



HIOKI BT5525 Sample Application Instructions

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HIOKI

HIOKI BT5525 Sample Application



Product Information

Product Name: BT5525 Sample Application
Manual Revision: 02

Overview:

- Setting for BT5525
- Display of measured values (measurement or update of measured values at specified time intervals)
- Backup and Restoration of the instrument's settings
- Sending and receiving communication commands
- Displaying and saving monitor data
- Displaying and saving BDD data

System Requirements

- **CPU:** 1 GHz or greater
- **Memory:** 512 MB or more
- **OS:** Windows10, Windows11
- **Microsoft .NET Framework 6.0**
- **Interface:** USB 2.0 (virtual COM port), LAN
- **Monitor resolution:** 1024 x 768 dots or greater
- **Hard disk:** 5 MB free space or more (However, if .NET Framework 6.0 is not installed, approximately 2.5 GB is required separately)

Product Usage Instructions

Installing the application

1. Double-click setup_BT5525 Sample Application.exe.

2. The installer screen will appear.
3. Click Next every time when it appears.
4. The installation will begin. A shortcut icon will be created on the desktop when the installation is complete.

Uninstalling the application (Windows10, 11)

The application can be uninstalled by opening the Windows Setting and choosing Apps.

Connecting the instrument to your computer

- **Connecting the instrument via USB:**
 - Works with standard Windows drivers.
- **Connecting the instrument via LAN:**
 - You'll need a LAN cross cable.

Launching and connecting to the application

1. Double-click the application's shortcut on the desktop. The measurement screen will be displayed.
2. Select the Function and Interface then click [Connect].
3. If you get an error message like the one on the right, please make sure that you are using the correct IP address and port. Also, the port may be used by other applications.

Application interface

This application will force the following settings upon connection. When the application is closed, the following settings will be restored to the original settings at the time of connection. If it does not exit successfully or cannot communicate on exit, the settings remain as follows:

- Response of measured value and status
- **Measure:** VALid 255
- Command monitor OFF
- Automatic data output setting OFF

Selecting the delimiter character for text (CSV) files

This application has the ability to save data to a text (CSV) file. You can set the separator used for data delimitation from the menu. Please set the separator according to your environment:

- Comma (,) separator
- Semicolon (;) separator

Insulation Resistance Test

Operate this instrument from the application to perform an insulation resistance test.

Overview of Main Screen

When this application is launched, it synchronizes with the settings of the instrument. When you change the settings on the screen, the settings on the instrument will automatically change as well. Please note that if you change the settings from the instrument, the settings on the screen will not be reflected. You can set up and check the instrument. Displays the measured value. Displays measurement results. Interval Measurement Records test results at each set time interval.

Overview

BT5525 Sample Application (this application) can perform the following operations on the BT5525:

- Setting for BT5525
- Display of measured values (measurement or update of measured values at specified time intervals)
- Backup and Restoration of the instrument's settings
- Sending and receiving communication commands
- Displaying and saving monitor data
- Displaying and saving BDD data

System requirements

- **CPU:** 1 GHz or greater
- **Memory:** 512 MB or more
- **OS:** Windows10, Windows11
- **Microsoft .NET Framework 6.0**
- **Interface:** USB 2.0 (virtual COM port), LAN
- **Monitor resolution:** 1024 x 768 dots or greater
- **Hard disk:** 5 MB free space or more (However, if .NET Framework 6.0 is not installed, approximately 2.5 GB is required separately)

Installing the application

1. Double-click "setup_BT5525 Sample Application.exe".
2. The installer screen will appear.
3. Click Next every time when it appears.
4. Installation will begin. When the installation is complete, a shortcut icon will be created on the desktop.

Uninstalling the application

Windows10, 11

The application can be uninstalled by opening the Windows Setting, choosing Apps.

