TL3000 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		USB 3.0			
Timing Analysis (Asynchronous, Max. Sample Rate)		1 GHz			2 GHz
State Clock Rate (Synchronous, External Clock)		200 MHz			
Storage		Conventional Timing, Transitional Timing			
Channels (Data / Clock / Ground)		16 / 1 / 2	32 / 2 / 4		
Total Memory		16Mb	1Gb		8Gb
Timing vs. Channels vs. Memory	Timing Analysis	Available channels (Conventional / Transitional Timing) - Memory per channel			
	2 GHz	---			(4 / 3) - 2Gb
	1 GHz	(8 / 6) - 2Mb	(8 / 6) - 125Mb		(8 / 6) - 1Gb
	500 MHz	(16 / 12) - 1Mb	(16 / 12) - 62Mb		(16 / 12) - 500Mb
	250 MHz	(16 / 16) - 1Mb	(32 / 24) - 31Mb		(32 / 24) - 250Mb
	200 MHz	(8 / x) - 2Mb (16 / 16) - 1Mb	(8 / x) - 125Mb, (16 / x) - 62Mb (32 / 24) - 31Mb		(8 / x) - 1Gb, (16 / x) - 500Mb (32 / 24) - 250Mb
Trigger	Resolution	1ns			500ps
	Channels	16	32		
	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	I²C	I²C, SPI, UART, USB PD 3.0		
	Bus II	---		BiSS-C, CAN 2.0B/CAN FD, DALI, HID over I²C, I²S, I3C, LIN 2.2, LPC, MDIO, Modbus, PMBus, Profibus, SMBus, SVI2, USB1.1	
	Bus III	---			eMMC 4.5, eSPI, MIPI SPMI 2, NAND Flash, SD 3.0, SVID[3], Serial Flash (SPI NAND)
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	±30V DC, 12Vpp AC			
	Operation	+10V ~ -10V			
	Sensitivity	0.25Vpp @50MHz, 0.5Vpp @150MHz, 0.8Vpp @250MHz			
Impedance	Data channels	200KΩ//<7pF			
	Analog channels	20KΩ//<3pF			
Temperature	Operating / Storage	5℃~45℃ (41℉~113℉) / -10℃~65℃ (14℉~149℉)			
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	I²C	I²C, SPI, UART, USB PD 3.0		
	II	---		BiSS-C, CAN 2.0B/CAN FD, DALI, HID over I²C, I²S, I3C, LIN 2.2, MDIO, Modbus, PMBus, Profibus, PWM, SMBus, USB1.1, USB PD 3.0	
	III	---			eSPI, SVID[3]
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 Drive			
	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[1], EDID, eMMC 5.1/MMC, eSPI, FlexRay, HD Audio, HDLC, HDQ, HID over I²C, I²C, I²C EEPROM, I²S (PCM, TDM), I3C, 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 (RGMII), MIPI CSI, MIPI DSI LP, MIPI RFFE, MIPI SPMI 2.0, Modbus, NAND Flash, NEC IR, PECI, PMBus, Profibus, PS/2, PWM, QEI, QI, RC-5, RC-6, RGB Interface, S/PDIF, SD 3.0 (SDIO), Serial Flash, Serial IRQ, SGPIO, Smart Card, SMBus (SBS, SPD), SMI, SPI, SPI-NAND, SSI, ST7669, SVI2, SVID[2], SWD, SWIM, SWP, 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 (mm³)	123 x 76 x 21			
Lead Cable	(Data / CLK / Analog / GND)	A 40-pin lead cable (32 / 2 / 2 / 4)			
Grippers		20	40		

[1] Optional DP AUX adapter needed.
[2] Upon request ONLY by users who have signed CNDA with Intel, SVID decode supported by all TL3000 models.
[3] Upon request ONLY by users who have signed CNDA with Intel, SVID trigger & PA supported by TL3234B+ ONLY.

