TravelLogic series

Model		TL2136B	TL2236B	TL2236B+
Power	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 vs. number of channels available	Timing Analysis	Memory (bits) per channel/number of channels available		
	4 GHz	2.5K/36		
	2 GHz	5K/36		
	1.6 GHz	4M/4	16M/4	
	800 MHz	2M/9	8M/9	
	400 MHz	1M/18	4M/18	
	200 MHz	512K/36, 1M/18 1.5M/12, 2M/9 3M/6, 4.5M/4 9M/2, 18M/1	2M/36, 4M/18, 6M/12, 8M/9, 12M/6, 18M/4, 36M/2, 72M/1	
	Resolution	250ps		
Trigger	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, I²C, I²S, 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		
Threshold	Range	+6V ~ -6V		
	Resolution	50mV		
	Accuracy	±100mV + 5%*Vth		
	Schmitt Trigger	Yes (Dual Threshold Mode)		
Input Voltage	Maximum	±40V DC, 15Vpp AC		
	Sensitivity	0.25Vpp @50MHz, 0.5Vpp @150MHz, 0.8Vpp @250MHz		
Impedance		200KΩ// <5pF		
Temperature	Operating/Storage Temperature	5°C ~ 45°C (41°F ~ 113°F)/-10°C ~ 65°C (14°F ~ 149°F)		
Channel to channel skew		< 1ns		
Software Features	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		
	Bus Decode I	1-Wire, 3-Wire, 7-Segment, A/D Mux Flash, AccMeter, ADC, APML, BiSS-C, BSD, CAN, Close Caption, CEC, DALI, DMX512, DP AUX, EDID, eSPI, eMMC 5.1/MMC, FlexRay, HDLC, Line Decoding, Line Encoding, HD Audio, HDQ, HID over I²C, I²C, I²C EEPROM, I²S, I80, IDE, ITU656, IrDA, JTAG, LCD1602, LIN, Lissajous, LPC, LPT, M-Bus, Math, MDIO, MHL CBUS, Microwire, MII, MIPI RFFE, MIPI DSI, MIPI SPMI, Modbus, Nand Flash, NEC IR, PECI, PMBus, ProfiBus, PS/2, PWM, QI, RGB Interface, RC-5, RC-6, SD 3.0/SDIO 3.0, 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, USB PD 2.0, Wiegand, ...		
	Bus Decode II	MIPI DSI-HS, ... (For TL2236B+ Only, Signal source: Other brand DSO or LA, not TravelLogic)		
	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, IEEE802.3), MLT-3, Miller, Modified Miller, NRZI, Pseudoternary, ...		
Dimension	Length x Width x Height (mm^3)	123 x 76 x 21 (mm^3)		
Lead Cable		A 40-pin lead cable (36 Signal + 4 Ground)		
Grippers		40		

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TravelLogic logic analyzer

123 x 76 x 21 mm^3

- 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, I²C, I²S, 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, I²C, I²S, Nand Flash, ProfiBus, SD, SPI, SVID, UART, USB1.1, ... (80+ decodes)
- Bus Decode II : MIPI DSI-HS, ...

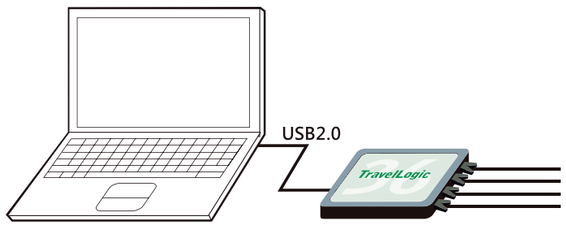
(Signal source: Other brand DSO or LA, not TravelLogic)

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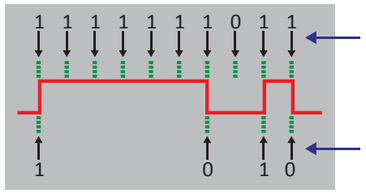
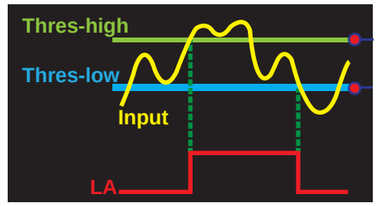
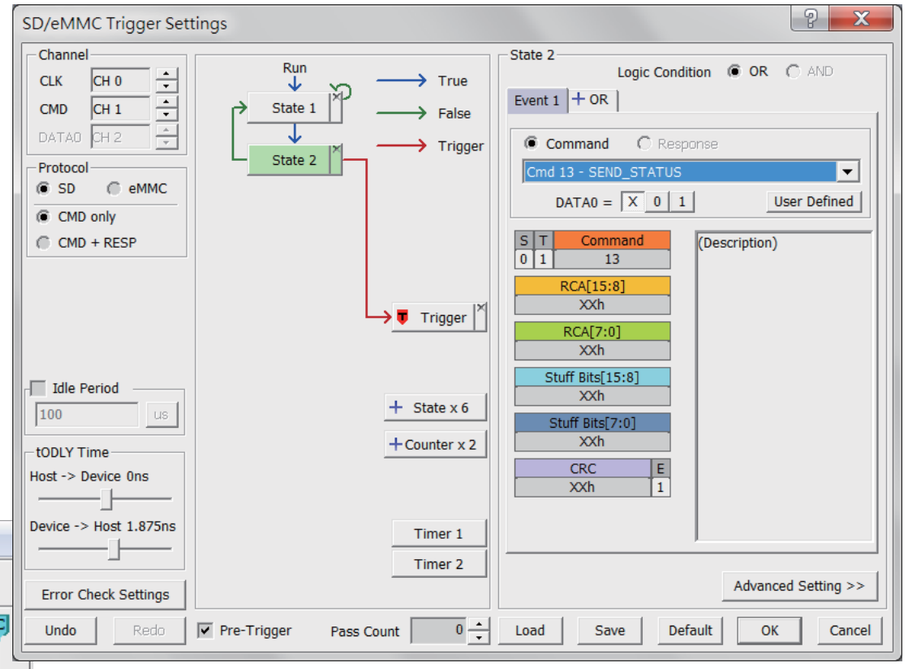
- **Use the Transitional Data Storage to capture longer time data.**



