

Quantum Data Video Generator

QD 701/780/801/802/804/880/980 Series

CalMAN Setup Guide

The Quantum Data Video Generator test patterns can be automatically controlled by CalMAN Display Calibration Software. The Quantum Data generators can provide HDR test patterns to HDR-10 compatible displays.

Required CalMAN Version:

- 5.6.0 or later

Recommended CalMAN Workflows:

- All available measurement and calibration workflows

Required Quantum Data Generator Firmware:

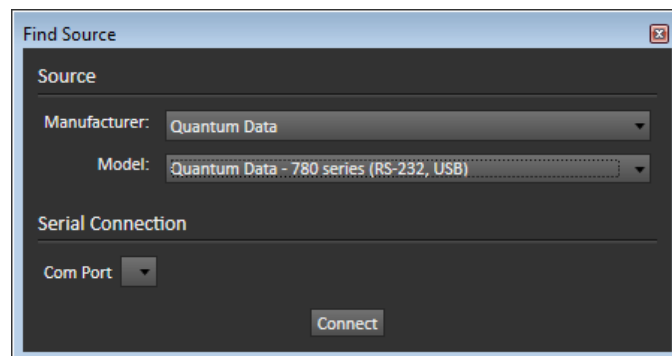
- All firmware versions are acceptable
- Firmware version 15092260 or later is required to enable HDR-10 support

Quantum Data Generator Control Connection:

- USB

CalMAN Connection Procedure

1. Connect the Quantum Data generator to the computer with a USB cable.
2. Be sure that the proper USB driver is installed. If necessary, run the SpectraCal Device Driver Pack from this link: <http://www.spectracal.com/download.php?id=3>
3. On the CalMAN Source Settings tab, click “Find Source.”
4. On the Find Source dialog (below), select “Quantum Data” as the Manufacturer.
5. Select the Model to match your Quantum Data generator.
6. Select the Com Port assigned to the connected generator (check this in 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.

The screenshot shows the 'Source Settings' window. It is divided into three main sections: 'Source', 'Source Information', and 'Settings'.
1. **Source**: A dropdown menu shows 'Quantum Data QD780' and a 'Find Source' button.
2. **Source Information**: Displays 'Quantum Data', 'QuantumData,780,12030056,15092260 COM10', and 'Triplet support: Full triplet support'. A 'Disconnect' button is on the right.
3. **Settings**:
- **Window Size**: 'Window L20' dropdown.
- **Delay**: '2' with an 'Optimize' button.
- **Pattern Size**: Slider set to 10.
- **Pattern APL**: Slider set to 18.
- **HDR-10**: Checked checkbox.
- **EOTF**: 'SMPTE ST 2084' dropdown.
- **Display Primaries**: 'BT.2020' dropdown.
- **Display White Point**: 'D65' dropdown.
- **Max Display Luminance**: Slider set to 1000.
- **Min Display Luminance**: Slider set to 1.
- **MaxCLL**: Slider set to 1000.
- **MaxFALL**: Slider set to 500.
- **HD-SDI Output**: Unchecked checkbox.
- **Colorspace**: 'BT.709' dropdown.
- **Specialty Patterns**: 'Brightness' dropdown.

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 generator and an attached display. To optimize the delay time for a particular configuration, potentially speeding up all measurement times, click the Optimize button.

HDR-10 Support

The Quantum Data generators, with firmware version 15092260 or later, can output HDR-10 test patterns to enable the HDR-10 mode on compatible HDR displays.

HDR-10: The HDR-10 option enables a generator's HDR-10 output mode. If the option is not selected, the following fields are disabled.

Note: 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.

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

Display Primaries: The target primary set; establishes the display's color gamut.

Display White Point: The target white point.

Max Display Luminance: The display's specified maximum calibrated luminance in nits (cd/m^2), measured with an L20 window.

Min Display Luminance: The display's specified minimum luminance in nits (cd/m^2), measured with an L20 window, multiplied by 0.0001. A value of 1 in this field equals 0.0001 nits.

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 Rec.601, Rec.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.