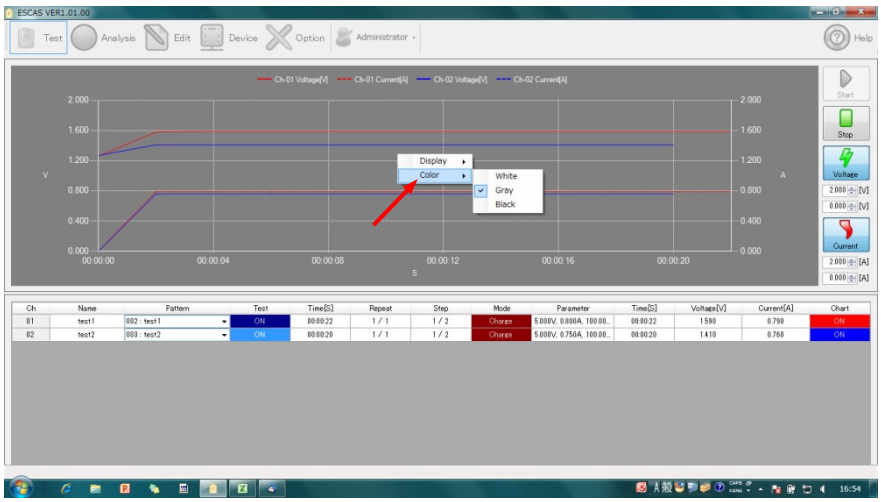
4-1-5. Testing resume

When you re-start after suspending an examination, double-click the “Test” button of the channel to start. Only the channel which is “ON” will resume an examination. If you resume testing, an examination will start from the beginning. If START icon is disabled, please reselect the pattern.



4-1-6. Graph design

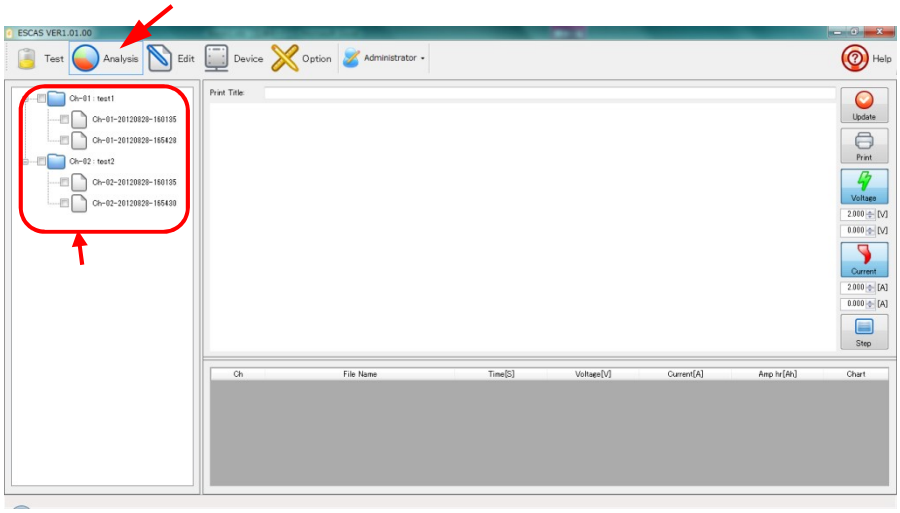
If a mouse is right-clicked on a graph, a menu will be displayed. Choose the back color of a graph from the list. A color on the back is reflected when an examination is started.



4-2. Analysis

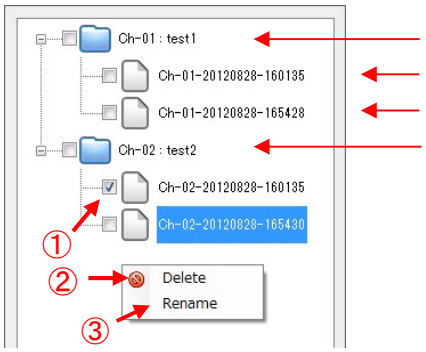
The data acquired by the examination can be checked on an analysis screen.

Click “Analysis” button and an analysis screen will be displayed.



4-2-1. Data

a. Data folder



It is a folder of channel 1 (test1).
The first test data is contained.
The second test data is contained.
It is a folder of channel 2 (test2).
A data folder is created in a channel folder.
One data folder will be created for every examination.

(1) Selection of data

Selected data is checked in the check box.

