



# Preferred Professional Logic Analyzer

Outstanding timing and protocol analysis to solve difficulties of digital circuits with ease

# What is a "logic analyzer" ?



The logic analyzer is a kind of waveform analytical equipment similar to an oscilloscope. It is able to acquire the logic level of a circuit continuously, present the signal timing relationship through memory and waveform display intuitively, and help users debug communication problems quickly in circuits.

Founded in 2001, Guangzhou ZHIYUAN Electronics Co., Ltd. (hereinafter referred to as "ZHIYUAN Electronics" ) has been working in the research and application of instruments, industrial control, and power source technology. In terms of circuit design and signal analysis, ZHIYUAN Electronics not only can provide various products as well as test and measurement solutions, but also participates in the formulation of relevant national standards.

## Product Selection

Products	Flagship Model			Deep Memory							
	LAB7504	LAB6052	LAB6022	LA2832A plus	LA2832A	LA2532A	LA2232A	LA1832A plus	LA1832A	LA1532A	LA1232A
Product Type	LAB7504	LAB6052	LAB6022	LA2832A plus	LA2832A	LA2532A	LA2232A	LA1832A plus	LA1832A	LA1532A	LA1232A
Memory capacity (bits)	2G	1G		2G	1G	512M	256M	2G	1G	256M	32M
Memory depth (bits/CH)	64M/128M(half-channel)	32M		64M	32M	16M	8M	64M	32M	8M	1M
High-speed timing sampling rate	5GHz	--		--				--			
Segmented memory (number of segments)	--	--	--	65536	32768	16384	8192	65536	32768	8192	1024
Maximum timing sampling rate	500MHz/1GHz(half-channel)	500MHz	200MHz	200MHz				100MHz			
Maximum state sampling rate	250MHz	250MHz	80MHz	80MHz				30MHz			
Bandwidth	250MHz	250MHz	80MHz	80MHz				30MHz			
Input channel	34CH	32CH		32CH							
Record mode	--	--	--	Supported	Supported	Supported	--	Supported	Supported	--	--
Channel multiplexing	32CH/16CH	--		32CH/16CH/8CH							
Compressed storage	Supported			Supported							
Frequency meter	Supports 2 channels			Supports 32 channels							
Logic pen	Supported			Supports 32 channels							
External trigger	Supports trigger output and input			Supports trigger output and input							
Input range	-30V ~ +30V			-30V ~ +30V							
Probe parameters	100KΩ/15pF			1MΩ/15pF							
Threshold voltage	-10 ~ +10V			-6 ~ +6V							
Power supply	DC 12V@2A ( internal: positive; external: negative )			DC 5V@1A ( internal: positive; external: negative )							

## Flagship Logic Analyzer

The LAB6000/7000 flagship logic analyzer has the best sampling rate, memory depth, and protocol analysis. It can quickly and accurately analyze and debug various high-speed and low-speed digital signals, and speed up circuit development to shorten the product launch cycle.



### 1GHz sampling rate

Enable flexible setting by users and satisfy the widest debugging demands of digital signals (The higher the sampling rate, the more accurate the signal time analysis.)

1GHz sampling rate to analyze any high-speed signals perfectly.



Applicable to any high-end FPGA, DSP, and CPU.

### Multiple instruments in one



With multiple functions in one, debugging is easier



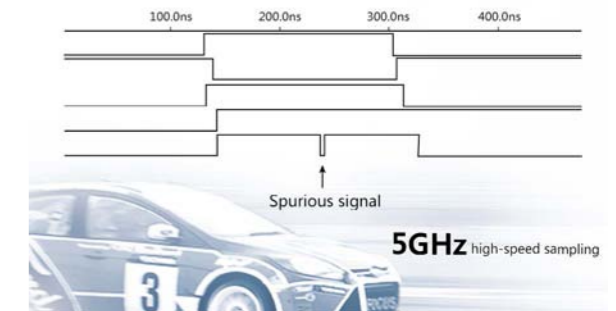
### Filter function

The function is able to effectively filter out glitches of the measured bus to make the measurement and analysis more accurate.



### Supports high-speed sampling

5GHz sampling rate to acquire any spurious signals with accuracy.



