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2.11 Advisor

The LeCroy USB Advisor™ USB 2.0 Protocol Analyzer is a stand-alone unit controlled and configured by a portable or desktop PC connected through its USB port.

The Advisor uses hardware triggering to capture real-time events and hardware filtering to preserve memory and find data. Recorded data uploads to the attached PC and displays on the CATC Trace graphical user interface as color-coded packets that can be searched for specific data, errors, or other conditions.

The Analyzer works with any Microsoft® Windows® XP, Windows Vista™ 32, or Windows Vista 64 desktop or portable PC.

The Analyzer supports the Universal Serial Bus, version 2.0. Please refer to the *Universal Serial Bus Specification, version 2.0* for details on the protocol. The USB specification is available from the USB Implementers Forum (USB-IF) at:

USB Implementers Forum
1730 SW Skyline Blvd. Suite 203
Portland, OR 97221

Tel: +1/503.296.9892
Fax: +1/503.297.1090
Web: http://www.usb.org/

2.12 Advisor PC Requirements

Please refer to the **USBProtocolSuite_Readme.html** file on the installation CD for the most current PC and operating system requirements.

2.13 Advisor System Components/Packing List

The LeCroy Advisor Analyzer package includes the following items:

- One stand-alone LeCroy USB Advisor™ Analyzer module
- One AC power cord with a plug appropriate to your location
- One External Interface Breakout Board with a 9-pin cable
- Five USB cables: four 3-foot (1-meter) cables and one 6-foot (2-meter) cable
- LeCroy Advisor software program installation CD
- Product documentation, including online help

2.14 Advisor Stand-Alone Unit

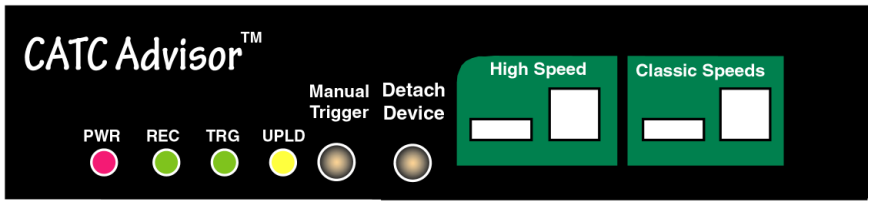


Figure 2.6 Advisor Front Panel

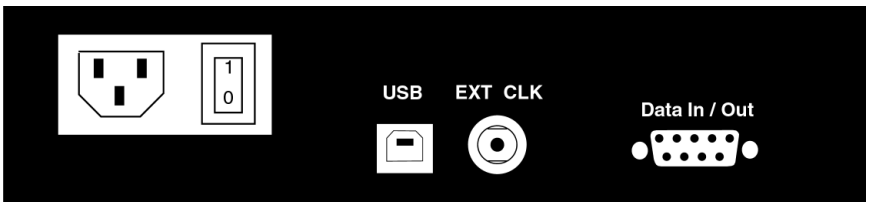


Figure 2.7 Advisor Rear Panel

The Analyzer has several user-accessible controls on its front and rear panels.

- **Red PWR (power) indicator LED**: Illuminates when the unit power is switched on.
- **Green REC (recording) LED**: Illuminates when the unit is recording.
- **Yellow TRG (triggered) LED**: Illuminates when the unit triggers an event. Also lights during power-on testing and blinks when the hardware is faulty.
- **Green UPLD (upload) LED**: Illuminates when unit is uploading data to host PC.
- **Manual Trigger** push-button (allows a manual Trace capture)
    - After beginning a recording session, press the **Manual Trigger** switch to force a Trigger condition. The session completes when a specified post-trigger amount of bus data is recorded or when you manually stop a recording session.
    - **Detach Device** push-button allows a momentary disconnection of the device from the host on the Classic Speeds port. This is useful when interesting traffic occurs during device enumeration. Use the **Detach Device** switch shortly after starting recording to capture a Trace of the device's enumeration.
- Two USB ports, **High Speed** and **Classic Speed**, each with a type A and a type B connector.
    - **High Speed**: Used to record 480 MB/s High-Speed traffic only
    - **Classic Speeds**: Used to record either 12 MB/s or 1.5 MB/s Classic-Speed traffic

- Wide range AC connector module:
  - Power socket
  - Power on/off switch
  - Enclosed 5x20 mm 2.0A 250 V fast acting glass fuse

Warning! For continued protection against fire, replace fuse only with the type and rating specified above.

