

Granite River Labs

Quick Start Guide

For Using GRL-M1-V-UP Automation Software with GRL USB Power Delivery & Data Loopback Volume Tester

Runtime Summary
Current Operator: admin
Current Model: PD Charger

Total
226

Pass:
22

Fail:
204

module #1

1

PID: 0000218

NO	TEST NAME	STATUS
1	VBus Hot	Pass
2	Loop Back Test	Pass
3	(5V 2A 0%) Voltage	Pass

Pass

2

PID: 0000217

NO	TEST NAME	STATUS
1	VBus Hot	Pass
2	Loop Back Test	Pass
3	(5V 2A 0%) Voltage	Fail

Running

3

PID:

NO	TEST NAME	STATUS
1	VBus Hot	Pass
2	Loop Back Test	Pass
3	(5V 2A 0%) Voltage	Pass

Pass

4

PID:

NO	TEST NAME	STATUS
1	VBus Hot	Pass
2	Loop Back Test	Pass
3	(5V 2A 0%) Voltage	Pass

Running

5

PID:

NO	TEST NAME	STATUS
1	VBus Hot	Pass
2	Loop Back Test	Pass
3	(5V 2A 0%) Voltage	Pass

Pass

6

PID:

NO	TEST NAME	STATUS
1	VBus Hot	Pass
2	Loop Back Test	Pass
3	(5V 2A 0%) Voltage	Fail

Running


7

PID:

NO	TEST NAME	STATUS
1	VBus Hot	Pass
2	Loop Back Test	Pass
3	(5V 2A 0%) Voltage	Fail

Fail

Current Date/Time
2/7/2020 9:31 AM



This material is provided as a reference to use the GRL-M1-V-UP Software for test automation with the Granite River Labs (GRL) USB Power Delivery & Data Loopback Volume Tester (GRL-V-UP). For customer support, contact support@graniteriverlabs.com.

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1 Scope of this Quick Start Guide

This Quick Start Guide helps you to familiarize with the GRL-M1-V-UP software to automate test runs for the GRL USB Power Delivery & Data Loopback Volume Tester (GRL-V-UP).

The GRL-V-UP tester supports concurrent USB Power Delivery 3.0 negotiation, 1000W power loading and USB 2.0 and USB 3.1 data loopback testing. The GRL-V-UP tester in modular form can add up to 10 test cards in a single 3U rack unit chassis. Each test card supports loading of a single 100W USB Type-C port or dual 60W USB Type-C ports.

For more information on GRL-V-UP, please refer to <https://graniteriverlabs.com/grl-v-up/>.

For purchase orders, licensing questions and concerns, please contact Granite River Labs support at support@graniteriverlabs.com.

2 Connection Setup of GRL-M1-V-UP

Figure 2.1 shows an example hardware setup for testing a USB Type-C/Power Delivery host, hub module, dock, monitor or charger using the GRL-M1-V-UP software running on a control computer and connected via USB to the GRL-V-UP tester that is attached to the USB device to be tested through the tester USB Type-C test port.

