KRAMER



USER MANUAL

MODELS:

VCO-1, VCO-8, VCO-16 Video Content Overlay Solution

www.kramerAV.com



VCO-1, VCO-8, VCO-16 Quick Start Guide

This guide helps you install and use your product for the first time. For more detailed information, go to http://www.kramerav.com/manual/VCOs to download the latest manual (or scan the QR code) and check if firmware upgrades are available.

Step 1: Check what's in the box

- VCO-1, VCO-8 or VCO-16 Video Content Overlay 🗹 1 Set of rack ears (VCO-8/VCO-16) 🗹 Cable bracket (for VCO-8/VCO-16 1 Power cord (VCO-8/VCO-16)
 - 4 Rubber feet
- 1 Quick start quide

1 Power adapter (VCO-1)

Step 2: Install the device

VCO-8 / VCO-16: To rack mount the device attach both ear brackets to the device (by removing the three screws from each side of the device and replacing those screws through the ear brackets) or place the device on a table.



VCO-1: To mount the VCO-1 in a rack, use an RK-3T rack adapter. Alternatively, attach the rubber feet to the underside of the VCO-1 and place it on a table.

A Kramer TOOLS™ can also be mounted on a desk top, wall or similar area. Fasten a bracket on each side of the TOOLS using the two M3x8 screws (supplied). Use the flat-head screws (supplied) to fix the TOOLS to the mounting surface or enable it to slide in place.

Step 3: Connect inputs and outputs

Always switch OFF the power of your AV equipment and VCO-1 / VCO-8 / VCO-16 device before connecting any inputs or outputs. For best results, we recommend that you always use Kramer high-performance cables to connect AV equipment to the VCO-1 / VCO-8 / VCO-16 device.

VCO-8 / VCO-16:

Note that VCO-8 is identical to VCO-16 except for the number of outputs:8 for VCO-8 and 16 for VCO-16.



192.168.1.39 is the default IP address for all VCO devices.

Step 3: Connect inputs and outputs (continued)

VCO-1:



Step 4: Connect the power

VCO-8 / VCO-16: Connect AC power to the rear of the device, switch ON its power and then switch ON the power of your AV equipment.

VCO-1: Connect the 5V DC power adapter to the VCO-1, plug the adapter into the mains electricity and then switch ON the power of your AV equipment.

Step 5: Setup the overlay application

Use the Kramer VCO Setup application to manage the VCO-1 / VCO-8 / VCO-16 device, define separate content layers for each output, and send the overlays to the VCO-1 / VCO-8 / VCO-16 device (via LAN).

You can download the KramerVCO-Setup.exe file from our Web site at: http://www.kramerav.com/downloads/VCOs.

TV Showroom example (also applies to coffee shops, sports bars, public areas and so on)



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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 14 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; GROUP 11: Sierra Video Products; GROUP 12: Digital Signage; GROUP 13: Audio; and GROUP 14: Collaboration.

Congratulations on purchasing your Kramer VCO-1, VCO-8, VCO-16 Video Content Overlay Solution. This product, which incorporates HDMI[™] technology, is ideal for:

- Providing visitor information, messages, promotional ads, and emergency announcements overlaid on your current display network
- Hotel lobbies, lounges, guest rooms and conference rooms
- Sports bars, nightclubs, special venues
- Restaurants, cafes, diners

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables



Go to <u>www.kramerav.com/downloads/VCOs</u> to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables (we recommend Kramer highperformance, high-resolution cables) to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighbouring electrical appliances that may adversely influence signal quality
- Position your Kramer VCO-1, VCO-8, VCO-16 away from moisture, excessive sunlight and dust



This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.

2.2 Safety Instructions

Caution:	There are no operator serviceable parts inside the unit
Warning:	Use only the power cord that is supplied with the unit
Warning:	Do not open the unit. High voltages can cause electrical shock! Servicing by qualified personnel only
Warning:	Disconnect the power and unplug the unit from the wall before installing
	Caution: Warning: Warning: Warning:

2.3 Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at <u>www.kramerav.com/support/recycling/</u>.

3 Overview

Kramer VCO solutions let users display targeted messages across any number of displays in showrooms, bars, lobbies, or conference rooms. VCO-1, VCO-8, and VCO-16 are specialized distribution amplifiers that can distribute independent content layers to 1, 5, 8, or 16 and optionally to any number of displays over standard HDMI in full HD resolution (1080p60 or 1920x1200).

Simply connect the Kramer **VCO** to each display with a single HDMI cable, choose any standard graphics file to be overlaid (such as a reminder that the bar will close at 11:00pm), and that's all. The **VCO** solution also enables scheduling specific messages to be overlaid on specific displays at any chosen time and provides a set of overlay templates for initial use.

With centralized control, Kramer **VCO** solutions let users manage individual video content overlays for each connected display from anywhere in the world.

With Kramer VCO, you get:

- Comprehensive Digital Overlay Solution:
 - Complete, project-tailored solution for all your display needs
 - Support for an unlimited number of overlays and displays
 - Individual or multi-channel control and centralized operation and management
 - Precise scheduling of each individual overlay per display
 - Static or animated dynamic color image overlays in full HD
 - Multiple overlay templates for multiple applications
 - Comprehensive error reporting for connected displays and overlays
- Flexible Integration and Usability:
 - Use with any customer management system
 - Use your existing display network infrastructure
 - Supports any-sized content overlays with full transparency control

- Built-in looping output for daisy chaining any number of devices (VCO-8 and VCO-16 only)
- Cost Effective. User-Friendly Operation and Management:
 - Easy setup with a non-technical, user-friendly and feature-rich interface
 - Automatically displays engaging static or animated messages and push notification campaigns, full-HD resolution to multiple displays in multiple zones over live video from cameras, satellite receivers, PCs, or media players — in a single click
 - Simple, cost-effective operation and management from a single display in a bar to hundreds of displays in a hotel
 - Problem-free installation, instant error reporting for each display and an international warranty with localized support

VCO-8 and **VCO-16** are housed in a 19" 1U rack mountable enclosure with rack "ears". They use a 100-240 VAC universal switching power supply.

VCO-1 is housed in a compact TOOLS size. Three units can be rack-mounted side by side in a 1U rack space with an optional **RK-3T** rack adapter tool.

3.1 Defining the Video Content Overlay Solution

2 1 ON IP ADDRESS \bigcirc 12345678 Ο $(\mathbf{0}$ VCO-1 1 Port Video Content Overlay 3 5 6 8 4 7 5VDC HDMI IN UŠB TEST HDMI OUT ٩ Ó Č Ο ت ETHERNET

This section defines the VCO-1, VCO-8 and VCO-16.

Figure 1: VCO-1 Front and Rear Panels

#	Feature	Function
1	IP ADDRESS DIP- Switches	For setting the last number in the machine LAN IPv4 address (see <u>Section 8.1.1</u>)
2	ON LED	Lights when an input signal is active; flashes slowly when no input signal is detected
3	ETHERNET Connector	Connect to the PC or other serial controller through computer networking
4	HDMI IN Connector	Connect to the source
5	Micro USB Port	Used to import graphic images
6	TEST Button	Press for 5 seconds to reset the IP address to its default value. Press briefly to enter the test pattern mode. The input signal is replaced with a test pattern at 1080p. Press briefly again to cycle between available test patterns or return to the input signal. Test pattern mode is useful for initial setup of the system
7	HDMI OUT Connector	Connect to the display
8	5V DC	+5V DC connector for powering the unit



Figure 2: VCO-8 and VCO-16 Front Panels

#	Feature	Function
1	INPUT LED	Lights when an input signal is active; flashes slowly when no input signal is detected
2	LOOP LED	Lights on the looped device when a looped signal is in use
3	OUTPUT STATUS LEDS	Lights when an output signal is active
4	USB CONNECTOR	Used to import graphic images





Figure 3: VCO-8 and VCO-16 Rear Panels

#	Feature	Function
1	INPUT HDMI Connector	Connect to the source
2	LOOP HDMI Connector	Connect to a machine to daisy chain additional displays
3	OUT HDMI Connector	Connect to the displays from 1 to 8 (VCO-8); from 1 to 16 (VCO-16)
4	SETUP DIP-Switches	For setting the Last number in the machine LAN IPv4 address (see Section 8.1.1)
5	RESET Button	Press for 5 seconds to reset the IP address to its default value. Press briefly to enter the test pattern mode. The input signal is replaced with a test pattern at 1080p. Press briefly again to cycle between available test patterns or return to the input signal. Test pattern mode is useful for initial setup of the system
6	ETHERNET Connector	Connects to the PC or other serial controller through computer networking
7	Power Connector with Fuse	AC connector, enabling power supply to the unit

VCO-1, VCO-8, VCO-16 - Installing the VCO-8 and VCO-16 in a Rack

4 Installing the VCO-8 and VCO-16 in a Rack

This section provides instructions for rack mounting the unit.

Before installing in a rack, be sure that the environment is within the recommended range:

OPERATING TEMPERATURE:	0° to +40°C (32° to 104°F)
STORAGE TEMPERATURE:	-40° to +70°C (-40° to 158°F)
HUMIDITY:	10% to 90%, RHL non-condensing

CAUTION!

When installing on a 19" rack, avoid hazards by taking care that:

 It is located within the recommended environmental conditions, as the operating ambient temperature of a closed or multi unit rack assembly may exceed the room ambient temperature.

2. Once rack mounted, enough air will still flow around the machine.

3. The machine is placed straight in the correct horizontal position.

4. You do not overload the circuit(s). When connecting the machine to the supply circuit, overloading the circuits might have a detrimental effect on overcurrent protection and supply wiring. Refer to the appropriate nameplate ratings for information. For example, for fuse replacement, see the value printed on the product label.

5. The machine is earthed (grounded) in a reliable way and is connected only to an electricity socket with grounding. Pay particular attention to situations where electricity is supplied indirectly (when the power cord is not plugged directly into the socket in the wall), for example, when using an extension cable or a power strip, and that you use only the power cord that is supplied with the machine.

To rack-mount a machine:

1. Attach both ear brackets to the machine. To do so, remove the screws from each side of the machine (3 on each side), and replace those screws through the ear brackets.



2. Place the ears of the machine against the rack rails, and insert the proper screws (not provided) through each of the four holes in the rack ears. Note:

• In some models, the front panel may feature built-in rack ears

• Detachable rack ears can be removed for desktop use

 Always mount the machine in the rack before you attach any cables or connect the machine to the power

 If you are using a Kramer rack adapter kit (for a machine that is not 19"), see the Rack Adapters user manual for installation instructions available from our Web site

5 Connecting the VCO-1, VCO-8, VCO-16



Always switch off the power to each device before connecting it to your VCO-1, VCO-8, VCO-16.

After connecting your **VCO-1**, **VCO-8**, **VCO-16**, connect its power and then switch on the power to each device.



You do not have to connect all the outputs, connect only those that are required.

5.1 Connecting the VCO-8 / VCO-16

To connect the VCO-8 / VCO-16, as illustrated in the example in Figure 4:

 Connect an HDMI source (for example, a media player) to the HDMI INPUT connector.
 Alternatively, you can connect the DVI connector on the DVD player to the

HDMI connector on the VCO-8 / VCO-16 via a DVI-HDMI adapter

- If required, connect a looped HDMI acceptor (for example, from the HDMI LOOP connector to the INPUT of another VCO device), see <u>Section 6</u>.
- Connect the HDMI OUT connectors to HDMI acceptors (for example, LCD displays): 1 to 8 for VCO-8, 1 to 16 for VCO-16.
- 4. Connect the power cord (not shown in Figure 4).
- 5. Connect the ETHERNET port, see Section 8.2.



