

# Acute TravelBus

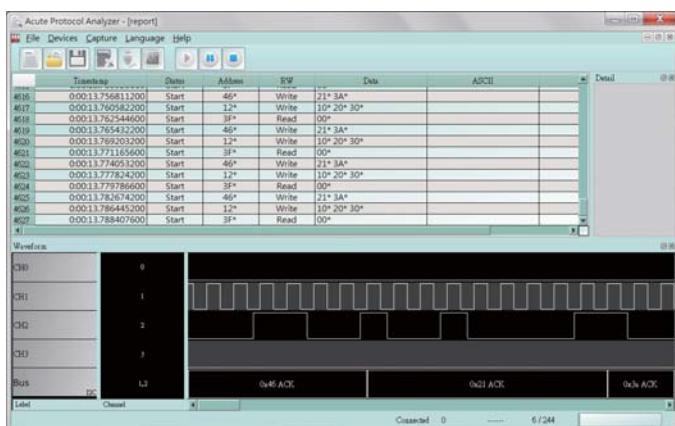
## Logic Analyzer & Protocol Analyzer

- PC-based, USB 3.0 interface/powered
- 200 MHz\* timing/state analysis
- Digital channels : 16 (Data), 1 (Clock), 2 (I<sup>2</sup>C/DP\_Aux)
- Memory : PC RAM
- Real time data display and post-capture waveform display
- Bus Decode : I<sup>2</sup>C, I<sup>2</sup>S, LIN2.2, SMBus, PWM, SMBus, SPI, UART, USB PD3... (70+ decodes)
- Module I  
Protocol Analyzer : I<sup>2</sup>C, RS232, SPI
- 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, Profibus, RS422, RS485, ...
  - Differential channels : 2 (CAN2.0B/CAN-FD), 4 (RS422/485)
  - Stackable with Acute TravelScope DSO to form an MSO
  - Isolated Ground : CAN2.0B/CAN-FD, RS485 (Safety Isolation >1000Vrms)



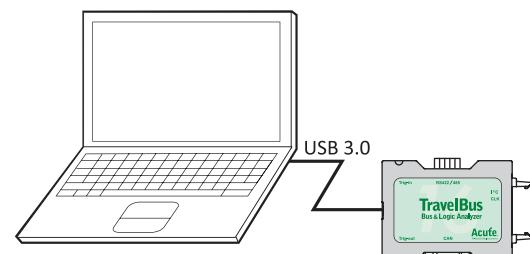
Model	Channels	Module	Bus Decode	DSO stack
TB2016F	19	I	YES	No
TB2016E	19	I, II	YES	No
TB2016B	25	I, II, III	YES	Yes

### Software Window



### System Requirements

- USB 3.0 port
- Win 7, Win 8, Win10 (32 / 64 bits)



# Acute

PC-based T&amp;M Instruments

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# TravelBus series

Model	TB2016F	TB2016E	TB2016B
Power	Power Source Static Power Dissipation Max Power Dissipation	USB bus-power (+5V) 0.75W < 2.5W	
Hardware Interface		USB 3.0	
Timing Analysis (Asynchronous, Max. Sample Rate)		200 MHz*	
State Clock Rate (Synchronous, External Clock)		200 MHz*	
Channels (Data / CLK / I <sup>2</sup> C / CAN / RS485)	16 / 1 / 2 / - / -		16 / 1 / 2 / 2 / 4
	Resolution Channels Conditions Pre/Post Trigger Setting Pass Counter Event Types	5 ns 16 (Max.) Yes (4) Yes Yes (0 ~ 65536 times) Channel, Pattern, Single, Width, Time-out, External	
Trigger	Module I Module II Module III	---	I <sup>2</sup> C, RS232, SPI HID over I <sup>2</sup> C, I <sup>2</sup> S, LIN2.2, MDIO, PMbus, SMBus, USB1.1 BiSS-C, CAN2.0B, CAN-FD, DALI2.0, DP_Aux, SENT Modbus, Profibus, RS422, RS485, USB PD3
	Input port (for Stack) Output port (for Stack)	---	TTL 3.3V TTL 3.3V
	Range Resolution	-6V ~ +6V 50mV	
Threshold	Accuracy	±100mV + 5%*Vth	
Input Voltage	Maximum Sensitivity	±40V DC, 15Vpp AC 0.5Vpp @150MHz	
Impedance		200KΩ // <5pF	
Maximum target signal speed		Data Port: 15MHz, CAN Port: 5Mbps, I <sup>2</sup> C Port: 400KHz, RS485 Port: Baud rate 20Mbps	
Temperature	Operating / Storage	5°C ~ 45°C (41°F ~ 113°F) / -10°C ~ 65°C (-14°F ~ 149°F)	
Protocol Analyzer	Module I Module II Module III	---	I <sup>2</sup> C, RS232, SPI HID over I <sup>2</sup> C, I <sup>2</sup> S, LIN2.2, MDIO, PMbus, SMBus, USB1.1 BiSS-C, CAN2.0B, CAN-FD, DALI2.0, DP_Aux, Modbus, Profibus, PWM, RS422, RS485, USB PD3
Software features	Bus decode	1-Wire, 3-Wire, 7-Segment, A/D Mux Flash, 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, Microwire, Mini/Micro LED, MIPI CSI/DSI LP, MIPI I3C, Modbus, NEC IR, PECI, PMBus, Profibus, PS/2, PWM, QEI, QI, RC-5, RC-6, RT_SWI, SDQ, SENT, GPIO, Smart Card (ISO7816), SMBus, SMI, SoundWire, SPI, SSI, ST7669, SWD, SWIM, SWP, UART, UNI/O, USB1.1, USB PD3, Wiegand	
Dimension	L x W x H (mm <sup>3</sup> )	96x74x24	
Lead Cable		24-pin	
Grippers	5	10	20

\* Measure signal under 14MHz ONLY due to data transmission limitation.

## Packing list

Item	Quantity
1. TB2016 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>

