

# Kramer VCO Setup version beta 3.256

## Jubilee Edition



This file describes the difference between the last officially published release of **Kramer VCO Setup** software basic User Manual (hereafter “the software” and “User Manual”), and the current upgraded beta version. These features are described in detail further in this document.

Please treat this document as a significant add-on to the basic User Manual.

## Features

Each new version incorporates multiple bugfixes and updates (in firmware, software, and/or in accompanying templates). Cosmetic appearance changes are mostly used to accommodate controls for the new features. This doesn't reduce the basic functionality.

*Changelog (includes published versions; skips intermediate versions):*

Date	Version	Notes
2019-09	3.256	Help and Update menu implemented. Automatic updates for app via Internet implemented. Template Wizard enhanced, with preview for graphic files, and templates recovering added. Manage Devices enhanced, with device renaming added. DL-Shop in DHCP mode support enhanced.
2019-03	3.253	Multiple Factory Reset options for devices. Auto Import scheduling enhanced. FTPS (SSL/TLS1.2) added.
2018-04	3.246	Configure Devices now includes IP and Output settings. Templates management enhanced.
2018-01	3.245	Automatic Import feature implemented.
2017-12	3.243	Fonts rendering and management enhanced. Fonts are now saved with templates.
2017-10	3.238	Multiple bindings implemented. DHCP mode implemented.
2017-07	3.231	Loading retries for scheduling and manual modes implemented.
2017-06	3.224	Overlay stacking feature implemented.
2017-05	3.219	Manage devices updated with Configure. HDCP on/off, and EDID management for devices.
2017-05	3.217	Export/Import Wizard added.
2017-04	3.208	External remote control for app. Multiple playback programs implemented. Export for USB drive added.
2017-02	3.191	Initial published version. Basic User Manual refers to this version.

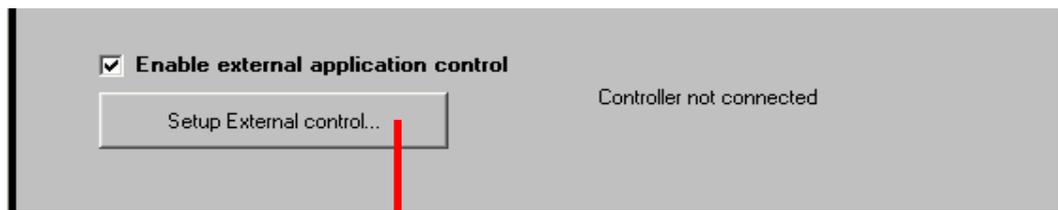
<i>Feature</i>	<i>Description</i>	<i>Page</i>
<b>Remote control for VCO Setup</b>	The Kramer VCO Setup application can be controlled remotely with any IP-enabled controller (another PC, Kramer SL controllers, Kramer Control, etc).	3
<b>Multiple bindings</b>	One overlay may be bound to many VCO outputs at once	4
<b>Loading retries in scheduling mode</b>	When an event loads some overlays to VCO outputs, the loading errors may occur. Now, VCO Setup will try to repeat the failed loading.	–
<b>Multiple playback programs</b>	For any template and/or overlay, multiple playback programs can be created. This allows loading of all the images, all the programs, and the program catalogue to each of the VCO output – altogether, by clicking the single button. Programs can be instantly switched, or played back one after another.	6
<b>Export for USB drive</b>	After an overlay is rendered, and assigned to a particular VCO device output, the data can be exported to USB drive. Connecting this USB drive to the USB port of a VCO device will automatically load the data into the device. This may be used instead of loading of data via Ethernet.	10
<b>“Render now” updated</b>	This feature is re-arranged, and now allows browsing for possible render errors.	11
<b>Export / Import Wizard</b>	Export feature allows saving of the selected data (templates, overlays, events, playlists) to the files (*.vco). These files can be backed up, or transferred to another VCO Setup applications (by email, etc.). The import feature allows reading of these *.vco files, and adding (or replacing) the data to the current workspace.	12
<b>Manage Devices</b>	The <b>Test connection and configure</b> page now shows multiple additional device parameters.	15
<b>Resetting, HDCP, IP settings, Output mode, and EDID management</b>	The <b>Test connection and configure</b> page now includes <b>Configure...</b> button to show the device configuration dialogue. This enables re-booting and resetting of the device, configuring of HDCP, IP, Output mode, EDID options inside the device, resetting and restoring of default settings of the device, on-line, with immediate effect.	16
<b>Overlay Stacking feature</b>	The above <b>Configure...</b> button also enables output stacking (for multi-output machines VCO-8 and VCO-16). Stacking means superimposing of the overlay (loaded at the output) over the overlay loaded to the previous output. As a result, two (or more) overlays will be shown together at the outputs (over the legacy background image). With this amazing feature, up to 8 overlays may be stacked (two groups of 8 overlays for VCO-16).	21
<b>DHCP support</b>	The Device Wizard now supports automatic detecting and installing of VCO devices set to DHCP mode.	23
<b>Automatic Import</b>	The VCO Setup can poll the external sources for updated overlays, templates, and playlists, and automatically load them. This provides the way to update all the contents remotely.	25
<b>Template files management enhanced</b>	Enhanced file management for Template Wizard now includes editing, renaming and duplicating of graphic files, automatic fonts copying, and allows restoring of the sample templates from the initial setup.	28
<b>Help and Upgrade menu</b>	Added convenient menu to access to application documentation. Added the automatic upgrade feature using Internet.	30

## Remote control for VCO Setup

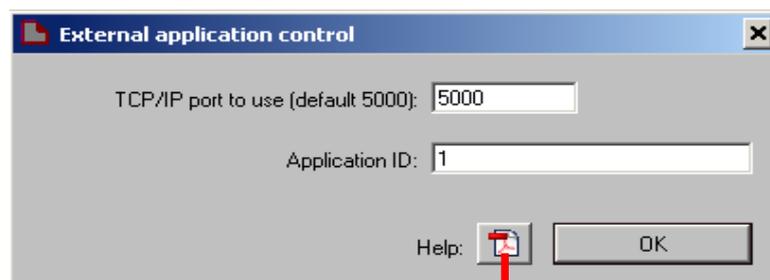
The control interface uses TCP/IP connection to the PC running VCO Setup application. The remote controller (client) should open a TCP/IP socket for the IP address of this PC, and IP port defined in the settings of this feature (default is 5000). The VCO Setup application will work as a server, and execute the commands received from the client.

To enable the remote control, launch the VCO Setup application, go to the **Setup & About** tab, and check the **Enable external application control** checkbox.

Though in many cases the default settings will run well, you may change them in the **External application control** window (click the **Setup External control** button). Click to the PDF icon at this window to open a PDF file with further explanations, and the complete communication protocol description.



Click here to setup this feature



Click here to open PDF description

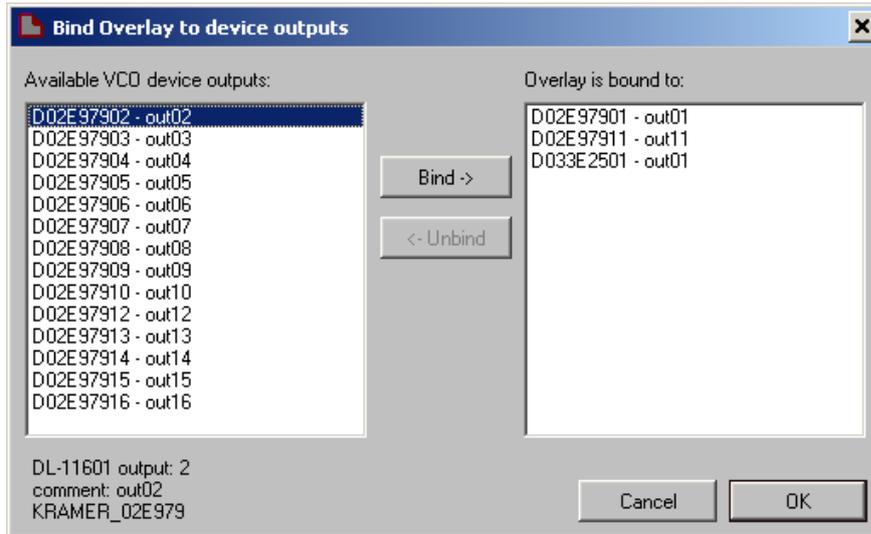
## Multiple bindings

Each and every overlay may be bound to several VCO outputs at once. This allows loading of this single overlay (after it is properly rendered) to many VCO outputs by clicking single **Load overlay to device** button.

Several bindings are shown to the right of the **Bind** button:



Click this button to open the **Bind Overlay** window:

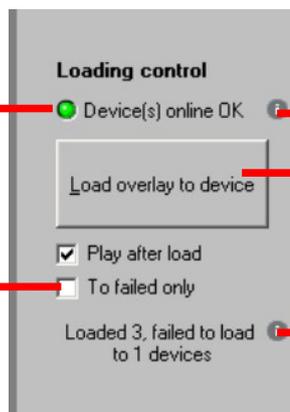


Selecting a VCO output in either list will show its type and IP settings in the left-lower part of the window. Select a device output, and click **Bind** or **Unbind** button, respectively.

For multiple VCO outputs bound to an overlay, the **Loading Control** section will show the following updated options:

**Green LED:** all the devices are on-line  
**Yellow LED:** some devices are on-line  
**Gray LED:** devices are off-line

When checked, clicking Load button will load overlay only to the outputs that were not loaded (failed) yet. This prevents unnecessary loading to the outputs already done.



Click at (i) icon to see the extended information of **on-line status** of each of the VCO outputs

Clicking **Load** button will load all the VCO outputs bound to the overlay (also depends on **To failed only** checkbox)

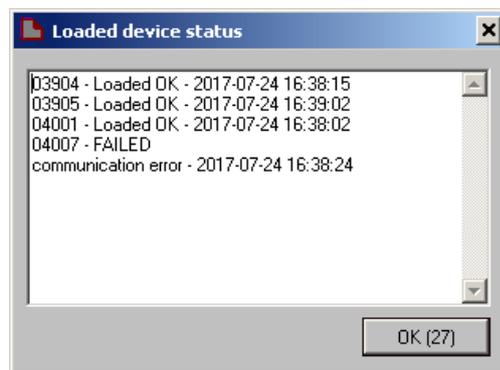
Click at (i) icon to see the extended information on **loading** of each of the VCO outputs

Clicking the (i) icon to the right of the **on-line** LED, will show the extended information like the following:

For each of the bound device output, the on-line status, playback state, and the number of playback program currently in effect, are shown.