Figure 4: Connecting the VCO-8 / VCO-16

5.2 Connecting the VCO-1

To connect the VCO-1 as illustrated in the example in Figure 5:

- Connect an HDMI source (for example, a media player) to the HDMI IN connector.
 Alternatively, you can connect the DVI connector on the DVD player to the HDMI connector on the VCO-1 via a DVI-HDMI adapter.
- Connect the HDMI OUT connector to an HDMI acceptor (for example, an LCD display).
- Connect the 5V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in <u>Figure 5</u>).
- 4. Connect the ETHERNET port, see Section 8.2.



Figure 5: Connecting the VCO-1

6 Looping the VCO-8 and VCO-16

In the following example, two **VCO-16** devices are connected via the LOOP connector to produce a 32 port video overlay. One video input is distributed to 32 outputs with individual content overlay set to each of the 32 outputs.

To connect two looped **VCO-16** units with 32 outputs, as shown in the example in Figure 6, do the following:

- 1. On the first VCO-16 unit, connect:
 - A video source to the HDMI INPUT connector (for example, a Blu-ray player)
 - The OUT HDMI connectors to acceptors (for example, displays)
- Connect the LOOP HDMI connector of the first unit to the INPUT HDMI Connector of the second unit.
- On the second VCO-16 unit, connect the OUT HDMI connectors to acceptors (for example, LCD displays)



In the Kramer **VCO** Setup App, each device in the daisy chain has a separate IP address and each of the 32 outputs is given a unique name and can be set with its own specific overlay.

In the same way you can loop an almost unlimited number of devices if HDCP is not in use and up to five devices when HDCP is in use.



When an HDCP source, such as a Blu-ray player or a SAT receiver, is used the number of looped devices may be lower.



Figure 6: A Set of 2 Looped VCO-16 Units

7 Using the Kramer VCO Setup Application

Use the Kramer VCO Setup App to manage and send an overlay to each output.

The **VCO** Setup App allows you to take a template which can include one or more graphic files and a playback program, modify the program and settings if needed, and load the resulting overlay onto specific device outputs.

The graphic files can be prepared with any graphics program such as Adobe Photoshop, Paint.NET and so on. They can include transparency, animation and for the PSD format also editable fields.

With the playback program you can set the size and position of the overlay on the screen and control its movement across the screen as well as its transparency level. Each overlay playback program can be scheduled to appear at certain times and on certain days. You can also control the frequency and rate a playback appears.

This section describes how to:

- Install the application (see <u>Section 7.1</u>).
- Set the application language and add devices (see <u>Section 7.2</u>).
- Create an overlay and manage it (see <u>Section 7.3</u>).
- Create and use a schedule (see <u>Section 7.4</u>).

7.1 Install the VCO Setup Application

To install the VCO Setup App:

- Download the VCO Setup App from our Website at <u>www.kramerav.com/downloads/VCOs</u>
- 2. Open the .exe file. The following message appears:

Open File	- Security Warning
Do you	want to run this file?
	Name:\kramer\Downloads\kramerVCO-SetupV3 (6).exe Publisher: <u>Installog Limited</u> Type: Application From: C:\Users\kramer\Downloads\KramerVCO-SetupV <u>Bun</u> Cancel
☑ Al <u>w</u> ay	rs ask before opening this file
Ì	While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. <u>What's the risk?</u>

Figure 7: Installing the VCO Setup App - Warning

3. Click Run. The following window appears:

Kramer VCO Setup	
	Kramer VCO Setup application
KRAMER	Kramer Electronics, LM. VCO Setup is a support software for the Vide Content Overlay processors (Kramer VCD-xxx), Use Kramer VCD Setus to create, manage, download, set up and load the content overlays to one or many VCO machines. These overlays will then be superimposed over the live video applied to the VCO machine input. The applicaton supports unimited multiple of overlays, templates, machines. The schedule feature enables automatic loading to multiple machines by time.
	It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
	Click Next to continue.
	Next > Cancel

Figure 8: Installing the VCO Setup App – Setup Application Description

4. Click Next>.

License Agreement			_
Please review the license terms befor	e installing Kramer VCO.		
Press Page Down to see the rest of t	he agreement.		
Kramer Electronics Ltd.			*
END USER LICENSE AGREEMENT			
This software end user license agree (the "Licensee") and Kramer Electron license granted by Kramer to the Lice EULA provides a license to use the So lability disclaimers. Read this EULA c agree", you are confirming your acce	ment (this "EULA") is an agre ics Ltd. ("Kramer") which set ensee as to the Software (as oftware and contains warran arefully before using the Sof eptance of this license to use	ement between y s forth the terms defined below). 1 ty information an tware. By clicking the Software and	rou of the This d "I t
If you accept the terms of the agreer agreement to install Kramer VCO. Clic	ment, click the check box belo k Next to continue.	ow. You must acc	ept the
I accept the terms of the License	Agreement		
ulisoft Install System v3.0			

Figure 9: Installing the VCO Setup App - Legal info

5. Check for acceptance and click Next>.



Figure 10: Installing the VCO Setup App - Setting the Destination Folder

 Check the destination folder and change if needed then click Install. The software is installed:



Figure 11: Installing the VCO Setup App- Installing the Software

	Completing Kramer VCO Setup
	Kramer VCO has been installed on your computer. Click Finish to close Setup.
KRAMER	(V) Bun Kramer VCO

Figure 12: Installing the VCO Setup App – Installation is Complete

7. Check Run Kramer VCO Setup and click Finish.

Kramer VCO Setup v3.191		
Overlays	Scheduling	Setup & About
My Overlays:		
Al Overlays		
light-click to manage a folder or overl	ay kem	

The Kramer VCO Setup App main window appears:

Figure 13: Installing the VCO Setup App – The Setup & About Tab

VCO Setup App includes three tabs:

- Setup & About Select the application language, manage devices and read the software license agreement and description (see <u>Section 7.2</u>)
- Overlays Create templates and overlays (see <u>Section 7.3</u>)
- Scheduling Schedule the overlays per output (see Section 7.4)

7.2 Setup & About

The Setup & About tab lets you set the language of the application, manage the devices and enable control of the system via an external application.

7.2.1 Setting the Application Interface Language

To change the interface language of the application:

1. Click the Setup & About tab. The Setup & About tab appears:

Select the application language Ch English Menage Devices	Kramer VCO Setup v3.191 Kramer VCO Setup - support software for the video content overing processors (finamer VCO-xxx) Copyright (c) 2016 Kramer Electronics Ltd. All rights reserved.
	Kinner VCD Setup (Rendp) the onlineard) is a support software for the Video Context Overlag processors (Kinner VCD) Use Kinner VCD Setup to context, manager, download, not up and load the Context Overlags to one or enary VCD Setup to context, and the supersystem of one to be for the for- set or enary VCD Setup to context, and the supersystem of one to be the setup of the setup of the setup of the setup of the setup of the setup of the setup of the setup of the setup of the setup of the setup ferralistics. Machines. The Schedule feature enables advances loading to multiple Machines to time. The software is provided by Kramer Electronics. Ltd. (Investig the Owned) under the license listed in EULA. INT (Included in this software foil.
	End User License Agreement (EULA bd)
Enable external application control TCP/IP port to use (default 5000) [1/200] Application ID [1	Kamer Electronics LM END USER LICENSE AGREEMENT The software and user license agreement (his "EULA") is an agreement between you (his License) and classes Electroness LUC (Yaawa") which sets forth the terms of the locaries granted by Komer to the Licenses as to the Software (a defrind bodies). The EULA provide as common to use the Software and contain variously elevation can addibly disclamers. Read this EULA caredy better using the Software (b) cloking "1 agree" you are containing you acceptance of this locaries and agrees to the societe board by the terms of the EULA. Byou do not agree to the terms of this EULA, do not use the Software.

Figure 14: Setup & About Tab

2. Select the application language from the dropdown box.

Select the applicati	on language:
EN English	•
EN English RU Russian	
	Manage Devices
·	

Figure 15: Setup & About - Selecting the Language

3. Restart the VCO Setup App.

The interface language is changed.

7.2.2 Managing Devices

To add a device to the application and manage it:

1. In the Setup & About tab, click Manage Devices.

The Device Wizard opens. The window on the left shows the list of the devices installed (empty in the example in Figure 16).

Device Wizard	
Welcome to Device Wizard Devices installed	KRAMER
Add New Device >	Close Wizard

Figure 16: Welcome to Device Wizard

2. Click Add New Device> to add a new device to the list.

Device Wizard	
Add Device	
Select a method	
C Add and configure a device manually	KRAMER
A 💿 Detect and add device(s) automatically	
Enter the IP address to check:	
192.168.1.39 Default	
Check all IP addresses up to the following:	
192.168.1.254 Default	
<back next=""></back>	Close Wizard

Figure 17: Device Wizard

- 3. Select a method to add a device:
 - Manually, by entering the IP address (if you have the IP address of the device), see <u>Section 7.2.3</u>
 - Automatically, by scanning for IP addresses up to a certain address, see <u>Section 7.2.4</u>.

7.2.3 Add a New Device Manually

To manually add a new device to the list:

1. Check the manual option:



Figure 18: Device Wizard - Add Device Manually



Device Wizard	Rame 21 Mag. suppl' officer to the serie processor frame 21 and	
Welcome to Device Add & Set	up Wizard step-by-step installation process	KRAMER
Select your device model: Kramer VCD-1		
Kramer VCD-5 Kramer VCD-8		
Kramer VCU-16 Kramer VCO-5UHD		
< BACK	Next >	Close Wizard

Figure 19: Device Wizard - Selecting a Device

3. Select a device.

evice Wizard	Rame Hill Mag. capacit address to be on sering procession if they Hill and	
Welcome to Device Add & Se This wizard will lead you through	tup Wizard a step-by-step installation process	K
Select your device model:		(RHAMER)
Kramer VCD-5 Kramer VCD-5 Kramer VCD-15 Kramer VCD-5UHD		
 16-channel Digital Label inserter, Ideal for Screen Price Labels application. Up to FullHD		
< BACK	Next >	Close Wizard

Figure 20: Device Wizard - Device Selected

In this example, VCO-16 is selected.

The window shows a photo and a short description of the selected device.

4. Click Next>.

This window lets you set the IP Address.

Device Wizard	Rame W1 May apport officers to be one seeing processors Rame W2 and	
Connect the Device and Set the IP Ad	ldress	
192.168.1.39		KRAMER
This part of the address is set programmatically	This part of the address is set by DIP switches as shown below	
To reset this, power on the device, then press RESET (or TEST) for 5 seconds	2	
The IP address must: A) Not be used by any other computers and devices in the network; B) Be valid for your network. Consult your system administrator if not sure.	🗍 I want to change the IP address	
< Back	Next >	Close Wizard

Figure 21: Device Wizard - Setting the IP Address



The last part of IP address numbers is set via the DIP-switches on the rear panel of the device (see <u>Section 8</u>).

The first 3 (higher) parts are set via the VCO Setup application.

 To change the IP address, check the "I want to change the IP address" box and click Next>; otherwise click Next>.

Device Wizard	
Device connection & Default IP	
Set the lower number of the IP address (1 to 254) via the DIP-switches:	
192.168.1. <mark>39 🔶</mark>	
Default	
This part of the IP address is set by the DIP-switches as shown below	
DIP settings: 1 1 1 0 0 1 0 0	
☐ I want to change the other part of IP address	
Keack Next>	Close Wizard

Figure 22: Device Wizard – Setting the Lower Number of the IP address.

 Type the lower number of the IP address and view the DIP-switch setup that corresponds to the selected number (also see <u>Section 8.1.1</u>).



