TEXIO
Test and Measurement Solutions

INSTRUCTION MANUAL

ESCAS（S-PL20）
Control software for Power system

Ver2.11

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 ESCAS.
Sequence pattern can be created for maximum 12 Channels.

(2) Compatible models

Power Supply

Series	GP-IB	USB	RS-232C
PS-A Series	IF-70GU	IF-70GU	IF-70RS / IF-71RS
PSF Series	IF-60GP	IF-60RU	IF-60RU
PU Series	PU +VG Option	-	Standard
PDS-A Series	IF-70GU	IF-70GU / IF-71LU	IF-71RS
PSW Series	GUG-001	Standard(CDC)	GUR-001
PFR Series	GTL-258	Standard(CDC)	GTL-259
PSU Series	PSU +VG Option	Standard(CDC)	GTL-259

Electronic Load

Series	GP-IB	USB	RS-232C
LSA Series	IF-80GUR	IF-80GUR	IF-80GUR
LW Series	IF-50GP	IF-50USB	-
LSG Series	PEL-004	Standard(CDC)	Standard
PEL-2000 Series	PEL-001	Standard(CDC)	Standard

(3) OS

It can be used by Windows after Windows10.

(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	Windows standard (USB2.0 correspondence). API and the USB driver of our offer are required.

(5)Supplied files

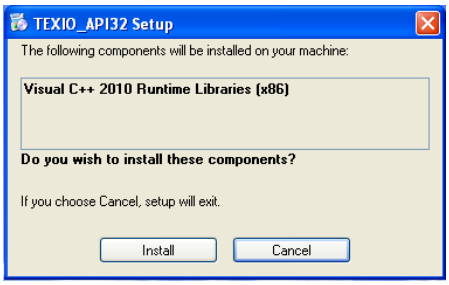
The contents of the enclosed disk are as follows:

[Folder]	[Contents]
¥ESCAS2	The folder for ESCAS setup
¥ESCAS2¥DotNetFX48	The library 1 for a setup
¥API	The access library for OS
¥USB_Driver	The USB driver for OS
¥USB-CDC	The USB-CDC driver for OS

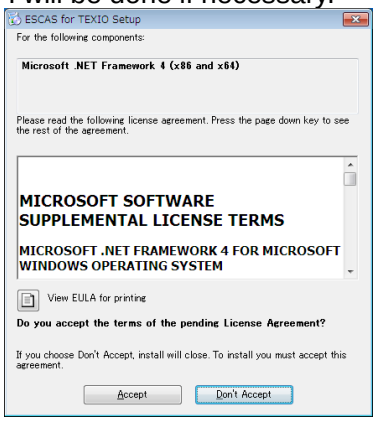
2. Install

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

(2) Install API in attached CD.(for PS-A,PDS-A,PSF,LSA,LW)
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 Client Profile and
Visual C ++ Redistributable Package on the way I will be done if necessary.



Visual C++ 2010 Redistributable Package



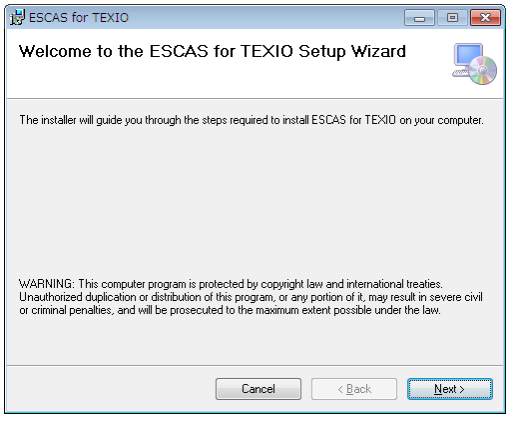
.NETFramework4 install

(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 CD.
for PS-A,PDS-A,PSF, LSA,LW
Please install the setup USB driver in the USB_Driver folder of the CD.
Run setup32.exe of USB driver folder.(for 64bit OS:setup64.exe)
Setup Wizard will open, please proceed with the installation after checking the contents displayed.
For PSW,PFR,PSU,LSG
Please install the setup USB driver in the USB_CDC folder of the CD.

(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 ESCAS, select "Run as administrator".
Please follow the instructions to proceed with the setup wizard will start.



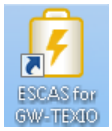
(7) Completing the Installation.

The desktop shortcut of "ESCAS for TEXIO" will be created when the installation is complete.