Clicking the (i) icon below the **Load** button, will show the extended information like the following:



For each of the bound device output, the loaded state, or error diagnostics, is shown, supplied with the date/time stamp of the last loading attempt.

## Multiple playback programs

### The Purpose

A playback program describes, what images will be displayed, where (at the screen) they will appear, and how they will move and change their transparency.

Having multiple playback programs allows using same or different images, and assignment of different positions, movement and transparency effects individually for each of the programs. All the programs (and the images used for them) will be loaded to the selected VCO device output(s) at once. Then, switching between programs takes virtually no time (no additional loading is involved).

Moreover, this feature allows both unlimited, and counted repetitions of each of the program. With only one program loaded, the VCO device has no other option except repeating of this single program in loop. With many programs, you may limit the repetitions (1 to 255 times) for each of the program, and after it is repeated, the VCO device will advance to the next program in its memory. This allows creation of long sequences of programs, that will play automatically one by one.

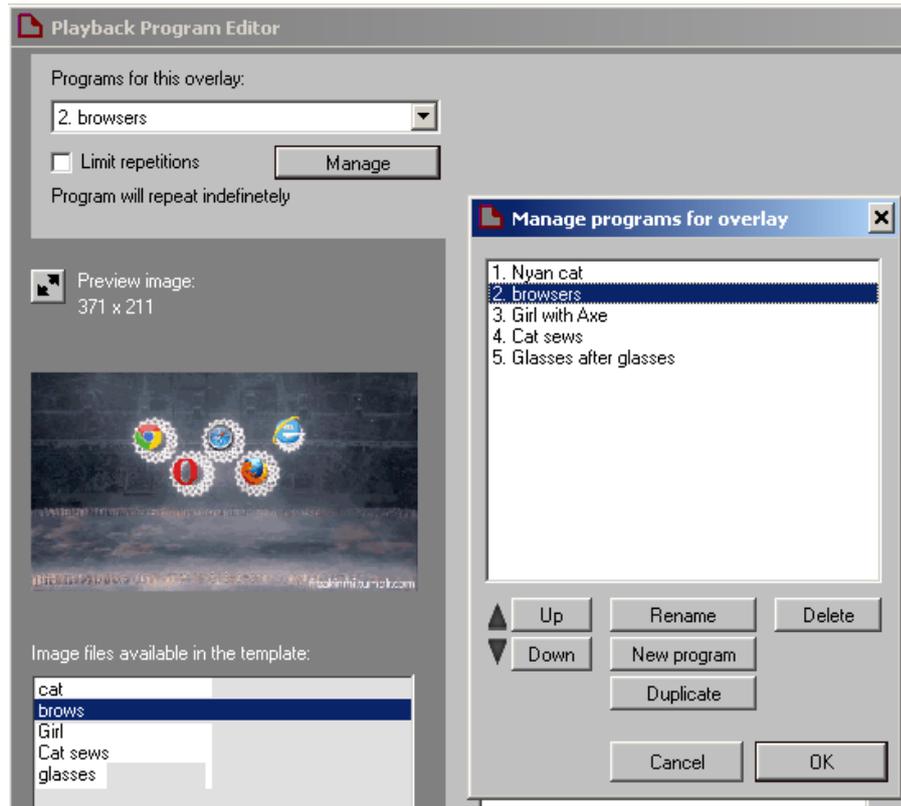
The VCO firmware allows direct selection of a program via the communication protocol (Protocol-3000). Any IP-enabled controller (like Kramer SL or RC controllers and keypads, Kramer K-Touch solution, or third-party controllers) can do this. Of course, VCO Setup software also allows this with GUI, and via the application external control feature.

After the power recycling, the VCO device will always start with program 1.

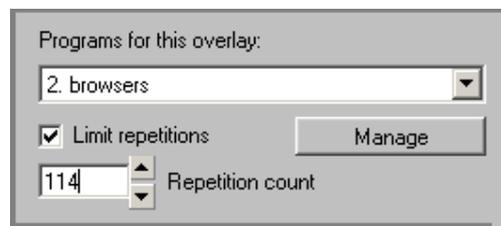
Usage examples:

- Load many subtitles with different text. Then, instantly switch to the next subtitle when needed.
- Load several scenarios (for the morning, for the daylight, for the closing hours), and assign repetitions for each. After powered on, the VCO device will automatically play all the scenarios from the morning till the evening, with no need for scheduling feature in the software.
- Load full-screen logos or wallpapers, and show them (or hide) by pressing buttons on a remote control panel – between events during a conference, or between presentations, etc.

## Setting Up



Use updated **Playback Program Editor** (available in Templates Wizard, and in Overlay settings area). Click **Manage** to add, delete, etc. playback programs. Then, select a program in **Programs for this overlay** list, and edit it.



**Check Limit repetitions**, and enter the desired number (up to 255). In the example at the figure, this program (“2. browsers”) will repeat itself 114 times, and then the next program will run (“3. Girl with Axe”). If the 3d program is also limited, it will later advance to the 4<sup>th</sup> one, and so on (the 5<sup>th</sup> program will advance back to the 1<sup>st</sup> one, in loop). If a program is not limited, it will repeat indefinitely – until the VCO device is redirected to another program by a command from the software, or external controller.

After all the VCO device outputs (bound to this overlay) are loaded with multiple playback programs, the software provides several options to control the playback.

*Note:* controls for multiple playback programs are available only for VCO outputs that are loaded with the current overlay. If a device output is loaded with any other overlay, only the generic controls (**Play/Pause/Stop**) are available.

For multiple playback programs, the **Current program** shows the current program that is run at all VCO outputs bound to this overlay (for your information).

*Note:* if the device outputs do play different programs, the current program is unknown, and not shown. Only a program that plays now at ALL the outputs, will be shown.

Select a program list lets you select another program (for convenience, you may also use arrow buttons below), and immediately run it (with Apply now button), or plan the selected program to be run next (**Set next** button). Clicking the **Set next** means that:

- Current program will play normally until its end
- After it is completely over, the VCO device output will start the selected program (set by you, and not the one calculated automatically).

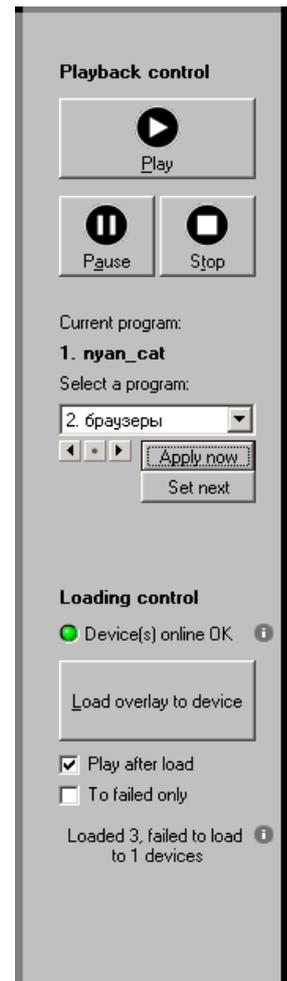
This method ensures smooth transition from one program to another.

Clicking the **Apply now** will:

- Immediately interrupt the current program, and start a new (selected) one.

The legacy playback control buttons (**Play/Pause/Stop**) will work with the current playback program. Moreover, you may **Stop** the overlay from showing on the screen, and change to another program with **Apply now** button. Clicking **Play** will then immediately run this new program.

*Note:* all the controls are in effect for all the device outputs bound to this overlay, at once.



## Remote Control for Multiple Playback Programs

When the VCO Setup software is not used, other external controllers may be used with VCO devices. Please never use VCO Setup and external controller at the same time for one VCO device (one common IP address). This may give unpredictable results.

The VCO device firmware (v5.14 or higher) supports Protocol-3000 commands to deal with multiple programs.

Any external controller (like a PC, Kramer SL or RC controller, Kramer K-Touch solution, or third-party controller) may use this set of commands. Please refer to main User Manual (section 10.3.4) on details of syntax and usage of such a commands (Device-Specific “Y” Commands).

The **Playback Program** commands will override the legacy **Limit playback** commands (if in use).

Note that playback program numbers are counted here from 0 (for 1<sup>st</sup> program, use 0 in the command, for 2d program use 1, etc.).

Device-Specific “Y” Commands:

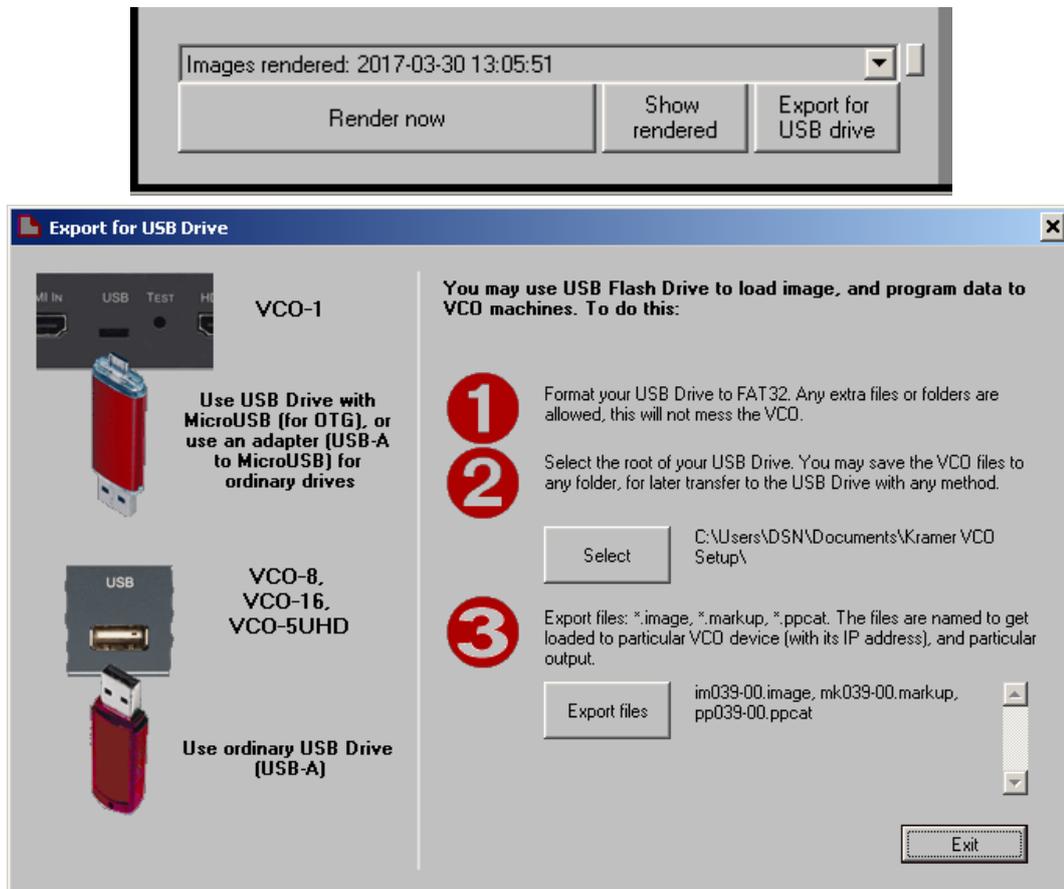
Description	Function	Parameter	Value	Notes
Playback Program (Read and Write)	154	VCO-1: OUTPUT[1] VCO-8: OUTPUT[8] VCO-16: OUTPUT[16]	[0:2047]	Current playback program number. For Set command (write), the program number will take effect immediately. If the VCO device was in Stop or Pause mode at this moment, it will remain the same mode until Play or Resume command will be received. <i>Example command: #Y 0,154,5,1</i> <i>Reply: ~01Y 0,154,5,1</i>
Plan Playback Program (Read and Write)	155	VCO-1: OUTPUT[1] VCO-8: OUTPUT[8] VCO-16: OUTPUT[16]	[0:2047]	Next playback program number. For Set command (write), the program number is set to be next, after the current program is over. If the VCO device was in Stop or Pause mode at this moment, it will remain the same mode until Play or Resume command will be received.
Enlist Playback Programs (Read only)	156	VCO-1: OUTPUT[1] VCO-8: OUTPUT[8] VCO-16: OUTPUT[16]	None for request [0:2047] for reply	Read total number of playback programs loaded to a VCO device output. <i>Example command: #Y 1,156,1</i> <i>Reply: ~01Y 1,154,25,1 (25 programs present)</i> <i>Reply: ~01Y 1,154,0,1 (no programs present)</i>
Playback Program Details (Read only)	157	VCO-1: OUTPUT[1] VCO-8: OUTPUT[8] VCO-16: OUTPUT[16]	[0:2047] for request “String” for reply	Read details of a requested playback program loaded to a VCO device output. The reply will return a string of the following format (parameters delimited by spaces): id start end repeat name id = identifier (0 for current software version) start = program starts at this position end = program ends at this position repeat = 0 for indefinite repetitions, or [1:255] limit for repetitions name = name set for this program in software <i>Example command: #Y 1,157,3,1</i> <i>Reply: ~01Y 1,157,3,1,0 2222 3333 0 browsers</i>

## Export for USB drive

After an overlay is rendered (with **Render now** button, or after the successful **Load overlay to device** action), and the VCO machine is bound to this overlay (with **Bind** button) – the overlay data may be transferred to the VCO device via Ethernet connection (the main method), or, alternatively, via a USB flash drive.

The USB drive loading is useful when the Ethernet is unavailable, or you need to transfer the ready-to-use overlay data to a remote VCO device using e-mail, or other non-automated method.

The Export for USB drive feature allows saving of the rendered data to any folder (in order to copy to the USB drive later), or directly to a USB drive connected to the PC. To do this, ensure you rendered you overlay, and the results are perfect (using **Render now**, and **Show rendered** buttons at the lower left part of the main window). Then, click **Export for USB drive**.



An export window will show all the instructions, and illustrations for the process. Please note that your USB flash drive must be formatted to FAT32 file system (NTFS will not go). After the data is loaded to the USB drive, just connect it to the appropriate USB connector of the VCO device (powered on). The device will detect the data, and automatically load it to the right output. One USB drive may contain the data for multiple VCO machines and outputs. In this case the VCO devices will detect their data and load it to correct outputs (ignoring other files).

After the VCO device copied the data from USB drive to its internal memory (the progress is shown by flashing LEDs), disconnect the USB drive, as it is not needed any more.

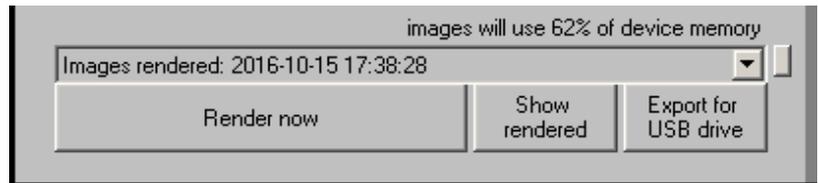
## “Render now” updated

The updated **Render now** section shows the rendering state, and possible render errors list. It is also provided with **Export for USB drive** button discussed above.

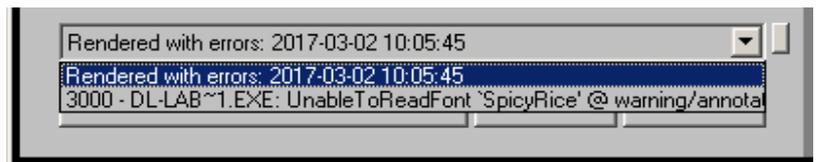
The overlay was never rendered yet. Can't show the results, or export for USB drive.



The overlay rendered with no detected errors. After rendering, the application shows the information on the memory used for overlay (in percents). It will be highlighted in red in case the memory is overloaded.



The overlay rendered with errors. Click the arrow at the list to browse the detected errors messages. Some of the errors may be non-fatal, so the results can be watched, loaded, and exported.

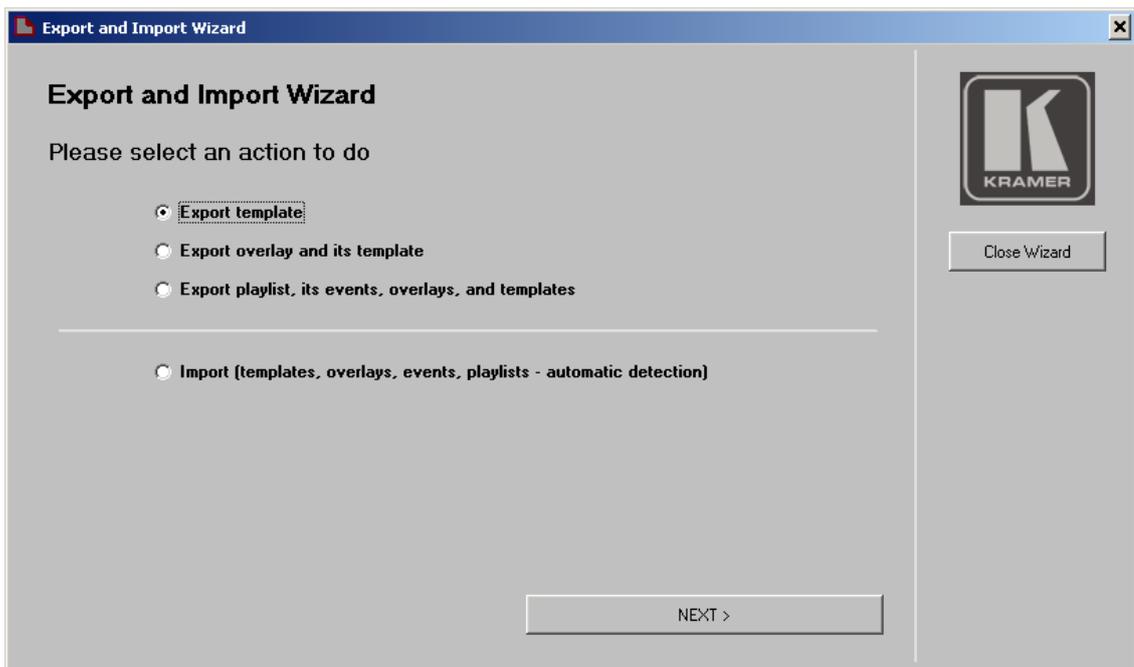


## Export / Import Wizard

This feature enables exporting of templates, overlays, events and playlists from your VCO Setup workspace. The data is saved to the \*.VCO files. You may then backup, send by email to your colleagues and friends, distribute them to the remote VCO Setup sites (see also the *Automatic Import* option), or deal with these files in any desired manner.

Importing will load this data back to a VCO Setup application. When import wizard detects that the data with the same name is already present in the current workspace, you will have an option to replace the data, or to add the data with the different name.

To run the feature, launch the VCO Setup application, go to the **Setup & About** tab, and click the **Export / Import Wizard** button.

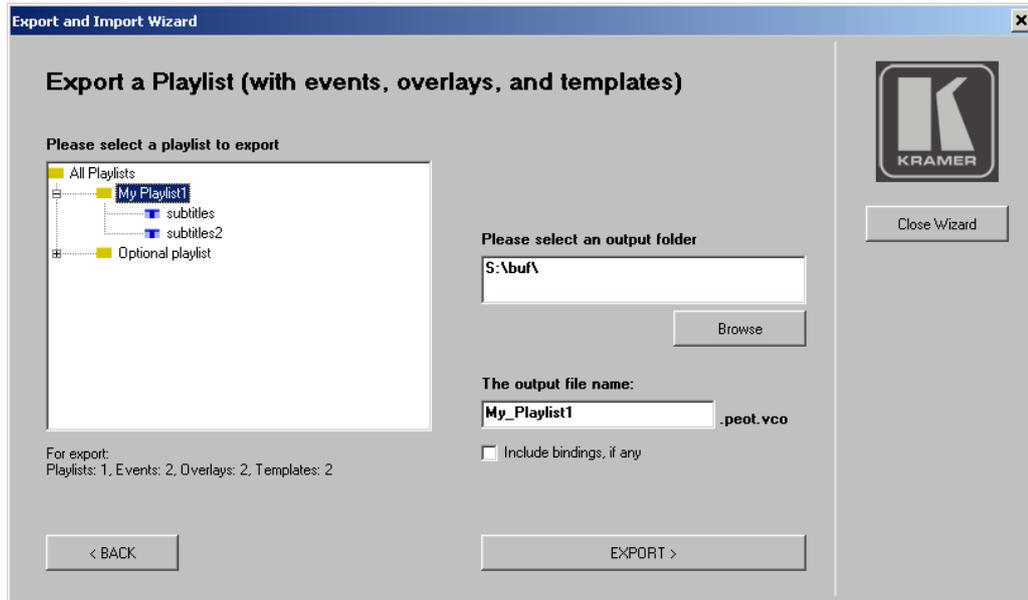


At the start page of Wizard, select the desired export function:

- **Export template:** one selected template will be exported.
- **Export overlay and its template:** one selected overlay will be exported, together with the template it is created from (packed to a single VCO file). Note that any overlay is useless without its template.
- **Export playlist, its events, overlays, and templates:** one selected playlist will be exported. As a playlist consists of events, they are also exported. Each event will load some overlays; these overlays will also be exported, accompanied by their templates. All the data is packed to a single VCO data file.

