



KRAMER ELECTRONICS LTD.

USER GUIDE

EDID Designer Guide

Version 4.0

Preliminary

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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront video, audio, presentation, and broadcasting professionals on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 11 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters and GROUP 11: Sierra Products.

1.1 Application

Kramer's **EDID Designer** is a powerful and versatile software application for viewing and editing extended display identification data (EDID) that is used in most of today's HDMI and DVI systems.

The EDID block described in the **EDID Designer** advanced mode follows the white paper that provides the industry standard for EDID: *VESA Enhanced Extended Display Identification Data Standard (Defines EDID Structure Version 1, Revision 4) Release A, Revision 2, September 25, 2006.*

The application is intended for installers during product installation for troubleshooting and fixing EDID information.



Warning:

This application is for trained and experienced personnel who are familiar with EDID concepts and their use. Using this application improperly might lead to loss of picture, sound or other system issues.

1.2 Minimum System Requirements

Operating system: Win 7 or higher, 32 or 64 bit.

Minimum HW requirements (same as for running Win7):

- 1GHz (gigahertz) or faster 32-bit (x86) or [64-bit \(x64\)](#) processor
- 1GB (gigabyte) RAM (32-bit) or 2GB RAM (64-bit)
- 16GB available hard disk space (32-bit) or 20GB (64-bit)
- DirectX 9 graphics device with WDDM 1.0 or higher driver

For getting the most of the application we recommend using screens with a minimal resolution of 1024x768, higher resolutions are preferred.

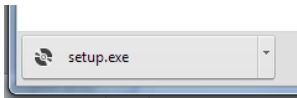
2 Installing EDID Designer

EDID Designer features one-click installation for a fast and trouble-free setup.

To install **EDID Designer**:

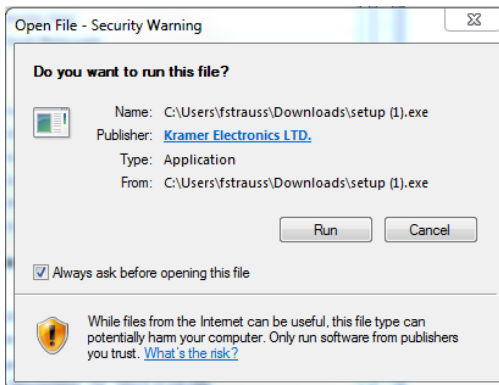
1. Navigate to the Kramer's EDID Designer Web site and click the install link:
www.kramerelectronics.com/downloads/setups/ediddesigner/setup.exe

The file downloads to the lower left corner of your browser:



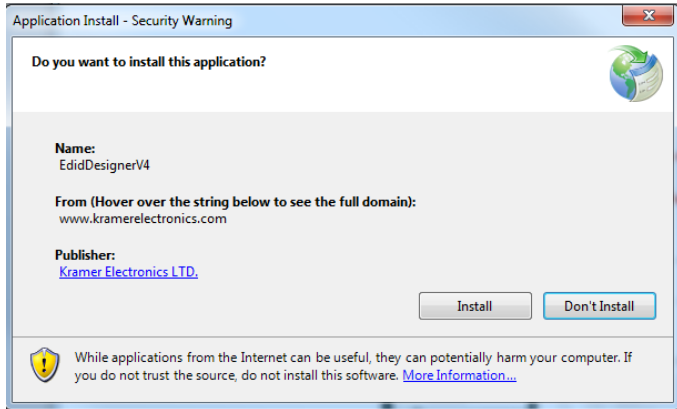
2. Click **setup.exe**.

A security warning opens:



3. Click **Run**.

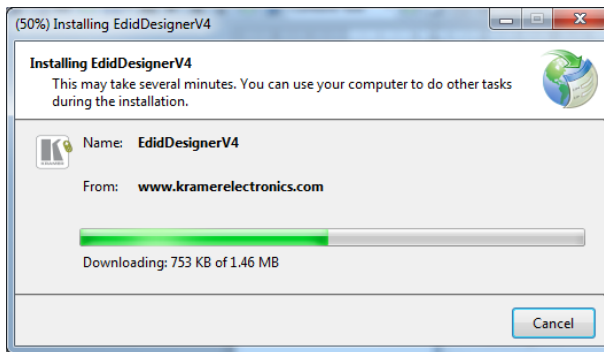
An application installation warning appears:



4. Click **Install**.

Note: At this stage, a message appears if DotNet 4.5 is not installed on your computer. Follow the instructions to install DotNet 4.5. After installation you may be required to reset the computer. Perform the reset and do not take any further action. **EDID Designer** continues to install automatically.

The installation progress window appears:



5. When complete, the application opens and the following message appears in the upper-left corner of the app:



The latest version of the device adapters downloads from the Web. Allow it to run to completion the first time otherwise device adapters or their latest versions might not be available for use.

To launch **EDID Designer**:

- Click **Start** and click on the application.
The **EDID Designer** main screen opens (see [Figure 1](#)) and automatically updates device adapters.

3 Defining the EDID Designer

Figure 1 defines the basic elements of the **EDID Designer** main screen.

