

V-DPWR-EPR

GRL Platform Solutions USB-C® EU (IEC 62680-1-2) Conformance Tester

Accelerate design, validation and ensure IEC/EU conformity across the USB-C® ecosystem



Overview

The V-DPWR-EPR is a USB Power Delivery (PD) Source, Sink, DRP and Cable DUT tester that supports 240W of power. It supports the latest USB PD 3.2 specification with AVS and is backwards compatible with USB PD 2.0 specification. Supports the EU conformity testing (IEC 62680-1-2) and USB PD functionality verification testing. Supports USB data loopback testing by emulating the tester as a USB 3.2 Gen 1 (5 Gbps) device.

Key Features

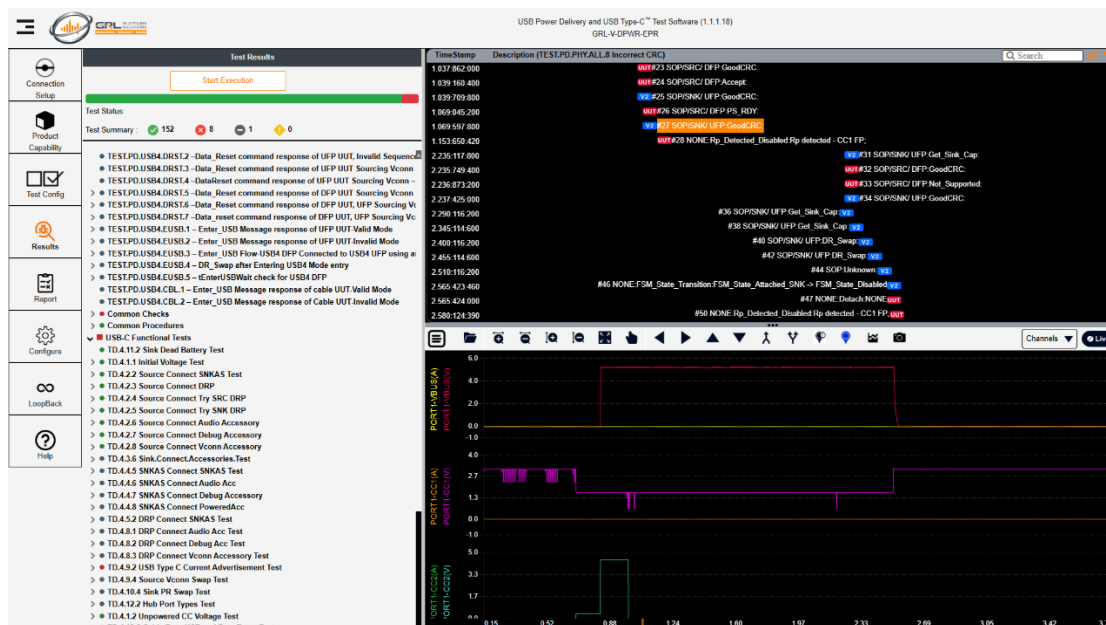
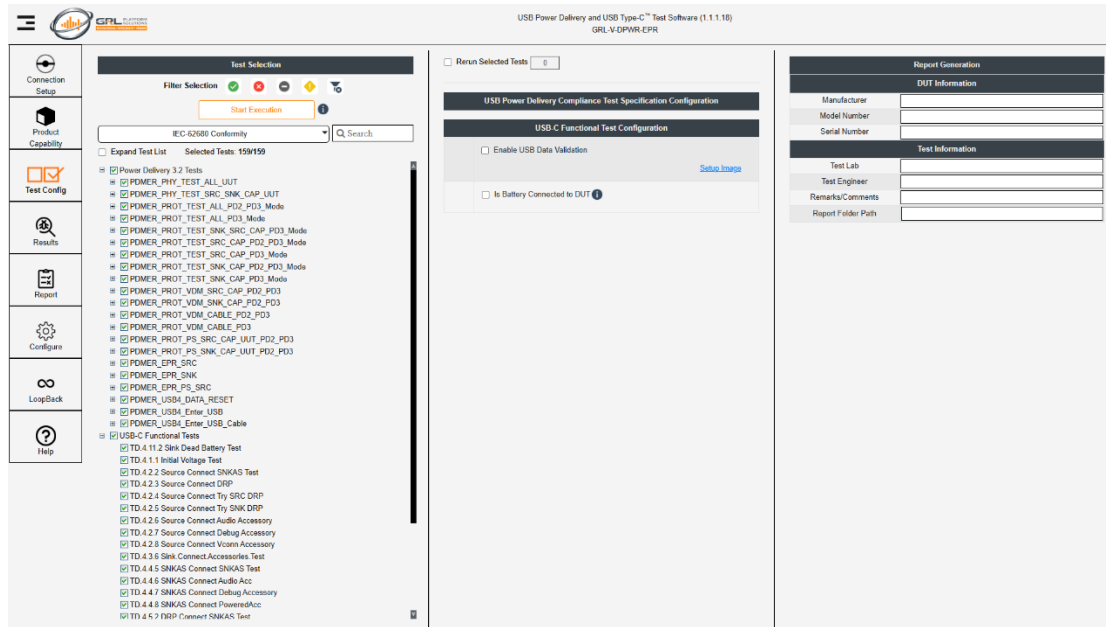
- USB PD Source, Sink and DRP Tester in a desk friendly form factor
- Supports USB PD 2.0 & PD 3.2 PPS, AVS, negotiation with USB 2.0 & USB 3.2 Gen 1 (5Gbps) data loopback test in device mode
- Supports USB PD Functionality Verification Test Cases (free of charge) and IEC 62368-1 Functional Safety Testing (option)
- The only customized solution for IEC 62680-1-2 for the EU Conformity testing
- Capable of supporting up to 240W continuous and 7.5W VCONN Power as Source, and Sink
- Voltage sense line available to compensate/reduce impact of IR drop
- Open API allows hardware control from customer's existing software
- GRL Platform Solutions production and validation software to support production floor testing
- Supports USB Type-C® and Type-A ports for power testing
- Targeted for design debug, high volume production and reliability testing of USB Type-C® DRP Designs including PD hosts, hub modules, docks, monitors, chargers and power banks