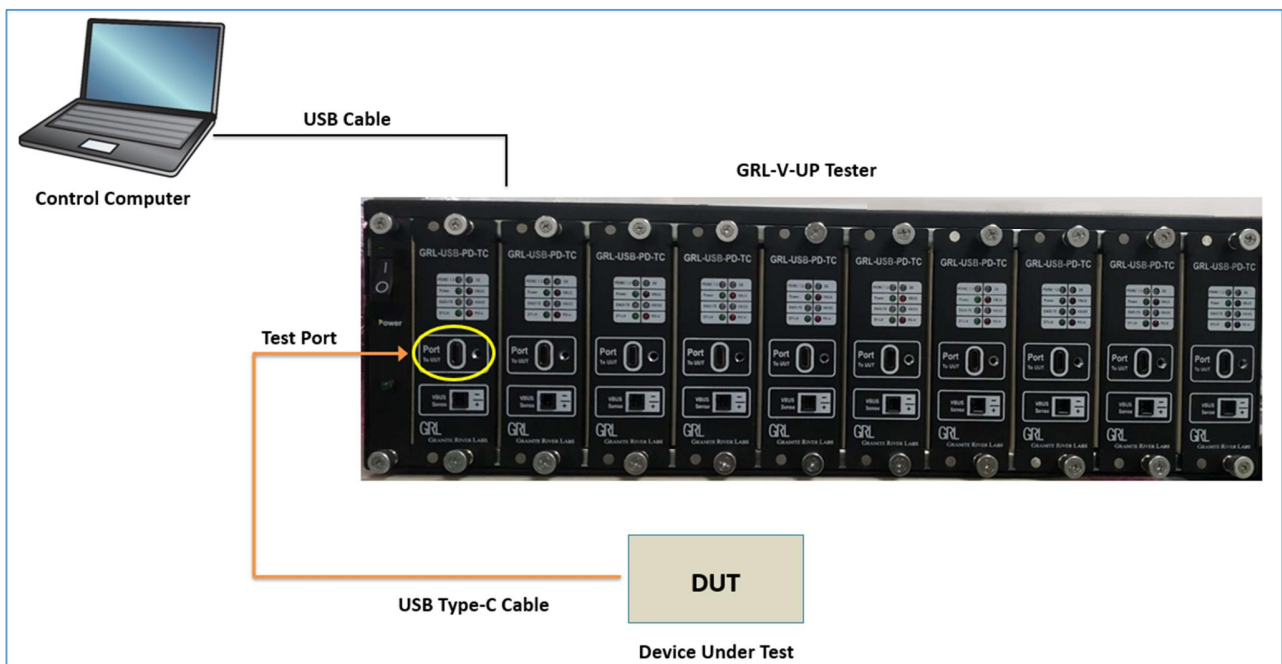


FIGURE 2.1: HARDWARE CONNECTION SETUP FOR GRL-M1-V-UP AND DEVICE UNDER TEST

The GRL-M1-V-UP software loaded on a Windows 7 (or higher) computer automates the testing process (note this will be referred to as the control computer here onwards). Below is a procedure for connecting the hardware and verifying proper hardware connections.

1. Connect a Power Supply to the GRL-V-UP Tester Power Interface using the power cord accessory included with the tester.
2. Connect the GRL-V-UP Tester to the control computer using a physical USB connection.

Note: For hardware setup procedure of the GRL-V-UP Tester, refer to the GRL-V-UP user documentation in <http://graniteriverlabs.com/download-center/>.

2.1 Turn On Tester and Connect Control Computer

1. Turn on the GRL-V-UP tester using the Power button on the front of the tester.



FIGURE 2.2: POWER ON GRL-V-UP

2. Make sure the GRL-V-UP tester is powered on and completely booted up, and then connect a USB cable from the GRL-V-UP tester's USB (To PC) connector to one of the control computer's USB ports.
3. To make sure the USB connection is set up properly, on the control computer open the Device Manager window from the Control Panel.
4. In Device Manager, from the top menu select "View" → "Devices by connection". The GRL-V-UP tester should appear in the list if connected properly to the control computer.

3 Getting Started with GRL-M1-V-UP

This section describes how to get started with the GRL-M1-V-UP software. If you are installing for the first time, please make sure to follow all the steps in this section to verify your setup prior to testing a DUT (device under test). The procedure is as follows:

1. Install the latest version of GRL-M1-V-UP on the computer (laptop or desktop) connected to the GRL-V-UP Tester.
2. Make sure the GRL-V-UP Tester has been updated to the latest firmware version.

If this procedure is followed and any issues arise, please contact support@graniteriverlabs.com.

Note: For hardware setup procedure of the GRL-V-UP Tester, refer to the GRL-V-UP user documentation in <http://graniteriverlabs.com/download-center/>.