Connecting the instrument to your computer

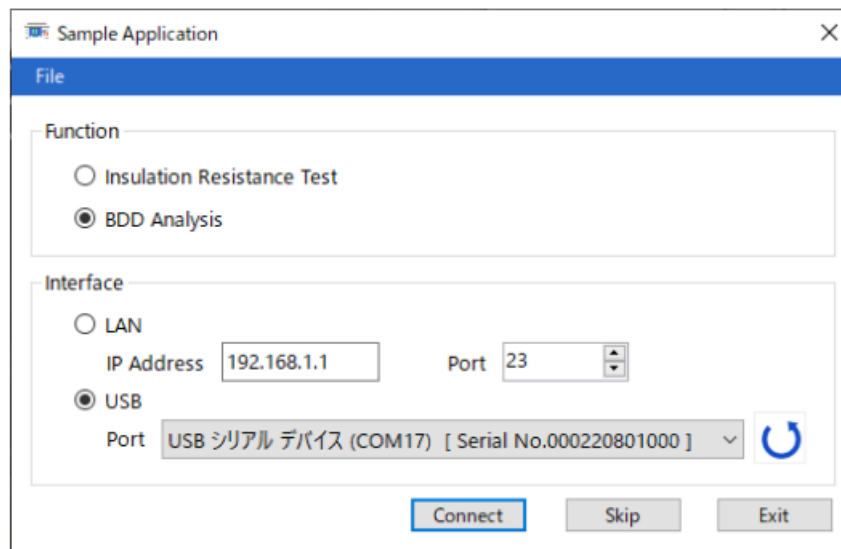
Connecting the instrument via USB Works with standard Windows drivers.

Connecting the instrument via LAN You'll need a LAN cross cable.

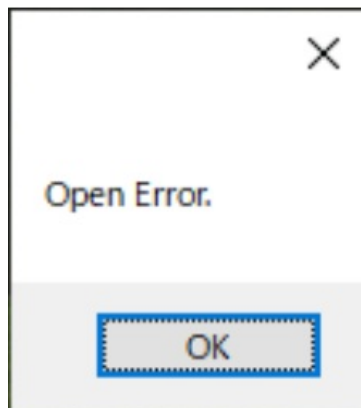


Launching and connecting to the application

1. Double-click the application's shortcut on the desktop. The measurement screen will be displayed.
2. Select the Function and Interface then click [Connect].



3. If you get an error message like the one on the right, please make sure that you are using the correct IP address and port. Also, the port may be used by other applications.



Application interface

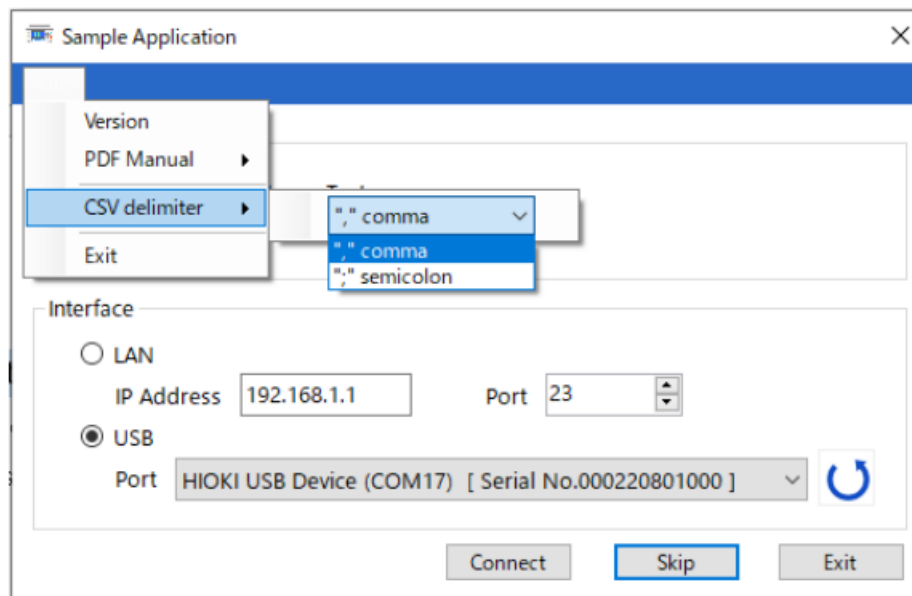
This application will force the following settings upon connection. When the application is closed, the following settings will be restored to the original settings at the time of connection.