3. Setup ESCAS

3-1. Start-up

Double-click "ESCAS for GW-TEXIO" icon on the disk top. ESCAS will start.



ESCAS starts and “Test” screen is displayed.

3-2. Device settings

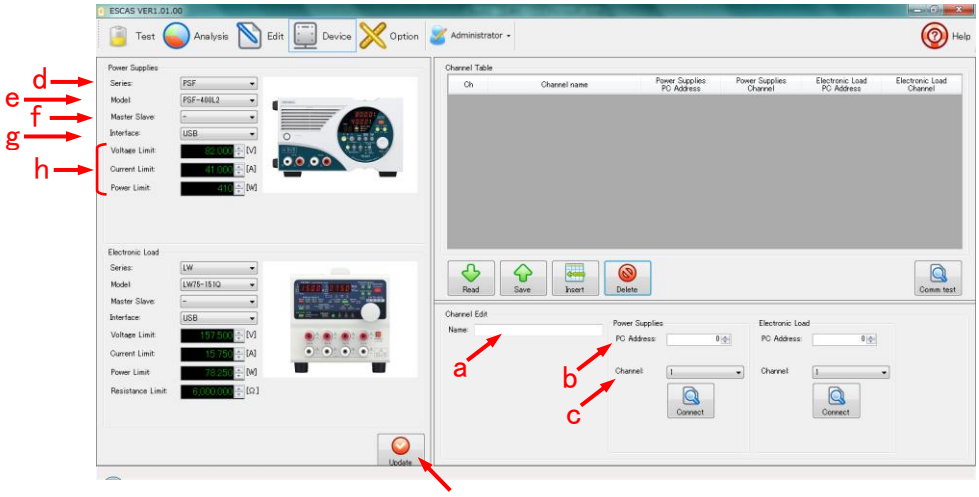
Click "Device" button on a tool bar to set up the equipment to examine.



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.

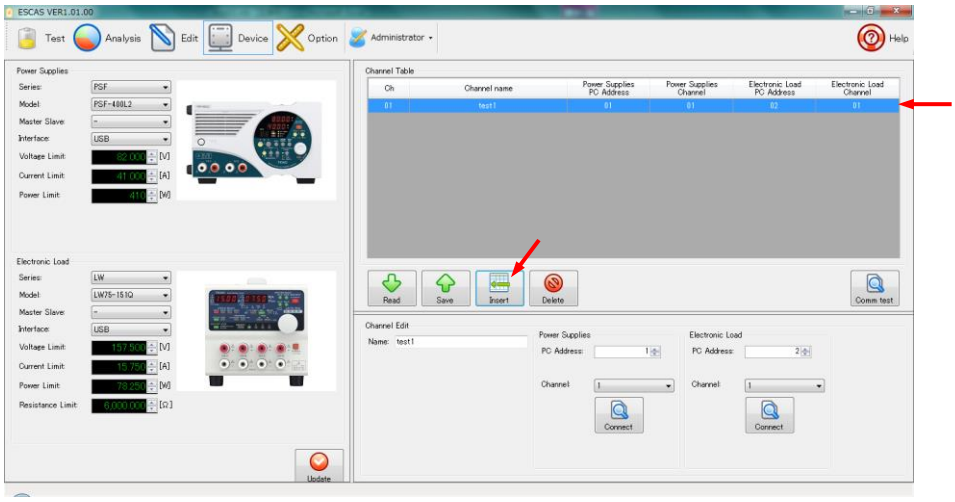


Set up PC address of equipment which will be examined and a channel of Power Supply or Electronic Load.

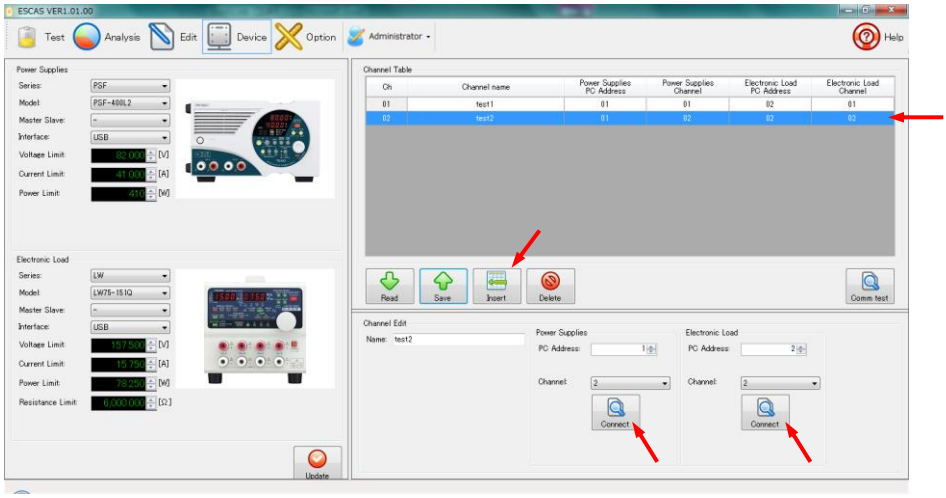
a. Name.	Name for each “Channel”.(Example: “The battery A”, “The battery B”)
b. PC address	Set up PC address of equipment. Or comport No.
c. Channel	Set channel number if Power Supply/Electronic Load to be used have two or more.
d. Series to be used.	Set up the series name of Power Supply/Electronic 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.

