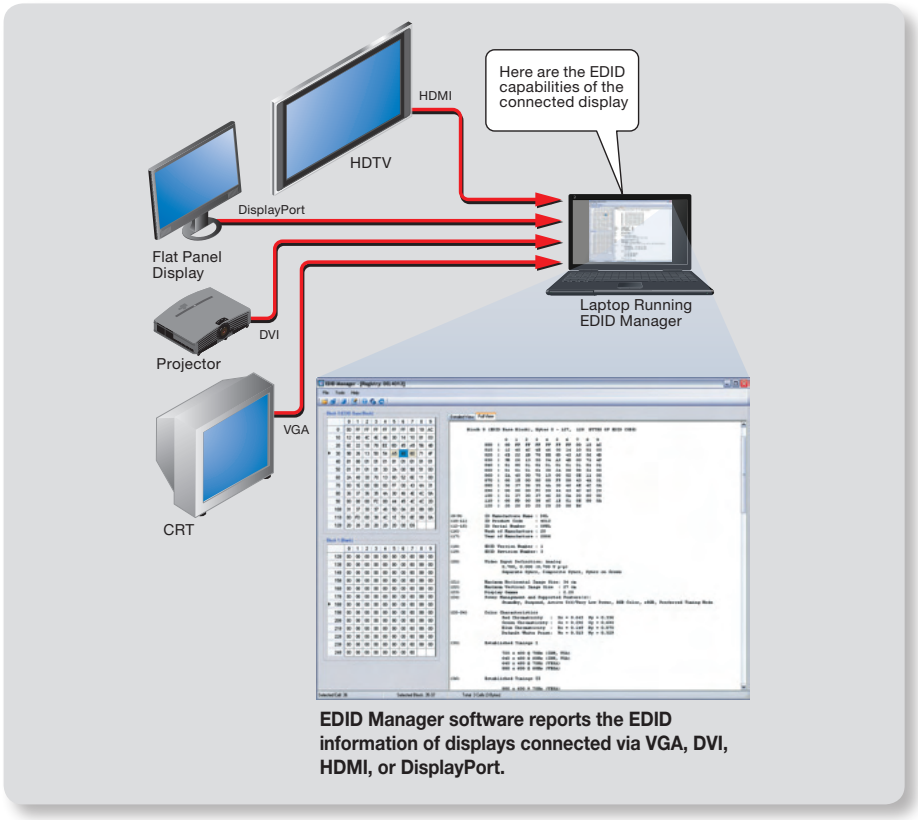
Using Extron EDID Manager to Identify and Troubleshoot Display Connectivity Problems

EDID - Extended Display Identification Data exchange is a standardized means for a display to communicate its capabilities, such as its native resolution, to the attached source device, which then generates the necessary video characteristics to match the needs of the display. When successful, EDID exchange maximizes functional compatibility between devices, helping to ensure optimal image quality as well as overall system reliability.

However, this data exchange often is not successful. The implementation of EDID for display devices varies widely, and in some cases, displays lack EDID information altogether. Such inconsistencies can cause operational issues ranging from overscan and resolution problems to the display device not displaying any image at all.

If you're encountering such problems, we're pleased to offer a convenient software application, Extron EDID Manager, which can be used to help determine whether EDID incompatibility may be the cause of an image display issue. With this software, you can directly view the contents of the EDID file from a display device. EDID Manager is available as a free download from www.extron.com.



EDID Manager software reports the EDID information of displays connected via VGA, DVI, HDMI, or DisplayPort.

How to Use Extron EDID Manager

Download and install EDID Manager on a Windows® PC. If the PC isn't the source device, you'll need to disconnect the source from the display device, and connect the PC to it. EDID exchange applies to VGA, DVI, HDMI, and DisplayPort, so it may be advisable that the same connection from the source be applied from the PC as well. Once connected, the PC will attempt to capture EDID from the display. Before running EDID Manager on your PC, reboot the computer first, which will help ensure that the EDID captured was saved to the registry.

