

CaIMAN Setup Guide



VideoForge PRO

By SpectraCal

Rev. 1.4

Introduction

The SpectraCal VideoForge PRO test pattern generator can be automatically controlled by the CalMAN Display Calibration Software to produce measurement and calibration test patterns via HDMI for SDR and HDR displays at resolutions from 640x480 up to 3840x2160.

CalMAN Required Version

- Version 5.8.31 or later

CalMAN Recommended Workflows

- All available measurement and calibration workflows

VideoForge PRO Supported Firmware

- Version 1.00 or later

VideoForge PRO Control Connection

- Mini USB port

VideoForge PRO USB Device Driver

The VideoForge PRO uses the FTDI USB device driver. The FTDI driver is available:

1. As part of the CalMAN Device Driver Pack (<http://www.spectracal.com/download.php?id=3>), or
2. From the FTDI web site (<http://www.ftdichip.com/FTDrivers.htm>).

Note: The VideoForge PRO connection is listed in Windows Device Manager, under Ports (COM & LPT), as "USB Serial Port (COMx)."

CalMAN Connection Procedure

1. Install the FTDI USB device driver, connect the VideoForge PRO to the CalMAN computer with a USB cable, and then launch CalMAN. CalMAN will automatically connect to the VideoForge PRO.
2. If the VideoForge PRO is plugged into the CalMAN computer after CalMAN is open, it can be connected by clicking the *Find Source* button on the CalMAN *Source Settings* tab.
 - a. On the CalMAN workflow *Hardware Connect* page, or on the CalMAN *Source Settings* tab, click “Find Source,”
 - b. On the *Find Source* dialog (Figure 1), select “SpectraCal - VideoForge Pro.”
 - c. Click *Connect* on the *Find Source* dialog.

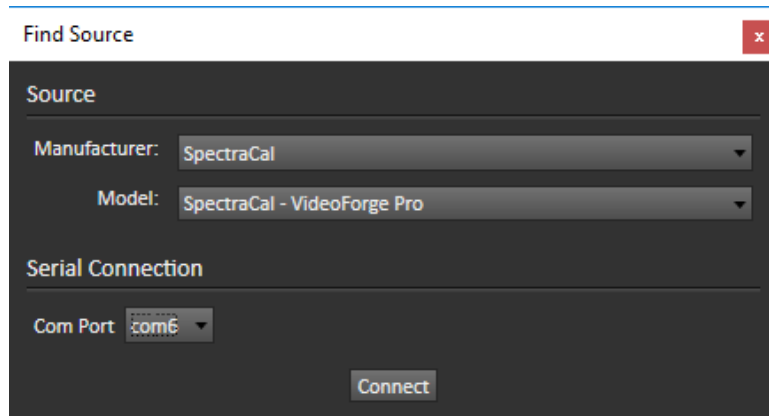


Figure 1. Find Source dialog.

CalMAN Source Settings Options

When the VideoForge PRO is connected as a CalMAN test pattern source, the following *Settings* options on the CalMAN *Source Settings* tab (Figure 2), should be set according to the type of display being measured or calibrated. Refer to specific display model information to guide these settings.

- *Window Size*
- *Delay* (Optimize for specific display characteristics)
- *Pattern Size*
- *Pattern APL*

- *Resolution* (match display's normal drive signal)

