Leaptronix®

PLA Series Operating Manual

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Warranty Description of Logic Analyzer

Leaptronix provides a one-year warranty of spare parts and assembly, from the date of delivery, for the products produced and sold by itself. In the event of any defect within the warranty period, Leaptronix will deliver materials and repair the defect products at its own cost, with exception of consumables. To acquire the warranty services, the customers shall, at the beginning of warranty, notify Leaptronix by the following ways, and make proper arrangements for the services:

(1) Fill data in the product warranty, and send the product warranty to Leaptronix by fax.

(2) Notify Leaptronix service personnel by telephone the complete data in the product warranty.

In the occurrence of warranty, the customers shall, at its own cost, package and deliver the defect products to the agents or distributor service center designated by Leaptronix.

If the locality of customers and Leaptronix service center are at the same country, Leaptronix will pay the mailing expenses; otherwise, the customers shall pay all transport expenses, tariffs, taxes and any other expenses.

This warranty doesn't apply to any defect, failure or damage arising from improper use, incorrect or insufficient maintenance and servicing. Leaptronix will not deliver services in either of the following cases:

(1)Damage not caused by Leaptronix personnel during assembly, repair or servicing.
(2)Damage caused by improper use or connection to incompatible equipments.
(3)Any damage or malfunction caused by use of non-Leaptronix consumables.
(4)Damage arising out of modification or integration with other products, in respect of which subsequently leads to more difficulty or time in services.

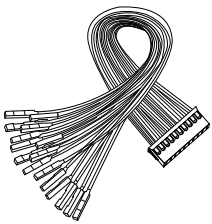
This warranty is provided by Leaptronix, which assumes no warranty of any transaction and resale for special purposes. Repair or replacement of defect products by Leaptronix shall be deemed as a remedy measure for the customers within the warranty period. Under no circumstances will Leaptronix be liable for any indirect, special, incidental or consequential damages, whether or not giving warnings in advance.

Warranty Description of Consumables of Logic Analyzer

The spare parts or assembly components other than the analyzer body and junction box are consumables not covered in the warranty service. The spare parts and assembly components shall be checked within 30 days after procurement; in the case of any abnormality, the designated agents shall be notified immediately, and defect spare parts or components shall be attached for replacement.

List of consumables or assembly components:

- 16CH signal capture cable



- USB Cable

Chapter 1 Product Description

1-1 Product Overview

Since its founding in 1980, Leaptronix was always devoted to IC burning and measurement, and also committed itself to delivering perfect R&D environment and top-quality measuring instruments.

In response to the measurement demands and further combination with other industries in digital times, Leaptronix was established to offer the most important digital measurement instrument: Leaptronix, typically represented by “PLA Series”.

PLA Series is a fault-free digital signal analyzer with 16-32CH, 100~250MHz sampling rate and 100MHz, which enables real-time tracking and capture of targeted signals on an independent instrument, but also stores, visualizes and analyzes the printed waveforms. So, it’s a perfect tool for analysis and debugging, helping you to complete your task for rapid troubleshooting and product development.

1-2 Safety Notes

All operations, maintenance and servicing must adhere to the following safety notes and precautions. Our company shall not assume any responsibility for any unexpected results arising from misuse of the instruments due to failure of following the safety notes.

1. Don't use this instrument nearby combustible gas or flame.

2. Don't remove the housing of instrument during operation, or adjust and replace spare parts in order to avoid misoperation and unnecessary danger!

WARNING!
This symbol warns you of the danger. Failure to correct operation or compliance with the operating procedure may lead to personal injury. Continuous use is prohibited unless the operating procedure is fully understood.

CAUTION!
This symbol reminds you of the danger. Failure to correct operation or compliance with the operating procedure may lead to instrument damage. Continuous use is prohibited unless the operating procedure is fully understood.

1-3 Product Specifications and Characteristics

Item		Specification	
		PLA-1016	PLA-2532
Time sequence analysis(capture frequency)		100MHz,Max(10ns)	250MHz,Max(4ns)
State analysis(External clock)		100MHz(Max)	100MHz(Max)
Bandwidth		100MHz	100MHz
Channel		16CH	32CH
Memory	Total memory	256 KBytes	2MBytes
	Memory depth	128k bits x 16CH	512k bits x 32CH
Trigger	Trigger number	1~255	1~255
	Trigger mode	Pattern/Edge / AND / OR	Pattern/Edge / AND / OR
	Trigger channel	16CH	32CH
	Advance/delay trigger	YES	YES
	Trigger PAT	3 (Edge or Pattern)	3 (Edge or Pattern)
	Continuous/discontinuous trigger	YES	YES
	Trigger output	YES(TTL Level)	YES(TTL Level)
	Trigger pulse width	YES	YES
	Bus analysis	YES	YES
	Glitch capture	YES	YES
Reference voltage	Range	-4V~+4V	-4V~+4V
	Accuracy of reference voltage	± 50mV	± 50mV
Max. input voltage		± 30V	± 30V
Input impedance		100KΩshunted by ≈ 10pF	100KΩshunted by≈ 10pF
Temperature	Operating temperature	0℃~45℃(32℉~113℉)	0℃~45℃(32℉~113℉)
	Storage temperature	-40℃~75℃(-56℉~167℉)	-40℃~75℃(-56℉~167℉)
Data skew		10ns typical	4ns typical
PC Link interface		USB 2.0	USB 2.0
Power supply		USB	USB
Dimension	Length x width x depth(cm)	15cm x 8cm x 3cm	15cm x 8cm x 3cm
	weight	230g	240g

1-4 Accessory List

After getting the package of the logic analyzer, please check if the standard accessories are complete according to the under list at once:

1. PLA-1016

NO	Name	Quantity	
01	PLA-1016	1	
02	Signal capture cable	1(16CH)	
03	CD-R	1	Including software, driver and manual
04	USB Cable	1	
05	Service warranty card	1	
06	Package acceptance form	1	Listing product package content

2. PLA-2532

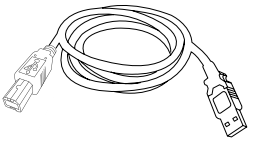
NO	Name	Quantity	
01	PLA-2532	1	
02	Signal capture cable	2(16CH)	
03	CD-R	1	Including software, driver and manual
04	USB Cable	1	
05	Service warranty card	1	
06	Package acceptance form	1	Listing product package content

* Check if the accessories and quantities are complete according to the above list. Otherwise notify the company or local agent immediately for timely handling.

1-5 Optional Components

- 16CH signal capture cable

- USB Cable



1-6 System requirements

1. Operating system
   Microsoft Windows 2000
   Microsoft Windows XP
   Microsoft Vista 32

2. CPU
   Windows 2000, Windows XP Home, Pro: 300MHZ or above

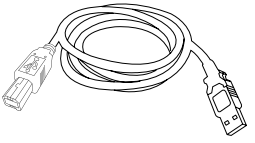
3. Memory
   Win2000 Pro: 128MB or above
   (Win XP Home, Pro: 256MB or above)

4. Hard disk space
   Minimum for 50MB available hard disk space

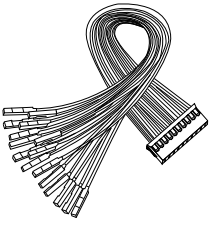
1-7 Appearance and function introduction

1. Logic analyzer main unit

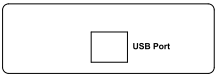
2. USB cable



3. Signal lead set

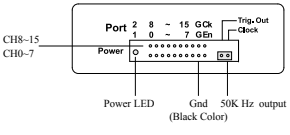


4. Back panel(USB port)

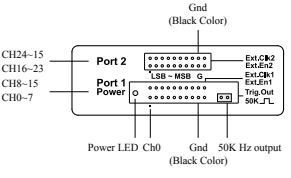


5. Front panel

(1). Description of PLA-1016 Front Panel



(2). Description of PLA-2532 Front Panel



Chapter 2 Check the instrument

2-1 Check prior to Installation

1. The ex-factory instruments are already tested and checked. Please unpack and check firstly to ensure the instruments are free of damage during the transportation.
2. Check if the accessories and quantities are complete according to the list of accessories, otherwise notify the company or local agent immediately for timely handling.

