

I. Software Install

Firstly, you have to obtain the software installation package from OWON website (www.owon.com.hk) , double-click it, and click according to the prompts until the installation is completed..

Secondly, use the supplied USB cable to connect the oscilloscope with a PC through their USB ports.

Note:

- Please select to HID in oscilloscope menu (Press the Utility → F4 → USB, select HID).
- If you use a USB cable that is not supplied by us, some problems such as connection error and signal disturbing might occur.

II. User Interface

When the software enters into the main interface as Fig 2-1 which has eight parts:

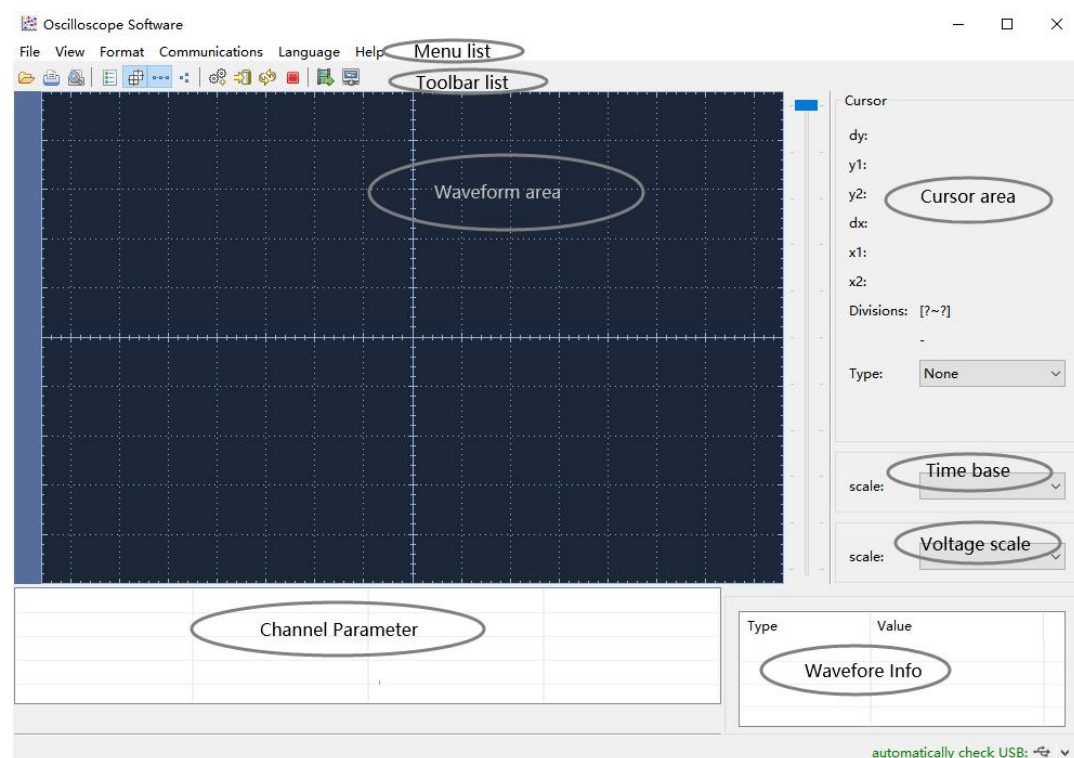


Fig 2-1

1. Menu Bar: provide various functions introductions.
2. Tool Bar: provide usual shortcut bar of menu options.
3. Waveform displayed range: the main range waveforms displayed.
4. Cursor range: provide the following four cursor types to observe and measure waveforms: none, horizontal line, vertical line, double line(the horizontal line and the vertical line shows simultaneously).
5. Channel box range: in which provides information and set waveforms displayed and hidden, also set one channel as current waveform.
6. Time base division range: which is used for observe and set the time base of the current waveform.
7. Voltage division range: which is used for observe and set the voltage division of the current waveform.
8. Parameter displayed range: which shows the period, frequency and pk-pk of the current waveform. If the new waveform is non-periodicity, the period and the frequency are all 0.

III. Menu

The following menus shows in the menu bar:

1. File
2. View
3. Format

4. Communications
5. Language
6. Help

The followings are the detailed description:

(1)File (Fig 3-1)

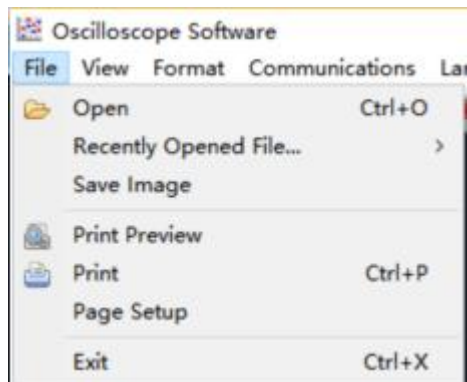


Fig 3-1

- 1) Open: open the saved files with bin suffix.
- 2) Open recent: save the 10 open recent files.
- 3) Save: save the current waveforms as pictures and support bmp, png, gif etc.
- 4) Print preview: preview the print effect.
- 5) Print: by printer.
- 6) Page setup: set the boundary value for printing.
- 7) Exit: exit from the software.

