

## TravelLogic series

Model	TL2136B	TL2236B	TL2236B+
Power Source	USB bus-power (+5V)		
Static Power Dissipation	0.75W		
Max Power Dissipation	<2.5W		
Hardware Interface	USB2.0 (USB1.1 Compatible)		
Timing Analysis (Asynchronous, Max. Sample Rate)	4 GHz		
State Clock Rate (synchronous, External Clock)	200 MHz		
Transitional Storage	Multi channel (55 bits at 5 ns resolution/5.7 years duration)		
Qualified Storage	Only supports Transitional Storage		
Channels (Signal/Ground)	36/4		
Total Sample Memory	18M bits	72M bits	
	Memory (bits) per channel/number of channels available		
	Timing Analysis		
	4 GHz		
	2 GHz		
	1.6 GHz		
	800 MHz		
	400 MHz		
	200 MHz		
Resolution	250ps		
Channels	36		
Conditions	Yes (4)		
Levels for each Condition	Yes (16)		
Pre/Post Trigger Setting	Yes		
Pass Counter	Yes (0 ~ 1048575 times)		
Event Types	Word, Channel, Transition, Glitch, Width, Comparison, Time-out		
Bus Trigger I	CAN, I <sup>2</sup> C, I <sup>2</sup> S, LPC, SMBus, SPI, SVI2, SVID, UART, USB1.1, ...		
Bus Trigger II	eMMC 4.5, eSPI, MIPI SPMI, NAND Flash, SD 3.0, Serial Flash (SPI NAND), ... (TL2236B+ Only)		
Input Port (for Stack)	TTL 3.3V		
Output Port (for Stack)	TTL 3.3V		
Range	+6V ~ -6V		
Resolution	50mV		
Accuracy	±100mV + 5%*Vth		
Schmitt Trigger	Yes (Dual Threshold Mode)		
Maximum	±40V DC, 15Vpp AC		
Sensitivity	0.25Vpp @ 50MHz, 0.5Vpp @ 150MHz, 0.8Vpp @ 250MHz		
Impedance	200KΩ // <5pF		
Operating/Storage Temperature	5°C ~ 45°C (41°F ~ 113°F)/-10°C ~ 65°C (14°F ~ 149°F)		
Channel to channel skew	< 1ns		
Zoom In/Out	Yes		
Languages	English / Traditional Chinese / Simplified Chinese		
Waveform Height	Adjustable		
Zoom Window/Report Window	Yes		
Quick Cursor-positioning	Yes		
Import Label(s)	Yes		
Quick Bus Decode Setup	Yes		
Trigger cursor/Auxiliary cursors	1/25		
Data Logger	Saved to Hard Disk		
Software Features	1-Wire, 3-Wire, 7-Segment, A/D Mux Flash, AccMeter, ADC, APML, Biss-C, CAN, Close Caption, CEC, DALI, DMX512, DP-Aux, EDID, eSPI, FlexRay, Line Decoding, Line Encoding, HD Audio, HDQ, HID over I <sup>2</sup> C, I <sup>2</sup> C, I <sup>2</sup> C EEPROM, I <sup>2</sup> S, I80, IDE, ITU656, IrDA, JTAG, LCD1602, LIN, Lissajous, LPC, LPT, M-Bus, Math, MDIO, MHL-CBus, Microwire, MII, MIPI DSI, MIPI SPMI, MMC(eMMC5.0), Modbus, Nand Flash, NEC IR, PECL, PMBus, ProfiBus, PS/2, PWM, QI, RC-5, RC-6, SDIO(SD3.0), Serial Flash, Serial IRQ, SGPIO, Smart Card, SMBus, SMI, S/PDIF, SPI, SPI-NAND, SSI, ST7669, SWD, SWP, SVI2, SVID, UART, UNI/O, USB 1.1, Wiegand, ...		
Bus Decode I	MIPI DSI-HS, ... (For TL2236B+ Only, Signal source: Other brand DSO or LA, not TravelLogic)		
Bus Decode II	Biphase Mark, Differential-Manchester, Manchester (Thomas, IEEE802.3), Miller, Modified Miller, NRZI, ...		
Line Decoding	AMI (Standard, B8ZS, HDB3), Biphase Mark, CMI, Differential-Manchester, Manchester (Thomas, IEEE802.3), MLT-3, Miller, Modified Miller, NRZI, Pseudoternary, ...		
Line Encoding	Biphase Mark, Differential-Manchester, Manchester (Thomas, IEEE802.3), MLT-3, Miller, Modified Miller, NRZI, Pseudoternary, ...		
Dimension	Length x Width x Height (mm <sup>3</sup> )		
Lead Cable	A 40-pin lead cable (36 Signal + 4 Ground)		
Grippers	40		

