VISUAL PRODUCTIONS

CUECORE1
MANUAL

Revision History

Revision	Date	Author(s)	Description
10	08.05.2017	ME	General update.
11	19.06.2018	ME	Added: Rackmount accessory. Replaced VisualTouch info by Kiosc. Updated vManager chapter to reflect app-store distribution.

Contents

VISUAL PRODUCTIONS

CE

Declaration of Conformity

We, manufacturer Visual Productions BV, herby declare under sole responsibility, that the following device:

CueCore

Is in conformity with the following EC Directives, including all amendments:
EMC Directive 2004/108/EG

And the following harmonized standards have been applied:
NEN-EN-IEC 61000-6-1:2007
NEN-EN-IEC 61000-6-3:2007

Full name and identification of the person responsible for product quality and accordance with standards on behalf of the manufacturer

Date:
February 1st, 2012

Place:
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Chapter 1

Introduction

Thank you for choosing the CueCore1. This manual discussing setting up the units and programming the lighting cues, show-control-actions and various other features.

The CueCore1 is solid-state lighting controller, designed without any moving parts, it is build for reliability and durability.

The unit is aimed at providing a control solution for (semi-)permanent lighting projects. The CueCore1 primary control signal is DMX-512, the protocol used for entertainment, theatre and most LED lighting fixtures. Next to DMX-512 this controller also supports a range of other protocols; allowing communication with various other equipment.

An internal web-server provides the web-interface through which you can program the CueCore1. A modern browser is required to access this web-interface during set-up. A browser or computer is not required for standalone use after the initial set-up.

Figure 1.1: CueCore1

This manual discusses setting up and programming the unit. Chapter 2 provides background information on the communication protocols used the CueCore1. Chapters 3 and 4 cover how to set up the unit and configure the network connection.

The CueCore1 includes a licence for CueluxPro; it unlocks two universes. CueluxPro is a professional lighting control software from Visual Productions and is discussed in chapter 5.

Chapters 6 and 7 cover creating and recording both static and dynamic lighting scenes.

Programming the triggering and converting functionality is explained in chpater 8 on page 27.

At the time of writing this manual the CueCore1's firmware was at version 1.90.

The CueCore1 is end-of-life and is not recommended for new designs. It has been superseded by CueCore2.

1.1 Features

The feature set of the CueCore1 includes:

- 2 DMX output ports
- 1 DMX input port
- MIDI input and output
- SMPTE input
- 4 GPI contact-closure ports
- Art-Net
- TCP, UDP & OSC
- Scheduling with Real-Time clock, weekdays and sunrise/sunset
- Desktop or DIN Rail mounted
- Kensington lock
- Locked power cable protection
- Web-based user-interface for programming
- PoE (Power Over Ethernet) Class I
- Compatible with IoCore, QuadCore, TimeCore and B-Station
- Bundled with CueluxPro, vManager and Kiosc software

1.2 What's in the box?

The CueCore1 packaging contains the following items (see figure 1.2):

- CD-ROM
- CueCore1
- Power supply

Figure 1.2: CueCore1 box contents

1.3 Saving data to memory

This manual will describe how to configure the CueCore1 and program conversions, action, etc. The unit's web-interface is used for editing these kinds of elements. When changes are made, these changes are directly stored in the RAM memory of the CueCore1 and the programming will directly influence the behaviour of the unit. RAM memory is, however, volatile and its content will be lost through a power cycle. For this reason the CueCore1 will copy any changes in the RAM memory to its onboard flash memory. Flash memory retains its data even when not powered. The CueCore1 will load all its data back from the flash memory upon startup.

This memory copy process is conducted automatically by the CueCore1 and should not be of any concern of the user. One point of consideration is, however, that after making a change the unit should be given time to perform the copy to flash. As a rule of thumb, do not disconnect the power from the device within 30 seconds from making a programming change.

1.4 Further Help

If, after reading this manual, you have further questions then please consult the online forum at `http://forum.visualproductions.nl/forum` for more technical support.

Chapter 2

Protocols

The CueCore1 is fitted with several communication ports and supports various protocols. This chapter describes these protocols and to which extent they are implemented in the CueCore1

2.1 DMX-512

DMX-512 is the standard communication protocol for stage lighting. Its official name is E1.11-2008 USITT DMX512-A. Nowadays the reach of the DMX protocol has extended beyond entertainment lighting and is also used for architectural lighting. Originally one DMX network contained 512 channels which is called a 'universe'. With the growing size and complexity of lighting systems it is now very common for a system to compose of multiple universes, each conveying 512 channels. It is advised to use a shielded twisted pair cable for DMX cabling. The cable should be terminated with an 120 Ohm resistor.

DMX-512 is a very successful protocol with, however, a few limitations. The maximum number of attached devices is limited to 32 and they all have to be connected in bus-topology having one cable running via each device. Furthermore, a DMX-512 cable should not be longer than 300 meters.

The DIN Rail RdmSplitter from Visual Productions (See figure 2.1) helps tackle those inconvenient limitations. The Splitter takes a DMX signal and sends it out again on its 6 DMX output ports for scaling group topology. Each output port is capable of driving 32 more devices. The Splitter can also function as a signal booster as each port supports another 300 meter long connection.

The CueCore1 has two DMX output ports and one input Port. It is able to control 1,024 channels. Figure 2.2 shows the pinout of the connectors. The CueCore1 can receive 512 channels for recording or converting into Art-Net. The DMX input port can also be used for triggering, however, for this purpose the CueCore1 is only capable of monitoring 50 DMX channels. By default these are channels 1-50. This block of channels can be moved up by changing the 'DMX Input' number in the settings page (See page 37).

Figure 2.1: Visual Productions' RdmSplitter

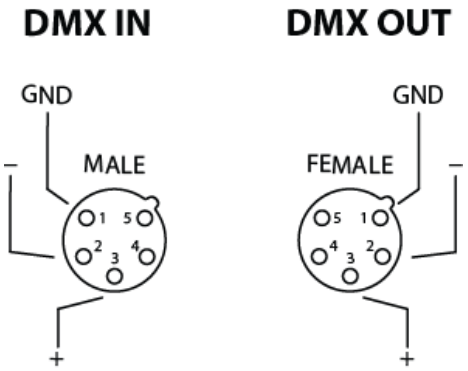

Figure 2.2: DMX Pinout

2.2 Art-Net

The Art-Net protocol primarily transfers DMX-512 data over Ethernet. The high bandwidth of an Ethernet connection allows Art-Net to transfer up to 256 universes. The data sent out for Art-Net does put a certain load on the network, therefore it is recommended to disable Art-Net when not in use. The CueCore1 can receive and send out two DMX universes over Art-Net. Art-Net can be used for recording, converting and creating triggers in the show control programming.

2.3 GPI

The CueCore1 features four General Purpose Inputs (GPI) ports that can be connected to external equipment, switches and sensors. State changes on these GPI ports can be used to trigger programmed events inside the CueCore1.

For each GPI port's pin the signal is held up by an internal pull-up resistor and results in a logic '0'. The external equipment is intended to short the port's pin to the provided ground pin. This short will create a logic '1'.

Please refer to figure 2.3 for the pinout of the GPI connector.

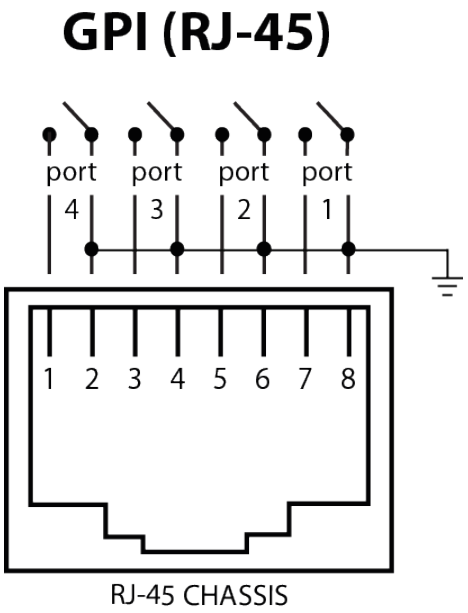

Figure 2.3: GPI Pinout

Programming events based on GPI activity is done in the Show Control page, which is discussed on page 27. If your project requires more than 4 GPI contacts then you can expand the GPI ports by connecting one or more IoCore modules to your CueCore1. The module can be connected through OSC, UDP, Art-Net or DMX.

2.4 UDP

User Datagram Protocol (UDP) is a simple protocol for sending messages across the network. It is supported by various media devices like video projectors and Show Controllers. It does not incorporate error checking, therefor it is faster than TCP but less reliable.

The CueCore1 responds to incoming UDP messages by programming custom messages in the Show Control page (see page 27). This is also the place where to program outgoing UDP messages.

2.5 OSC

Open Sound Control (OSC) is a protocol for communicating between software and various multi-media type devices. OSC uses the network to send and receive messages, it can contain MIDI and custom information. There are apps available for creating custom-made user interfaces on iOS (iPod, iPhone, iPad) and Android. These tools allow to program fool-proof user-interfaces for controlling the device. E.g. TouchOSC from `http://hexler.net/software/touchosc`. There is a TouchOSC layout available from `http://www.visualproductions.nl/products/b-station.html` that is configured to control the playbacks of the CueCore1.

The CueCore1 responds to incoming OSC messages by programming custom messages in the Show Control page (see page 27). This is also the place where to program outgoing OSC messages.

2.6 MIDI

The MIDI protocol is intended for inter-connecting musical devices such as synthesisers and sequencers. Furthermore, this protocol is also very suitable to send triggers from one device to another and is often used to synchronise audio, video and lighting equipment. There is also a large collection of MIDI control surfaces available; user-interface consoles with knobs, (motorised-)faders, rotary-encoders, etc.

The CueCore1 is fitted with a MIDI input and MIDI output port. It supports receiving and sending MIDI messages like NoteOn, NoteOff, ControlChange and ProgramChange.

