

INSTRUMENTATION AMPLIFIER

WGA-900A

INSTRUCTION MANUAL

(SOFTWARE FOR SD CARD)

Thank you for purchasing KYOWA's product Instrumentation Amplifier WGA-900A.

Read this Instruction Manual carefully in order to make full use of the high performance capabilities of the product.

Do not use the product in methods other than described in this Manual.

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The contents of the Instruction Manual are subjected to change without prior to notice.

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NOTATIONS USED IN THE INSTRUCTION MANUAL

Informational Notes

Certain notations are used as necessary to attract your attention to information that requires special care when handling the WGA-900A, and to information provided for reference purposes.

Examples of Notations

NOTE

Essential precautions required when handling the WGA-900A.

MEMO

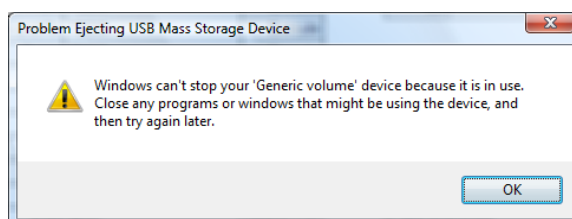
Reference items required when handling the WGA-900A.

IMPORTANT PRECAUTIONS WHEN USING PC SOFTWARE FOR SD CARD

NOTE

Be sure to quit a software (hereinafter referred to as the Software) of the WGA-900A before removing the SD card or USB memory from the PC.

If you try to remove the SD card from the PC by using the Safely Remove Hardware application before quitting the Software, the following alert window may appear.



NOTE

Capacity of the SD card corresponding to the WGA-900A is up to "2 GB."

Note that the WGA-900A does not support the SDHC standard card 4 GB or more.

The reading/writing speed of the SD card may be slowed and time to write the waveform data to the SD card may be delayed according to speed class of the SD card.

Recommended SD card is as follows.

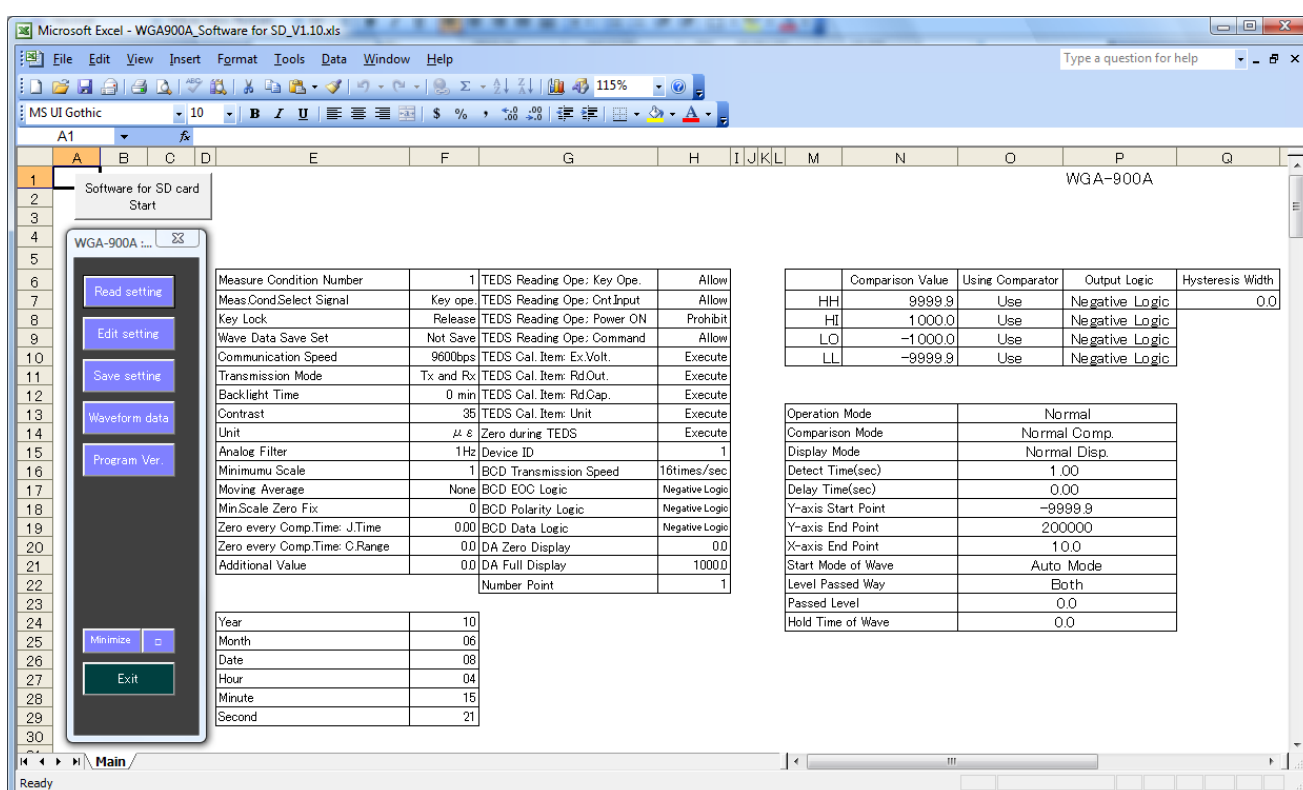
Model: RSDC-S2GC4, Capacity: 2 GB, Manufacture: BUFFALO



1. PRODUCT OUTLINE

This Software includes the following functions.

- Capable of updating the setting value of the WGA-900A by editing the value with the WGA-900A software and by writing the value in the SD card.
- Capable of saving the setting value to the SD card and capable of reading the value with the WGA-900A software.
- Capable of converting the waveform data to the CSV format, capable of displaying the data graphically on the EXCEL sheet, and capable of editing the data by reading the recorded waveform data in the SD card with the WGA-900A.
- Capable of checking the version of the update program saved in the SD card.