(2) View menu (Fig3-2-1)



Fig 3-2-1

- 1) Wave XY : The voltage values of sampling point in CH1, CH2 are shown as X,Y of point coordinates. If only one of the channels, the function is not available.
- 2) Data Table: The sequence of voltage value in sampling point of every channel is shown in the list which could be saved as .txt or .xls (Windows Office Excel) files exported to other documents. The list supply check all or check none, the right part as saved channel and click Exit to close the list.

Select	CH1(Unit:V)/10000.0
1	200.000
2	200.000
3	400.000
4	400.000
5	200.000
6	200.000
7	200.000
8	200.000
9	200.000
10	200.000
11	200.000
12	200.000
13	200.000
14	200.000
15	200.000
16	200.000
17	400.000

Fig 3-2-2: Value list

- 3) Grids color: Bring out the color dialogue box and change the color.
- 4) Background color: double click waveform area of display to bring out the color dialogue box and change the background color.
- 5) Grids line: display or hide the grid scale of image background.

(3)Format menu (Fig 3-3)

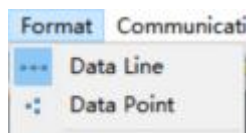


Fig 3-3

- 1) Data Line: draw the sampling point and connect by lines.
- 2) Data Point: draw the sampling point discretely.

(4) Communications menu (Fig 3-4-1)

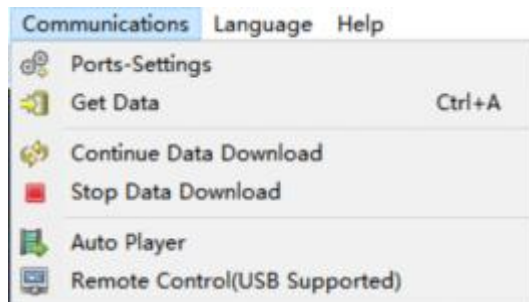


Fig 3-4-1

- 1) Ports-Settings : Set as USB and search USB port from connecting oscilloscopes then refresh connecting USB ports.

Custom USB transfer instructions: send command to get which type of data from the machine by software.

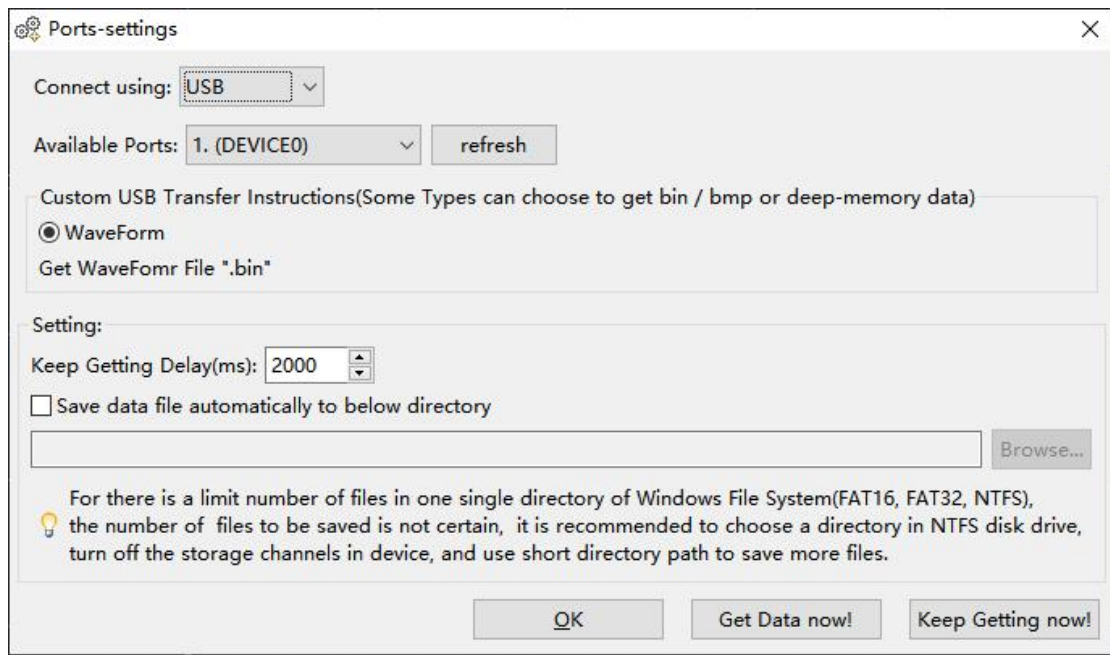


Fig 3-4-2

The bottom of port setting window is the auto obtained area in which interval time and save catalogue of auto obtained could be set up.