*V-DPWR-EPR is intended solely for EU (IEC 62680-1-2) conformity assessment testing. It does not provide complete USB-IF compliance testing and cannot be used to claim USB-IF's EU Conformity and/or full certification. **For USB-IF's EU conformity or full certification, use the USB-IF-approved [GRL-C2-EPR](#) and complete the applicable USB-IF program requirements to receive formal notification from USB-IF.***

IEC 62680-1-2 Conformity Testing

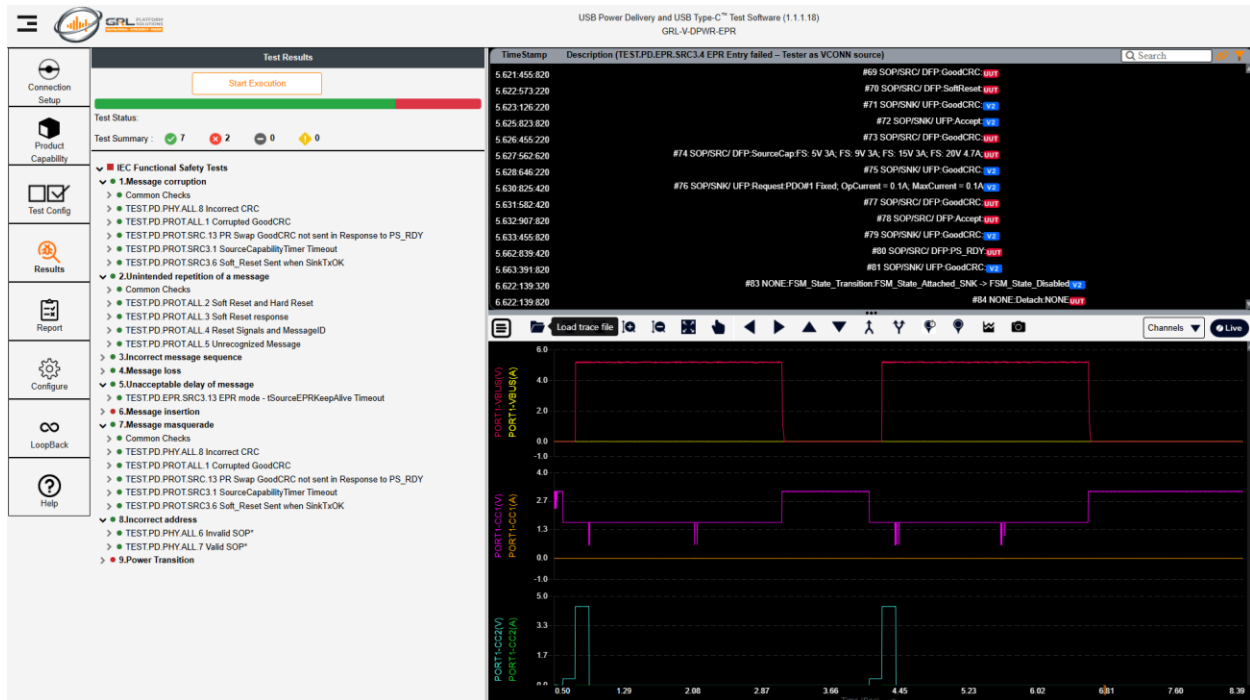
Customized for IEC 62680 1-2 EU Conformity Testing, V-DPWR-EPR validates all USB Type-C® devices for EU Common Charger Directive conformity. The V-DPWR-EPR tester takes the Vendor information file (VIF) as an input and runs all the necessary IEC 62680-1-2 testing and provides the EU Conformity Test report.