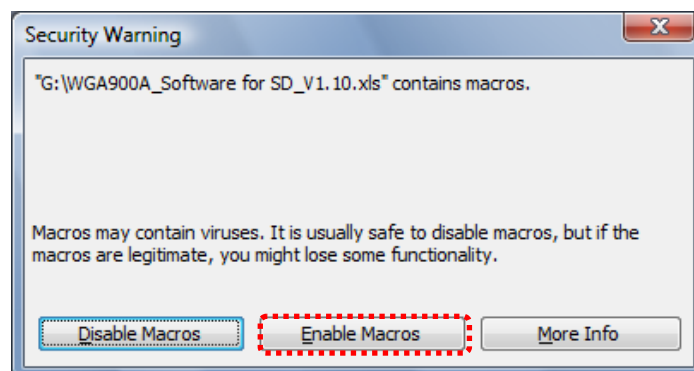


Operating Environment
EXCEL2003 or EXCEL2007

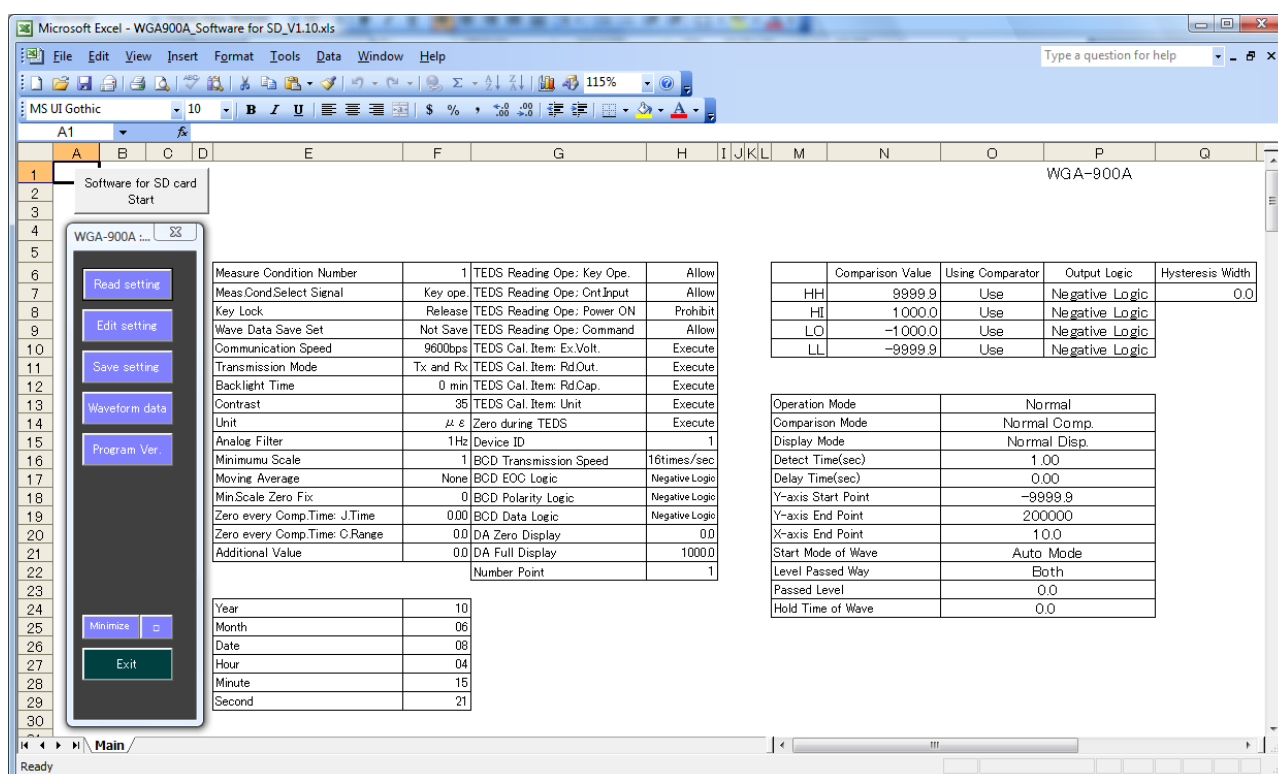


2. INSTALLATION AND ACTIVATION

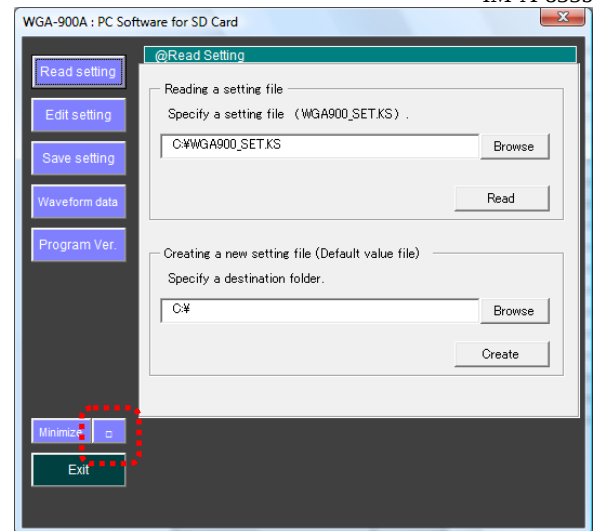
- 1) Insert the accessory CD-R into the CD-ROM drive.
- 2) Copy a WGA-900A_Software for SD_V1.10.xls in the CD-R and paste it on the easy to find place such as desktop.
- 3) Click the WGA-900A_Software for SD_V1.10.xls icon.
EXCEL2003, OS: Windows Vista is used in the following.
- 4) The **Security Warning** dialog box appears.
Click the **Enable Macros** button.



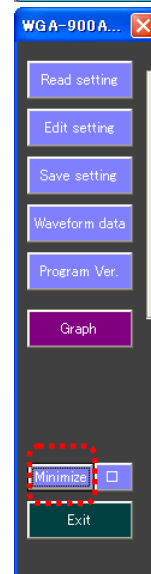
- 5) Click the **Software for SD card Start** button to display the following menu window.



6) Click the  button on the menu window to widen the menu window.



7) Click the **Minimize** button on the menu window to narrow the menu window.



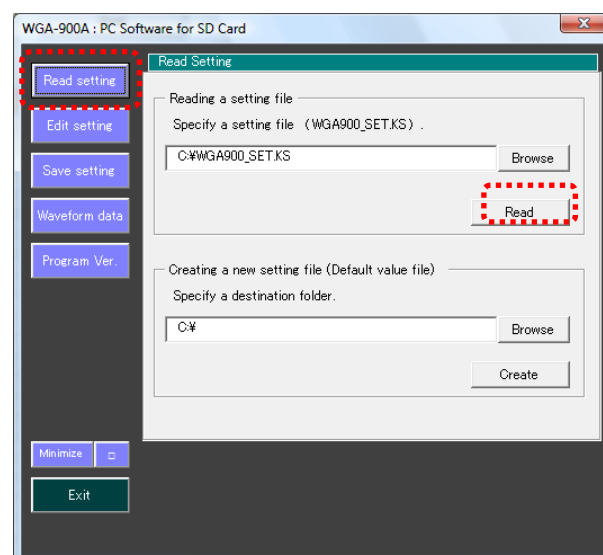
3. READING SETTING VALUE

This section describes how to read a setting file from the specified directory of the SD card or PC.

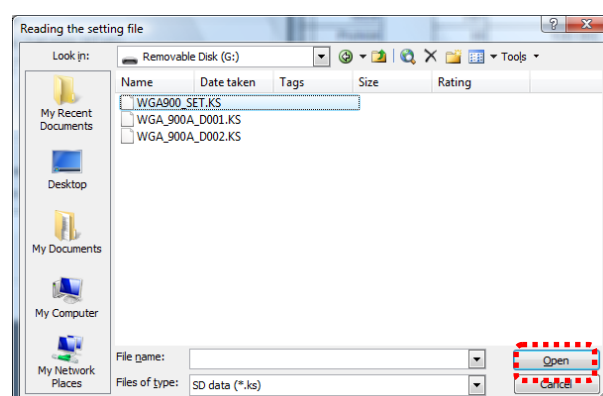
In addition, capable of creating the new setting file storing the default of the setting value (hereinafter referred to as the “default value file”) and capable of reading it.

3-1. READING SETTING FILE

- 1) Click the **Read setting** button on the menu window to display the **Read Setting** window.
- 2) Click the **Browse** button on the **Reading a setting file** flame window.



- 3) The **Reading the setting file** window appears.
Select the target look in.
Select the **WGA900A.SET.KS** and click the **Open** button.



■ For setting file

The setting file name is as follows and the file format is dedicated to the WGA-900A.

WGA900A.SET.KS

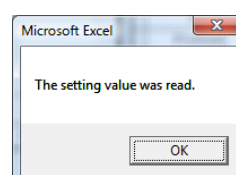
The setting file includes all setting values (excluding calibration value).

Setting values of Measurement Condition No. 1 to 32 on the Comparison and Measure Mode tabs are also included.

NOTE

- Never change the file name.
Or, the setting value cannot be read.
- Save the setting file in the root directory (top-most directory) of the SD card such as E drive (E:¥) etc.
Or, the setting value cannot be read.

- 4) Click the **Read** button on the **Reading a setting file** flame window. The setting file is read and the right dialog box appears. Click the **OK** button.

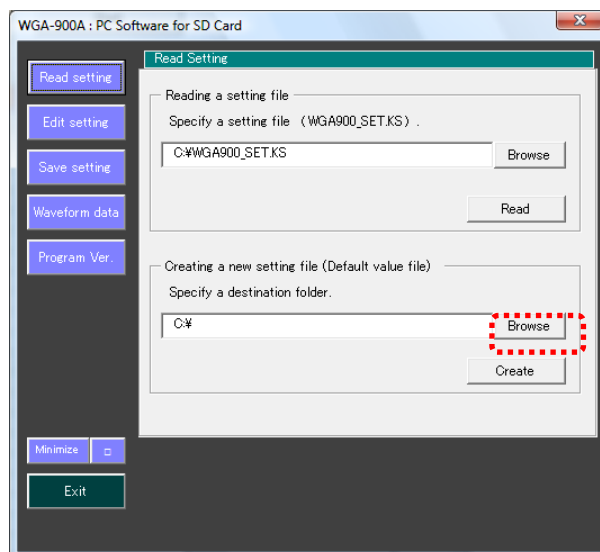


3-2. CREATING DEFAULT VALUE FILE

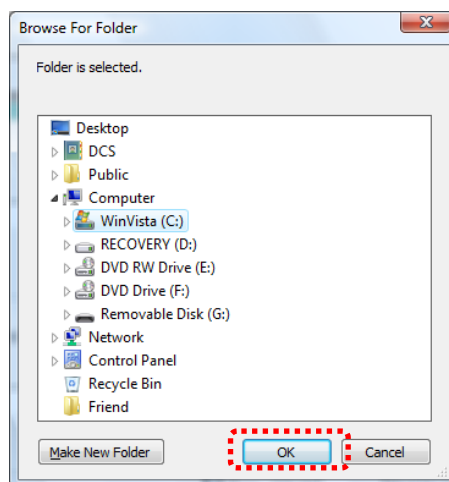
MEMO

- For details of the default of the setting value, refer to “11-1. LIST OF SETTING ITEM” in the WGA-900A Instruction Manual for Hardware.