2.7 SMPTE

SMPTE is timecode signal which can be used to synchronise audio, video, lighting and other show equipment. The CueCore1 supports receiving SMPTE that is transferred as an audio signal, also know as LTC timecode.

Chapter 3

Setting up

This chapter discusses how to set up the IoCore.

3.1 Mounting

The device can be placed desktop or it can be DIN Rail mounted. The device is prepared for DIN Rail mounting by using the 'DIN rail holder TSH 35' from Bopla (Product no. 22035000).

Figure 3.1: Bopla DIN rail adapter

This adapter is - amongst others - available from:

- Farnell / Newark (order code 4189991)
- Conrad (order code 539775 - 89)
- Distrelec (order code 300060)

3.2 Rackmount

There is an adapter available for mounting the CueCore1 into a 19" rack . The rackmount adapter is 1 HE and is sold separately. It fits two units, however, it is supplied with one position closed by a blind panel, see figure 3.2.

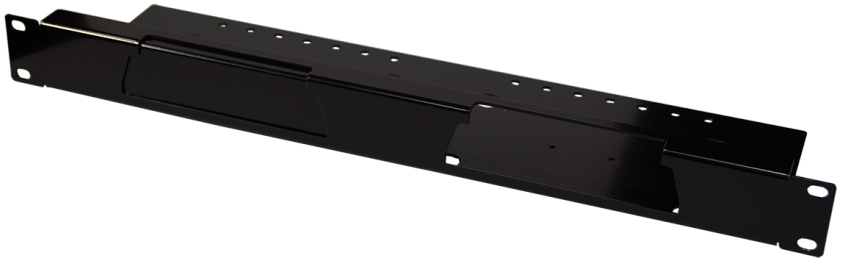

Figure 3.2: Rackmount adapter

3.3 Kensington Lock

The device can be secured by using a Kensington style laptop lock.

Figure 3.3: Kensington lock

3.4 Power

The CueCore1 requires a DC power supply between 9 and 12 Volt with a minimum of 500mA. The 2,1 mm DC connector is center-positive.

The CueCore1 is also Power-over-Ethernet (PoE) enabled (starting from hardware version v1.6). It requires PoE Class I.

Figure 3.4: DC polarity

Chapter 4

Network

The CueCore1 is a network capable device. A network connection between between a computer and the unit is required to configure and program the CueCore1, however, once the device is programmed then it is not necessary anymore for the CueCore1 to be connected to an Ethernet network.

There are multiple arrangements possible for connecting the computer and the CueCore1. They can be connected peer-to-peer, via a network switch or via Wi-Fi. Figure 4.1 illustrates these different arrangements.

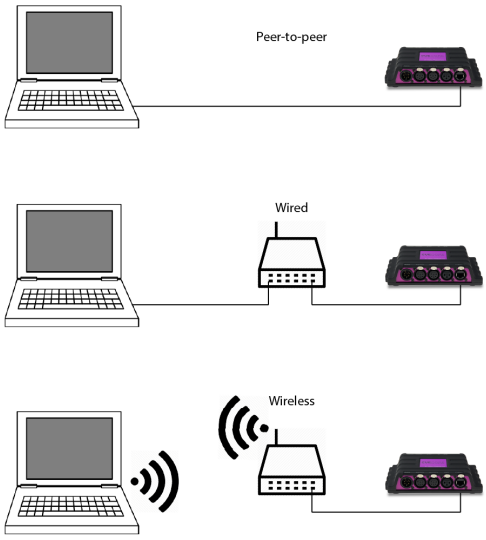

Figure 4.1: Network arrangements

The Ethernet port on the CueCore1 is auto-sensing; it does not matter whether a cross or straight network-cable is being used.

4.1 IP Address

The CueCore1 only supports static IP addresses. By default, the CueCore1 is set to 192.168.1.10.

There are three ways to change the IP address setting of the CueCore1.

- **vManager** can be used to detect a CueCore1 on the network. Once found, the vManager software (figure **??**) allows for changing the IP address and subnet mask.
- If the IP address is already known then browsing to this address using the computer's browser will show the CueCore1's **web-interface**. The Settings page on this web-interface enables changing the IP address and subnet mask settings.
- By pressing the **reset button** on the device for 3 seconds, it will reconfigure the unit to the factory default IP address and subnet mask. No other settings will be changed. The default IP address is 192.168.1.10 with the subnet mask set to 255.255.255.0.

Figure 4.2: Reset button

4.2 Access via Internet

The CueCore1 can be accessed through the Internet. There are two ways to achieve this: Port-Forwarding and VPN.

- **Port-Forwarding** Is relatively easy to setup in the router. Each router is different so it is advised to consult the router's documentation (sometimes it is revered to as NAT or Port-Redirecting). Please note that port forwarding is not secure, since anybody could access the CueCore1 this way.
- Accessing via a **Virtual Private Network** (VPN) tunnel requires more setup efforts, also the router needs to support the VPN feature. Once set up, this is a very secure way to communicate with the CueCore1. A VPN is a network technology that creates a secure network connection over a public network such as the Internet or a private network owned by a service

provider. Large corporations, educational institutions, and government agencies use VPN technology to enable remote users to securely connect to a private network. For further information about VPN please refer to `http://whatismyipaddress.com/vpn`.

Chapter 5

CueluxPro

The CueCore1 includes a software licence for CueluxPro. CueluxPro is powerful software application for controlling DMX lighting, it features fixtures, groups, palettes, pixel-mapping, timeline-editor and fx-generator (See figure 5.1). Each CueCore unlocks 2 universes in CueluxPro, multiple CueCore1 units can be used together to create one large control system. You can also use CueluxPro as a programming-tool for the CueCore, using powerful software features to upload your cues and recorders into the CueCore1's memory.

Figure 5.1: CueluxPro

For compatibility with CueluxPro the CueCore1 needs to run firmware v1.55 or higher.

Please refer to the CueluxPro manual for more information.

Chapter 6

Console

The Console page allows you to program and manually playback lighting scenes.

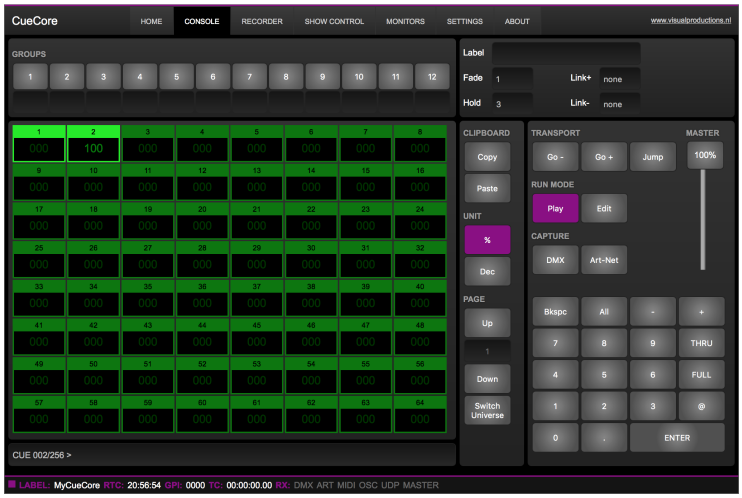

Figure 6.1: Console page

6.1 Overview

A Cue is a lighting scene, a state at which all DMX channels are set to a specific value. A sequence of multiple Cues - running one-by-one is called a Cue-list. The Lighting Console function features as 1 Cue-list containing 256 Cues. Each Cue stores the values for all 1,024 DMX channels. The number of Cues is fixed, however, Cues can be left unused.

6.2 Run Mode

The Lighting Console can be set in either PLAY or EDIT mode. The difference between the modes is the EDIT mode ignores the fade, hold and link values. The EDIT mode is more convenient during programming the Cues.

6.3 Unit

A DMX channel can be set between 0 (minimum) and 255 (maximum). The DMX levels are shown in these decimal values if the UNIT is set to DEC. When UNIT is set to % the levels are shown in the range of 0% and 100%. The UNIT setting also influences how you enter the values via the Command Line interface. E.g. if you would like to set a channel to the maximum level you would type in value '255' when the unit is set DEC and you would type in '100' when it was is set to

6.4 Programming a Cue

First enable the EDIT mode and select the desired Cue by using the GO+ and GO- buttons. You see the number of the current Cue in the bottom left-hand corner of the screen. Use the command line interface (CLI) to change the value of the channel. The CLI is known from theatre lighting consoles and provides a fast way of setting values for one or multiple channels. Examples of the CLI's usage are:

Command	Function
`1 @ 50 <ENTER>`	Sets channel 1 at 50% (or at DMX value 50 when DEC unit is selected)
`1 + 2 @ <FULL>`	Sets channel 1 and 2 at maximum value
`1 <THRU> 3 @ 0`	Sets channels 1 till 3 at minimum value
`1 <THRU> 3 + 5 @ 0`	Sets channels 1, 2,3, and 5 at minimum value
`<ALL> @ 100 <ENTER>`	Sets channels 1 till 1024 at 100% (or at DMX value 100 when DEC unit is selected)
`1 @ + 10 <ENTER>`	Increases channel 1 value with 10
`<ALL> @  20 <ENTER>`	Decreases all channels' value by 20

6.5 Capture a Cue

Alternatively to programming a Cue through the CLI it is also possible to record a Cue from the DMX input port or incoming Art-Net universes. To capture from DMX, simply connect your external DMX-512 source and set it to output the desired Cue, then press the DMX Capture button. Only the first 512 channels will be recorded, channels 513 till 1024 are left unchanged. For capturing from Art-Net please make sure that the universe settings for incoming Art-Net match the universes at your Art-Net source. Press the Art-Net Capture button and all 1,024 channels are recorded in the Cue.