Chapter 3 Installation and Execution

3-1 Installation of Software

1. Software is mainly used to make the captured signal waveform of PLA for saving, visualization, search and printing.

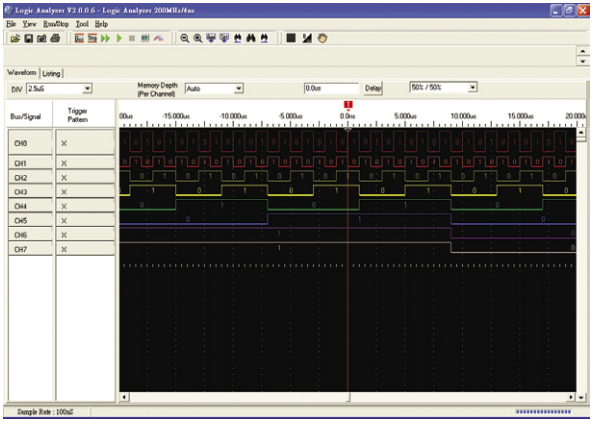
2. Software has a communication interface USB 2.0, so USB driver shall be installed.

3. Application software attached onto PLA (or "download area" of Leaptronix website) shall be installed into PC: After the program is unzipped, an installation key will pop up, click this key and follow the steps on PC display for installation.

4. After completion of installation procedure and steps, button  will appear at PC desktop, indicating the completion of installation.

3-2 Operation of Software

Click LA's button  at PC, enter into PLA operating display as follows:

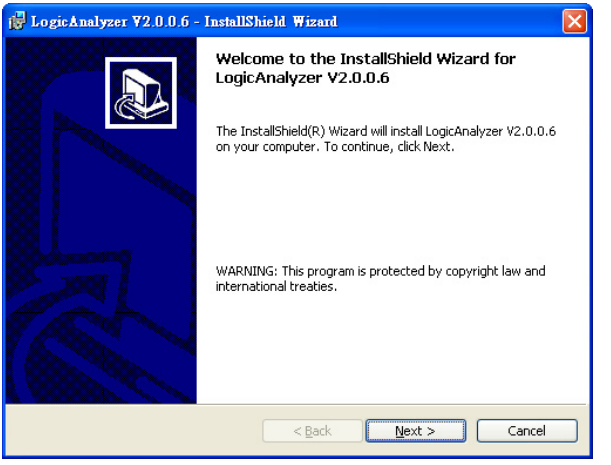


3-3 Software System Requirements

CPU: 3.0GHz or higher.
Ram: at least 512MB.
HD: 50MB.
Port supporting USB2.0.

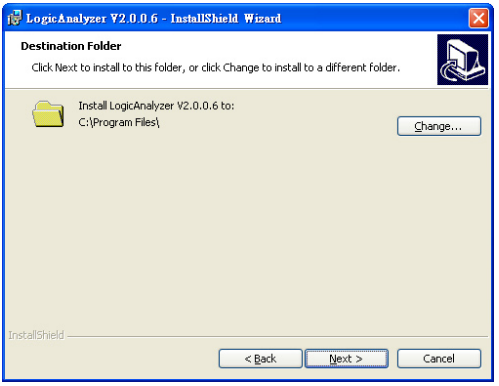
3-4 Software Installation Steps

Step1: close all running programs.
Step2: place CD in the optical drive, and install by the following steps.
If auto-play of the optical drive is activated, the following display will appear:

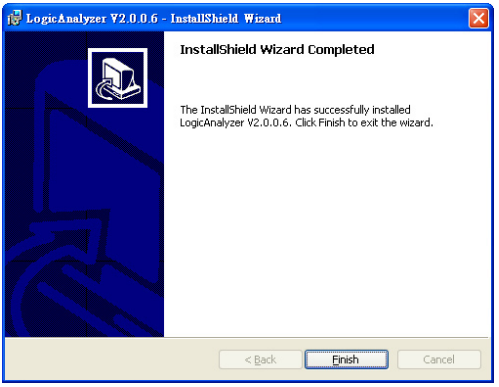


If Optical disc isn't automatically performed, press "Start" button of Windows, then press "Execute". Enter "D: \setup.exe" (assuming optical drive is: "D: \") in "Activate" field.

Step3: press "Next", the option display of installation path will appear:

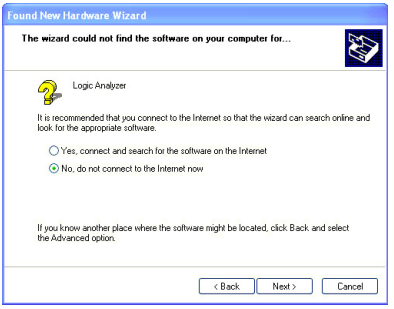


Step4: start installation by pressing “Next”, and finally press "Finish".



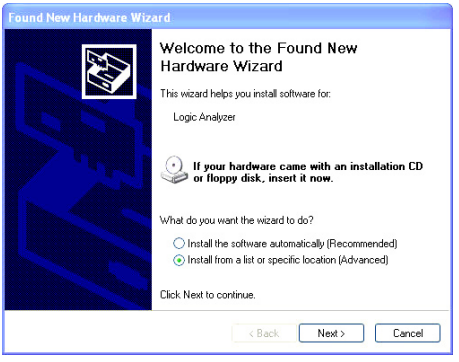
3-5 Hardware Installation Steps

Step1: Logic Analyzer is linked to PC via USB; in the case of first installation, the following display will appear:



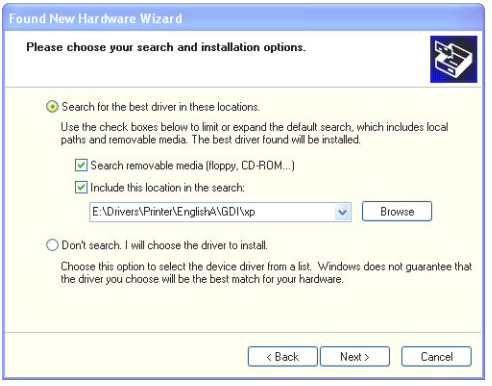
Select “No, do not connect to the internt now ”.

Step2: the following display appears press "Next".



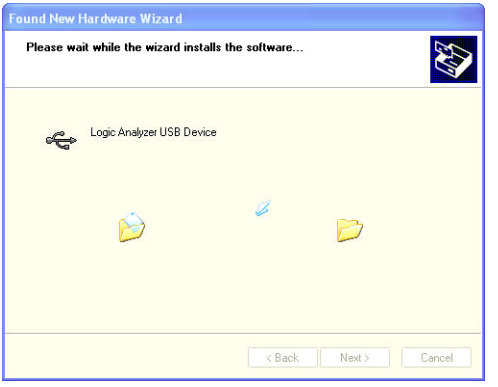
Select “Install from list or specific location”

Step3: the following display appears press "Next"



Select “this location is included during search”, and press "review".

