

quantumdata 980 Firmware & External Manager v5.10 Release Notes

Dec 27, 2018

1 Overview

This document provides information on Release 5.10 of the firmware and External Manager software release for the quantumdata 980B and 980R Advanced Test Platforms.

For further information, please refer to the Quick Start Guide for the 980 Advanced Test Platforms, and the User Guides for the individual modules, all available on our website at www.quantumdata.com

2 Installation Instructions

Important Note: When upgrading the 980 GUI Manager and the system firmware, please be sure to disconnect any HDMI cables that are connected to the 980 Protocol Analyzer / Video Generator modules. Failure to do so may result in issues during upgrade.

Begin by installing the **Windows External Manager** software:

1. Download the **Windows External Manager 5.10** file (file type .msi)
2. Double-click or Run this file to install it.

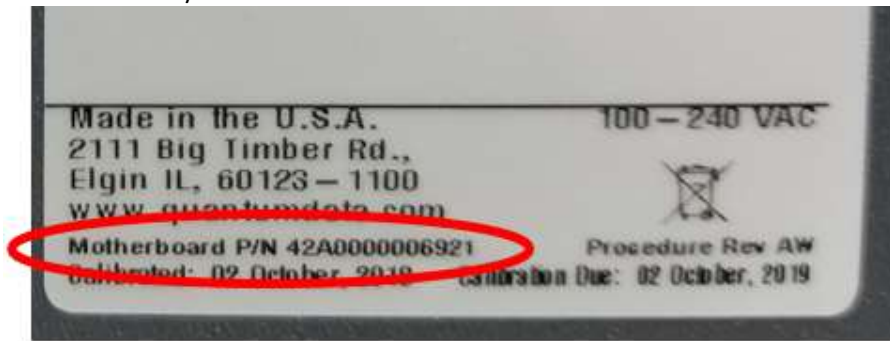
Then install the Instrument Firmware **Release**.

Important Note: 2 different versions of the Instrument Firmware are available, for 32-bit and for 64-bit operating systems. You must install the correct version for your specific 980. (The incorrect version will be refused during the upgrade process.) Please make one or both of the following checks to determine whether you need the 64-bit firmware:

1. At the bottom of the instrument Card Control screen, check for “64 bit” indication:



2. On the product label on the back (980B) or bottom (980R) of the instrument, check for Motherboard P/N 42A0000006921:



If you find either of the above, then download the “atp-64” firmware. Otherwise, you have a 32-bit system, so download the “atp-32” firmware.

1. Download the release “atp-xx” .deb firmware file as indicated above.
2. Launch the newly installed External Manager (980 Manager) and connect to the 980 via Ethernet TCP/IP. (For information on the 980 network connections, please refer to the Advanced Test Platform Quick Start Guide and related erratum below.)
 - a. Note: you may see a warning about version mismatch. This is normal and indicates that you should continue with the version upgrade before using the instrument with the new version of the External Manager.
3. From the External 980 Manager program, pull down the **Instrument** menu and select **Upgrade UI/Firmware/Gateway**. Browse to and select the atp-xx release file, select **Open**, and continue with the process. The 980 will power down at the end.

If the 980 is licensed for **HDR Lab Images** (License 45):

4. Download the HDR Lab Images .deb file.
5. From the External 980 Manager program, pull down the **Instrument** menu and select **Upgrade System Components**. Browse to and select the hdr-lab-images.deb file, select **Open** and continue with the process.

If the 980 is licensed for **HDMI HDCP CTS 2.2 Compliance Test for Sinks** (License 29):

6. Download the 980-hdcp2-sink-ct.deb file.
7. From the External 980 Manager program, pull down the **Instrument** menu and select **Upgrade CT Scripts**. Browse to and select the 980-hdcp2-sink-ct.deb file, select **Open** and continue with the process.

If the 980 is licensed for **HDMI CTS 1.4b Compliance Test for Sinks** (License 6):

8. Download the 980-hdmi-sink-ct.deb file.
9. From the External 980 Manager program, pull down the **Instrument** menu and select **Upgrade CT Scripts**. Browse to and select the 980-hdmi-sink-ct.deb file, select **Open** and continue with the process.

To verify the installation:

1. After installing any necessary packages from above, press the front button and Reboot the 980.
2. View the Instrument Information report in one of the following ways:
 - a. From the External 980 Manager, when connected to the 980, pull down the **Instrument** menu and select **Information**.