6.6 Timing

You can specify the cross-fade time between two Cues by setting the Cue's fade time (expressed in seconds). Also you can determine for how long the Cue

should be active before advancing to the next Cue by setting the hold time. If the hold time is set to 0, the Cue is set to Halt and will not automatically go to the next Cue.

6.7 Linking Cues

When going to a new cue (whether by a manual 'Go+' or automatically by setting a hold time) then by default the next cue will be run, as shown in figure 6.2.

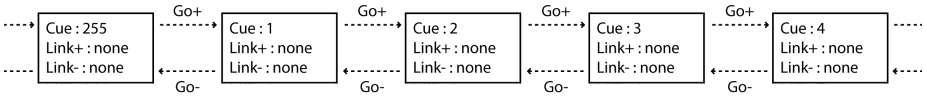

Figure 6.2: Normal cue order

You can change this by setting the 'Link+' field other than 'none'. When set to a number, this cue will go to this specified cue number as the next cue. You can use the link field to create loops/chases. See figure 6.3.

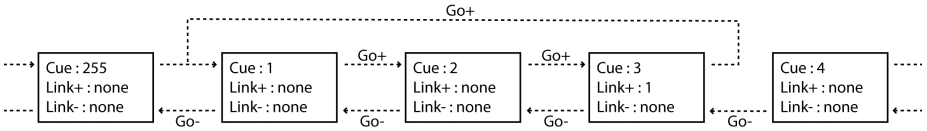

Figure 6.3: Using Link+

When you press the 'Go-' button you will go to the previous cue, however, similar to the 'Link+' field, you can use the 'Link-' field to specify a cue to go-back to. Using both link fields you can create a bi-directional loop by which the user could step through a set of cues by using just two buttons (e.g. 2 physical switches connected via the GPI port that control the 'Go-' and 'Go+'). As illustrated in figure 6.4.

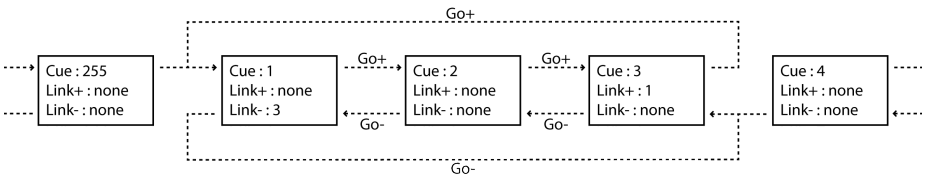

Figure 6.4: Using Link+ and Link-

6.8 Manual Playback

Set the Lighting Console to the PLAY mode for manual playback of the Cues. You can use the GO+ and GO- buttons for traversing through the various Cues. The JUMP allows you to go to a certain Cue directly (without stepping through all intermediate Cues). E.g. If you like to go to Cue 24 you use the CLI to type `<JUMP>24<ENTER>`.

6.9 Channel Groups

It is likely that during programming of the Cues you will often select the same channels, albeit with different values. To make the process of selecting channels quicker, the Lighting Console features Channel Groups. You can store one or more channel numbers in a Group and quickly recall this group by clicking its button. For example you can program the value of channels 1,2,3,4,6 by entering in the CLI: `1 <THRU> 4 + 6 @ 50 <ENTER>` You can also store these channels in Group 1 by typing: `1 <THRU> 4 + 6 @ <GROUP1>` Then press the group button to recall Group 1 in order to set the channels: `<GROUP1> @50 <ENTER>`

6.10 Routing

The DMX values outputted by the Lighting Console can be routed to either or both DMX-512 outlets and Art-Net. This can be controlled in the settings page (see page 34)

Chapter 7

Recorder

In the previous chapter you've read that you can record a static lighting scene by capturing it into a Cue, however, in some cases it will be required to record a dynamic lighting scene that is changing over time. Perhaps you need to record pan/tilt shapes for moving lights or record graphical effects on a LED matrix.

For these situations the CueCore1 offers the DMX-512 and Art-Net recording functionality. With it you can store both static and dynamic DMX data.

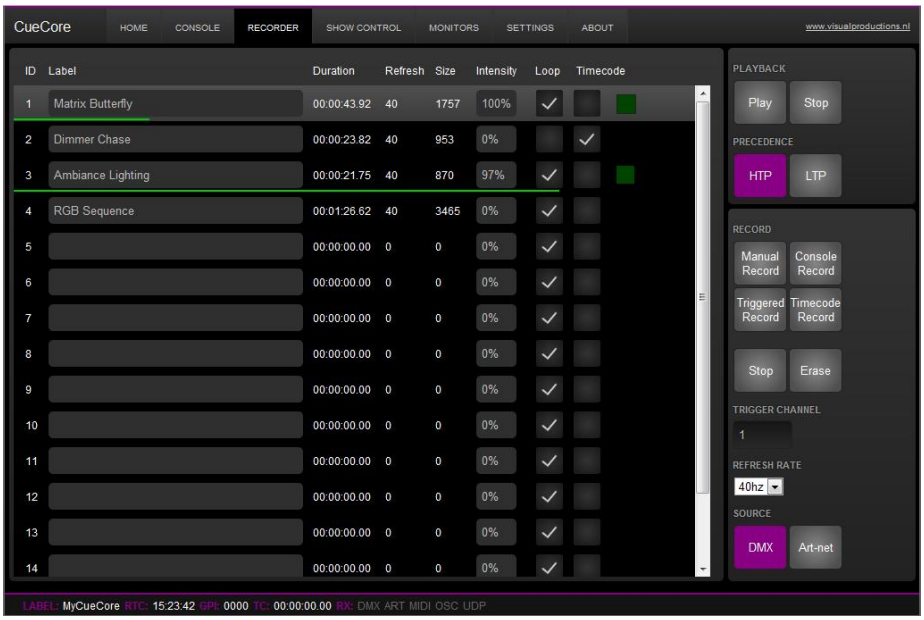

Figure 7.1: Recorder page

Behind each memory you sometimes see a coloured icon. It represents the state of the memory:

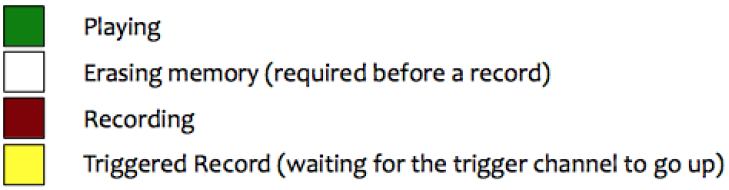

Figure 7.2: Memory icons

7.1 Capacity

There are 16 memories that can hold a recording. When recording all 1,024 channels are stored, even though some channels might not be used and remain at zero. The CueCore1 utilizes a compression technique to filter out all channels that do not change. Therefore it is not possible to exactly state the maximum duration a memory can hold; it depends on the DMX data itself. When many channels change often the compression is less effective. When only a few channel change a little the compression is very effective.

Furthermore, the refresh rate setting will determine how many samples of the data are taken per second and stored in memory. This setting varies between 1 and 40 frames per second. 40 Hz gives maximum quality in terms of smooth dimming curves. 5 Hz is quite a low value but very useful for recording very slow DMX changes that in themselves might not change faster anyway. Often a setting of 20 Hz will do fine, while allowing for twice as long recording as a 40 Hz setting.

Theoretically, the memory will hold for at least XXX seconds data in the worst-case situation, i.e. all 1,024 channels change each frame, recorded at 40 Hz. More realistic, a set-up using 100 dimmer channels changing regularly, recorded at 30 Hz, may last XXXXX minutes.

By default, the recorder has 16 memories. You can reduce the number of memories in the settings page. When you reduce the number of memories each memory will have more storing capacity, as the total capacity used by all memories remains the same.

7.2 Recording

To make a recording first select one of the memories. You may give it a name now or do this after recording. Then set the desired refresh rate and select between DMX and Art-Net for the source. Then press the 'Manual record' button. When you're ready press the 'Stop' button. If the memory becomes full the recording is stopped automatically.

You can use the 'Console record' button to simply copy the current output of the Console into a recording (this recording will have one DMX frame).

Alternatively, you can have the recording started and stopped automatically if the timing needs to be more precise than manual control. In order to make a 'triggered' recording appoint one DMX channel as the trigger channel (choose from 1 till 1,024). Then press the 'Triggered record' button. The memory is now ready for recording, but the recording will only start when the trigger channel's

value reaches above 127. The recording is stopped as soon as the trigger channel goes below or equals 127. This allows you to program the value of the trigger channel in your external DMX-512 or Art-Net console and time the recording accurately.

Finally, you can also record a memory in sync with the timecode by using the 'Timecode record' button.

7.3 Playback

Each memory has an intensity value. When the intensity is set to a value other than 0, the memory will be played back. The CueCore1 is capable of simultaneous playback of 4 memories. When a fifth playback is set to playback, CueCore1 will automatically stop the oldest playback (the one whose intensity level has not altered for the longest time).

7.4 HTP/LTP

By default the values of all running playbacks are, with its intensity level taken into account, merged together according to the Highest Takes Precedence (HTP) principle. The following table illustrates the HTP system.

	Playback 1	Playback 2	Playback 3	Merged Output
Channel 1	0%	0%	25%	25%
Channel 2	100%	0%	25%	100%
Channel 3	0%	0%	0%	0%
Channel 4	0%	100%	25%	100%

When set to LTP, only the last activated playback will send out its values. As soon as that playback is stopped the one-but-last activated playback will be sending out.

7.5 Timecode

Normally the memory is played back using the internal timings of the CueCore1. When the 'Timecode' check box is enabled, the internal timing is ignored and the playback is synchronised to the timecode. Please select a timecode source in the settings page.

7.6 Loop

The 'Loop' check box controls whether the playback stops when it reaches the end of the track, or whether is should continue looping indefinitely. The Loop feature is only available when 'Timecode' is disabled.