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Type-C® EPR (>100W)

The V-DPWR-EPR automates electrical functional safety validation of USB Type-C® Power Source (PS3) and Power Receiver implementations to support conformance with IEC 62368-1 and EN 61558, which are key safety standards for commercial USB charging modules which require chargers to support above 100W power.



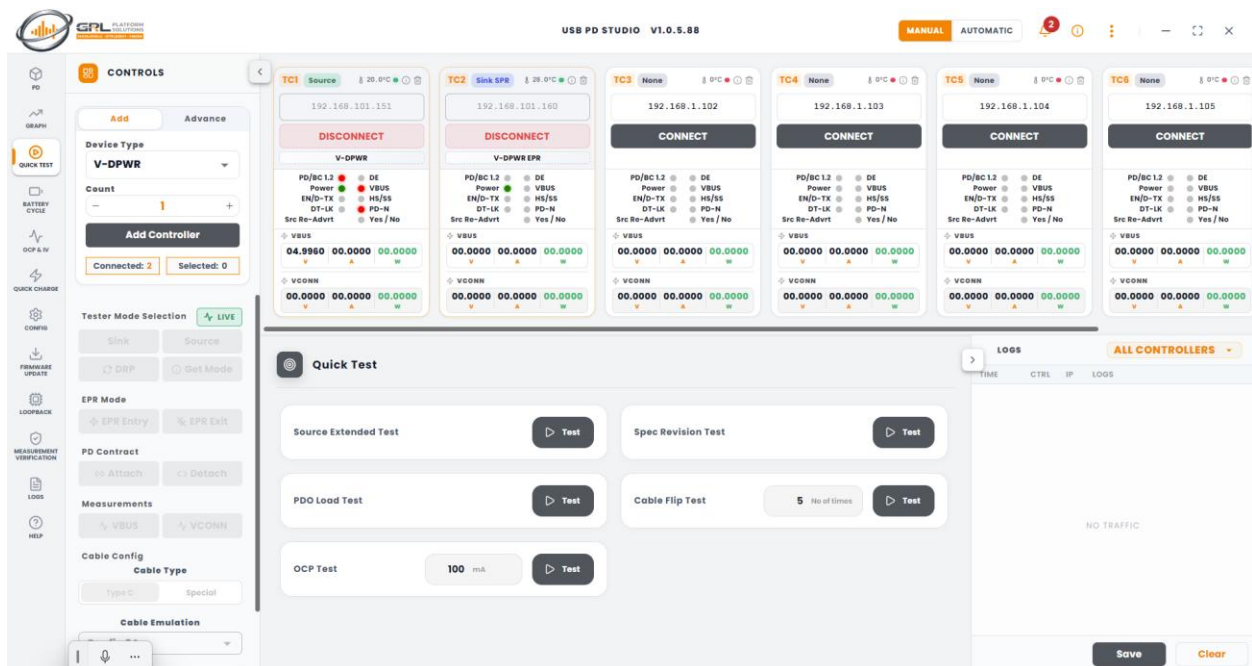
Quick Testing

The V-DPWR-EPR tester lets users run fast, targeted tests to quickly validate whether a device under test is performing its core power delivery functions correctly without needing to run a full test suite. This helps users catch basic functional issues early, saving time during development, debugging, and pre-conformance checks.