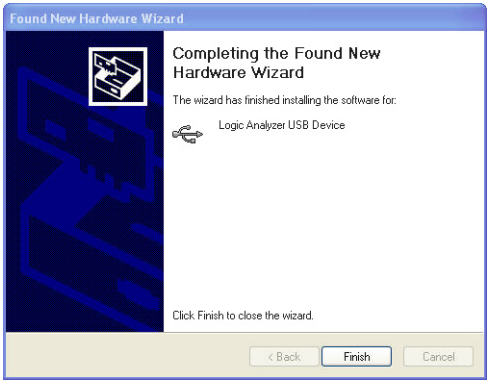
There is a “Driver” folder under the installed data folder (preset as: c:\program files\Logic Analyzer V2.0\); select the data and press "Confirm".
Step4: after pressing "Confirm", select "Next" to start installation of the intended Driver.



The following warning window will appear during installation:

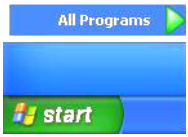
Select “Continue Anyway” for completion of Driver installation.

Step5: after completion of installation, press “Finish”.

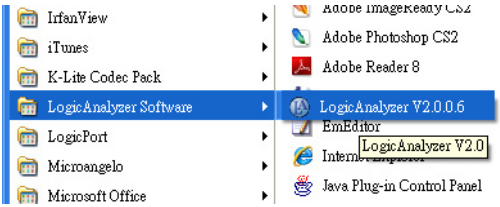


3-6 Software Execution

Method 1:
1. Press "Start" function key, select "all programs".



2. Start the software by selecting LogicLogicAnalyzer Software → LogicAnalyzer V2.0.



Method 2:
1. start the software by clicking directly the software tag on the desktop.

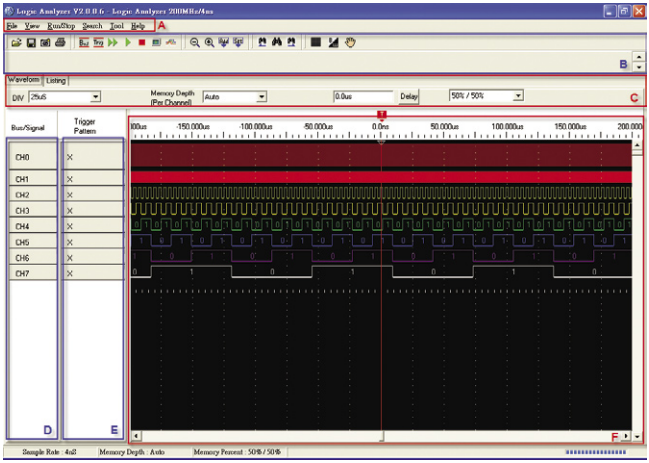
3-7 Interface

3-7-1 Model Selection

Select the types by pull-down menu.

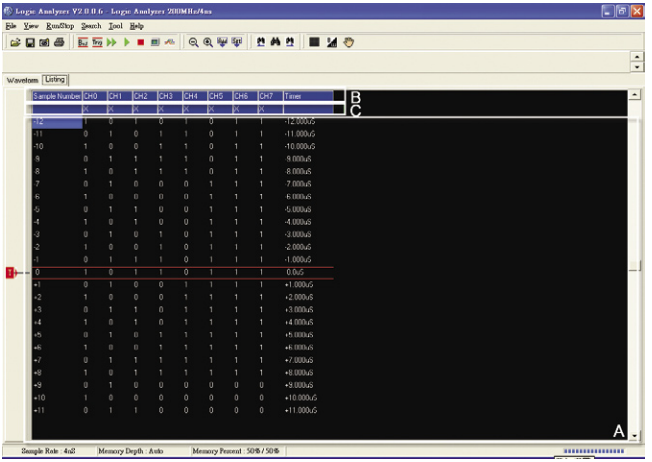
3-7-2 Operating Interface

1. Window
   (1) .Waveform window



A: Functional option list.
B: Tool list.
C: Message list.
D: Display of channel names.
E: Display of trigger mode.
F: Waveform display area.

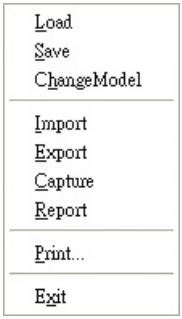
(2). State Mode



A: State mode display area.
B: Display of channel names.
C: Display of trigger mode.

2. Menu

(1). File menu



Load: load the files saved in PC.
Save: save the existing data into file.
ChangeModel: switch different model.
Import: import the data of host computer to PC.
Export: export PC data to the host computer.
Capture: capture the existing display into file.
Report: put the existing data into report.
Print: print the existing waveform.
Exit: close the existing programs.

(2). View menu

HandShift: move waveform by mouse.
Zoom In: zoom-in waveform.
Zoom Out: zoom-out waveform.
Grid Style: grid style switching.
B/W: background color switching.

(3). Run/Stop menu

Auto Scale: auto-search.
Run: continuous sampling.
Single Run: single sampling.
Auto Store: auto-saved.
Erase: erase screen.
Stop: stop.

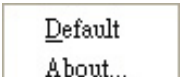
(4). Search menu

Search Setting: Start search function dialog box.
Search Previous: Search previous date.
Search Next: Search next date.

(5). Tool menu

Trigger Edit: set trigger conditions.
Channel/Bus Edit: Set Channel/Bus.
GOTO Cursor: Position the cursor.

(6). Help menu



Default: ex-factory setting.
About: software information.

3. List of Operations

(1). File function list

A: Load. B:Save.
C: Capture display. D: Print.

(2). Advanced function list

A: Call BUS setting dialog box.
B: Call Trigger setting dialog box.
C: Continuous sampling.
D: Single sampling.
E: Stop.
F: Auto scale.
G: Auto store.
H: Erase

(3).Utility operation list

A: G: Search next.
B: Zoom-out.
C: New cursor.
D: Cursor spacing display.
E: Search previous.
F: Search setting.
G: Search next.
H: Grid style.
I: Background white.
J: Handshift.

3-8 Detailed Operations

3-8-1 File Functions

1. Load
   Method 1:
   Select "File" menu and then "Load".

   Method 2:
   Click the file folder pattern on the tool list.

2. Save
   Method 1:
   Select "File" menu and then "Save".

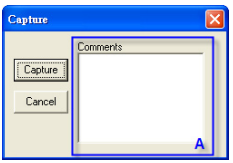
   Method 2:
   Click the disc pattern on the tool list.

3. Export
   (1). Connect Logic Analyzer with PC via USB.
   (2). Then, select "File" menu and Export, thus exporting data to Logic Analyzer.

4. Import
   (1). Connect Logic Analyzer with PC via USB.
   (2). Then, select "File" menu and Import, thus importing data from Logic Analyzer to PC software.

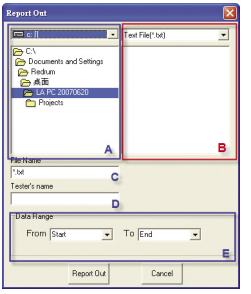
5. Capture
   Method 1:
   Select "File" menu and then "Capture" to call capture dialog box.

   Method 2:
   Click and select the camera pattern on the tool list to call the capture dialog box.



Capture dialog box:
A: if there is any input comment, the comments will be automatically added to left upper corner.

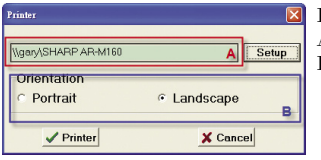
6. Report Print-out
   Select "File" menu and then "Report Out" to call "Report Out Dialog Box".