3.1 Install GRL-M1-V-UP

1. Download the GRL-M1-V-UP software from: <http://graniteriverlabs.com/download-center/>.



FIGURE 3.1: GRL SUPPORT DOWNLOAD PAGE

2. On the Win7 (or above) computer to be used for running the GRL-M1-V-UP, create a folder and download the software installer compressed archive (zip file). On the Download Center page, select the “Download” button associated with the latest GRL-M1-V-UP version. Enter the required information and select the “Download” button:

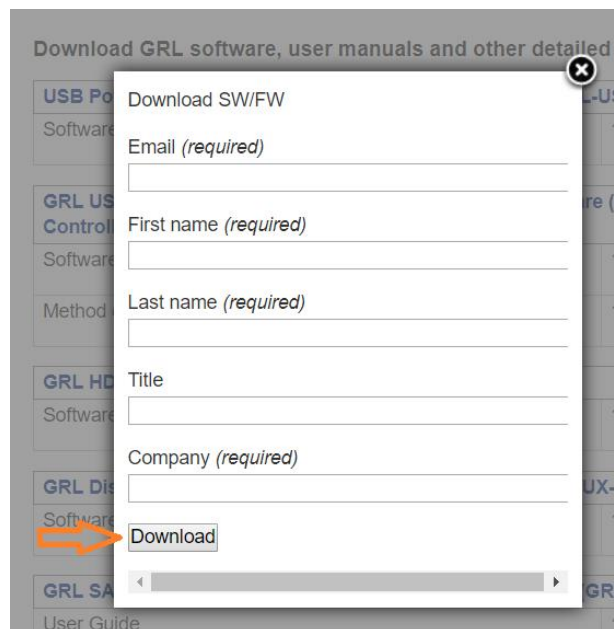


FIGURE 3.2: DOWNLOAD INFORMATION

3. Save the zip archive in a convenient folder and extract the GRL-M1-V-UP installer by right-clicking the downloaded archive and selecting “Extract All”:

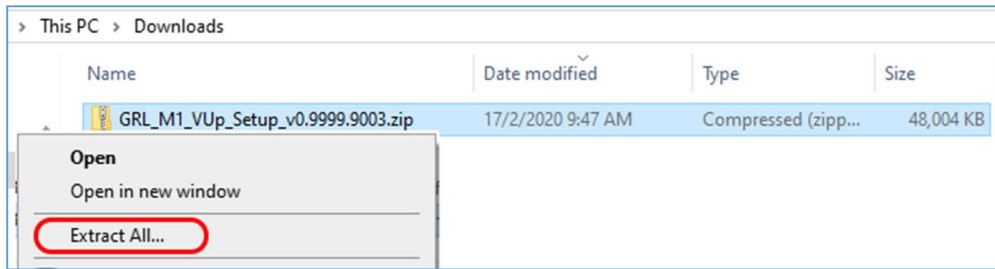


FIGURE 3.3: EXTRACT INSTALLER FROM ZIP ARCHIVE

4. Run the installer by double clicking the extracted executable:

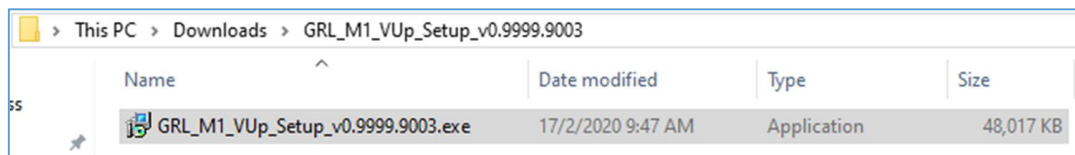


FIGURE 3.4: DOUBLE CLICK EXECUTABLE TO START APP INSTALLATION

5. Make sure to click “Yes” when the system prompt asks if you want to allow the installer to make changes to your system. Then follow the on-screen instructions to complete installation for the GRL-M1-V-UP.