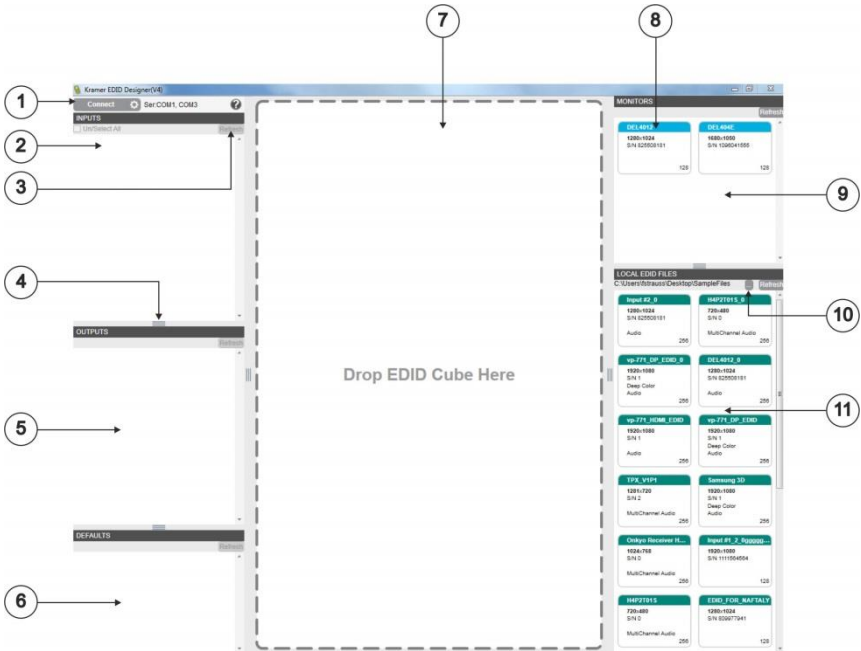


Figure 1: Main Screen

#	Feature	Function
1	CONNECT Bar	Connects an attached device (serial or Ethernet)
2	INPUT Panel	Displays all available EDIDs on EEPROM of the relevant input channel of the connected device
3	REFRESH Button	Reloads all EDID information from the chosen source to the panel
4	Resizing Handle	Drag any handle to resize the desired panel
5	OUTPUT Panel	Displays all EDIDs of the devices/monitors connected to the outputs of the connected device
6	DEFAULT EDID DEFINITIONS Panel	Displays all available default Kramer's EDID definitions
7	EDID Display Panel	Displays the chosen EDID for editing or viewing (of read-only EDIDs)
8	EDID Cube	The graphic representation of an available EDID, showing title, resolution, manufacturer and serial number taken from the <i>General Information</i> tab Since EDID blocks saved on a device input's EEPROM have no file name, we recommend using the serial number field as a file identifier when editing an EDID block

#	Feature	Function
9	MONITOR Panel	Displays the EDID of any monitor connected to the PC running the application
10	Browse Button	Click to browse the disk for EDID files
11	LOCAL EDID FILE Panel	Displays all saved EDID files from a disk location

Figure 2 shows EDID Designer with a connected device, monitors, files, and an EDID open for editing with the following additional elements:

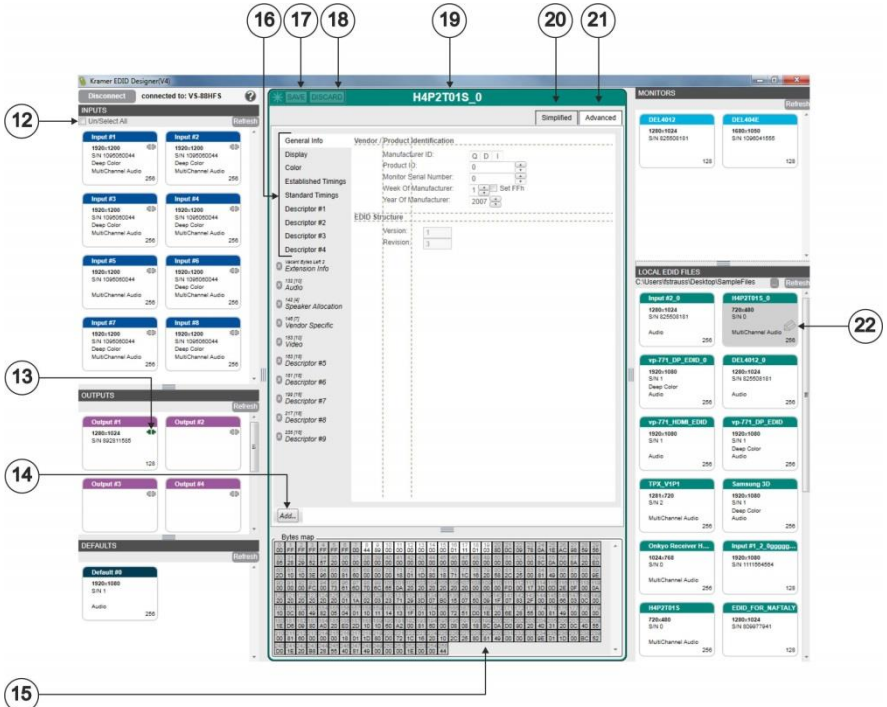


Figure 2: Full Screen



#	Feature	Function
12	Select All Checkbox	Check to select all inputs
13	Connection Status Icon	Shows if the input or output is connected  or disconnected 
14	<i>ADD</i> Button	Click to add and specify a CEA Extension
15	Binary EDID Map	Displays the binary representation of the EDID being viewed or edited. The highlighted bytes represent the selected descriptor tab
16	Descriptor Tabs	Click each tab to open a list of descriptor-specific parameters
17	<i>SAVE</i> Button	Click to save the changes to the source of the EDID being edited (disk file or device)
18	<i>DISCARD</i> Button	Click to throw away all unsaved changes
19	EDID Title	Title of the EDID being edited
20	<i>SIMPLIFIED</i> Tab	Displays a shortened form of the EDID based on a summary of commonly accessed functions
21	<i>ADVANCED</i> tab	Displays the full version of the EDID
22	Active EDID status	Displays the status of the EDID dragged to EDID Display Panel (On Drag, On Edit, On View)

Figure 3 shows the sources of the EDIDs that are used by **EDID Designer** and whether they are read-only (R/O) or read/write (R/W).

Note: To edit an EDID from a R/O source (for example, a local PC monitor), save it locally on your PC. This changes it to a locally saved file that can be edited.

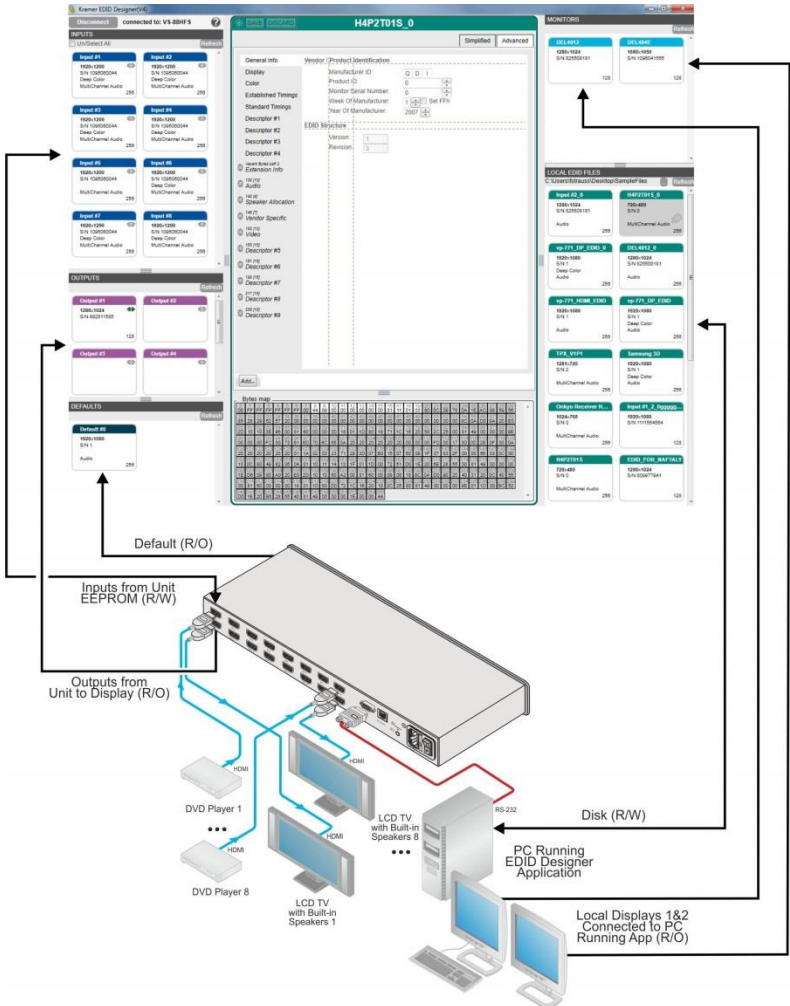


Figure 3: EDID Sources

4 Using the EDID Designer

EDID Designer is designed using drag-and-drop technology to make EDID file manipulation very easy and intuitive.


Any active EDID cube is dragged to the desktop panel for viewing or editing and when saved, it is saved to the source from which it was taken.

Legal drags are symbolized by a green cross **+** in the dragged cube and when dropped, the action is completed. Illegal drags are symbolized by a red no-entry symbol **⊘** in the cube and when dropped, the action is discarded.

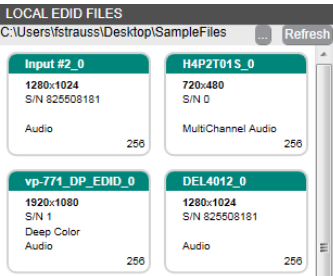
4.1 Connecting to Saved EDID Files

EDID files are taken from and saved to the disk of the PC.

To load EDID files from the disk:

1. On the Local EDID Files panel, click the  icon.
2. A Browse for Folder window opens.
3. Navigate to the desired folder and click **OK**.

