

GOMAX FORUM

EDID 1-2-3

From Wikipedia,

Extended display identification data (EDID) is a data structure provided by a [computer display](#) to describe its capabilities to a [graphics card](#). It is what enables a modern [personal computer](#) to know what kind of monitor is connected. EDID is defined by a standard published by the Video Electronics Standards Association ([VESA](#)). The EDID includes manufacturer name, product type, phosphor or filter type, timings supported by the display, display size, luminance data and (for digital displays only) pixel mapping data.

Limitations

Some graphics card drivers have historically coped poorly with the EDID, using only its standard timing descriptors rather than its Detailed Timing Descriptors (DTDs). Even in cases where the DTDs were read, the drivers are/were still often limited by the standard timing descriptor limitation that the horizontal/vertical resolutions must be evenly divisible by 8. This means that many graphics cards cannot express the [native resolutions](#) of the most common [wide screen flat panel displays](#) and [liquid crystal display televisions](#). The number of vertical pixels is calculated from the horizontal resolution and the selected [aspect ratio](#). *To be fully expressible, the size of [wide screen](#) display must thus be a multiple of 16×9 pixels. For 1366×768 pixel [Wide XGA](#) panels the nearest resolution expressible in the EDID standard timing descriptor syntax is 1360×765 pixels. Specifying 1368 pixels as the screen width would yield an unnatural screen height of 769.5 pixels.*

Many Wide XGA panels do not advertise their native resolution in the standard timing descriptors, instead offering only a resolution of 1280×768. ***Some panels advertise a resolution only slightly smaller than the native, such as 1360×765. For these panels to be able to show a [pixel perfect](#) image, the EDID data must be ignored by the display driver or the driver must correctly interpret the DTD and be able to resolve resolutions whose size is not divisible by 8.*** Special programs are available to override the standard timing descriptors from EDID data; PowerStrip for [Microsoft Windows](#) and SwitchResX for [Mac OS X](#).

From GoMax

Since the size of the content of EDID is **limited to 128 bytes for DVI monitor, and 256 bytes (minimal request)**, it is impossible to record every possible resolutions in such a small flash ROM. Therefore, the basic requirement on EDID is not to provide every resolution that the display can handle. Instead, the optimal or native resolution is suggested and recorded in EDID. This is the way EDID works.

WHY IS THE EDID LEARNING FUNCTION REQUIRED?

For double Cat-5 port HDMI solutions, the DDC channel, which occupies one of the two ports, will be used to exchange EDID and HDCP information between source and display. In such a scenario, 2 Cat-5 cables are unavoidable in order to get everything work well. For HDMI extenders in GoMax HDMI over Single Cat5 series, there is no DDC channel, but it still needs to take care of EDID and HDCP. So, how is everything working?

For HDCP, GoMax uses patent pending technology to ensure this protection not violated. As to EDID, we can handle it with the following two ways.

One approach is to provide users a general EDID. This is going to save users from doing the learning process, because most of the users will never understand what EDID is. The question is the default EDID is not going to make every HDMI source send signal as normally as when the source is connected to the display directly. This is concerning the video resolution, audio format support of the display, and the ability of source to decipher the EDID information. In order to avoid these many issues, **GoMax HDMI over Single Cat-5 series is built with EDID learning ability, the second approach.** Transmitter is suggested to learn the display EDID before connected to the source. This guarantees the source will always see the accurate EDID it is supposed to, not a general EDID!

A general EDID is not possible working for all combination. If we embed an advanced EDID, sources may generate video with resolution the display cannot handle or audio in 7.1-channel which is not supposed to be supported!

If we provide a very normal EDID content, some users will complain about low resolution or stereo audio only. That is why EDID learning function is a must!

WHEN IS THE EDID LEARNING PROCESS NEEDED?

Basically, we encourage users to learn EDID of the display before installation. It is the safest way to get everything works as expected. Bypassing this process, users may encounter no video, no audio, video with no audio, or audio with no video. Nevertheless, based on EDID learning process, actually you can override or upgrade the standard timing descriptors using the EDID embedded in GoMax HDMI over Single Cat-5 series, not embedded in TV, to make your monitor demonstrate perfect image more than it is originally designed!

MARKETING THE EDID LEARNING FUNCTION

Actually, EDID learning is a very special function, and similar products (http://www.gefen.com/kvm/dproduct.jsp?prod_id=4715) may cost \$ 69~129 alone. Honestly speaking, such a function is designed to guarantee single Cat-5 cable based HDMI extender simply working like a 40 meter long HDMI cable. A bonus is that we can have the chance to upgrade the content of EDID with modifying the original EDID inside source. This way can be much safer than allowing users to override EDID inside display directly.

GoMax Default EDID information

VIDEO

VESA

1920x1200

1600x1200

1680x1050

1440x900

1360x765

1280x1024

1280x960

1152x864

1024x768

800x600

EIA

1080p@50(59.94)(60)

1080i@50(59.94)(60)

720p@50(59.94)(60)

576p@50

480p@59.94(60)

480i@59.94(60)

Audio :

Linear PCM 8 Channel