Astro Design Video Signal Generator
VG-870B/871B/873/874/876/877
CalMAN Setup Guide

The Astro Design Video Signal Generator test patterns can be automatically controlled by CalMAN Display Calibration Software. The VG-876 and VG-877 generators can provide HDR test patterns to HDR10 compatible displays.

Required CalMAN Version:

- 5.6.0 or later

Recommended CalMAN Workflows:

- All available measurement and calibration workflows

Required Astro Generator Firmware:

- All firmware versions are acceptable

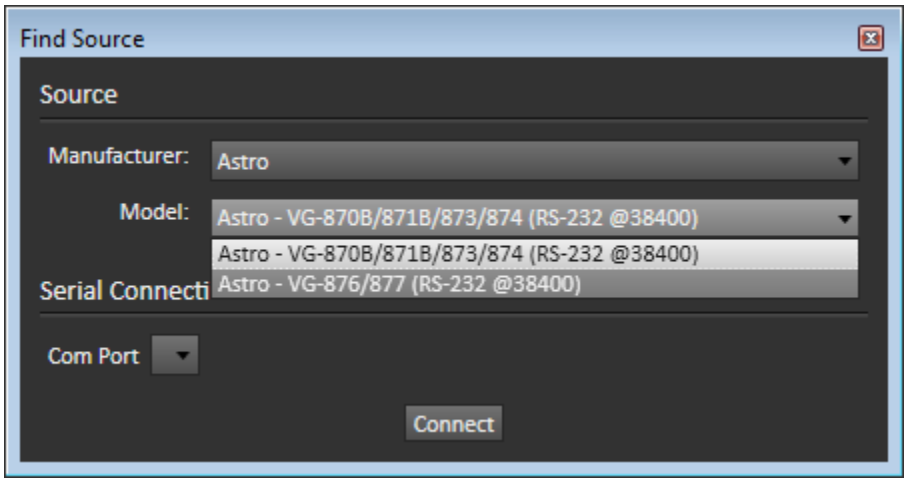
Astro Generator Control Connection:

- RS-232C serial (straight-through, female to female)
  Note: The available cable arrangement will typically be a straight-through, female to male cable with an added female to female adapter. Most female to female serial cables are null modem (pins 2 and 3 reversed) rather than straight-through.

CalMAN Connection Procedure

1. Connect the Astro generator to the computer with an RS-232 straight-through, female to female serial cable (probably requiring a male to female cable and a gender changer).
2. Set the generator's serial baud rate to 38400.
   Astro Menu -> Configuration -> General -> RS-232C -> Baudrate -> 38400

1. On the CalMAN Source Settings tab, click “Find Source.”
2. On the Find Source dialog (below), select “Astro” as the Manufacturer.
3. Select the Model to match your Astro generator.



4. Select the Com Port value of the serial port to which the Astro is connected.
5. Click *Connect* on the Source connect dialog.

CalMAN Source Settings Tab

The CalMAN Source Settings tab (below) provides Source Information and Settings for the connected Astro Video Signal Generator.

Settings

Window Size

Select the desired test pattern size and type from the Window Size drop down box.
(Note: For Plasma and CRT displays, Constant APL 50 works well.)

Delay

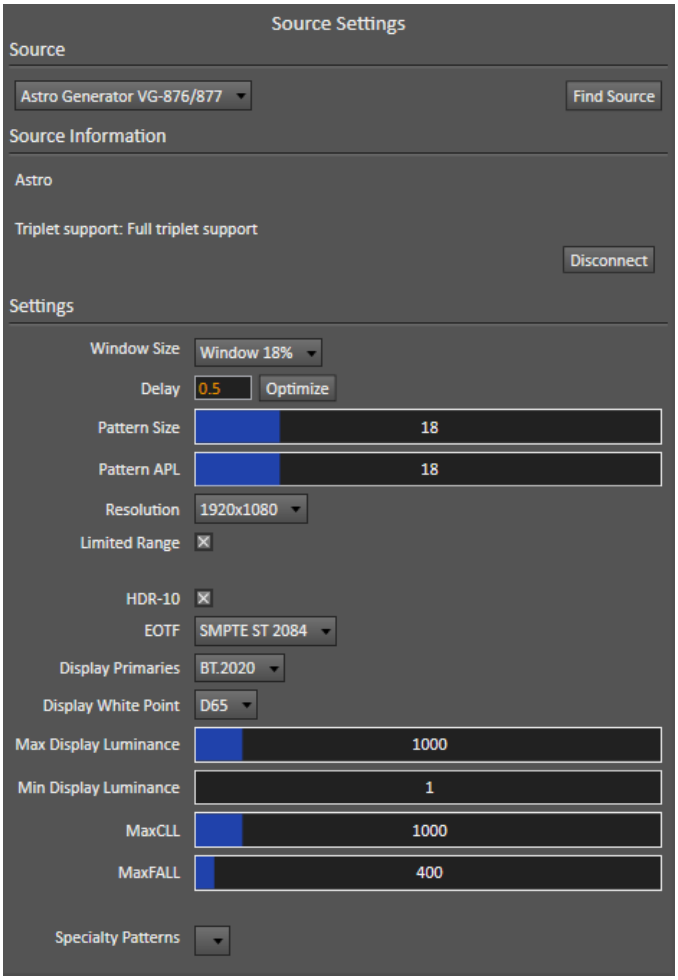
CalMAN provides a default measurement delay time of 0.5 seconds to accommodate the test pattern settling time of the Astro generator and an attached display. To optimize the delay time for a particular configuration, potentially speeding up the measurement time, click the Optimize button.

