VISUAL PRODUCTIONS

CUETY
MANUAL

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Introduction

Thank you for choosing the Cuety lighting controller. This manual will discuss setting up the hardware and software as well as programming your light show.

System

The Cuety system consists of the LPU hardware and the Cuety App running on your iPad. In order for the LPU and the App to communicate you would need to provide a Wi-Fi access point yourself. You can expand the system by also running the Remote App on your iPhone.

Hardware

The LPU hardware device is the brain of your Cuety system. This box takes care of all the calculation of DMX levels, Cue timing and FX engine. Therefore, all the information about the patch and cues are stored in this device. In a way, the Apps are just 'user interface'. This means that when the communication between the LPU and the App is interrupted – perhaps because of a Wi-Fi problem – then your show will continue to run.

This also means that when you use the LPU for lighting in a permanent installation then you only need to connect the (Remote) App when you want to change to a different cue. When not connected to an App, the LPU will just continue to run the currently active cues.

LPU-1 vs LPU-2

The LPU is available in two versions, the LPU-1 and the LPU-2. The difference between the two units is that the LPU-2 has additional options to connect to external systems. Only the LPU-2 has support for OSC, TCP, UDP and HTTP protocols, making it very suitable to be integrated in permanent systems. Appendix A discusses the LPU-2's connectivity in detail.

Apps

The main App is the Cuety App for the iPad. This App allows you to create a patch (the list of fixtures you are controlling), program cues and FX and operate the playbacks like a live lighting console.

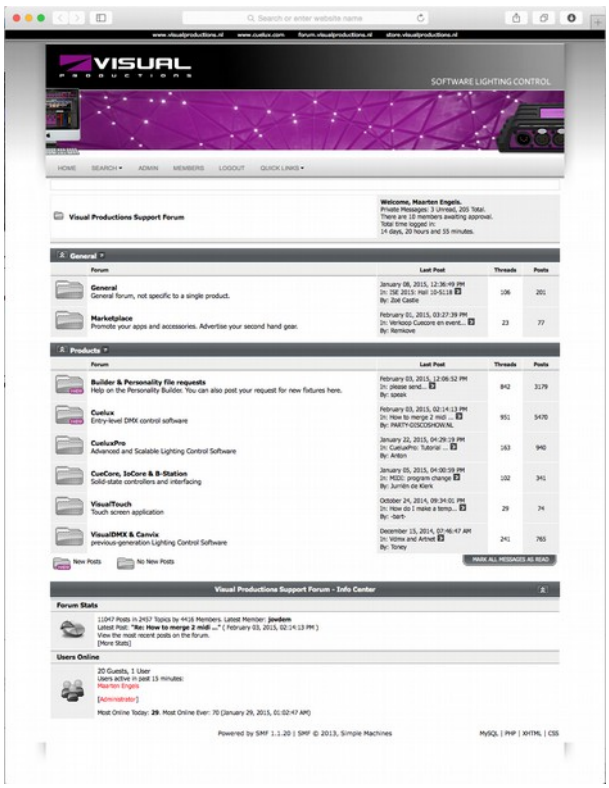
In some situations you might not need the ability to modify all the details of your light show; sometimes you just want a simple way of choosing between the pre-programmed cues. In this case you can use the Remote App for iPhone.

The Remote App is also useful to give to other users of your lighting that have less privileges; the Remote App does not enable the user to make any changes to the patch or cues.

Both Apps are available in the Apple App Store.

Further Help

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



Quick Start

This chapter gives you brief step-by-step instructions on how to get your Cuety system up and running. All steps are explained in further detail in the subsequent chapters. In this Quick Start example we are using a simple 3-channel RGB fixture that is set to start-address 1.

Connect

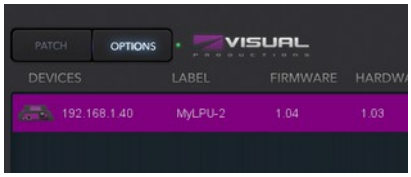
Power up your LPU device with the accompanied PSU. Use the network cable to connect the LPU to your router.

DHCP

We assume here that you have a router that acts as a DHCP server. Make sure your LPU device is also set to DHCP. The LED should be blinking in red. If it's blinking in white (static IP) then please use a pencil to shortly push the reset button.