2) Get Data : Acquire waveform data from instrument .

Note: You can get the data from instrument after connecting PC with USB cable and install driver and then choose the correct interface setting.

Click "browse" to bring out the "save file" dialogue box and set the save path and file name.

File type may be Vector or Bitmap corresponding suffix .bin or .bmp which will be acquired after correct setting in the instrument. On

beginning the file format can be viewed from file types and choose "close window and load" when finishing, only bin file can load software and show, bmp open by picture tool.

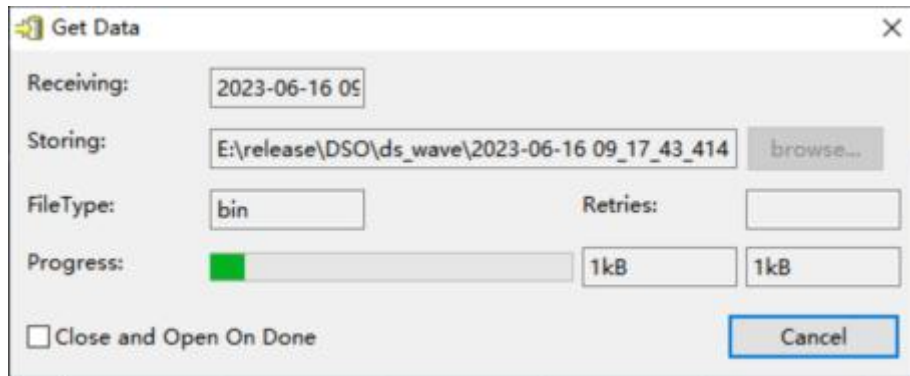


Fig 3-4-3

3) Continue Data Download: Gain data using interval time in interface set based on continuous "data acquirement" until clicking Stop.(the interval time should be 500ms or more to guarantee transmit and operation.).

Vector data will be uploaded and shown immediately, recorded in hardware. Bitmap file recorded at the same way except for uploading.

4) Stop Data Download : Stop auto acquiring.

5) Auto Player: automatically display the waveform data.

Before using the function of Auto Player, you should make sure that you used the function of auto acquirement to record data files in hardware, which use a data record directory path. When you open the AutoPlayer Dialog, [Add] this directory path as a display [History], Choose [Play Mode] as [Turn] or [Reverse], set the [Time Delay(ms)], then you can click the Start Arrow Button to display the record waveform data, it also provides Stop, Next, Previous to operate, you can also drag the progress item to location.

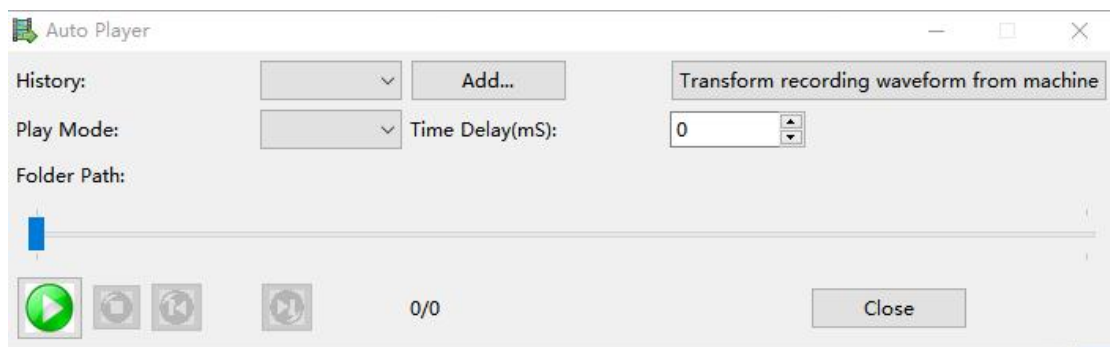


Fig 3-4-4 Auto Play Window

6) Remote Control (USB Supported)

Through the operation of the software to remotely control the instrument, set the required parameters.

(5)Language (Fig 3-5)

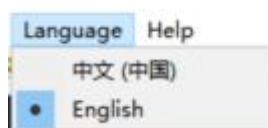


Fig 3-5: Language menu

In this menu, the users can make the language conversion between English and espahol.