The EDID files appear as cubes in the Local EDID Files panel.



Note: When saving an EDID file on your PC, you give it a file name. However, EDID files saved on display devices or Kramer matrices and other routing products have no file names. To match and compare EDID files from different sources we advise using the SN field of the EDID file. When editing an EDID file, change the SN field and use it as “file identifier” field.

4.2 Connecting to a Device

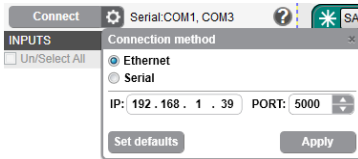
Connect to a Kramer device (for example, a matrix switcher) to view, edit and copy its EDIDs. The list of supported Kramer devices updates each time you launch the software and your PC is connected to the Internet.

Note: When a new version of **EDID Designer** is available for installation, a new version notification appears upon launch.

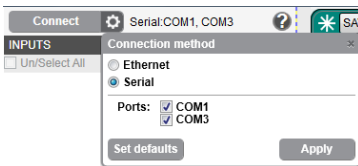
Important: When your Kramer device supports both Protocol 2000 and Protocol 3000 communication protocols, make sure it is set to Protocol 3000 mode.

To connect a device:

1. Choose the connection method by clicking gear icon on the **Connect** button. The parameter window opens.
2. For Ethernet, enter the correct IP address and port number.



3. For Serial, check the desired port(s).

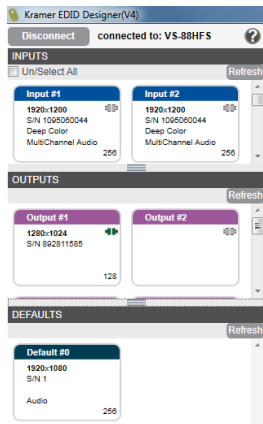


4. Click the **Apply** button to save the changes.

Note: For serial connections, after pressing the **Connect** button, **EDID Designer** scans all the checked ports and connects to the first one that responds with an active device. If multiple devices are connected, check only the port of the desired device.

After successfully connecting to the device the **Connect** button becomes **Disconnect** and next to it, the device type is displayed.

All inputs, outputs and default EDIDs are displayed in the appropriate panel.



4.3 Writing an EDID to an Input

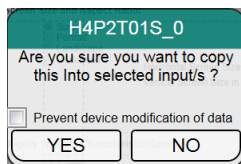
Changing the EDID block on your Kramer device input channels is a powerful way to take control of the signal your sources output. You can do that by writing an EDID block EDID from a file, a default EDID, a local monitor or from an output to an input.

Important: Before writing an EDID cube to an input, make sure to first sync (save) the EDID to its source.

To copy an EDID to an input:

1. Click and drag the selected EDID from a saved EDID file, a local EDID File, a default EDID or an Output to the desired input or several inputs.

When dropped, a warning message appears:





Note: Some devices, by default, manipulate the written EDID to better suit their device properties. If desired, click the checkbox to prevent the device from modifying the data. In devices not supporting this prevention, the checkbox is grayed out. Note that modification of the written EDID might occur.

2. Click **Yes** to write the EDID to the input or **No** to discard and exit the action.

4.4 Opening an EDID

Monitor, output and default EDIDs are read-only. Local EDID files and inputs are read-write and editable.

To open (read or edit) an EDID:

- Drag the selected EDID cube to the desktop panel and drop it. While writing to the desktop, the source cube shows **+**. After writing, the source cube shows an eye icon  (read-only) or a pencil icon  (read-write) (see [Figure 2](#)).

4.5 Editing an EDID

To edit an EDID:

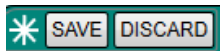
1. Click the desired EDID cube and drag it to the central EDID panel.

The EDID opens for viewing or editing.

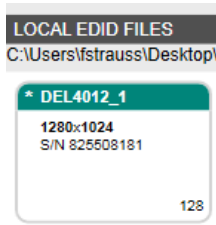
Only Input and Local EDID files (from the disk) are editable. Monitor, Output and Default EDIDs are read-only.

2. Click on the desired tab, make any necessary changes. For a detailed description of tabs and their parameters, see [Section 5](#).

Note: After making any change, the Save and Discard buttons and their reminder asterisk are enabled.



Note also that editing a new EDID before saving or discarding a previous EDID leaves the asterisk reminder on the source file. Before writing this EDID to an input, it must be recalled and saved, otherwise the unchanged source file will be written to the input.



3. Click **Save** to write the EDID to its source or **Discard** to throw out any changes made since the last save.

4.6 Copying or Deleting an EDID to/from the Disk

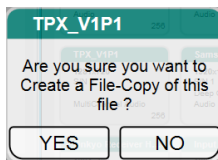
You can make additional copies of an EDID file on the disk or delete the file from the disk.

To make an additional copy of an EDID on the disk:

1. In the Local EDID file panel, right-click the desired EDID cube. The Delete/Copy window opens.



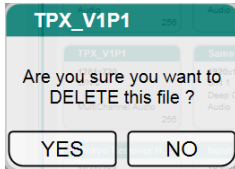
2. Click **Create a Copy**. A warning message appears: Only this message appears when copying an input EDID to local files on the disk.



