

GRL-USB-PD-F1

GRL USB Power Performance Tester (GRL-USB-PD-F1)

All-in-One Portable Intelligent USB Power Performance Tester for Functional Bench Testing



- Used by major OEM brands to evaluate factory units
- Used by factories to support 100% in-line testing
- User by engineers to develop and run custom USB Power Delivery tests

Product Overview

Based on the industry standard GRL-USB-PD-C2 USB Power Delivery and Quick Charge Compliance tester, the GRL-USB-PD-F1 makes intelligent USB power testing more accessible through ease of use and an affordable price point. After the GRL-USB-PD-C2 has been used to perform in-depth USB Power Delivery and Qualcomm Quick Charge compliance and certification testing during semiconductor and product development, the GRL-USB-PD-F1 can be factories and brands looking to quickly evaluate production units in volume for manufacturing related defects.

The GRL-USB-PD-F1 can be used to test a wide range of products with USB Type-C and Type-A ports, including mobile phones, PC's, docks, monitors, USB based power banks, wall and car chargers, and car infotainment systems supporting different charging technologies including USB PD 2.0, USB PD 3.0 with PPS, Qualcomm QC 2.0, QC 3.0, QC4, QC4+.

Each port can be configured independently as a PD Provider or Consumer for PD system testing for up to 120 watts. Each port can be configured independently as a PD Provider or Consumer for PD system testing. GRL-USB-PD software runs on an externally connected PC through Ethernet connection. The solution enables product developers to quickly run full functional and power testing without even pushing a button.

Users can run built-in functional tests that check for protocol negotiation, power loading, voltage impact of no-load/full-load situations, voltage overshoot/undershoot, ripple, over-current, short circuit, and Level VI power efficiency testing*. Users can also test to see how their products with the GRL-USB-PD-F1 emulating different devices in the market. Power loading profiles captured by the GRL-USB-PD-A1 can be replicated and played back.

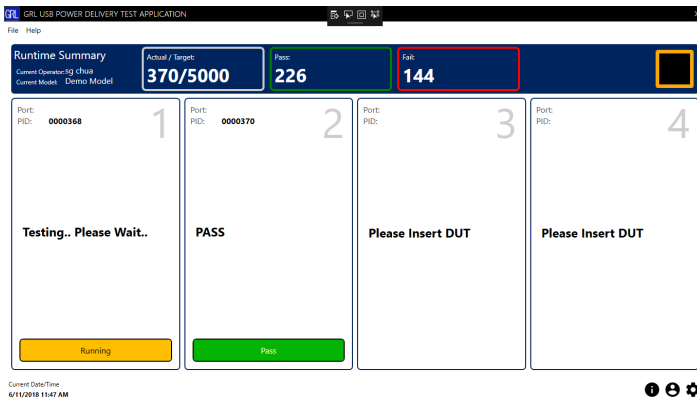
Users can also take advantage of rich API libraries to program the GRL-USB-PD-F1 using Python or C# to create custom test cases or debug interoperability issues. These API's also allow the GRL-USB-PD-F1 to be controlled as component in a larger test system.

The GRL-USB-PD-F1 uniquely brings a lot power and easy to use functionality in a compact, portable tester at a price point that is affordable for everyone.

Features

- Integrates 5 Instruments into a single compact tester
- Portable enough to be placed on any lab bench or office desk
- Complete all testing within 30 seconds in a single setup
- Easy to use software allows you to select test coverage and test reports
- Detail protocol and power test logs and traces captured for every test run
- Test data can be stored locally on PC or accessed through the cloud
- Perfect for testing mobile phones, PC's, docks, monitors, USB based power banks, wall and car chargers, and car infotainment systems
- Functionally exercises power capabilities over multiple voltage rails
- Two fully independent ports - source/sink up to 240W
- Support of multiple charging technologies like USB Power Delivery, USB Battery Charging 1.2, Qualcomm Quick Charge, etc.
- Tests for proper USB Power Delivery negotiation, power loading, voltage impact of no-load/full-load situations, voltage overshoot/undershoot, ripple, over-current, short circuit, and Level VI power efficiency testing*
- Programmable API access allows users full control of protocol negotiation and power behavior through Python or C# scripts
- Emulation of USB protocol and power behavior of different devices in the market
- Power loading profiles captured by the GRL-USB-PD-A1 can be replicated and played back
- Supports DP Tx electrical test automation as DP Aux accessory
- Bench and rack-mount versions available