Quick Tests include:

1. **Spec Revision Test** – Confirms the device reports and complies with the correct specification revision.
2. **PDO Load Test** – Verifies the device correctly advertises and handles Power Data Objects under load.
3. **Source Extended Test** – Checks extended source capability messaging for accuracy and completeness.
4. **Cable Flip Test** – Validates reliable operation regardless of cable orientation (CC line flip).
5. **OCP Test** – Confirms the device's over-current protection triggers as expected to prevent damage.
6. **And more** – Additional quick checks are available to cover a broader range of basic functional scenarios.

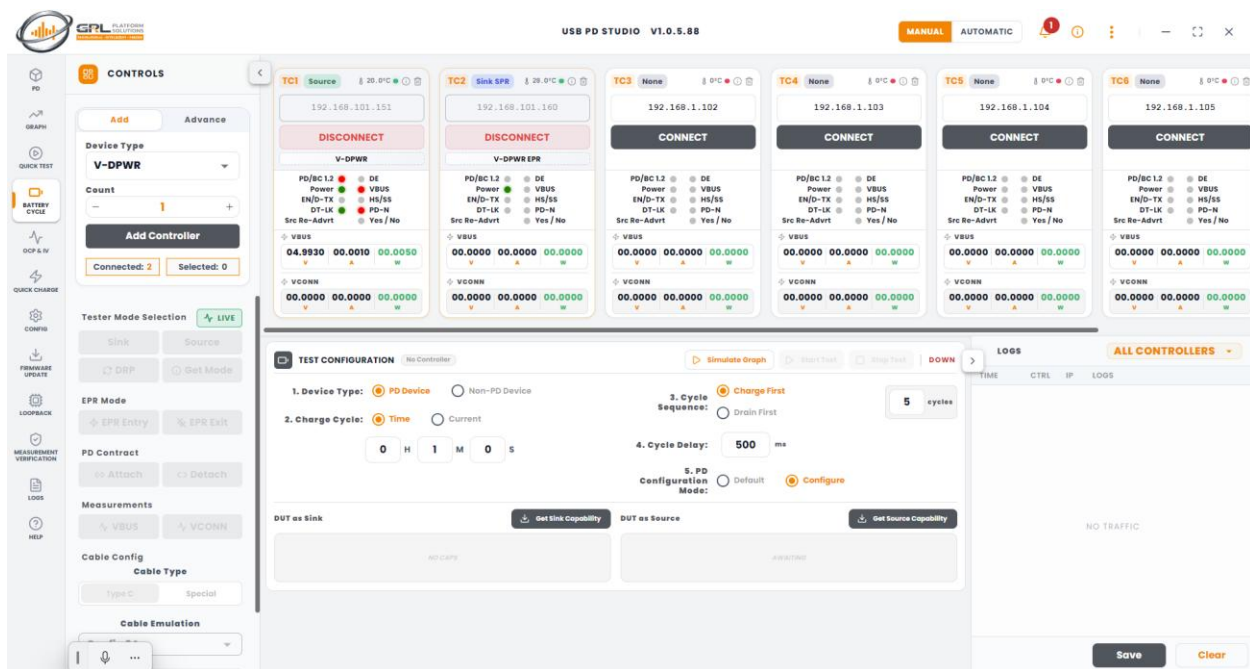
With Quick Testing, users get a fast first-pass health check of their device, helping identify issues before investing time in deeper, more comprehensive testing.