(2) Deletion of data

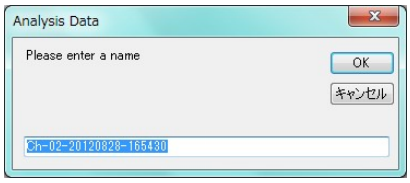
If a mouse is right-clicked within a data folder, a "Deletion" and "Change of name" mark will be displayed. Click "Deletion" mark and message “Analysis data are deleted. Is it all right?” will be appeared. Click “OK” to delete data. Click “Cancel” to cancel deletion.

* As for deletion of data, all the data in which the checked will be deleted simultaneously.

(3) Change of a name

Click the name of test data and you can change the name of data.

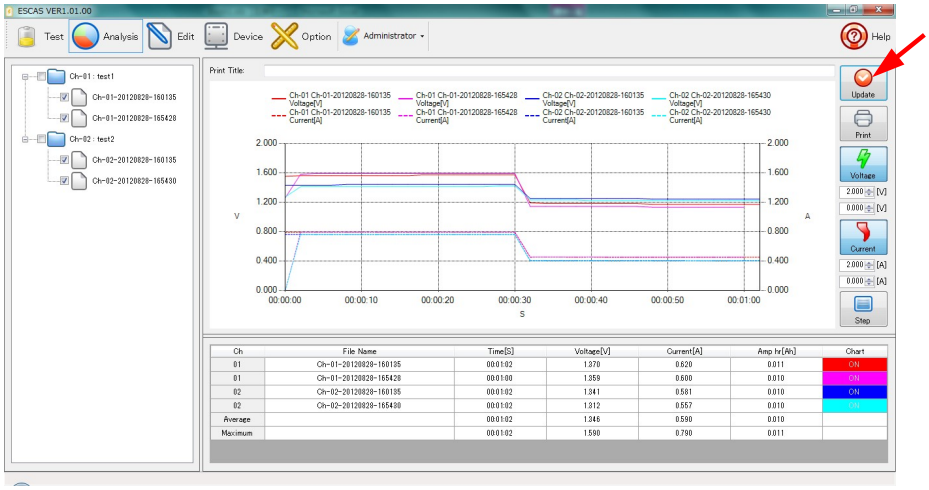
If within a data folder is right-clicked, "Deletion" and "Change of name" mark will be displayed. Click “Change of name” mark and “Inputting a name” box will be opened.



4-2-2. Graph display

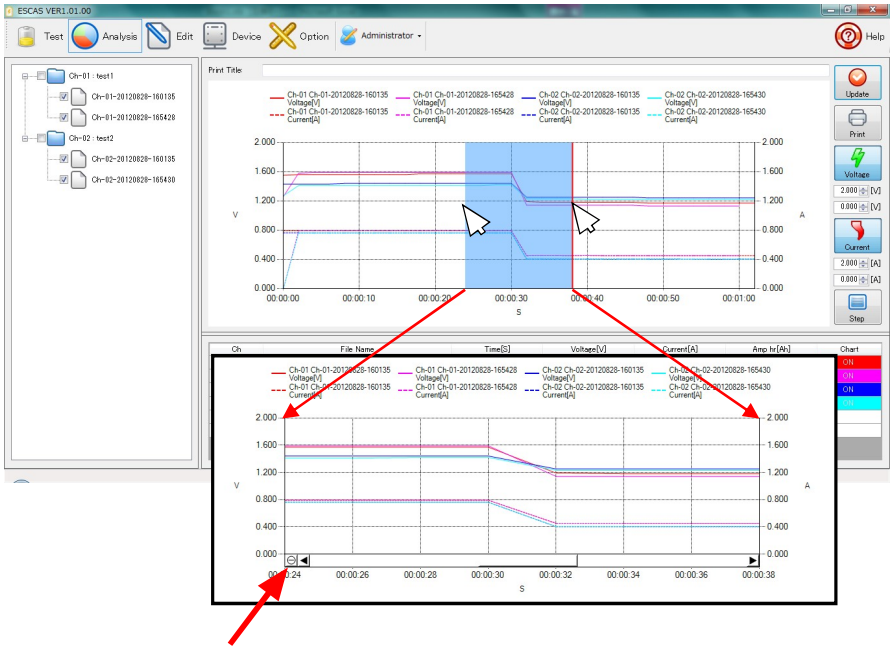
Click “Updating” button after choosing the data, a graph and data will be displayed. A graph is classified by color for every data.

* Since the graph of current is displayed in an absolute value, it becomes a plus direction irrespective of charge and discharge.



Expansion display

Click start position and drag mouse to the end position in graph, the selected area will be magnified.



Click here when you restore to the original size.