3. Click **Yes** to make a copy or **No** to exit. The copied file appears as a new cube in the upper-left corner of the Local EDID file panel with an `_0` extension.

To delete an EDID from the disk:

1. In the Local EDID file panel, right-click the desired EDID cube.
The Delete/Copy window opens.
2. Click **Delete**. A warning message appears:



3. Click **Yes** to delete or **No** to exit.

5 Editing an EDID

EDID Designer allows the user to manipulate the full EDID, with all its parameters and extensions using the *Advanced* tab (see [Section 5.3](#)). The *Advanced* tab is a full representation of the EDID according the White Paper referenced in [Section 1](#), and uses the exact field names used in the EDID white paper.

The *Simplified* tab (see [Section 5.1](#)) provides a summary view of the EDID showing the most frequently changed parameters based on the most commonly used functions. The *Simplified* tab takes its information from the *Advanced* tab. Changing any parameter changes the value in both tabs. Various logical operators also try to ensure that certain combinations of parameters cause only valid options to display for selection.

This guide does not provide a detailed explanation of all the EDID parameters. The user must be familiar with EDID structure and the meanings of fields in the descriptors and is referred to the White Paper for full explanations of the fields in the EDID.

5.1 Using the Simplified Tab

The Simplified mode is used for easy editing of the frequently used EDID properties. Since the EDID block structure includes many cross references between data fields, the Simplified mode prevents the user from creating EDID blocks that might cause signal compatibility issues and the application does NOT alter the EDID data block structure.

This means that in the Simplified mode the application denies any editing actions that might change the total size or order of the block. Adding or removing CEA extensions is prohibited. To make changes to the structure of the EDID block, use the Advanced mode.

Simplified mode rearranges the displayed data in convenient and logical groups with shared functionality. This is in direct contrast to the advanced mode, where the exact block structure and content is maintained and displayed as it appears in the EDID.

5.2 Simplified - General Information

General information of the EDID block has no real functional meaning. We suggest using the SN as a cross-platform file identifier.

SAVE DISCARD
Input #2

Simplified Advanced

General Info

Video- Established Timings

Video- Standard Timings

Video-Detailed Timings

HDMI Audio

HDMI Spec Features

Vendor /Product Identification

Manufacturer ID: D E L

Product ID: 61461

Monitor Serial Number: 1095060044

Week Of Manufacturer: 43 Set FFh

Year Of Manufacturer: 2012

EDID Structure

Version: 1

Revision: 3

Bytes map

00	FF	FF	FF	FF	FF	00	08	10	AC	15	F0	4C	4A	45	41	2B	16	01	03	20	81	22	23	24	25	26	27	28	29	30	
B1	26	0E	5D	54	A5	4B	00	81	8D	A9	4D	D1	00	71	4F	D1	01	01	01	01	01	01	01	01	28	3C	8D	AD	7D	BD	
83	01	82	83	84	85	86	87	88	89	7D	7E	7F	78	79	7A	7B	7C	7D	7E	7F	80	81	82	83	84	85	86	87	88	89	8A
23	4D	3D	2D	3E	0D	0E	44	21	00	00	1A	00	00	00	FF	00	4E	3E	32	3E	4D	32	41	52	41	45	4A	4C	0A		
8E	01	8E	04	8E	08	8E	0C	8E	10	8E	14	8E	18	8E	1C	8E	20	8E	24	8E	28	8E	2C	8E	30	8E	34	8E	38	8E	3C
00	00	00	FC	00	44	45	4C	4C	20	55	32	34	31	3D	0A	20	20	00	00	FD	00	38	4C	1E	51	11	00	0A			
20	20	20	20	20	20	01	00	02	03	13	00	23	02	00	00	8A	03	0C	8E	44	10	4D	4D	20	8D	00	00	00	00		
0E	15	15	05	15	15	05	15	15	05	15	15	05	15	15	05	15	15	05	15	15	05	15	15	05	15	15	05	15	15	05	
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81		
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20	F21	F22	F23	F24	F25	F26	F27	F28	F29	F30	F31	F32	F33	F34	F35	F36	F37	F38	F39	F40	
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	

5.2.1 Simplified – Video - Established Timings

Video-Established-Timings are collected from established timing 1 & 2, the most common and standard resolutions. The source outputs the highest possible resolution checked from this list, only if there are not compatible resolutions under the standard and detailed timing.