*Tip:* To make a comprehensive backup of your workspace, you can create a playlist with one event, and add all your overlays (to be backed up) to this event. There is no need to set up scheduling for this event (do not check the **Enable scheduling**). In **Export / Import Wizard**, just select this playlist to export, to get a single VCO file with all the data included.

Below is the example outlook of the export window for a playlist (similar windows will appear for other options).

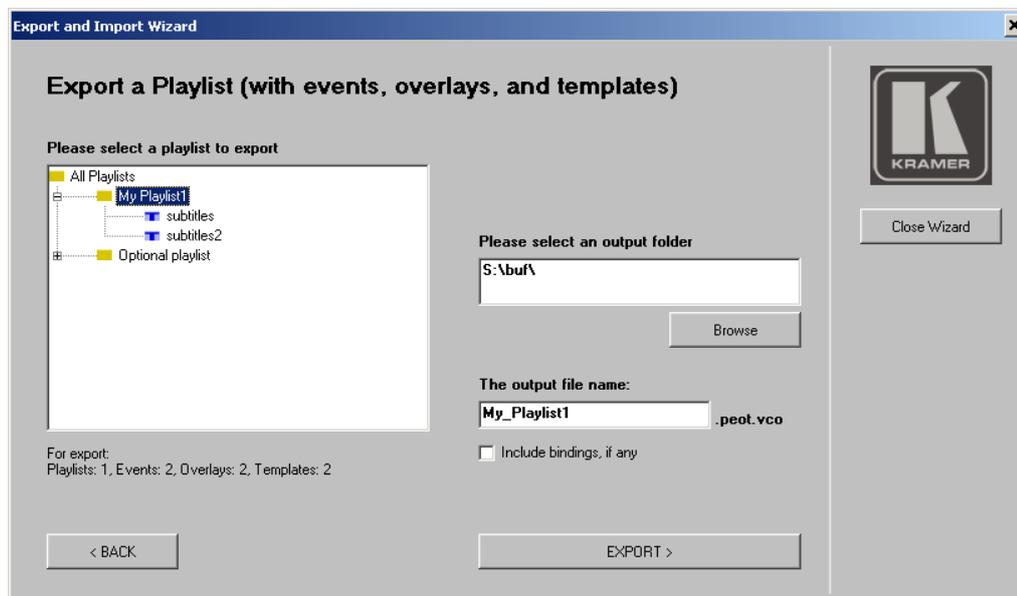


First, select an item (a playlist for this example) to export. The application will show the statistic information about this item (for a playlist, the number of events, overlays, and templates to export). In **the output file name** field, enter a desired VCO file name (no spaces are allowed in this name). Click **Browse**, and select a folder to export the file to.

Check **Include bindings**, if you want to export the current bindings to VCO outputs. In many cases, the resulting VCO file will be moved to another installation site, and your local bindings will be obsolete. Nevertheless, if the bindings are to be imported to another site, check this.

Click **Export>** to finish the operation.

To import a VCO file to your workspace, select an **Import** option at the Wizard start screen.

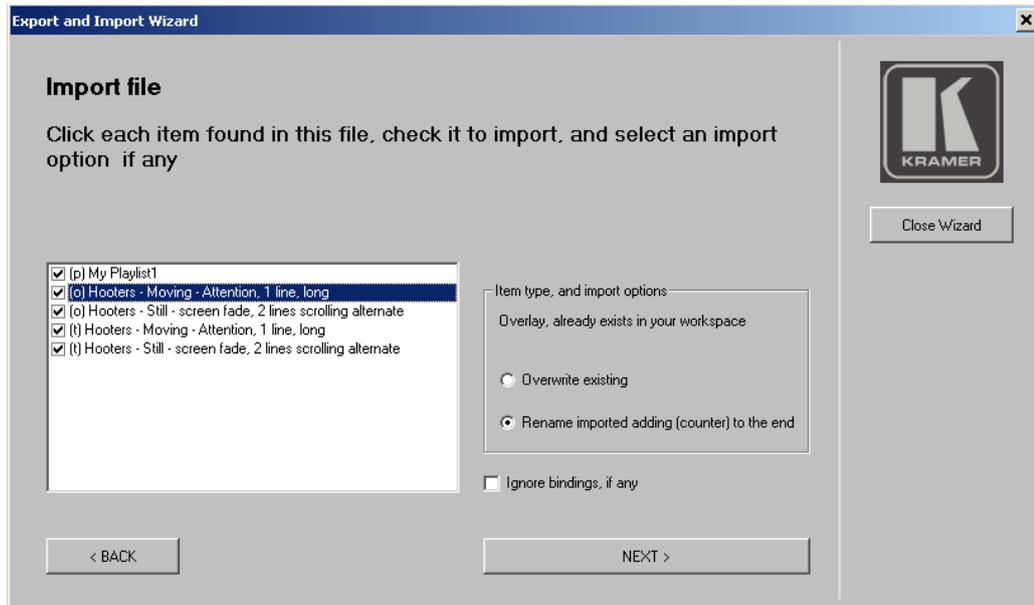


Click **Browse**, and select a VCO file to import from. Click **Next>** to examine the file.

The VCO Setup checks the contents of the file, and presents a list of available items.

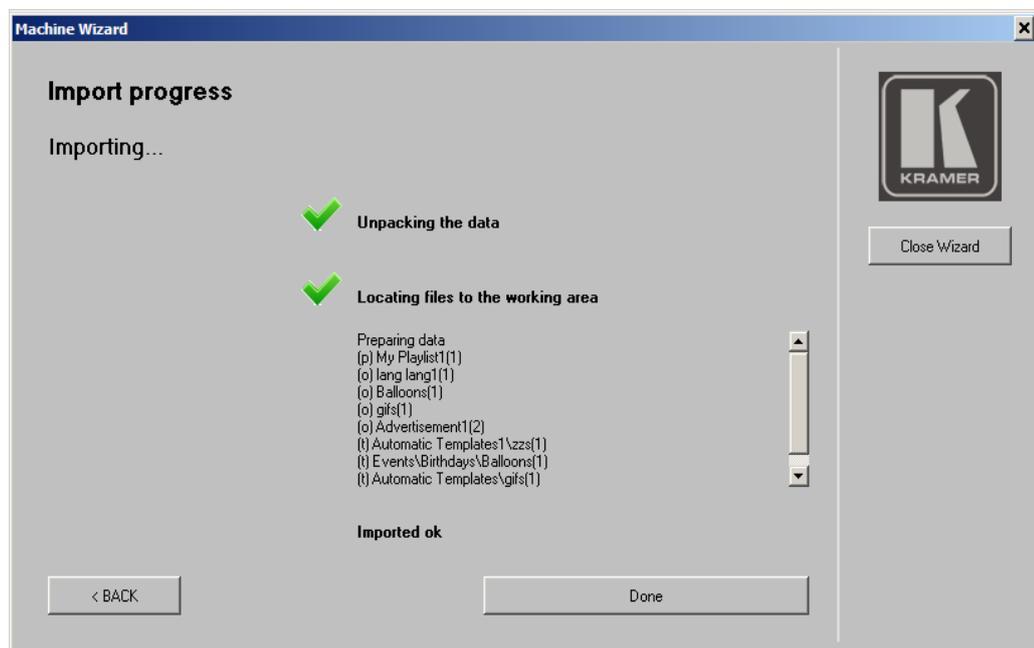
Click on an item to view its status, and check the items you need. For items already present in your workspace (the same name and path), you will have options to overwrite the existing data from the VCO file, or to rename the imported data. In the example below, the “Hooters –

Moving...” overlay from the VCO file will be imported with the new name “Hooters – Moving...(1)” (thus, the existing overlay will not be affected). You may later rename, delete, move, etc. the items in the main windows of VCO Setup.



Check **Ignore bindings**, if your overlays are already bound to perfect set of VCO outputs, and you don't want them to be modified by the import operation. Do not check, if you want the imported VCO file to apply the bindings (that were exported to this file).