Report Out Dialog Box:
A: Route selection
B: File selection
C: File name entry box
D: Name of test personnel
E: Selection of export range

7. Print
   Method 1:
   Select "File" menu and then "Print" to call print dialog box.

   Method 2:
   Click and select the printer pattern on the tool list to call the print dialog box.



Print dialog box:
A: Printer currently selected
B: Portrait or landscape

3-8-2 Waveform capture

1. Continuous sampling
   Method 1:
   Select "Run/Stop" menu and then "Run" to capture continuously the waveform data.
   Method 2:
   Click dual arrow pattern on the tool list to capture continuously the waveform data.

2. Single sampling
   Method 1:
   Select "Run/Stop" menu and then "Single Run" to capture individually the waveform data.
   Method 2:
   Click single arrow pattern on the tool list to capture individually the waveform data.

3. Stop
   Method 1:
   Select "Run/Stop" menu and then "Stop" to stop all operations.
   Method 2:
   Click the red square pattern on the tool list to stop all operations.

4. Auto-scale
   Method 1:
   Select "Run/Stop" menu and then "Auto Scale" to search automatically waveform data and set the system parameters.
   Method 2:
   Click the display pattern on the tool list to search automatically waveform data and set the system parameters.

5. Auto store
   Method 1:
   Click "Run/Stop" menu and then"Auto Store"to auto store the waveform.
   Method 2:
   Click the waveform pattern on the tool list to auto store the waveform.

6. Erase screen
   Method 1:
   Click "Run/Stop" menu and then "Erase" to erase the screen.
   Method 2:
   Click "Erase" pattern on the tool list to erase the screen.

3-8-3 Waveform analysis

1. Grid style
   Method 1:
   Click "View" menu and then "Grid Style" to change the grid display mode.
   Method 2:
   Click the grid pattern on the tool list to change the grid display mode.

2. Background color
   Method 1:
   Click "View" menu and then "B/W" to change the background color.
   Method 2:
   Click the B/W pattern on the tool list to change the background color.

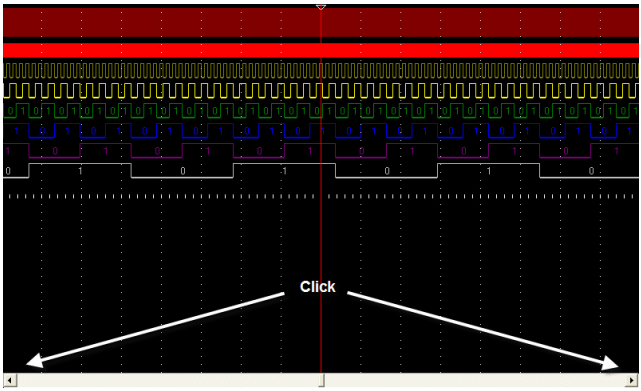
3. Handshift
   Method 1:
   Click "View" menu and then "Handshift" to change the handshift.
   Method 2:
   Click the palm pattern on the tool list to change the handshift.

4. Waveform zoom-out
   Method 1:
   Click "View" menu and then "Zoom Out" to zoom-out the waveform.
   Method 2:
   Click zoom-in (-) pattern on the tool list to zoom out the waveform.

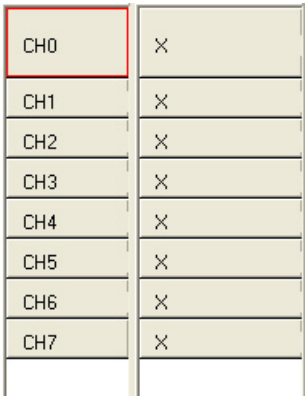
5. Waveform zoom-in
   Method 1:
   Click "View" menu and then "Zoom In" to zoom-in the waveform.
   Method 2:
   Click zoom-in (+) pattern on the tool list to zoom in the waveform.

6. Waveform shift

Drag the scroll axle below the waveform display to shift the waveform or use handshift to drag leftwards or rightwards.



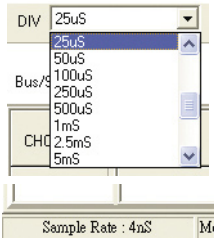
7. Adjust the position of waveform



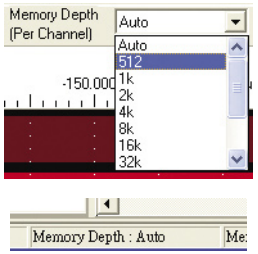
Press and drag the left mouse button on the left side to adjust the position of waveform. The selected channel is highlighted by a red box.

3-8-4 Settings

1. Setting of interval time
   Click the pull-down menu of the tool list under "waveform window". The setting is coming out an interval of a scale on the picture. After completion of setting, it will display corresponding sampling frequency use in the left corner.



2. Setting of memory depth
   After completion of setting completion, it will show the memory depth by corresponding use at the left corner.
   In the case of bigger memory depth and lower sampling frequency, it takes longer time to capture data. In such case, "Auto" option could be selected to enable automatic setting of memory depth for faster data capture.
   After finishing the setting, it will show the memory depth by corresponding use at the left corner.



3. Setting of channel/BUS

Method 1:

Click "Tool" menu and then "Channel/Bus Edit" to call Channel/BUS edit dialog box.

Method 2:

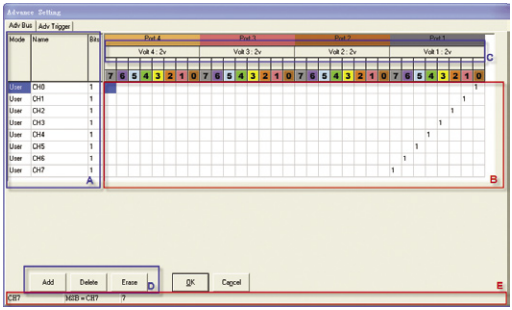
(1). Click right mouse button in waveform display under waveform mode, select "Advance BUS" from the pull-down menu to call Channel/BUS edit dialog box.

(2). Click right mouse button in data area under state mode, and select " Advance BUS" from the pull-down menu to call Channel/BUS edit dialog box.

Method 3:

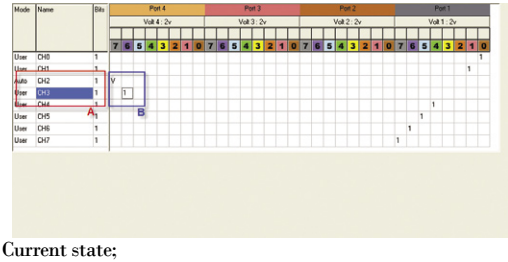
Click "Bus" pattern on the action list to call Channel/BUS edit dialog.

(1). BUS setting page



A: Channel state;
"Mode", "name" and "bits in channel" from left to right.
B: Channel/BUS setting zone
C: PORT voltage display
D: Function key
E: State display zone

(2). Channel setting

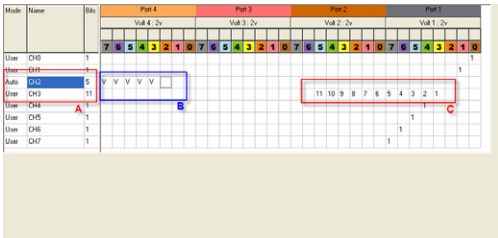


A: Current state;
This setting is valid only when the channel is BUS.
Bits indicate the quantity of Bit(Channel) in the channel, 1 is single channel, 0 is shut-off; the others bigger than 1 is BUS.