  - USB type B host computer connector
  - **Data In/Out** DB-9 (9-pin) external interface connector

Note: The BNC connector next to the Data In/Out 9-pin DIN connector DOES NOT PROVIDE ANY USER FUNCTIONALITY! It may have the label **EXT CLK**, **AUX,** or **TRIGGER,** depending on when it was manufactured.
Do not use the BNC connector for any purpose!
(The Trigger In and Trigger Out functions are only available through the Breakout Board accessory.)

Warning! Do not open the Analyzer enclosure. There are no operator serviceable parts inside. Refer servicing to LeCroy.

2.15 Advisor System Setup

The Analyzer functions with any personal computer using the Microsoft® Windows® XP, Windows Vista™ 32, or Windows Vista 64 operating system and equipped with a functional USB interface.

The Analyzer is a stand-alone unit configured and controlled through a personal computer USB port. It can be used with portable computers for field service and maintenance as well as with desktop units in a development environment. To install, connect a cable between the computer's USB port and the Analyzer's USB port.

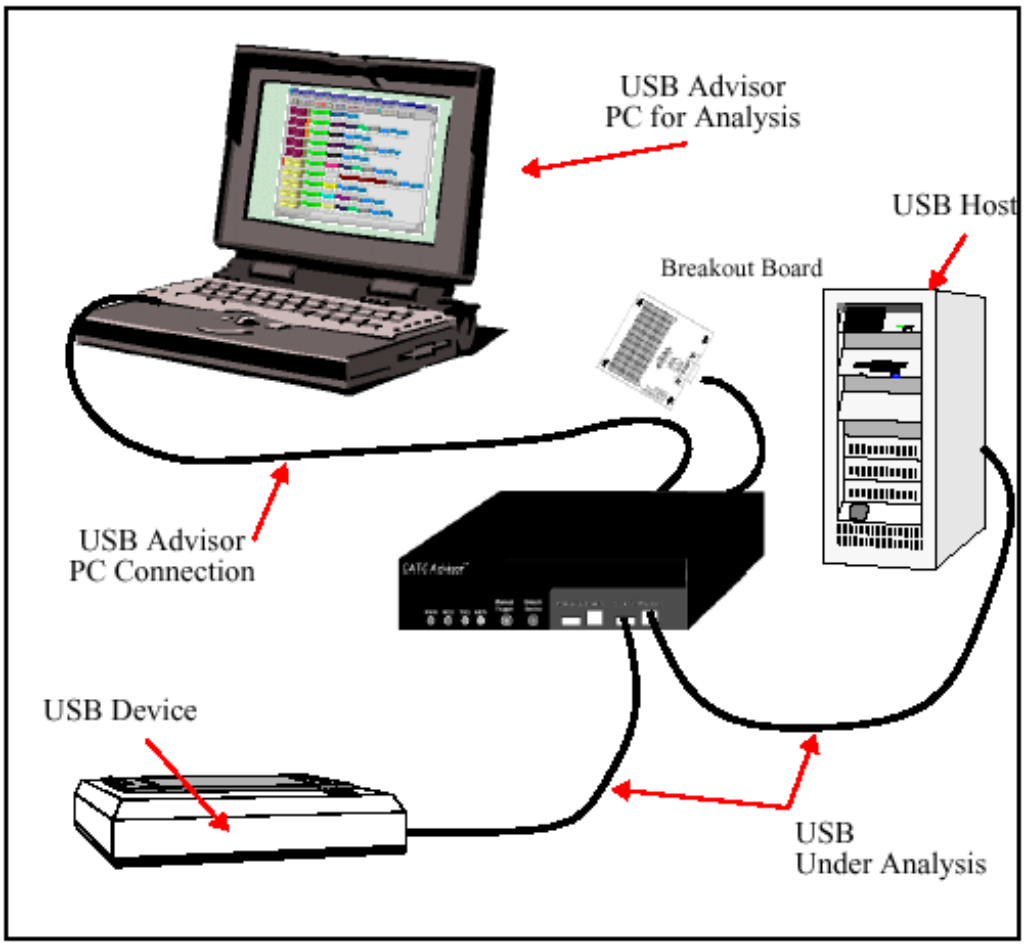


Figure 2.8 USB Advisor Connection

2.16 Advisor Specifications

2.16.1 Package

Dimensions	9.2 x 8.4 x 2.5 inches (23.4 x 21.3 x 6.4 cm)
Connectors	AC power connection Trigger IN/OUT input (BNC) Host connection (USB, type B) Data connector (Data In/Out, 9-pin DB)
Weight	2.8 lbs. (1.2 kg)

2.16.2 Power Requirements

90 to 254 V AC, 47 to 63 Hz (universal input), 100 W maximum

2.16.3 Environmental Conditions

Operating Temperature	0 to 55°C (32 to 131°F)
Storage Range	-20 to 80°C (-4 to 176°F)
Operating Humidity	10 to 90%, non-condensing
Operating Altitude	Up to 6560 feet (2000 meters)

2.16.4 Switches

Power	on/off
Manual Trigger	Forces trigger event.
Detach Device	Detaches the device from the classic speed connection.