The same or similar established timings lists may be located in several sections of the EDID block. In the simple mode, since we display only one aggregated list, following rules apply:

- If a resolution is checked in the list, it is “checked” in at least one place in the block
- If a user checks a resolution, it is checked in all relevant resolution lists
- If a user unchecks a resolution from the list, it is unchecked from all relevant places in all lists

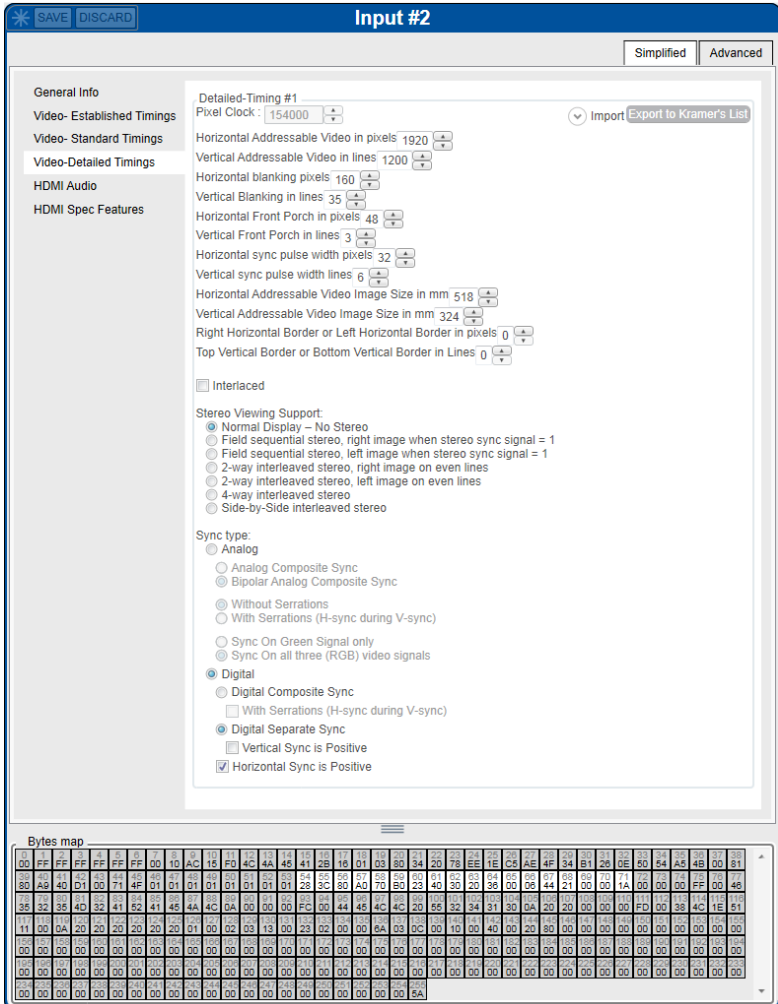
As an example, if the resolution 640x480@60Hz is marked in two lists out of three, and the user unchecks and rechecks it in the simple mode, the EDID block changes since the 640x480@60Hz resolution is now checked in all three lists.

The screenshot shows the 'Input #2' configuration window in EDID Designer. The 'Simplified' tab is active. The 'General Info' section is expanded, showing a list of video timings. The 'Video-Established Timings' section is checked, and the 'Video-Standard Timings' section is also checked. The 'Video-Detailed Timings' section is unchecked. The 'HDMI Audio' section is unchecked. The 'HDMI Spec Features' section is unchecked. The 'Established Timing I' section is checked, and the 'Established Timing II' section is checked. The 'Manufacturer's Timings' section is unchecked. The 'Bytes map' section shows a grid of hexadecimal values representing the EDID data.

5.2.3 Simplified – Video - Detailed Timings

Video-Detailed-Timing gathers details from all descriptors set to display as “detailed-timing”. The source outputs the highest possible resolution defined on this list.

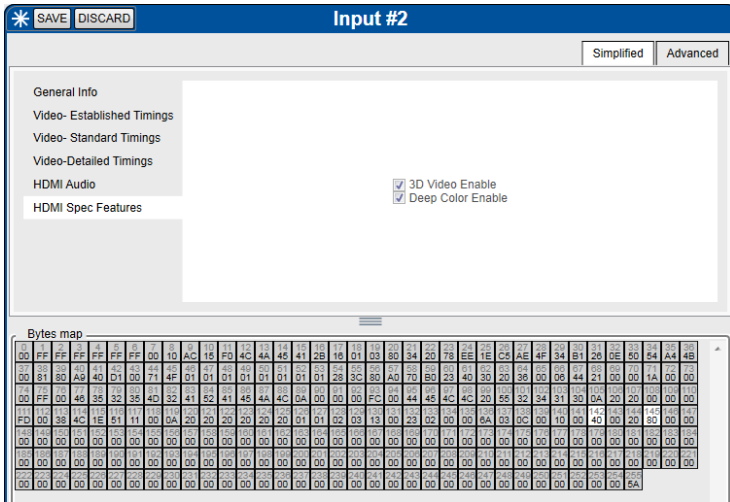
Import/Export – from/to attached Detailed Timings list. “In-use” list items are marked as checked.



5.2.5 Simplified – HDMI-Spec-Features

HDMI-Spec-Features screen are shown if a CEA extension block exists and one of its descriptors is a *Vendor-Specific* CEA block.