To change the IP address of the device requires that it is initially set to its default value.

 To change the other parts of the IP address, check the change address box and click Next>. If you do not want to change the other parts of the IP address, keep that box unchecked and click Next>. 8. Follow the instructions outlined in Figure 23:



Figure 23: Device Wizard - Setting the Higher parts of the IP Address

9. Connect the device as instructed and click Next>.

The following window appears:

Device Wizard Device I	IP address	
Set up the	e high part of IP address 192.168.1 39 Default Enter the high part of the address	KRAMER
< Back	Device will move from address: 192,168,1.39 To the resulting address: 192,168,1.39 Next >	Close Wizard

Figure 24: Device Wizard - Changing the IP Address

10. Change the number, for example, to 192.168.2.39.

Device Wizard	tange Will Mag. Angeor adhees to the object on the processory Ramon Will and	
Device IP address		
Set up the high part of IP address		
192.168.2 39		KRAMER
Default		
Enter the high part of the address		
Device will move from addre	ss: 192.168.1.39	
To the resulting addre	ess: 192.168.2.39	
< Back	Next >	Close Wizard

Figure 25: Device Wizard – Changing the Higher Parts of the IP Address

11. Click Next>. The following message appears:

Changing the IP address
Immediately changing the IP address of the device. Are you sure?
OK Cancel

Figure 26: Changing the IP Address Message

12. Click OK.



You can change the first three parts of the IP Address only if the device is initially set to its default IP address. If the device is not set to its default IP address, you need to first restore the default IP address by pressing the RESET or TEST button for 5 seconds, and then you can change the IP address to the desired value.

Device Wizard	5
Try to Connect to Device (optional)	
Encadar Connect both your computer to LAI Using a crossed patch cord for direct connection is recommended Connect both your computer to LAI Using a crossed patch cord for direct connection is recommended Connect both your use the following IP address 192, 193, 21 Network mask 265, 255, 255, 01	KRAMER
You selected: Test result shows:	
The device type: Kramer VCO-16 - Test	
The IP address: 192.168.2.39 -	
Kext>	Close Wizard

Figure 27: Device Wizard – Changing the IP Address Higher Parts

The application changes the IP address on the machine while it's connected.

Try to Conner	ct to Devic Cor Cor Cor dev dev direct connectio	e (optional) innect both your ice and your public to LAN i patch cond for n is recommended	In your network card TCP/IP properties, set the following: Use the following IP address 192.168.2.1 Network mask 265.265.265.0	KRAMER
	You selected:	Test result shows:		
The device type:	Kramer VCO-16	 VCO-16 s/n 123456789012 version 4.32.1111 	34 Testi	
The IP address:	192.168.2.39	ok		
< Back		[Next>	Close Wizard

13. Click Test! to test the connection or just click Next>.

Figure 28: Device Wizard – Testing the IP Address Change

If you do not wish to change the IP address, you can connect to the device to test the connection (optional) or click **Next>**.

Device Wizard		
Device Ready Device setup is complete. Adding the	device to the list now.	KRAMER
Configured:	Kramer VCO-16	
Choose a unique logical name for the device (up to 5 numbers or latin letters). The name will be automatically linked with the output number (multiple names for a multi-output device)	Image: 039 Set Recommended Name Resulting name(s): Image: 03916 Image: 03916 Image: 03916	
Enter a short description (up to 30 chars, for your convenience)		
< Back	Finish. Add Device >	Close Wizard

The device is ready to use the application.

Figure 29: Device Wizard Setting the Recommended Name

You can set a name for the device (up to 5 characters) or you can set the recommended name (using the last digits of the IP address. In this example, the device name is 039 and each output is numbered in sequence: 03901, 03902, and so on). You can also add a short description to this particular device:

Device Wizard		5	
Device Ready			
Device setup is complete. Adding the	device to the list now.	KRAMER	
Configured:	Kramer VCO-16		
Choose a unique logical name for the device (up to 5 numbers or letters). The name will be	Set Recommended Name	039	
automatically linked with the output number (multiple names for a multi-output device)	Resulting name(s):	03901 to 03916	
Enter a short description (for your convenience)	Retail store showroom		
< Back	Finish	Add Device > Close Wizard	

Figure 30: Device Wizard - Set the Device Name

14. Click Finish. Add Device>.

Device Wizard				5
Welcome to Device W Devices installed 03901 03916	izard			RAMER
		Add New Devic	38>	Close Wizard

Figure 31: Device Wizard - Device Installed

15. Select a device to view its details:

Device Wizard Welcome to Device	Wizard		
Devices installed: (0390) 03915	Selected device properties: Model (Kanner VCD-16 Brief: [16 outputs, FulHD] IP Adders: [192-168-1.39 Device outputs lint: Charge for the second	Test connection	KRIAMER
		Add New Device >	Close Wizard



In the same way you can add as many devices as required.

The final page of the wizard shows the list of the devices that were installed. You can delete a selected device by clicking — below the list. This page shows the properties of the selected device and lets you change each individual output name. You can test the connection to the machine at this point.

7.2.4 Adding a Device Automatically

You can detect a device automatically by searching for a specific IP address on the Network or by scanning a range of IP addresses. To add a device automatically:

 In the Device Wizard check Detect and add device(s) automatically. Choose either to search for a specific IP address or scan a set range of IP addresses to detect connected devices.

Add Device Select a method	Device Wizard		Served Served
Select a method Add and configure a device manually Add and configure a device manually Create the IP addees to check: 12 tele.1.39 Create the IP addeeses up to the following: 12 tele.1.254 Default Default	Add Device		
Add and configure a device manually Add and configure a device manually Center the IP addees to check:	Select a method		
Enter the IP address to check: 192.568.1.39 Defx.at Check all IP addresses up to the following: 192.166.1.254 Defx.at	Add and configure a device manual	ty altv	KRAMED
192.168.1.39 Default ICP [Check all IP addresses up to the following] 192.166.1.254 192.166.1.254 Default	Enter the IP address to check:		
Check all IP addresses up to the following: 192.1661.254 Default	192.163.1.39	Delault	
192.168.1.254 Default	🖓 [Check all IP addresses up to the	following	
	192.160.1.254	Delault	
	< Back	Next>	Close Wizard

Figure 33: Device Wizard - Automatic IP Address Detection

2. Click Next>.

If an IP address range is defined, multiple VCO devices may be found during the scan.

Device Wizard		Contraction of Contra
Add Device: Automatic I	Mode	
Scanning		
Found the following d	evices:	KRAMER
Ch	ecking the IP address: 192168.2.54	
	Stop Scanning	
< Back	Add the Checked D	evices 7 Close Wigard

Figure 34: Device Wizard - Searching for an IP Address
3. Click **Stop Scanning** once the expected devices are found.

Device Wizard		
Add Device: Scanning is ov	Automatic Mode er. Check the devices to install	K
	Found the following devices:	
	☑ 192.168.2.39 Kramer VCO-16	
	Checking the IP address: 192.168.2.92	
l	· · · · · · · · · · · · · · · · · · ·	
< Back	Add the Checked Dev	close Wizard

Figure 35: Device Wizard – Device IP Address Detected

4. Click Add the Checked Devices>.

The selected device shows its properties and output names.

Devices installed:	Selected device properties:		
03901 03916	Model: Kramer VCO-	16 Test connection	KRAMER
	Brief: 16 outputs, F	uIHD	
	IP Address: 192.168.2.35		
	Selected the device outputs list:		
	Change the 1. out1	<u> </u>	
	selected name 2. out2 3. out3 4. out4	=	
	4. 004 5. out5 6. out6	-	
	? 0. 0010 7. 0017 8. 0018		
	9. out9	-	
	10. OUTO		

Figure 36: Device Wizard - The Device Details (following Automatic Scan)

7.3 Setting the Overlays

The Overlay tab lets you prepare overlays to use with your **VCO** devices to send to the individual outputs of the device.



You do not need to connect to a device to set the Overlays.

Specific tasks can be performed by right-clicking each file or folder in the Overlays tab and selecting one of the context-sensitive menu options:



Figure 37: Setting the Overlays - Right-Clicking the All Overlays folder

Select	То
Сору	Copy an overlay
Paste	Paste an overlay
Create folder	Create new folder
Add new overlay	Create an overlay using an existing template
Create a new overlay	Create a new template for an overlay and then immediately create an overlay with this template
Duplicate Overlay	Duplicate an overlay
Edit the overlay template	Edit an existing overlay template
Rename	Rename an overlay or overlay folder
Delete	Delete an overlay or overlay folder
Undo	Undo the last action

Click + to add an overlay based on an existing overlay template and adjust it to your needs. Click ++ to create a new overlay. The overlay will be added to the My Overlays list.

7.3.1 Adding an Overlay from an Existing Template

To add an overlay from a template to the My Overlays list:

- Drame VCO Schop v1312

 Overlays
 Scheduling

 By Overlays:
 Image: Colored and Col
- 1. Click the Overlays tab. The Overlay tab appears:

Figure 38: Setting the Overlays - the Overlay Tab

- 2. Right-click the All Overlays folder.
- Select Create folder and type its name in the Create a new folder window (Birthday events in this example):



Figure 39: Setting the Overlays – Create a New Folder

The new folder is added to the list:



Figure 40: Setting the Overlays - New Folder Added



You do not need to add the new overlay to a new folder and you can just add an overlay to the main folder.

 Click + or right-click the Birthday events folder and select Add new overlay. The following window appears:

Add new Overlay	x
Overlay will be created in folder: Birthday events Overlay name (short): My description of this overlay:	
Select a template for your overlay: All Template Examples Tk.Logo Tk	Selected template description/preview:
B JULIES	
Launch Templates Wizard	
	Cancel

Figure 41: Setting the Overlays - the Overlay Tab

 In the Examples Folder select Advertisement1. The following window shows the name of the overlay template, recommends the optimal screen size for this template, and describes its features:

Add new Overlay	
Overlay will be created in folder: Birthday events	
Overlay name (short): Advertisement1	_
My description of this overlay:	
Select a template for your overlay:	Selected template description/preview: Optimal for screen: 1920 x 1080 /60
T Kame Logo totaing and moving along screen borde T Moritor (Tamail context for exhibition Moritor) (Taigl) context for exhibition T Moritor3 (mid) context for exhibition T mew	Sample multi-content demonstration for an Aexhibition.
Notifing Subitles	
Moving screen width 1 line Moving screen width 1 line, 2 parts alternate m	01.1071
Launch Templates Wizard	DL STAND
	A subtitile of any kind
	Cancel Create

Figure 42: Setting the Overlays - the Add New Overlay Window

You can give the overlay a new name and add a description of the overlay:

Add new Overlay	×
Overlay will be created in folder: Birthday events	
Overlay name (short): Birthday	_
My description of this overlay: Pizza and cake	
Select a template for your overlay:	Selected template description/preview: Optimal for screen: 1920 x 1080 /60
Koner Logo rotating and moving along screen borde Monitol (mail) content for exhibition Monitol (mail) content for exhibition Monitol (mid) content for exhibition KLogo Monitol (mid) content for exhibition Monitol	Sample multi-content demonstration for an exhibition.
	Cancel

Figure 43: Setting the Overlays – Add a New Name and Description

6. Click Create.

Overlays Schedulin	9	Setup & About
hy Overlays:	Overlag actings No settings available for this overlag.	
light cách, to manage a liabhr or overlay kens . Jarrent overlag properties tarbhag		Pupback O Device is office Land overlap to device P Pay after load
Image: Second case Second case Image: Second case Second case Second case Second case Second case Second case Second case		Ever Parent Store Not loaded

Figure 44: Setting the Overlays - The Overlay Added to the Overlay List

After adding the overlay, the overlay properties list shows the Overlay name, the description (which can be added) and the original template location (click Info to display the template summary and edit it if needed – via the template wizard, see <u>Section 7.3.2</u>):

Template details	x		
Template in use - description/preview:			
Optimal for screen: 1920 x 1080 /60			
Sample multi-content demonstration for an 🔺			
	Ŧ		
HELLO PIZZA LOVERSI			
A subtitile of any kind			
Edit this template			

Figure 45: Setting the Overlays - Template Details

- 7. Bind the machine as follows:
 - Make sure that that the devices to which you want to add the overlays are installed (see <u>Section 7.2</u>).
 - Each overlay in the My Overlays list can be loaded to a specific output of a specific device. Therefore for each output on a device(s) you need to create a duplicate of the overlay.