If it does not exit successfully or cannot communicate on exit, the settings remain as follows.

- Response of measured value and status. :MEASure:VALid 255
- Command monitor OFF.
- Automatic data output setting OFF.

Selecting the delimiter character for text (CSV) files

- This application has the ability to save data to a text (CSV) file
- You can set the separator used for data delimitation from the menu. Please set the separator according to your environment.
 - Comma (",") separator
 - Semicolon (";") separator

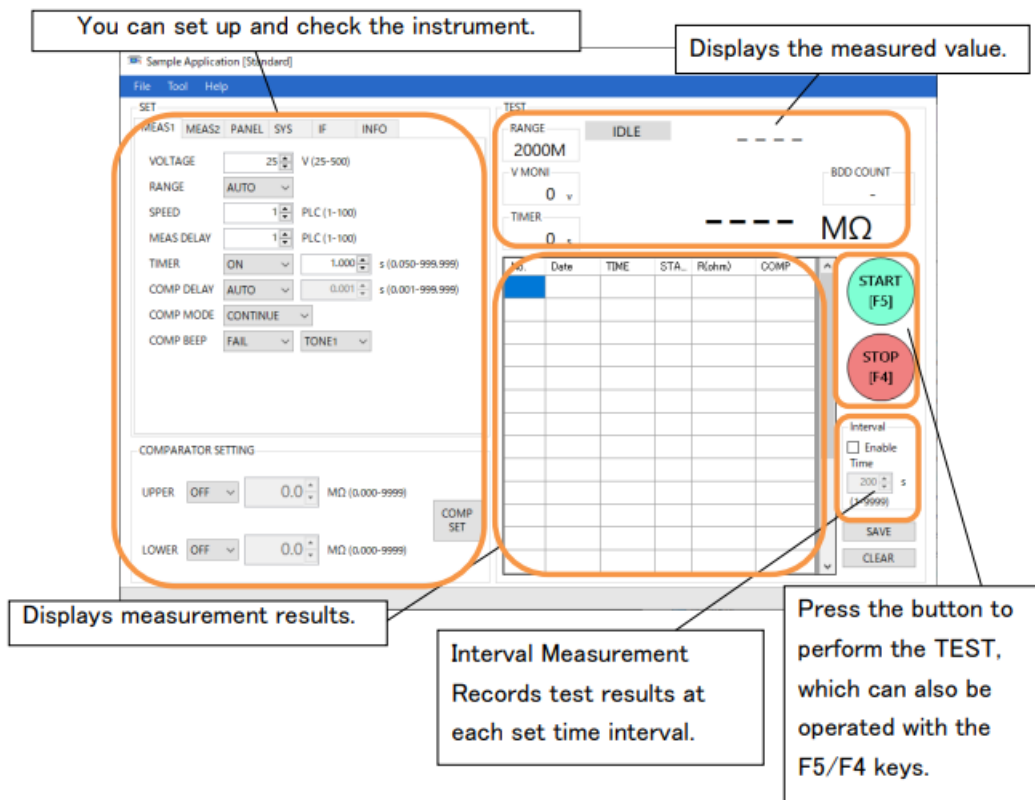


Insulation Resistance Test

Operate this instrument from the application to perform an insulation resistance test.