7.7 Routing

The DMX values outputted by the Recorder can be routed to either or both DMX-512 outlets and Art-Net. This can be controlled in the settings page (see page 34).

Chapter 8

Show Control

The CueCore1 can interact with the outside world; it can receive messages and values through various protocols and it can send out many protocols. It is possible to automate the CueCore1 by having it respond automatically to incoming signals. An example of this would be to start the playback of a recorded memory by receiving a specific UDP network message. The Show Control page (See figure 8.1) enables this kind of programming to be made.

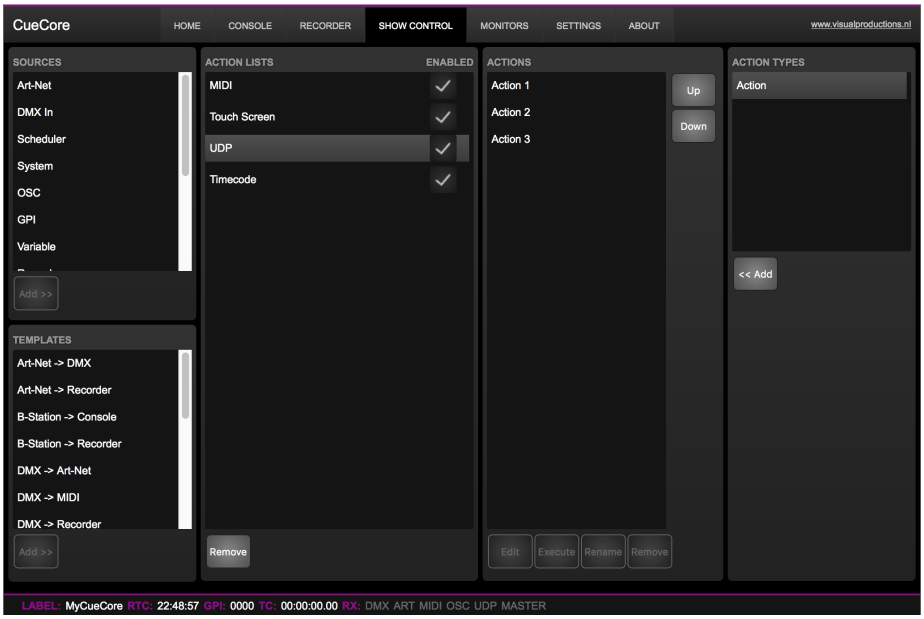

Figure 8.1: Show Control page

8.1 Protocol Conversion

With many signals coming into the CueCore and many signal going out, the Show Control page is also the place where you can program Conversion between

different protocols. For example you can program an Art-Net Source and fit it within an Action that sends out DMX-512, thus creating an Art-Net to DMX-512 converter.

8.2 Structure

The Show Control page presents a system of 'actions'. A signal that the CueCore1 needs to respond to or perhaps convert into some other signal, needs to be expressed in an actions. Before programming actions please consider the Show Control structure in figure 8.2.

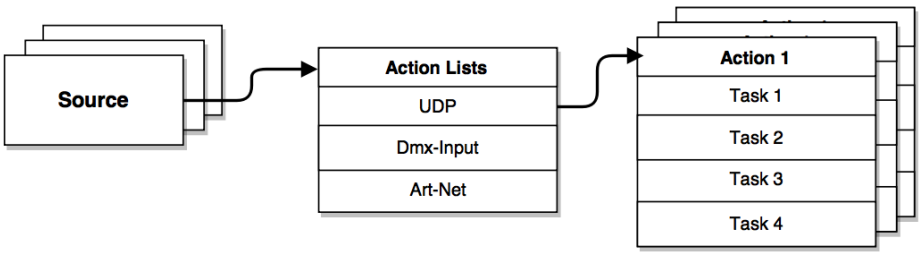

Figure 8.2: Show Control structure

The CueCore1 is capable of listening to various protocols. These available protocols are listed in Sources, however, the CueCore1 can only actively listen to 8 protocols at once. The active protocols are listed in 'Action Lists'. Each action list can contain actions. Within a protocol/source each individual signal requires its own action. For example, when listening to channel 1 and 2 on the incoming DMX, the DMX action list needs two actions; one for each channel.

Inside the action we define the trigger and tasks. The trigger specifies for which signal to filter. In the above DMX example the trigger would be set to 'channel 1' and 'channel 2' respectively. The tasks determine what the CueCore1 will do when this action is triggered. Several tasks can be placed in the action. There are tasks available for a wide range of CueCore1 features and external protocols. Task types are detailed in Appendix B on page 54.

8.3 Sources and Action Lists

The Sources listing presents all protocols that the CueCore1 is capable of receiving. It also includes internal features that can create events that can be used for triggering actions, such as the GPI ports. These sources are available, however, they will only be actively listened to once moved to the action-list table.

Source	Description
Touch Screen	Triggers from Kiosc. For each Action various controls can be chosen such as buttons and sliders, colour picker etc. The order of the actions will control the arrangement in Kiosc.
Art-Net	Receiving Art-Net DMX data
DMX In	Receiving DMX data
MIDI	Incoming MIDI message
Timecode	Triggers set to specific timecode frames
Scheduler	Date and time triggers based on the internal clock
System	Events such as 'Power on'
OSC	OSC network message
GPI	Changes on one of the GPI ports
Variable	The Variable source works in combination with the variable task (For more information about the Variable task please refer to paragraph 8.7). The Variable task will set a value of which an enabled action-list type with Variable as Source will use as a trigger.
Recorder	A recording changes state
UDP	UDP network messages
Console	Events created by the console function
Randomiser	The randomiser can generate a random number, more information in paragraph 8.8.
User List 1-4	These action-lists will never trigger an event, however, they are useful for advanced programming.

Action-lists can be temporarily suspended by disabling their checkbox in the Show Control page. There is also a task available to automate changing the state of this checkbox.

8.4 Actions

Actions are executed when a certain signal is received. This signal is defined by the trigger. A trigger is always relative to the action-list the action belongs to. For example, when the trigger-type is set to 'Channel' then it refers to a single DMX channel if the action is placed inside a 'DMX Input' list and it means a single Art-Net channel if the action resides in an Art-Net action-list.

A trigger is determined by the trigger-type, trigger-value and trigger-flank fields. Although these fields are not applicable for all action-lists and are therefor sometimes omitted in the web GUI. The trigger-type field specifies what kind of signal the action will be triggered by. For example, when making an action in the

Art-Net list there is the choice between 'Channel' and 'Receiving' trigger-types. The trigger-value specifies the actual signal value. In the Art-Net example the trigger-value could be set to 'channel 1' or 'channel 2'.

In some action-lists actions do also need to specify the trigger-flank. The flank further specifies the value that the signal should have before triggering the action. For example, when an action is triggered from a Touch Screen list and it is linked to a button in the Kiosc software, the flank will determine whether to trigger only when the button goes down or only when it goes up. Appendix A provides an overview of the available trigger-types.

An action-list can have up to 48 actions, system-wide there is a maximum of 64 actions.

8.5 Tasks

Tasks are added to an action in order to specify what to do when it gets executed. Up to 8 tasks can be included in an action, systemwide there is a maximum of 128 tasks. The tasks are executed in the order of the list. There is a wide selection of tasks available to choose from, they include altering any of the internal software features like GPOs but also sending out messages through any of the supported protocols. The tasks are organised in categories. Once a task is chosen from these categories each task allows for further choice between several 'Features' and 'Functions'. Tasks contain up to two parameters that might be required for its execution.

If the event that triggers the action passes a parameter along then this parameter can be used in a task. The 'set' function makes a task use a fixed value, however, when using the 'control' function then the trigger's parameter is used. This is very useful for conversions between protocols.

For example when converting 0-10V to DMX the GPI action specifies the port (e.g. #1) and flank (e.g. OnChange) on which it will trigger. The actual 0-10V level sampled on the GPI port will passed along and fed into the action. Then when a task (e.g. DMX) uses the function 'control' this 0-10V level will be used for setting the DMX value.

A task can be tested by selecting it and pressing the 'execute' button in the action-edit dialog. The complete action can also be tested; go to the Show Control page, select the action and press the 'execute' button.

Appendix B provides a detailed overview of the available tasks, features, functions and parameters.

8.6 Templates

The Show Control page presents a list of templates. A template is a set of action-list, actions and task. These templates configure the CueCore1 to perform typical functions; for example convert Art-Net to DMX or control the 16 recordings through OSC. The templates thus save time; otherwise actions should have been set up manually. They can also function as a guide to soften

the learning curve on actions; a lot can be learned from adding a template and then exploring the actions and tasks it created.

Please note that some templates require settings to changed in the settings page; for example the 'Art-Net ->DMX' template needs the Art-Net subnet/universe to specified in order to achieve an Art-Net to DMX conversion. Appendix C gives an overview of the available templates.

8.7 Variables

Variables are internal memories that can hold a value; a number in the range of [0,255]. There are 8 variables and they are typically used for advanced show control programming. In the CueCore1, the content of the variable is not stored between power cycles.

Variables can be set by tasks. Variables can be added as sources in order to have actions triggered when a variable changes value.

8.8 Randomizer

The randomizer is an internal software feature that can generate a (pseudo-)random number. This is useful for having an event trigger a random lighting scene in a themed environment. The randomizer is activated by the Randomizer-task. The result of the randomizer's calculation can be obtained by catching the event in the Randomizer-actionlist.

Chapter 9

Monitors

This page allows the user to inspect the incoming and outgoing data, both DMX-type data (See figure 9.1) as well as control messages (See figure 9.2). Monitoring incoming and outgoing data can help the user troubleshoot during programming.