(6)Help (Fig 3-6)

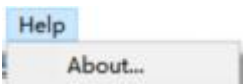


Fig 3-6

About: about soft information

IV. Toolbar:

Toolbar shortcuts common menu items about 13 numbers of knobs as follows:



1 2 3 4 5 6 7 8 9 10 11 12 13

Icon	Name	Function
1	Open	Open saved files with suffix bin
2	Print preview	Preview the print effect
3	Print	Print by printer

4	Data display	Display every voltage sequence of sampling point
5	Display/hide grids	Display or hide grids scale of waveform background
6	Display linked waveform	Draw the sampling point and connect in direct line
7	Display data point	Draw the sampling point discretely
8	Communication setting	Set communication parameter
9	Manual acquirement	Open waveform acquirement interface
10	Auto acquirement	Auto acquiring files
11	stop	Stop auto acquiring
12	Auto Play	Auto play the .bin file
13	Remote control	Turn on remote control

V. Relevant operations

Some related operations of the software.

1. Operation for waveforms display range: (Fig 5-1-1)

(1) Waveform moving up and down:

Firstly, the position as Fig (CH1) is the zero voltage position of current waveform.

1) Fine adjustment: drag "CH1" and make the waveform move up and down on the screen;

2) Coarse adjustment: drag the ruler slider on the right and make the waveform move up and down, the moving area is the maximum movable area on time base division (which could be check the current blocks on the right of cursor area, a block $\frac{1}{8}$ of height of the screen.).

(2) Waveform move left and right: Move the mouse to the waveform, it becomes icon, then drag the mouse to make the waveform left and right as Fig 5-1-1;

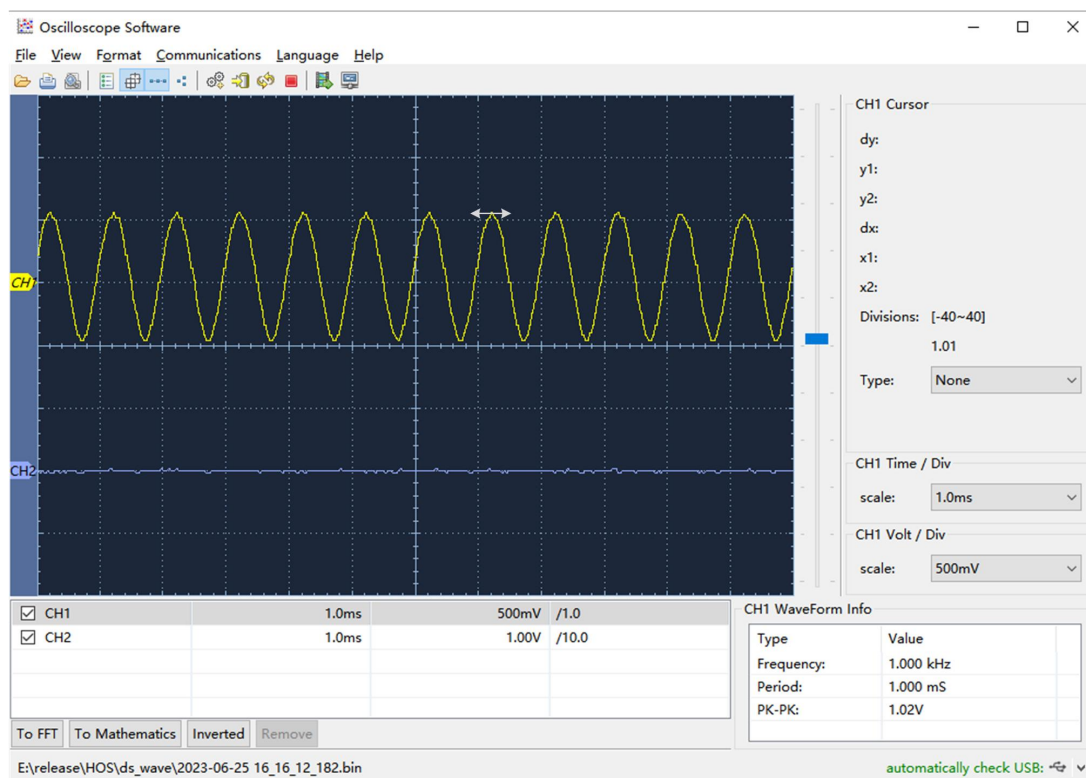


Fig 5-1-1

- (3) Change the color of waveform: double click "CH1" to bring out color dialogue box to change the color.
- (4) The time base division of current waveform can be shown and adjusted in such area (as Fig 5-1-2) which is the time range about one scale on the vertical line (8 scales in the following), and adjust the scale in the come box, the waveform zoom to the corresponding division with the centre scale mark as centre shaft.(Fig 5-1-3).

