

# Acute TravelBus Logic/Protocol Analyzer



96 x 74 x 24 mm<sup>3</sup>

- PC-based, USB 3.0 interface/powered
- 800 MHz timing/ 200 MHz state analysis
- Digital channels : 16 (Data), 1 (Clock), 2 (I<sup>2</sup>C/DP\_Aux)
- Memory : PC RAM
- Protocol Decode : CAN FD, DALI2.0, DP\_Aux, I<sup>2</sup>C, I<sup>2</sup>S, LIN2.2, PMBus, PWM, SMBus, SPI, MIPI I3C 1.1, UART, USB PD 3, ...(70+ decodes)
- Module I  
Protocol Analyzer : I<sup>2</sup>C, MIPI I3C 1.1, SPI, UART (RS232)
- Module II  
Protocol Analyzer : HID over I<sup>2</sup>C, I<sup>2</sup>S, LIN2.2, MDIO, PMBus, SMBus, USB1.1
- Module III
  - Protocol Analyzer : BiSS-C, CAN2.0B, CAN-FD, DALI2.0, DP\_Aux, Profibus, RS485, ...
  - Differential channels : 2 (CAN2.0B/CAN-FD), 4 (RS422/485)
  - Stackable with a DSO to form an MSO
  - Isolated Ground : CAN2.0B/CAN-FD, RS485 (Safety Isolation up to 1000Vrms)

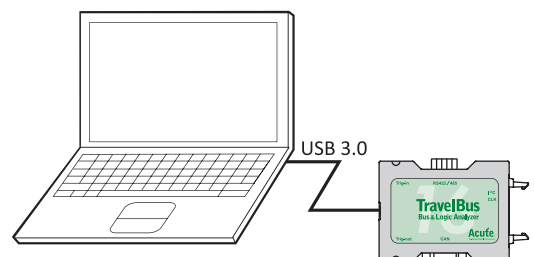
Model	Channels	Module	Protocol Decode	Protocol Trigger
TB3016F	19	I	70+	I
TB3016E	19	I, II	70+	I, II
TB3016B	25	I, II, III	70+	I, II, III

## Software Window



## System Requirements

- USB 3.0 port
- Win 7, Win 8, Win 10, Win11 (64 bit)



# Acute®

PC-based T&M Instruments

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TravelBus series		TB3016F	TB3016E	TB3016B
Power	Power Source	USB bus-power (+5V)		
	Static Power Dissipation	0.75W		
	Max Power Dissipation	< 2.5W		
Hardware Interface		USB 3.0		
Timing Analysis (Asynchronous, Max. Sample Rate)		800 MHz*		
State Clock Rate (Synchronous, External Clock)		200 MHz*		
Channels (Data / CLK / I <sup>2</sup> C; DP_Aux / CAN / RS485)		16 / 1 / 2 / - / -		16 / 1 / 2 / 2 / 4
Timing vs. Channels	Timing Analysis	Available channels		
	800 MHz	8		
	400 MHz	16		
Threshold	200 MHz	16		
	Group	2 (ch0~7, ch8~15 & clk0)		
	Range	±6V		
	Resolution	50mV		
Trigger	Accuracy	±100mV + 5%*Vth		
	Resolution	1.25 ns		
	Channels	16 (Max.)		
	Pre/Post Trigger Setting	Yes		
	Pass Counter	Yes (0 ~ 65536 times)		
	Event Types	Channel, Pattern, Single, Width, Time-out, External		
	Protocol I	I <sup>2</sup> C, MIPI I3C 1.1, SPI, UART (RS232)		
	Protocol II	---	HID over I <sup>2</sup> C, I <sup>2</sup> S, LIN2.2, MDIO, PMBus, SMBus, USB1.1	
	Protocol III	---	---	BiSS-C, CAN2.0B, CAN-FD, DALI2.0, DP_Aux, SENT Modbus, Profibus, RS422, RS485, USB PD 3
	Input port (for Stack)	---	TTL 3.3V	
Output port (for Stack)	---	TTL 3.3V		
Input Voltage	Maximum	±40V DC, 15Vpp AC		
	Sensitivity	0.5Vpp @150MHz		
Impedance		200KΩ // <5pF		
Maximum target signal speed		CAN Port: 10 Mbps, I <sup>2</sup> C Port: 400 KHz 3.3V, RS485 Port: Baud rate 20 Mbps		
Temperature	Operating / Storage	5°C ~ 45°C (41°F ~ 113°F) / -10°C ~ 65°C (-14°F ~ 149°F)		
	I	I <sup>2</sup> C, MIPI I3C 1.1, SPI, UART (RS232)		
	II	---	HID over I <sup>2</sup> C, I <sup>2</sup> S, LIN2.2, MDIO, PMBus, SMBus, USB1.1	
Protocol Analyzer	III	---	---	BiSS-C, CAN2.0B, CAN-FD, DALI2.0, DP_Aux, Modbus, Profibus, PWM, RS422, RS485, USB PD 3
	Protocol Decode	1-Wire, 3-Wire, 7-Segment, AccMeter, ADC, APML, BiSS-C, BSD, CAN2.0, CAN FD, Close Caption, CODEC_SSI, DALI2.0, Digital LED, DMX512, DP_Aux, EDID, FlexRay, 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, ITU656, IrDA, JTAG, JVC IR, LCD1602, LIN2.2, Line Decoding, Line Encoding, LPT, M-Bus, Math, MDIO, MHL Cbus, Microwave, Mini/Micro LED, MIPI CSI LP, MIPI DSI LP, MIPI I3C 1.1, MIPI SoundWire, Modbus, NEC IR, PDM, PECE, PMBus, Profibus, PS/2, PWM, QEI, QI, RC-5, RC-6, RT_SWI, SDQ, SENT, SGPIO, Smart Card (ISO7816), SMBus, SMI, SPI, SSI, ST7669, SWD, SWIM, SWP, UART, UNI/O, USB1.1, USB PD 3, Wiegand		

\* Measure up to 50 MHz signals due to data transmission limitation.

## Packing list

Item	Quantity
1. TB3016 device	1
2. Terminal Block (F/E/B)	0/0/1
3. D-Sub Connector (F/E/B)	0/0/1
4. Lead Cable (24-pin)	1
5. USB 3.0 Cable	1
6. Grippers (F/E/B)	5/10/20

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