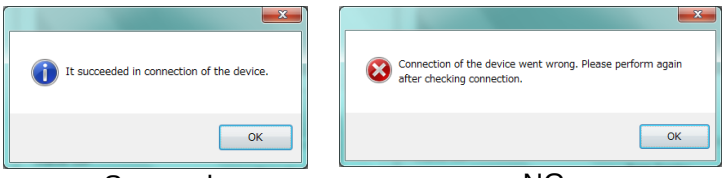
When setup of name, PC address and channel finishes, click "Insert" button.
The set-up contents are inserted in a channel table.



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.

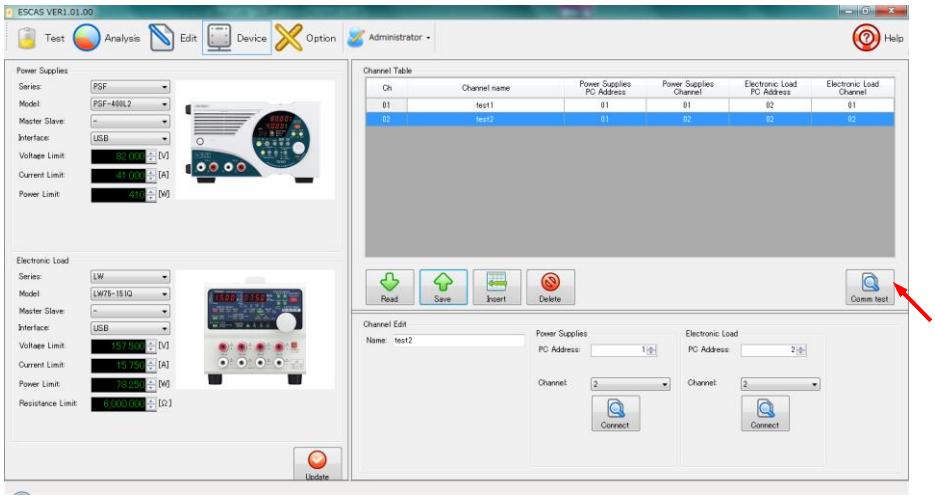


Succeed NG

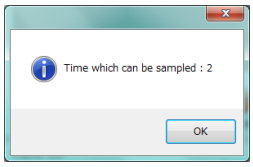
If the connection was disconntct during the test bus is unstable connection, you may need to restart the application. Please restart because the application is terminated.

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

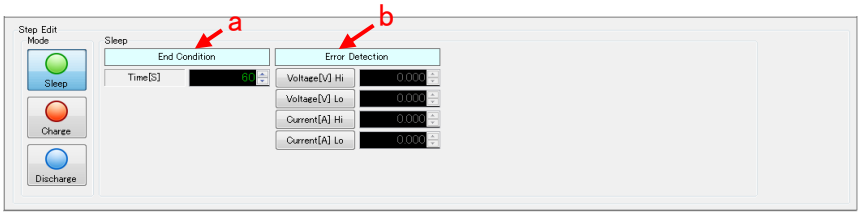
Examination pattern are created. Click “Edit” button in the tool bar.

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

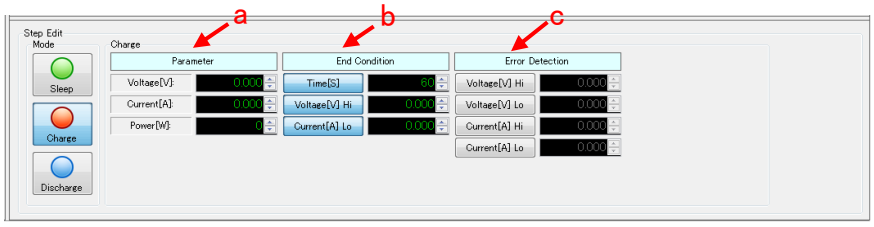


a. End Condition	Set pausing time.
b. Error Detection	Error will occur when setting maximum/minimum voltage or current is detected.

