

GRL-USB-PD-A1

USB Type-C™ Power Delivery Performance Analyzer (GRL-USB-PD-A1)

The Only USB Type-C Power Delivery 3.0 and 2.0 Analyzer Easy Enough for Anyone to Use to Check Charging Performance



- Supports all USB Type-C based charging like USB Power Delivery 3.0 and 2.0, Qualcomm Quick Charge TM 2.0/3.0/4/4+, Huawei SuperCharge, Samsung Adaptive Fast Charge, etc.
- Also supports all charging technologies over USB micro-B, USB Type-A and Apple Lightning connectors through inexpensive USB Type-C adapters
- Easily assess power charging performance and entry into Thunderbolt, DisplayPort, and other Alt-Modes
- Conveniently view power, voltage, current, and USB PD protocol all on the same graph
- Able to process poor USB power delivery protocol packets without crashing

Product Overview

GRL-USB-PD-A1 (GRL-A1) is the only solution available that analyzes for proper performance of USB Power Delivery 3.0 and all other charging technologies over USB Type-C and all other USB connectors without having to be an expert user

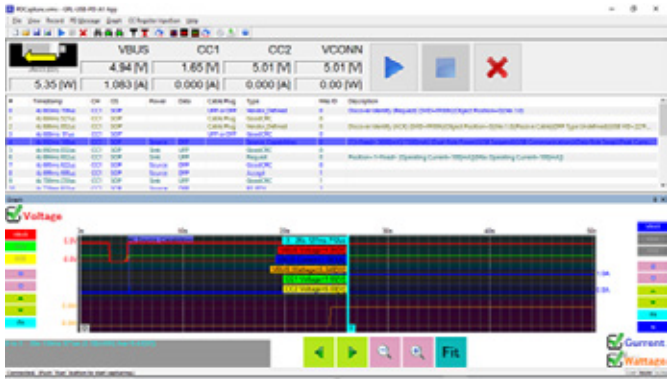
USB Type-C is becoming one of the most widely adopted interface technologies and is rapidly evolving to support more and more communication and charging protocols. The GRL-A1 makes it easy for anyone to understand what is transpiring between two devices connected over USB Type-C. Expert users can look at detailed USB Power Delivery protocol communication and conveniently monitor in real-time VBUS voltage and current, CC/VCONN voltage and current, and Rd. Everyday users can also use GRL software to quickly understand if proper USB Power Delivery communication and charging performance is happening, and to explain what went wrong.

The GRL-A1 can be used to analyze behavior between any USB Type-C based device such as Apple Mac's, Chromebooks, Android phones, Thunderbolt 3 docks, DisplayPort adapters, Qualcomm Quick Charge AC adapters, USB PD power banks, and cable E-Markers, etc. Using passive adapters, the GRL-A1 can also check for power and USB Power Delivery protocol communication over Apple Lightning connectors, and analyze charging behavior over USB micro-B and Type-A connectors.

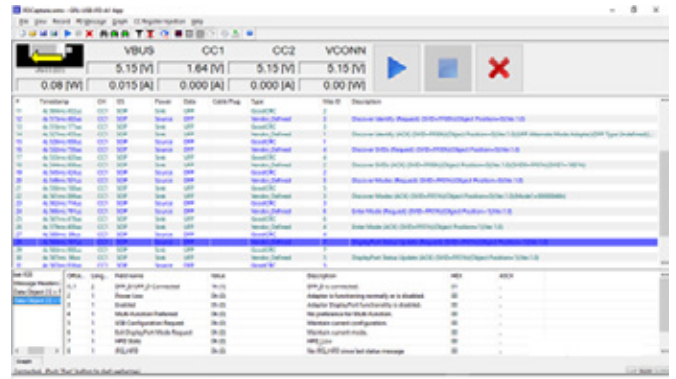
Professionals and enthusiasts can use the GRL-A1 to easily check if their USB Type-C device is charging properly and safely. Developers of USB Type-C devices and technical experts can utilize the GRL-A1 to validate their design and debug issues.

Features

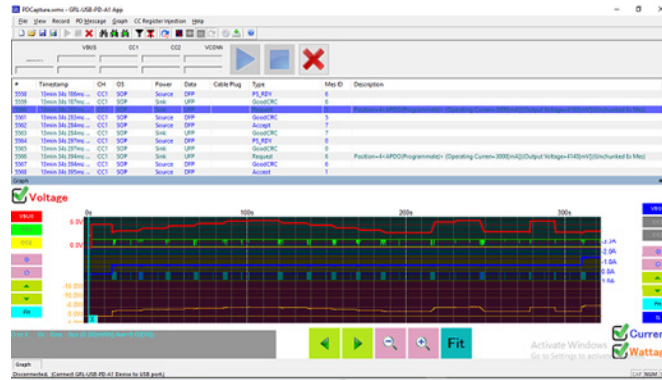
- Supports communication and power performance analysis of USB Power Delivery (PD) 3.0 with Programmable Power Supply (PPS), USB PD 2.0, and USB BC 1.2 over USB Type-C
- Supports USB Power Delivery analysis for DisplayPort, Thunderbolt 3, and HDMI Alternate Mode devices
- Supports charging analysis for Qualcomm Quick Charge 4, Quick Charge 4+, Quick Charge 3.0, and Quick Charge 2.0, Huawei Super Charge, Samsung Adaptive Fast Charge, Mediatek Pump Express™, OnePlus Dash Charge, etc.
- Supports up to 28 volts and 5.4 amps charging
- Inject CC register values to set Rp, Rd, Ra on CC1 and CC2 to pseudo-emulate a source or sink
- Analyze Apple iPhone/iPad charging behavior using USB Type-C to Lightning cables
- Works with USB micro-B and Type-A connectors through passive USB Type-C connector adapters
- Can be used with all USB PD devices including cable and adapter E-Markers, chargers, mobile phones, PC's, monitors, etc.
- Easy to navigate between USB PD protocol and power traces
- View USB PD protocol information directly in the power traces
- Monitor USB PD protocol and power traces in real-time
- Perform round-the-clock testing where trace files are continuously and automatically saved
- Protocol and power trace files can be easily opened and analyzed by anyone using free trace viewing software
- Turn on optional GRL Intelligent Charging Performance Assessment (ICPA) to automatically analyze trace during capture and report if proper USB PD communication and charging performance is happening and explain what went wrong
- Access GRL USB PD and charging test experts for further debug and testing



Power Graph between Source and Sink capture



Alt-mode communications



Power increment by step



Silicon Valley, USA

Beaverton Oregon, USA

Hsinchu & Taipei, Taiwan

Shanghai, China

Yokohama, Japan

Bangalore, India

Böblingen, Germany

Singapore

Penang, Malaysia

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Application Specifications

Required Equipment Windows 7+ PC

Ordering information

For a formal quote and pricing contact sales@graniteriverlabs.com

Model Number	Description
GRL-USB-PD-A1	USB Type-C™ Power Delivery Performance Analyzer (HW+SW)
GRL-USB-PD-A1-ICPA	GRL Intelligent Charging Performance Assessment (SW Upgrade)

About Granite River Labs

Granite River Labs (GRL) provides end-to-end Engineering Services and Test Solutions to help hardware engineers adopt connectivity technologies. A trusted partner of up-and-coming hardware developers to some of the largest companies in the world, GRL combines recognized industry experts, high performance test equipment, and automated test solutions. For additional information or questions regarding Granite River Labs, including quotes, product demonstrations, software and technical assistance, please contact us at: info@graniteriverlabs.com

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