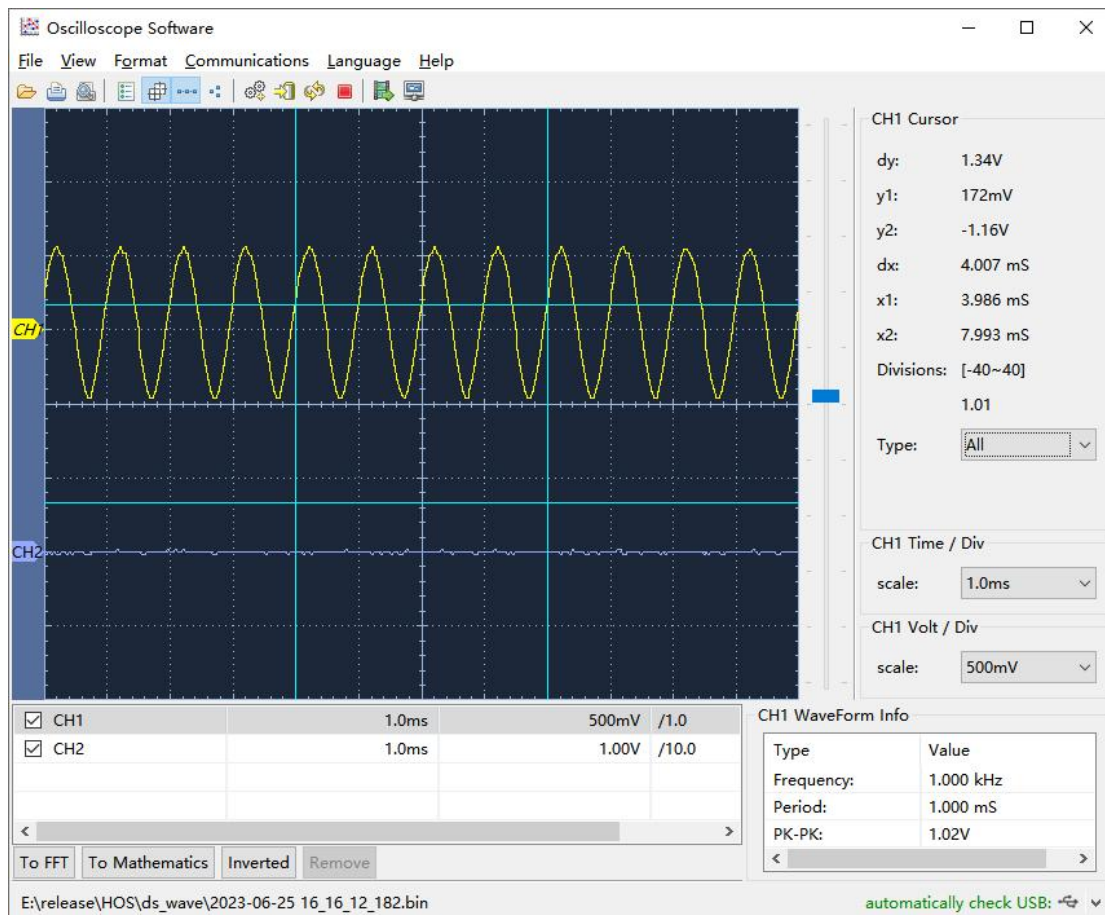


Fig 5-1-2

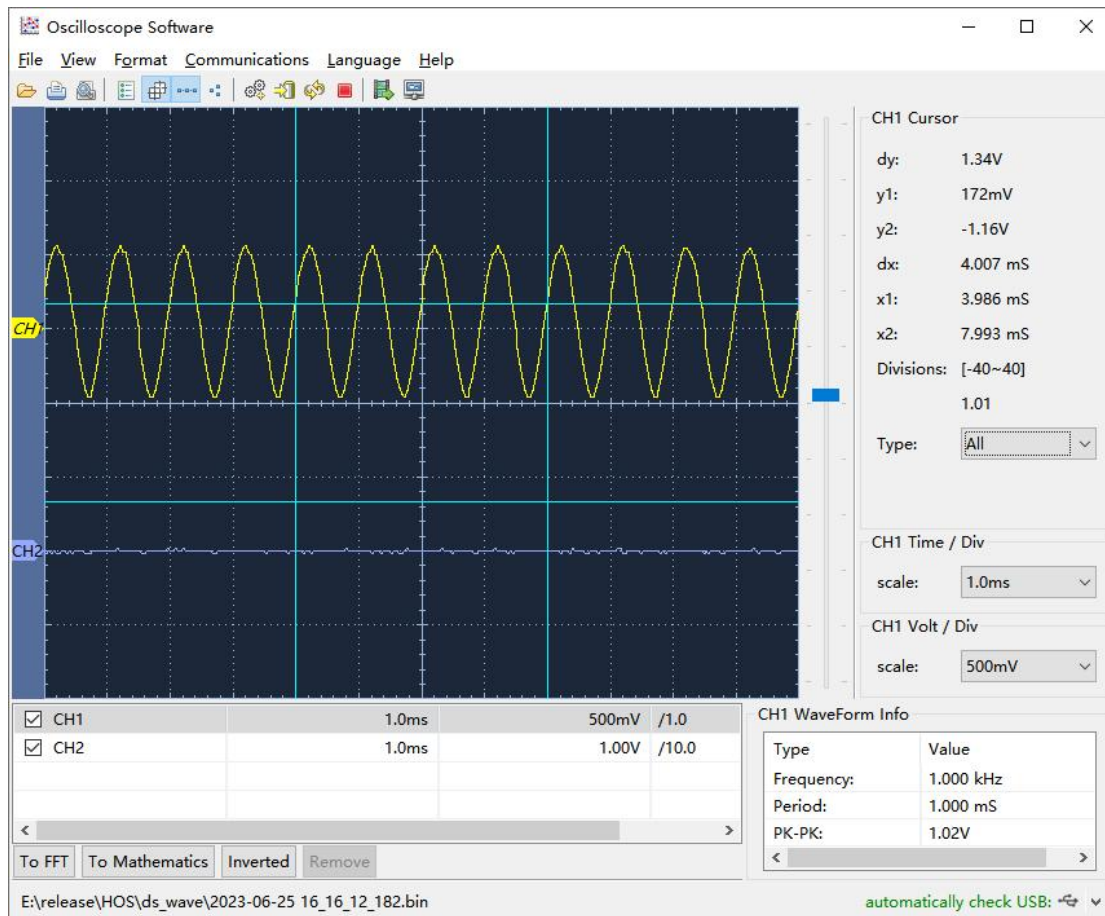


Fig 5-1-3

- (5) In this aspect, voltage division can be use to show and adjust the current waveform which is one scale on the horizontal line (12 scales in the following, different series with different format which are only for reference.) and adjust the scale in the come box, the waveform zoom to the corresponding division with the zero voltage position as centre shaft.