(2) Charge

Setup the power supply.

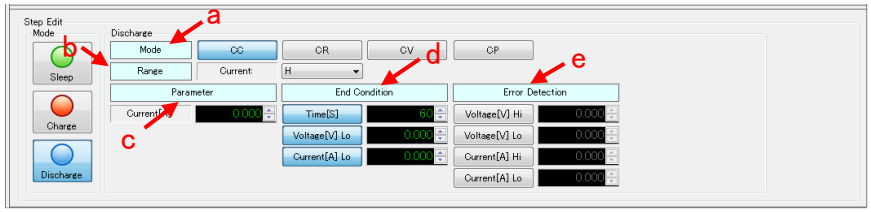
(This setting will be available when PSF-400L2 is used.)



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

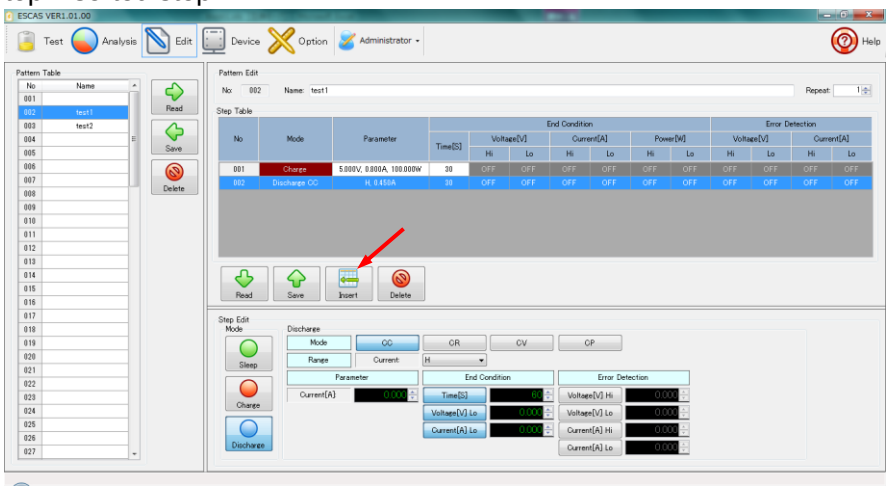
Setup the electronic load (Example: LSA-165). Setting parameter are depends on the model.



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.

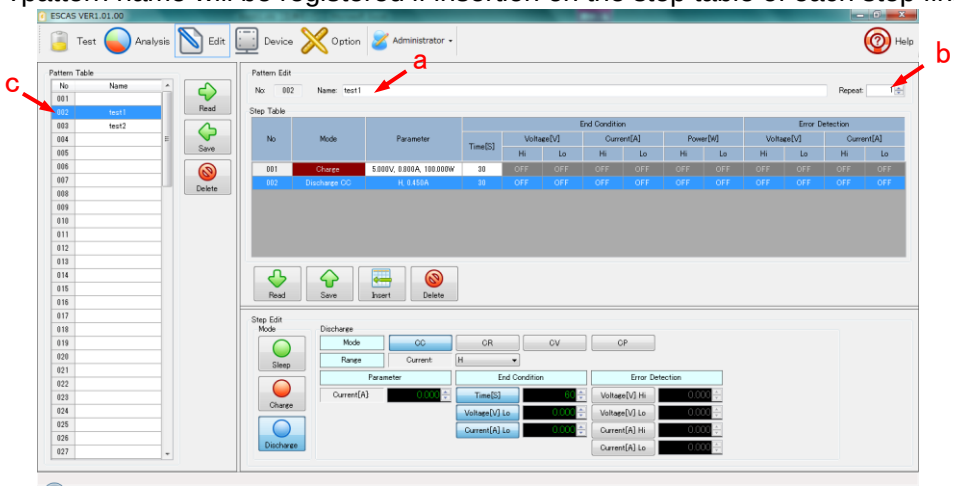
3-3-2. Step insertion into the table

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.