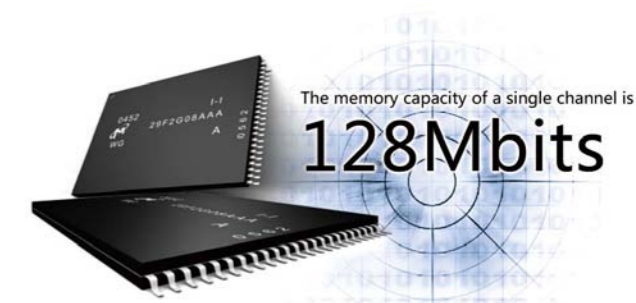
### Abundant logic channels

The analyzer integrates 32 logic channels and 2 synchronous clock input channels. The sampling rate will be 500MHz and 1GHz when opening 32 and 16 channels respectively.



### Deep memory depth

The memory capacity of a single channel is 128Mbits. It supports compressed storage (timing, state and timing-state), so users can set flexibly according to actual measured signals for recording waveforms with longer times.



# Deep Memory Logic Analyzer

The LA1000A/2000A logic analyzer is used for locating deep memory. The maximum memory depth of a single channel is 256Mpts. This analyzer is able to work with more than 60 professional protocol decoding plug-ins and to observe the complete cycle of the high-speed signal with clarity. In addition, the LA2000A logic analyzer comes with a non-stop recording function. Thus, it is able to upload real-time data to the PC for analysis, which centers on the long-time test requirement on site and presents faster digital signal debugging.

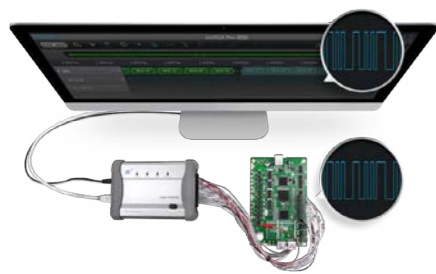
## Intelligent filtration memory

Segmented and conditional memory, intelligent recording, real-time filtration of redundant data, effective information storage, and great improvement of debugging analysis efficiency.



## High fidelity and non-stop real-time recording

It supports slow protocols with a super-long time recording and data real-time return to the PC for the sake of memory. Moreover, it has no limit as to the memory capacity of equipment and is based on the lossless compression algorithm. Furthermore, it guarantees occupying no additional bandwidth at the maximum sampling rate in order to realize high fidelity data sampling.



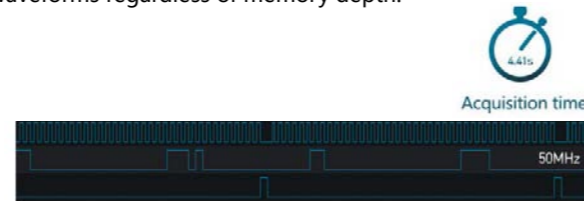
## Efficient protocol analysis platform

It provides one-step service in protocol triggering, decoding, search, export and analysis, event list, waveform view, decoding-research linkage, secondary analysis of data export, and efficient and fast problem location. It has many protocols and supports online upgrades while continuously increasing new protocols.



## Ultra-large capacity memory

It has such advantages as memory depth upgrades, channel multiplexing support, maximum memory of 256Mpts/channel, built-in lossless compression algorithm, mass memory, and worry-free recording. The measured 50MHz high-speed SPI Flash transfer data package and 4.41s acquisition time enable it to acquire any interested waveforms regardless of memory depth.



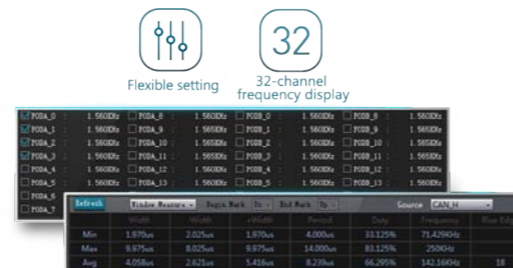
## Diversified trigger search

It has 12 basic trigger modes and 10 protocol trigger modes, and supports usual, trend, view, frame, and package searches. In addition, it is able to acquire, search, locate, and mark concerned data of users rapidly and can substantially guarantee big data analysis.



## Flexible parameter measurement

It supports cycle, pulse width, duty cycle, and other parameter measurements and statistics. Moreover, it has a 32-channel hardware frequency meter and a real-time display of a logic pen. Furthermore, it provides many tools (such as a digital filter) to greatly improve analysis efficiency.