Reading and Interpreting EDID Data

EDID is a data structure organized into several blocks of data, each revealing pertinent information about the display device and its operational characteristics. For computer-video applications, EDID is generally 128 bytes. For digital video interfaces including DVI, HDMI, and DisplayPort, EDID includes the CEA-861 extension data with 128 additional bytes of information relating to HDTV rates, audio formats and channels, and other video attributes.

By default, the software gives you the option to view the data, block by block, in full detail. Select the "Full View" tab, and you'll see a complete report of what's in the EDID file. EDID Manager offers the option to save the report to a file.

Confirm that you're accessing the correct EDID, by checking the manufacturer name and model of the display in bytes 90-107. If you don't see the correct name and model, it's possible that no EDID was communicated to the PC. This could be

a situation in which the display failed to generate any EDID information at all, or for some reason the PC could not read the EDID information.

Scroll up to bytes 54-71, and you'll find what is perhaps the most important information about the display: the video signal rate it prefers to receive from the source. This preferred rate generally includes the native resolution of the display. In applications where a PC is connected to a monitor or projector, the resolution for the graphics card should always be at this preferred rate to ensure optimal image quality. If you had been seeing fuzzy, distorted images from the source PC, chances are that the graphics card had been set to a different output than what is preferred by the display.

If the source is DVI or HDMI-equipped, such as a Blu-ray Disc player, and the display is an HDTV, try to find the CEA-861 extension data in bytes 128 to 255. If no CEA-861 data is found, the display may be a legacy model with limited HDTV compatibility.

Resolving EDID-Related Compatibility Problems

If the EDID file reveals a discrepancy between the rates accepted by the display and what's coming out of the source, there are several ways you can try to resolve the issue. A first step could be to attempt to set the output of the source to match the display's preferred rate, or one of the other rates it will accept. If the source is a PC, and the rate you want isn't available as an option, you can first try to update the driver for the graphics card.

These measures will fail to resolve the problem if the PC overrides your settings and forces its own default resolution, such as 640x480. In other cases, the PC or some other source simply won't output anything at all.

For these situations, the solution would be to connect an EDID emulation device, such as the Extron EDID 101D or EDID 101V, to the output of the source. This device communicates the EDID data the source needs to provide the proper video output. Extron EDID 101 devices feature EDID Minder™ which provides constant and continuous EDID data management with the source. The devices generate emulated EDID based on a user-selected resolution and a refresh rate, or EDID captured and stored from the display device.

Using EDID Manager in A/V Systems

In addition to displays, other devices within an A/V system may communicate EDID, including switchers and video scalers. EDID Manager can be used to check for possible EDID discrepancies between the display and these mid-stream devices.

The display's EDID can be used as a reference in setting up products that can generate emulated EDID, such as those from Extron featuring EDID Minder. These products can be particularly effective in A/V systems with a twisted pair, fiber optic, or traditional RGBHV infrastructure that do not convey EDID from the display back to the source.

A Common EDID-Related Problem: Audio Incompatibility

Although mostly associated with video, audio problems may also occur due to EDID issues between HDMI-connected devices. The CEA-861 extension data lists audio formats supported by the device as well as the speaker assignments for the audio channels. Ideally, the source should read the display's EDID and then send its audio output in a format compatible with the display.

Extron EDID 101D Emulator with EDID Minder™

The source resolution matches that of the display, so that the image is displayed correctly.

The source resolution does not match that of the display, resulting in a fuzzy, distorted image.

Unfortunately, this often is not the case. For example, a Blu-ray Disc player is sending content to a display. The picture is fine, but there is no sound from the speakers. The EDID indicates that the display only accepts two-channel audio. However, the Blu-ray Disc player is overriding or ignoring this information, and instead is sending Dolby® Digital 5.1 multi-channel audio, which the display is unable to decode. To resolve this issue, the Blu-ray Disc player should be reconfigured so that it outputs two-channel audio to the display.