B: Since "Auto" and "User" modes are valid only when the channel is BUS, the setting of channel is not affected even if Channel is displayed by numerical value or selection.

(3). Bus Setting

BUS or Channel is set by dragging with left mouse button at Channel/BUS setting zone.



A: Current state;

Auto represents auto-judgement mode.

User represents user-defined mode.

Bits indicate the quantity of Bit(Channel) in the channel, 1 is single

channel, 0 is shut-off; the others bigger than 1 is BUS.

B: BUS display under Auto mode;

C: BUS display under User mode;

*** Auto mode**

Since no arrangement issue exists in Auto mode, it's displayed by selection; MSB to LSB is arranged from left to right in this mode.

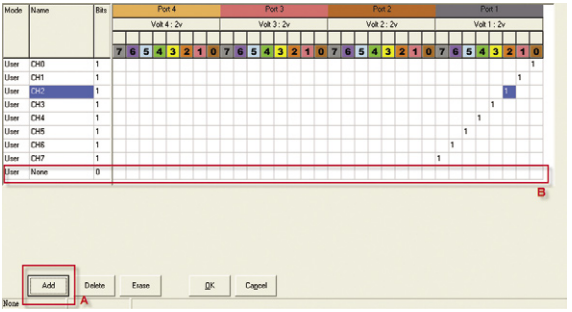
Switching mode: the mode is switched to "Auto" by clicking "User".

*** User mode**

BUS arrangement is user-defined for numerical display. A smaller arrangement number of BUS indicates MSB, otherwise LSB.

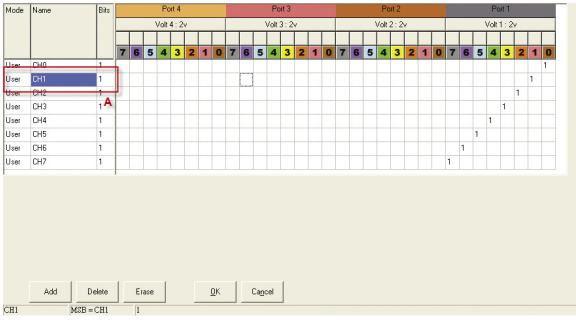
Switching mode: the mode is switched to "User" by clicking "Auto".

(4). New channel

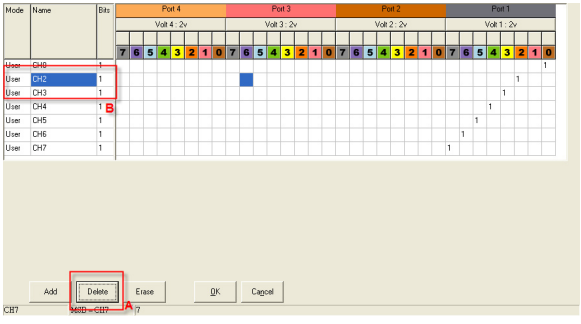


A: Click “Add” at the lower position.
B: Add a new void channel at the lowest position of all channels for the user.

(5). Delete channel

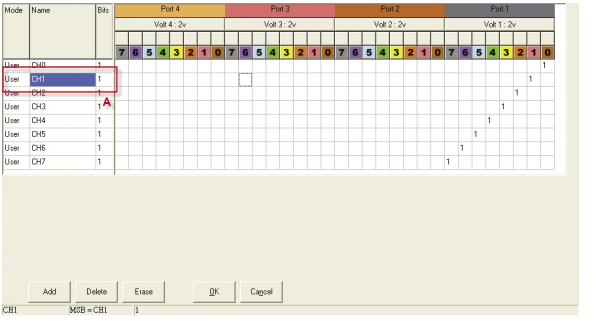


Firstly, select the channel to be deleted.

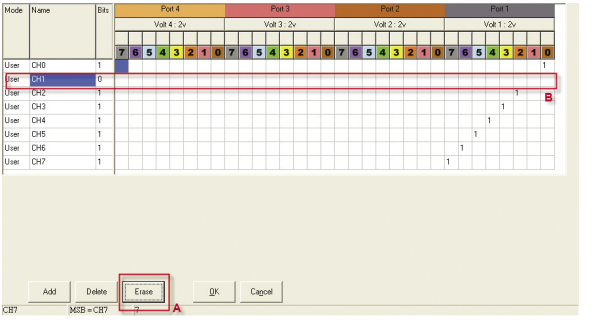


A: Click “Delete” at lower position.
B: The selected channel will be deleted.

(6). Erase channel



Firstly, select the channel to be erased.



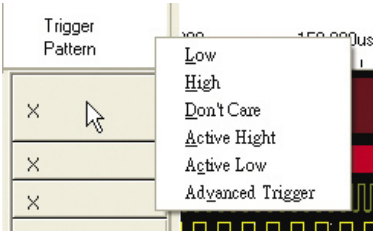
A: Click “Erase” at lower position.
B: The selected channel will be erased.

4. Trigger setting

Simple Trigger setting

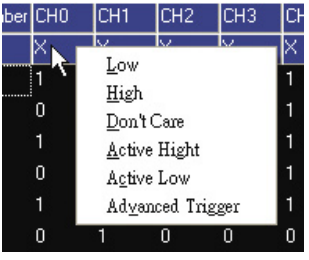
Method 1:

Call the rapid setting list by press right mouse button "Trigger/Pattern" field of the channel in the "waveform window".



Method 2:

Call the rapid setting list by press right mouse button "Sample/Trigger" field of the channel under "state mode".



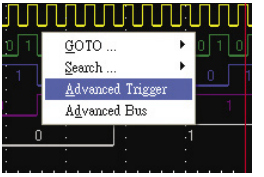
Advanced Trigger setting

Method 1:

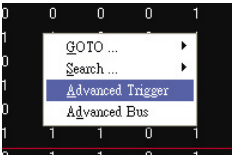
Click "Tool" menu and then "Trigger Edit" to call Channel/Bus Edit dialog box.

Method 2:

Press right mouse button of waveform display under waveform mode, select "Advanced Trigger" from pull-down menu to call Trigger Edit dialog box.



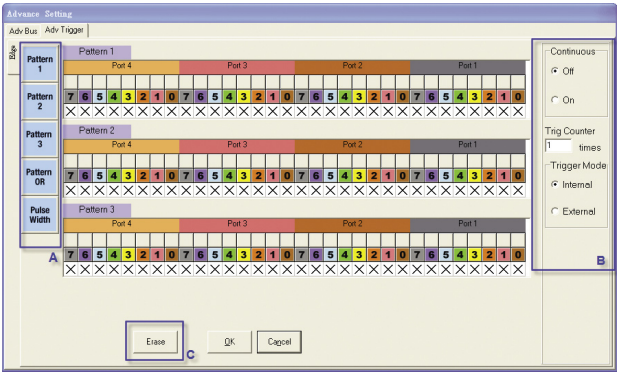
Press right mouse button at data zone under state mode, select “Advanced Trigger” from pull-down menu to call Trigger Edit dialog box.



Method 3:

Click "Trig" pattern on the tool list to call Channel/Bus edit dialog box.

(1). Trigger setting page

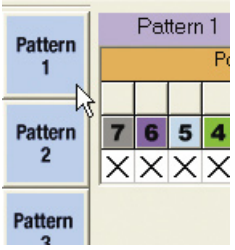


A: Pattern mode switching.
B: Trigger Counter, continuous/discontinuous and internal/external trigger setting
C: Erase key.

(2). Erase Pattern setting
Press the lower “Erase” key to erase all existing Pattern settings;
All Trig states reset to “Don’t Care" under Pattern mode.
The settings are set as "CH0" "High" "<" "1" "us" under Pulse width mode.