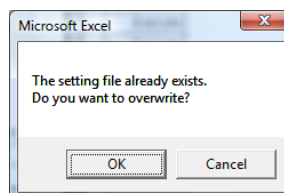
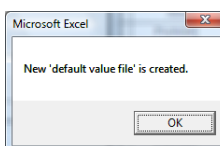
- Click the **Browse** button on the **Creating a new setting file** flame window.



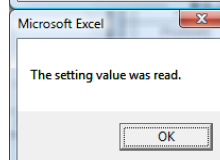
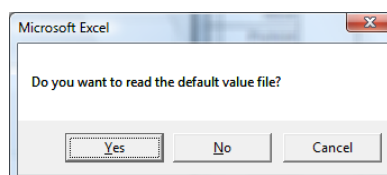
- Select the target folder to save the “default value file” and click the **OK** button.
WinVista (C) is selected in the right figure.



- Click the **Create** button on the **Creating a new setting file (Default value file)** flame window. The “default value file” is created and the right window appears.
Click the **OK** button.
A confirmation dialog box to overwrite appears if the “default value file” already exists in the selected folder.
Click the **OK** button for overwriting.



- Then, a confirmation dialog box to read the “default value file” appears.
Click the **Yes** button to read the “default value file.”
The right dialog box appears after reading the “default value file.” Click the **OK** button.



4. EDITING SETTING VALUE

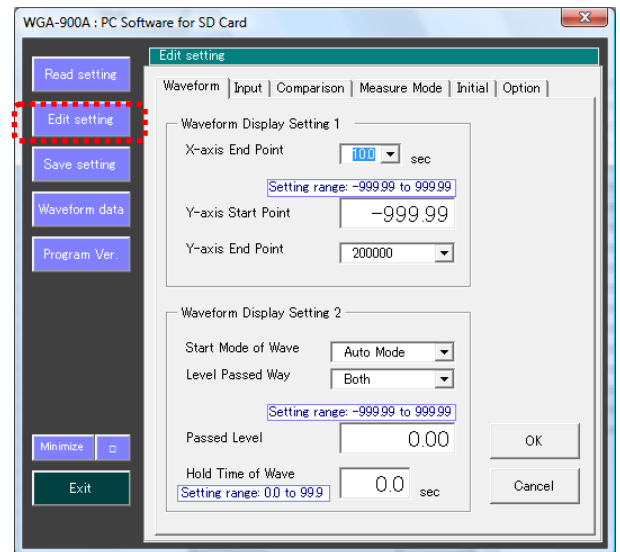
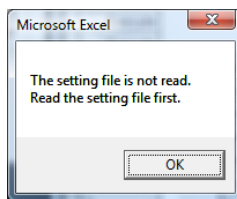
Capable of editing the content of the setting file that was read in the Chapter 3.

4.1. EDITING SETTING VALUE OF WAVEFORM TAB

- 1) Click the **Edit setting** button on the menu window.
The **Edit setting** window appears.

NOTE

If the **Edit setting** button is clicked without reading the setting file, the following window appears.
Click the **OK** button first and read the setting value.



- 2) Select the target number of the **X-axis End Point** from the list box.
- 3) Directly input the target number of the **Y-axis Start Point**.
- 4) Select the target number of the **Y-axis End Point** from the list box.
- 5) Select the target mode of the **Start Mode of Wave** from the list box.
- 6) Select the target **Level Passed Way** from the list box if **Normal Mode** or **Single Mode** is selected in the **Start Mode of Wave**.
- 7) Directly input the target number of the **Level Passed Way** if **Normal Mode** or **Single Mode** is selected in the **Start Mode of Wave**.
- 8) Directly input the target number of the **Hold Time of Wave** if **Auto Mode** is selected in the **Start Mode of Wave**.

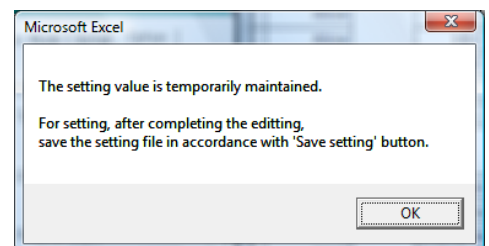
NOTE

Be sure to set the decimal point position of the **Y-axis Start Point** and **Level Passed Way** to the same position that is set in the **Rd. Display** of the WGA-900A calibration.
Or, the error window appears when the **Read setting** button is pressed.

- 9) After editing, click the **OK** button on the bottom right corner of the **Edit setting** window to temporarily maintain the setting value.
For saving the settings, save the setting file by referring "5. SAVING SETTING VALUE" after completing the editing.

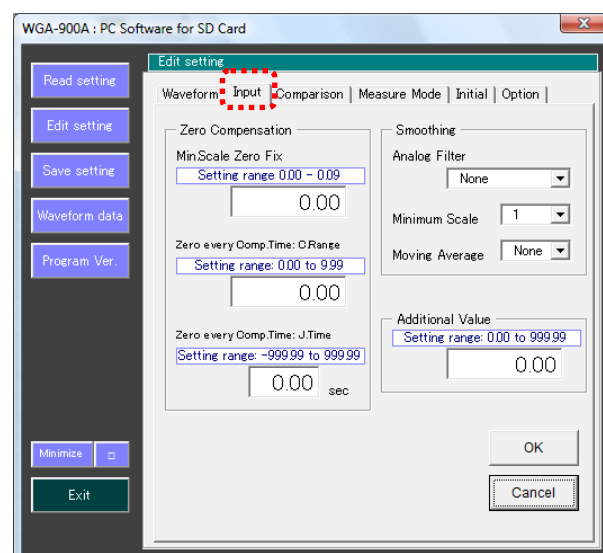
NOTE

Be sure to press the **OK** button.
If you click the other tabs before pressing the **OK** button, the edited setting value is not maintained and gets back to the setting value before editing.



4.2. EDITING SETTING VALUE OF INPUT TAB

1) Click the **Input** tab to display the right window.



2) Directly input the target number of the **Min.Scale Zero Fix**.*

* It means least significant digit fixed at zero.

3) Directly input the target number of the **Zero every Comp. Time: C. Range**.

4) Directly input the target number of the **Zero every Comp. Time: J. Time**.

5) Select the target **Analog Filter** from the list box.

6) Select the target number of the **Minimum Scale** from the list box.

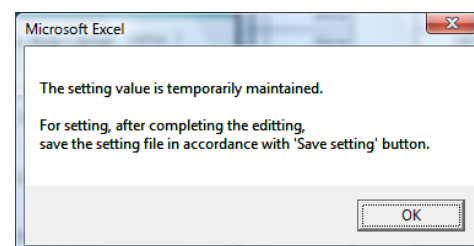
7) Select the target **Moving Average** from the list box.

8) Directly input the target number of the **Additional Value**.

NOTE

- Be sure to set the decimal point position of the **Min.Scale Zero Fix**, **Zero every Comp. Time: C. Range**, and **Additional Value** to the same position that is set in the **Rd. Disp.** of the WGA-900A calibration.
Or, the error window appears when the **Read setting** button is pressed.
- Set the decimal point position of the **Zero every Comp. Time: J. Time** within the setting range.

9) After editing, click the **OK** button on the bottom right corner of the **Edit setting** window to temporarily maintain the setting value.
For saving the settings, save the setting file by referring "5. SAVING SETTING VALUE" after completing the editing.



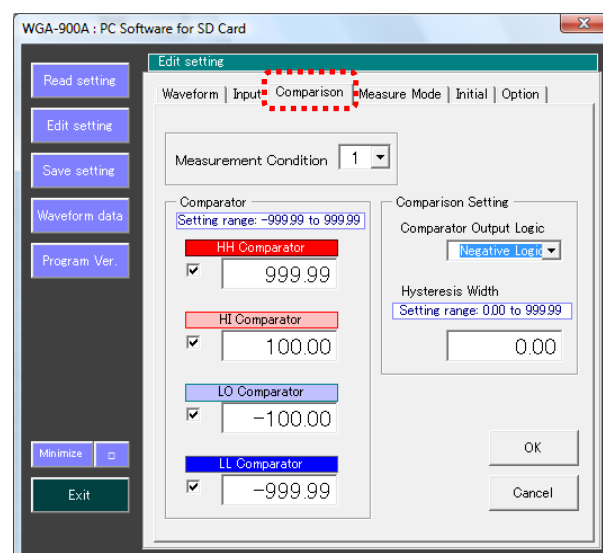
NOTE

Be sure to press the **OK** button.
If you click the other tabs before pressing the **OK** button, the edited setting value is not maintained and gets back to the setting value before editing.



