Product Overview

Developed in collaboration with Teledyne LeCroy, GRL's USB 3.0 Protocol Performance & Stress Test Suite (GRL-USB3-PROTO) allows LeCroy users to make the most of their Voyager investment. In the past, LeCroy users had to develop their own scripts to implement functional and protocol stress tests. Now, with GRL-USB3-PROTO Voyager users can instantly read enumeration information, run raw performance benchmarking, perform randomized protocol stress testing, and characterize protocol error margin tolerance.

GRL-USB3-PROTO offers the ease of use of Windows PC-based tools without the driver, OS and system loading effects that impact performance. And, GRL-USB3-PROTO offers precise error injection control and detailed protocol trace logging capabilities available only on the Voyager. Compatible with any Windows 7/8 PC, GRL-USB3-PROTO unlocks the Voyager's full potential and allows USB developers to easily and quickly optimize the performance and robustness of their USB 3.0 products.

Features

- Easy to Use – No need for script creation. User-friendly GUI
- Full Control – Highly controllable and configurable Error Injection and Benchmarking
- Full Visibility – Understand bottlenecks and optimize performance
- No Limits on Device Performance – Test with an ideal link partner for consistent response time results with no O/S or driver effects.

Features

**Performance Comparison vs Standard PC Tools**

Compared to standard PC-based tools, GRL-USB-PROTO provides:

- More Accurate response time for SCSI Write/Read operations
- More consistent and reliable timing results
- Cleaner transactions
- Protocol trace files for deeper analysis

**Protocol Random Error Injection & Margin Tolerance**

- Determine protocol error injection impact on USB 3.0 Device stability and performance
- Select individual or a combination of protocol errors to assert on DUT
- Select from a range of random error injection parameters and iterations
- Automatically generate exerciser scripts for each iteration and continually step through different random parameter combinations
- Perform automated characterization of DUT's protocol error margin tolerance for each error
- Explore how combinations of errors can create problems even within operating ranges of error parameters showing no problems when error parameters are run individually
- Increase test coverage and probability to identify issues
- Produce detailed traces and error injection logs showing error injection history

Supports USB Mass Storage Class Peripherals. Other classes available upon request.

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**Average Performance Increase vs PC-based Tools**

**Write:** 58%

**Read:** 17%

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*Average performance increase based on GRL independent validation of eight commercially-available USB Mass Storage Class Peripherals, January 2014.*
Application Specifications

This application is compatible with the Teledyne LeCroy Voyager M3i, M3x, and M301 USB 3.0 protocol Analyzer & Exerciser.

GRL USB3 Protocol Performance and Stress Test Suite for the Teledyne LeCroy USB 3.0 Protocol Analyzer

<table>
<thead>
<tr>
<th>Protocol Specification</th>
<th>USB 3.0</th>
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<tbody>
<tr>
<td>Data Rates</td>
<td>5Gb/s</td>
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<tr>
<td>Required equipment</td>
<td>Windows 7 or Windows 8 PC, Teledyne LeCroy Voyager M3i, M3x, or M301 model USB protocol Analyzer with Exerciser. Requires Exerciser option.</td>
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</tbody>
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Ordering information

For a formal quote and pricing, please contact info@graniteriverlabs.com or your Teledyne LeCroy representative.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
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<tr>
<td>GRL-USB3-PROTO</td>
<td>GRL USB 3.0 Protocol Performance and Stress Test Suite</td>
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About Granite River Labs

Granite River Labs (GRL) provides end-to-end Engineering Services and Test Solutions to help hardware engineers adopt high speed interfaces. A trusted partner of small up-and-coming hardware developers to some of the largest companies in the world, GRL combines recognized industry experts, high performance test equipment, automated test solutions, and convenient locations to provide the utmost in customer service and robust, user-friendly tools. Together with our customers we overcome challenges with designing and validating early stage products and new connectivity technologies.

For additional information or questions regarding Granite River Labs Test Solutions, including quotes, product demonstrations, software and technical assistance please contact us at: info@graniteriverlabs.com.

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GRL-USB3-PROTO-EN, published Jan 2014