- If bytes representing the options exist in the Vendor-Spec CEA block, checkboxes are enabled
- If 3D is checked, 3D is shown in advanced
- Deep Color Enable means DC 48/36/30

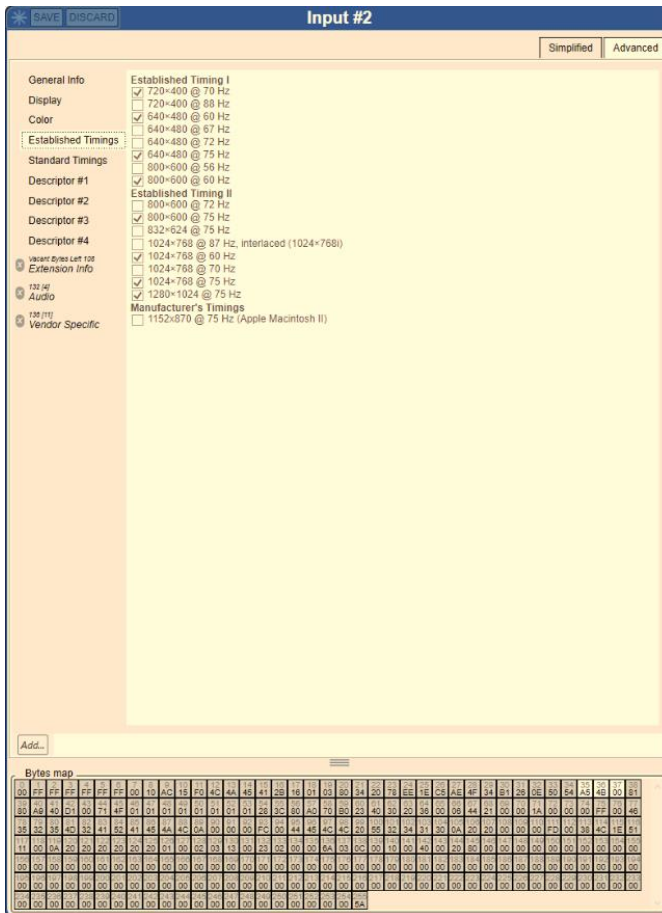


5.3 Using the Advanced Tab

The following sections describe several workflow aid features found in the advanced mode.

5.3.1 Advanced - Established Timings

Advanced mode does not aggregate the established timing lists as in simple mode, so to remove compatibility from a certain resolution you must uncheck it manually from all lists (in case the standard timing list also exists in the descriptors).



5.3.2 Advanced – Editing Descriptors

Some descriptors can be set to one of several types. We suggest in most cases that the user not change the descriptor type.

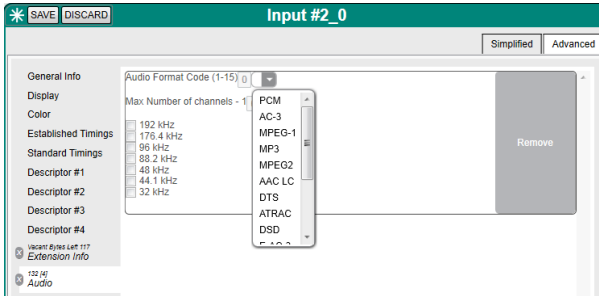
If you do change a descriptor type, it is important to note that the content of the descriptor does not change, only the way the source treats this data block changes. Therefore, when changing a descriptor type, make sure to check that the data after the change still has a meaningful interpretation under the new descriptor.

Also, several types of descriptors contain compulsory byte values. They must contain a certain value to maintain correct block structure. As a workflow aid, all the compulsory bits for the specified descriptor type are displayed in the Compulsory Byte Value area. The application informs you if their value is valid or not and if needed, their value can be changed to the recommended ones by clicking Fix on the window frame.

5.4.2 Extension – Audio

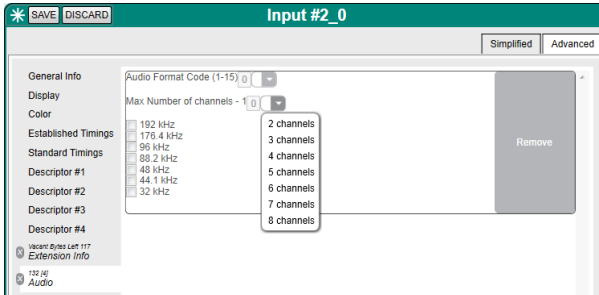
To configure the Audio Format code:

- Click the dropdown box and select the desired code. The bitrate information automatically matches the selected code.



To configure the number of channels:

- Click the dropdown box and select the number of channels.



To add another audio descriptor:

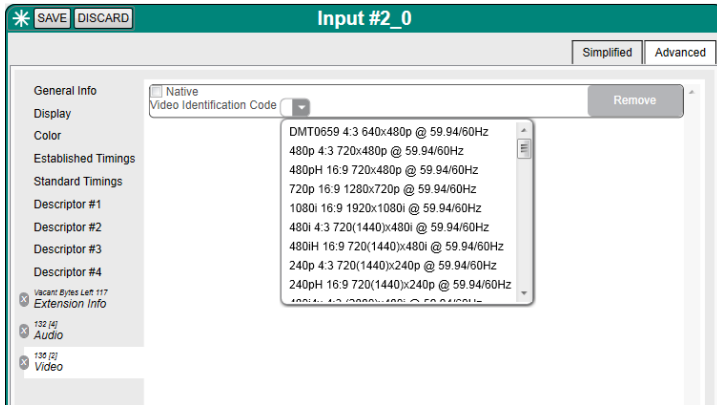
1. Click the **AddShortAudioDescriptor** button.
Another configurable audio descriptor opens. (Only one additional descriptor is allowed.)
2. Configure it as described in the previous two steps.