4-3. EDITING SETTING VALUE OF COMPARISON TAB

1) Click the **Comparison** tab to display the right window.



2) Select the target Measurement Condition No. from the list box.

If you change the Measurement Condition No., the Measurement Condition No. and the setting values on the **Measure Mode** tab change at the same time.

3) Directly input the compared value of comparators.

4) Put a checkmark for using the target comparator.

For not using, release the checkmark.

5) Select the target **Comparator Output Logic** from the list box.

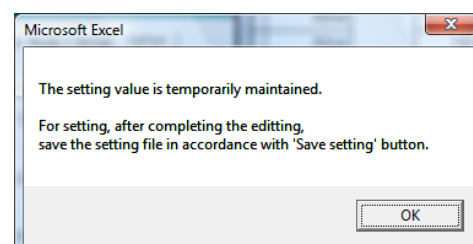
6) Directly input the target number of the **Hysteresis Width**.

NOTE

Be sure to set the decimal point position of the compared values of comparators and **Hysteresis Width** to the same position that is set in the **Rd. Disp.** of the WGA-900A calibration.
Or, the error window appears when the **Read setting** button is pressed.

7) After editing, click the **OK** button on the bottom right corner of the **Edit setting** window to temporarily maintain the setting value.

For saving the settings, save the setting file by referring “5. SAVING SETTING VALUE” after completing the editing.



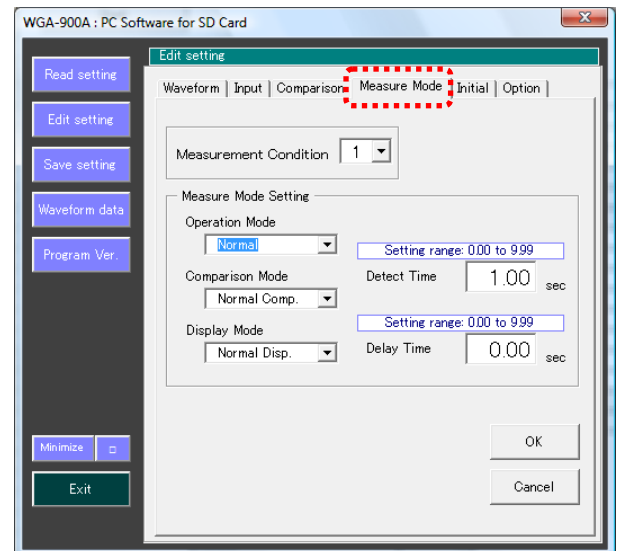
NOTE

- Be sure to press the **OK** button.
If you change the Measurement Condition No. before pressing the **OK** button, the edited setting value is not maintained and gets back to the setting value before editing.
- Be sure to press the **OK** button.
If you click the other tabs before pressing the **OK** button, the edited setting value is not maintained and gets back to the setting value before editing.



4.4. EDITTING SETTING VALUE OF MEASURE MODE TAB

1) Click the **Measure Mode** tab to display the right window.



2) Select the Measurement Condition No. from the list box.

If you change the Measurement Condition No., the Measurement Condition No. and setting values on the **Comparison** window changes at the same time.

3) Select the target **Operation Mode** from the list box.

4) Directly input the target number of the **Detect Time** if **Time-specified peak** or **Time-specified bottom** mode is selected in the **Operation Mode**.

5) Directly input the target number of the **Delay Time** if modes other than **Normal** are selected in the **Operation Mode**.

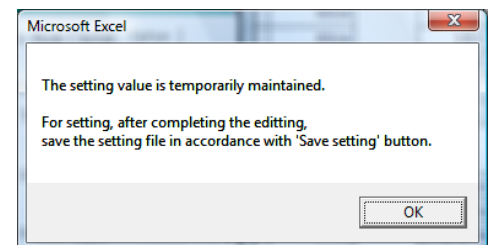
6) Select the target mode of the **Operation Mode** from the list box if **Block-specified peak**, **Time-specified peak**, **Block-specified bottom** or **Time-specified bottom** is selected in the **Operation Mode**.

7) Select the target mode of the **Comparison Mode** from the list box if **Block-specified peak**, **Time-specified peak**, **Block-specified bottom** or **Time-specified bottom** is selected in the **Operation Mode**.

NOTE

Set the decimal point position of the **Detect Time** and **Delay Time** within the setting range.
Or, the error window appears when the **Read setting** button is pressed.

8) After editing, click the **OK** button on the bottom right corner of the **Edit setting** window to temporarily maintain the setting value.
For saving the settings, save the setting file by referring "5. SAVING SETTING VALUE" after completing the editing.



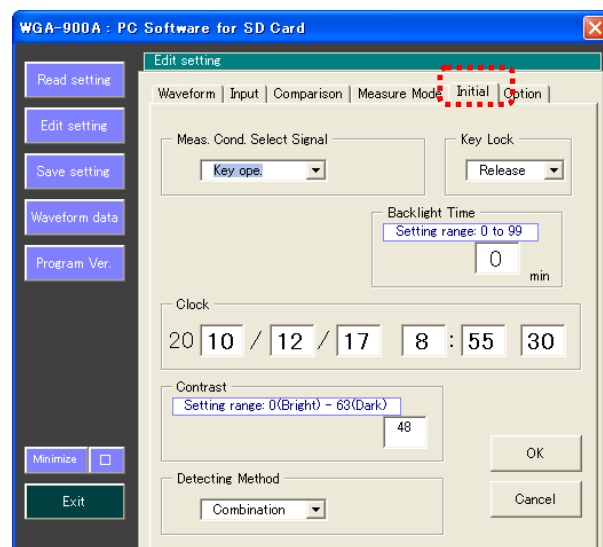
NOTE

- Be sure to press the **OK** button.
If you change the Measurement Condition No. before pressing the **OK** button, the edited setting value is not maintained and gets back to the setting value before editing.
- Be sure to press the **OK** button.
If you click the other tabs before pressing the **OK** button, the edited setting value is not maintained and gets back to the setting value before editing.



4.5.EDITTING SETTING VALUE OF INITIAL TAB

1) Click the **Initial** tab to display the right window.



2) Click the target **Meas. Cond. Select Signal** from the list box.

3) Select the target operation of the **Key Lock** from the list box.

4) Directly input the target number of the **Backlight Time**.

5) Directly input the target number of the **Clock**.

6) Directly input the target number of the **Contrast**.

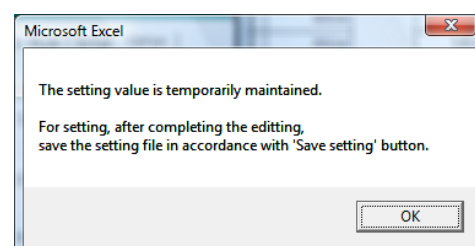
7) Select the target operation of the **Detecting Method** from the list box.

NOTE

Set the **Backlight Time** and **Contrast** within the setting range.

8) After editing, click the **OK** button on the bottom right corner of the **Edit setting** window to temporarily maintain the setting value.

For saving the settings, save the setting file by referring “5. SAVING SETTING VALUE” after completing the editing.



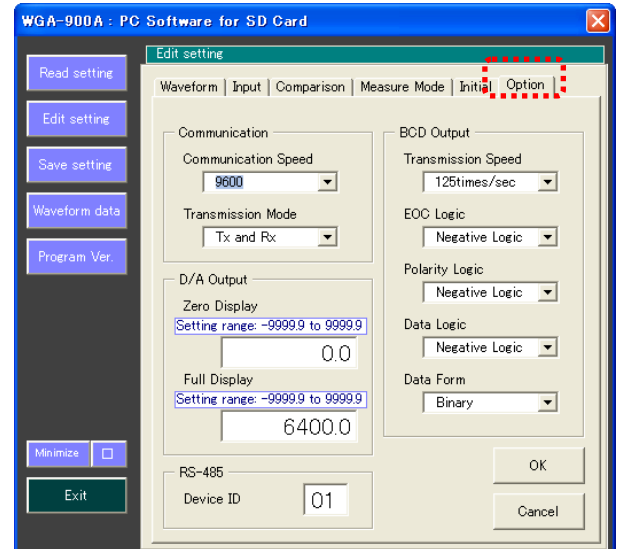
NOTE

- Be sure to press the **OK** button.
If you click the other tabs before pressing the **OK** button, the edited setting value is not maintained and gets back to the setting value before editing.