Figure 9.1: DMX Monitor page

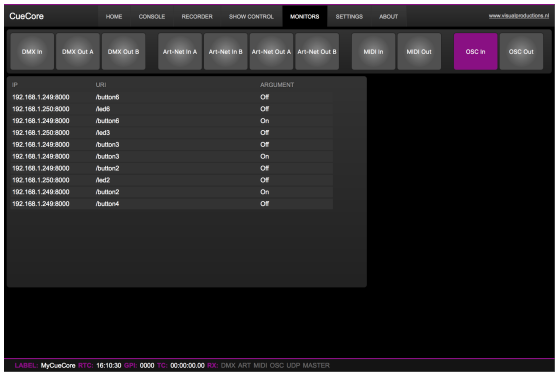

Figure 9.2: OSC Monitor page

Chapter 10

Settings

The CueCore1's settings are organised into sections, see the Settings page figure 10.1. This chapter will discuss each section.

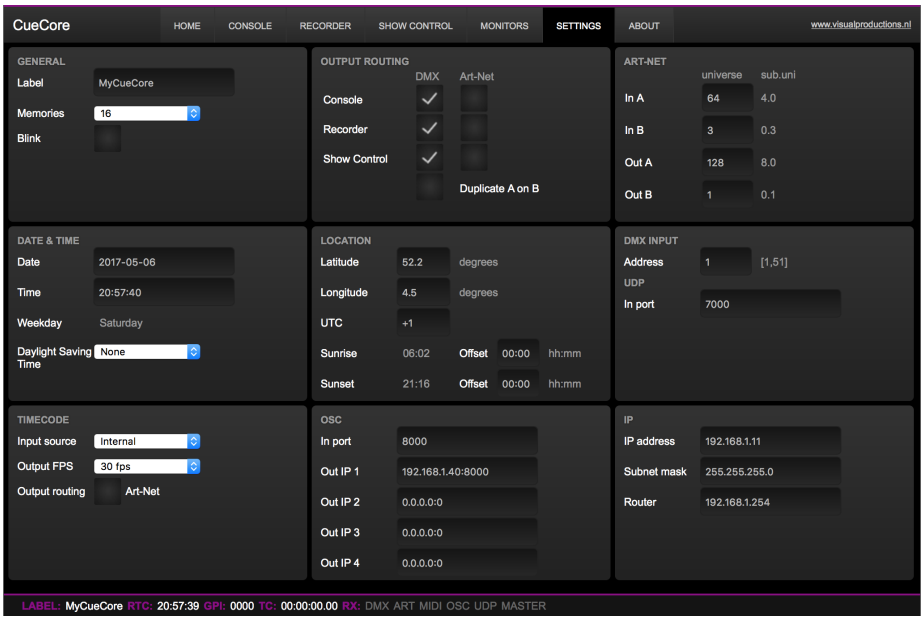

Figure 10.1: Settings page

10.1 General

You can change the CueCore1's label. This label can be used to distinguish the unit in a set-up with multiple devices. By enabling the 'Blink' checkbox the device's LED will blink to help to identify it amongst multiple devices.

This section also allows you to set the number of Memories in the Recorder. By default this number is set to 16. If you would like to store only a few, but

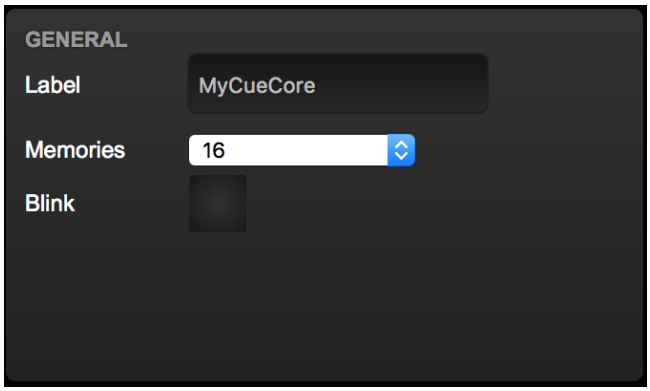

Figure 10.2: General Settings

larger, recordings then you can lower this number; making each memory bigger. All the recorder's memories need to be erased after changing this setting.

10.2 Output Routing

There are three sources that can set DMX/Art-Net data:

- Lighting Console
- Recorder
- Show Control

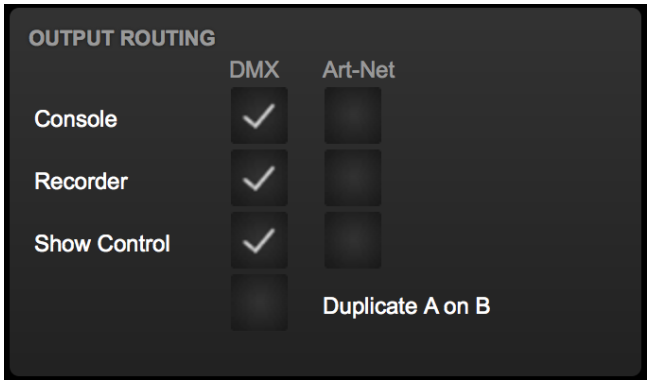

Figure 10.3: Output Routing Settings

The routing settings enables you to determine on which ports the Lighting Console, Recorder and Show Control output their data; i.e. the DMX ports, the Art-Net (Ethernet) port or both.

If more than one source is enabled per DMX or Art-net then the data of those sources is merged together via the Highest Takes Precedence (HTP) principle.

When your project only uses one universe ($\leq$ 512 channels) then it is worthwhile to enable the 'Duplicate A on B' checkbox. When enabled, both DMX

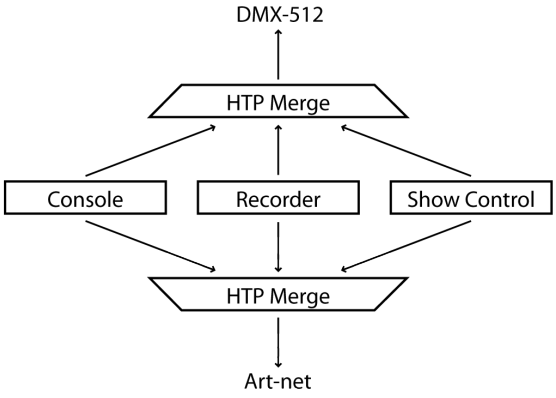

Figure 10.4: Output Routing flow chart

outlets will transmit Universe A's data. This can make the cabling to the lighting fixtures more economic or safe a DMX splitter.

10.3 Art-Net

The CueCore1 supports sending out 2 universes or and receiving 2 universes of Art-Net. These universes can be mapped to any of the 256 available universes in the Art-Net protocol. The outgoing Art-Net transmission can be disabled by disabling the checkboxes in the 'Output Routing' section.

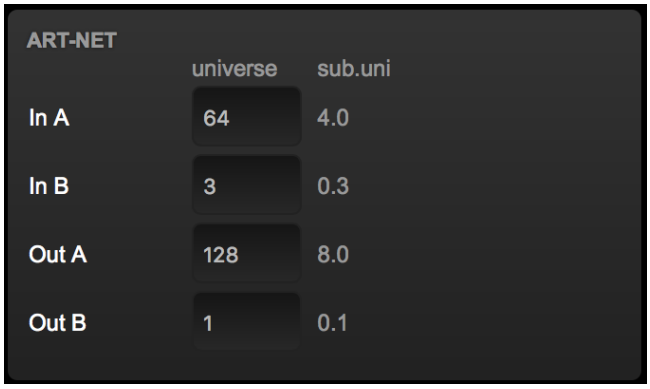

Figure 10.5: Art-Net settings

The vManager software also allows you to change the Art-Net destination IP. The destination IP determines where the outgoing Art-Net data will be send to. Typically, this field contains a broadcast address like 2.255.255.255 which will send the Art-Net data to the 2.x.x.x IP range. Another typical Art-Net broadcast address is 10.255.255.255. When using broadcast address 255.255.255.255 then all the devices on the network will receive the Art-Net data.

It is also possible to fill in a unicast address like 192.168.1.11; in this case the Art-Net data will be send to one IP address only. This keeps the rest of the network clean of any Art-Net network messages.

10.4 Date & Time

The date and time of the RTC can be set here. The clock has a back-up battery to keep the time during a power down. Daylight Saving Time (DST) is supported for the regions Europe and United States.

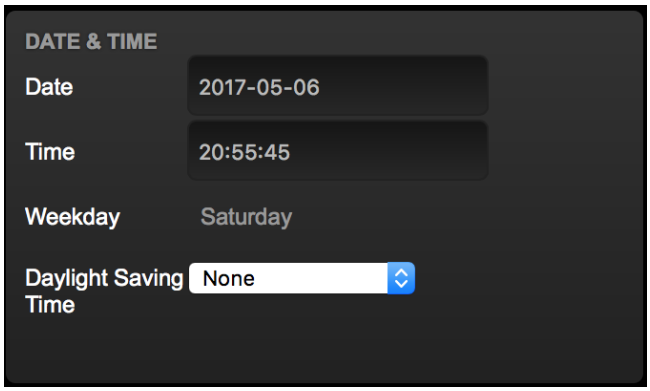

Figure 10.6: Date & Time Settings

10.5 Location

The astronomical clock in the CueCore1 calculates the sunrise and sunset times based on day of the year, latitude, longitude and UTC. The latitude and longitude values define the position in the world and should be entered in degrees. The latitude value should be positive for North and negative for South, the longitude should positive for East and negative for West. The website `http://www.findlatitudeandlongitude.com` can help discover the latitude and longitude values for the current location. The time-zone and perhaps daylight saving time of the current location is expressed in the UTC value. UTC is - in this context - equivalent to Greenwich Mean Time (GMT). For example, Visual Productions' HQ is based in the city of Haarlem, the Netherlands. During the winter the UTC equals +1 and in the summer during day light saving time it is set to +2. So, the settings for the Visual Productions HQ are shown in Figure 10.7.
The Offset fields allows to shift the sunrise and sunset triggers, both earlier and later. For example, to have a trigger half an hour before sunrise set the offset to -00:30.