To delete an audio descriptor:

- Click the **X** button.
The descriptor is removed.

5.4.3 Extension – Video

This allows you to specify all custom or non-standard resolutions and indicate whether the resolution is native.



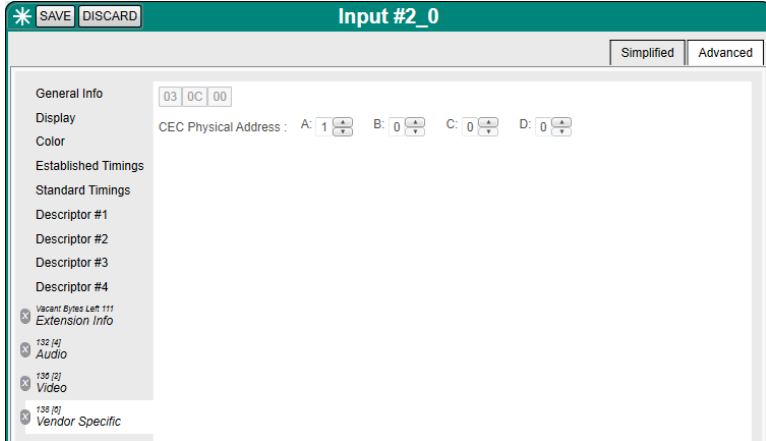
To specify the video identification code:

- Click the video identification code dropdown box and select the desired resolution. (To remove, click the **Remove** button.)
- Native resolution defines ONE additional native video resolution in addition to the one specified in the Detailed timing of the first block. Although the software does not prevent this, we recommend setting only one video resolution as a Native one. If you do so, change the value of “total number of native DTD” field to 1.

5.4.4 Extension – Vendor Specific

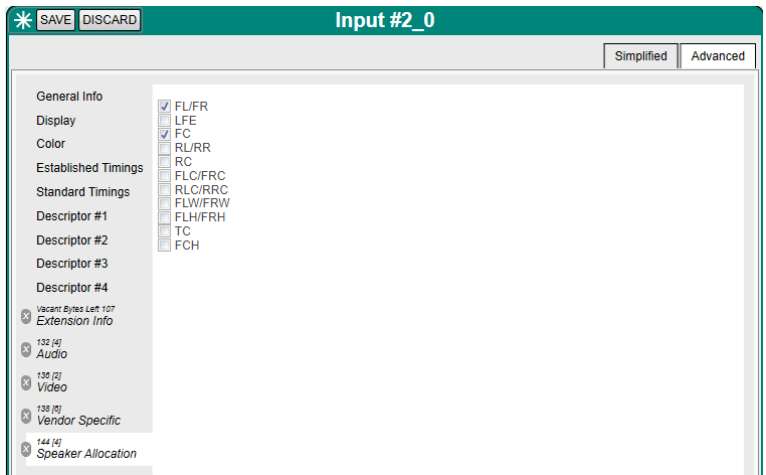
This allows you to specify the vendor specific CEC address.

- Click the up and down arrows to increment or decrement the value shown.



5.4.5 Extension – Speaker Allocation

This allows you to specify the speaker configuration according to front, rear, left, right, center, woofer and high.



5.4.6 Extension – Additional Descriptors

These descriptors allow you to include additional video specifications.

Input #2_0 [Simplified] [Advanced]

Pixel clock : 148500

Horizontal Addressable Video in pixels: 1920

Vertical Addressable Video in lines: 1080

Horizontal blanking pixels: 720

Vertical Blanking in lines: 45

Horizontal Front Porch in pixels: 528

Vertical Front Porch in lines: 4

Horizontal sync pulse width pixels: 44

Vertical sync pulse width lines: 5

Horizontal Addressable Video Image Size in mm: 698

Vertical Addressable Video Image Size in mm: 392

Right Horizontal Border or Left Horizontal Border in pixels: 0

Top Vertical Border or Bottom Vertical Border in Lines: 0

Interlaced

Stereo Viewing Support:

- Normal Display – No Stereo
- Field sequential stereo, right image when stereo sync signal = 1
- Field sequential stereo, left image when stereo sync signal = 1
- 2-way interleaved stereo, right image on even lines
- 2-way interleaved stereo, left image on even lines
- 4-way interleaved stereo
- Side-by-Side interleaved stereo

Sync type:

- Analog
 - Analog Composite Sync
 - Bipolar Analog Composite Sync
 - Without Serrations
 - With Serrations (H-sync during V-sync)
 - Sync On Green Signal only
 - Sync On all three (RGB) video signals
- Digital
 - Digital Composite Sync
 - With Serrations (H-sync during V-sync)
 - Digital Separate Sync
 - Vertical Sync is Positive
 - Horizontal Sync is Positive