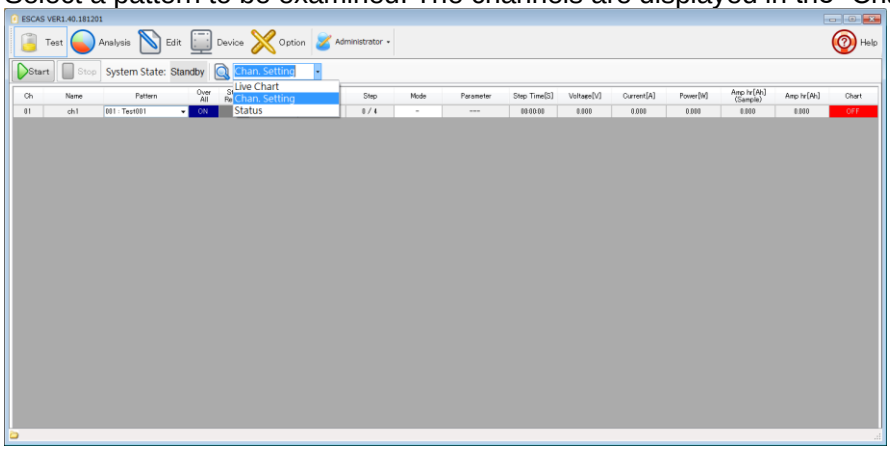
4. Executing of ESCAS

4-1. Testing

A channel is examined by the set-up pattern.

4-1-1. Pattern selection

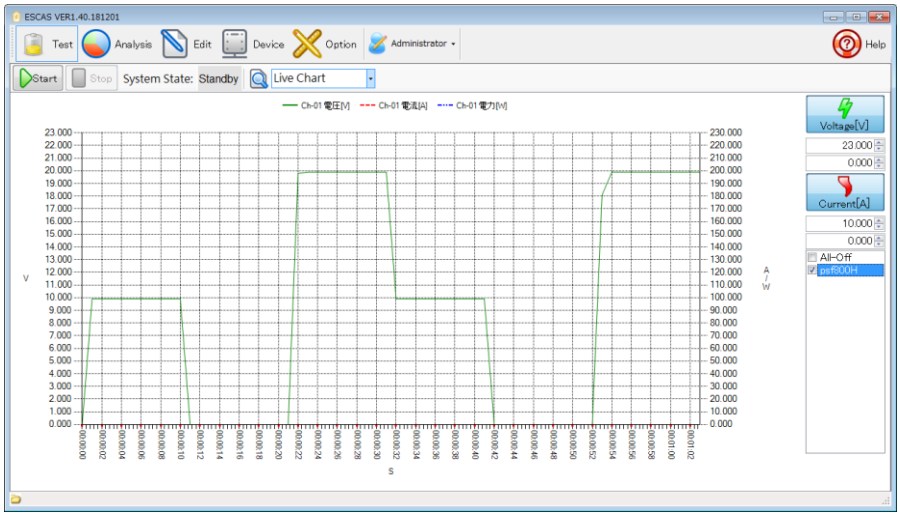
Select a pattern to be examined. The channels are displayed in the “Chan.Setting” .



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

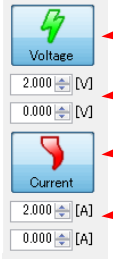
4-1-2. Start testing

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



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

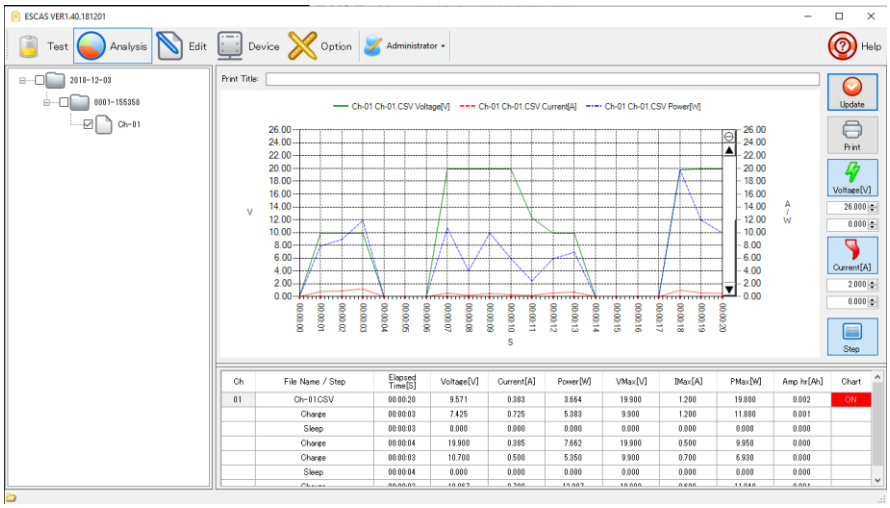
Each channel will be “OFF” when one of the “End Condition” will be met.
The examination will finish. Even all the channels become "end conditions" and are "OFF", an examination does not stop. If you want to stop examination manually, double-click “Examination” button. Please return to the idle state,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