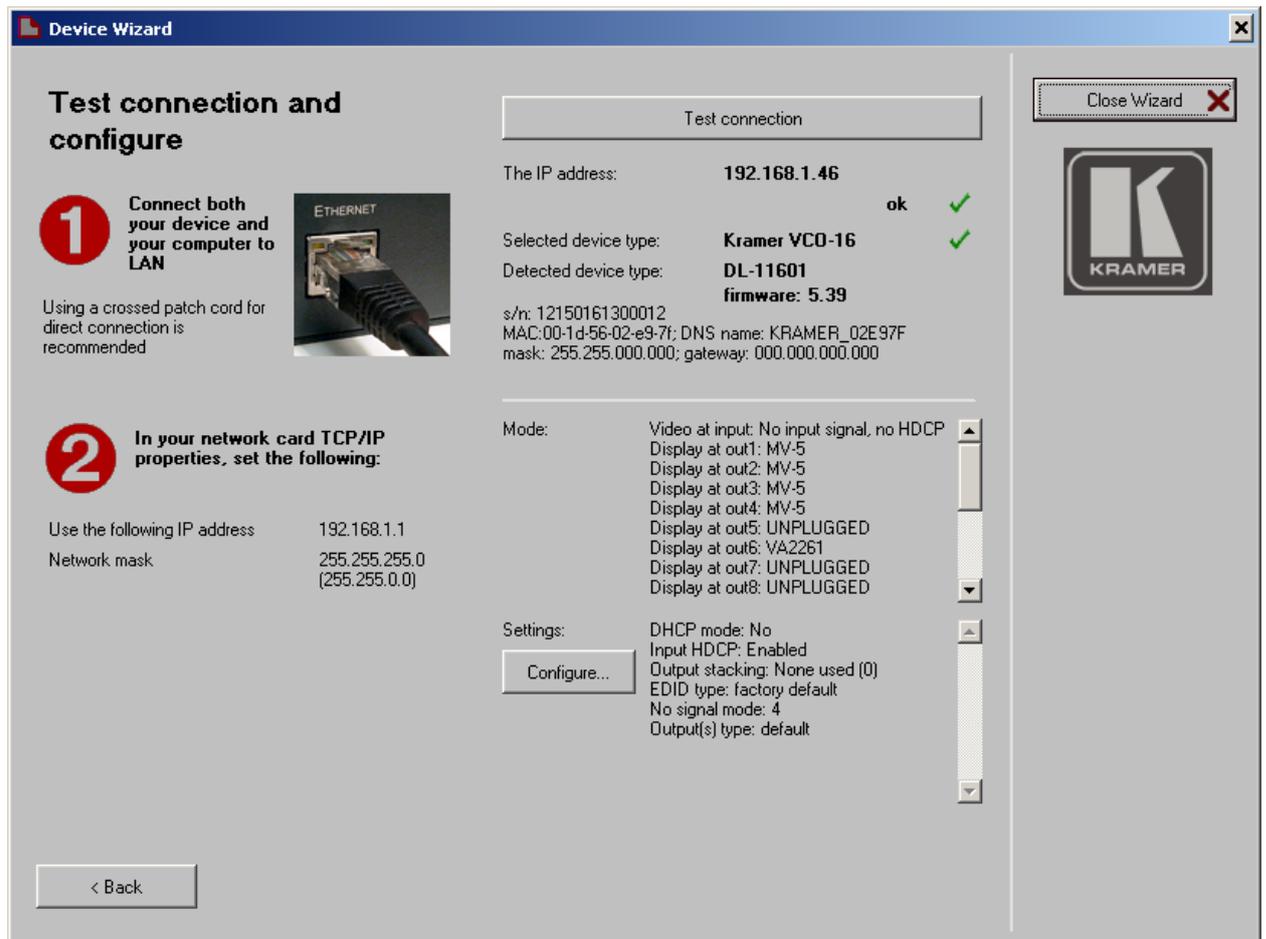
**Click Next>** to finish the import operation. The application will show the resulting list of imported items (with new names assigned for them by the **Rename** option, if it was selected).



Click Close Wizard when finished.

## Manage Devices Wizard, Test connection page

Test connection page now gathers and shows multiple device settings and operation modes. The outlook of this page is as below.



After clicking the **Test connection** button, the actual parameters of a real device (found at the selected IP address), will be shown by this page.

This includes the common device parameters (like IP address, device type, and the firmware version). Additionally, the page will show serial number, MAC address, DNS name, network mask, network gateway IP.

The **Mode:** section will show the current state of video signal at the device input (*No input signal*, or the real resolution of this signal, like *1080p60*, or the *Test pattern*, if the device is now in the test mode, switched by typing of TEST or RESET button on the device). Additionally, for each device output, the connected display information is shown (as it is read from the display EDID), or *UNPLUGGED* if no display is connected.

The **Settings:** section will show the current configuration of the device. Click the **Configure...** button to alter this configuration, as described in the following section.

## Resetting, HDCP, IP settings, Output mode, EDID management

**Test connection and configure** page now gathers and shows multiple device settings and operation modes (by clicking the **Test connection** button). After this, the **Configure...** button comes available. Clicking this button will show the **Configure the device online** page.

In the configuration window, clicking at any option will immediately load this option to the device (with the *Setting applied to device OK* message). The sent command, and the reply from the device are also logged below (for your information; note that <CR> and <LF> chars at the end of the messages are not shown here).

Click **Reset to defaults** to restore the original configuration (as defined by the VCO Setup application).

Click the additional button **Restart** to re-boot the device (as if it was just powered up).

Click the additional button **Factory reset** to load all the default settings (as they are defined inside the device). Please select one of the options:

- **Complete but IP** will reset everything, except all the current IP parameters (IP address, mask, gateway). These parameters will remain.
- **Complete reset to 77** will reset everything, and will set the IP address to 192.168.77.xxx (with xxx defined by the DIP switch).
- **Complete reset** will reset everything, including setting the IP address to 192.168.1.xxx (with xxx defined by the DIP switch) that is true complete factory default settings pool.

Description of other settings at the upper pane:

**Input HDCP:** When enabled, the device supports HDCP encoding at its input (default setting for the most applications). **Disable HDCP** support, if a source (like PC or media player) tends to switch HDCP on, while it is not needed in your system (preferable for many professional installations). Note that some sources (like BluRay players or SAT receivers) will not work with HDCP support disabled.

**Advanced IP settings:** Contains three settings (also available in Kramer K-Upload application).

- **DNS name:** This setting enables correct communication with the device in DHCP mode. Each device must have a unique DNS name. The default name (restored with **Reset** button) is “KRAMER\_xxyyzz” (“xyyzz” is a unique hex number derived from the device MAC address).
- **IP mask, IP gateway:** Standard IP settings (used in non-DHCP mode). These settings may be extremely important when the device is routed from its LAN to other destinations. Refer to your LAN system administrator for the correct settings. **Reset** buttons will load the factory default settings typical for most LAN setups.

**Output mode** pane contains separate settings for outputs:

**With no background video input, the output will** (applies to all of the outputs):

- **Show blue screen (default):** a FullHD (1080p/60) blue screen will be shown as a background (with an overlay shown over it).
- **Show black screen:** The same, but with black screen more suitable for some installations.
- **Switch off sync/signal:** As there is no signal at the HDMI input of the device, there will be no signal at the output. This mode may be helpful for a display that must automatically go to sleep mode with no input signal. Any other mode will not allow this display to go to sleep.
- **Show test pattern N:** Any of 8 test patterns built in the device will be shown at FullHD mode.

**Output video mode (per output):**

Each output of the device can operate in several modes. This enables selecting an optimal mode for each connected display.

- **Select output:** select an output to set up (for VCO-1, only 1 output is available). Each output is set up individually with one of the following modes.
- **Auto (HDMI) default:** The factory default mode, optimal for most of the displays. The device will automatically select between HDMI mode (including possible YUV or RGB colorspaces, and embedded audio), and DVI mode (RGB without audio), depending on the display EDID. If EDID for some reason is not valid or unavailable, the output will use HDMI (YUV and audio).
- **Auto (DVI):** Same as above, but for invalid EDID, the output will use DVI (RGB without audio).
- **Forced HDMI:** Regardless of EDID, the output will use HDMI (YUV and audio).
- **Forced DVI:** Regardless of EDID, the output will use DVI (RGB without audio).

**EDID management:** The device shows its EDID (Extended Display Identification Data) to the video signal source, thus enabling the source to supply the correct video/audio stream. The right EDID is essential to get the whole video system working properly.

- Use **factory default** setting to use universal EDID, valid for most installations. For some devices, several factory variants may be available.
- Use **external (read from the output)** setting to use EDID that was read from one of the device outputs (see below on procedure).

Click **Set EDID type** after the selection is made.

Reading the EDID from a video acceptor (e.g. a display, projector, etc.) that is connected after the VCO device, will ensure the correct video/audio stream for this particular acceptor, so it is recommended to do this if correspondent problems occurred.

To do this:

- Connect an acceptor (display, projector, etc.) to an output of the VCO device, and make sure it is switched on
- Select this output number in the **Select output** list
- Click **Read EDID from the output**

## Remote Control for Resetting, HDCP, output, and EDID Settings

The VCO device firmware supports Protocol-3000 commands to deal with extended FACTORY reset procedure, with HDCP mode, output mode, and EDID. Note that IP settings are supported by the standard commands NAME, NAME-RST, NET-MASK, NET-GATE (see the original User Manual).

Device-Specific “Y” Commands:

Description	Function	Parameter	Value	Notes
Input HDCP Capability (Read and Write)	105	-	0	HDCP is supported
			1	HDCP is not supported
Read input HDCP STATUS (Read only)	335	-	0	No HDCP is currently in use
			1	HDCP is used
Output No Signal Mode (Read and Write)	343	-	0 to 10	0 = Blue Screen, 1 = Black screen, 2 = Sync off, 3 = Test Pattern1, 4 = Test Pattern2, 5 = Test Pattern3, 6 = Test Pattern4, 7 = Test Pattern5, 8 = Test Pattern6, 9 = Test Pattern7, 10 = Test Pattern8
Output DVI/HDMI Mode (Read and Write)	202	VCO-1: OUTPUT[1] VCO-8: OUTPUT[8] VCO-16: OUTPUT[16] VCO-5UHD: OUTPUT[5]	0	Auto (HDMI) default
			1	Auto (DVI)
			2	Forced HDMI
			3	Forced DVI
EDID type (Read and Write)	201	-	0	Default factory EDID
			1	Default factory EDID, deliberately limited to 1080p (for VCO-5UHD only)
			255	External EDID (read from the VCO output with CPEDID command). No external EDID was ever read, this restores the factory default EDID.  This mode is also selected automatically after the execution of CPEDID command.

Standard Protocol-3000 commands:

Extended factory reset

Command – FACTORY		Command type – Video commands	
Command name		Permission	Transparency
Set:	FACTORY param	End User	Public
Get:	-	-	-
Description		Syntax	
Set:	Reset to factory defaults	FACTORY param<CR>	
Get:	-	-	
Response ~nn@FACTORY ok<CR><LF>			
<p><i>param</i> – optional parameter. No parameter: complete factory reset (standard reset with IP address set to 192.168.1.xxx); parameter A: complete reset with IP address set to 192.168.77.xxx; parameter P: complete reset but IP parameters (IP address, IP mask, IP gateway) are preserved as they are. Example: #FACTORY P&lt;cr&gt; will factory reset the device, leaving the IP parameters unchanged.</p>			

## Reading EDID from the output to input

Command – CPEDID		Command type – Video commands	
Command name		Permission	Transparency
Set:	CPEDID	End User	Public
Get:	-	-	-
Description		Syntax	
Set:	Read EDID data from the output	CPEDID out<CR>	
Get:	-	-	
Response ~nn@CPEDID out, result<CR><LF>			

*out* – output number (counts from 0). For VCO-1 always equals to 0. For VCO-5UHD (0 to 4), VCO-8 (0 to 7), VCO-16 (0 to 15).