Display/Hide a graph

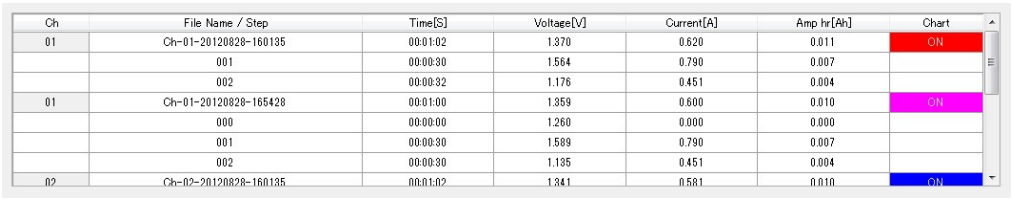
The graph of voltage can be changed to a display/hide by clicking the "Voltage" button.

The graph of current can be changed to a display / hide by clicking the "Current" button.

You can display / hide channel data by clicking “ON” or “OFF” of “Chart”. Select “OFF” and data will be hidden.

4-2-3. Test data

The test data displayed on a chart can display the data for every step by clicking the “Step” button.As for the displayed data, it is possible to scroll the display with a scroll bar.



Ch	File Name / Step	Time[S]	Voltage[V]	Current[A]	Amp hr[Ah]	Chart
01	Ch-01-20120828-160135	00:01:02	1.370	0.620	0.011	ON
	001	00:00:30	1.564	0.790	0.007	
	002	00:00:32	1.176	0.451	0.004	
01	Ch-01-20120828-165428	00:01:00	1.359	0.600	0.010	ON
	000	00:00:00	1.260	0.000	0.000	
	001	00:00:30	1.589	0.790	0.007	
	002	00:00:30	1.135	0.451	0.004	
02	Ch-02-20120828-160135	00:01:02	1.341	0.581	0.010	ON

Data file

Test data is recorded as CSV file in the folder specified.

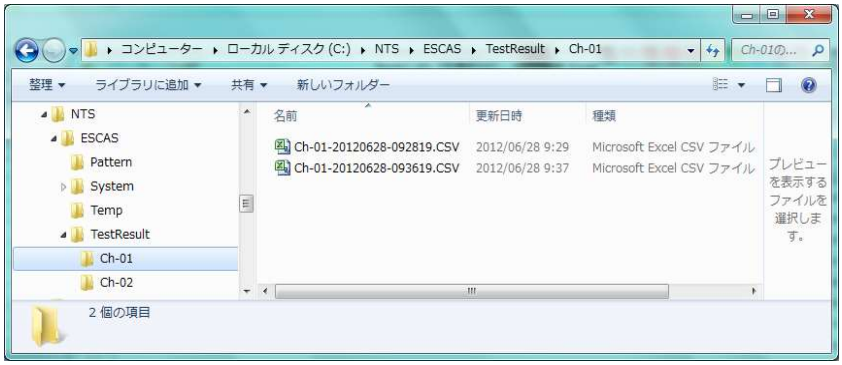
At a default, the data folder is created as following example:

“C:\GWinstek\LINKVIEW\TestResult\ch-01” for data of channel 1.

“C:\GWinstek\LINKVIEW\TestResult\ch-02” for data of channel 2, etc.

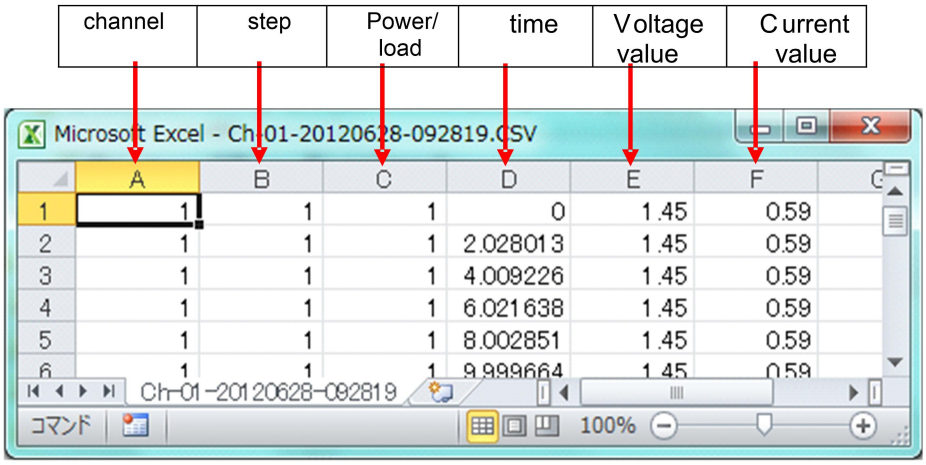
Default file name consist of the channel and time which examined.