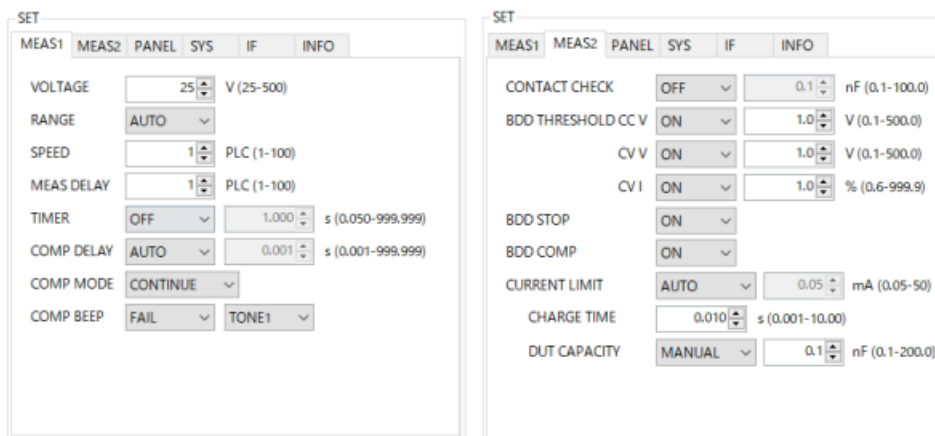
Overview of Main Screen

- When this application is launched, it synchronizes with the settings of the instrument.
- When you change the settings on the screen, the settings on the instrument will automatically change as well.
Please note that if you change the settings from the instrument, the settings on the screen will not be reflected.



MEAS1 MEAS2

All test settings that can be configured on the instrument can be changed.



COMPARATOR SETTING



PANEL

- Saves the settings to the specified panel number. If panel data already exists, it is overwritten.
- Loads the settings for the specified panel number.
- Renames the specified panel number. (Max. 10 single-byte alphanumeric characters)
- Deletes the setting of the specified panel number.

SYS, IF

- [RESET] : The settings of the instrument other than the communication settings and panel are initialized.
- LAN: To change the LAN settings, press [Reflect]. The instrument's LAN settings will not be changed until [Reflect] is pressed; if a LAN connection has been made, it will be reconnected.
- Some functions cannot be set from the application.

INFO

Information on this instrument can be checked.

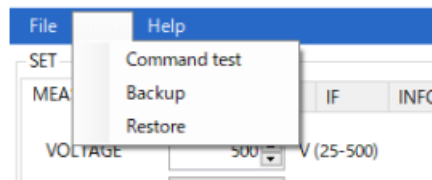
- Obtains error information from the instrument. For details on various errors, refer to the ":SYSTEM:ERROR?" command page in the instrument's instruction manual.

Various Tools

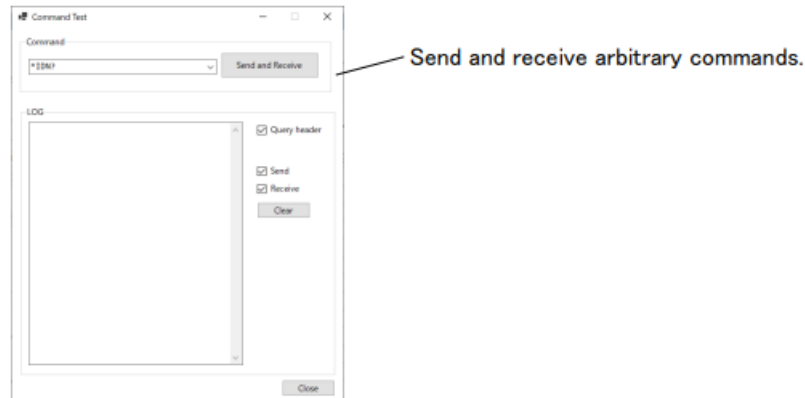
The following windows open from [Tool] on the top toolbar.

When the window is closed, it returns to the original screen.

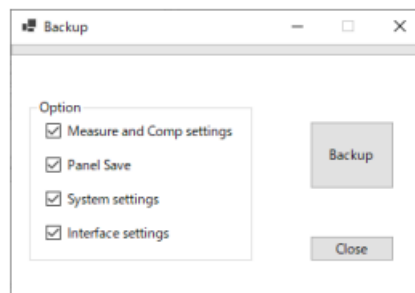
The instrument will be synchronized with the instrument at that time.



Command test

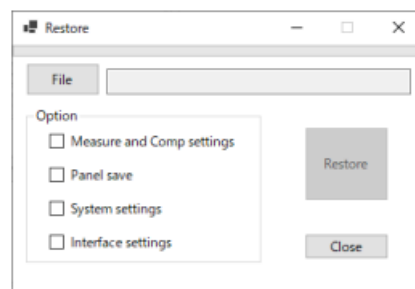


Backup



- Backs up the instrument's settings and saves a dedicated settings file.
- Check the items to be backed up and click [Backup] to open the folder selection screen.
- When "Complete Backup" is displayed, the backup is complete. If multiple PANELs are set up, it may take some time.