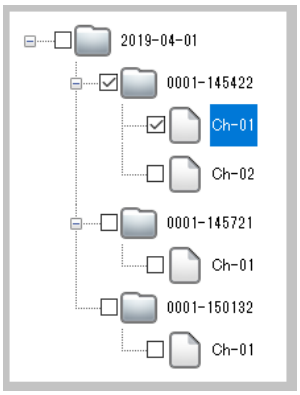
4-2. Analysis

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



When you conduct an exam, a folder is created for each exam date, and a subfolder is created for each exam. The subfolders are Number-Time names.

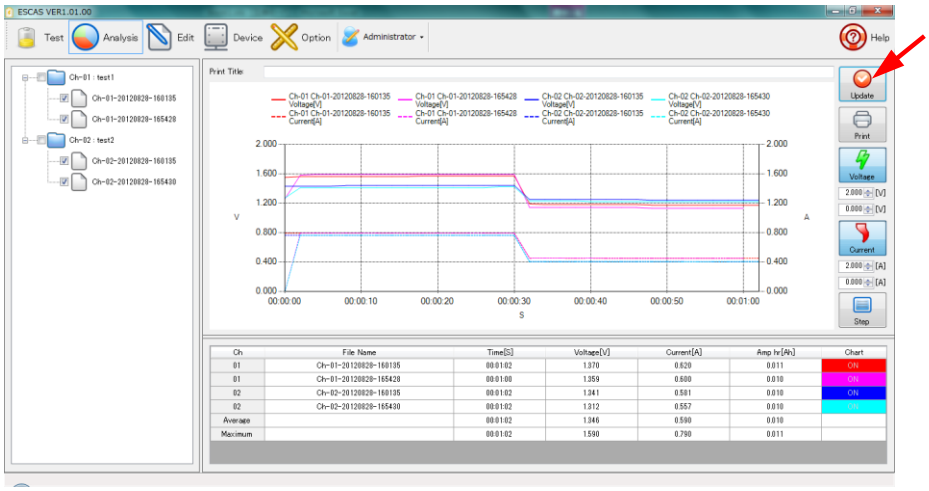
A CSV file for each channel is created in the subfolder for each TEST.
To display a graph, check the file for each channel and select it, and then click the "Update" icon.

Also, if you double-click the file for each channel, the associated application will display the CSV file.

4-2-2. Graph display

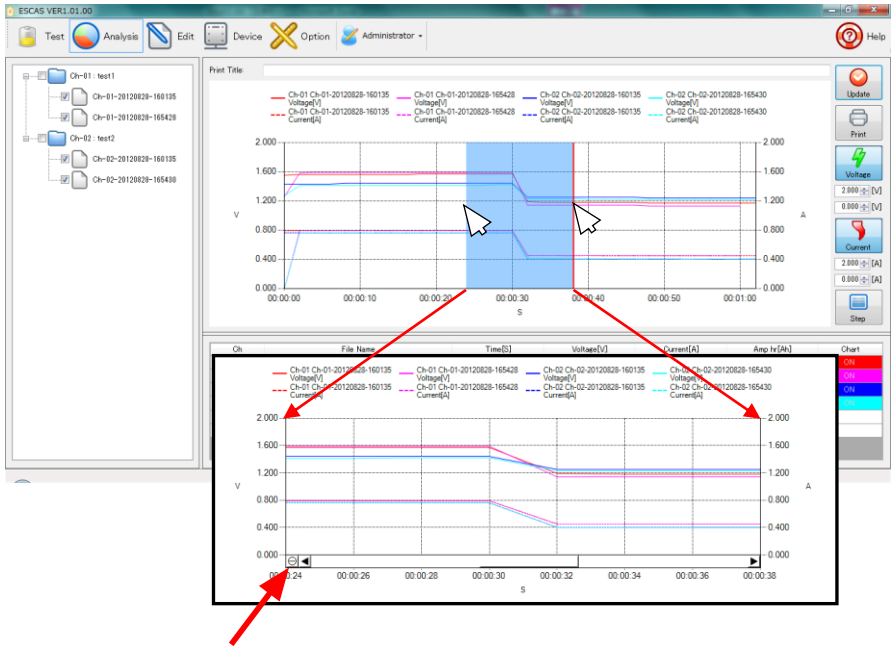
Click “Updating” button after choosing the data, a graph and data will be displayed. A graph is classified by color for every data.