Example: Ch-01-20120628-092819.csv = Ch-01 9:28 19 seconds on June 28, 2012



Data

Test data is recorded on a predetermined folder in the form of csv.



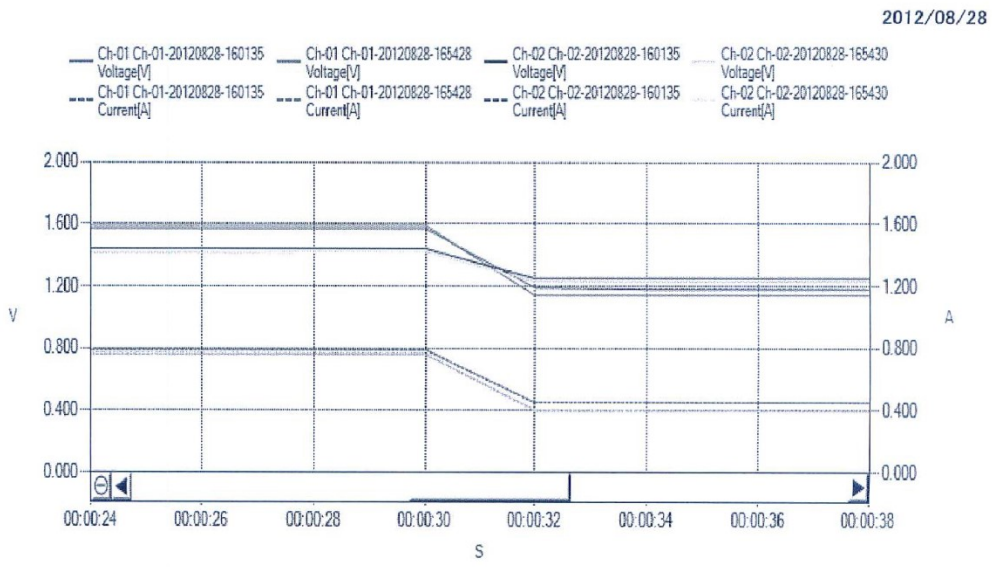
Channel	It is a channel number.
Step	It is a number of a step.
power/load	“1” refers to “Operation of power supply”, “2” refers to “Operation of electronic load”.
Time	It is the lapsed time since test starts.
Voltage value	It is a voltage value and is measured in voltage (V).
Current value	It is a current value and is measured in ampere (A).

* Since the data of a current value serves as a plus value irrespective of charge and electric discharge. Please check the data of "a power supply/load" simultaneously.

4-3. Print

The test data displayed on a chart can be printed to the printer specified by clicking “Print” button.

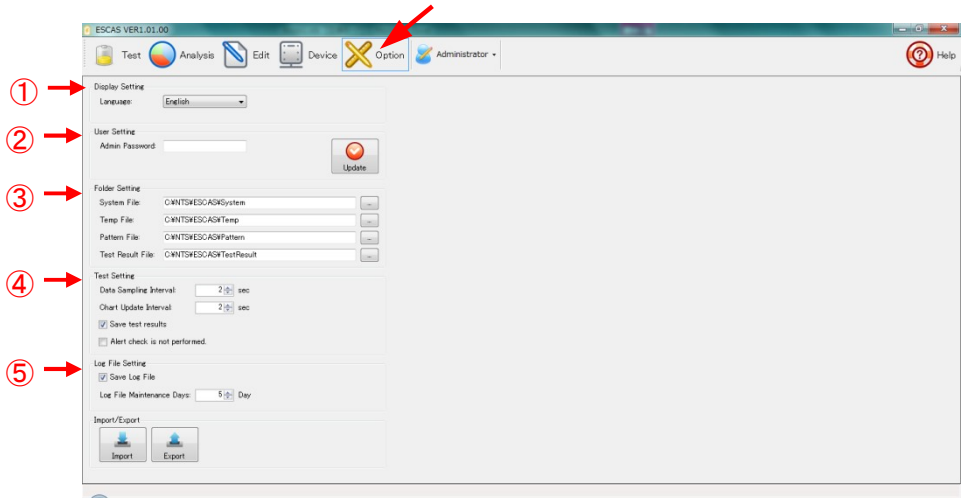
Example of printing:



Ch	File Name / Step	Time[S]	Voltage[V]	Current[A]	Amp hr[Ah]	Chart
01	Ch-01-20120828-160135	00:01:02	1.370	0.620	0.011	ON
	001	00:00:30	1.564	0.790	0.007	
	002	00:00:32	1.176	0.451	0.004	
01	Ch-01-20120828-165428	00:01:00	1.359	0.600	0.010	ON
	000	00:00:00	1.260	0.000	0.000	
	001	00:00:30	1.589	0.790	0.007	
	002	00:00:30	1.135	0.451	0.004	
02	Ch-02-20120828-160135	00:01:02	1.341	0.581	0.010	ON
	001	00:00:30	1.438	0.760	0.006	
	002	00:00:32	1.245	0.402	0.004	
02	Ch-02-20120828-165430	00:01:02	1.312	0.557	0.010	ON
	000	00:00:00	1.270	0.000	0.000	
	001	00:00:30	1.411	0.760	0.006	
	002	00:00:32	1.223	0.402	0.004	
Average		00:01:02	1.346	0.590	0.010	
Maxim		00:01:02	1.590	0.790	0.011	

4-4. Option

The environment of "LINKVIEW" is set up.
Click "Option" button and “Option screen” will be displayed.



(1) Display setting

Language:

You can select language from “Japanese”, “English”, “Chinese (Traditional)” or “Chinese (Simplified)”.

(2) User setting

The "LINKVIEW" user can be select from “Administrator” or “Operator”. If you select “Operator”, only “Examination” and “Analysis” can be selected. If you select “Administrator”, you can operate all

operations. “Password” will be asked when you change from “Operator” to “Administrator”.

(3) Folder setting

The folder of a "system file", "temporary file", "pattern file" and "test result file" can be set up. In a default, [C:\GWINSTEK\LINKVIEW\].

(4) Test setting

・”Data sampling interval" and "Renewal interval of a chart" can be set up.

* It cannot be set shorter than the “Sampling time” measured by the “Communication test”.

・A test result can be saved if "Preservation of a test result" is checked.

・When “Alert check is not performed” is checked, examination will be continued even alarm occurs.

(5) Log file setting

・When “Save Log File” is checked, the state of equipment of examination will be saved.

・The log file will be deleted when the file elapsed days will be over “Log file Maintenance Days”. The default setting is 5 days.

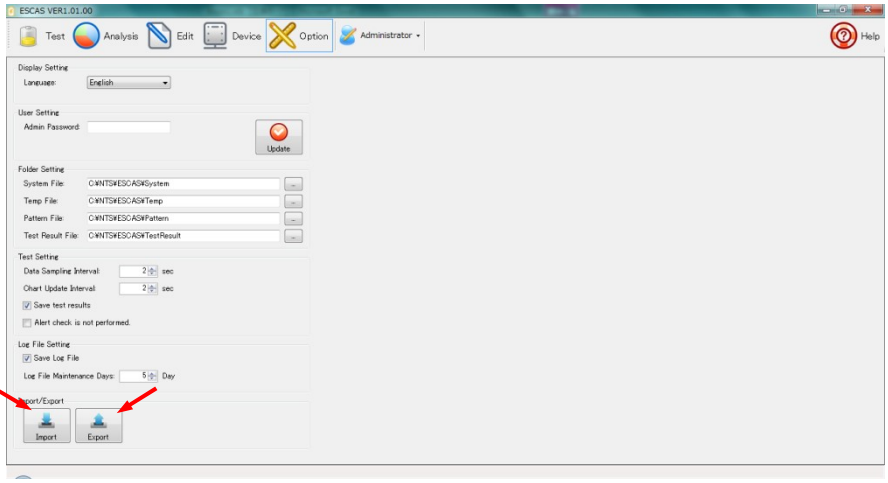
・The Log File are recorded in a folder of “system file” folder.

* When the contents of the option are changed, please push "Updating" button.

* Please note that it may not work properly when the interval and maintenance is blank.

(6) Import/Export

Edited pattern can be saved to specified folder (Export). The saved data can be read also (Import). Moreover, the saved pattern can also be read and carried out. One file name can saved all data in pattern table.



a.Click “Export” button to save patterns.

Since a conservative field place is displayed, input file name and click "OK."

The subfolder named with current date and time is created and required files are saved.

b.Click “Import” button to read patterns.

Select folder which is created by “Export” and click "OK".

5. Notes of each model

5-1. PSB 2000 series

When used with the RS-232C, please system address (SyAd) set to 1

5-2. PSU series

PSU series connection does not support RS-485. Please use the address of the initial value of 6 when using the RS-232C.

5-5. For use in only power supply.

Measurement data can’t be retrieved at the sleep.

GW INSTEK

Simply Reliable