4-6. EDDITING SETTING VALUE OF OPTION TAB

- 1) Click the **Option** tab to display the right window.
- 2) For both standard RS-232C and optional RS-485
 - (1) Select the target rate of the **Communication Speed** from the list box.
 - (2) Select the target mode of the **Transmission Mode** from the list box.
 - (3) For the optional RS-485 only. Directly input the number of the **Device ID**.
- 3) BCD output
 - (1) Select the target speed of the **Transmission Speed** from the list box.
 - (2) Select the target logic of the **EOC Logic** from the list box.
 - (3) Select the target logic of the **Polarity Logic** from the list box.
 - (4) Select the target logic of the **Data Logic** from the list box.
 - (5) Select the target logic of the **Data Form** from the list box.
- 4) DA output
 - (1) Directly input the target number of the **Zero Display**.
 - (2) Directly input the target number of the **Full Display**.



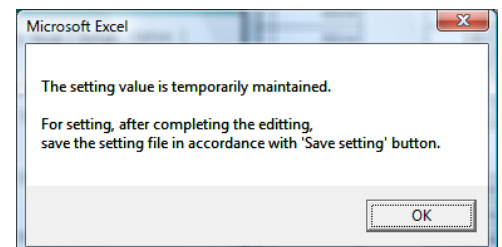
NOTE

Be sure to set the decimal point position of the **Zero Display** and **Full Display** of the D/A output to the same position that is set in the **Rd. Disp.** of the WGA-900A calibration.
Or, the error window appears when the **Read setting** button is pressed.

- 5) After editing, click the **OK** button on the bottom right corner of the **Edit setting** window to temporarily maintain the setting value.
For saving the settings, save the setting file by referring “5. SAVING SETTING VALUE” after completing the editing.

NOTE

- Be sure to press the **OK** button.
If you click the others before pressing the **OK** button, the edited setting value is not maintained and gets back to the setting value before editing.

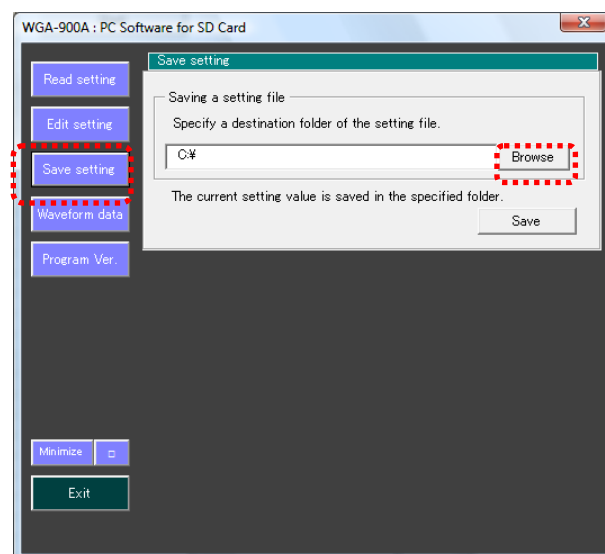


5. SAVING SETTING VALUE

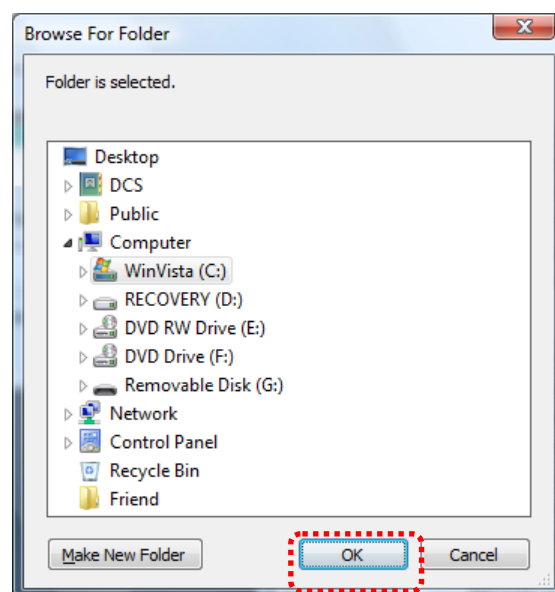
Saves the edited setting value to the SD card or other folders.

Capable of updating the setting value by inserting the SD card that saves the setting file to the WGA-900A and by reading the file.

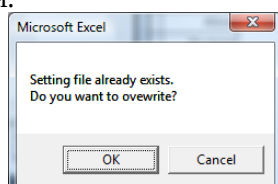
- 1) Click the **Save setting** button on the menu window to display the **Save setting** window.
- 2) Click the **Browse** button on the **Saving a setting file** frame window.



- 3) **Browse For Folder** window appears. Select the destination place for the setting file and click the **OK** button.

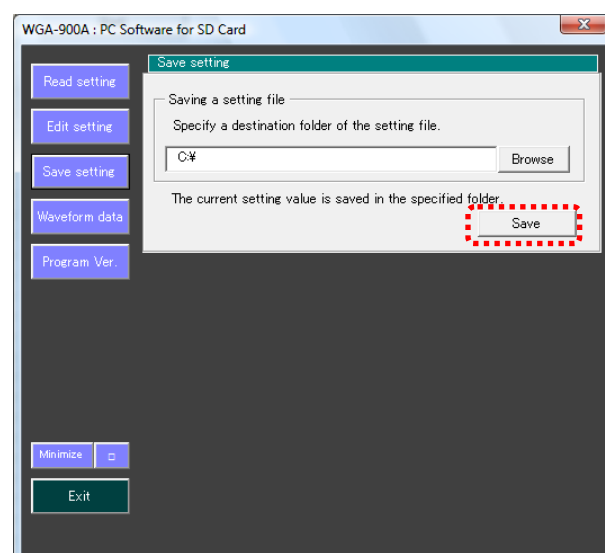
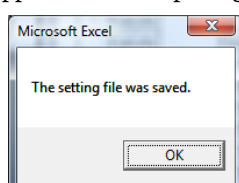


- 4) Click the **Save** button to save the setting file. The following dialog box appears if the setting file already exists in the specified folder.



Click the **OK** button.

The following dialog box appears after completing the saving.

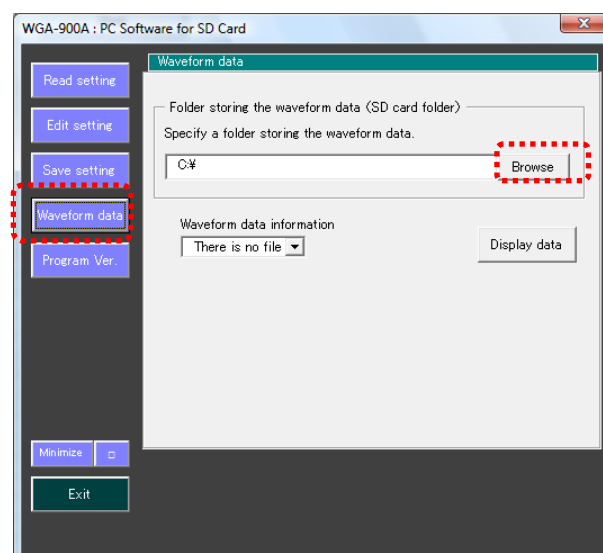


6. WAVEFORM DATA

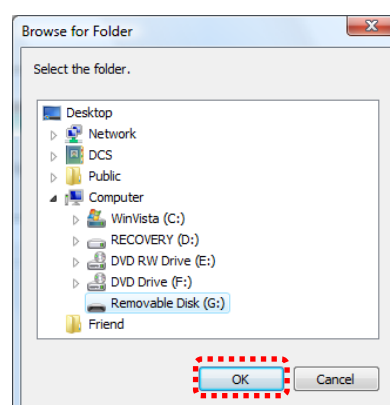
Capable of converting the waveform data to the CSV format or capable of displaying the data on the EXCEL graph by reading the waveform data that was recorded in the SD card by the WGA-900A.