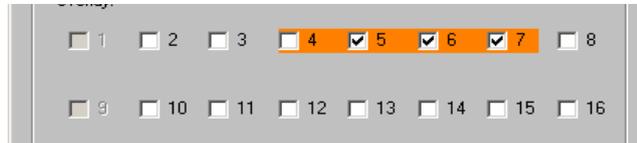
*result* – OK if successful, CABLE UNPLUGGED or NO EDID DDC ACCESS or BAD EDID HEADER on errors.

Execution of this command automatically switches the device to the “External EDID” mode (see “Y” command 201).

## Overlay Stacking feature

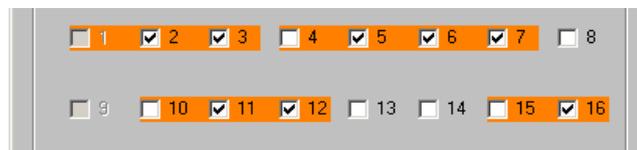
The above **Configure the device online** page also comprises the **Output Stacking** section.

These settings are available only for multi-output devices that supports this feature (currently, VCO-8, VCO-16). Check the output which must superimpose its overlay over the overlay at the previous output. At the example below:



- Output 5 output is checked. It will show its overlay over the output 4 overlay
- Output 6 output is checked. It will show its overlay over the output 5 overlay
- Output 7 output is checked. It will show its overlay over the output 6 overlay
- As a result, **all the outputs** (4, 5, 6, 7) will show the same picture: background with overlays 4, 5, 6, 7 stacked over it
- Overlay 4 is the lowest level (overlapped by all other overlays), while overlay 7 is the topmost level (it will show itself over all the others)
- Each overlay at every output may be loaded separately (from the VCO Setup main window controls, manually or by the schedule)
- Each overlay at every output may be individually played/paused/restarted, may comprise multiple programs, etc. - just like any other overlay in the system

Note that you may even define many output stacks for a device. At the example below:



- We left unchanged the previous stack (outputs 4, 5, 6, 7).
- We added a stack for outputs 1, 2, and 3 (checking outputs 2 and 3)
- We added a stack for outputs 10, 11, and 12 (checking outputs 11 and 12)
- We added a stack for outputs 15 and 16 (checking output 16)
- All of these stacks will work in parallel; each will show its own stack of overlays over a background, at all of its outputs
- Note that outputs 8, 9, 13 and 14 are left out of any stacks, so these are ordinary independent outputs (with their own overlays over a background)
- Note that VCO-16 can't traverse the stack from output 9 to output 8 (due to hardware restrictions)

## Remote Control for Stack Overlay Feature

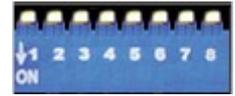
The VCO device firmware (v5.19 or higher) supports Protocol-3000 command to deal with overlay stacking.

Device-Specific “Y” Commands:

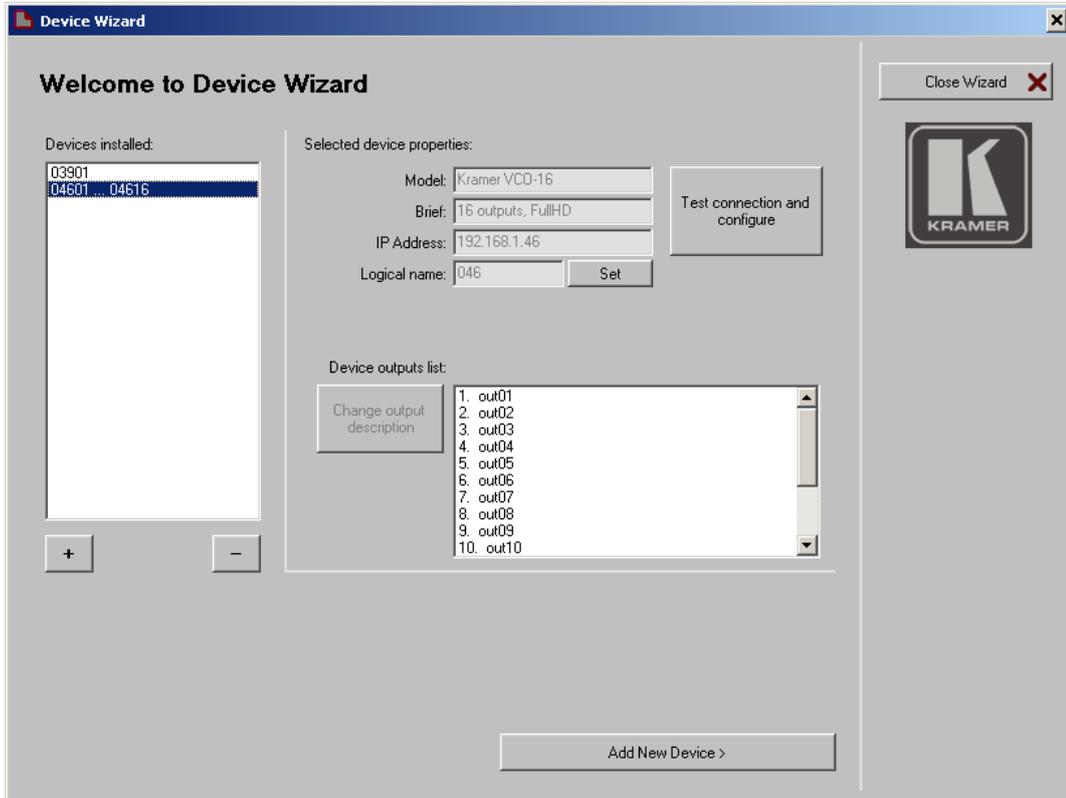
<i>Description</i>	<i>Function</i>	<i>Parameter</i>	<i>Value</i>	<i>Notes</i>
Output Stacking (Read and Write)	212	VCO-1: not available VCO-8, VCO-16: bitmask	[0:2047]	Set the stack state for a multi-output device. Bitmask (in decimal format) that shows the stacking status for each output: bits 0...6: correspond to outputs 2...8 accordingly bits 8...14 (VCO-16 only): correspond to outputs 9...16 accordingly For each bit, 0 means no stacking, 1 means stacking with the previous output. <i>Example command:</i> #Y 0,212,17979 (bitmask for the last example above) <i>Reply:</i> ~01Y 0,212,17979

## DHCP Support

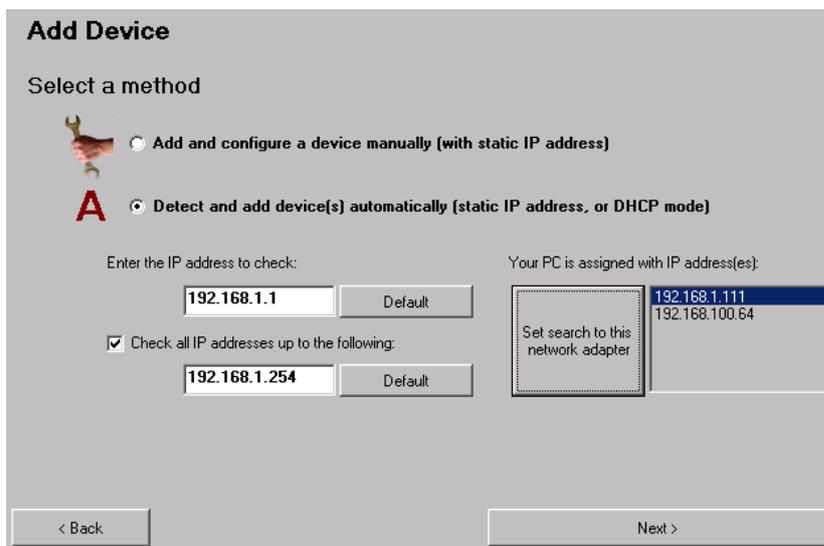
The updated DHCP feature needs firmware v5.30 or higher for VCO-1, VCO-8, VCO-16, and v1.30 or higher for VCO-5UHD devices. To enable DHCP mode for the device (in contrary to static IP mode), select the OFF (upper) position for all the **DIP switches** at this device.



After the power is recycled, the device will receive an IP address and other IP settings from your DHCP server available in LAN. Any number of DHCP-enabled VCO devices may reside in your LAN (depending on DHCP server settings; advise to your system administrator for details).

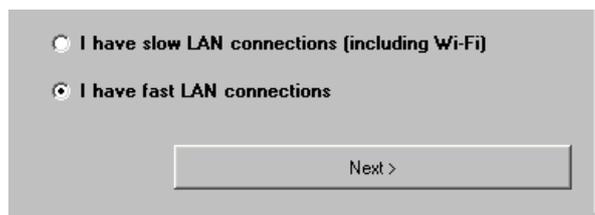


To install DHCP-enabled VCO devices, use **Device Wizard**, click **Add New Device**, and select **Detect and add device(s) automatically** in **Add Device** dialogue:

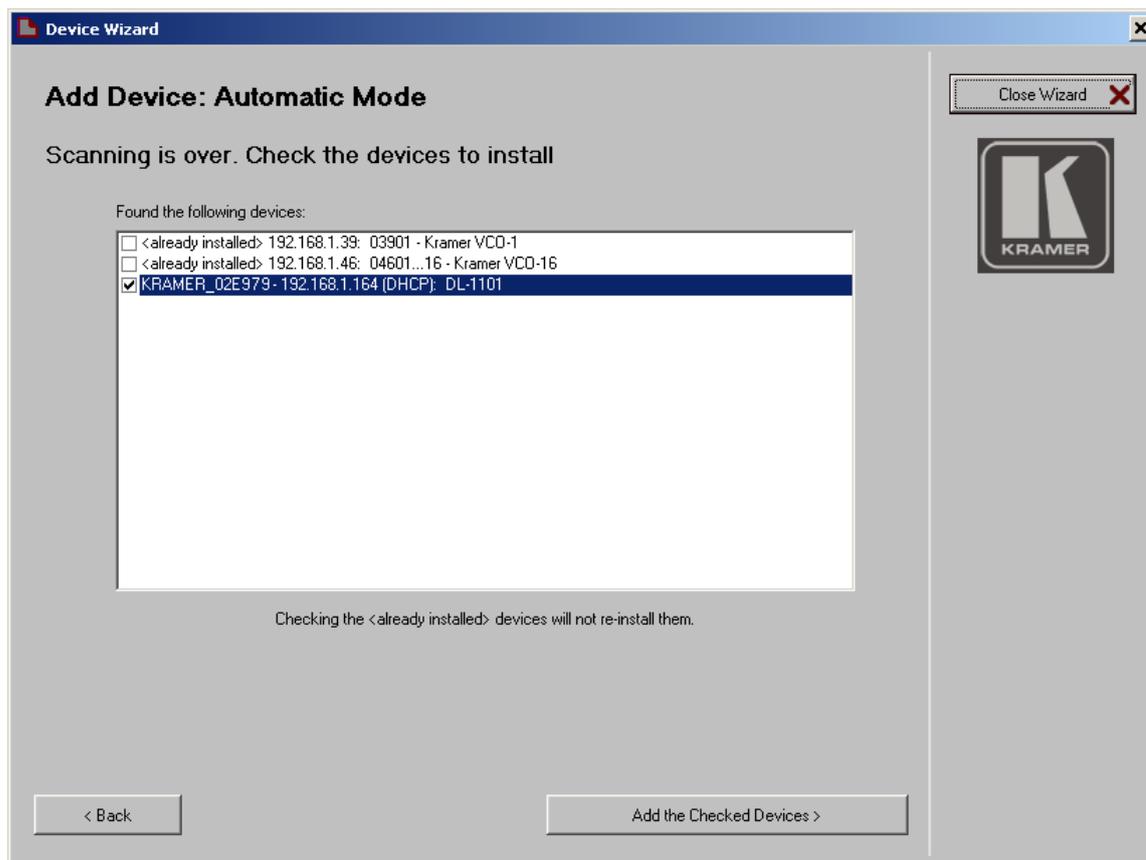


Enter the correct address range (in most cases, this is the DHCP server address pool, advise your system administrator for this). The **Your PC is assigned with IP address(es)** list will show the installed network adapters, and will allow to automatically set the range according to the selected adapter.

The next dialogue will allow you to set up the polling speed. In most cases, fast LAN is the right setting, so you will not waste much time for the whole procedure. Unfortunately, some slow connections (for instance, Wi-Fi routing) may cause some VCO devices to be skipped from the search. In this case, slow LAN setting will help. With this setting, the procedure will wait much longer for each device to respond, thus the overall procedure will go slower.



The updated procedure will find and show all the VCO devices (in DHCP or static IP mode; already installed or new ones).



By default, all the VCO devices (in DHCP mode) have the network name KRAMER\_xxyzz (with xxyzz are the last 6 hex digits of the MAC address). See the MAC label clued to the bottom of each device – like the one shown to the right. As each device has a unique MAC address, all the network names are unique for each device.



In the above example, a device (model **VCO-16**) set to **DHCP** mode, is found at the IP address **192.168.1.151**, and will be registered by the Wizard with the network name **KRAMER\_02E979** (instead of IP address). The appropriate outputs of VCO-16 will be automatically assigned **D02E97901** to **D02E97916** names ("D" stands for DHCP, and "01" to "16" are appended for the appropriate outputs).

Note that in this example, the VCO-1 and VCO-15 devices (upper lines of the list) are already installed in the system. Clicking the **Add the Checked Devices**, will result the device list to comprise the new device.

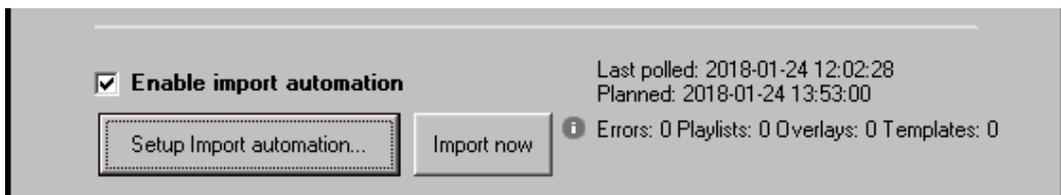
## Automatic Import

The running VCO Setup application can automatically load the updated data from the VCO files (templates, overlays, playlists) retrieved from the external sources. The VCO files are exported with the **Export/Import Wizard** (discussed above). This enables automatic distribution of the data to the remote sites. The generic workflow may look like this:

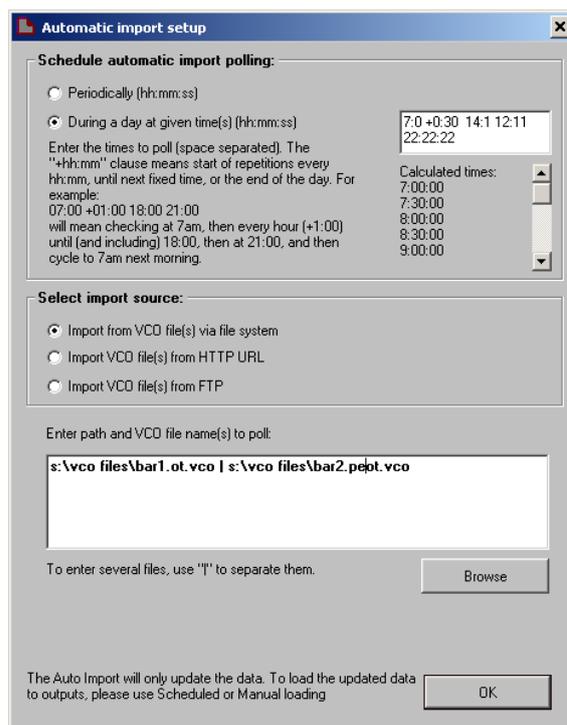
- At the central office, the designer uses VCO Setup application and other tools (like Adobe Photoshop) to prepare the updated templates, overlays, and playlists
- He or she uses the **Export/Import Wizard** to prepare a VCO file with all the results, and then places this file to the storage (shared file folder, FTP storage, or a web site) which is also accessible by the remote VCO sites
- At each of the remote sites, there is its own copy of VCO Setup running with **Automatic Import** feature, and **Scheduling** mode, both enabled
- Each site polls the storage by **Automatic Import**, and retrieves the new data (if it gets updated)
- The **Scheduling** feature of the VCO Setup then loads the new data to the VCO device outputs that are bound to the overlays.

Note that playlists may also be updated this way, so the scheduling feature itself may also retrieve the updated events to execute.

To enable this feature, use **Enable import automation** checkbox at the **Setup & About** tab.



Please use **Setup Import automation...** button to define the settings.



Scheduling options

Type of communication with the polled data

The file names and other settings to access the data

Click **OK** when finished with settings

## Scheduling options

There are two simplified options for polling of the data:

**Periodically:** the data will be polled with the pre-defined repetition period (starting with the enabling of this feature, or running of the application with the feature enabled).

Note that this period is approximate.

**Schedule automatic import polling:**

Periodically (hh:mm:ss)

During a day at given time(s) (hh:mm:ss)

**Once a day:** each day, the data will be polled at the pre-defined time. You may set many time

points to poll (separated with space). Entering the increment time (in the “+hh:mm” format, with the “+” sign indicating the increment) will poll after each increment, until the next fixed time will happen. The **Calculated list** will show you the overall result.

**Schedule automatic import polling:**

Periodically (hh:mm:ss)

During a day at given time(s) (hh:mm:ss)

Enter the times to poll (space separated). The "+hh:mm" clause means start of repetitions every hh:mm, until next fixed time, or the end of the day. For example:  
07:00 +01:00 18:00 21:00  
will mean checking at 7am, then every hour (+1:00) until (and including) 18:00, then at 21:00, and then cycle to 7am next morning.

Calculated times:  
7:00:00  
7:30:00  
8:00:00  
8:30:00  
9:00:00

## Select import source

The **Auto Import** feature can poll three types of storage.

**Select import source:**

Import from VCO file(s) via file system

Import VCO file(s) from HTTP URL

Import VCO file(s) from FTP

Enter path and VCO file name(s) to poll:

To enter several files, use "|" to separate them.

**Select import source:**

Import from VCO file(s) via file system

Import VCO file(s) from HTTP URL

Import VCO file(s) from FTP

Enter HTTP URL(s) to VCO file(s) to check:

To enter several URLs, use "|" to separate them.

**Shared folders** (local or network) may contain VCO file(s) to poll. Enter the full path and file name (UNC names like “\\myserver\path\file.ot.vco” are also accepted), or use **Browse** to select them. The feature can poll many VCO files one by one. Please enter all the needed files, and use the | character to separate them.

You may place the VCO file(s) onto the **existing web site**. Use the URL to define a file (just copy this URL from your browser). To poll several URLs, enter them one by one, and use the | character to separate them.

**Select import source:**

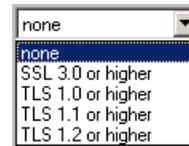
Import from VCO file(s) via file system  
 Import VCO file(s) from HTTP URL  
 Import VCO file(s) from FTP

Enter FTP credentials for VCO file(s) to poll:

FTP Server:   
 Login:   
 Password:   
 Security level:

/path/filename for VCO file(s):   
To enter several files, use "|" to separate them.

**FTP storage** has more settings than other sources. For FTP Server field, enter the root server name or IP address (no "ftp://" please). Enter the login and password credentials, and select the security level:



Most servers will use pure FTP (select "none" for them). The secure FTPS servers may require SSL or TLS access. VCO file names may include the path at the server. As with other source options, to poll several files, enter them one by one, and use the | character to separate them.