Reliability and Robustness Stress Testing

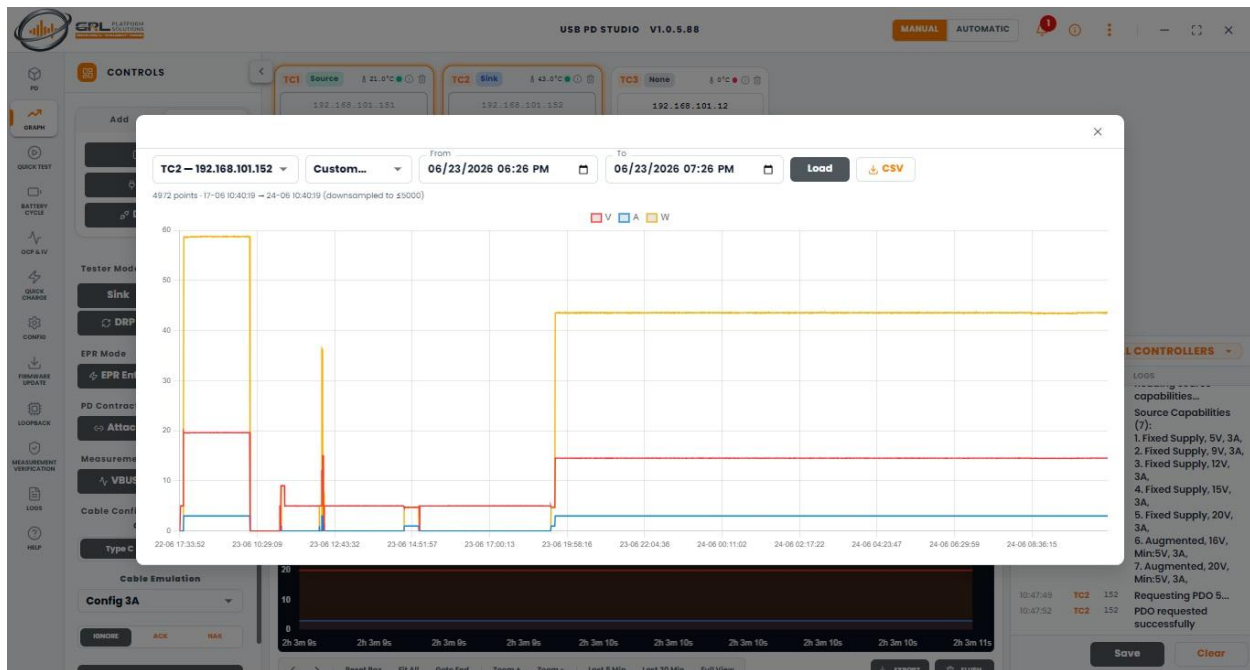
The V-DPWR-EPR enables users to put power banks through repeated charge-drain cycles, simulating real-world usage over extended periods. Devices can be cycled hundreds of times, helping users evaluate battery performance, durability, and consistency over the product's expected lifetime without needing separate cycling equipment.

This capability allows users to identify capacity degradation, charging inconsistencies, or reliability issues early, supporting more confident validation of power bank quality and longevity before release.