- b. From the External 980 Manager, when connected to the 980, locate the **Instruments** section in **Navigator**, right-click on the instrument, and select **Information**.
 - c. From the 980-front panel touch screen, select the **Other** page and then select **About the 980 Manager**.
3. Verify the following version information from the Instrument Information report, for the specific versions of modules installed:

Table 1: Module revisions and Build Versions

Item	FPGA Versions (Changes compared to previous release are in GREEN)	
	980	
	5.05	5.10
DP 1.2 980 Protocol Analyzer Rev D	4.17.85 Build Number: 1	4.17.85 Build Number: 1
DP 1.2 980 Protocol Analyzer Rev E	4.17.85 Build Number: 1	4.17.85 Build Number: 1
DP 1.2 980 Protocol Analyzer Rev E (410)	4.18.42 Build Number: 1	4.18.42 Build Number: 1
DP 1.2 980 Protocol Analyzer Rev F	4.18.62 Build Number: 1	4.18.62 Build Number: 1
DP 1.4 980 Protocol Analyzer	4.25.203 Build Number: 1	4.25.208 Build Number: 1
DP 1.4 USB-C 98 Protocol Analyzer	N/A	4.26.4 Build Number: 1
SDI Scope	4.33.7 Build Number: 32	4.33.7 Build Number: 32
HDMI 2.0 980 Video Generator Rev B	4.34.1 Build Number: 32	4.34.1 Build Number: 32
HDMI 2.0 980 Video Generator Rev C	4.34.1 Build Number: 32	4.34.1 Build Number: 32
HDMI 1.4 980 Protocol Analyzer	4.22.1 Build Number: 57	4.22.1 Build Number: 57
HDMI 2.0 980 Protocol Analyzer	4.22.7 Build Number: 43	4.22.7 Build Number: 43
HDMI 2.0 RX/TX	4.27.1 Build Number: 55	4.27.1 Build Number: 55
HDMI 2.1 RX/TX	4.28.1 Build Number: 102	4.28.1 Build Number: 102
Phy and Protocol Aux Channel Analyzer	5.16.24 Build Number: 12	5.16.24 Build Number: 12

3 New and Improved Features and Functions

3.1 Support for the new 980 DisplayPort 1.4 USB-C Module

980 DisplayPort (DP) 1.4 USB-C/eDP Video Generator/Analyzer module, the industry's first High Bit Rate 3 (HBR3) and Display Stream Compression (DSC) capable solution with USB-C support. The new module is designed to help developers in R&D and silicon manufacturing greatly simplify and improve verification for two growing Technologies - USB-C DisplayPort: Alt Mode negotiations and the Embedded DisplayPort (eDP) interface.

The introduction of Teledyne LeCroy's 980 DP 1.4 USB-C/eDP Video Generator/Analyzer module simplifies the testing and troubleshooting of devices with DP over USB-C by removing the need for external adapters. The new module's native USB-C ports use the USB PD protocol to perform discovery and DP Alt Mode negotiations thereby eliminating issues incurred using adapters.

Teledyne LeCroy's 980 DP 1.4 USB-C/eDP Video Generator/Analyzer module contains hardware necessary for support of eDP analysis and generation including eDP optional features such as Fast Link training, Advanced Link Power Management (ALPM) and the alternate scrambler for content protection.

The new module is fully equipped with the same rich set of DP compliance tests available on the current 980 DP 1.4 module. These include an extensive suite of VESA-approved link-layer compliance tests for sources and sinks, plus tests for Forward Error Correction (FEC) as well as DCP-approved HDCP 2.2 compliance tests for sources, sinks and repeaters. Furthermore, developers of DisplayPort source devices can still view the DisplayPort video as well as key link and video parameters in the Real Time Video Analyzer. DisplayPort sink-device developers can also continue to utilize all the features and functions of the 980 DP video generator to configure the link-training parameters by selecting from an extensive video format library and a large set of test patterns and audio clips.