Cuety

Start your Cuety app on your iPad and go to the OPTIONS screen. Select the LPU from the list. There now should be a green LED in the Cuety GUI (right next to the OPTIONS button).



Patch

Go to the PATCH screen and select the first fixture cell (top left). Press the PERSONALITY button and go to the 'Generic' manufacturer, where you choose a 'RGB 01x' model.

Edit

Exit the PATCH screen, you are now back in the main playback screen. Press the EDIT button and then select a playback cell. This opens the EDIT screen.

Select the fixture and set some RGB values in the 'programmer' below. Press ADD for >1 second to add a cue to the list and record it immediately.

Now set some other RGB values and press ADD again for 1> second to create the second cue.

Playback

Press the BACK button to return to the main playback screen. Now you can activate your edited playback by clicking on it. The playback status should indicate a yellow colour and the attached fixture should show our first RGB levels. By clicking the playback button again it will go to the next cue.

You could go back into the EDIT screen to set fade times and change the cues' conditions to make it traverse automatically.

Setting up

This chapter discusses the steps to set up the Cuety system.

Mounting

The LPU can be placed desktop or it can be DIN rail mounted

DIN Rail

The device is prepared for DIN Rail mounting by using the 'DIN rail holder TSH 35' from Bopla (Product no. 22035000).

This adapter is – amongst others – available from:

Farnell / Newark (order code 4189991)

Conrad (order code 539775 – 89)

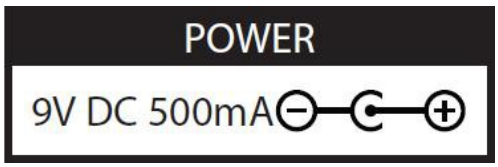
Distrelec (order code 300060)

Kensington Lock

You can secure your device by using a Kensington style laptop lock.

Power

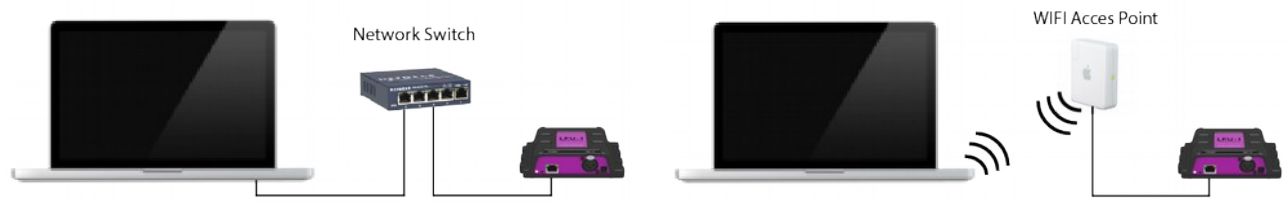
The LPU requires a DC power supply between 9 and 12 Volts with a minimum of 500mA. The 2,1 mm DC is center-positive.



Network

Connect the LPU to a Wi-Fi access point by using the supplied CAT-5 cable. You can either connect it directly to the access point or via a network switch. The LPU's Ethernet port is auto-sensing so it does not matter whether you use a cross or straight cable.

Per factory default the LPU is set DHCP. It will be automatically assigned with an IP address by the DHCP server in your network (usually done by your router). When set to DHCP the heartbeat LED on the LPU indicates red.



You switch the LPU to a static IP address by briefly pressing the reset button on the device. When set to static, the heartbeat LED on the LPU will indicate white. Static IP addresses are useful when you have no DHCP server in your network, for instance when you make a direct peer-to-peer connection between your LPU and your tablet/computer. It is also useful in case you want to make sure that the IP address of the LPU will never change, e.g. in a permanent installation.

When using static IP addresses you have to make sure that all equipment on your network have unique IP addresses.

You can also change the IP settings inside the Cuety App.

By pressing the reset button on the device for 3 seconds or more, you will reconfigure the unit to the factory default IP address and sub-net mask. No other settings will be changed. The default IP address is 192.168.1.10 with the sub-net mask set to 255.255.255.0

If you wish to reset and fully erase the patch and playback memory in the LPU then you can perform a 'Factory Defaults' by using the vManager software tool. This tool is discussed on page 15.