6-1. READING WAVEFORM DATA

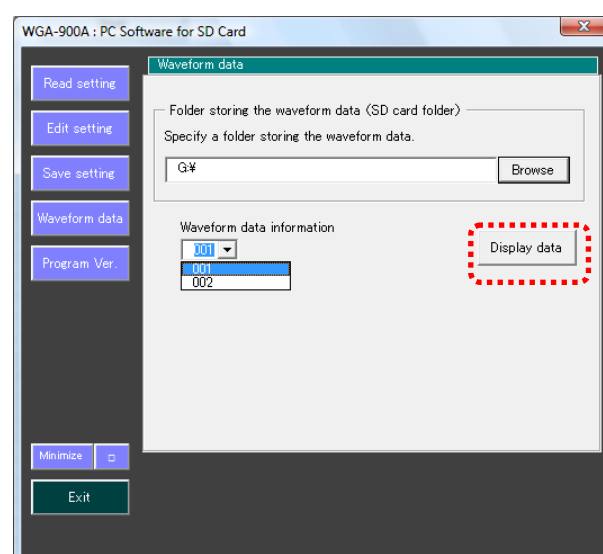
- 1) Click the **Waveform data** button to display the **Waveform data** window.
- 2) Click the **Browse** button on the **Folder storing the waveform data (SD card folder)** frame window.



- 3) The **Browse for Folder** window appears. Specify the target drive of the SD card saving the waveform data and click the **OK** button.



- 4) Click the list box of the **Waveform data information** to display the file names of the waveform data that is saved in the SD card. Click the **Display data** button.



MEMO

The waveform data name is described as follows and is KYOWA's original format.

WGA_900A_Dxxx.KS (xxx: 001 to 100)

The **Waveform data information** list box displays the file name (from 001 to 100).

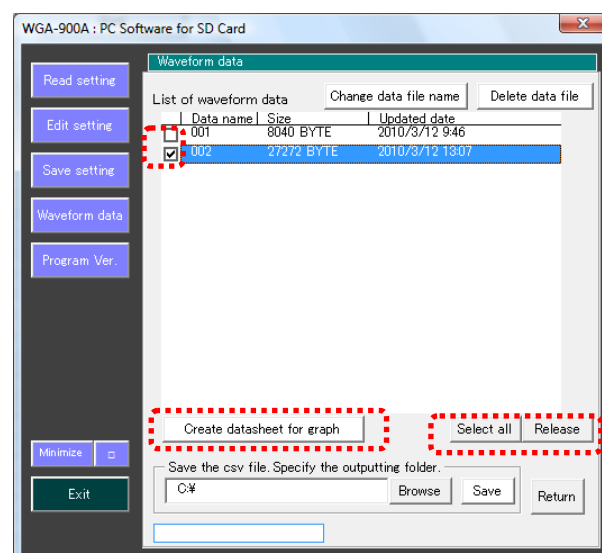


6-2. CREATING DATASHEET FOR DISPLAYING GRAPH OF WAVEFORM DATA

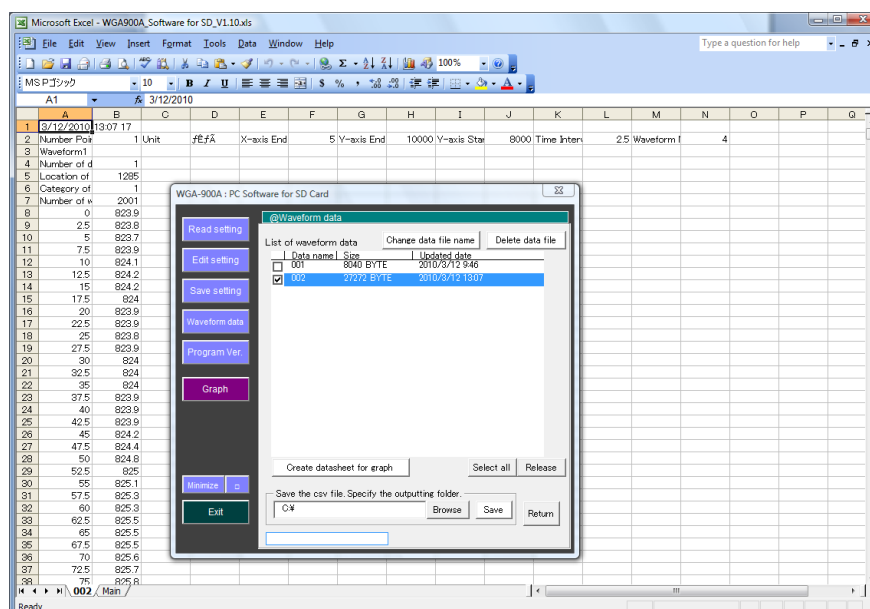
- 1) Select the target waveform data that you want to create the datasheet for displaying the graph on the **List of waveform data** window and put a checkmark in the box next to the data name.

To put checkmarks to the all waveform data, click the **Select all** button on the lower right side of the window.

To release all checkmarks, click the **Release** button on the lower right side of the window.

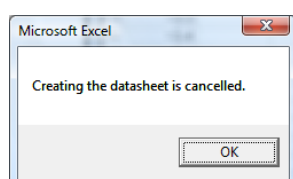


- 2) Click the **Create datasheet for graph** button on the **List of waveform data** window and the sheet for displaying the graph of the selected waveform data is newly created.
The detail of the waveform data is displayed on the EXCEL sheet.

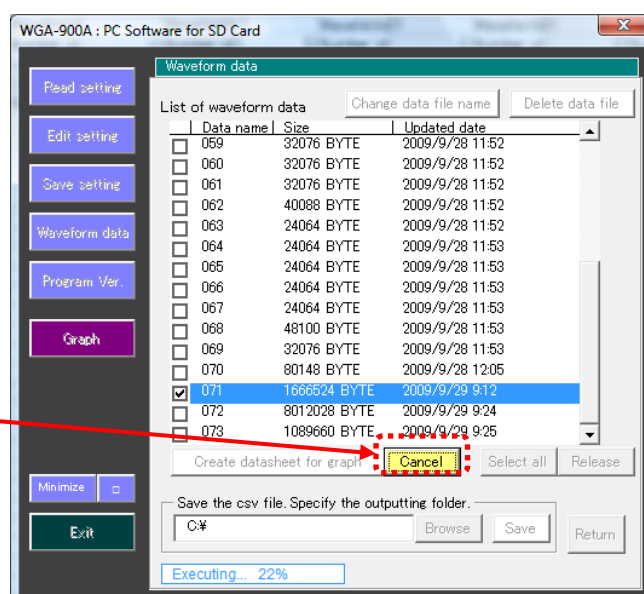


MEMO

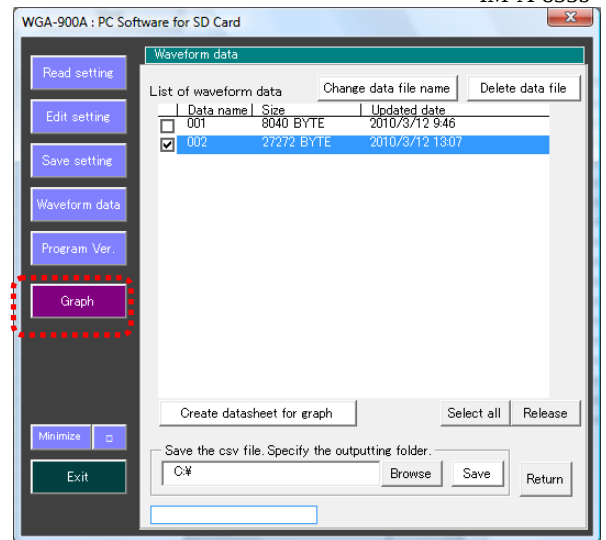
For the large size file, the progress situation of the creating data sheet for displaying the graph appears on the lower left side of the window in percentage (%).
In addition, if the **Cancel** button is clicked, creating the datasheet is stopped and the following window appears.