To do this, select the overlay to duplicate in the My Overlays list and click **Duplicate overlay** in the right-click menu.

Bind Ove	erlay to Device	×
003901 - ou 003902 - ou 003903 - ou 003904 - ou 003906 - ou 003906 - ou 003909 - ou 003909 - ou 003909 - ou 003909 - ou 003910 - ou 003911 - ou 003912 - ou 003913 - ou 003913 - ou	H01 H02 H03 H04 H05 H05 H06 H07 H07 H07 H07 H07 H07 H07 H10 H11 H12 H12 H13 H13 H13 H13 H13 H13 H13 H13 H13 H13	A H
KRAMER V0 192.168.1.3	CO-16 9	
	Cancel	ОК

Figure 46: Setting the Overlays - Bind Overlay to Machine

For some overlays you may need to enter the Overlay settings, which are specific per overlay, as illustrated in the following example:

8. Set the text, the background and background variation, the colors and other information.

Overlays Scheduling		Setup & About
My Overlags: •• • • AD Overlags • Exhibits weeks • Still cosen lade. 2 lines scrolling alternate	Overlay settings 1. You test, find live (of two lives) [Fodge is the day 2. You be described for two lives) [Select the background for the test. Select two loads ground 4. Select the background Select Two loads ground Constant ground Select Two loads ground Constant ground	Playback
NgH click to manage a folder or overlap item Carrent overlap properties Statis screen fade, a lines scrolling alternate Overlap description: Edit Overlap template Union Socialities/Still screen fade, 2 lines scrolling alternate Bond to device Etim Statis Statis Carrent Not rendered yet Statis Cardor com		O Dence or other Load crowing for dence or other Prevalue load O Prevalue load O Prevalue O Prevalue O Prevalue O Prevalue Not loaded

Figure 47: Setting the Overlays - the Overlay Settings

9. Click Render now to render the image and show it.

The following message appears:



Figure 48: Setting the Overlays - Building Overlay Message

10. Click OK.

Overlays Scheduling		Setup & About
aty Overtays: ••• • ■ Al Overtays: ••• • Bindays events Bindays events Bindays Bindays events Bindays e	Overlay settings 1. The Name of the Celebrated person Wendy 2. The Name of the Celebrated person - celour Select: purple 3. Notification or greetings under the Celebrated Name Gisterings today of 15 p.m. 4. Notification or greetings - celour Select: ourge w	Bayback
Bight-click, and use content menu to manage overlays and folders Current Overlay properties Balloons with My dencipion for the Overlay: Edd Bittles amouncement for party in room 1 Template used for the Overlay: Indo Events life: Hodges/Balloons Binded to DL Machine: Bind Pard 2016-00-07 00:4222 Show Events row	Movement & Transamory Save Diverse sellings	Load Overlay to DL Machine V Play after load Degree Page Degree Building Overlay inagers hon ternolate Sets Net loaded

Figure 49: Setting the Overlays - Rendering the Overlay

11. Click Show Rendered to view the Overlay:



Figure 50: Setting the Overlays - View of the Overlay

7.3.2 Adding a New Overlay Based on an New/External Template

To add a new overlay based on an external template:

1. In the Overlays tab (see Figure 37), click +.

Add new Overlay	X
Overlay will be created in folder: Birthday Events Overlay name (short);	_
My description of this overlay:	
Select a template for your overlay: All Templates Examples K-Logo Nothing Subbiles	Selected template description/preview:
Launch Templates Wizard	
	Cancel

Figure 51: Adding a New/External Template - Launching the Template Wizard

2. Click Launch Templates Wizard. The Template Wizard appears:



Figure 52: Adding a New/External Template – Template Wizard

The template wizard lists the available templates within the application. You can right-click a template to edit it rename or delete it. The template that is edited then appears in its new format in the overlay template list (as in Figure 41)

select a template to edit:			Selected template description/preview:	
Air remplates Advertisements Examples Shit		Î	Sample multi-content demonstration for an A	KRAMER
Advertime Kamer	Сору	Ctrl+C		
Monito	Paste	Ctrl+V		
T Monito	Create folder Create template here			
T Monitor3 (mid)	Edit template	Ctrl+E	DUDTI BUDIT	
<	Rename	F2	6331 1307 USBAY	
nigricalek to manage a t	Delete	Del		Get READY-TO-U

Figure 53: Adding a New/External Template – Available File Operations

Right-click a template folder to create a new folder, create a new template (see <u>Section 7.3.3</u>) and perform other operations.

Welcome Select a templ	to Template Wizard		Selected template description/preview:	
All Template	3			KRAMER
B	Сору	Ctrl+C		
	Paste	Ctrl+V		
Mc	Create folder			
■ No	Create template here			
	Edit template	Ctrl+E		
	Rename	F2		
	Delete	Del		
Bight-click to u	Restore the deleted My Tem	plate		<u>^</u>
_				Get READY-TO-US Template

Figure 54: Adding a New/External Template – Available Folder Operations

3. Click Get-READY-TO-USE Template to select a template source:



Figure 55: Adding a New/External Template - Ready-to-Use Template - External Source

 Select From an existing folder (the Web site source is currently unavailable) and click Next>:

Cet ready-to-use template	folder	
Select a source folder with a ready-to-use template:	Folder template description/preview:	KRAMER
Ready-to-use template found: First, select a folder		
		X
< Back	Accept, Add Template >	Close Get Ready Wizard

Figure 56: Adding a New/External Template - Selecting the Folder

5. Click Select folder to choose an external template within that folder:

Browse for Folder	x
Select a folder with ready-to-use template	
⊿ 퉬 _Templates_	
Advertisements	
Events	
a 📙 Examples	
🔋 🔋 8bit	
Advertisement	1
📔 Kamer Logo ro	ta
Monitor 1 (smal	0
Monitor 2 (big)	o
Monitor3 (mid)	C 🛨
· · · · · · · · · · · · · · · · · · ·	
OK Cance	el 📄



6. Click OK.

Get ready-to-use template	folder	
Select a source folder with a ready-to-use template: Select folderMonitor3 (mid) content for exhibit	Folder template description/preview: Optimal for screen: 1920 x 1060 /50 Sample multi-content demonstration for an A	
Ready-to-use template found: Found template, with the following graphic files to play: price 3up	Sangle IV shop price label - horizontal Jayout.	
< Back	Accept, Add Template > Close Get Re Wizard	× sady

Figure 58: Adding a New/External Template – Available Operations

7. Click Accept, Add Template> to add the new template.

The new Template and its description are added to the list of available templates. And you can use it, edit it and so on.

Template Wizard		
Welcome to Template Wizard Select a template to edit:	Selected template description/preview;	
Al Templates Al Templates Al Templates Complete The Examples The Examples The Analysis of the Analysis of the Analysis Substates	Optimal for screen: 1520 × 1080 /60 Sergie multi-content demonstration for an exhibition: Sample TV shop price label - horizontal layout:	KRAMER
Right-click to manage a folder or overfay item		Get READY-TO-USE Template

Figure 59: Adding a New/External Template – New Template Added

You can get a new external template or close the Wizard.

7.3.3 Creating an Overlay Template

To create an overlay template:

 In the Overlays tab (see Figure 37), right-click the All Overlays folder and click Add overlay from scratch or click ++.





2. Type the name of the new overlay and click **OK**.

A new overlay is created based on a new template, so you need to create a new template for this overlay – thus, the Template Wizard window appears:

	olay Resolution		
ou are editing the template			
Automatic Templates	ew Template		
elect the target display res	olution for this template:		CREAMEN
	Target display resolution: 1920x1080 (1080p. FulHD)		
	Refresh rate (Hz): 60 (59.9) * 💌		
It is important that you select the rate to ensure the correct locali correct animation sequence an software)	correct display resolution and refresh or of the overlay graphics and the litring (as created by your animation	∲ →→	

Figure 61: Template Wizard – Setting the Resolution

Selecting the appropriate resolution ensures that the overlay is located correctly on the screen, and that the animation and timing appear as programmed.

Click <Back or Close Wizard to cancel the process.

2. Click Resolution OK, Next>. The following window appears:

Template Wizard	
Add Graphics	
Automatic Template:	
	KRAMER
Graphics included in this template:	
+ Edit 🔿 ?	
< Back Graphic Files OK, Next >	Close Wizard

Figure 62: Template Wizard - Adding and Editing Window

2. Click + to add an image, animation and so on. The file format window appears.

Template Wizard	
Add graphics You are editing the template: Automatic TemplatestNew Template Choose one of the following file formats to add: © PSD - Photoshop Document © GIF - Graphic Interchange Format © DIG - Partial Malanda Graphics without animation (static)	KRAMER
FING i Fondace newsion anigenes - window animater (robor) FING Animation - animation sequence (several PNG files) C JPG, JPEG - any photo or other image	
PSD is the most versatile format on the list and can include editable fields and settings. PSD supports animation and transparency.	
< Back Next >	Close Wizard

Figure 4: Template Wizard – Select a File Format

3. Select a file format, for example, PNG. The capabilities of each format are described for each selection.

Template Wizard	
Add graphics	
You are editing the template:	
Automatic Templates/New Template	
Choose one of the following file formats to add:	KRAMER
C PSD - Photoshop Document	
C GIF - Graphic Interchange Format	
 PNG - Portable Network Graphics - without animation (static) 	
C PNG Animation - animation sequence (several PNG files)	
C JPG, JPEG - any photo or other image	
PNG supports transparency. You will be allowed to Crop, Hotate, and Scale your image.	
< Bank Nevt >	Close Wizard

Figure 4: Template Wizard – Adding Graphics

4. Click Next and select a file. The selected PNG appears:



Figure 63: Template Wizard - Editing the PNG graphic

 If required, use the Rotate and Mirror buttons to rotate and mirror the image, respectively. Click and drag the blue markers around the image to crop the image.

When using a JPG format, you can also set a transparent color and use transparency. When using a PNG format, the transparency implemented in the PNG file itself is supported (created via an external editor program).

6. Click Next Settings>.

This window lets you resize the image, with respect to the screen size. **VCO** devices can manage images that are up to 200% of the screen size (horizontally, vertically or both).

Template Wizard		
Add Graphics – Resizing Options You are editing the template: Automatic TemplatestNew Template Resize the image, if required.	Current screen resolution 1920 x 1080 Current graphics size 455 x 284 Resized/corped graphics will be 874 x 545	KRAMER
The box on the right represents the image size with respect to the selected display resolution. Use the slider to resize the image.	192%	
Jitoiney	Image size:	
< Back	JPEG File OK, Add >	Close Wizard

Figure 64: Template Wizard – Resizing Options

7. Click JPEG File OK, Add>.

Template Wizard		
Add Graphics You are editing the template: Automatic Templatestiter	v Template Graphics included in this template:	KRAMER
< Back	Graphic Files DK, Next >	Close Wizard

Figure 65: Template Wizard – Adding Graphics

8. Add another file, refresh the list, edit a file (via an associated external editor) or delete it if needed.



If there is no graphic application associated with a selected graphical format (for example, if you don't have any editor for the PSD format), the edit button will have no effect. If you want to edit the graphic, you need to install the appropriate program.

