

# Acute LA3000 Plus logic analyzer

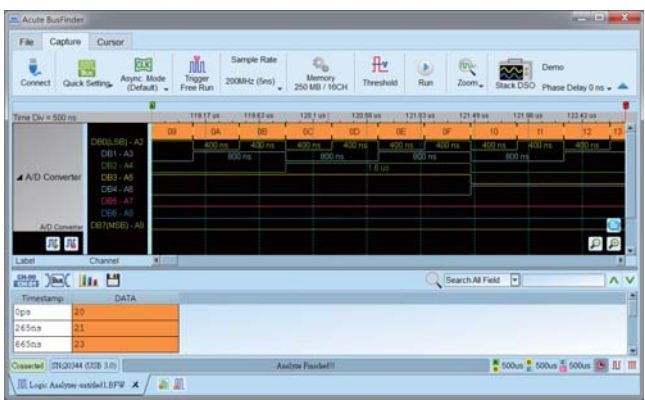
- PC-based
- 68 / 136 channels
- USB 3.0 interface, 12V power adaptor
- 2.4GHz Timing Analysis / 300MHz State Analysis
- 32Gb Memory
- Active Probe
- Logic, State and Protocol triggers
- Stackable with a DSO to form an MSO
- Bus Decode : CAN 2.0B/CAN FD, DP\_Aux<sup>1</sup>, eMMC 5.1, I<sup>2</sup>C, MIPI I3C 1.1, Profibus, SD 3.0, SPI, SVID<sup>2</sup>, SWD, UART (RS232), USB1.1, USB PD 3... (100+)
- Bus Trigger I : I<sup>2</sup>C, MIPI I3C 1.1, SPI, UART (RS232), USB PD 3
- Bus Trigger II : eMMC 5.0, eSPI, I<sup>2</sup>S, NAND Flash, SD 3.0, Serial Flash, SVID<sup>3</sup>, ...
- Protocol Analyzer I : I<sup>2</sup>C, MIPI I3C 1.1, SPI, UART (RS232), USB PD 3
- Protocol Analyzer II : CAN 2.0B/CAN FD, DALI, eSPI, I<sup>2</sup>S, LIN 2.2, PWM, SVID<sup>3</sup>, ...



270 x 175 x 55 (mm<sup>3</sup>)

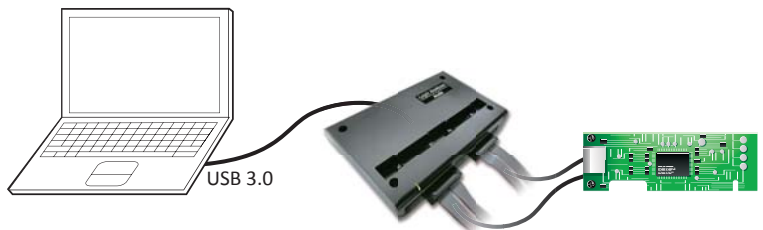
Model	Channel	Bus Trigger	Protocol Analyzer
LA3068E+	68	I	I
LA3136E+	136	I	I
LA3068B+	68	I, II	I, II
LA3136B+	136	I, II	I, II

## Software Window



## System Requirements

- USB 3.0 port
- Win 7, Win 8, Win 10 (64 bit), Win 11
- PC RAM 16GB (recommended) or 8GB at least



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## Protocol Analyzer:

It is hardware decoding, may log protocol data very long time if without waveforms.  
Application timing: Preliminary protocol debug.

Support multiple protocols with different operating modes

Real-time data search

Stack with a DSO as an MSO in logic analyzer mode

Real-time data statistics

Hide items for easy view

Protocol report

Show waveforms with bus decodes



### Protocol Analyzer

Show real-time protocol data

Application timing: massive protocol data with some idles in between



### Protocol Logger

Like data logger, save massive data into SSD hard drive

Application timing: massive protocol data



### Protocol Monitor

Like dash cameras, record protocol data by the device's memory only  
Application timing: trigger event only happens in very long time

## Packing List :



## Logic Analyzer:

Capture digital waveforms and support bus decodes. Able to stack with a DSO to form as an MSO.