Restore



- Restore the instrument's settings from the dedicated settings file created by the above backup.
- Press [File] and select the backup file from the folder.
- Press [Restore] to execute the restoration, which is complete when "Complete Restore" is displayed. If multiple PANELs are set up, it may take some time.

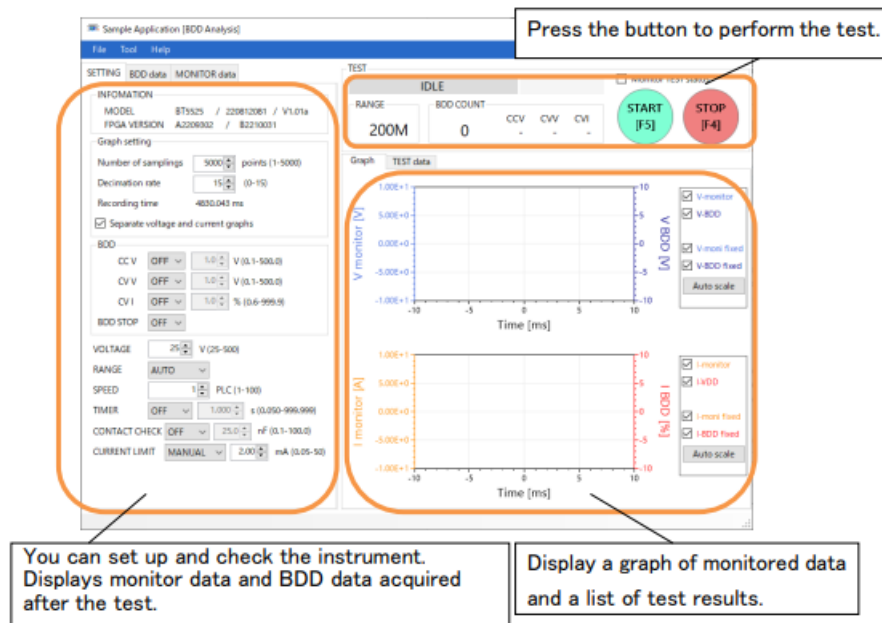
BDD Analysis

An insulation resistance test is performed, and when the test stops, monitor voltage and current values (reference values) from the start of the test are acquired, displayed on the data grid, and waveforms are displayed on the graph.

Waveform data can be saved as CSV. (Note that this is different from the actual detection waveform of the BDD function.)

Overview of Main Screen

- When this application is launched, it synchronizes with the settings of this instrument.
- When the screen settings are changed, the settings of this unit are automatically changed as well.



SETTING

Graph setting

Graph setting		
Number of samplings	500	(1-5000)
Decimation rate	1	(0-15)
Recording time	60.376 ms	
<input checked="" type="checkbox"/> Separate voltage and current graphs		

- Sets the number of waveforms sampled.
- Sets the degree to which sampled waveforms are thinned out. Larger values result in lower resolution, but allow acquisition of waveforms of longer duration.
- The recording time with the above settings is shown.
- If checked, the voltage and current graphs are displayed separately.