Figure 10.7: Location settings

10.6 DMX Input

Actions programmed in the Show Control page can be triggered by incoming DMX, however, the CueCore1 can only monitor 50 DMX channels. The 'Address' field allows you to position the 50 channel window within the universe.

The DMX input port has no limitation for recording or converting.

Figure 10.8: DMX Input settings

This section also defines the listening port for UDP messages. External system intending to send UDP message to the CueCore1 should need to know the unit's IP address and this port number. By default the port is set to 7000.

10.7 Timecode

The CueCore1 can receive SMPTE, MTC and Art-Net timecode. This section allows to choose one of these protocols as the timecode source. Alternatively, the CueCore1 also has 'internal' timecode; a timecode generated by the unit itself. Synchronisation of playbacks and actions depend on this choice.

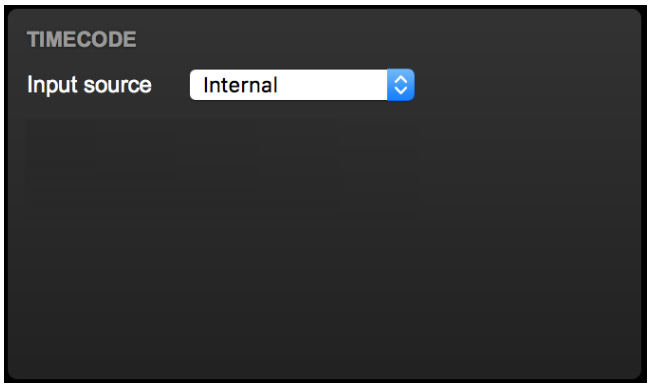

Figure 10.9: Timecode Settings

10.8 OSC

External equipment sending OSC messages to the CueCore1 need to be aware of the number specified in the 'Port' field. This is the port the CueCore1 listens to for incoming messages.

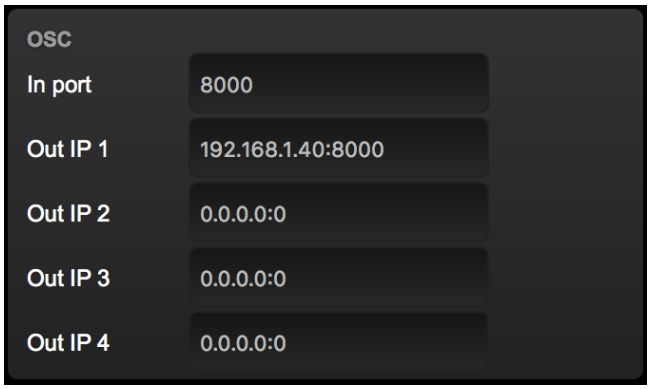

Figure 10.10: OSC Settings

The CueCore1 will send its outgoing OSC messages to the IP addresses specified in the 'Out IP' fields. Up to four IPs can be specified here. Use the 'ipaddress:port' format in these fields, e.g. "192.168.1.11:9000". If a field should not be used that it can be filled with IP 0.0.0.0:0. It is possible to enter a broadcast IP address like 192.168.1.255 in order to reach more than four recipients.

10.9 IP

The IP fields are for setting up the IP address and subnet mask of the CueCore1. The 'Router' field is only required when Port Forwarding is used.

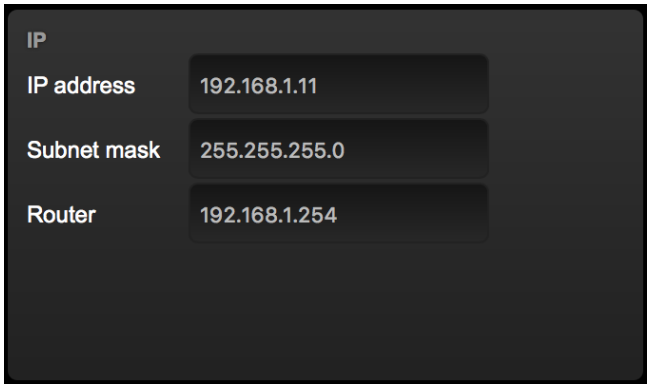

Figure 10.11: IP Settings

Chapter 11

vManager

A free-of-charge software tool called vManager has been developed to manage the devices. vManager allows for:

- Setup the IP address, subnet mask, router and DHCP
- Backup and restore the device's internal data and settings
- Perform firmware updates
- Set the real-time clock of the CueCore1 (The computer's date and time will be used)
- Identify a specific device (in a multi device set-up) by blinking its LED
- Revert to factory defaults

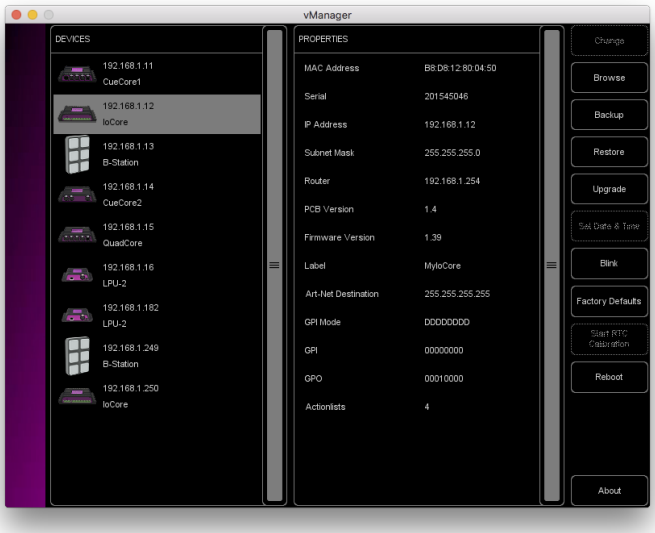

Figure 11.1: vManager

The following section explain the buttons in the vManager, as seen in figure 11.1.

11.1 Backup

Backups of all the programming data inside the device can be made. This backup file (an XML) is saved on the computer's hard-disk and can be easily transferred via e-mail or USB stick. The data of the backup can be restored via the Restore button.

Figure 11.2: Creating a backup

Apps distributed by app stores are not allowed to access files outside this designated location. It is important to know where vManager is storing its files, in case you wish transfer a backup file to memory stick or dropbox.

The designated file location differs per operating system and is likely to be a long and obscure path. For this reason, vManager provides you with a shortcut to the correct file location. A *Folder* button can be found in the file related dialogs. Clicking this button will open a file browser at appropriate folder.

11.2 Upgrade Firmware

To upgrade the firmware, first select the device and press the Upgrade Firmware button. The dialogue allows for selecting from the list of firmware versions available.

Figure 11.3: Firmware upgrade

Warning: Make sure the power to the device is not interrupted during the upgrade process.

11.3 Set Date & Time

The computer's date and time can be quickly copied to the unit by selecting a device and clicking the Set Date & Time button. Not all Visual Productions devices feature an internal real-time clock.

11.4 Blink

The device's LED can be set to blink fast for identifying the particular unit amongst multiple devices. The blinking is enabled by double-clicking on a device in the Devices list or by selecting a device and then clicking the Blink button.

11.5 Factory Defaults

All the user data like cues, tracks and actions are stored on the memory. They will be completely erased and all settings will reverted to their defaults by pressing the Factory Defaults button. This action does not affect the device's IP settings.

11.6 RTC Calibration

The CueCore1 features an internal real-time clock (RTC) that is used for generating scheduler triggers (date, time, sunrise, etc). In case that the clock is drifting, i.e. slowly falling behind or getting ahead of the real time, then it can be calibrated again using the vManager. The procedure is as follows:

1. Select the CueCore1
2. Click on the 'Start RTC Calibration' button
3. wait approximately 30 minutes
4. Click on the 'Stop RTC Calibration' button
5. Apply the recommended calibration value in the dialog (figure 11.4)

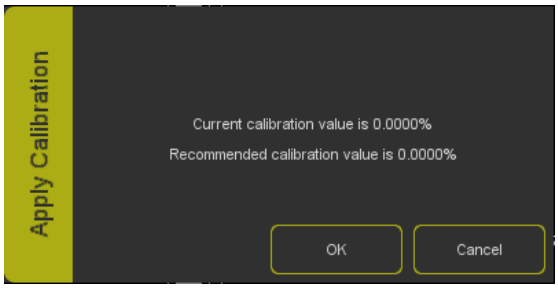

Figure 11.4: Apply calibration value

11.7 Reboot

The Reboot button allows you to remotely restart the device. This is useful for testing the unit's behaviour after a power-cycle.

11.8 Installing vManager

The vManager app is available on a wide range of operating systems, both mobile and desktop.

The softwares is distributed through app-stores to take advantage of receiving future software updates automatically.

11.8.1 iOS

vManager can be downloaded from the Apple iOS app-store at `itunes.apple.com/us/app/vman/id1133961541`.

11.8.2 Android

vManager can be found on the Google Play store at `play.google.com/store/apps/details?id=org.visualproductions.manager`.

Android 5.0 or higher is required.

11.8.3 Windows

Visit the Microsoft store at `www.microsoft.com`.

Windows 10 or higher is required.

11.8.4 macOS

Visit the Apple macOS app store at `itunes.apple.com/us/app/vman/id1133961541`.

macOS 10.13 is recommended.

11.8.5 Ubuntu

You can acquire the vManager from the uApp Explorer `uappexplorer.com/snap/ubuntu/vmanager`.

Alternatively, it can be installed by using the command-line:

```
snap find vmanager
snap install vmanager
```

To update the apps later on via the command-line type:

```
snap refresh vmanager
```

Ubuntu 18.04 LTS is recommended. The software is only available for the amd64 architecture.

Chapter 12

Kiosc

Kiosc is an app for creating custom user-interface. This app (see figure 12.1) is available on many operating systems: (iOS, Android, Windows, macOS & Ubuntu Linux). It can remote control lighting controllers from Visual Productions such as CueluxPro, CueCore, IoCore, LPU-2 and the B-Station.