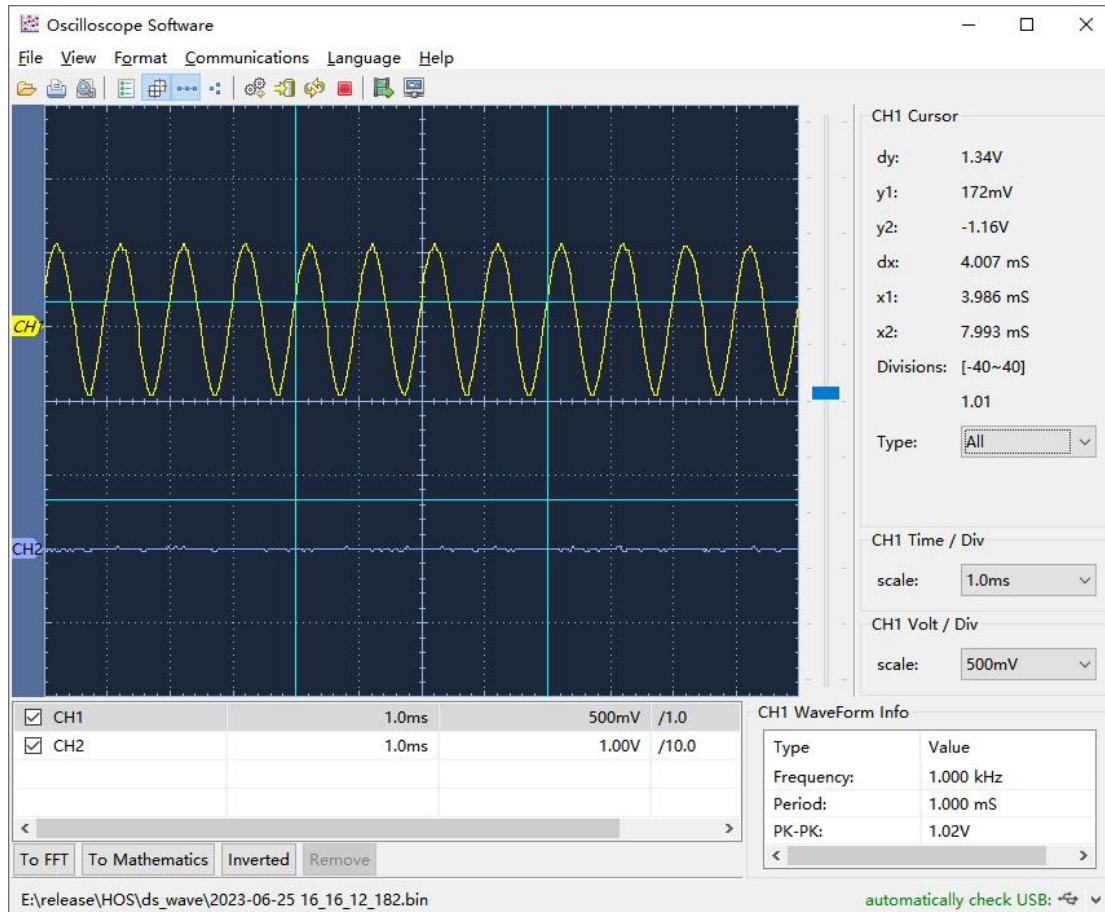


Fig 5-1-4

2. Operation in cursor area (Fig 5-2)

There are four cursor types for selection to measure and locate, such as: none, horizontal line, vertical line, double line (that is horizontal line and vertical line display at the same time) (Fig 5-2)