3.2 Start Up and Navigate GRL-M1-V-UP

Once installed, launch the GRL-M1-V-UP and enter your user name and password to log in. The main screen will be displayed upon successful login as follows:

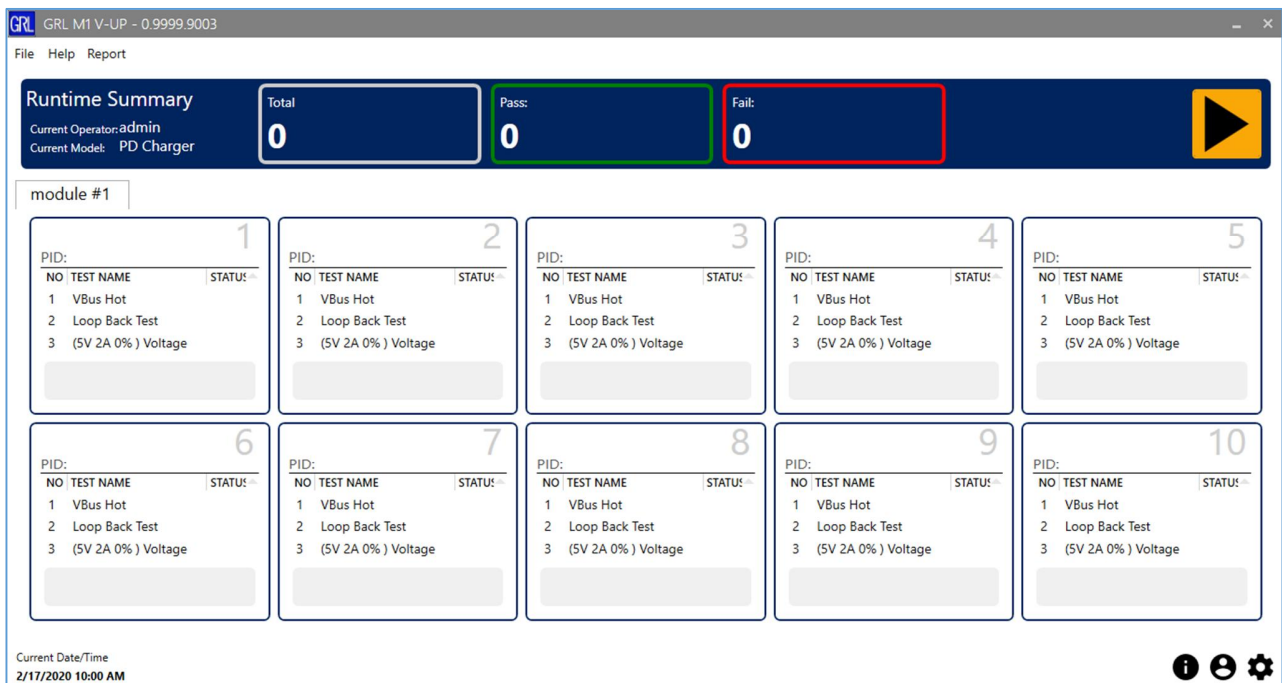








FIGURE 3.5: GRL-M1-V-UP MAIN SCREEN

1. On the main screen, you can use the    menu buttons at the bottom right of the screen to access the corresponding features:


- a. **Test Reports**  – This allows you to view and manage test reports for all automated test runs for each DUT. You can also choose to delete any selected individual or all test records from the list.
- b. **User Profile**  – This allows you to access your own user profile or use another profile with the GRL-M1-V-UP software. You can log out of the software from here.
- c. **Settings**  – This allows you to access and configure various settings for the DUT, test module and connected equipment.
 - *Model Settings:* Set up or configure the DUT for testing. Select the “Load” button for each respective DUT to be tested. To make changes to the DUT settings, select the “Edit” button to configure the description, test port and test selection for the respective DUT. To make a copy of an existing DUT, select the “Duplicate” button for the respective DUT. To save the DUT settings to a file, select the “Export” button for the respective DUT.