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

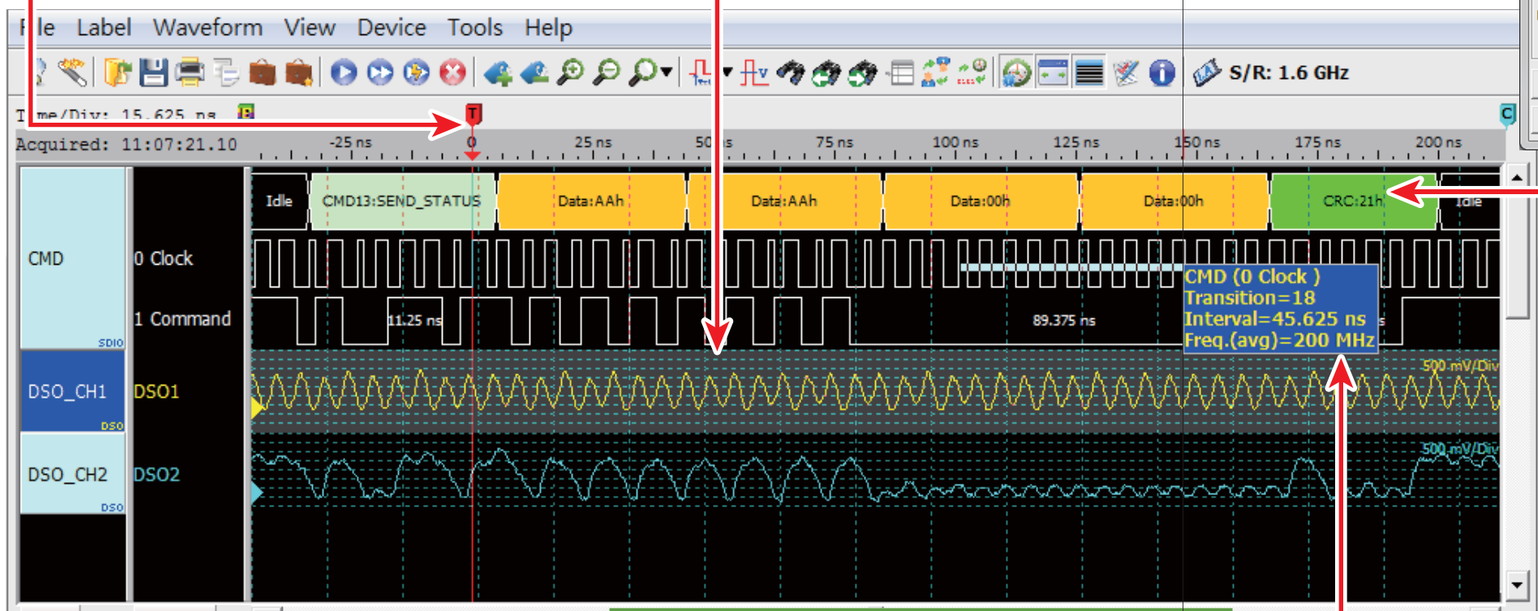
- **Provide 2 voltage thresholds (Schmitt Trigger)**
  Measure the slow-transition signal more accurately.





- **More than 10 serial bus triggers**
  Capture the designated command/data of CAN, eSPI, eMMC4.5, I²C, 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, HAMEG, Keysight (Agilent), LeCroy, R&S, Tektronix, …



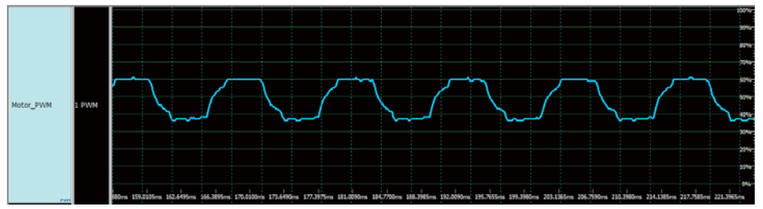
- **Serial Bus Decode**
  Easy result check in the report window.

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

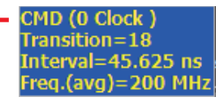
Label	Channel	T-A (Transition,	Rising,	Falling) -348....	T-B (Transition,	Rising,	Falling) -348....	A-B (Transition,	Ri
Serial Flash	0 CS#	221,	110,	111	221,	110,	111	0,	
Serial Flash	1 SCLK	21260,	10630,	10630	21260,	10630,	10630	0,	
Serial Flash	2 SIO0	1722,	861,	861	1722,	861,	861	0,	
Serial Flash	3 SIO1	2371,	1186,	1185	2371,	1186,	1185	0,	
Serial Flash	4 SIO2	0,	0,	0	0,	0,	0	0,	
Serial Flash	5 SIO3	0,	0,	0	0,	0,	0	0,	

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

- **70+ free serial bus decodes**
  CAN, eSPI, eMMC5.0, I²C, MIPI SPMI, NAND Flash, SD3.0, SPI, Serial Flash, SVID, UART, …



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



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

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

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