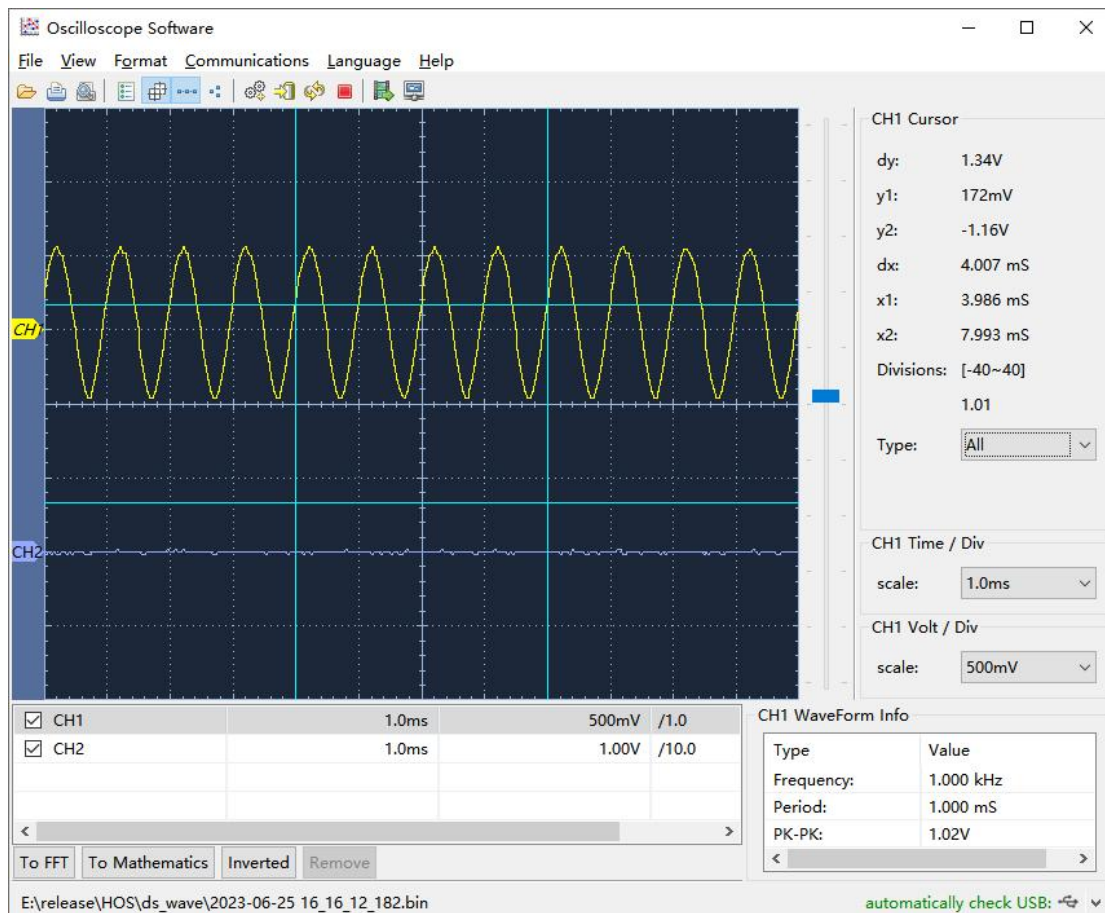


Fig 5-2

- (1) None: without measure cursor;
- (2) Horizontal line: Drag the two horizontal lines in the waveform area up and down to measure every voltage value on the vertical of current waveform, as the above Fig the Y1,Y2 shows the actual voltage values of the two vertical lines corresponding to the zero point of current waveforms and $dy=y1-y2$ which is the voltage difference value of the two cursor lines;
- (3) Vertical line: Drag the two vertical lines in the waveform area left and right to measure every time value on the horizontal of