*Separate power meter accessory needed for power efficiency testing



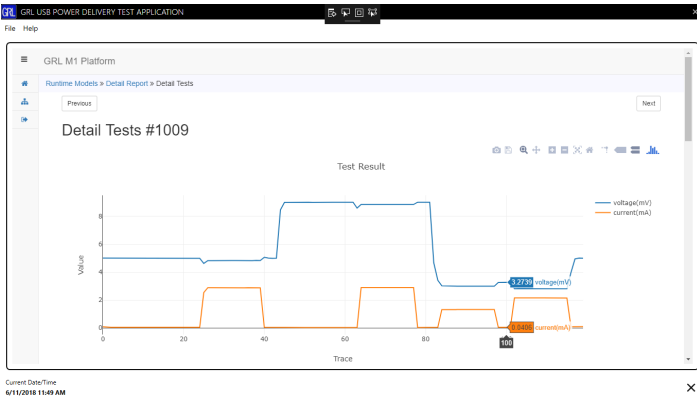
Software Main Screen

Runtime Models > Detail Report

Test No	Serial No	Duration(sec)	Timestamp	Status	Action
1003	0000361	6	2018-06-08 09:51:22	Pass	View Tests Detail
1002	0000360	6	2018-06-08 09:50:52	Pass	View Tests Detail
1001	0000359	5	2018-06-08 09:50:00	Pass	View Tests Detail
1000	0000358	16	2018-06-07 14:51:52	Fail	View Tests Detail
999	0000357	16	2018-06-07 14:47:30	Fail	View Tests Detail
998	0000356	16	2018-06-07 14:46:05	Fail	View Tests Detail
997	0000355	13	2018-06-07 14:43:39	Pass	View Tests Detail
996	0000354	13	2018-06-07 14:43:20	Pass	View Tests Detail
995	0000353	13	2018-06-04 22:46:53	Pass	View Tests Detail
994	0000352	13	2018-06-04 22:46:29	Pass	View Tests Detail

Current DateTime: 6/11/2018 11:48 AM

Test Overall Report



Test Detail

New/Edit Model Detail

Product Info

- ✓ All Tests
 - ✓ Custom Fixed PDO (5.00V/3.00A)
 - ✓ Load 0%
 - ✓ Load 50%
 - ✓ Load 100%
 - ✓ Load 50%
 - Custom APDO (3.30V/3.30V)
 - ✓ Load 0%
 - ✓ Load 100%
 - Custom APDO (3.30V/3.30V)
 - ✓ Load 50%
 - ✓ Load 100%
 - ✓ Load 80%

Custom APDO (3.30V/3.30V)
New custom Alternative PDO: Voltage Range 3.30V/3.30V

Current DateTime: 6/11/2018 11:47 AM

Test Configuration



- Silicon Valley, USA
- Beaverton Oregon, USA
- Hsinchu & Taipei, Taiwan
- Shanghai, China
- Yokohama, Japan
- Bangalore, India
- Böblingen, Germany
- Singapore
- Penang, Malaysia
- Dogguan, China



GRL-USB-PD-F1R

Ordering information

For a formal quote and pricing information, contact info@graniteriverlabs.com or your Tektronix sale representative.

Model Number	Description
GRL-USB-PD-F1	GRL USB Power Performance Tester (bench model)
GRL-USB-PD-F1R	GRL USB Power Performance Tester (rack model)

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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World Wide Headquarters

Granite River Labs

3500 Thomas Road, Suite A
Santa Clara, CA 95054 USA
+1 (408) 627-7608
info@graniteriverlabs.com
www.graniteriverlabs.com