

# Beagle™

## USB 5000 v2

### SuperSpeed

### Protocol Analyzer



#### Key Features<sup>1</sup>

##### Real-Time Non-Intrusive Monitoring

- SuperSpeed/High-/Full-/Low-Speed USB (up to 5 Gbps)
- Digital I/Os to synchronize with oscilloscopes or logic analyzers
- 2 ns resolution for USB 3.0
- USB 3.0 downlink

##### USB 3.0/2.0 Advanced Triggers

- Create state-based and flexible trigger conditions based on data patterns, packet types, error types, events, and other criteria
- Hardware packet filtering
- Up to eight independent states and six matches per state
- Digital I/Os to synchronize with oscilloscopes or logic analyzers

##### Data Center™ Software

- Real-time display, search, and filtering of captured data
- LTSSM graphical view
- Descriptor and class-level decoding
- Automatic bus speed detection
- Capture traces to >25 GB
- Cross-platform support for Windows, Linux, Mac OS X

##### Beagle API

- Create custom software applications
- Example files included

##### Quality

- CE, REACH, RoHS
- Manufacturing: ISO 9001, ISO 13485, AS9100C, ITAR
- One year warranty

With the increasing complexity of USB, especially USB 3.0, and growing array of USB devices, the need for interactive, real-time analysis is more important than ever - the Beagle USB 5000 v2 Protocol Analyzer line is expressly designed to enable your competitive edge.

The Beagle USB 5000 analyzer is the ideal tool for debugging and monitoring traffic on your SuperSpeed and high-speed USB devices. The Beagle analyzers provide a comprehensive, high-performance and powerful monitoring solution, helping to minimize your debugging and development time.

##### Enhanced Visibility for USB 3.0

- Detection of low-level bus events: link training, LFPS polling, training sequences
- LTSSM View tracks upstream and downstream link state transitions
- Automatic support for data scrambling, spread spectrum clocking, and receiver detection

##### Advanced Triggers

- Start a capture using the flexible trigger environment: 8 states, 6 matches per state, plus timer and bus events
- Perform hardware filters and utilize digital I/Os for synching with external logic for comprehensive captures

##### Enumeration Debugging

The ability to detect LFPS polling events, training sequences, the link layer, as well as parse descriptors makes the Beagle USB 5000 analyzer invaluable in debugging issues with device enumeration. In particular, the real-time display, search, and filtering abilities of the analyzer streamlines the debugging and development process for USB 3.0 developers.

##### Power Management

With the introduction of low-power states in USB 3.0, gaining visibility into a device's current state is essential for troubleshooting bugs with state transitions. The LTSSM View provides that visibility, allowing users to easily trace through state transitions and identify events that occurred before and after those transitions.

<sup>1</sup> Please visit [www.totalphase.com/products/usbguide](http://www.totalphase.com/products/usbguide) for a complete feature comparison

# Beagle™ USB 5000 v2 SuperSpeed Protocol Analyzer

## Applications

Storage Bridges	Hubs Video	Cameras Mobile Devices	Audio Controllers
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## Specifications

### Software

The Data Center™ Software is a bus monitoring software application that displays captured USB, I2C, SPI, and CAN bus data in true real-time through the Beagle™ line of hardware protocol analyzers and the Komodo™ line of CAN interfaces.

### Data Center Software Features

- LiveDisplay™ technology allows for real-time interactive display and analysis of SuperSpeed, high-, full- and low-speed USB (up to 5 Gbps)
- Automatic class-level decoding and descriptor parsing
- LiveFilter™ and LiveSearch™ tools allow for real-time interactive filtering and searching
- Collaborate easily by sharing capture files
- Export saved capture files to CSV format

### Beagle API

- Create custom applications using the flexible, powerful, and well-documented Beagle API
- 32- and 64-bit support for C/C++/C#, Python, .NET, VB.Net, VB 6

### Operating Systems Supported (32-bit and 64-bit)

- Windows: XP, Vista, 7, 8, 8.1
- Linux: Red Hat, SuSE, Ubuntu, Fedora, Arch, CentOS, Debian
- Mac OS X: 10.4-10.9

### Hardware

#### USB Monitoring<sup>1</sup>:

- SuperSpeed, 5 Gbps
- High Speed, 480 Mbps
- Full Speed, 12 Mbps
- Low Speed, 1.5 Mbps

#### Target Device Port:

USB 3.0 Type A receptacle

#### Target Host Port:

USB 3.0 Type B receptacle

#### Analysis Port (connects to PC):

USB 3.0 Type B receptacle

#### USB 3.0 Digital I/O Port:

- 2 SMA connectors: 1 input, 1 output
- Impedance: 50 OHM
- Digital I/O are rated for 1.8V and 12 mA

#### USB 2.0 Digital I/O Port:

- Mini DIN-9 connector: 4 inputs, 4 outputs, 1 ground
- Digital inputs are rated for 3.3 V and max 30 MHz
- Digital outputs are rated for 3.3 V and 10 mA

#### Cross Analyzer Sync Ports<sup>1</sup>:

- 2 HDMI connectors: 1 input, 1 output

#### On-board Memory Buffer

Up to 4 GB for USB 3.0, 128 MB for USB 2.0

#### Dimensions (W x D x L)

16 cm x 15.4 cm x 4.7 cm (6.3" in x 6.1" x 1.8")

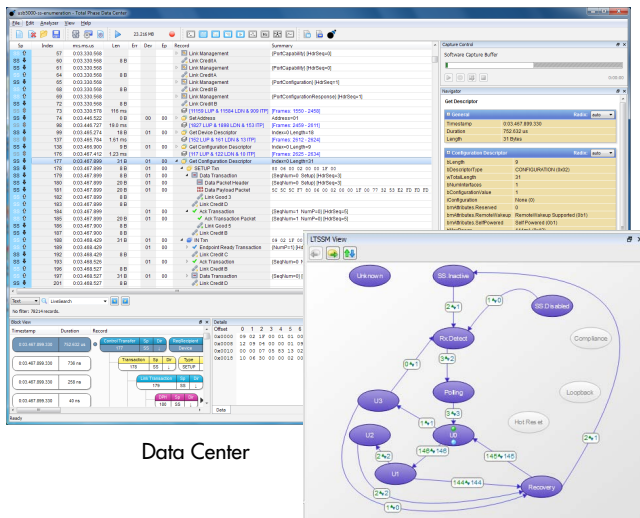
#### Weight

900 g (1.9 lbs)

#### Operating Temperature

10 to 35 °C (50 to 95 °F)

<sup>1</sup> Feature dependent on model of analyzer



## Ordering information

Beagle USB 5000 v2 SuperSpeed Protocol Analyzer - Ultimate Edition

Part Number TP322610

Beagle USB 5000 v2 SuperSpeed Protocol Analyzer - Standard Edition

Part Number TP322510

Beagle USB 5000 v2 Protocol Analyzer - USB 2.0 Edition

Part Number TP322410

Beagle USB 5000 v2 Protocol Analyzer - Standard to Ultimate Bundle

Part Number TP323410

Beagle USB 5000 v2 Protocol Analyzer - USB 2.0 to Ultimate Bundle

Part Number TP323310

Country of Origin USA

HTS 9030890100

ECCN EAR99