You can also select the “Import Model” button below the screen to load a previously saved DUT settings file or the “Add New Model” button to set up and add a new DUT to the list.

Runtime Management									
MODEL NAME	ACTUAL QTY	PASS	FAIL	LAST UPDATED	STATUS	REMARKS			
PD Charger 2	0	0	0	2/4/2020 10:50:34 AM		Test SQLite Remarks	LOAD	EDIT	DELETE
PD Charger	128	0	128	2/6/2020 12:44:51 AM	READY TO RUN	Test Updates	LOAD	EDIT	DELETE
							IMPORT MODEL	ADD NEW MODEL	

Current Date/Time
2/6/2020 12:41 PM

FIGURE 3.6: GRL-M1-V-UP MODEL SETTINGS SCREEN

- *Test Module Settings:* Set up or configure the GRL-V-UP tester and connected power supply for testing. For the power supply, select the AC or DC source to be used. For the GRL-V-UP tester, you can enter/change the module name and also verify the connection status of the tester by selecting the “Test Connection” button. The LED indicator next to the module name will turn green module #1  once connection is successful. You should also be able to view the serial number and firmware version of the tester.

Hardware Module Management

Power Supply Settings:

AC Source:

DC Source:

F1R Module Settings:

module #1 ☒ Module #2 ☒

Module Name:

Serial No:

FW Version:

☐ Offline

Current Date/Time: 2/17/2020 10:08 AM

FIGURE 3.7: GRL-M1-V-UP TEST MODULE SETTINGS SCREEN

To access/manage connectivity of each connected test port of the tester, select the “Port Settings” button. For each respective test port, you can select to turn on/off the port, enable/disable data loopback testing or assign which port is attached to the DUT.

PORT NUMBER	STATUS		
Port 10	<input type="button" value="ENABLE PORT"/>	<input type="button" value="ENABLE LOOPBACK"/>	<input type="button" value="PORT ATTACHED"/>
Port 9	<input type="button" value="ENABLE PORT"/>	<input type="button" value="ENABLE LOOPBACK"/>	<input type="button" value="PORT ATTACHED"/>
Port 8	<input type="button" value="ENABLE PORT"/>	<input type="button" value="ENABLE LOOPBACK"/>	<input type="button" value="PORT ATTACHED"/>
Port 7	<input type="button" value="ENABLE PORT"/>	<input type="button" value="ENABLE LOOPBACK"/>	<input type="button" value="PORT ATTACHED"/>
Port 6	<input type="button" value="ENABLE PORT"/>	<input type="button" value="ENABLE LOOPBACK"/>	<input type="button" value="PORT ATTACHED"/>
Port 5	<input type="button" value="ENABLE PORT"/>	<input type="button" value="ENABLE LOOPBACK"/>	<input type="button" value="PORT ATTACHED"/>
Port 4	<input type="button" value="ENABLE PORT"/>	<input type="button" value="ENABLE LOOPBACK"/>	<input type="button" value="PORT ATTACHED"/>
Port 3	<input type="button" value="ENABLE PORT"/>	<input type="button" value="ENABLE LOOPBACK"/>	<input type="button" value="PORT ATTACHED"/>
Port 2	<input type="button" value="ENABLE PORT"/>	<input type="button" value="ENABLE LOOPBACK"/>	<input type="button" value="PORT ATTACHED"/>
Port 1	<input type="button" value="ENABLE PORT"/>	<input type="button" value="ENABLE LOOPBACK"/>	<input type="button" value="PORT ATTACHED"/>

FIGURE 3.8: GRL-M1-V-UP TEST MODULE SETTINGS SCREEN– PORT SETTINGS

If you want to operate the GRL-V-UP tester in offline mode, select the “Offline” checkbox.