# Acute TravelLogic logic analyzer



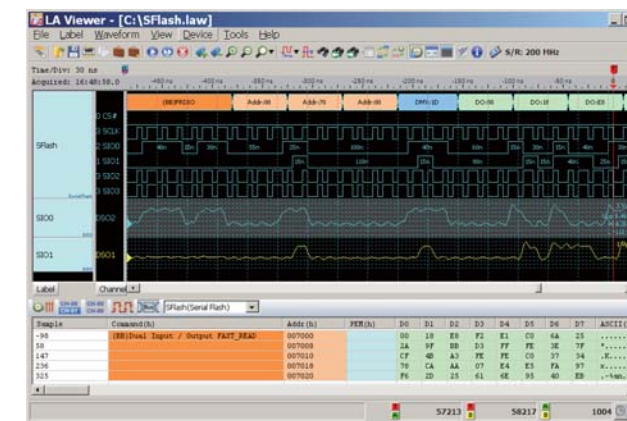
123 x 76 x 21 mm<sup>3</sup>

- PC-based
- USB2.0 interface / powered
- 36 channels
- 4 GHz timing / 200 MHz state analysis
- 4-conditions (4 levels each) trigger
- Data Logger (HD storage)
- Input Sensitivity 0.25Vpp
- Qualified Storage
- Transitional Storage (8 channel mode can be used to store data for 4 hours)
- Stackable with Acute or other brand DSO to form an MSO
- Bus Trigger I : CAN, I<sup>2</sup>C, I<sup>2</sup>S, LPC, SMBus, SPI, SVI2, SVID, UART, USB1.1, ...
- Bus Trigger II : eMMC 4.5, eSPI, MIPI SPMI, NAND Flash, SD 3.0, Serial Flash (SPI NAND), ...
- Bus Decode I : BiSS-C, CAN, eMMC5.0, I<sup>2</sup>C, I<sup>2</sup>S, Nand Flash, ProfiBus, SD, SPI, SVID, UART, USB1.1, ... (70+ decodes)
- Bus Decode II : MIPI DSI-HS, ...

(Signal source: Other brand DSO or LA, not TravelLogic)

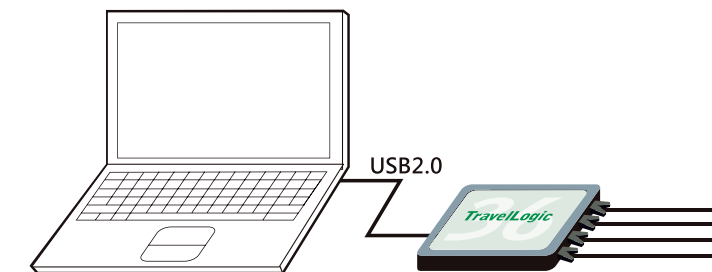
Model	Memory	Bus Trigger	Bus Decode
TL2136B	18 Mb	I	I
TL2236B	72 Mb	I	I
TL2236B+	72 Mb	I, II	I, II

## Software Window



## System Requirements

- USB 2.0 port
- XP, Vista, Win 7, Win 8 (32 / 64 bits)



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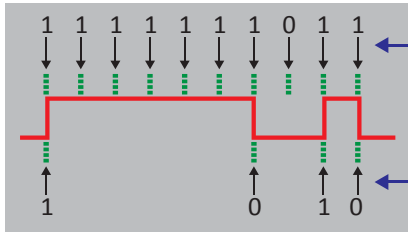
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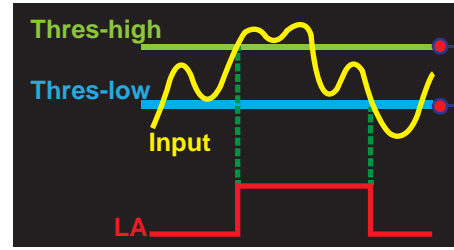


- Use the Transitional Data Storage to capture longer time data.