# Logic Analyzer Protocol Type Summary

Protocol Type	Protocol	LA1232A	LA1532A	LA1832A	LA2232A	LA2532A	LA2832A	LA1832A Plus	LA2832A Plus	LAB6022	LAB6052	LAB7504
IC Interface	1-WIRE	•	•	•	•	•	•	•	•	••	••	••
	I2C	•	•	•	•	•	•	•	•	••	••	••
	SPI	•	•	•	•	•	•	•	•	••	••	••
	SSI Interface	•	•	•	•	•	•	•	•	••	••	••
	UART	•	•	•	•	•	•	•	•	••	••	••
	Universal CLK bus analysis	•	•	•	•	•	•	•	•	••	••	••
	SMBus 2.0	•	•	•	•	•	•	•	•	••	••	••
	SPI Compatible	--	--	--	•	•	•	•	•	••	••	••
	JTAG (IEEE 1149.1)	--	--	--	•	•	•	•	•	••	••	••
	QuadSPI	--	--	--	•	•	•	•	•	••	••	••
PC System	SDQ	--	--	--	--	--	--	--	--	••	••	••
	CF card	•	•	•	•	•	•	•	•	••	••	••
	USB1.1	•	•	•	•	•	•	•	•	••	••	••
	PS/2	•	•	•	•	•	•	•	•	••	••	••
	Protocol analysis for SPI mode of SD card	•	•	•	•	•	•	•	•	••	••	••
	SDMMC mode analysis of SD card	--	--	--	•	•	•	•	•	••	••	••
Memory	SD 3.0	--	--	--	--	•	•	•	•	••	••	••
	SDIO mode analysis of SD card	--	--	--	--	•	•	•	•	••	••	••
	NANDFlash bus analysis	--	--	--	--	--	--	--	--	••	••	••
	SD 2.0	--	--	--	--	--	--	--	--	••	••	••
	SD_eMMC mode analysis of SD card	--	--	--	--	--	--	--	--	••	••	••
	SDRAM	--	--	--	--	--	--	--	--	••	••	••
Display	7-Seg LED Nixietube	•	•	•	•	•	•	•	•	••	••	••
	LCD12864	•	•	•	•	•	•	•	•	••	••	••
	LCD1602	•	•	•	•	•	•	•	•	••	••	••
	LED Pitch Array	•	•	•	•	•	•	•	•	••	••	••
	DALI	--	--	--	•	•	•	•	•	••	••	••
	MIPI	--	--	--	--	--	--	--	--	••	••	••
Infrared	DMX512	--	--	--	--	--	--	--	•	••	••	••
	NEC infrared transfer protocol analysis	•	•	•	•	•	•	•	•	••	••	••
	Philips RC-5	•	•	•	•	•	•	•	•	••	••	••
	Philips RC-6	•	•	•	•	•	•	•	•	••	••	••
Wireless Communication	PT2262 waveform analysis	•	•	•	•	•	•	•	•	••	••	••
	Manchester	•	•	•	•	•	•	•	•	••	••	••
	WIEGAND	•	•	•	•	•	•	•	•	••	••	••
	Deformation Miller coding analysis	•	•	•	•	•	•	•	•	••	••	••
Automation and Industrial Control	DigRF v4	--	--	--	•	•	•	•	•	••	••	••
	ISO7816	--	--	--	•	•	•	•	•	••	••	••
	DS1302	•	•	•	•	•	•	•	•	••	••	••
	ModBus	•	•	•	•	•	•	•	•	••	••	••
Sensor	HART	--	--	--	•	•	•	•	•	••	••	••
	KNX	--	--	--	•	•	•	•	•	••	••	••
	OPEN_THERM	--	--	--	•	•	•	•	•	••	••	••
	PROFIBUS	•	•	•	•	•	•	•	•	••	••	••
Power Supply	DS18B20	•	•	•	•	•	•	•	•	••	••	••
	SHT11	--	--	--	•	•	•	•	•	••	••	••
	DHT11	--	--	--	•	•	•	•	•	••	••	••
	PMBus 1.1	--	--	--	•	•	•	•	•	••	••	••
Automotive	HDQ	--	--	--	•	•	•	•	•	••	••	••
	BMS	--	--	--	•	•	•	•	•	••	••	••
	CAN	--	--	--	•	•	•	•	•	••	••	••
	LIN1.3	--	--	--	•	•	•	•	•	••	••	••
	LIN2.0	--	--	--	•	•	•	•	•	••	••	••
	FlexRay	--	--	--	•	•	•	•	•	••	••	••
Video, Audio	MVB	--	--	--	•	•	•	•	•	••	••	••
	CAN-FD	--	--	--	•	•	•	•	•	••	••	••
	DSI Bus	--	--	--	•	•	•	•	•	••	••	••
	SENT	--	--	--	•	•	•	•	•	••	••	••
Aviation	WTB	--	--	--	•	•	•	•	•	••	••	••
	AC97	--	--	--	•	•	•	•	•	••	••	••
	I2S	--	--	--	•	•	•	•	•	••	••	••
	PCM	--	--	--	•	•	•	•	•	••	••	••
Others	DSA Interface	--	--	--	•	•	•	•	•	••	••	••
	AES EBU	--	--	--	•	•	•	•	•	••	••	••
	S/PDIF	--	--	--	•	•	•	•	•	••	••	••
	ARINC429	--	--	--	•	•	•	•	•	••	••	••
PC System (USB2.0 full speed)	MIL-STD-1553B	--	--	--	•	•	•	•	•	••	••	••
	PCF8591 analysis	•	•	•	•	•	•	•	•	••	••	••
	Epp communication	--	--	--	•	•	•	•	•	••	••	••
	MDIO	--	--	--	•	•	•	•	•	••	••	••
SMI	--	--	--	•	•	•	•	•	••	••	••	
SCCB	--	--	--	•	•	•	•	•	••	••	••	
CCID	--	--	--	•	•	•	•	•	••	••	••	