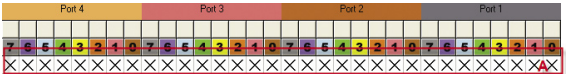
Pattern

(1). Pattern switching



Click the left Pattern key for mode switching.

(2). Setting of Pattern

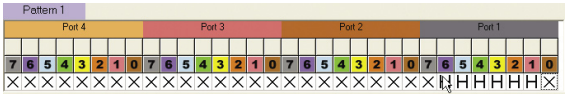


A: Pattern state zone.

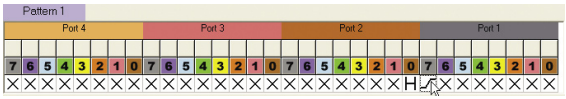
To change the trigger mode of Pattern, call the state menu in the state zone by right mouse button:

The state of channel can be set by clicking the required state.

a. In the case of “Low”, “High” and “Don’t Care", press and hold the left mouse button on the state, then drag leftwards and rightwards to set rapidly the trigger state.



b. In the case of “Raising” and “Falling”, press and hold the left mouse button on the state, then drag leftwards and rightwards to shift the position of “Raising"and "Falling".



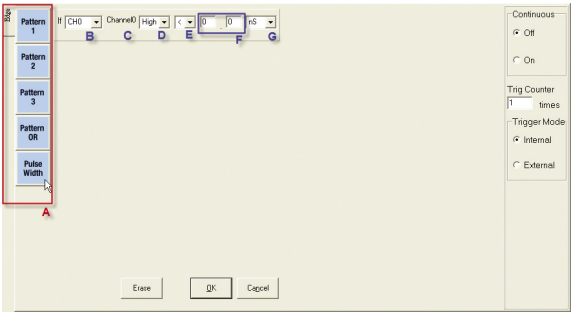
*** Note: only “Low”, “High” and “Don’t Care" trigger state can be selected under Pattern2 and Pattern3.**

*** Either "Raising" or "Falling" can be set under Pattern1 and Pattern OR.**

*** Under Pattern2 and Pattern3, the next Pattern is compared only when the setting state of previous Pattern is already achieved. Trigger is effected when the setting state of all Patterns is met.**

*** Under Pattern OR mode, Trigger is effected if either Pattern1 or Pattern OR state is met.**

Pulse width



A: Switch to PulseWidth setting page by clicking "Pulse Width" button of left Pattern column.
B: Select the channel. (CH0~CH31)
C: Channel name(auto-display).
D: Select logic level. (Low, High)
E: Select condition. (<, =, >)
F: Enter time
G: Select time unit

Continuous and discontinuous

A: Click “On” and “Off” in “Continuous” at right information column.

* This function is effective only in the case of “ Pattern2” and “Pattern3”.

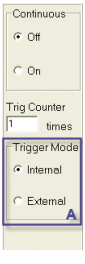
* If continuous/discontinuous is set as "On", trigger is effected only Pattern2 and Pattern3 match continuously Pattern state, without mixture of other states; otherwise no continuous data is required for triggering.

Trigger Counter

A: Enter the intended times in the entry box of “ Trig Counter” at right-hand information column, within the range of 1~255 times.

* If the entry exceeds 255 times, 255 times is limited during system setting.

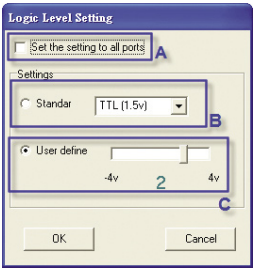
Internal/External trigger



* If setting is set as " Internal" , it selects the internal for sampling frequency.
* If setting is set as "External" , it selects the external CLOCK for sampling frequency.
*Caution!
Use the last channel (CH31) for LA Series to be external clock input.
Use the individual external clock input for LA Series.

5. Voltage setting

Call the voltage setting dialog box by clicking the upper voltage display zone with left mouse button in BUS setting page.

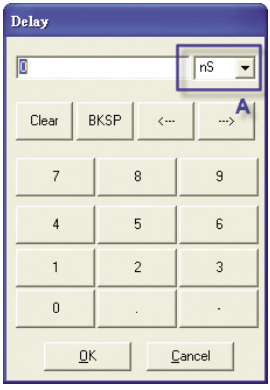


A: Click this option, all Port voltages are set consistently, otherwise set individually.
B: Standard voltage setting; "TTL", "ECL" and "CMOS".
C: User define; user-defined voltage logic level.

* Caution!
The quantity of preset voltage port for PLA Series is slightly different from LA Series, according to the mode to classify into one port and two ports.

6. Delay

Call delay entry dialog box by clicking “Delay” key on the tool list.

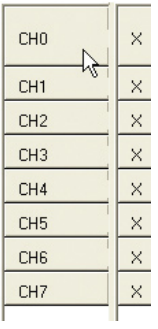


A: Select unit.
BKSP: delete a character by cursor.
Clear: clear the contents in the entry box.
"←", "→": left and right shift of cursor.

7. Change the channel name

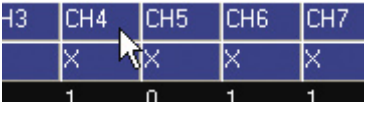
Method 1:

Under the “waveform window”, double click the channel name to call the name setting dialog box.



Method 2:

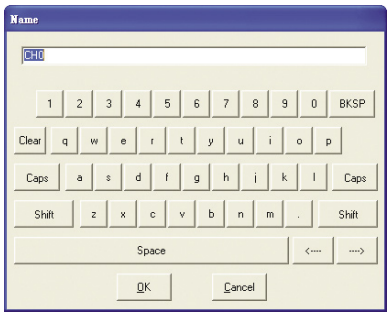
Under the "state mode", double-click the channel name to call the name setting dialog box.



Method 3:
Under "BUS" setting dialog box, double-click the channel name to call the name setting dialog box.

Mode	Name	Bits
User	CH0	1
User	CH1	1
User	CH2	1
User	CH3	1
User	CH4	1
User	CH5	1
User	CH6	1
User	CH7	1

Name setting dialog box:



BKSP: delete a character by cursor.
Clear: clear the contents in the entry box.
Caps: big/small number switching.
Shift: character/symbol switching.
"←", "→" : left and right shift of cursor.

8. Switch BUS numerical display mode

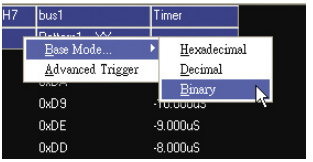
Method 1:

Under the "waveform window", double click the "Sample/Trigger" field of the channel to call the numerical display options.

Hexadecimal: display in hexadecimal system.
Decimal: display in decimal system.
Binary: display in binary system.

Method 2:

Under the "state mode", double click the "Sample/Trigger" field of the channel to call the numerical display options.



Hexadecimal: display in hexadecimal system.
Decimal: display in decimal system.
Binary: display in binary system.

9. Cursor setting

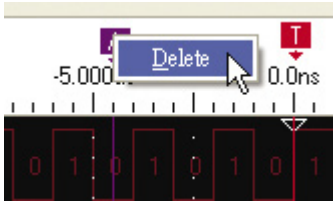
(1). Add new cursor

A new cursor is added into "waveform window" or "state mode" by clicking "Add" icon on the tool list.

*** The quantity of cursors is limited to 26.**

(2). Delete cursor

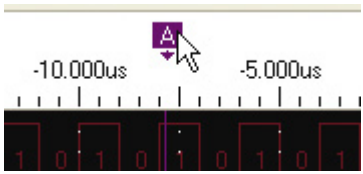
Call the function options by clicking the right mouse button on the cursor to be deleted.