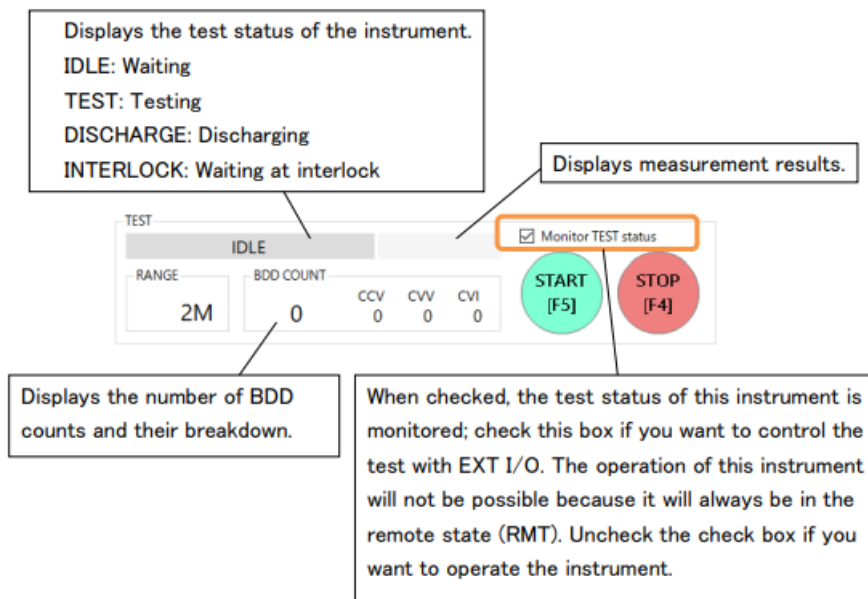
BDD setting

BDD		
CC V	OFF	1.0 V (0.1-500.0)
CV V	OFF	1.0 V (0.1-500.0)
CV I	OFF	1.0 % (0.6-999.9)
BDD STOP	OFF	

Enable BDD setting, set threshold

- CCV: Detects V in CC (charging) state
- CVV: Detects V in CV (steady) state
- CVI: Detects I in CV (steady) state
- When turned ON, the test is stopped when the BDD count reaches 1 or more.

TEST



BDD data / MONITOR data

SETTING BDD data MONITOR data		
SAVE		
Time[ms]	Vmoni[V]	Imoni[A]
0.12	6.464	0.003461
0.241	14	0.003461
0.362	21.24	0.003461
0.483	28.48	0.003461
0.603	35.71	0.003461
0.724	42.95	0.003461
0.845	50.21	0.003461
0.966	57.45	0.003461
1.086	64.7	0.003461

- After the test STOP, it is read from the instrument and the display is updated.
- It can be saved as CSV by [SAVE].
- Vmoni and Imoni are reference values.
- BDD data displays the result when BDD COUNT is 1 or more, and the unit of BDD value is [V] when Type is CCV or CVV, and [%] when CVI.

Note that the % of CVI is a percentage of BT5525's own reference value and cannot be converted to a current value.

Graph / TEST data

Graph

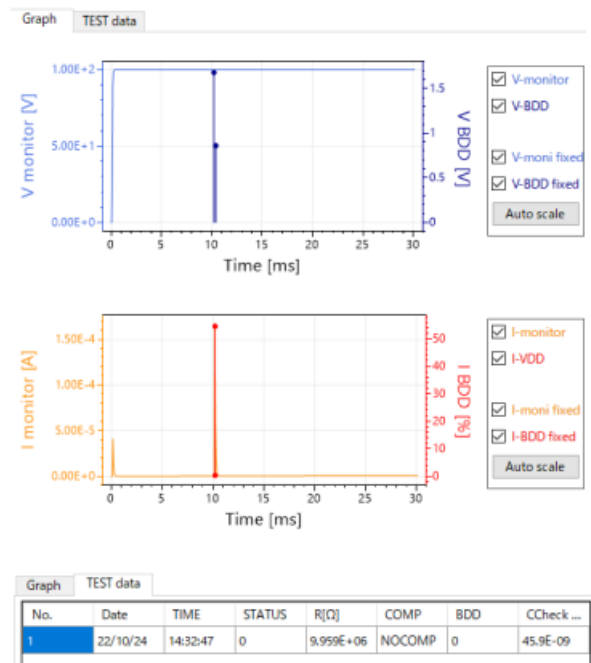
- Displays monitor value waveforms of voltage and current.
- Displays the detection time and magnitude of BDD as dots with bars.
- Move, zoom in/out, and copy images on the graph by mouse operation.
- Check boxes allow you to switch between showing/hiding the waveforms and fixing the axes.

TEST data

Lists the test results

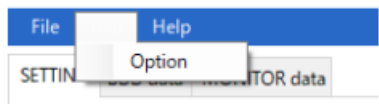
For details, refer to the

“:MEASure?” and “:CONTactcheck:CAPacitance?” command pages of the instrument’s user manual.