Note: "•" indicates the protocols which will be freely supported by ZLGLogic V5 (new version of the software). "••" indicates the protocols which have been supported by ZLGLogic V4 (old version of software). "••" indicates the protocols which are supported currently by ZLGLogic V5 (new version of the software). "--" indicates the protocols not supported.

# ZLG Logic Software Interface

## ① Interface with a strong sense of science and technology

The software takes dark grey as its body background and blue as its waveform display, showing its strong sense of science and technology.

## ③ Protocol search

For decoded mass data, users can acquire all interested data so long as they set the corresponding search criteria.

## ⑤ 32-channel frequency meter display

It has a standard configuration of a 32-channel frequency meter display, enabling users to view the frequency value of each channel by simply checking it.

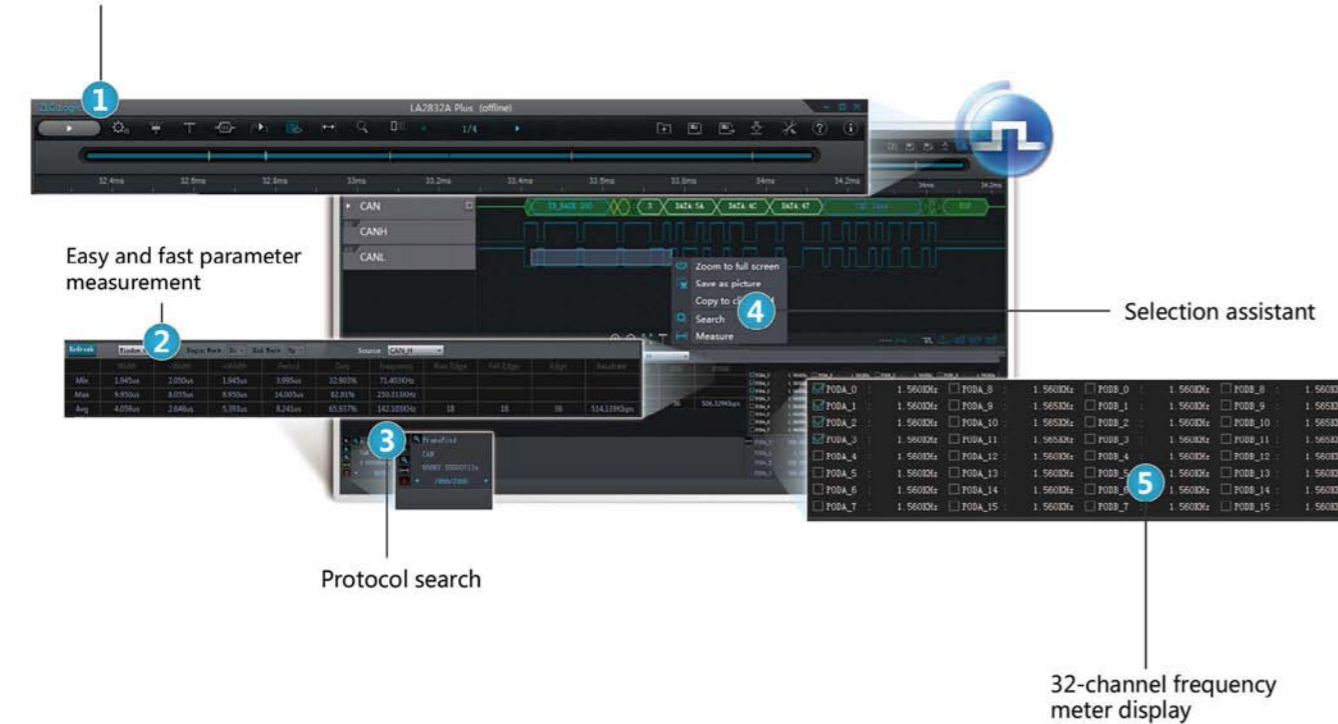
## ② Easy and fast parameter measurement