Delete the selected cursor by clicking “Delete”.

(3). Shift cursor

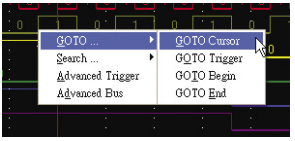
Press and hold left mouse button on the intended cursor, drag leftwards and rightwards to shift the position of cursor.



(4). Look for cursor

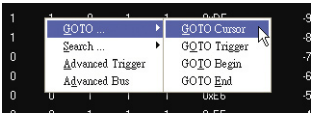
Method 1:

call the function options by clicking right mouse button on "waveform display zone" in "waveform window".



Method 2:

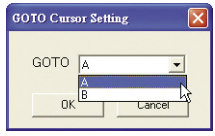
Call the function options by clicking right mouse button on "state display zone" in "state mode".



Method 3:

Click "Tool" menu and then "GOTO Cursor" to call Channel/BUS edit dialog box.

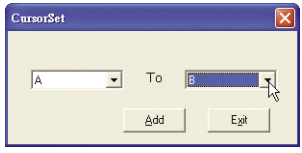
a. Click "GOTO Cursor" to call the cursor and search the dialog box.



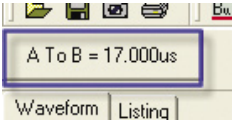
b. Select the cursor to be searched from the pull-down menu.
c. Enable the central point to align the trigger cursor by clicking "GOTO Trigger".
d. Enable the central point to align the starting point of data by clicking "GOTO egin".
e. Enable the central point to align the ending point of data by clicking "GOTO End".

(5). Cursor time

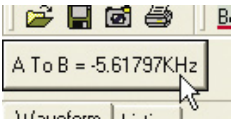
Call the cursor time dialog box by clicking “Set” icon on the tool list.



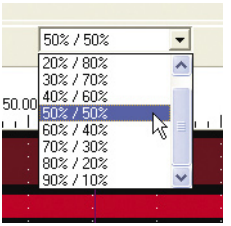
A new cursor time display is added onto the tool list by selecting the starting and ending cursors and then clicking "Add".



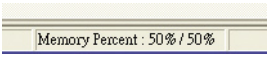
Click the left mouse button on the cursor time to switch between "cursor time" and "cursor frequency".



10 . Show the setting of percentage
Click the pull-down on the tool list in the waveform window.



After completion of setting, the position of hollow point will switch according to the selecting percentage on the picture and proceed the trigger of the memory by selecting percentage.
After completion of the setting, it will show the percentage of corresponding use at the left corner.

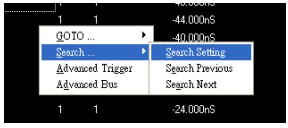


*** After re-catches the data, it will renew status.**

11. Data Search

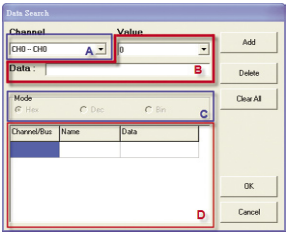
Method1:
Click the pattern of binoculars on the tool list to call the information survey dialog box.

Method2:
Click the right mouse in the “waveform window” or “state mode” to call the information survey function dialog box by selecting ”Search” and then selecting ”Search Setting ”.



Method3:
Click “Search” function list, and then click “Search Setting” to call the information searching function dialog box.

1. Data Search dialog box



A: Channel selecting

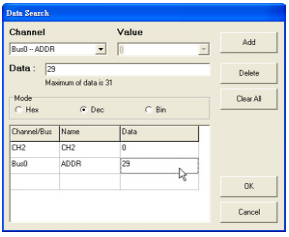
B: Information searching

C: Information of the showing state
(It can be only used if bus is the channel.)

D: List searching

2. Change the information the searching list

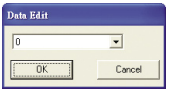
Double click on the data column to call information edit dialog box.



Double click on the data column to call information edit dialog box.

(1). BUS focus window

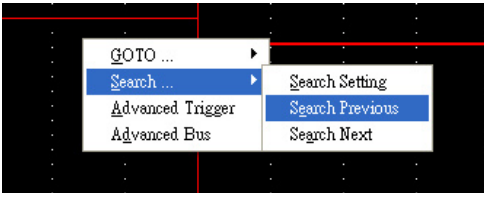
(2). Channel focus window

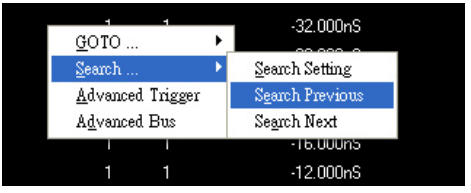


3. Jump to the next and previous information

Method 1:
Click the pattern of "previous" and "next" on the tool list to match to the correspondence information.

Method 2:
Click the right mouse button on the "waveform window" or "state mode" to jump to the correspondence information by selecting "search" and then clicking "Search Next" or "Search Previous".



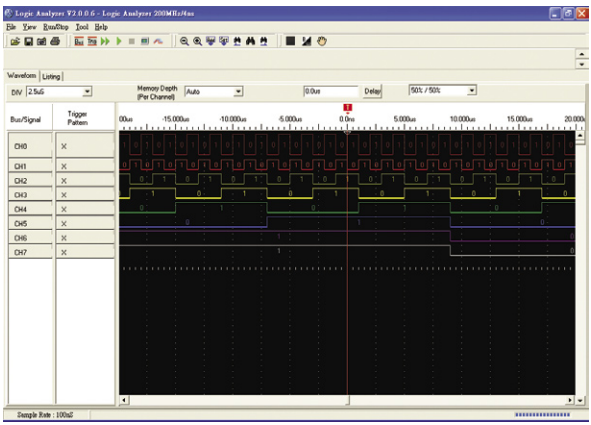


3-9 Shortcut Flow Process

1. Link the Logic Analyzer to computer.
2. Switch the Logic Analyzer to PC Link mode.
3. Perform Logic Analyzer PC software.
4. Select device.

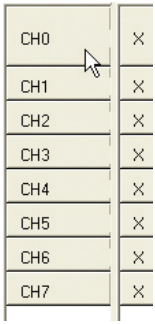
5. Auto-search
   Select auto-search key on the tool list.

"Auto-search" can detect automatically if it's possible to capture signals, Auto-scale sampling frequency and memory depth. The waveform can automatically appear if it's captured.

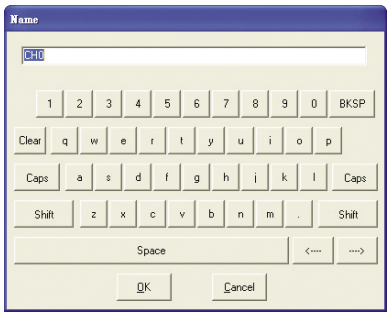


6. Change the channel name

(1). Call the name setting dialog box by double click the name display zone.

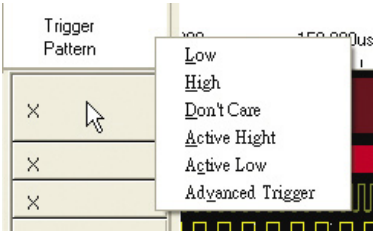


(2). All signals are named using dialog box.



