CalMAN Setup Guide

Quantum Data Video Generator

QD 780/880/980 Series

Rev. 1.3

Introduction

The Quantum Data Video Generator test patterns can be automatically controlled by CalMAN Display Calibration Software. The Quantum Data 780, 880, and 980 series generators can provide HDR test patterns to HDR10 compatible displays.

Note: Due to current interface limitations, 4:2:0 signal formats are not supported under CalMAN control.

CalMAN Required Version

- 5.6.0 or later for 780 and 880 series
- 5.7.0 or later for 980 series

CalMAN Recommended Workflows

- All available measurement and calibration workflows

Quantum Data Generator Required Firmware

- All firmware versions are acceptable
- QD firmware version 15092260 or later is required to enable HDR10 support

Quantum Data Generator Control Connection

- Serial over USB for 780 series
- RS-232 serial for 880 series
- Ethernet for 980 series

Quantum Data Generator Required Device Driver

The required Quantum Data device driver can be installed as part of the CalMAN Device Driver Pack, available for download at:

http://www.spectracal.com/download.php?id=3

Or, the required driver can be downloaded from:
www.quantumdata.com > 780 Series > Downloads > Miscellaneous.

Quantum Data Generator Control Setup

Before attempting to connect CalMAN to one of the Quantum Data generators listed above, check the following Preference setting on the generator.

1. On the Main menu, select *Preferences*.
2. On the Preferences menu, select *USB Mode*.
3. The USB mode options are *COM* and *Disk*; select the COM mode to enable CalMAN communication.

CalMAN Device Connection Procedure

1. If you haven't already done so, install the device driver for the generator.
2. Connect the Quantum Data generator to the computer with a USB cable.
3. On the CalMAN *Source Settings* tab, click "Find Source."
4. On the *Find Source* dialog (below), under *Manufacturer*, select "Quantum Data."
5. Select the *Model* to match your Quantum Data generator.

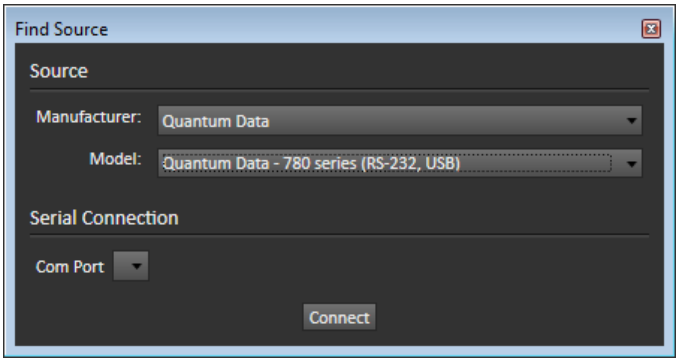


Figure 1. CalMAN Find Source dialog.

6. Select the Com Port or enter the IP address for the connected generator. The generator Com Port can be determined in Windows Device Manager.
7. Click *Connect* on the *Find Source* dialog.

CalMAN Source Settings Tab

The CalMAN Source Settings tab provides *Source Information* and *Settings* for the connected Quantum Data Video Generator.

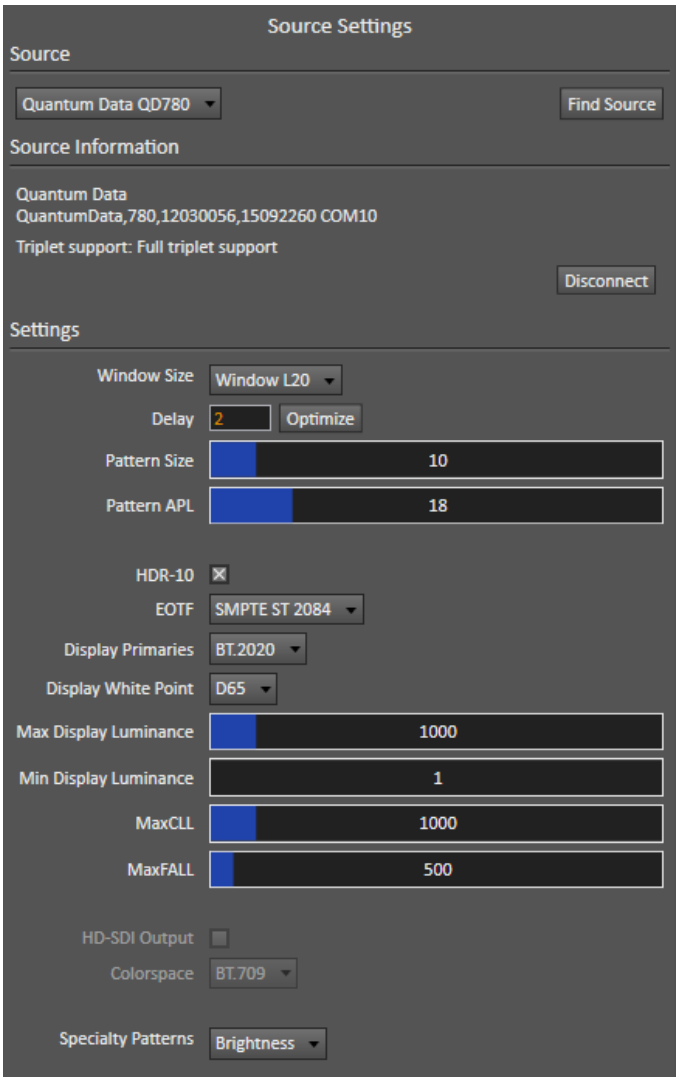


Figure 2. CalMAN Source Settings tab.