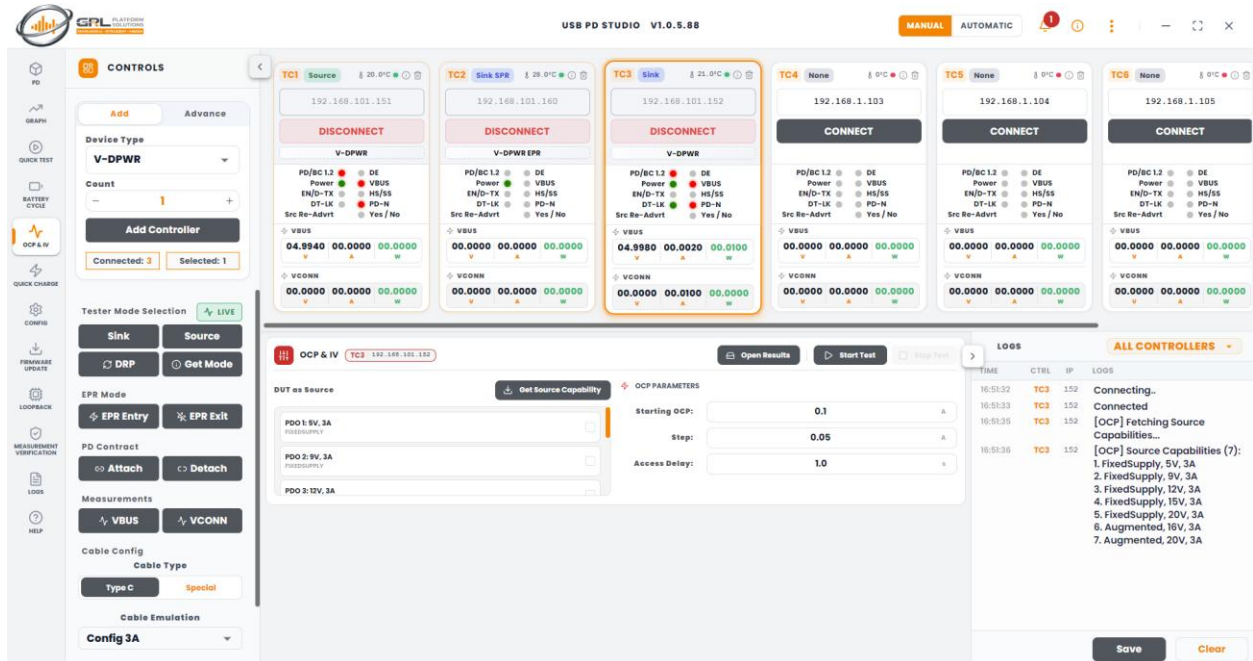
Long Duration Testing

The V-DPWR-EPR enables users to assess the long-term reliability and robustness of their devices by running continuously as a source or a sink for multiple days at a time. This extended, hands-off operation helps users uncover issues that only surface over time — such as intermittent faults, thermal drift, or performance degradation — giving greater confidence in product stability under real-world, sustained-use conditions.



OCF and IV Curves

The V-DPWR-EPR enables users to verify Over Current Protection (OCP) behavior across the full voltage range up to 48V, at each supported power level. Users can visualize current foldback characteristics alongside the corresponding OCP trip value for every voltage level, making it easy to confirm that protection circuitry responds correctly and consistently across the device's entire operating range — helping ensure safe, reliable operation under fault conditions.



The screenshot displays the USB PD STUDIO V1.0.5.88 software interface. The top bar shows the title "USB PD STUDIO V1.0.5.88" and tabs for "MANUAL" and "AUTOMATIC". The main interface is divided into several sections:

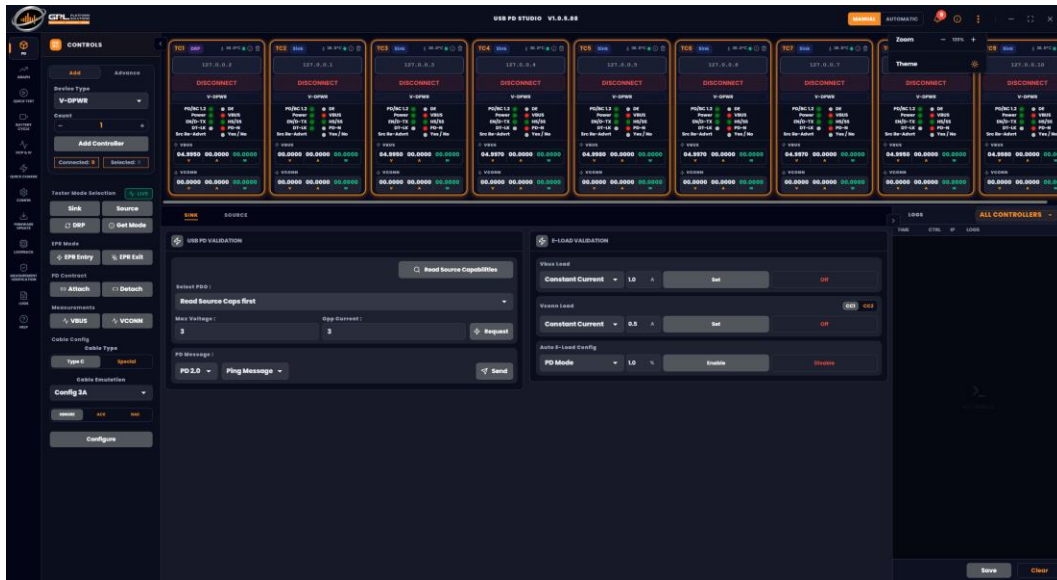
- CONTROLS** (Left Panel): Includes "Add Controller", "Device Type" (V-DPWR), "Count" (1), "Add Controller", "Tester Mode Selection" (LIVE), "Sink", "Source", "EPR Mode" (EPR Entry, EPR Exit), "PD Contract" (Attach, Detach), "Measurements" (VBUS, VCONN), "Cable Config" (Type C, Special), and "Cable Emulation" (Config 3A).
- TC1 to TC6** (Top Center): Six tabs for different test conditions. TC3 is selected, showing "DISCONNECT" and "CONNECT" buttons. Below each button are various status indicators and numerical values.
- OCP & IV** (Bottom Center): A section for "OCP & IV" testing. It includes a "Get Source Capability" button, "DUT as Source" settings, and "OCP PARAMETERS" (Starting OCP: 0.1, Step: 0.05, Access Delay: 1.0).
- LOGS** (Bottom Right): A table showing test results. The table has columns for "TIME", "CTRL", "IP", and "LOGS". The logs show a sequence of events: "Connecting...", "Connected", "[OCP] Fetching Source Capabilities...", and "[OCP] Source Capabilities (7):".