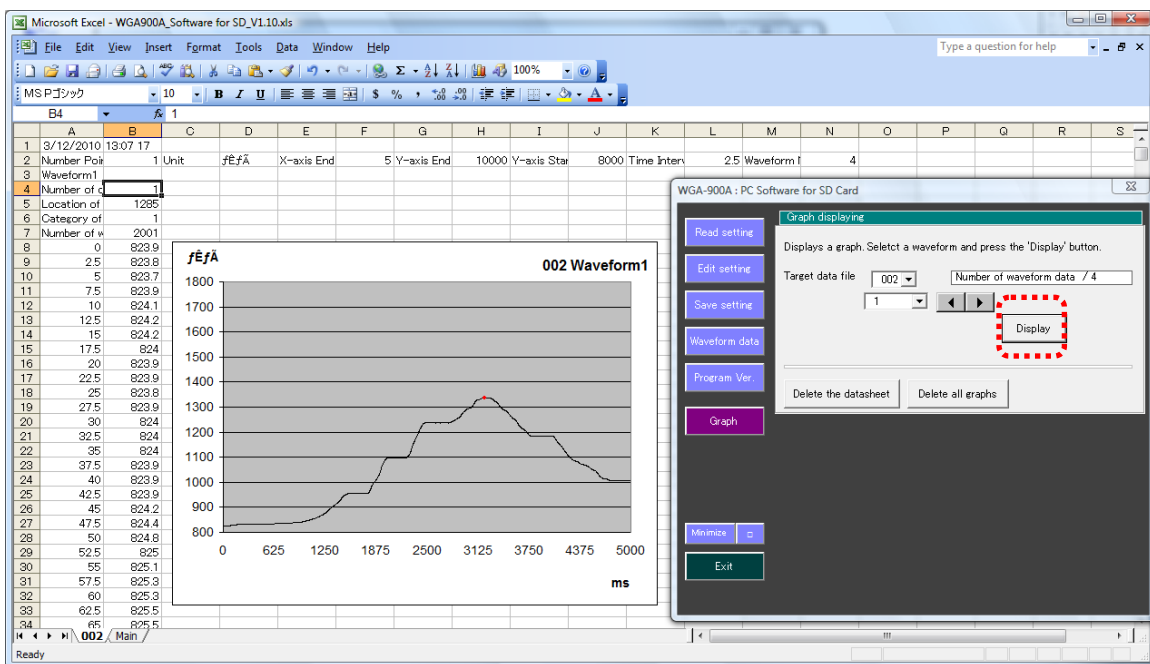
Cancel button



- 3) The **Graph** button is added on the menu window.
Click the button to display the **Graph displaying** window.

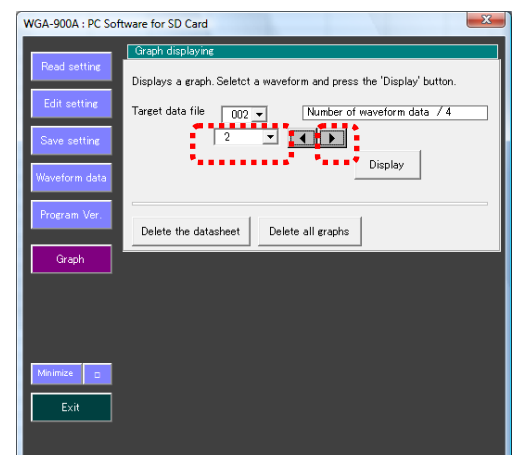
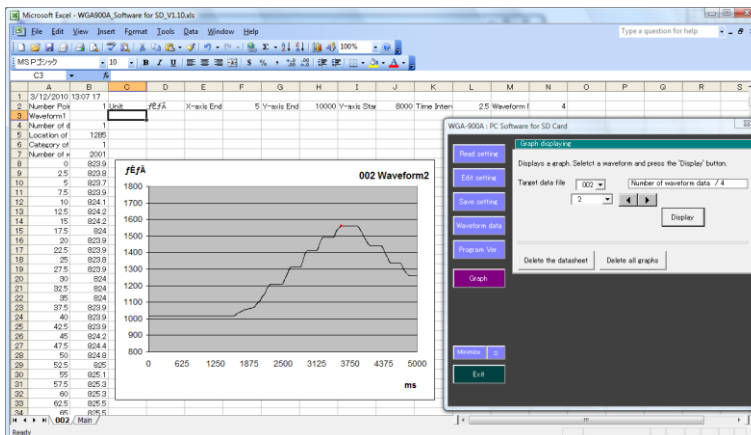


- 4) The data of the first window of the recorded waveform is graphically displayed on the EXCEL sheet.



- 5) To graphically display the second window of the recorded waveform, click the list box or  button under the **Target data file** on the **Graph displaying** dialog box to change the number.

Then click the **Display** button to graphically display the waveform data of second window.



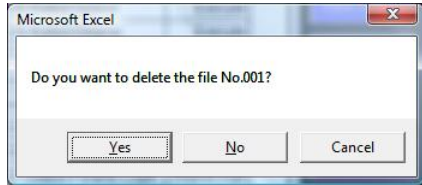
- 6) To delete the datasheet for displaying the graph, click the **Delete the datasheet** button on the bottom side of the **Graph displaying** window.

The **Do you want to delete the file No. ***? (***:**

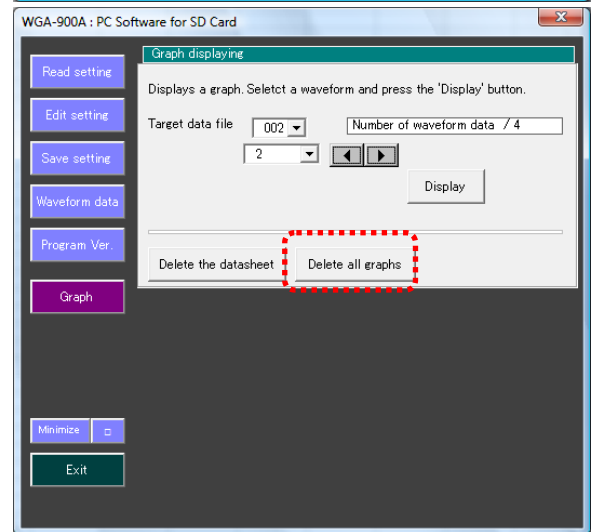
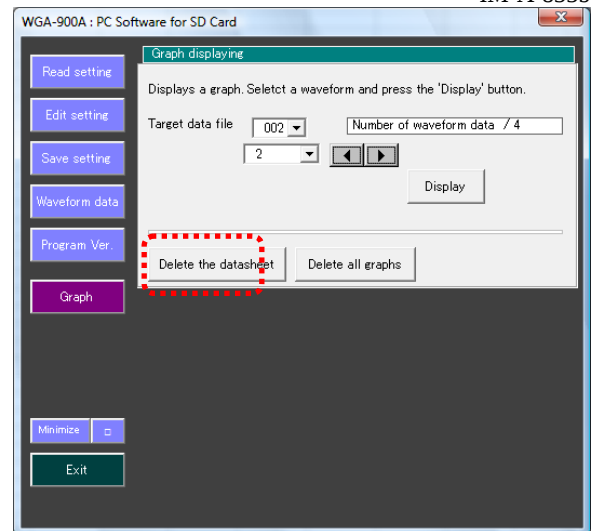
Waveform data name) message appears.

Click the **Yes** button to delete the datasheet.

The same windows continuously appear when the multiple data sheets for displaying graph are displayed.



- 7) For deleting the displaying graph, click the **Delete all graphs** button on the lower right of the **Graph displaying** window.



6-3. CHANGING DATA NAME AND DELETING DATA FILE OF WAVEFORM DATA

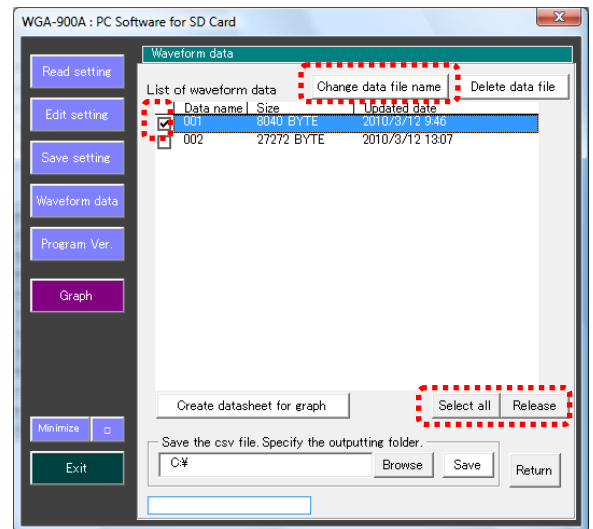
6-3-1. Changing Data Name

- 1) Select the target waveform data that you want to change the data name on the **List of waveform data** window and put a checkmark in the box next to the data name.

To put checkmarks to the all waveform data, click the

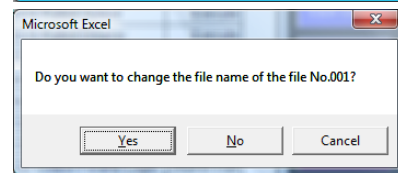
Select all button on the lower right side of the window.

To release all checkmarks, click the **Release** button on the lower right side of the window.

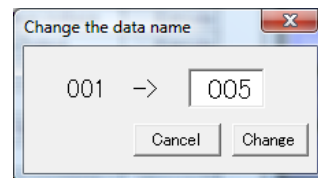


- 2) Click the **Change data file name** button on the upper right side of the **List of waveform data** window.