2019.05

Acute TravelLogic

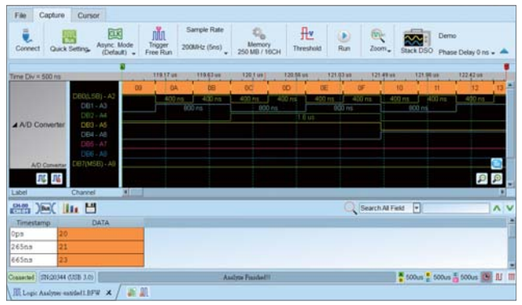
Logic Analyzer & Protocol Analyzer

123 x 76 x 21 mm³

- PC-based
- USB 3.0 Interface
- 34 Channels (Max.)
- 2 GHz Timing (Max.) / 200MHz State Analysis
- 8Gb Memory (Max.)
- Stacks with Acute or another DSO to form as an MSO
- Bus Decode : BiSS-C, CAN 2.0B/CAN FD, DP_Aux[1], DMX512, EDID, eMMC 5.0, eSPI, I²C, I²S, I3C, MII, MIPI DSI LP, NAND Flash, NEC IR, Profibus, SD 3.0/SDIO, Serial Flash, SPI, SVID[2], SWD, UART, USB1.1, USB PD 3.0... (90+)
- Bus Trigger I : I²C, SPI, UART, USB PD 3.0
- Bus Trigger II : BiSS-C, CAN 2.0B/CAN FD, DALI, I²S, I3C, LIN 2.2, LPC, MDIO, Modbus, PWM, ...
- Bus Trigger III : eMMC 4.5, eSPI, MIPI SPMI 2.0, NAND Flash, SD 3.0, SVID[3], ...
- Protocol Analyzer I : I²C, SPI, UART, USB PD3.0
- Protocol Analyzer II : BiSS-C, CAN 2.0B/CAN FD, DALI, I²S, I3C, LIN2.2, MDIO, PWM, USB1.1, ...
- Protocol Analyzer III : eSPI, SVID[3], ...

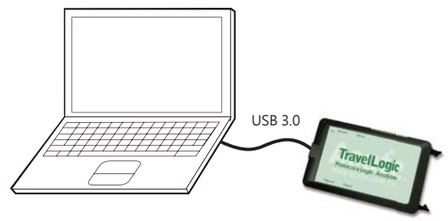
Model	Channels	Sample Rate	Memory	Bus Trigger	Protocol Analyzer
TL3017E	17	1 GHz	16Mb	I²C	I²C
TL3134E	34	1 GHz	1Gb	I	I
TL3134B	34	1 GHz	1Gb	I, II	I, II
TL3234B+	34	2 GHz	8Gb	I, II, III	I, II, III

Software Window



System Requirements

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



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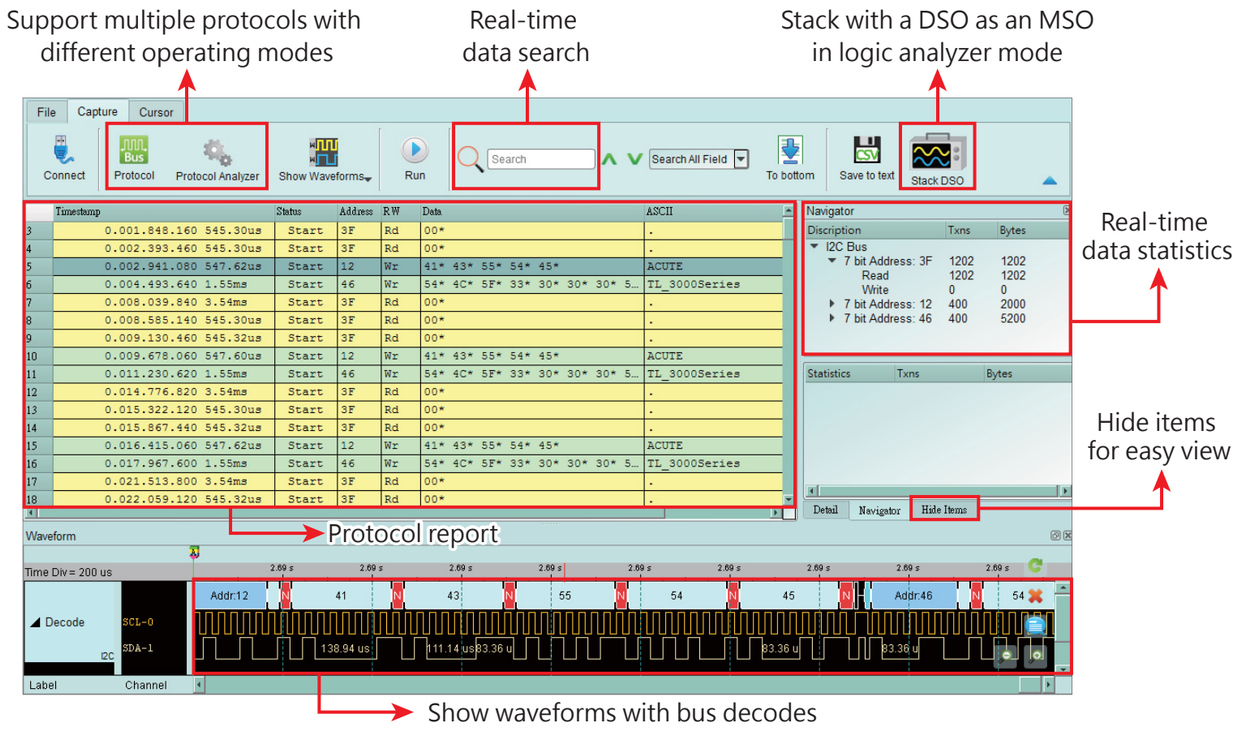
Protocol Analyzer:

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



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 :

TL3017E / TL3134E

TL3134B / TL3234B+

TL3234B+ only 8.5cm Lead Cable

18.5cm Lead Cable

Stack cable

USB 3.0 cable

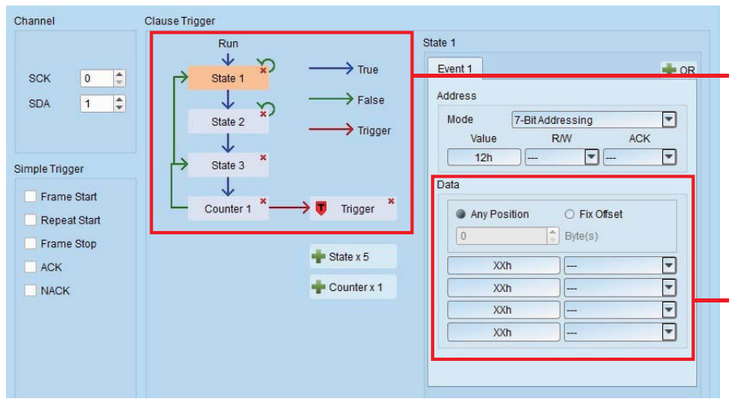
Grippers

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

Logic Analyzer:

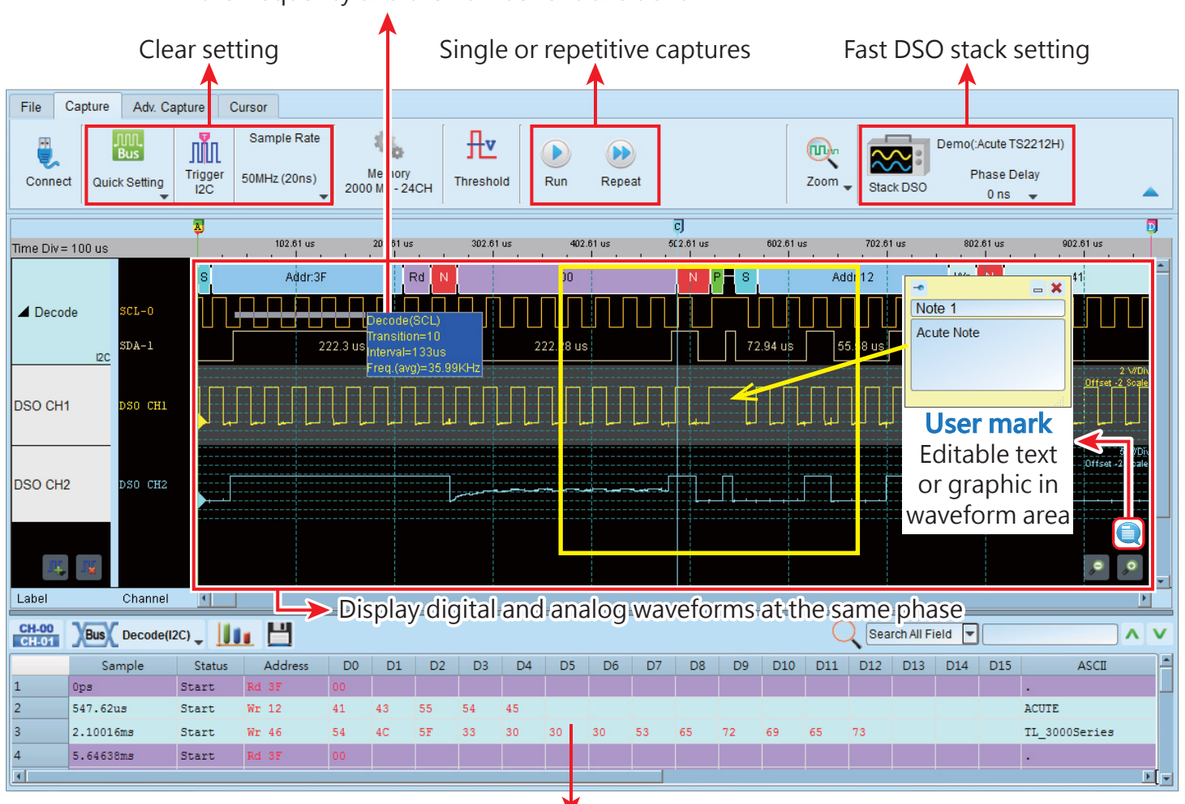
Capture digital waveforms and support bus decodes.
Able to stack with a DSO to form as an MSO.

Flow chart bus triggers :



Quick View

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



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.