9. Click Graphic Files OK, Next>.

Template Wizard	Liberations offer	
Create Playback Pro You are editing the template: Automatic Templates/New Use the playback program to pl across or beyond the screen. Y	Digram Template ace the template graphic(s) statically over the screen or define movement ou can also change its transparency level. Launch the playback program editor	KRAMER
< Back	Next >	Close Wizard

Figure 66: Template Wizard – Create Playback Program

 Click Launch the playback program editor. Set the movement and transparency (see <u>Section 7.3.4</u>) and then click Next>.
 Add a description of the template and view, select or edit the template preview.

Templa C Ye	te Wizard Create Templat ou are editing the temp Automatic Template	e Description and P late: ssWew Template(1)	review		KRAMER
	Add a d	escription to this template		Template preview:	
	Monkey	vs Hanging out	*	Select image Edit this picture	
	< Back			Template Created	Close Wizard

Figure 67: Template Wizard - Add Template Description and see Preview

11. Click Template Created.

The template is created, and the overlay (with the name assigned in the first step "New Template") is also automatically created and added to the All Overalys list, in the selected folder.



Figure 68: New Template Added

 Click Movement & Transparency to program the overlay (see <u>Section 7.3.4</u>).

7.3.4 Movement and Transparency

The Movement & Transparency window lets you create and edit a template or an overlay program.

- When used for a template, this window defines the default playback for that template. Any overlay created from this template will have this program
- When used for an overlay, this window lets you edit the playback template for this specific overlay, resulting in an overlay program that is different from its template program

You can create multiple overlays from a template, each with different settings and playback programs. Once prepared, you can load these overlays to **VCO** devices manually or via the scheduling feature (see <u>Section 7.4</u>).

The following example shows how to edit an overlay program (template program editing is identical).

After setting the overlay, click **Movement & Transparency** (see Figure 49) to set the movement and the transparency of that overlay. The Program Editor window lets you set the movement of the overlay on the display and the transparency of each image in the movement sequence.



Figure 69: Setting the Movement and Transparency - the Program Editor

The image files that are available for this template appear on the left side. You can select a file from the list to add to the Program Edit window on the right side of the window. The left lower side shows the preview of the selected image (an image is available only after it is rendered via the Render now button, see Figure 68, or after it is loaded to a **VCO** device).

On the right side of the window you can manage the movement and the

transparency of the overlay.

Select	То
Target screen resolution and refresh	Select the resolution and refresh rate for the specific output display to which the overlay will be sent.
rate	It is very important to select the appropriate resolution and refresh rate to view a high quality overlay over the screen.
Display area	Shows the display area with respect to the selected resolution and a smaller STAT/ANIM area (STAT for static images/ANIM for animation) representing the overlay image.
Program edit list	Lists the overlay images. Each image on the list incorporates its specific location and transparency level, as well as its connection to the previous and next image on the list.
	The sequence of images in the list corresponds to the sequence these images will be presented on the screen (one by one). When the list sequence ends, the whole program will repeat itself cyclically. Using the Movement, Repeat and Delay options allows setting the time each
	image appears and thus the overall length of the program. You can move an image position inside the list using the Up and Down buttons below, duplicate an image (with all its attributes), remove an image or insert a blank (having the image disappear).
Position, transparency, animation	Position: Set the top (vertical) and left (horizontal) position of the overlay image. When used with the Movement option, defines the position to which the image arrives.
	Transparency : Set the overall transparency of the image. When used with the Movement option, defines the final transparency level of the image. For example, when used with the movement option, the image can move across the screen, appearing gradually on the screen (from 100% to 0 transparency)
	Suppress animation at position: If the overlay is animated (for example, flickering candles), you can disable that animation when the image stays in its final position (only the first frame of the animation is displayed). In this case, use the Delay option to setup the show-time of the image. Otherwise it will be displayed only briefly.
Movement	To create a smooth movement from one image to another, check Move from the previous image. This will also smoothly change the transparency level. Once checked, set the movement duration (in seconds).
	You can stop the animation while the image is moving from one point to the next.
Repeat and delay	Check the box to have the overlay repeat itself (valid for animated images only). Set the number of times the overlay repeats itself. A delay following a playback allows for a static image (or the last frame of an animated image – upon completion of the set number of repetitions) to additionally appear in its final position.
Undo changes	Undo the changes revert to the last saved program.
Restore program from template	Used for overlays only. The program will be restored from the template used for this overlay. Changes that you made manually for this particular overlay are lost after restoring from the template.
Don't save, Close	Exit without saving
Save program	Save the program without exiting (a red star appears for unsaved changes)
Save Program & Exit	Save the program and exit (a red star appears for unsaved changes)

7.3.5 Overlay Program Example

The following example shows a sequence of four images moving across the screen:

The image appears below the screen and it's 100% transparent:



The image moves upwards. It appears gradually (60% transparency) and moves smoothly from the previous point (Move from previous image is checked) within 2 seconds:



The third image is not transparent (0%) and within 5 seconds move from the previous to the current position.



The image fades out of the screen.

Targat scseen verschliter. Refrech sate (Hz)	1920-1000 (1000), Fu#(0)
Programme ndit hoppy birthday balloom, sample hoppy birthday balloom, sample hoppy birthday balloom, sample neggy birthday balloom, sample	Position, transparency, animation $ \frac{\begin{bmatrix} 5.29}{1307} \\ 1307 \end{bmatrix} Cep. Diversit transparency ($) To Suppose animation of position for animated only)$
alpha=82 delay=20.00 movefrom=2.00 xy=1307,529	Movement Move from the previous image [200 **] Movement duration (second) I'' No animation while moving flor animated only)

7.4 Scheduling the Overlays

Once an overlay is loaded to an output of a Kramer **VCO** device, it will keep playing on that input until a different overlay is loaded to that device/output (you can manually play, pause or stop an overlay).

The Scheduling feature lets you load overlays to devices and create playlists which automatically load lists of overlays to one or many **VCO** devices. This enables the creation of complex scenarios for multiple pre-configured overlays to load to one or many VCO devices according to a predefined schedule.

Playlist: a playlist includes a list of events that will play according to a predefined schedule. You can create multiple playlists. Each playlist is given a specific name.

Event: the event includes a list of overlays that can be bound to different **VCO** outputs. Each event can have multiple overlays. An Event is part of a playlist and can be scheduled and repeated as needed.

For example, a store playlist that includes two events, one for opening hours and the other when the store is closed (they can be called Day and Night). The **VCO** device includes eight outputs and all of them show the same images during opening hours and other images for when the store is closed. Each event includes a list of overlays that are scheduled to play at the appropriate time (this can happen at certain days in a week, at certain time each day, and so on).

There is no limit to the number of overlays that are included in an event and to the number of events that can be included in a playlist.

You can schedule an event after configuring the overlays and binding them to the outputs of **VCO** devices. If you need an overlay to be loaded to several **VCO** devices (outputs), you need to duplicate these overlays and bind them to other devices (outputs).



We recommend that you logically create folders and subfolders in the My Overlays list for the different overlays and outputs to make it easy to navigate between duplicate overlays.

To schedule an overlay:

- 1. Select the Scheduling tab. The Scheduling tab appears.
- Click + next to My Playlists to add a new playlist name. The Playlist name appears under My Playlists:

ovenays				Se	tup & Ab	out
Ny Overlays: •• • Al Overlay: Subday events The meanspraces The meansp	☐ Enable scheduled execution of the playfist Event log:		C 20 Si	17-01-22 inday	15:04:29	
Template-weekend specials	My Playlists	_				
	The Store	•		Rename	Duplicate	
	My events in this playlist:					
		*		Rename	Duplicate	-
urrent overlay properties						
na range occordo manage description: Edit Info Subtitien Still screen fade, 2 lines scrolling alternate ound to device. End State						

Figure 70: Scheduling Tab

3. Add an event to the playlist:

Overlays Scheduling		Setup & About
Ny Overlays: • • • Al Overlay: - Brithday events - message closed - message closed - message closed - Mew Tenciale closed - New Tenciale coped	Enable scheduled execution of the playlist Event log:	C 2017-01-22 15:05:04 Sunday
T New Template weekend specials	My Plaviists:	
	The Store	Rename Duplicate
	My events in this playlist:	
	Opening Hours	Rename Duplicate -
light-click to manage a folder or overlay item Current overlay properties message closed Dverlay description: Edit	This event properties: My descripton for this event. Edit Overlays to be loaded in this event.	This event scheduling ☐ Enable scheduling
Verligt template. Info South to device Dired outwork out to device out to device	•	
mages rendered 2017-01-22 14:43:54		
Show Bender new	Handrick Bart Aller	1

Figure 71: Scheduling - Adding an Event



You may create as many events as you need. We recommend that you create one event first and then you can duplicate it and make the necessary changes.

 Select an overlay from the My Overlays list and then click + sign below to load overlays to the event:

Overlays Scheduling			S	etup & Ab	ou
Al Overlags: ++ + Al Overlags: ++ + Al Overlags Etitladge events message closed message closed New Tenglate coend New Tenglate coend	☐ Enable scheduled execution of the playfet Event log:	с 	2017-01-22 Sunday	15:10:17	
 New Letifiete weekend special. 	My Playlists:	-			
	The Store		Rename	Duplicate	-
	My events in this playlist:				
	Opening Hours	• •	Rename	Duplicate	-
light click to manage a folder or overlay item Current overlay properties nessage-open Ivelay desception Edit Ivelay template.	This event properties: My description for this event: Edit Overlays to be loaded in this event: 1. message open 2. New Template-open		This event sch	eduling veduling	
lound to device. Bind 03982 out2 mages rendered. 2017-01-22 14.42.54	•				

Figure 72: Scheduling - Adding Overlays to the Event

Each overlay in an event is bound to a unique output of a **VCO** device, and when this event is activated, this overlay runs in the specific output. If, for example, two overlays that are bound to the same output appear in an event, a conflicting message appears.

5. Click Save Event.

6. Click Fire Event Now to make sure that the event list is OK.

Overlays	Scheduling			Setup & About
My Overlays: All Overlays Binday events The staday events The stad		Event log: 2017/01/22 15:19:22 Minual Opening House	•	2017.01.22 15.18:18 Sunday To render 0, done 0 To prepare 2, done 2 To load 2, done 0 Stris
		My Playlists:		
		The Store		Bename Duplicate -
		My events in this playlist:		
		Opening Hours		Rename Ouplicate -
Right-click to manage a folder or overlay	ðem -	This event properties:		This event scheduling
Current overlay properties liew Template-open		My description for this event.		🖬 Endlerstering
Dvelay description Edi Monkeys Hanging out		Overlags to be loaded in this event: 1. message open 2. New Tenglate open		
Iverlay template: Into Automatic Templates 3 Sound to device:	lew Template(1)			
Bind 03901 out1	-	•	-	
mages rendered 2017-01-22 14:40 Show	47 a b da 34		1	

Figure 73: Scheduling – Firing an Event



You can also use fire event just to load a number of overlays with one click.