The **Do you want to change the file name of the file No. ***?** message appears.

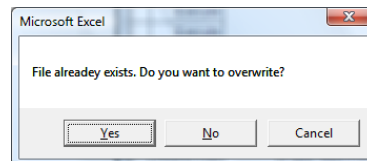


- 3) Click the **Yes** button and the **Change the data name** window appears. Directly input the target number.



The **File already exists. Do you want to overwrite?** message appears if the file having same data name already exists.

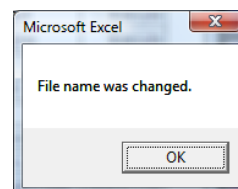
Click the **Yes** button for overwriting.



- 4) Click the **Change** button.

The **File name was changed.** Message appears.

Click the **OK** button.



- 5) Repeat the procedures from 2) to 4) when multiple waveform data is selected.



6-3-2. Deleting Data File

- 1) Select the target waveform data that you want to delete on the **List of waveform data** window and put a checkmark in the box next to the data name.

To put checkmarks to the all waveform data, click the **Select all** button on the lower right side of the window.

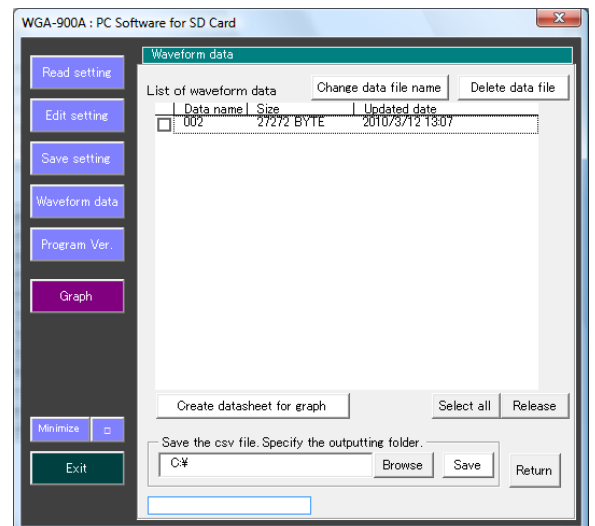
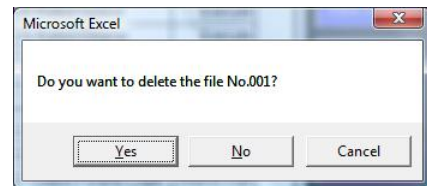
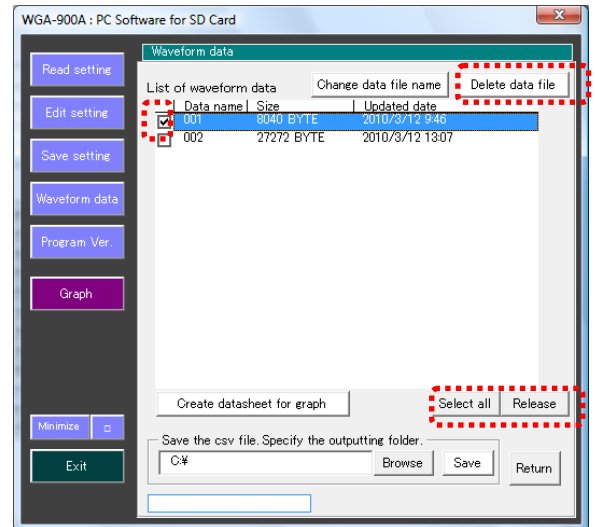
To release all checkmarks, click the **Release** button on the lower right side of the window.

- 2) Click the **Delete data file** button on the upper right side of the **List of waveform data** window.

The **Do you want to delete the file No. ***?** message appears.

- 3) Click the **Yes** button.

The selected waveform data is deleted and the data name disappears from the **List of waveform data** window.



6-4. SAVING CSV FORMAT OF WAVEFORM DATA

- 1) Select the target waveform data that you want to save on the **List of waveform data** on the window and put a checkmark in the box next to the data name.

To put checkmarks to the all waveform data, click the **Select all** button on the lower right side of the window.

To release all checkmarks, click the **Release** button on the lower right side of the window.

- 2) Click the **Browse** button on the **Save the csv file** frame window.

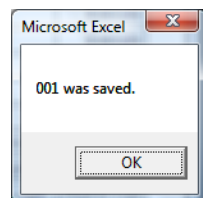
- 3) The **Browse For Folder** window appears. Specify the destination place of the setting file and click the **OK** button.

- 4) Click the **Save** button and the waveform data is converted to the csv format for saving.

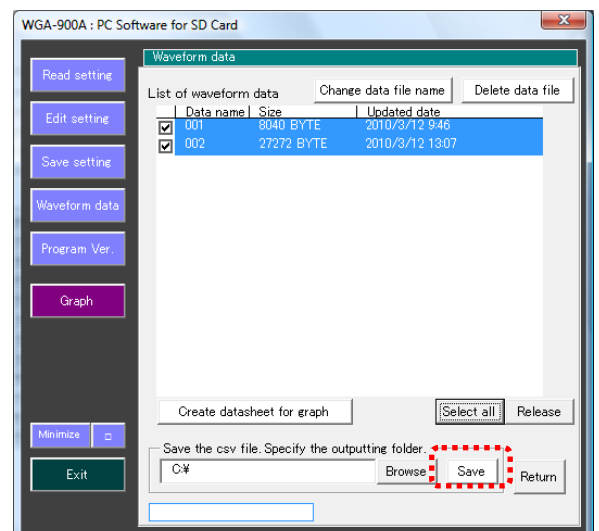
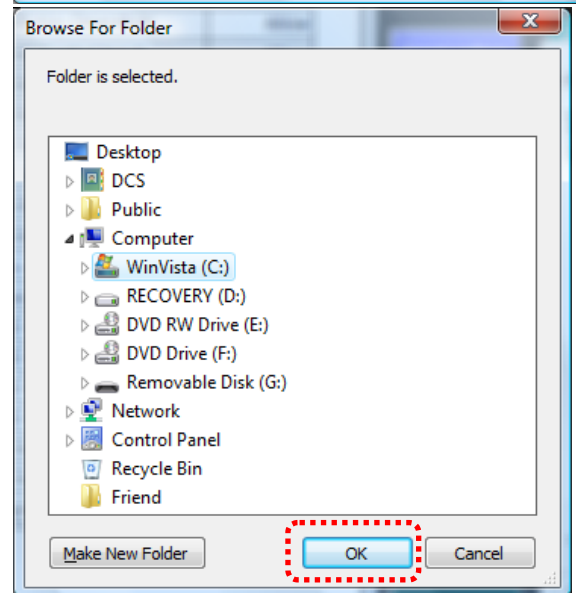
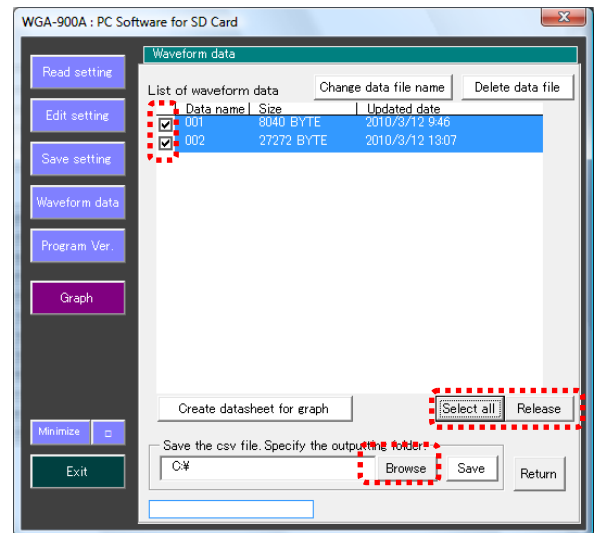
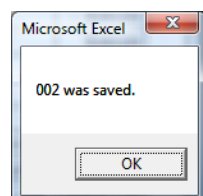
The following window appears if the setting file already exists in the specified folder.

Click the **OK** button for overwriting.

The following window appears after the saving is completed.



The following window continuously appears when the multiple waveform data are selected.



7. PROGRAM VERSION

Capable of checking the updating program version that was saved in the SD card.

- 1) Click the **Program Ver.** button to display the **Program version** window.
- 2) Click the **Browse** button on the **Program version** flame window.
- 3) The **Specify the 'PVER.h' file.** window appears.
Specify the destination place of the **【PVER.h】** file and click the **Open** button.
- 4) Click the **Read** button to display the current program version on the lower side of the window.