3.2 Added new HDMI 2.1 FRL Compliance Tests

Release 5.10 adds the following Fixed Rate Link (FRL) Compliance Tests:

HFR2-17 – Sink FRL Protocol – CED – Locked Bits

HFR2-18 – Sink FRL Protocol – CED – Error Counting During Reads

HFR2-19 – Sink FRL Protocol – CED – Specific Video Data Error Injection

HFR2-20 – Sink FRL Protocol – CED – Maximum Video Data Error Injection

HFR2-21 – Sink FRL Protocol – CED – Update Flag with Specific Error Injection

HFR2-22 – Sink FRL Protocol – CED – Update Flag with Maximum Error Injection

4 Enhancements and Corrections

4.1 Updates and fixes

	Trac Bug Id	Description
1	2767	Mvid of MSA parameter transmitted by 980 DP1.4 card in DSC mode is violating DP 1.4 standard – Fixed
2	2777	Script errors encountered during HDCP 2.2 Repeater Test (3C-01) Execution – Fixed

5 Errata

5.1 Known Issues

5.1.1 Power-on reboot - Important Notice!

Some quantumdata 980 systems exhibit occasional boot issue upon power-up from “cold” state. In these occasions, the system enters an abnormal state where it continuously reboots at the BIOS level, instead of booting the 980 operating system and quantumdata application.

Solution: In the unlikely event that your 980 enters this state, please follow the simple steps below:

1. Turn off the main power rocker switch beside the mains power cord inlet (on the side of the 980).
2. Leave the system powered off for about 5 seconds.
3. Reapply power using the rocker switch and boot as usual.

These simple steps should get the system up and running. However, if this does not allow the 980 to boot normally, **please contact us by referring to the Support section at the end of this document.**

5.1.2 CEC Functionality on HDMI 18 Gbps RX/TX Analyzer receive port.

Regarding the HDMI 2.0 RX/TX analyzer (this is the HDMI 2.0 18 Gbps analyzer module that has 2 HDMI ports: Transmit and Receive): On this module, CEC is disabled by default on the HDMI Receive port. CEC functionality can be enabled temporarily (until the instrument is rebooted.) The following procedure will allow you to enable RX CEC functionality:

1. Launch the Windows External Manager (980 Manager) and connect to the 980.
2. From the Windows 980 Manager, select the **Other** GUI page.
3. Select the **Command Console**.
4. Select the **Connect** button.
5. Touch in the **Command** field to activate the touch screen keyboard.
6. Type the command **discover** and press **Enter**.
7. In the resulting list, locate the section that includes class: **Quantum Data, Inc. HDMI 2.0 RX/TX**.
8. Make note of the **slot** number indicated for this section. (For example, **3**)

9. Again, touch in the Command field to activate the touch screen keyboard.
10. Type the **slot** number from step 7 above and press **Enter**. (For example, **3** then press **Enter**.)
11. You should see a command prompt of **#p2c-scope>**
12. Touch in the **Command** field to activate the touch screen keyboard.
13. Type the command **wb1 350 18 0** and then press **Enter**. (After the letters wb, the other visible characters are digits. Be sure to type the 3 spaces where shown.)
14. Verify that **wb1 350 18 0** is echoed in the console window.
15. You may **Disconnect** and close the **Command Console**.

5.1.3 Difficulty connecting via Ethernet.

Under some conditions, the 980B and 980R Advanced Test Platforms may exhibit difficulty in establishing an Ethernet connection. In this case, if a connection cannot be established after following the Quick Start Guide and common procedures for establishing a network connection, please follow this procedure:

1. Press the front button of the 980 ATP and select Shutdown.
2. After shutdown is complete, turn off the physical power switch beside the mains power cord inlet.
3. While the power switch is OFF, press the front button and hold for a few seconds. Repeat this a few times to assure that all motherboard and power supply capacitors are drained.
4. Make sure the Ethernet connector is connected to your network or PC before powering on the 980 ATP. On Gigabyte motherboards with 2 Ethernet connectors, use the bottom Ethernet connector on 980B, or on the 980R, the Ethernet connector nearest the mains power inlet.
5. Power on the 980 ATP and allow it to fully boot.
6. Use the normal procedure to establish Ethernet TCP/IP connection with the External 980 Manager software.

5.1.4 HDMI 2.1 Analyzer

There is currently no real-time video display on the HDMI 2.1 Analyzer. This will be added in a future release. Please use Capture Mode Analysis.

5.1.5 eARC Compliance Tests

In user dialog window, text is not formatted properly, and some text may be cut off.

6 Support

For support on the quantumdata 980 or other Teledyne LeCroy PSG products, please send an email to: psgsupport@teledynelecroy.com

Please include your full contact information and a detailed description of the problem, including product model number, serial number, firmware version, software version, etc.