Overlays Scheduling				Se	etup & At	ou
An Overlaps: • • •	Finaldie schedulied execution of the playfet	_	C 20 Su	17-01-22 nday	15:16:25	
New Template-weekend specials	My Playlists:	_				
	The Store	*	•	Rename	Duplicate	-
	My events in this playlist:					1
	Opening Hours		•	Rename	Duplicate	-
light-tick to manage a folder or overlay kens current overlay properties message closed livelay discription: 	This event properties: My description for this event: Edit Overlages to be backed in this event. 1. message-scient 2. New Template door.		נננפפננ נ ב	s event sch Enable sch Su Ma Tu We Fr Sa	eduling eduling From 2017/01/22 15:00:52 Once Loop uniti 2017/01/22 15:00:52 15:00:52 repeat Every	
wages rendered 2017-01-2214 43:54				P	oursminutes) 0.01	0

7. Check Enable scheduling to enter scheduling mode (see Section 7.4.1).

Figure 74: Scheduling – Enable Scheduling



Check Event scheduling to fire all the events in the playlist. When unchecking the box, the event ceases to run and can be fired again by checking the box.

8. Click **Save Event** (appears with a red star when there are unsaved changes to the event).

7.4.1 Scheduling Modes

Each event in the playlist can be set to a different mode. The following table defines the available scheduling modes:

Selecting the days of a week

Applies to all scheduling modes.

To set: check the days of the week for the event to fire.

Your event will fire only at the day of the week that is checked.

Uncheck a weekday to prevent firing of an event on that day.



Once, when scheduling mode starts

The event fires once when scheduling mode starts (that is when you check the Enable scheduling execution option).

To set: select Once and uncheck From.

Recommended use: when initializing **VCO** devices with some default overlays, when the whole system starts. For example, for such an event you may configure overlays based on the "Nothing" template (see <u>Figure 41</u>); this configuration will remove any overlay from the **VCO** devices.



Once, at the selected date and time

The event will fire once at the selected date and time. If this date/time is missed, the event will not fire.

To set: Select Once and check From; select or enter the date and time.

Recommended use: any one-time event that is scheduled for the future, such as a wedding announcement: "Wanda and Bill's wedding".





Once, every day

The event will fire every day at the selected time.

To set: Select **Once**, check **From**, uncheck the date and enter the time.

Recommended use: any everyday event, such as the opening of a store, or a lunch break, or the start of an evening show, and so on.

In this example, the event will fire each day at 13:49:26.

Repeat, since scheduling is started

The event will fire when scheduling mode is started, and then will repeat with a selected period.

To set: Select **Loop**, uncheck **From**, enter the firing rate in **Repeat Every**.

Recommended use: any repeated event, for which a start time or date are not important. This mode is rarely used, as in most cases such an event can interfere with other, more deterministic events in the system.

In this example, the event will fire every 1 hour and 20 minutes.

Repeat, from a selected date and time

The event will fire at the selected date and time, and then will repeat at a certain rate. If the selected date was missed, the event will start firing at the selected time of the nearest possible day.

Every other day, the event will re-synchronize itself with the selected time.

This means that, if the selected start time will arrive before the time of firing according to the repeat rate, then the event will fire at the selected time, and the repetitions will re-start from that time.

To set: Select Loop; check From; select or enter date; enter time; enter period in Repeat Every.

Recommended use: any repeated event with no stop time limit. For example, you may interweave this event and another repeated event. Just set these events to different start times (for example, set the first event to 8:00 and the other to 8:30). Set both events to the same repeat rate (1 hour, for example). This will result in altering the overlays from one to another every 30 minutes.





Repeat, until the selected date and time

Same as Repeat (scheduling starts, at the set date and time and repeats at a set rate), but with a stop date and time.

To set: Set any of the above Repeat modes, than select **Loop until** and then select or enter date and time.

When the "Loop until" selected date and time is reached, the event will cease to fire. Note that "Loop until" date and time should be later than the "From" date and time (if in use), otherwise the event will never fire.

Repeat, until the selected time

Same as Repeat (scheduling starts, at the set date and time and repeats at a set rate), but with a stop time.

To set: Set any of the above **Repeat** modes, than select **Loop until**, uncheck date and enter a stop time.

On the next day, it will start firing again (if scheduled), and stop firing at the selected "Loop until" time.





8 Defining an IP Address for a Device

When a static IP address is used, the first three numbers of the address are defined via the labeling software and the fourth number is set by the DIP-switches on the rear panel of the machine (see <u>Figure 75</u>). This is very useful when setting labels for large systems.

Device Wizard		Common State
Connect the Device and Set the IP Add	iress	
Set the default IP address on your device:		KRAMER
192.168.1.39		
This part of the address is set programmatically	This part of the address is set by DIP switches as shown below	
To reset this, power on the device, then press RESET (or TEST) for 5 seconds		
The IP address must: A) Not be used by any other computers and devices in the network; B) Be valid for your network. Consult your system administrator if not sure.	I want to change the IP address	
KBack	Next >	Close Wizard

Figure 75: Setting the IP Address

8.1 Setting a Static IP Address

The first three IP numbers are set via **VCO** Setup Application Machine Wizard (see <u>Section 7.2.3</u>), or via K-Upload (see <u>Section 8.1.2</u>) and the last number is set by the DIP-switches (see <u>Section 8.1.1</u>). You can also set the DHCP mode (see <u>Section 8.1.3</u>)

8.1.1 Using the DIP-Switches

The last IP number is set by the DIP-switches at the rear of the machine (in binary code, 8 bits). Use 8-bit binary code for this number (DIP#1 is LSB, DIP#8 is MSB). Valid numbers are 1 to 254 (default factory setting is 39).

The following are examples of IP address setups of the last number of the IP address (192.168.1.**XXX**):
IP Address (192.168.1.XXX)	DIP-Switch Setup (1=On; 0=Off)					
39	ON 1 2 3 4 5 6 7 8	11100100				
40	ON 12345678	00010100				
41	ON 12345678	10010100				
42	ON 12345678	01010100				
43	ON 12345678	11010100				
44	ON 1 2 3 4 5 6 7 8	00110100				
45	ON 12345678	10110100				
46	ON 1 2 3 4 5 6 7 8	01110100				
47	ON 1 2 3 4 5 6 7 8	11110100				
48	ON 1 2 3 4 5 6 7 8	00001100				
49	ON 1 2 3 4 5 6 7 8	10001100				
50	ON 12345678	01001100				

IP Address (192.168.1.XXX)	DIP-Switch Setup (1=On; 0=Off)			
51	ON 12345678	11001100		
52	ON 1 2 3 4 5 6 7 8	00101100		
53	ON 1 2 3 4 5 6 7 8	10101100		
54	ON 1 2 3 4 5 6 7 8	01101100		
55	ON 1 2 3 4 5 6 7 8	11101100		
56	ON 1 2 3 4 5 6 7 8	00011100		
57	ON 1 2 3 4 5 6 7 8	10011100		
58	ON 1 2 3 4 5 6 7 8	01011100		
59	ON 12345678	11011100		

8.1.2 Restoring the Default IP Address via K-Upload

The first three parts of the IP address can be changed via the **VCO** Setup application. In this case, this part of the address can be changed only after the device is set to its default IP address.

To reset the IP Address:

1. Power on the device, while pressing the RESET (or TEST for VCO-1) button for 5 seconds.

 Follow the Machine Wizard instructions to set up a new address (see Section 7.2.3).

Device Wizard Device IP address	
Set up the high part of IP address 192.168.1 39 Default	KRAMER
Enter the high part of the address	
Device will move from address: 192,168.1.39 To the resulting address: 192,168.1.39	
K Back Next >	Close Wizard

Figure 76: Setting the High Parts of the IP Address

The first three numbers of the IP address are set via the Kramer **K-Upload**. The factory default is set to: 192.168.1.39 (the last number is set via the DIP-switches).

To set the first three IP address numbers do the following:

- 1. Start K-Upload.
- Check that the PC network card is set to the same address pool (for example, to 192.168.1.1) as the known current address of a VCO device.
- 3. In the main window click **Connect**. The Connect window appears.
- 4. Enter the current machine IP number and click **Connect**.

 In the Device Properties area change the first three numbers of the IP address (you do not need to change the fourth number as it is set via the DIP-switches).

Note that you might also need to change the Gateway and Mask.

6. Click Save.

The first three numbers of the IP address are saved.

8.1.3 The DHCP Mode

Some LAN networks may require the use of DHCP mode for the machine. In the DHCP mode, a DHCP server will assign all IP settings to your machine. To set the machine to the DHCP mode set the DIP-switches on the machine to OFF:



00000000

Figure 77: DHCP Mode DIP-Switch Setup

The machine can be identified in the network via its MAC address (which is printed on the label that is attached to the underside of the machine), and by the network name ("KRAMER_xxxxxx", with xxxxxx representing the last 6 hexadecimal digits of the MAC address of this device).

8.2 Operating via the Ethernet

You can connect to the **VCO-1**, **VCO-8**, **VCO-16** via Ethernet using either of the following methods:

- Directly to the PC using a crossover cable (see Section 8.2.1)
- Via a network hub, switch, or router, using a straight-through cable (see <u>Section 8.2.2</u>)

Note: If you want to connect via a router and your IT system is based on IPv6, speak to your IT department for specific installation instructions.

8.2.1 Connecting the Ethernet Port Directly to a PC

You can connect the Ethernet port of the VCO-1, VCO-8, VCO-16 directly to the Ethernet port on your PC using a crossover cable with RJ-45 connectors.



This type of connection is recommended for identifying the VCO-1, VCO-8, VCO-16 with the factory configured default IP address.

After connecting the **VCO-1**, **VCO-8**, **VCO-16** to the Ethernet port, configure your PC as follows:

- 1. Click Start > Control Panel > Network and Sharing Center.
- 2. Click Change Adapter Settings.
- 3. Highlight the network adapter you want to use to connect to the device and click **Change settings of this connection**.

The Local Area Connection Properties window for the selected network adapter appears as shown in Figure 78.

🖳 Local Area Connection Properties
Networking Sharing
Connect using:
Intel(R) 82579V Gigabit Network Connection
Configure This connection uses the following items:
Description TCP/IP version 6. The latest version of the internet protocol that provides communication across diverse interconnected networks.
OK Cancel

Figure 78: Local Area Connection Properties Window

- Highlight either Internet Protocol Version 6 (TCP/IPv6) or Internet Protocol Version 4 (TCP/IPv4) depending on the requirements of your IT system.
- 5. Click Properties.

The Internet Protocol Properties window relevant to your IT system appears as shown in <u>Figure 79</u> or <u>Figure 80</u>.

Internet Protocol Version 4 (TCP/IPv4)) Properties				
General Alternate Configuration					
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.					
Obtain an IP address automatical	ally				
O Use the following IP address:					
IP address:	· · · · · ·				
Subnet mask:	· · ·				
Default gateway:					
Obtain DNS server address auton	matically				
Ouse the following DNS server add	dresses:				
Preferred DNS server:					
Alternate DNS server:					
Validate settings upon exit	Advanced				
	OK Cancel				

Figure 79: Internet Protocol Version 4 Properties Window

Internet Protocol Version 6 (TCP/IPv6) Properties	? 💌			
General				
You can get IPv6 settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IPv6 settings.				
Obtain an IPv6 address automatically				
Use the following IPv6 address:				
IPv6 address:				
Subnet prefix length:				
Default gateway:				
 Obtain DNS server address automatically 				
O Use the following DNS server addresses:				
Preferred DNS server:				
Alternate DNS server:				
Validate settings upon exit	Advanced			
	OK Cancel			

Figure 80: Internet Protocol Version 6 Properties Window

 Select Use the following IP Address for static IP addressing and fill in the details as shown in <u>Figure 81</u>.

For TCP/IPv4 you can use any IP address in the range 192.168.1.1 to 192.168.1.255 (excluding 192.168.1.39) that is provided by your IT department.