* 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.



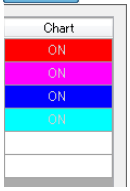
Click here when you restore to the original size.

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	Elapsed Time[S]	Voltage[V]	Current[A]	Power[W]	VMax[V]	IMax[A]	PMax[W]	Amp hr[Ah]	Chart
01	Ch-01.CSV	00:00:20	9.571	0.383	3.664	19.900	1.200	19.800	0.002	ON
	Charge	00:00:03	7.425	0.725	5.383	9.900	1.200	11.880	0.001	
	Sleep	00:00:03	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Charge	00:00:04	19.900	0.385	7.662	19.900	0.500	9.950	0.000	
	Charge	00:00:03	10.700	0.500	5.350	9.900	0.700	6.930	0.000	
	Sleep	00:00:04	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

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:¥TEXIO¥ESCAS2¥TestResult¥ch-01” for data of channel 1.

“C:¥TEXIO¥ESCAS2¥TestResult¥ch-02” for data of channel 2, etc.

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

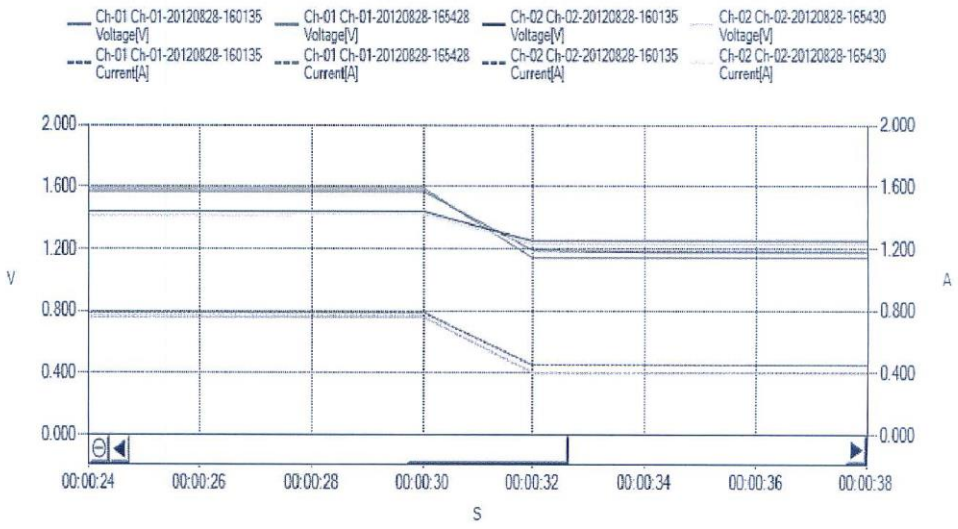
4-3. Print



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

Example of printing:

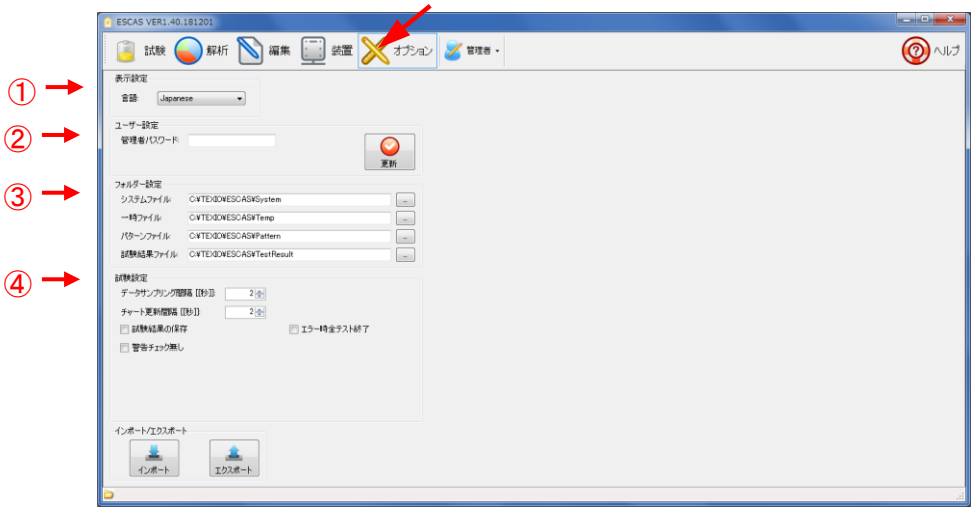
2012/08/28



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 "ESCAS" is set up.
Click "Option" button and “Option screen” will be displayed.



