CalMAN Device Driver Pack
Quick Start Guide

CalMAN Display Calibration Software directly controls many hardware devices, including light meters, pattern sources, LUT processors, and display devices. The control interface to these devices may be USB, RS-232 serial, or wired or wireless network IP connections. In many cases, a device driver needs to be installed on the CalMAN computer to tell the computer how to properly handle data communications between the computer and the hardware device. The required device driver can often be obtained from the hardware device manufacturer, or it can be installed with the CalMAN Device Driver Pack.

USB Devices

If the hardware device has a USB interface connection and is directly connected to a USB computer port, the computer needs to have a device driver installed to properly handle data communications between the computer and the USB device (unless it is a USB HID device; see below).

Serial Devices

If the hardware device has an RS-232 serial connection and is directly connected to a computer serial port, the computer does not require a device driver.

However, since most computers no longer include a serial port, a serial hardware device will usually be connected to a computer via a USB to serial adapter. In that case, the computer needs to have a device driver installed to properly communicate through the USB to serial adapter.

Network Devices

If the hardware device is connected to a computer via a wired or wireless IP network connection, the computer does not require a device driver.

In summary, **a device driver is required** for a hardware device connected to a CalMAN computer if:

- A USB hardware device (meter, source, display) is connected to the CalMAN computer via a USB cable and it is not a USB HID device.
- A serial hardware device is connected to the CalMAN computer via a USB to serial adapter.

USB HID Devices

The USB Human Interface Device (HID) class is a specification for computer peripherals such as keyboards, mice, and game controllers. A computer doesn't require a separate device driver for USB HID devices because they are recognized and handled directly by the computer operating system. Other devices that comply with the USB HID spec are also recognized automatically by a computer and don't require a separate device driver.

USB HID devices supported by CalMAN include the SpectraCal C6 Colorimeter, the X-Rite i1Display Pro, and the ColorMunki Display light meters. When one of these meters is plugged into a computer, the operating system automatically connects to the the meter without requiring a separate device driver.

USB to Serial Adapters

If a hardware device has an RS-232 serial connection, it usually is connected to a modern computer's USB port, through a USB to serial adapter. The computer sends data to and receives data from the USB port on the adapter. The adapter translates that data, through its serial port, to a serial hardware device. The computer requires a device driver to tell it how to properly handle data communications with the USB port on the USB to serial adapter.

A data buffer is included within some USB to serial adapters. The data buffer improves the reliability of a device interface at high data rates. Many USB to serial adapters without a data do not provide a reliable interface between CalMAN and hardware devices. The USB to serial adapter produced by FTDI (Figure 1) includes a data buffer. It has been tested with all hardware devices supported by CalMAN and has been certified to provide a reliable interface in all cases.

Figure 1: Both versions of the FTDI USB to serial adapter include a data buffer to improve data communications reliability.

Installing Device Drivers

Device drivers can be obtained in a number of ways. Device manufacturers may package a device driver with the device or they may provide a device driver download on their device support page. In cases where the manufacturer supplies operating software with the hardware device, the device driver may be installed as part of the manufacturer's operating software installation.

CalMAN Device Driver Pack

SpectraCal also provides a Device Driver Pack that includes device drivers for all the hardware devices supported by CalMAN. Installing the Device Driver Pack on a CalMAN computer automatically installs and registers all the device drivers for CalMAN supported hardware. When a hardware device is then connected to the CalMAN for the first time, the proper device driver is automatically associated with the device.

If the hardware device was connected to the computer before the proper device driver was installed, an incorrect device driver may have become associated with the device. In that case, you may need to uninstall the incorrect driver (in Windows Device Manager), then reconnect the device to the proper device driver.

If you will only ever connect one or two USB devices to a CalMAN computer, you may wish to obtain the device driver for your device(s) from the device manufacturer to install on the CalMAN computer.

Or, for convenience sake or to insure that you have the proper driver, or if you will be connecting a number of different USB devices to CalMAN, you may wish to download the CalMAN Device Driver Pack from the SpectraCal Download page to install all supported device drivers on the CalMAN computer.

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