Internet Protocol Version 4 (TCP/IPv4) Properties				
General				
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.				
Obtain an IP address automaticall	y			
O Use the following IP address:				
IP address:	192.168.1.2			
Subnet mask:	255.255.255.0			
Default gateway:	1			
Obtain DNS server address autom	natically			
Ose the following DNS server add	resses:			
Preferred DNS server:	· · ·			
Alternate DNS server:				
Validate settings upon exit	Advanced			
	OK Cancel			

Figure 81: Internet Protocol Properties Window

- 7. Click OK.
- 8. Click Close.

8.2.2 Connecting the Ethernet Port via a Network Hub or Switch

You can connect the Ethernet port of the VCO-1, VCO-8, VCO-16 to the Ethernet port on a network hub or using a straight-through cable with RJ-45 connectors.

9 Technical Specifications

Inputs:	VCO-1, VCO-8, VCO-16: 1 HDMI connector (HDMI, HDCP version 1.4), 1 USB port		
Outputs:	VCO-1: 1 HDMI connector (HDMI, HDCP version 1.4) VCO-8: 8 HDMI connectors (HDMI, HDCP version 1.4), 1 LOOP HDMI connector VCO-16: 16 HDMI connectors (HDMI, HDCP version 1.4), 1 LOOP HDMI connector		
Ports	VCO-1, VCO-8, VCO-16: 1 RJ-45 Ethernet port 10/100BaseT		
Bandwidth:	Full HD resolution (1080p60 or 1920x1200)		
Controls	IP address setup DIP-switches, Reset/Test button, Ethernet (VCO Setup App), output status indication LEDs, input indication LED, loop indication LED (for VCO-8 and VCO-16 only)		
Power Consumption:	VCO-1: 5V DC, 800mA max. VCO-8: 100-240V AC, 32VA max. VCO-16: 100-240V AC, 32VA max.		
Operating Temperature:	0° to +40°C (32° to 104°F)		
Storage Temperature:	-40° to +70°C (-40° to 158°F)		
Humidity:	10% to 90%, RHL non-condensing		
Dimensions:	VCO-1: 12cm x 7.1cm x 2.4cm (4.7" x 2.8" x 0.94") W, D, H VCO-8, VCO-16: 19" x 7" x 1U (W, D, H) rack mountable		
Shipping Dimensions:	VCO-1: 15.7cm x 12cm x 8.7cm (6.2" x 4.7" x 3.4") W, D, H VCO-8, VCO-16: 55cm x 27.6cm x 10.7cm (21.6" x 10.9" x 4.2") W, D, H		
Weight:	VCO-1: 0.25kg (0.55lbs) approx. VCO-8: 1.53kg (3.37lbs) approx. VCO-16: 1.7kg (3.74lbs) approx.		
Shipping Weight:	VCO-1: 0.66kg (1.45lbs) approx. VCO-8: 2.42kg (5.3lbs) approx. VCO-16: 2.6kg (5.7lbs) approx.		
Included Accessories:	VCO-1: Power supply unit (5V DC, 4A) VCO-8, VCO-16: Power cord, rack ears, cable bracket, cable plastic ties		
	VCO-1: RK-3T 19" rack mount		
Specifications are subject to change without notice. For the most updated specifications, go to our Web site at www.kramerav.com			

9.1 Default Communication Parameters

Ethernet				
IP Address:	192.168.1.39			
Subnet mask:	255.255.255.0			
Default gateway:	192.168.1.254			
TCP Port #:	5000			
Full Factory Reset				
Reset/Test button	ton While power is switched on, press and hold the RESET (or TEST) button for at least 5 seconds. Set the DIP-switches to 1 1 1 0 0 1 0 0 positions (DIP#1 to DIP#8, 1=on, 0=off).			
Ethernet (TCP/IP) Command Protocol				
Command Format:		ASCII protocol 3000		
Example (Stop playback, and remove overlay from the screen for output 1):		#Y 0,150,0,0 <cr></cr>		

10 Communication Protocol

The VCO-1, VCO-8, VCO-16 Video Content Overlay Solution can be operated using the Kramer Protocol 3000 serial commands. The command framing varies according to how you interface with the VCO-1, VCO-8, VCO-16. In the following example, the firmware version number command is entered as follows:

• Terminal communication software, such as Hercules:

🔆 Hercules SETUP utility by HW-group.com	
UDP Setup Serial TCP Client TCP Server UDP Test Mode About	
Received/Sent data	
#VERSION?~010VERSION 4.43.1111	TCP Port 132.168.1.39 5000 Ping X Disconnect TEA authorization TEA authorization 12.101.020304 3, 090A060C 2, 05060708 4; 000E0F10 Authorization code
	PortStore test
	NVT disable Received test data
Send	
	Send HUDgroup Send Hercules SETUP etility Version 3.0.8

The framing of the command varies according to the terminal communication software. This command is used for demonstration purposes only and its syntax may vary per device.

K-Touch Builder (Kramer software):

Version request' PROPERTIES				
name	Version request	Ø		
data	#VERSION?\x0D	8 2		

• K-Config (Kramer configuration software):

Command Syntax	Display Command as	O Hex	C Decimal	ASCII		
"#VERSION?",0x0D					Set	Clear



All the examples provided in this section are based on using the Kramer K-Config software.

You can enter commands directly using terminal communication software (e.g., Hercules) by connecting a PC to the Ethernet port on the **VCO-1**, VCO-8, VCO-16. To enter CR press the Enter key (EF is also sent but is ignored by the command parser).

Commands sent from various non-Kramer controllers (e.g., Crestron) may require special coding for some characters (such as, /x##). For more information, refer to your controller's documentation.

For more information about:

- Using Protocol 3000 commands, see Section 10.1
- General syntax used for Protocol 3000 commands, see Section 10.2
- Protocol 3000 commands available for the VCO-1, VCO-8, VCO-16, see Section 10.3

10.1 Understanding Protocol 3000

Protocol 3000 commands are structured according to the following:

- Command A sequence of ASCII letters (A-Z, a-z and -). A command and its parameters must be separated by at least one space.
- Parameters A sequence of alphanumeric ASCII characters (0-9, A-Z, a-z and some special characters for specific commands). Parameters are separated by commas.
- Message string Every command entered as part of a message string begins with a message starting character and ends with a message closing character.



A string can contain more than one command. Commands are separated by a pipe (|) character.

The maximum string length is 64 characters.

- Message starting character:
 - # For host command/query
 - ~ For device response
- Device address K-NET Device ID followed by @ (optional, K-NET only)
- Query sign ? follows some commands to define a query request
- Message closing character:
 - CR Carriage return for host messages (ASCII 13)
 - CR LF Carriage return for device messages (ASCII 13) and line-feed (ASCII 10)
- Command chain separator character Multiple commands can be chained in the same string. Each command is delimited by a pipe character (|). When chaining commands, enter the message starting character and the message closing character only at the beginning and end of the string.



Spaces between parameters or command terms are ignored. Commands in the string do not execute until the closing character is entered. A separate response is sent for every command in the chain.

10.2 Kramer Protocol 3000 Syntax

The Kramer Protocol 3000 syntax uses the following delimiters:

- CR = Carriage return (ASCII 13 = 0x0D)
- LF = Line feed (ASCII 10 = 0x0A)
- SP = Space (ASCII 32 = 0x20)

Some commands have short name syntax in addition to long name syntax to enable faster typing. The response is always in long syntax.

The Protocol 3000 syntax is in the following format:

Host Message Format:

Start	Address (optional)	Body	Delimiter
#	Device_id@	Message	CR

• Simple Command – Command string with only one command without addressing:

Start	Body	Delimiter
#	Command SP Parameter_1,Parameter_2,	CR

Command String – Formal syntax with command concatenation and addressing:

Start	Address	Body	Delimiter
#	Device_id@	Command_1 Parameter1_1,Parameter1_2, Command_2 Parameter2_1,Parameter2_2, Command_3 Parameter3_1,Parameter3_2,	CR

Device Message Format:

Start	Address (optional)	Body	Delimiter
~	Device_id@	Message	CR LF

• Device Long Response – Echoing command:

Start	Address (optional)	Body	Delimiter
~	Device_id@	Command SP [Param1,Param2] result	CR LF

10.3 Protocol 3000 Commands

This section includes the following commands:

- System commands (see Section 10.3.1)
- Communication commands (see <u>Section 10.3.2</u>)
- Device-specific P3000 commands (see Section 10.3.3)
- Device-specific Y commands (see <u>Section 10.3.4</u>)

10.3.1 System Commands

Command	Description
#	Protocol handshaking (system mandatory)
BUILD-DATE	Get device build date (system mandatory)
FACTORY	Reset to factory default configuration
HELP	Get command list (system mandatory)
MODEL	Get device model (system mandatory)
NAME	Get machine (DNS) name
NAME-RST	Reset machine (DNS) name to factory default
PROT-VER	Get device protocol version (system mandatory)
SN	Get device serial number (system mandatory)
VERSION	Get device firmware version (system mandatory)
RESET	Reset device (system mandatory)

10.3.1.1

Functions		Permission	Transparency
Set:	#	End User	Public
Get:	-	-	-
Description		Syntax	
Set:	Protocol handshaking	#CR	
Get:	-	-	
Response			
~nn@SP OK	CR LF		
Notes			
Validates the Protocol 3000 connection and gets the machine number Step-in master products use this command to identify the availability of a device			
K-Config Example			
"#",0x0D			

10.3.1.1 BUILD-DATE

Functions		Permission	Transparency	
Set:	BUILD-DATE	End User	-	
Get:	-	-	-	
Description		Syntax		
Set:				
Get:	get device build date	#BUILD-DATE?CR		
Response				
~nn@BUILI	D-DATESPdateSPtimeCR LF			
Parameters				
<pre>date - Format: YYYY/MM/DD where YYYY = Year, MM = Month, DD = Day time - Format: hh:mm:ss where hh = hours, mm = minutes, ss = seconds</pre>				
K-Config Example				
Read the device build date: "#BUILD-DATE?", 0x0D				

10.3.1.1 FACTORY

Functions		Permission	Transparency	
Set:	FACTORY	End User	Public	
Get:	-	-	-	
Description		Syntax		
Set:	Reset device to factory defaults configuration	#FACTORYCR		
Get:	-	-		
Response				
~nn@FACTC	RYSP ok CR LF			
Notes				
This command deletes all user data from the device. The deletion can take some time. Your device may require powering off and powering on for the changes to take effect.				
K-Config Example				
Reset the device to its factory default configuration: "#FACTORY", 0x0D				

10.3.1.2 MODEL

Functions		Permission	Transparency	
Set:	-	-	-	
Get:	MODEL?	End User	Public	
Description		Syntax		
Set:	-	-		
Get:	Get device model	#MODEL?CR		
Response				
~nn@model	SPmodel_nameCR LF			
Parameters				
model_nam	ne – String of up to 19 printable ASCII characteristics	ars		
Notes				
This command identifies equipment connected to Step-in master products and notifies of identity changes to the connected equipment. The Matrix saves this data in memory to answer REMOTE-INFO requests				
K-Config Example				
Get device model: "#MODEL?", 0x0D				

10.3.1.3 NAME

Functions		Permission	Transparency
Set:	NAME	Administrator	Public
Get:	NAME?	End User	Public
Description		Syntax	
Set:	Set machine (DNS) name	#NAMESPmachine_name	CR
Get:	Get machine (DNS) name	#NAME?CR	
Response			
Set: ~nn@N	AMESPmachine_nameCR LF		
Get: ∼ <mark>nn</mark> @ x	AME?SPmachine_nameCR_LF		
Parameters			
machine_na end) the dev	ame – String of up to 15 alpha-numeric c vice will automatically add 6 last Hex digit	hars (can include hyphen, n s of its MAC address to this	ot at the beginning or name.
Notes			
The machine name is not the same as the model name. The machine name is used to identify a specific machine or a network in use (with DNS feature on).			
K-Config Example			
Get device name:			