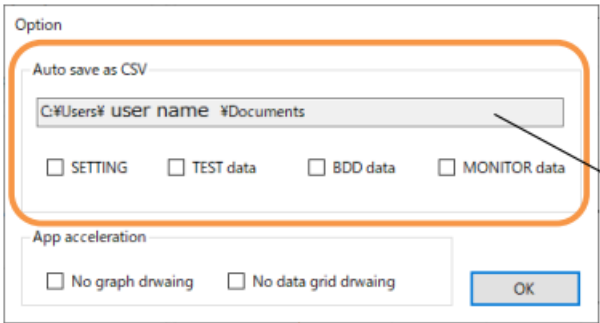


Option

The [Tool] on the top toolbar opens the [Option] window.



Auto save function



- At the end of the test, the checked items are automatically saved in CSV format. If none of the items are checked, the file will not be automatically saved.
- Enter the location to save the CSV file.
- Click [OK] to save the settings and apply them from the next test.

The file name to be saved automatically changes depending on the data checked.
File name yyyy-MM-dd_HH-mm-ss_auto_xxxx.csv xxxx is the type of storage and number of data

1	#INFORMATION				Date and time the file was saved, information.					
2	DATE	2022/10/24	15:31:12							
3	MODEL	HIOKI	BT5525	2.21E+08						
4	VERSION	V1.01								
5	FPGA	A2209302	B2210031							
6										
7	#SETTING				● Measurement Setting Saves when SETTING is checked.					
8	VOLTAGE	500								
9	RANGE	HOLD	2M							
10	SPEED	1								
11	TIMER	0.1								
12	CONTACT CHECK	ON	20							
13	BDD CCV	ON	0.1							
14	BDD CVV	ON	0.1							
15	BDD CVI	ON	0.6							
16	BDD STOP	OFF								
17	CURRENT LIMIT	MANUAL	25							
18	CHARGE TIME	0.01								
19	DUT CAPACITY	MANUAL	0.1							
20	Graph setting	500	1							
21					● TEST result Saves when TEST data is checked.					
22	#TEST DATA									
23	No.	Date	TIME	STATUS	R[Ω]	COMP	BDD	CCheck value[F]		
24	1	2022/10/24	15:31:11	0	9.96E+06	NOCOMP	6	4.60E-08		
25										
26	#Number of data				● BDD data, MONITOR data If either BDD data or MONITOR data is checked, it will be saved. If both BDD data and MONITOR data are checked, both data are combined and sorted by Time and saved.					
27	Time	Vmoni	Imoni	Type					Value	Bdd_Id
28	0.12		17.2	0.00316						
29	0.158			CCV					0.23	1
30	0.241		77.18	0.003461						
31	0.339			CCV					0.23	2
32	0.362		141	0.003461						
33	0.483		205.8	0.003461						
34	0.603		270.7	0.003461						
35	0.724		335.7	0.003461						
36	0.725			CCV					0.16	3
37	0.729			CCV					0.25	4
38	0.733			CCV					0.17	5
39	0.845		400.8	0.003461						
40	0.966		465.5	0.003461						
41	1.063			CCV					0.21	6
42	1.066		499	0.003461						
43	1.207		500	0.001953						
44	1.328		500	0.000801						
45						

Application acceleration

Option

Auto save as CSV

C:\Users\% user name %\Documents

☐ SETTING ☐ TEST data ☐ BDD data ☐ MONITOR data

App acceleration

☐ No graph drawing ☐ No data grid drawing

OK

- Checking the option speeds up the operation of this application. If you have a lot of data you want to auto-save and the test interval is short, etc., and data cannot be read out in time, please try speeding up the process.
- Press [OK] to save and apply the settings.

Disclaimer

This application is free software. HIOKI ELECTRIC CO., LTD. assumes no responsibility for any damage caused by the use of this application. Also, HIOKI Electric Corporation assumes no responsibility for any bugs or other inconveniences that may occur with the software. Please note that HIOKI is unable to respond to questions about this software. Thank you for your understanding.

Documents / Resources