2.16.5 LEDs

Power (PWR)	Illuminated when the Analyzer is powered on
Recording (REC)	Illuminated when the Analyzer is actively recording traffic data
Triggered (TRG)	Illuminated during power-on testing and when the Analyzer has detected a valid trigger condition
Uploading (UPLD)	Illuminated when the Analyzer is uploading its recording memory to the host PC for display

2.16.6 Recording Memory Size

128 megabyte DRAM for traffic data capture, timing, state and other data

2.17 Advisor External Interface Breakout Board

The External Interface Breakout Board is an accessory that allows convenient access to several potentially useful standard, fast TTL output and input signals. It also offers a simple way to connect logic Analyzers or other tools to the Analyzer unit. Four ground pins and one 5-volt pin are provided.

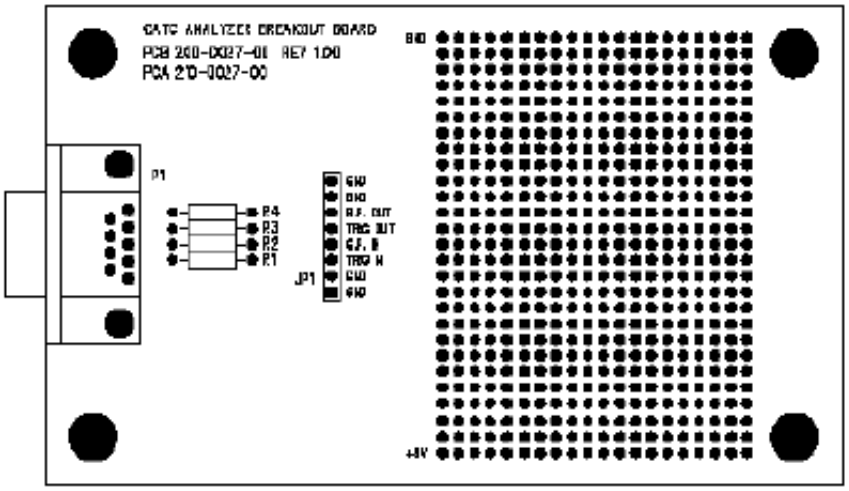


Figure 2.9 External Interface Breakout Board

The Breakout Board connects by cable to the **Data In/Out** connector located on the rear of the Analyzer box. Each signaling pin is isolated by a 100 Ω series resistor and a buffer inside the Analyzer box.

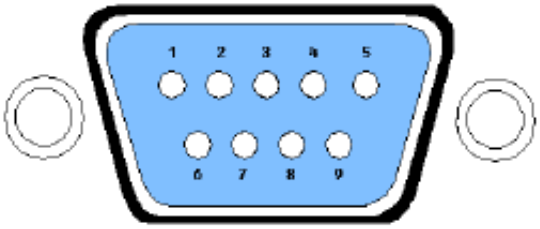


Figure 2.10 Data In/Out Connector (on cable)

2.17.1 Pin-Outs for the Data In/Out Connector

Table 2 lists the pin-out and signal descriptions for the **Data In/Out** connector on a cable that connects to the Breakout Board.

Table 2 Data In/Out Connector – Pin-Out

Pin	Signal Name	Signal Description
1	+5V	+5 Volts, 250mA DC source
2	TRG IN	(*) Trigger Input
3	GP IN	(*) General Purpose Input
4	TRG OUT	(*) Trigger Output
5	GP OUT	(*) General Purpose Output
6	GND	Ground
7	GND	Ground
8	GND	Ground
9	GND	Ground

Note: (*) Pins 2 and 3 have the same function: they allow external signals to be used to cause triggering or recording. Pins 4 and 5 are used to transmit output signals.

2.17.2 Prototype Rework Area

The Breakout Board contains a prototype rework area for making custom circuits for rapid development. The area consists of plated-through holes, 20 columns wide by 27 rows long. The top row of holes connects to GND, and the bottom row connects to +5 V. The remaining holes are not connected. Use the rework area to insert custom components and wire-wrap their respective signal, power, and ground pins.

2.17.3 PC Connection

Use the **LONGEST (6-foot/2-meter)** of the five USB cables provided to connect the host computer to the Analyzer box.

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