## Import now

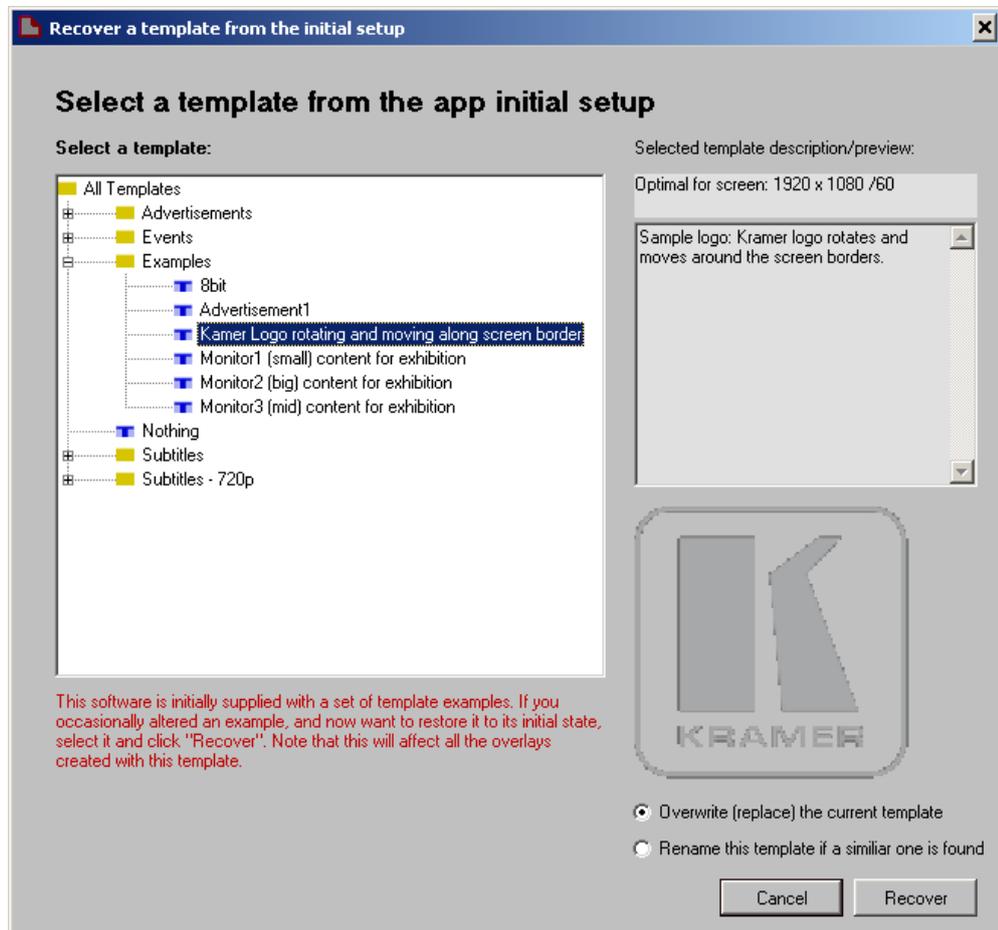
With the settings completed, close the setup page with **OK** button. Now, you may test the access to the VCO files by clicking **Import now** at the **Setup & About** tab. On the prompt, click **Yes** to load the data from the VCO file(s) to your workspace, or **No** to test this data (without updating the workspace).

## Looking up the log

Clicking the  icon to the left of **Import now** button will show the comprehensive **Auto Import** feature log, including the polled VCO file names, and the names of all playlists, overlays, and templates affected (the last 1000 events are stored in the list, from the start of VCO Setup application). You may also save this log to a text file.

## Template files management enhanced

Enhanced **Template Wizard**, allows restoring of the templates from the initial setup package. This may be useful if you managed to damage a sample template, and now want to revert it back. To do this, click the  button below the templates list. The dialog window allows selecting a template, and a method to recover it (overwrite an existing one, or restore it with a different name, to save both versions).

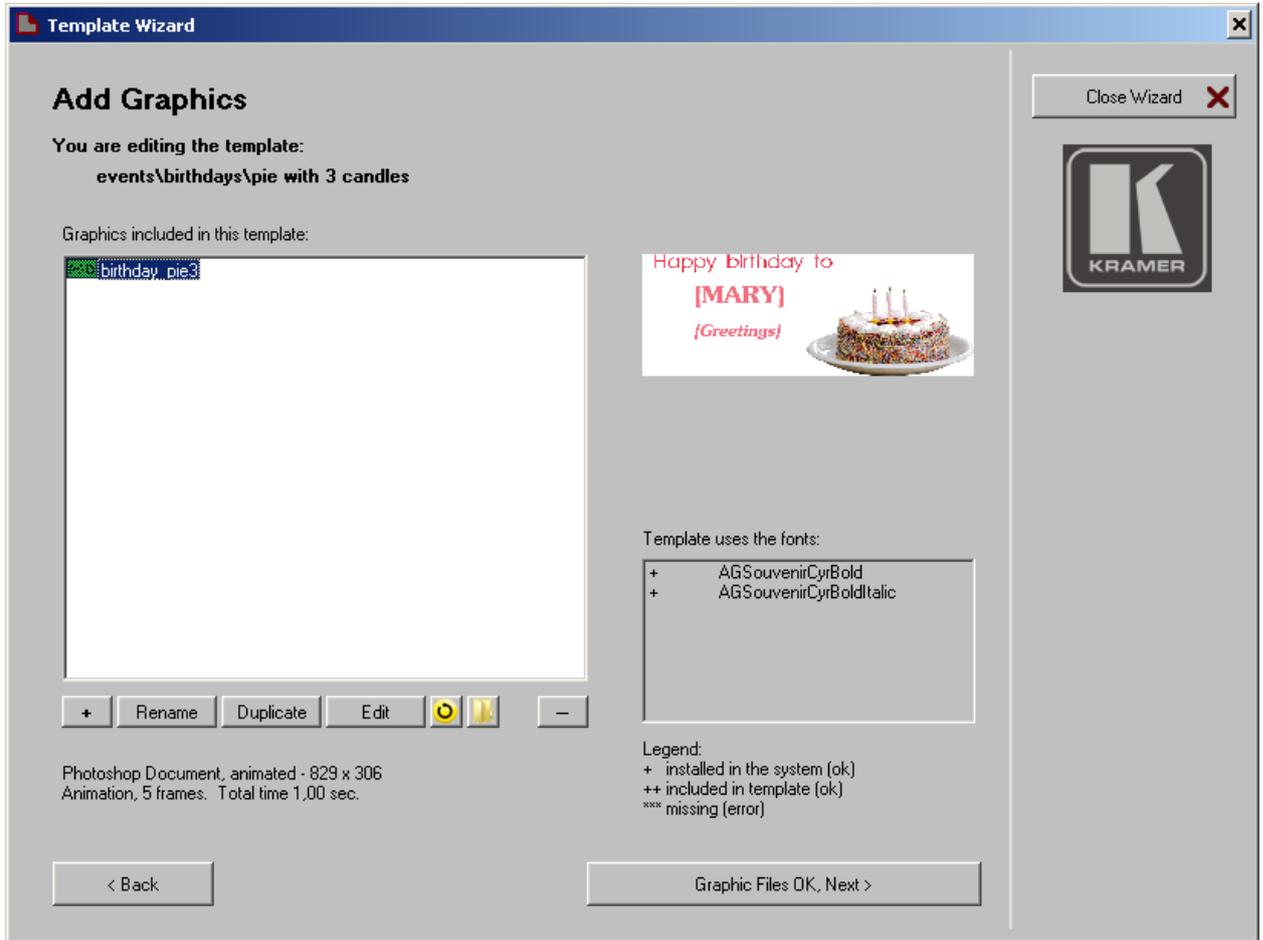


Files management in Template Wizard now allows renaming and duplicating of graphic files. For management convenience, the user now may open the current template folder by clicking “folder”  button. Use **Edit** button to open a graphic editor that is specified by the OS for this type of file by default. Note that if you want to use a specific editor (like Adobe Photoshop), you must first install this separate software to your computer, and set it as a default editor.

**The Add Graphics** wizard page now also includes the **Template uses the fonts** list.

The PSD files may include the text layers formatted with some fonts. In order to preserve the consistency of a template, these fonts are automatically copied to the template folder. This ensures that any template will be rendered normally, even when transferred to another PC via a VCO file (see the **Export/Import** feature).

Note that when a template is imported from a VCO file, and you want to edit its PSD files locally, the fonts may occur still missing for Adobe Photoshop. Please open the template folder by clicking the “folder” button, then locate the fonts file in this folder, and install them manually into your system.



The above list shows what particular fonts are in use, and if these fonts are really available. If by some reason a font is missing (marked as \*\*), it will be substituted by *Arial* during the rendering.

**WARNING:** Some computer fonts may have copyright limitations on copying and/or transferring of them to other systems. Please refer to your fonts legal information on this.

## Help and Upgrade menu

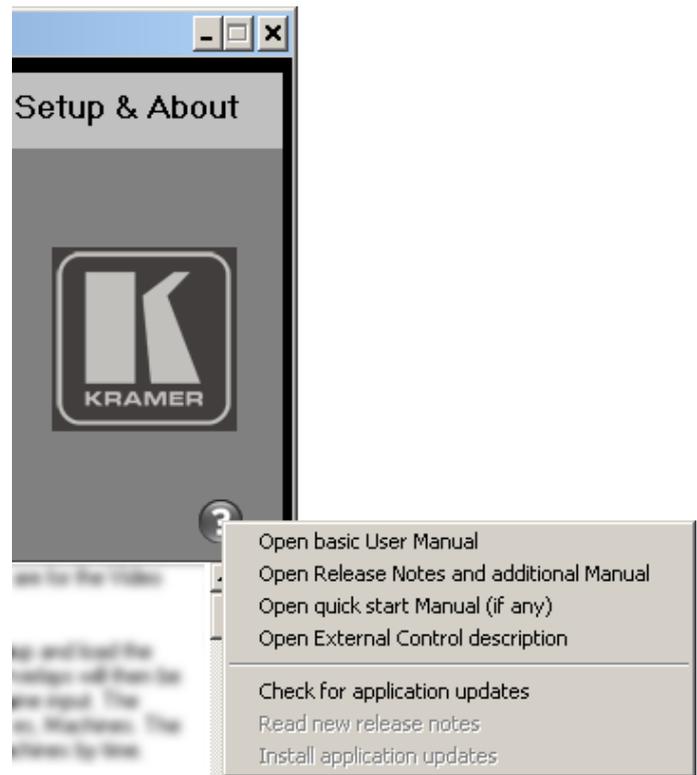
Use the **Help and Upgrade** icon at the **Setup&About** page to access this feature.

This menu allows easy opening of several PDF files that now come with the installed VCO Setup application.

Select the **Check for application updates** to automatically access the special web site, and lookup for the latest available software version. Note that you will need the Internet connection for this.

If a new version is available, you may read its Release Notes documentation, and select the **Install application updates** (recommended) if you find this update valuable.

The updating includes downloading of the software package file (typically up to 50MB), closing the current application, and starting of the new setup procedure. Please follow the on-screen instructions to complete the upgrade procedure.



•EOF•