- Standard Storage mode: 10 points
- Transitional Storage mode: 4 points

- Provide 2 voltage thresholds (Schmitt Trigger) Measure the slow-transition signal more accurately.



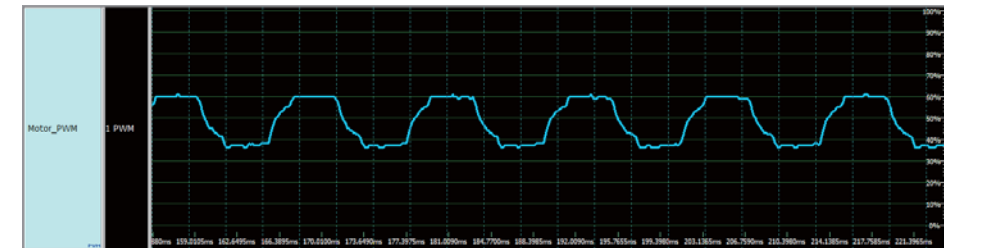
- More than 10 serial bus triggers Capture the designated command/data of CAN, eSPI, eMMC4.5, I<sup>2</sup>C, MIPI SPMI, NAND Flash, SD3.0, Serial Flash, SPI, SVID, UART, ...

- Stack a DSO to form an MSO to see both analog and digital waveforms on the same timing phase. Stackable DSOs: Acute, Agilent, HAMEG, LeCroy, Tektronix, ...

The dialog box shows configuration for SD/eMMC triggers. It includes settings for Channel (CLK, CMD, DATA0), Protocol (SD, eMMC, CMD only, CMD + RESP), Idle Period (100 us), and TODLY Time. It also features a state machine diagram with State 1 and State 2, and a list of triggers like Command and Response.

The main oscilloscope view shows a digital signal (CMD) and two analog signals (DSO1, DSO2) stacked vertically. A serial bus decode window is overlaid on the digital signal, showing commands like CMD13:SEND\_STATUS and their responses.

- 70+ free serial bus decodes CAN, eSPI, eMMC5.0, I<sup>2</sup>C, MIPI SPMI, NAND Flash, SD3.0, SPI, Serial Flash, SVID, UART, ...



- PWM analysis Display the PWM data as percentile or the original frequency waveform.

CMD (0 Clock) Transition=18 Interval=45.625 ns Freq.(avg)=200 MHz

- Quick View Function Right-click and drag on the waveform to see the signal frequency and transitions.

- Serial Bus Decode Easy result check in the report window.

Timestamp	Command	Response	Argument (h)	CRC7 (h)	Frequency	Timing
-0.00003375 ms	CMD13:SEND_STATUS		AA AA 00 00	21	201MHz	
0.000265625 ms		R1 :CMD13:SEND_STATUS	00 00 09 00	1F	200MHz	Ncr: 12
0.011299375 ms	CMD18:READ_MULTIPLE_BLOCK		00 C0 91 50	4F	200MHz	Nrc: 2159
0.01160375 ms		R1 :CMD18:READ_MULTIPLE_BLOCK	00 00 09 00	69	200MHz	Ncr: 13
1.24718 ms	CMD12:STOP_TRANSMISSION		00 00 00 00	30	200MHz	Nrc: 140458
1.247485 ms		R1bb:CMD12:STOP_TRANSMISSION	00 00 0B 00	3F	200MHz	Ncr: 13

Label	Channel	T-A (Transition, Rising, Falling) -348....	T-B (Transition, Rising, Falling) -348....	A-B (Transition, Ri
Serial Flash 0	CS#	221, 110, 111	221, 110, 111	0,
Serial Flash 1	SCLK	21260, 10630, 10630	21260, 10630, 10630	0,
Serial Flash 2	SI00	1722, 861, 861	1722, 861, 861	0,
Serial Flash 3	SI01	2371, 1186, 1185	2371, 1186, 1185	0,
Serial Flash 4	SI02	0, 0, 0	0, 0, 0	0,
Serial Flash 5	SI03	0, 0, 0	0, 0, 0	0,

Label	Channel	Measurement	Range	Average	Max	Min
CS	0	Period Time	Begin-End	719.917ns	25.392us	412.500ns
Clock	1	Frequency	Begin-End	65.729MHz	88.889MHz	40.854KHz

- Data Transitions Counter Tab Transition/Rising/Falling edge counter for all displayed channels.

- Waveform Measurement and Statistics Tab Quick measurement and statistics for selected channels.