

## TL3000E/B series

Model	TL3017E	TL3134E	TL3134B	TL3234B+
Power	Power Source USB bus-power (+5V)			
	Static Power Consumption 0.75W			
	Max Power Consumption <2.5W			
Hardware Interface USB3.0				
Timing Analysis (Asynchronous, Max. Sample Rate) 1GHz				
State Clock Rate (Synchronous, External Clock) 200MHz				
Storage Conventional Timing, Transitional Timing				
Channels (Data / Clock / Analog / Ground) 16 / 1 / 1 / 2				
Total Memory 16Mb				
Timing vs. Channels vs. Memory	Timing Analysis Available channels / Memory per channel			
	2GHz ---			
	1GHz 8 / 2Mb			
	500MHz 16 / 1Mb			
	250MHz 16 / 1Mb			
Trigger	Resolution 1ns			
	Channels 16			
	States 16			
	Events 16			
	Pre / Post Yes			
	Pass Counter Yes (0~1048575 times)			
	Types Channel, Pattern, Single / Multi Level, Width, Time-out, External			
	Bus I I <sup>2</sup> C, SPI, UART, USB PD3.0			
	Bus II ---			
	Bus III ---			
Threshold	Group 2 (ch0~7, ch8~15 & clk0)   4 (ch0~7, ch8~15 & clk0, ch16~23, ch24~31 & clk1)			
	Range +5V ~ -5V			
	Resolution 50mV			
	Accuracy ±100mV + 5%*Vth			
Input Voltage	Non-Destructive Volt. ±30V DC, 12Vpp AC			
	Sensitivity 0.25Vpp @50MHz, 0.5Vpp @150MHz, 0.8Vpp @250MHz			
Impedance	Data channels 200KΩ//<7pF			
	Analog channels 20KΩ//<3pF			
Temperature Operating / Storage 5°C~45°C (41°F~113°F) / -10°C~65°C (14°F~149°F)				
Channel to channel skew < 1ns				
I/O port	Trig-In TTL 3.3V level (Rising / Falling)			
	Trigger pulse approval > 8 ns			
	Trig-Out TTL 3.3V, Pulse Width			
	Ref. Clock Input 10MHz, Vpp=3.3 to 5V			
	Ref. Clock Output 10MHz, TTL 3.3V			
	Connector type MCX jack / female			
Protocol Analyzer/ Protocol Logger / Protocol Monitor	I I <sup>2</sup> C, SPI, UART, USB PD3.0			
	II ---			
	III ---			
Software Features	Zoom In / Out Yes			
	Language English / Simplified Chinese / Traditional 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			
	Data Logger Saved to Hard Disk			
	Bus Decode 1-Wire, 3-Wire, 7-Segment, A/D Mux, Flash, AccMeter, ADC, APML, BiSS-C, BSD, CAN 2.0, Close Caption, DALI, DMX512, DP Aux, EDID, eMMC 5.1/MMC, eSPI, FlexRay, HDMI CEC, HD Audio, HDLC, HDQ, HID over I <sup>2</sup> C, I <sup>2</sup> C, I <sup>2</sup> C EEPROM, I <sup>2</sup> S, I <sup>3</sup> C, I <sup>8</sup> O, IDE, ITU656, IrDA, JTAG, LCD1602, LED_Ctrl, LIN2.2, Line Encoding, Line Decoding, Lissajous, LPC, LPT, M-Bus, Math, MDIO, MHL CBUS, Microwire, MII (GMII, RGMII), MIPI DSI, MIPI RFFE, MIPI SPMI 2.0, Modbus, NAND Flash, NEC IR, PECL, PMBus, Profibus, PS/2, PWM, QI, RC-5, RC-6, RGB Interface, SD3.0 (SDIO), Serial Flash, Serial IRQ, SGPIO, Smart Card, SMBus, SMI, S/PDIF, SPI, SPI-NAND, SSI, ST7669, SWD, SWP, SVID, UART, UNI/O, USB 1.1, USB PD 3.0, 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> ) 123 x 76 x 21 (mm <sup>3</sup> )				
Lead Cable (Data / CLK / Analog / GND) A 40-pin lead cable (32 / 2 / 2 / 4)				
Grippers 20				