10.3.1.4 NAME-RST

Functions		Permission	Transparency
Set:	-	Administrator	Public
Get:	NAME-RST	-	-
Description		Syntax	
Set:	Reset machine (DNS) name to factory default	#NAME-RSTCR	
Get:			
Response			
~nn@name-	RSTSPOKCR LF		
Notes			
Factory defa	Factory default of machine (DNS) name is "KRAMER_" + 4 last digits of device serial number.		
K-Config Example			
Reset device name: *#NAME-RST , 0x0D			

10.3.1.5 PROT-VER

Functions		Permission	Transparency		
Set:	-	-	-		
Get:	PROT-VER?	End User	Public		
Description		Syntax			
Set:	-	-			
Get:	Get protocol version	#PROT-VER? CR			
Response					
~nn@prot-	VERSP3000:versionCR LF				
Parameters					
Version – F	Version – Format: XX.XX where X is a decimal digit				
K-Config Example					
Get the protocol version: "#PROT-VER?", 0x0D					

10.3.1.6 SN

Functions		Permission	Transparency
Set:	-	-	-
Get:	SN?	End User	Public
Description		Syntax	
Set:	-	-	
Get:	Get device serial number	#SN?CR	
Response			
~nn@SNSP	serial_numberCR LF		
Parameters			
serial_num	ber – 14 decimal digits, factory assigr	ned	
K-Config Example			
Get device serial number: "#sN?", 0x0D			

10.3.1.7 VERSION

Functions		Permission	Transparency		
Set:	-	-	-		
Get:	VERSION?	End User	Public		
Description	Description Syntax				
Set:	-	-			
Get:	Get version number	#VERSION?CR			
Response	Response				
~nn@versi	CONSPfirmware_versionCR LF				
Parameters					
firmware_version – Format: XX.XX.XXXX where the digits group are: major.minor.build version					
K-Config Example					
Get the firmware version number: **VERSION? , 0x0D					

10.3.1.8 RESET

Functions		Permission	Transparency	
Set:	RESET	Administrator	Public	
Get:	-	-	-	
Description		Syntax		
Set:	Reset device	#RESETCR		
Get:	-	-		
Response				
~nn@RESEI	SP ok Cr lf			
K-Config Example				
Reset the device: "#RESET?", 0x0D				

10.3.2 Communication Commands

Command	Description
ETH-PORT	Get Ethernet port protocol
NET-MAC	Get MAC address
NET-IP	Set/get IP address
NET-GATE	Set/get gateway IP
NET-MASK	Set/get subnet mask

10.3.2.1 ETH-PORT

Functions		Permission	Transparency	
Set:	ETH-PORT	Administrator	Public	
Get:	ETH-PORT?	End User	Public	
Description		Syntax		
Set:	Set Ethernet port protocol	#ETH-PORTSPportType	e, ETHPortCR	
Get:	Get Ethernet port protocol	#ETH- PORT?SPportTy	/pe CR	
Response				
~nn@ETH-P	ORTSPportType, ETHPortCR LF			
Parameters				
portType -	TCP/UDP			
ETHPort - T	CP/UDP port number			
K-Config Example				
Set the Ethernet port type and number address:				
"#ETH-POR	T TCP,5000",0x0D			

10.3.2.2 NET-MAC

Functions		Permission	Transparency	
Set:	-	-	-	
Get:	NET-MAC?	End User	Communication	
Description	Description Syntax			
Set:				
Get:	Get MAC address	#NET-MAC?CR		
Response				
~nn@NET-M	ACSPmac_addressCR LF			
Parameters				
mac_addre	mac_address – Unique MAC address. Format: XX-XX-XX-XX-XX-XX where X is hex digit.			
K-Config Example				
Get the MAC address:				
<pre>w#net-mac? xx-xx-xx-xx-xx/,0x0D</pre>				

10.3.2.3 NET IP

Functions		Permission	Transparency	
Set:	NET-IP	Administrator	-	
Get:	NET-IP?	End User	Communication	
Description		Syntax		
Set:	Set device IP address	#NET-IPSPP1CR		
Get:	Get device IP address	#NET-IP?CR		
Response				
Set: ~nn@N	T-IPSPip_addressSPOK CRLF			
Get: ~nn@N	ET-IP SP ip_address CR_LF			
Parameters				
P1 – IP address, in the following format: xxx.xxx.xxx (since the last xxx number is set by the DIP-switches, it is ignored in this command)				
Notes				
For proper settings consult your network administrator.				
K-Config Example				
Set the IP address to 192.168.1.39: "#NET-IP 192.168.001.039",0x0D				

10.3.2.4 NET-GATE

Functions		Permission	Transparency		
Set:	NET-GATE	Administrator	-		
Get:	NET-GATE?	End User	Communication		
Description		Syntax			
Set:	Set Gateway IP	#NET-GATESPP1CR			
Get:	Get Gateway IP	#NET-GATE?CR			
Response					
Set: ~nn@NI	et-gatesp p1spokcr lf				
Get: ~nn@N	ET-GATE SPi p_address CR LF				
Parameters					
P1 – gatewa	P1 – gateway IP address, in the following format:				
Notes	Notes				
A network gateway connects the device via another network and maybe over the Internet. Be careful of security problems. For proper settings consult your network administrator					
K-Config Example					
Set the gateway IP address to 192.168.0.1:					
"#NET-GAT	E 192.168.000.001",0x0D				

10.3.2.5 NET-MASK

Functions		Permission	Transparency	
Set:	NET-MASK	Administrator	-	
Get:	NET-MASK?	End User	Communication	
Description		Syntax		
Set:	Set device subnet mask	#NET-MASKSPnet_mas	c CR	
Get:	Get device subnet mask	#NET-MASK?CR		
Response				
Set: ~nn@NI	ET-MASKSPP1SPOKCR LF			
Get: ~nn@N	ET-MASKSPnet_maskCR LF			
Parameters				
P1 – net-ma	sk format: xxx.xxx.xxx			
Response to	riggers			
The subnet mask limits the Ethernet connection within the local network.				
For proper settings consult your network administrator.				
K-Config Example				
Set the subnet mask to 255.255.0.0:				
"#NET-MASK 255.255.000.000",0x0D				

10.3.3 Device Specific Command

Command	Description
MON-TYPE	Get EDID information from the display

10.3.3.1 MON-TYPE

Functions		Permission	Transparency		
Set:		-	-		
Get:	MON_TYPE?	End User	Public		
Descri	ption	Syntax			
Set:					
Get:	Get EDID information from the display	#MON_TYPE?SPoutCR			
Respo	nse				
~ nn@M	ION_TYPESPEDID_STRINGCR LF				
Param	eters				
out – 0 15).	output number (counts from 0). For VCO-1 alway	s equals to 0; for VCO-8 (0	to 7) and VCO-16 (0 to		
EDID_	EDID_STRING – the EDID information read from the monitor currently connected to the required output. If no monitor is connected, <i>EDID_STRING</i> is empty.				
K-Config Example					
Read EDID of the Display connected to output 3					
"#MON	"#MON_TYPE? 2",0x0D				

10.3.4 Device-Specific "Y" Commands

Syntax for a "set" command (write value to the device):

#Y 0,function,value,parameter<CR>

Device response:

#Y 0,function,value,parameter<CR>

Syntax for a "get" command (read value from the device):

#Y 1, function, parameter < CR>

Device response:

#Y 1,function,value,parameter<CR>

Parameter means input or output number of the device. All devices have only 1 input (that means in the INPUT case the Parameter always equals to 0). Depending on the device model (which may have different number of outputs) the allowed range of OUTPUT parameter is specified in brackets []. For instance, for [8] the allowed parameter is 0 to 7 (eight possible outputs, counted from 0).

Description	Function #	Parameter	Value	Notes
HDMI input HDCP	105	INPUT[1]	0	HDMI input is HDCP compliant
capability			1	HDMI input is not HDCP compliant Additional parameter defines HDMI Input 0 only.
Playback control	150	VCO-1: OUTPUT[1] VCO-8: OUTPUT[8] VCO-16: OUTPUT[16]	0	Stop playback, and remove overlay from the screen
			1	Start (or restart) playback from the start of the playback program
			2	Resume playback from the last paused position, or from the start
			3	Pause playback, showing overlay statically, at its last shown frame (freeze)
Read Playback Position (Read only)	151	VCO-1: OUTPUT[1] VCO-8: OUTPUT[8] VCO-16: OUTPUT[16]	[0:32765]	Current playback program position (at the moment the command was received)

Description	Function #	Parameter	Value	Notes
Limit playback, lower bound	152	VCO-1: OUTPUT[1] VCO-8: OUTPUT[8] VCO-16: OUTPUT[16]	[0:32765]	Playback program will start from this position (default=0)
Limit playback, upper bound	153	VCO-1: OUTPUT[1] VCO-8: OUTPUT[8] VCO-16: OUTPUT[16]	[0:32765]	Playback program will end with this position (default=32765), and cycle back to start
Input resolution (Read only)	301	INPUT[1]	[0:56]	See <u>Section 10.3.4.1</u>
Test Signal	334	VCO-1: OUTPUT[1]	0	No test signal; normal mode
STATUS (Read only)		VCO-8: OUTPUT[8] VCO-16: OUTPUT[16]	1	Test signal is on
Display Connected	340	VCO-1: OUTPUT[1] VCO-8: OUTPUT[8]	0	No display connected to output
STATUS (Read only)		VCO-16: OUTPUT[16]	1	Display is connected
Common STATUS (Read only)	341	VCO-1: OUTPUT[1] VCO-8: OUTPUT[8] VCO-16: OUTPUT[16]	[0:15]	Bitwise status information. Use AND mask to extract data: mask=1: background input signal status (0=signal is present; 1=none) mask=2: output test signal status (0=test is present; 2=none, normal mode) mask=4: display connected status (0=no display; 4=display is connected)

10.3.4.1 Input Resolution (Function 301)

Value	Notes	Value	Notes
0	480i/60 INP_RSL[4] - background	29	1024x768/60
1	576i/50	30	1024x768/70
2	720p/50	31	1024x768/75
3	720p/59	32	1024x768/85
4	720p/60	33	1152x864/75
5	1080i/50	34	1280x768/60 reduced blanking
6	1080i/59	35	1280x768/60
7	1080i/60	36	1280x768/75
8	1080p/23	37	1280x800/60
9	1080p/24	38	1280x960/60
10	1080p/25	39	1280x960/85
11	1080p/29	40	1280x1024/60
12	1080p/30	41	1280x1024/75
13	1080p/50	42	1360x768/60
14	1080p/59	43	1366x768/60
15	1080p/60	44	1400x1050/60 reduced blanking

Value	Notes	Value	Notes
16	1080sf/23	45	1400x1050/60
17	1080sf/24	46	1400x1050/75
18	1080sf/25	47	1440x900/60 reduced blanking
19	1080sf/29	48	1440x900/60 reduced blanking
20	1080sf/30	49	1440x900/75
21	640x480/60	50	1440x900/85
22	640x480/72	51	1600x1200/60
23	640x480/75	52	1680x1050/60 reduced blanking
24	640x480/85	53	1680x1050/60
25	800x600/60	54	1920x1200/60 reduced blanking
26	800x600/72	55	UNIDENTIFIED INPUT SIGNAL
27	800x600/75	56	NO INPUT SIGNAL
28	800x600/85		

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KRAMER











SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing

For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

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