### Parallel Clause triggers (Logic) :

State 0	<pre> Description... IF (Bus_[A7:A0] = 55h    AND CH-08 )Edge Rising OR (Bus_[A7:A0] = AAh    AND CH-08 )Edge Rising Start Timer 0 AND Reset Timer 0 Goto Next         </pre>
State 1	<pre> Description... IF CH-08 Edge Falling AND Timer/Counter 0 Condition Matched Set Triggered         </pre>

16-States parallel IF Clause settings for 128/64 channel value compare combined with AND/OR logic condition and 4 Timer/Counter conditions.

### Quick View

Right-click and drag on the clock waveform to see the frequency and the number of transitions

Clear setting

Single or repetitive captures

Fast DSO stack setting

The screenshot shows the Logic Analyzer software interface. At the top, there are menu tabs: File, Capture, Adv. Capture, and Cursor. Below these are various control buttons and settings, including 'Quick Setting', 'Trigger I2C', 'Sample Rate' (50MHz (20ns)), 'Memory' (2000 M, -24CH), 'Threshold', 'Run', and 'Repeat'. A 'Stack DSO' button is also visible. The main display area shows a digital waveform (SCL-0) and an analog waveform (SDA-1). A yellow box highlights a section of the digital waveform with a 'Quick View' popup showing 'Note 1' and 'Acute Note'. A red box highlights the 'Stack DSO' button. A red arrow points to the 'Run' and 'Repeat' buttons. A red arrow points to the 'Quick Setting' button. A red arrow points to the 'Stack DSO' button. A red arrow points to the 'User note' popup. A red arrow points to the 'Report window' at the bottom.

Display digital and analog waveforms at the same phase

Report window

### Flow chart bus triggers (Protocol) :

The screenshot shows the Logic Analyzer software interface for flow chart bus triggers. On the left, there are 'Channel' settings for SCK (0) and SDA (1). Below that are 'Simple Trigger' options: Frame Start, Repeat Start, Frame Stop, ACK, and NACK. The main area is titled 'Clause Trigger' and shows a flow chart with four states (State 1, State 2, State 3, Counter 1) and a 'Trigger' button. A red box highlights the flow chart. A red arrow points to the 'Counter 1' button. A red arrow points to the 'Trigger' button. A red arrow points to the 'Detail parameters for each states' section, which includes 'Address' (Mode: 7-Bit Addressing, Value: 12h, R/W: ---, ACK: ---) and 'Data' (Any Position, Fix Offset, 0 Byte(s), XXh, XXh, XXh, XXh).