The "LOGS" table contains the following data:

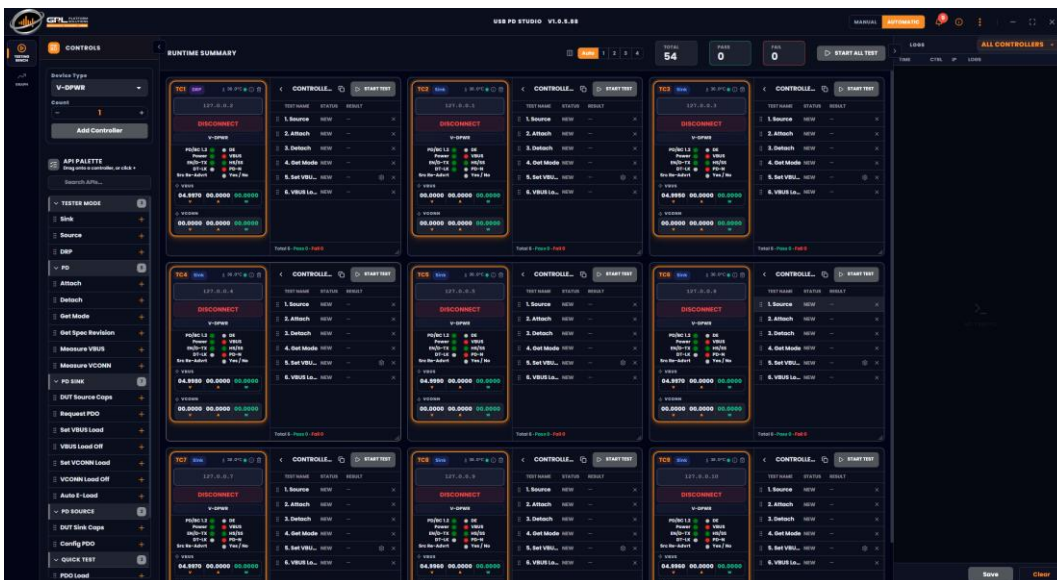
TIME	CTRL	IP	LOGS
16:51:32	TC3	152	Connecting...
16:51:33	TC3	152	Connected
16:51:35	TC3	152	[OCP] Fetching Source Capabilities...
16:51:36	TC3	152	[OCP] Source Capabilities (7):

Multi Tester Emulation Using One Software

USB PD Studio allows users to control and emulate multiple V-DPWR-EPR testers simultaneously from one software interface. This enables parallel testing across multiple devices under test, helping users significantly reduce overall test time and streamline workflows in high-volume validation or production environments.



Additionally, the test flow can be customized independently for each tester connected to USB PD Studio, giving users the flexibility to run different test sequences on different devices at the same time ideal for validating multiple product variants or test scenarios in parallel without needing separate software instances.



Ordering Information

For a formal quote and pricing, contact info@grlps.com

Model Number	Description
V-DPWR-EPR	Tester and USB PD Studio Software
V-DPWR-IEC	IEC 62680-1-2 and IEC 62368-1 Conformance Testing
V-DPWR-Safety	IEC 62368-1 Conformance Testing



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