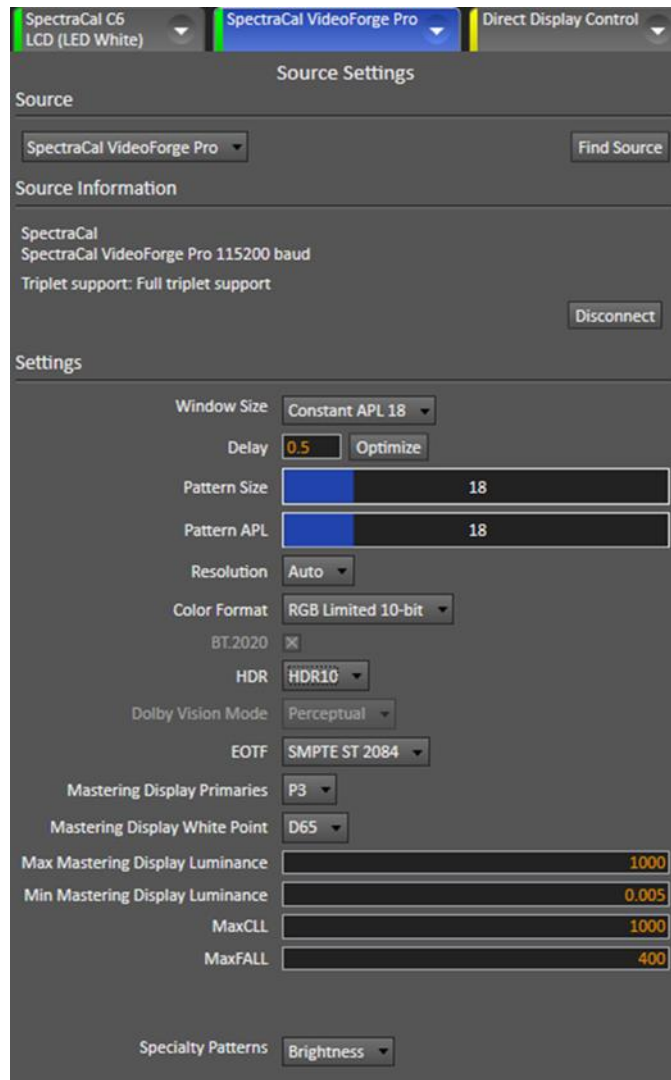


Figure 2. Source Settings tab.

Those options on the *Source Settings* tab that are listed below the *Resolution* option should be set to configure the VideoForge PRO properly for the type of content for which the display is being calibrated.

The *Source Settings* options are detailed below for each of the following types of content:

- **VESA sRGB SDR content** (RGB computer monitors)
- **HDTV SDR content**
- **HDR10 HDR content**
- **HLG HDR content**
- **Dolby Vision HDR content**

Note: The VideoForge PRO output mode does not change until the first pattern is selected to be displayed.

VESA sRGB SDR Content Calibration (RGB computer monitors)

VideoForge PRO *Source Settings* options (see Figure 2, above):

- *Color Format:* RGB Full 8-bit
- *BT.2020:* Disabled
- *HDR:* Off

HDTV SDR Content Calibration

VideoForge PRO *Source Settings* options (see Figure 2, above):

- *Color Format:* YCbCr or RGB Limited
- *BT.2020:* Disabled
- *HDR:* Off

HDR10 HDR Content Calibration

VideoForge PRO *Source Settings* options (see Figure 2, above):

- *Color Format:* RGB Limited 10-bit
- *HDR:* HDR10
- *EOTF:* SMPTE ST 2084
- *Mastering Display Primaries:* P3
- *Mastering Display White Point:* D65
- *Mastering Display Max Luminance:* 1000
- *Mastering Display Min Luminance:* 0.005
- *MaxCLL:* 1000
- *MaxFall:* 400

HLG HDR Content Calibration

VideoForge PRO *Source Settings* options (see Figure 2, above):

- *Color Format:* RGB Limited 10-bit
- *HDR:* HDR10
- *EOTF:* HLG

Dolby Vision HDR Content Calibration

VideoForge PRO *Source Settings* options (see Figure 2, above):

- *Color Format:* RGB Full 8-bit (The patterns are actually 4:2:2 YCbCr 12-bit. Dolby Vision tunnels the YCbCr 12-bit patterns through the RGB 8-bit signal path.)
- *HDR:* Dolby Vision
- *Dolby Vision Mode:*
 - *Perceptual* - To be selected when using the *Dolby Vision* workflow (not to be used with the *Dolby Vision Custom* workflow).
 - *Relative* - To be used with the *Dolby Vision Custom* workflow, to perform the *Metered Calibration* steps.
 - *Absolute* – To be used with the *Dolby Vision Custom* workflow, to perform the *Post Calibration* steps.
- *Specialty Patterns:* In the Dolby Vision mode, the VideoForge PRO specialty patterns display to the TV screen, but they are SDR, not Dolby Vision HDR.

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.

Portrait Displays, an Intel Capital Portfolio company, is a private corporation with headquarters in Pleasanton, California, USA with representatives in Europe, Taiwan, China, Japan, and Korea.

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