current waveform, as the above Fig the x_1, x_2 shows the time value of the two vertical lines(the leftmost is zero value of time), $dx=x_1-x_2$ which is the time difference value of the two cursor lines.

(4) Double lines (Fig 5-1-3): The vertical line and the horizontal line are all in the waveform area and be measured at the same time.

3. Operation in channel box (Fig 5-3)

The user can click some channel in the channel box or some waveform in such area to set the current waveform (select CH1 or sampling point in the waveform), then the selected channel would be high light marked and the corresponding data will be displayed in the time base division, voltage division and parameter area simultaneously.

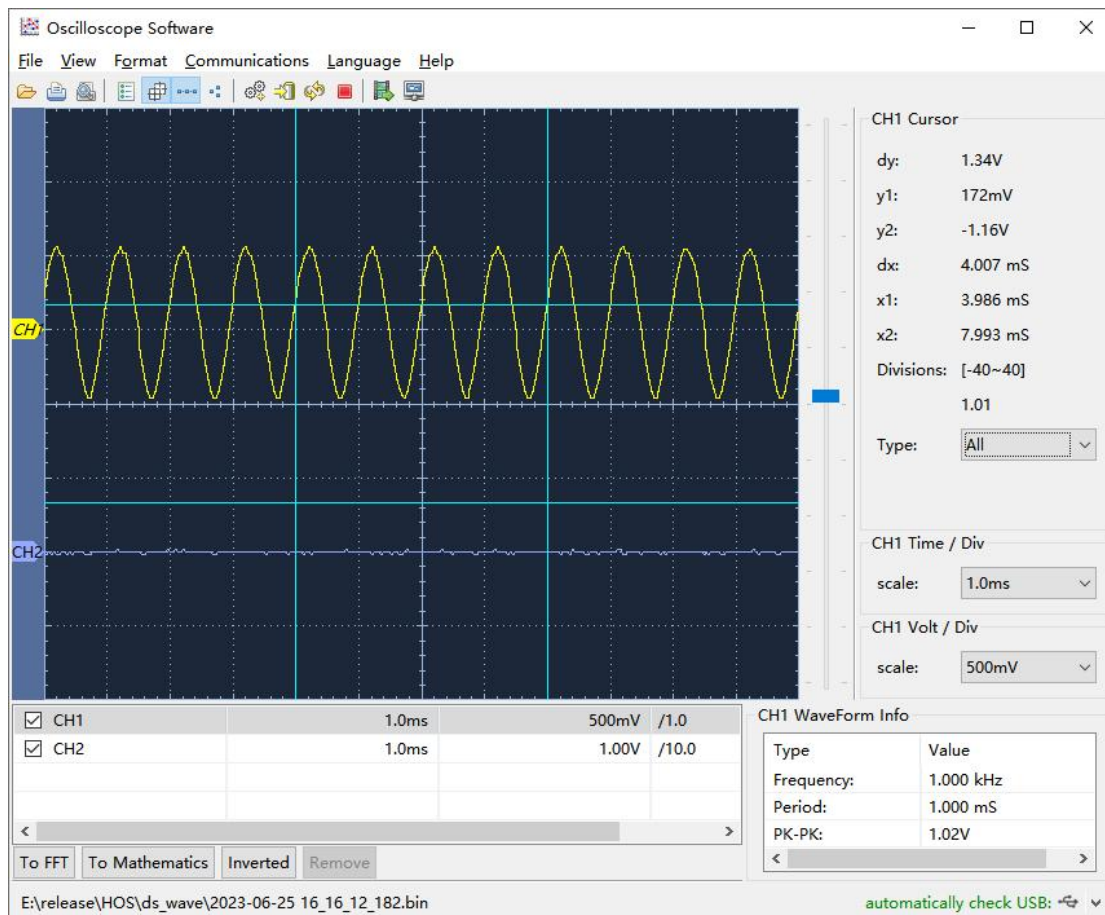


Fig 5-3