To add a new tester module on top of the existing one, select the button next to the existing module tab (e.g., module #1 ☒).

The “Other Settings” button at the bottom right of the screen when selected allows you to perform the following– update the tester firmware, troubleshoot problems with the tester, control the tester remotely by sending commands/queries to the tester or remove the current tester module– by selecting the respective buttons.

- *Equipment Settings*: Set up or configure other equipment/devices that are connected to the GRL-V-UP tester. **Note: This feature will only be available/supported on the GRL-M1-V-UP in future releases.**

2. You can select other drop-down menus above the main screen of the GRL-M1-V-UP to access the following:



FIGURE 3.9: GRL-M1-V-UP TOP DROP-DOWN MENU

- a. Select the **File** drop-down menu to exit the GRL-M1-V-UP.
- b. Select the **Help** drop-down menu to change the language displayed on the GRL-M1-V-UP or access the Quick Start Guide (this document) and software information of the GRL-M1-V-UP.
- c. Select the **Report** drop-down menu to view overall test results from all test runs performed through the GRL-M1-V-UP.

4 Running Tests with GRL-M1-V-UP

This section describes how to use the GRL-M1-V-UP software to perform automated testing with the GRL-V-UP tester.

1. The main screen of the GRL-M1-V-UP software should display “Connected” for each DUT attached Test Port of the GRL-V-UP tester if properly set up and connected successfully. *Note: You can verify the tester connection through the Test Module Settings screen as described in Section 3.2.*