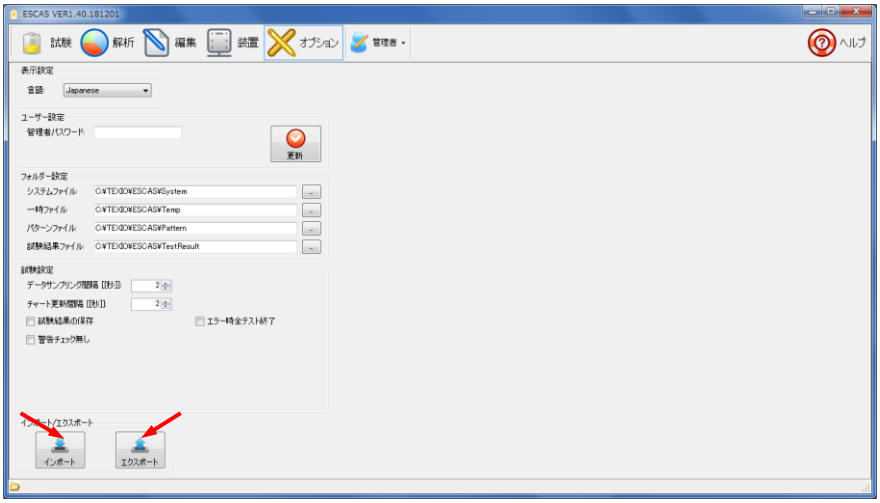
(1) Display setting
Language:
You can select language from “Japanese”, “English”, “Chinese (Traditional)” or “Chinese (Simplified)”.

(2) User setting
The "ESCAS" 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:¥TEXIO¥ESCAS2¥].

(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.
・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.

(5) 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".
Import and export files are not compatible with files before Ver1.40, so please be careful.

4-5. Help

Click on the help icon in the upper right of the window to display the PDF format instruction manual. It is necessary to install and associate the application which displays PDF beforehand. (In the previous version, we adopted Windows Help format, but it was changed to PDF format as the support in OS was over.)

5. Notes of each model

5-1. PSF series

When used with the RS-232C, please system address (SyAd) set to 1,and PC address(PcAd) set to 3.

5-2. PU series

PU series connection does not support RS-485. Please use the address of the initial value of 6 when using the RS-232C. Please set RS-232C baudrate to 9600bps.

5-3. PS-A / PDS-A series

When used with the RS-232C, please system address (SyAd) set to 1, and Mode set to PSA mode.

5-4. LW series.

LW series can't be used to change the short mode and multi-channel load during the test. Please note that the specification will be ignored.

5-5. PSW / PFR / PSU series

Please set according to the instruction manual and enable the interface to use. USB is connected by USB-CDC(virtual COM). Be careful not to conflict with the standard COM port. Also, the port must be correctly recognized by the device manager, Depend on the state of the PC, installation of the USB device driver is necessary.
Please set RS-232C baudrate to 57600bps.

5-6. LSG / PEL-2000 series

Please set according to the instruction manual and enable the interface to use. USB is connected by USB-CDC(virtual COM). Be careful not to conflict with the standard COM port. Also, the port must be correctly recognized by the device manager, Depend on the state of the PC, installation of the USB device driver is necessary.
Please set RS-232C baudrate to 38400bps.

5-7. PSF / PS-A / PDS-A / LW / LSA series

When connecting the power supply and electronic load with the same interface of USB or GP-IB, please allocate PC addresses(PcAd) so that they do not overlap. In the case of USB, installation of the USB device driver and API is required.

5-8. For use in only power supply.

Measurement data can't be retrieved at the sleep.

5-9. About switching time

Wait may be forcibly inserted by switching mode etc.
Please note that the total test time will be longer than the setting.
Also, since it is controlled every data sampling interval, if there are many channels, errors may occur in the step time.

5-10. Device-specific functions

Turn off the sequence function, the program function, the test function, the switching function, the dynamic mode ,etc. before connecting.

TEXIO

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