Settings

Window Size

Select the desired test pattern size and type from the Window Size selection box.

Note: For plasma and CRT displays, Constant APL 50 works well.

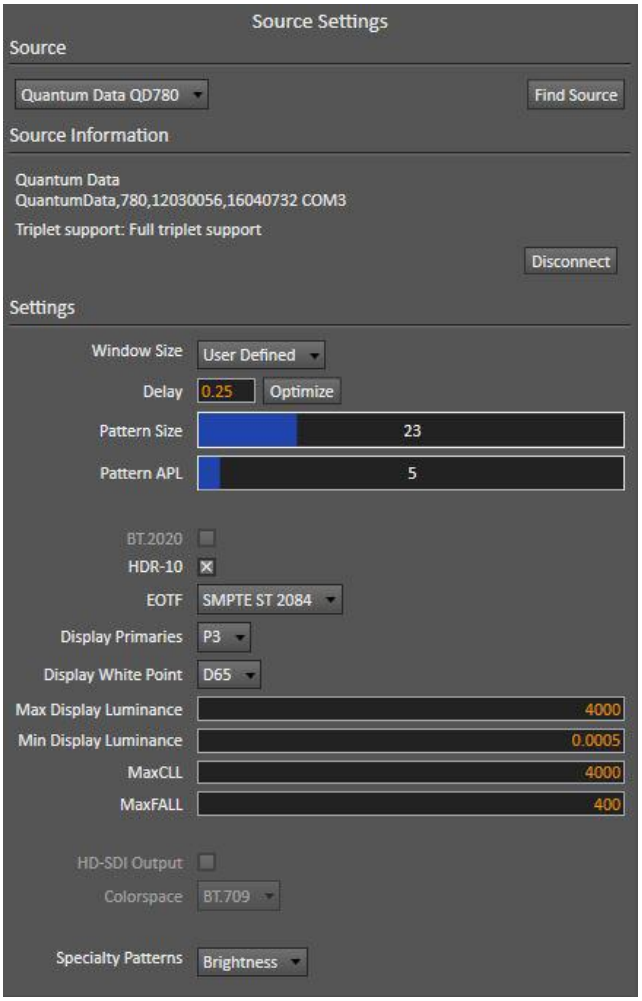
Delay

CalMAN provides a default measurement delay time of 2 seconds to accommodate the test pattern settling time of the Quantum Data 980 generator and an attached display. To optimize the delay time for a particular configuration, potentially speeding up all measurement times, click the Optimize button.

HDR10 Support

The Quantum Data generators, with firmware version 15092260 or later, can output HDR10 test patterns to enable the HDR10 mode on compatible HDR displays.

HDR10: The HDR10 option enables a generator's HDR10 output mode.



Note: The following HDR10 Metadata is the Content Metadata that specifies the specifications of the HDR Mastering Display that was used to create the HDR10 content. To change the default values for the following fields, refer to

EIA-861.3. If you do not know what values to set, leave the fields at their default values.

Mastering Display EOTF: Electrical-Optical Transfer Function. The target luminance response function.

Mastering Display Primaries: Defines the Mastering Display's color gamut.

Mastering Display White Point: The white point of the Mastering Display.

Note: The following HDR10 Metadata is the Content Metadata that specifies the specifications of the HDR Mastering Display that was used to create the HDR10 content. To change the default values for the following fields, refer to EIA-861.3. If you do not know what values to set, leave the fields at their default values.

Mastering Display Max Luminance: The Mastering display's specified maximum luminance in nits (cd/m^2.

Mastering Display Min Luminance: The Mastering display's specified minimum luminance in nits (cd/m^2).

MaxCLL: Maximum Content Light Level. The maximum pixel value within the applied content.

MaxFALL: Maximum Frame-Average Light Level. The maximum value of the frame-averaged maxRGB, over all frames in the content.

HD-SDI Output

The Quantum Data 780C has an HD-SDI output that can be controlled by selecting this option. The HD-SDI Colorspace options are BT.601, BT.709, and BT.2020.

Specialty Patterns

The pattern selection field allows you to select patterns from the Quantum Data generator other than the automated measurement windows or fields.

About Portrait Displays

Portrait Displays, Inc., since 1993, is a leading application software provider (ASP) for PC, smartphone, and tablet displays. The Portrait Displays team now includes **SpectraCal**, the world's leading provider of video display calibration software. The combined companies offer value-added, feature-rich solutions to both OEM display manufacturers and end users seeking improved accuracy and manageability of their displays.

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