7. Trigger setting

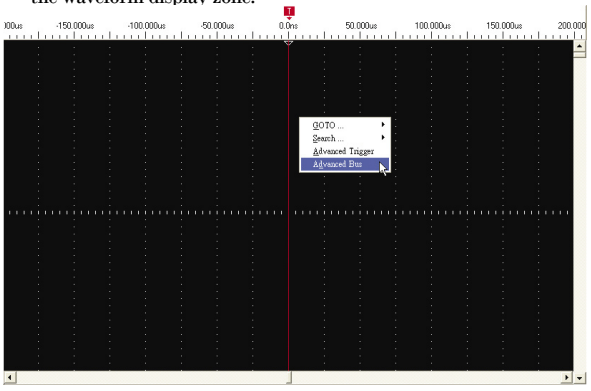
(1). Call simple trigger options by double click “Trigger / Pattern” field.



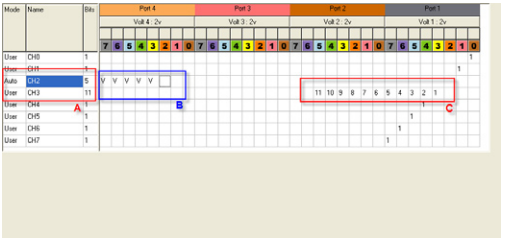
(2). After completion of setting, the waveform is triggered according to the set trigger state.

8. Manial setting

(1). If auto-search is not used, the channel is set by pressing right button in the waveform display zone.

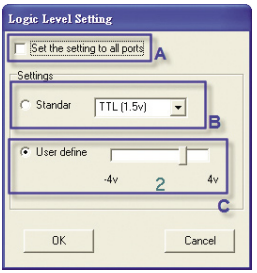


(2). BUS combination and Channel assignment are performed by means of dragging.

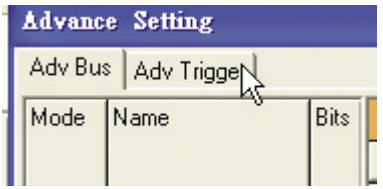


(3). Call the voltage setting dialog box by clicking left mouse button on the voltage display zone.

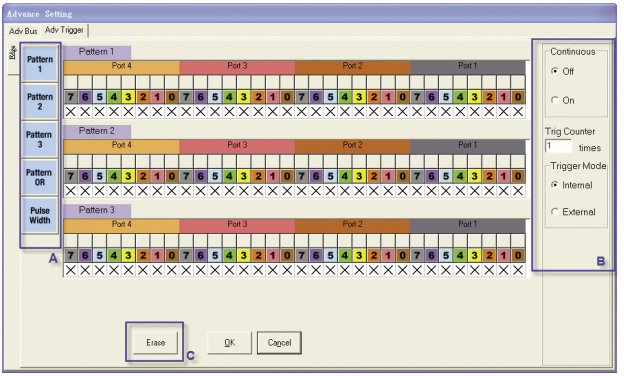
(4). Set voltage in the dialog box.



(5). Switch to the trigger page by clicking the upper Trigger subpage.

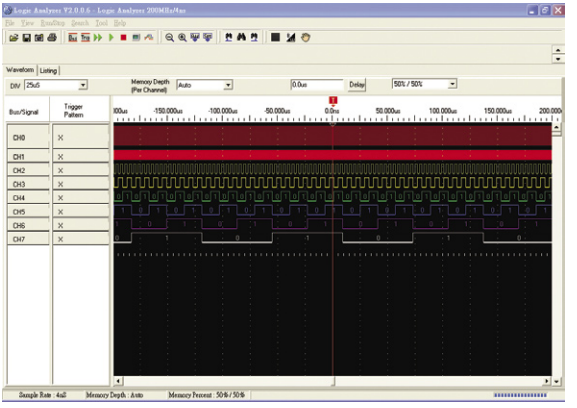


(6). Set advance trigger in the Trigger page.

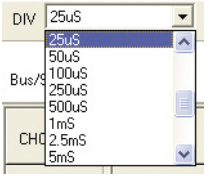


(7). Return to the waveform window, and capture the waveform by pressing dual-arrow on the upper tool list.

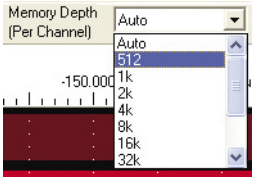
(8). After data capture, set trigger by repeating the above 6~7 steps.



9. Return to waveform window, set the sampling frequency by clicking "DIV " pull-down menu on the tool list.

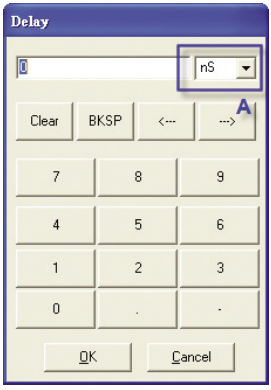


10. Set the memory depth by clicking "Memory Depth" pull-down menu on the tool list.



11. Enter Delay value by click "Delay" key on the tool list.

Enter Delay value into the dialog box with Delay.



Chapter 4 Calibration

Description

It's advisable to calibrate the instrument since an error between setting and import/export value exists due to certain factors after a period of time (often 1 year).

4-1 Calibration Mode

Calibration modes are described below:

1. The user shall apply for calibration and then send the instruments back to the factory; this company provides ex-factory calibration report.
2. Calibration is recommended if spare parts are to be replaced (calibration expense is listed in the maintenance cost statement).
3 The repair and calibration shall be performed by the warranty method within the warranty period.

*** No auto-calibration by the user is currently unavailable.**

Chapter 5 Maintenance, Repair and Utilization

Description

Maintenance and repair is divided into: maintenance by users and maintenance by factory.

5-1 Maintenance by Users

1. The users may maintain the devices without removing the instrument housing.
2. It's required to prevent penetration of water droplet or other liquid.
3. Corrosive cleaning agent or solvents or those with poor chemical-resistance shall be avoided when rubbing the instrument.

5-2 Maintenance by Factory

The components shall be maintained or replaced by the manufacturer or distributor in either of the following cases:

1. Continuous operation cannot proceed in the presence of error message.
2. The front, lateral and rear panels cannot be operated due to damage of components, and the housing must be removed when replacing spare parts.

*** Warning: please send back the products with original packaging materials, or package carefully to avoid damage of products due to vibration, collision and falling.**

5-3 Troubleshooting

1. Description: please read carefully the operating instructions if certain problems or doubts are encountered when logic analyzer is employed.

2. Operating questions and countermeasures:

Q1: Unable to execute the main application or can only use display mode. please check by the following procedures:

Ans: 1. Check if the driver is installed successfully.
2. Make sure that USB cable and PLA USB port are well connection.
3. Try anther USB device. If it OK, means the USB port is normal. If not OK, means the USB port maybe damaged.
4. Try another USB cable.

Q2: Why is the power indicator (red) highlighted after startup, but no on-screen display exists?

Ans: 1. Make sure the each channel and DUT has been connected properly.
2. Make sure the grounding cord of measurement channel is linked to the ground joint of the DUT correctly.
3. Make sure that the setting of trigger level is fit to the signal level of the DUT.
4. Make sure that the setting of trigger level is 4 times higher than the DUT.
5. Make sure that the setting of the trigger is accurate. If the signal does not fit to the setting of trigger, please simplify the conditions of trigger or modify the condition.
6. Make sure if the setting of trigger counter setting is too many times.
7. If use external sampling signal to sampling, the counters of sampling maybe not enough. In this situation, please try to capture the internal sampling signal to verify it normal or not, if it shows normal, we can be sure the result of the above are correct.

*** If you still have problem, do not hesitate to contact to our customer service dept. Let us to help you to solve the problems.**