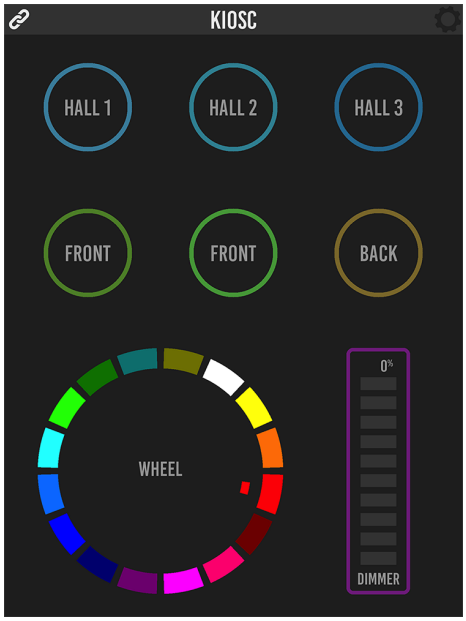

Figure 12.1: Kiosc

Please read the Kiosc manual, available from `http://www.visualproductions.nl/downloads`, for more details.

Appendices

Appendix A

Trigger Types

The following tables list the different types of triggers that can be used in the CueCore1. The different types are accompanied with values and flanks .

A.1 Touch Screen

Trigger Type	Trigger Value	Flank	Description
-	-	Change	Button/Fader goes up or down
-	-	Down	Button is pressed
-	-	Up	Button is released

When editing the Touch Screen actionlist it will be possible to add different kind of actions such as Button, Fader and Colour Picker. These elements will be displayed in the Kiosc software which is available from the Visual Productions website.

A.2 Art-Net

Trigger Type	Trigger Value	Flank	Description
Channel	DMX address	Change	Channel changes
Channel	DMX address	Down	Channel becomes non-zero
Channel	DMX address	Up	Channel becomes zero
UniverseA	-	-	A DMX level change in the first universe
UniverseB	-	-	A DMX level change in the second universe
Receiving	-	Change	Start receiving or loose Art-Net signal
Receiving	-	Down	Lost Art-Net signal
Receiving	-	Up	Start receiving Art-Net signal

A.3 DMX In

Trigger Type	Trigger Value	Flank	Description
Channel	DMX address	Change	Channel changes
Channel	DMX address	Down	Channel becomes non-zero
Channel	DMX address	Up	Channel becomes zero
UniverseA	-	-	A DMX level change in the universe
Receiving	-	Change	Start receiving or loose Art-Net signal
Receiving	-	Down	Lost Art-Net signal
Receiving	-	Up	Start receiving Art-Net signal

A.4 MIDI

Trigger Type	Trigger Value	Flank	Description
Message	MIDI address	Change	Receive a message that matches the address
Message	MIDI address	Down	Receive a message that matches the address and the value non-zero
Message	MIDI address	Up	Receive a message that matches the address and the value is zero
Receiving	-	-	Receive any message

MIDI address can be any note-on, note-off or control-change.

A.5 Timecode

Trigger Type	Trigger Value	Flank	Description
Time	Frame	-	Timecode frame
Receiving	-	Change	Start receiving or loose timecode signal
Receiving	-	Stop	Lost timecode signal
Receiving	-	Start	Start receiving timecode signal

A.6 Scheduler

Trigger Type	Trigger Value	Flank	Description
WeekdayAndTime	-	-	Enable weekdays and specify a time (don't care 'X' can be used)
DateAndTime	-	-	Specify a specific date and time (don't care 'X' can be used)
Sunrise	-	-	When the sun rises in the morning
Sunset	-	-	When the sun goes down in the evening
DaylightST	-	Change	Daylight Saving Time period starts or ends
DaylightST	-	Stop	Daylight Saving Time period ends
DaylightST	-	Start	Daylight Saving Time period starts

A.7 System

Trigger Type	Trigger Value	Flank	Description
Startup	-	-	The CueCore1 has been power up
Network Connection	-	Change	Network connection established or lost
Network Connection	-	Stop	Network connection lost
Network Connection	-	Start	Network connection established
ReleasedByMaster	-	Change	Master (e.g. CueluxPro) released or obtained connection
ReleasedByMaster	-	Stop	Master released connection
ReleasedByMaster	-	Start	Master obtained connection

A.8 OSC

Trigger Type	Trigger Value	Flank	Description
Message	URI	Change	Receive a message that matches the URI
Message	URI	Down	Receive a message that matches the URI and the value non-zero
Message	URI	Up	Receive a message that matches the URI and the value is zero
Receiving	-	-	Receive any message

The user can define his own URI as the trigger value of a message, however, the OSC specification dictate this string must start with a '/' sign. Please note that this string has a maximum length of 14 characters, including the '/'.

A.9 GPI

Trigger Type	Trigger Value	Flank	Description
Channel	Port number	Change	Port state changes
Channel	Port number	Down	Port is closed
Channel	Port number	Up	Port is opened
Binary	Combination value	-	A combination of ports being closed

Use the Binary trigger type to catch port combinations when they are set as digital. Specify the port combination by adding the values that correspond to the ports (see table below). This value is entered as the trigger value.

Port	Value
1	1
2	2
3	4
4	8

For example, to trigger on both port 1 and 2 being closed fill in trigger value 3 (1+2). To trigger on port 5 and 6, fill in value 48 (16+32).

A.10 Variable

Trigger Type	Trigger Value	Flank	Description
Channel	Variable Index	-	The specified variable changes
Variable 1	Number [0,255]	Change	Variable 1 becomes = or # to the value
Variable 1	Number [0,255]	Down	Variable 1 becomes = to the value
Variable 1	Number [0,255]	Up	Variable 1 becomes # to the value
Variable 2	Number [0,255]	Change	Variable 2 becomes = or # to the value
Variable 2	Number [0,255]	Down	Variable 2 becomes = to the value
Variable 2	Number [0,255]	Up	Variable 2 becomes # to the value
Variable 3	Number [0,255]	Change	Variable 3 becomes = or # to the value
Variable 3	Number [0,255]	Down	Variable 3 becomes = to the value
Variable 3	Number [0,255]	Up	Variable 3 becomes # to the value
Variable 4	Number [0,255]	Change	Variable 4 becomes = or # to the value
Variable 4	Number [0,255]	Down	Variable 4 becomes = to the value
Variable 4	Number [0,255]	Up	Variable 4 becomes # to the value
Variable 5	Number [0,255]	Change	Variable 5 becomes = or # to the value
Variable 5	Number [0,255]	Down	Variable 5 becomes = to the value
Variable 5	Number [0,255]	Up	Variable 5 becomes # to the value
Variable 6	Number [0,255]	Change	Variable 6 becomes = or # to the value
Variable 6	Number [0,255]	Down	Variable 6 becomes = to the value
Variable 6	Number [0,255]	Up	Variable 6 becomes # to the value
Variable 7	Number [0,255]	Change	Variable 7 becomes = or # to the value
Variable 7	Number [0,255]	Down	Variable 7 becomes = to the value
Variable 7	Number [0,255]	Up	Variable 7 becomes # to the value
Variable 8	Number [0,255]	Change	Variable 8 becomes = or # to the value
Variable 8	Number [0,255]	Down	Variable 8 becomes = to the value
Variable 8	Number [0,255]	Up	Variable 8 becomes # to the value

A.11 Recorder

Trigger Type	Trigger Value	Flank	Description
Intensity	Recorder #	Change	Intensity changed
Intensity	Recorder #	Down	Intensity became non-zero
Intensity	Recorder #	Up	Intensity became zero
End	Recorder #	-	Recorder stopped

A.12 UDP

Trigger Type	Trigger Value	Flank	Description
Message	String	-	Receive a message that matches the trigger-value
Receiving	-	-	Receive any message

The user can define his own string as the trigger value of a message. Please note that this string has a maximum length of 14 characters.

It is possible to pass a parameter along with a message. In order to do this use the syntax `trigger=value`. For example when the trigger type is set to 'message' and the trigger value is set to `intensity` then the transmitting equipment can pass an intensity level by sending `intensity=255`, where 255 can be any number in the range [0,255].

A.13 Console

Trigger Type	Trigger Value	Flank	Description
Cue change	-	Change	Console changed cue
Cue change	-	Down	Console changed to cue >1
Cue change	-	Up	Console changed to cue 1
Channel	Cue #	Change	Cue activated or de-activated
Channel	Cue #	Down	Cue activated
Channel	Cue #	Up	Cue de-activated

A.14 Randomizer

Trigger Type	Trigger Value	Flank	Description
Result	-	-	The Randomizer made a new value
Specific Value	Number	-	The Randomizer made a value that matches

A.15 User List (1-4)

User lists have no triggers. Actions inside user lists can only be activated by other actions through 'Action' task with the 'Link' feature.

Appendix B

Task Types

Tasks allow you to automate the functionality in the CueCore1. All this functionality is categorized in task-types. This appendix provides a listing of the various task-types. The tables present an overview of all available features and functions per task-type.

B.1 Console

Control the Console.

Feature	Function	Parameter 1	Parameter 2
Go+	-	-	-
Go-	-	-	-
Jump	Set	Cue #	-
Jump	Toggle	Cue #	Cue #
Jump	Control	-	-
Jump	Switch	Cue #	Cue #
Jump	Control Variable	Variable #	-
Intensity	Set	percentage [0%,100%]	-
Intensity	Control	-	-
Capture from DMX	-	-	-
Capture from Art-Net	-	-	-
Capture from ShowControl	-	-	-

B.2 Recorder

Manipulate the memories in the Recorder.