Cuety App

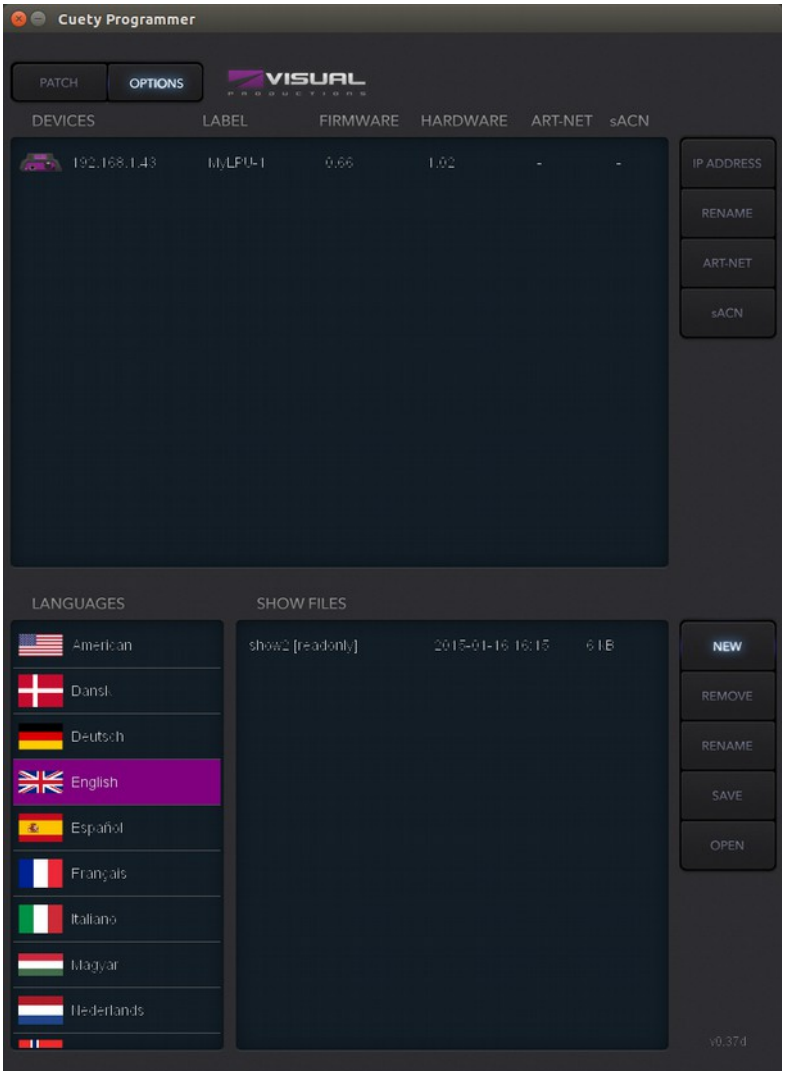
The Cuety App is the main tool to program your light-show and to operate it live. Please note that you first need to connect to a LPU hardware before you can create a patch or record cues.

This App is available for iOS (an Android version is pending) and available through the Apple App Store.

Although the App is designed for tablets, there are also releases available for desktop operating systems like Windows, Mac OS and Ubuntu Linux. You are welcome to download these versions from our website. Do keep in mind that the Programmer App has a window that fits the original iPad screen resolution. Your computer therefore requires a screen height of minimal 1080 pixels.

Options

To connect to your LPU hardware first open the Options page.



Devices

Here you can choose your LPU device from the list. Once your LPU is selected it will be possible to change the IP address of the unit. When changing the IP be careful to keep it within the IP range of your tablet. Moving the IP address of your LPU outside this range will result in the LPU disappearing from the list. In this case press the physical reset button shortly on the LPU to switch back to DHCP (red LED) or press it long to revert back to the default static IP address (white flashing LED) which is 192.168.1.10.

Art-Net & sACN

You can also enable the Art-Net and/or sACN protocols. These protocols are not required for normal use of the Cuety system. The protocols will allow you for instance to connect to a 3D visualizer for rendering your lighting rig.

Show files

All your show data is located in the LPU hardware, however, it is possible to create a backup show file on your tablet. This show file can later be 'opened' in the hardware. You can access these show files through iTunes and copy them to your desktop computer.