# Acute TravelLogic 2-in-1 Analyzer (Protocol & Logic)

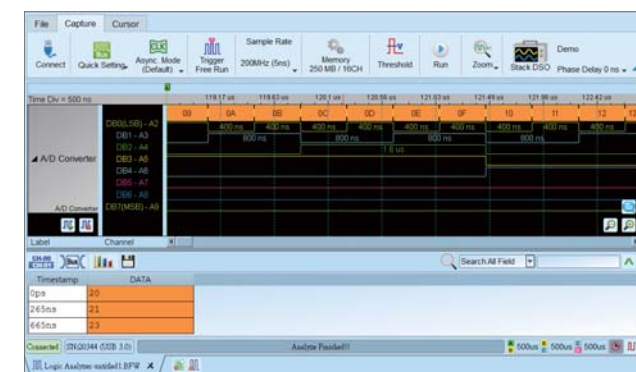
- PC-based
- USB3.0 interface
- 34 Channels (Max.)
- 2GHz timing (Max.) / 200MHz state analysis
- 8Gb Memory (Max.)
- Voltage detect : 2 sets
- Stacks with Acute or another DSO to form as an MSO
- Bus Trigger I : I<sup>2</sup>C, SPI, UART, USB PD3.0
- Bus Trigger II : BiSS-C, CAN2.0, DALI, I<sup>2</sup>S, I<sup>3</sup>C, LIN2.2, LPC, MDIO, Modbus, PWM, SVID, ...
- Bus Trigger III : eMMC 4.5, eSPI, MIPI SPMI 2.0, NAND Flash, SD 3.0, Serial Flash (SPI NAND)
- Protocol Analyzer I : I<sup>2</sup>C, SPI, UART, USB PD3.0
- Protocol Analyzer II : BiSS-C, CAN2.0, DALI, I<sup>2</sup>S, I<sup>3</sup>C, LIN2.2, SVID, MDIO, PWM, USB1.1, ...
- Protocol Analyzer III : eSPI
- Bus Decode : BiSS-C, CAN, eMMC5.0, eSPI, I<sup>2</sup>C, I<sup>2</sup>S, I<sup>3</sup>C, NAND Flash, Profibus, SD3.0, SPI, SVID, UART, USB1.1, USB PD3.0... (80+)



123 x 76 x 21 mm<sup>3</sup>

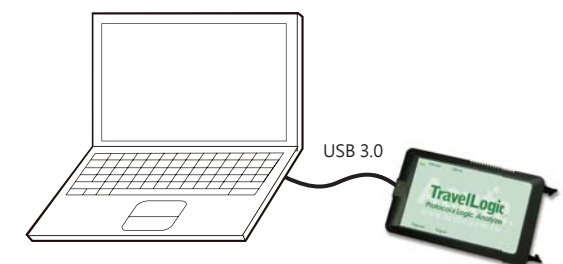
Model	Channels	Sample Rate	Memory	Bus Trigger	Protocol Analyzer
TL3017E	17	1GHz	16Mb	I <sup>2</sup> C	I <sup>2</sup> C
TL3134E	34	1GHz	1Gb	I	I
TL3134B	34	1GHz	1Gb	I, II	I, II
TL3234B+	34	2GHz	8Gb	I, II, III	I, II, III

### Software Window



### System Requirements

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



# Acute

PC-based T&M Instruments

Acute Technology Inc.

Tel: +886-2-2999-3275 E-mail: service@acute.com.tw http://www.acute.com.tw



## 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

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 :



Software and Manual Download links at: <http://www.acute.com.tw>

## Logic Analyzer:

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

### Flow chart bus triggers :

### Quick View

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

Display digital and analog waveforms at the same phase

Report window

Measurement Type	Label Name A	Label Name B	From	To	Minimum	Maximum	Average
Period Time	BUS_I2C		Begin	End	10ns	57.895us	24.719us
Frequency	BUS_I2C		Begin	End	100MHz	17.273KHz	40.454KHz
Cycle Count	BUS_I2C		Begin	End	---	---	6627
Positive Pulse Count	BUS_I2C		Begin	End	---	---	6628

**Measurement Statistics Tab**  
Quick measurement and statistics for selected channels.