A parameter measurement window can be called out under the interface to measure pulse width, cycle and duty cycle. In addition, a statistical measurement of the measured parameters can be performed.

## ④ Selection assistant

Any interested waveform can be directly selected on the software interface. Then, a function menu will pop up on the interface, enabling amplification, screenshot, search and other user operations on the software.

Interface with a strong sense of science and technology



## Many protocol plug-ins

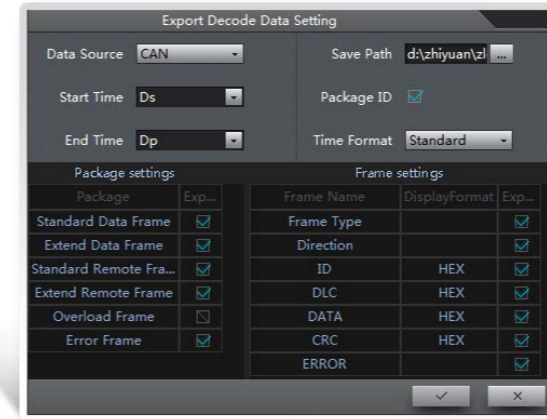
ZLGlogic comes with more than 60 protocol plug-ins. It features good protocol classification, easy searches and a clear selection of protocol plug-ins.



# Features of ZLGlogic Software

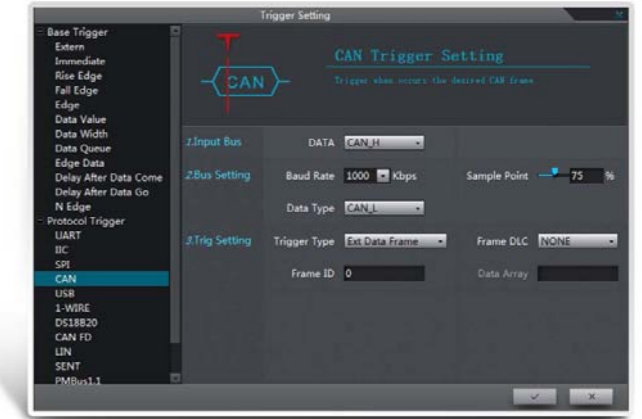
## Flexible data export

ZLGlogic has a powerful data export function. This enables users to flexibly set data package and frame settings before exporting so as to rapidly obtain the desired file format.



## Diversified trigger modes

Diversified trigger modes are crucial in the acquisition of protocol data. ZLGlogic has abundant trigger modes for flexible selection of users.



## Linkage location of protocol decoding, waveform, search and event list

ZLGlogic is able to realize the linkage location of protocol decoding, waveform, search and event list for the interested events of users. Moreover, it enables users to search interested waveforms quickly from any angle.



## Standard accessories

Name of accessory	Description
USB communication cable	Communication between PC and oscilloscope
Measuring probe	32-channel probe with TI and TO
Power adapter	For power supply to logic analyzer
USB power line	For power supply through power adapter of USB interface
Warranty card	Application for product warranty

## Optional accessories

Name of accessory	Description
Hook test clip	For test of small pin signal output

## Warranty service

One-year warranty for host machine, which excludes probes and accessories.

Tel: **+86-20-28872349**

E-mail: **service@zlg.com**



Official Wechat Account

**ZLG**® **Guangzhou ZHIYUAN Electronics Co.,Ltd.**

Address: Floor 2, Building No.7, Huangzhou Industrial Estate, Chebei Road, Tianhe District, Guangzhou, China

 **天猫 TMALL.COM**  
TMALL Store: ZLG official Online Store URL: <http://zlgwj.tmall.com>

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