Feature	Function	Parameter 1	Parameter 2
Intensity	Set	Memory #	percentage [0%,100%]
Intensity	Toggle	Memory #	percentage [0%,100%]
Intensity	Control	Memory #	-
Intensity	Inverted Control	Memory #	-
Intensity	Fade in 1s	Memory #	percentage [0%,100%]
Intensity	Fade in 3s	Memory #	percentage [0%,100%]
Intensity	Fade in 10s	Memory #	percentage [0%,100%]
Intensity	Control Variable	Variable #	-
Intensity	Variable to Intensity	Variable #	Memory #
Play State	Toggle	Memory #	-
Play State	Start	Memory #	-
Play State	Stop	Memory #	-
Play State	Restart	Memory #	-
Play State	Switch	Memory #	-
Play State	Start Variable	Variable #	-
Play State	Stop Variable	Variable #	-
Solo	Set	Memory #	Fade time
Solo	Control	-	Fade time
Random Solo	Set	-	Fade time
Stop All	Stop	-	-
Stop All	Fade in 1s	-	-
Stop All	Fade in 3s	-	-
Stop All	Fade in 10s	-	-
Loop	Set	Memory #	On/Off
Loop	Toggle	Memory #	-
Loop	Control	Memory #	-
Timecode	Set	Memory #	On/Off
Timecode	Toggle	Memory #	-
Timecode	Control	Memory #	-
Record	Start	Memory #	-
Record	Stop	-	-
Erase	Start	Memory #	-

B.3 DMX

Manipulate the DMX levels. These are the levels that can also be send out via Art-Net.

Feature	Function	Parameter 1	Parameter 2
Set Value	Set	Channel [1,512]	Value [0,255]
Set Value	Toggle	Channel [1,512]	-
Set Value	Control	Channel [1,512]	-
Set Value	Inverted Control	Channel [1,512]	-
Set Value	Decrement	Channel [1,512]	-
Set Value	Increment	Channel [1,512]	-
Set Value	Universe A	-	-
Set Value	Universe B	-	-
Set Value	Switch	DMX Channel	-
Set Value	Control scaled	Channel [1,512]	Percentage [0%,100%]
Set Value	Control offset	Channel [1,512]	Offset [0,255]
Bump Channel	Set	Channel [1,512]	Value [0,255]
Bump Channel	Control	Channel [1,512]	-
Clear All	Set	-	-
Spectrum	Control	Channel [1,510]	-

B.4 MIDI

Send a MIDI message.

Feature	Function	Parameter 1	Parameter 2
Send	Set	Address	value [0,127]
Send	Control	Address	-

B.5 OSC

Send an OSC message via the network. The OSC recipients are specified in the Settings page.

Feature	Function	Parameter 1	Parameter 2
Send	Set	URI	floating point number
Send	Control	URI	-
Send Float	Set	URI	floating point number
Send Float	Control	URI	-
Send Unsigned	Set	URI	positive number
Send Unsigned	Control	URI	-
Send Bool	Set	URI	true or false
Send Bool	Control	URI	-
Send String	Set	URI	String of characters
Send String	Control	URI	-

Please note that string in parameter 1 has a maximum length of 14 characters, including the compulsory leading '/' sign.

B.6 Art-Net

Convert DMX universes to Art-Net universes.

Feature	Function	Parameter 1	Parameter 2
Set Value	Universe A	-	-
Set Value	Universe B	-	-

B.7 System

Miscellaneous tasks.

Feature	Function	Parameter 1	Parameter 2
Blink	Set	On or Off	-
Blink	Toggle	-	-
Blink	Control	-	-
Console Routing DMX	Set	On or Off	-
Console Routing DMX	Toggle	-	-
Console Routing DMX	Control	-	-
Console Routing DMX	Inverted Control	-	-
Recorder Routing DMX	Set	On or Off	-
Recorder Routing DMX	Toggle	-	-
Recorder Routing DMX	Control	-	-
Recorder Routing DMX	Inverted Control	-	-
Show Control Routing DMX	Set	On or Off	-
Show Control Routing DMX	Toggle	-	-
Show Control Routing DMX	Control	-	-
Show Control Routing DMX	Inverted Control	-	-
Console Routing Art-Net	Set	On or Off	-
Console Routing Art-Net	Toggle	-	-
Console Routing Art-Net	Control	-	-
Console Routing Art-Net	Inverted Control	-	-
Recorder Routing Art-Net	Set	On or Off	-
Recorder Routing Art-Net	Toggle	-	-
Recorder Routing Art-Net	Control	-	-
Recorder Routing Art-Net	Inverted Control	-	-
Show Control Routing Art-Net	Set	On or Off	-
Show Control Routing Art-Net	Toggle	-	-
Show Control Routing Art-Net	Control	-	-
Show Control Routing Art-Net	Inverted Control	-	-

B.8 Action

Trigger another action.

Feature	Function	Parameter 1	Parameter 2
Link	Set	Action	-

B.9 Action List

Manipulate an action-list.

Feature	Function	Parameter 1	Parameter 2
Enable	Set	Action-list	On or Off
Enable	Toggle	Action-list	-
Enable	Control	Action-list	-
Enable	Inverted Control	Action-list	-

B.10 Timecode

Manipulate the internal timecode generator.

Feature	Function	Parameter 1	Parameter 2
Playstate	Set	Time	-
Playstate	Start	-	-
Playstate	Stop	-	-
Playstate	Restart	-	-
Source	Set	input source	-

B.11 Variable

Manipulate one of the eight variables.

Feature	Function	Parameter 1	Parameter 2
Set Value	Set	Variable [1,8]	Value [0,255]
Set Value	Toggle	Variable [1,8]	Value [0,255]
Set Value	Control	Variable [1,8]	-
Set Value	Inverted Control	Variable [1,8]	-
Set Value	Decrement	Variable [1,8]	-
Set Value	Increment	Variable [1,8]	-
Set Value	Continuous Decrement	Variable [1,8]	Delta [1,255]
Set Value	Continuous Increment	Variable [1,8]	Delta [1,255]
Set Value	Stop Continuous	Variable [1,8]	-
Set Value	Control Scaled	Variable [1,8]	Percentage [0%,100%]
Set Value	Control Offset	Variable [1,8]	Offset [0,255]
Refresh	Set	Variable [1,8]	-

Vari-

ables are further explained on page 31

B.12 UDP

Send an UDP message via the network. Specify the recipient in Parameter 2. For example "192.168.1.11:7000".

Feature	Function	Parameter 1	Parameter 2
Send	Set	text string	IP address & port
Send	Control	-	IP address & port
Send Float	Set	floating point number	IP address & port
Send Float	Control	-	IP address & port
Send Unsigned	Set	positive number	IP address & port
Send Unsigned	Control	-	IP address & port
Send Bool	Set	true or false	IP address & port
Send Bool	Control	-	IP address & port
Send String	Set	text string	IP address & port
Send String	Control	-	IP address & port
Send String Hex	Set	hex string	IP address & port
Send String Hex	Control	String	IP address & port
Send Bytes	Set	Hex string	IP address & port

Please note that string in parameter 1 has a maximum length of 14 charac-

ters.

The Send Bytes features allows for sending ASCII codes. For example, in order to send the string 'Visual' followed by a line feed parameter 1 should be '56697375616C0A'.

B.13 GPI

Force the GPI actions to be triggered.

Feature	Function	Parameter 1	Parameter 2
Sample Binary	Set	-	-
Refresh	Set	-	-

B.14 Randomiser

Trigger the Randomizer to generate a new random number.

Feature	Function	Parameter 1	Parameter 2
Refresh	Set	Minimum value	Maximum value

Appendix C

Templates

This appendix discusses the templates provided in the Show Control page.

Template	Description
Art-Net ->DMX	Converts two incoming Art-Net universes to DMX. The Art-Net universe numbers are determined on the settings page. The 'DMX' output routing for 'Show Control' should be enabled.
Art-Net ->Recorder	Control the recording intensities by Art-Net (channel 1-16). The input universe number is determined on the settings page.
B-Station ->Console	Use the B-Station to select between cue 1-6 in the Console page. The B-Station should have its 'Buttons ->OSC with Feedback' template loaded. Additionally, the B-Station should list the CueCore1's IP address in its OSC output IP list. Likewise, the CueCore1 should list the B-Station's IP address in its OSC output IP list (see page 38 in order for the feedback to work.
B-Station ->Recorder	Use the B-Station to select between memory 1-6 in the Recorder page. The B-Station should have its 'Buttons ->OSC with Feedback' template loaded. Additionally, the B-Station should list the CueCore1's IP address in its OSC output IP list. Likewise, the CueCore1 should list the B-Station's IP address in its OSC output IP list (see page 38 in order for the feedback to work.
DMX ->Art-Net	Converts the incoming DMX universe to Art-Net. The Art-Net universe number is determined on the settings page. The 'Art-Net' output routing for 'Show Control' should be enabled.
DMX ->MIDI	Converts the first 8 incoming DMX channels to MIDI ControlChange messages.
DMX ->Recorder	Control the recording intensities by DMX (channel 1-16).
DMX Splitter	This template will copy the incoming DMX to the two DMX output ports. The 'DMX' output routing for 'Show Control' should be enabled.
GPI ->Console	Each GPI port selects a cue in the Console.
GPI ->DMX	Each GPI port controls a DMX channel (1-4). The 'DMX' output routing for 'Show Control' should be enabled.
GPI ->MIDI	Each GPI port converts to a MIDI message.
GPI ->OSC	Each GPI port converts to a OSC message. Specify the OSC target IPs on the settings page.
GPI ->Recorder	Each GPI port control the playback of a recording [1-4].
MIDI ->DMX	Incoming MIDI ControlChange messages are translated into DMX channels.
OSC Recorder Control	The recorder is controlled by OSC messages.
OSC RGBW Example	An example of controlling the first four DMX channels by OSC.
Touch Screen ->Recorder	Creates a Kiosc layout for controlling the playback of the recordings.

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