Resolution

To properly size test patterns, CalMAN needs to know the output resolution setting of the Astro generator. Check the Astro resolution setting at the following menu screen:

Astro Menu -> Program Edit.

On the CalMAN Source Settings screen, select that same resolution in the Resolution drop down box.



Limited Range Option

The Astro Design Video Signal Generator provides either Full range or Limited range video signal levels through HDMI or SDI output connections (16-240 for 8-bit YCbCr or 64-940 for 10-bit YCbCr), as selected in this Astro menu:

Menu -> Program Edit -> Output -> All -> Level Mode -> HDMI / SDI : Full / Limited

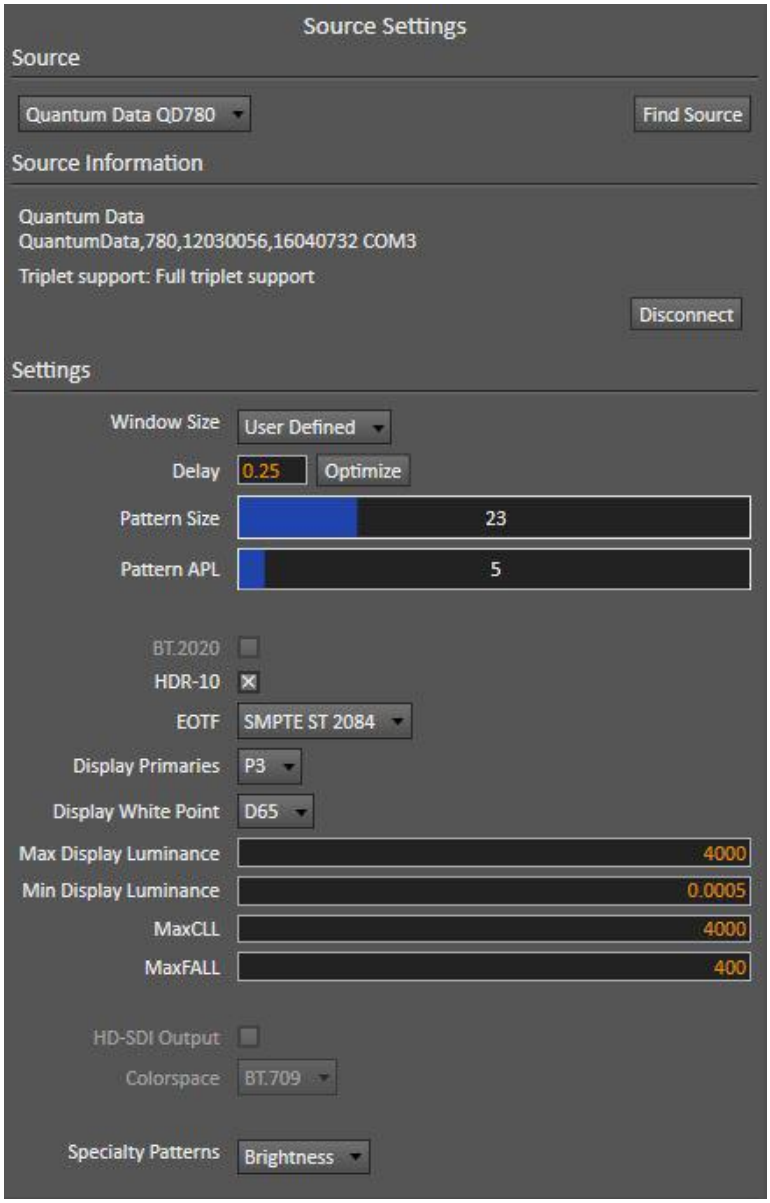
The *Limited Range* option on the CalMAN Source Settings tab needs to be selected if the Limited level mode is selected in the Astro generator.

For best display calibration results, set the Astro generator for Full range and uncheck the Limited Range option on the CalMAN Source Settings tab. After the calibration, set the Astro generator to its desired level mode.

HDR10 Support

The Astro Design VG-876 and VG-877 can output HDR10 test patterns to enable the HDR10 mode on compatible HDR displays. The following HDR10 fields are available only with the VG-876 and VG-877 generators.

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



If the HDR10 option is selected, the following fields are enabled.

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.

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.

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.

Specialty Patterns

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