Power trigger for serial bus, 8-states flow chart setting with Counter/Timer

Detail parameters for each states

# LA3000+ series

Model		LA3068E+	LA3136E+	LA3068B+	LA3136B+
Power	Power Source	12V Power adapter			
	Static Power Consumption	18W	30W	18W	30W
	Max Power Consumption	45W	75W	45W	75W
Hardware Interface		USB 3.0			
Timing Analysis (Asynchronous, Max. Sample Rate)		2.4 GHz			
State Clock Rate (Synchronous, External Clock)		300 MHz			
Storage		Conventional Timing, Transitional Timing			
Channels (Data / Clock)		64 / 4	128 / 8	64/4	128/8
Total Sample Memory		32Gb			
Available channels vs. Memory per channel	Timing Analysis	Available channels (Conventional / Transitional Timing) - Memory per channel			
	2.4 / 2 GHz	(32 / 28) - 1Gb			
	1 GHz	(64 / 56) - 500Mb			
500 / 250 / 200 MHz		(64 / 64) - 500Mb	(128 / 128) - 250Mb	(64 / 64) - 500Mb	(128 / 128) - 250Mb
	Resolution	416 ps			
Channels		64	128	64	128
Pre / Post Trigger		Yes			
Pass Count		Yes (1 ~ 1000000 times)			
Event Types		Channel, Pattern, Single / Multi Level, Parallel Clause, Width, Time-out, External			
Bus Triggers I		I <sup>2</sup> C, MIPI I3C 1.1, SPI, UART (RS232), USB PD 3			
Trigger	Bus Triggers II	---	BiSS-C, CAN 2.0B/CAN FD, DALI, DP_Aux <sup>1</sup> , eMMC5.0, eSPI, GMII (RGMII), HID over I <sup>2</sup> C, I <sup>2</sup> S, LIN2.2, MDIO, MII (RMII), Mini/Micro LED, MIPI RFFE 3, MIPI SPMI 2, Modbus, NAND Flash, PMBus, Profibus, Serial Flash, SMBus, SVI2, SVID <sup>3</sup> , USB1.1		
	Input (for Stack)	TTL 3.3V			
	Output Port (for Stack)	TTL 3.3V			
Ref. Clock Input		10MHz, Vpp=3.3 to 5V			
Threshold	Range	-0.5V~4.5V			
	Resolution	21mV			
	Accuracy	+/- 100mV + 5%* Vth			
Input Voltage	Maximum	+/- 15V			
	Sensitivity	~300mV			
Impedance		1M    5pF			
Temperature Operating / Storage		5°C~45°C (41°F~113°F)/-10°C~65°C (14°F~149°F)			
Channel to channel skew		< 500 ps			
Protocol Analyzer/ Protocol Logger / Protocol Monitor	I	I <sup>2</sup> C, MIPI I3C 1.1, SPI, UART (RS232), USB PD 3			
	II	---	BiSS-C, CAN 2.0B/CAN FD, DALI, DP_Aux <sup>1</sup> , eSPI, HID over I <sup>2</sup> C, I <sup>2</sup> S, LIN2.2, MDIO, Modbus, PMBus, Profibus, PWM, SMBus, SVID <sup>3</sup> , USB1.1		
Zoom In / Out		Yes			
Languages		English / Traditional Chinese / Simplified Chinese			
Waveform Height		Adjustable			
Zoom / Report Window		Yes			
Quick Cursor-positioning		Yes			
Import Label(s)		Yes			
Quick Bus Decode Setup		Yes			
Trigger / Auxiliary cursors		1/25			
Software Features	Bus Decode	1-Wire, 3-Wire, 7-Segment, A/D Mux Flash, AccMeter, ADC, APML, AVSBus, BiSS-C, BSD, BT1120, CAN 2.0B/FD, Close Caption, CODEC_SSI, DALI, DMX512, DP AUX <sup>1</sup> , EDID, eMMC 5.1/MMC, eSPI, FlexRay, HD Audio, HDLC, HDQ, HID over I <sup>2</sup> C, HTSensor, HyperFlash, HyperRAM, I <sup>2</sup> C EEPROM, I <sup>2</sup> C, I <sup>2</sup> S (PCM, TDM), I80, IDE, IrDA, ITU-R BT.656 (CCIR656), JTAG, JVC IR, LCD1602, LED_Ctrl, LIN 2.2, Line Decoding, Line Encoding, Lissajous, LPC, LPT, Math, M-Bus, MDDI, MDIO, MHL CBUS, Microwire, MII, Mini/Micro LED, MIPI CSI LP, MIPI DSI LP, MIPI I3C 1.1, MIPI RFFE 3, MIPI SoundWire 1.2, MIPI SPMI 2, Modbus, NAND Flash, NEC IR, PDM, PECI 3.0, PMBus, Profibus, PS/2, PWM, QEI, QI, QSPI, RC-5, RC-6, RGB Interface, RGMII, RMII, S/PDIF, SD 3.0 (SDIO 2.0), SENT, Serial Flash, Serial IRQ, Serial PSRAM, SGPIO, Smart Card, SMBus (SBS, SPD), SMI, SPI, SPI-NAND, SSI, ST7669, SVI2, SVID <sup>2</sup> , SWD, SWIM, SWP, UART (RS232), ULPI, UNI/O, USB 1.1, USB PD 3, Wiegand, ...			
	Line Decoding	Biphase Mark, Differential-Manchester, Manchester (Thomas, IEEE802.3), Miller, Modified Miller, NRZI, ...			
	Line Encoding	AMI (Standard, B8ZS, HDB3), Biphase Mark, CMI, Differential-Manchester, Manchester (Thomas, IEEE802.4), MLT-3, Miller, Modified Miller, NRZI, Pseudoternary, ...			
Dimension	L x W x H (mm <sup>3</sup> )	270 x 175 x 55			
Weight	Device / Accessories	800g / 1500g			
Lead Cable (LA-Pod / Flying lead cable)		2 / 8	4 / 16	2 / 8	4 / 16
Grippers		80	160	80	160

<sup>1</sup> Optional DP AUX adapter needed.

<sup>2</sup> Upon request ONLY by users who have signed CNDA with Intel, SVID decode supported by all LA3000+ models.

<sup>3</sup> Upon request ONLY by users who have signed CNDA with Intel, SVID trigger & PA supported by LA3068B+/LA3136B+ ONLY.