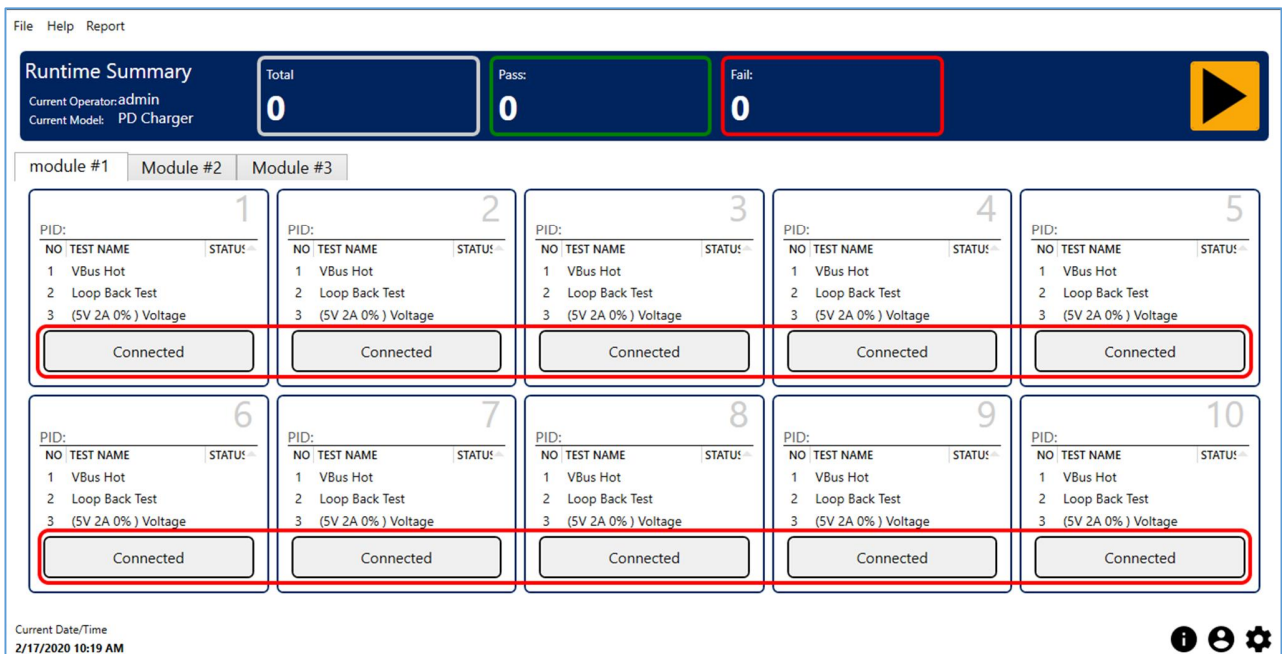



FIGURE 4.1: GRL-M1-V-UP TEST RUN INTERFACE EXAMPLE #1

- Once all test configurations have been set up as described in *Section 3.2*, proceed to select the “Run”  button at the top right of the screen. This will execute test runs for the DUT attached tester ports.
- The status of test runs will be displayed for each port as “Pass”, “Fail” or “Running”. The top of the screen shows the total number of test runs and pass/fail tests.

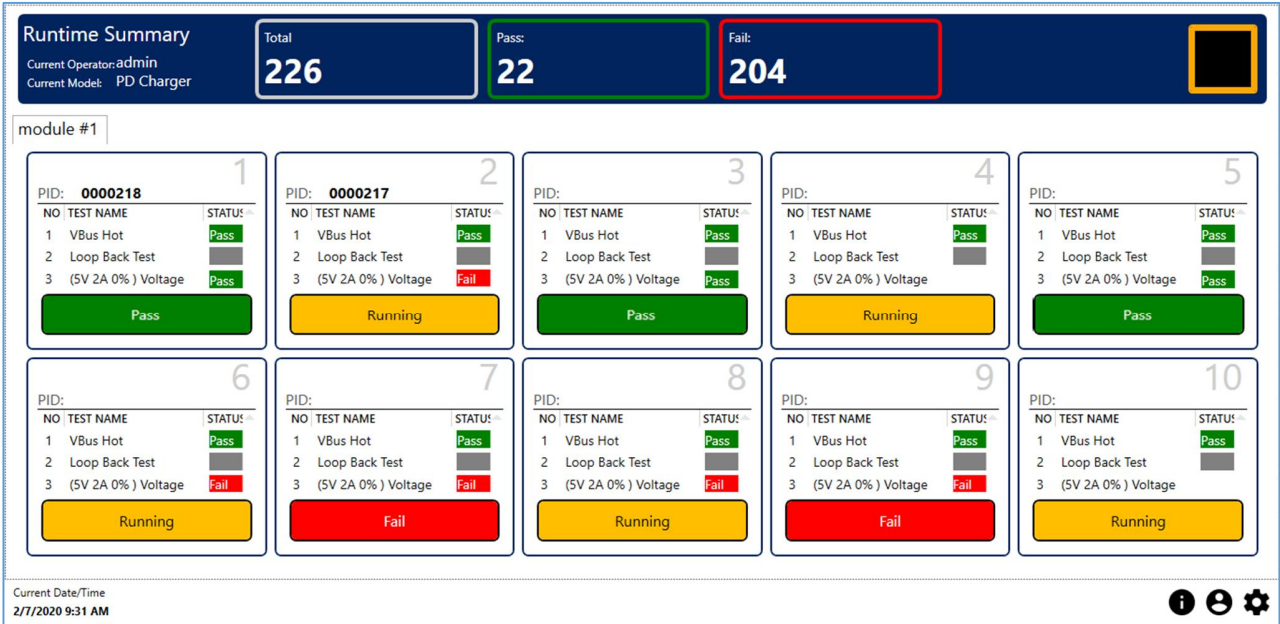




FIGURE 4.2: GRL-M1-V-UP TEST RUN INTERFACE EXAMPLE #2

- To terminate testing at any time, select the “Stop”  button at the top right of the screen. This will stop all test runs in progress.
- You can view the overall test report by selecting the top “Report -> View Report” drop-down menu or selecting the bottom right  menu button.

END_OF_DOCUMENT