When running Cuety on your desktop OS, the files will be stored at:

Windows C:\Users\[username]\Documents\Visual Productions\Programmer

Mac OS X /Users/[username]/Visual Productions/Common/Programmer

Ubuntu Linux /home/[username]/Visual Productions/Common/Programmer

You can make a show file read-only by editing the XML-based show file with a standard text editor. When you replace the `<show>` tag by `<show readonly="true">` then this can no longer be removed, renamed or overwritten by the Cuety App.

It is possible to import a show file made in Cuelux, another lighting software package made by Visual Productions. After copying the Cuelux show file to the iPad using iTunes it will become visible in the show file listing. The Cuelux

show files remain read-only. Opening this file will import the patch and some playback settings. The cues, however, will not be imported as Cuelux saves this information in different style.

Patch

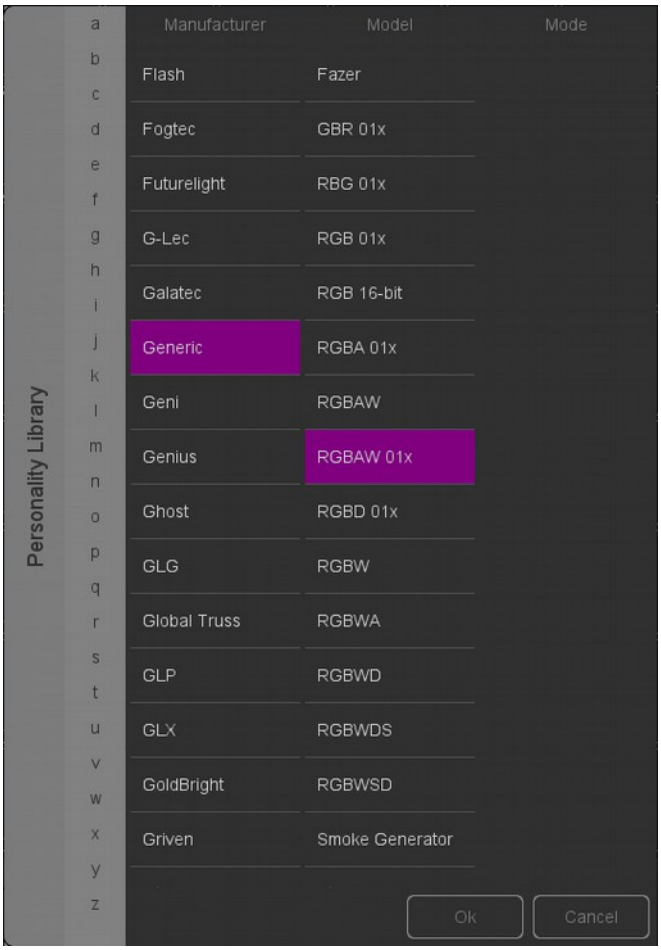
After successfully connecting to your hardware the logical next step would be to create a patch. A patch is a configuration in which you tell the Cuety controller which DMX fixtures you are using. Cuety supports a maximum of 64 fixtures. These fixtures can be of many different types and brands.

Adding fixtures

To add fixtures to your patch first select one or more fixture cells. Then press the 'Personality' button. This will popup a dialog that lets you traverse through the library of personalities (also known as profiles). Personalities are descriptions of a DMX-512 capable apparatus. Cuety is equipped with a large library of approximately 3.500 personalities. It includes popular and even obscure brands, it ranges from moving lights to special effects.

A special 'manufacturer' to take into consideration is 'Generic'. This collection contains many typical DMX fixtures with common traits like dimmers and RGB spots. It is likely that some of your DMX equipment will correspond with items from the Generic list.

In case you have a DMX fixture that is not represented in the Cuety library then please consult page 14.



Addressing

Each DMX fixture needs to be set to a 'start address'. You would need to set the addresses on the actual fixtures. Then you need to make sure that the same addresses are set in the patch of Cuety. Please refer to the fixture's documentation on how to set it on the actual fixture. In Cuety, you select one or more fixture cells and press the 'address' button. If you have multiple fixtures selected Cuety will automatically increment the addresses between the consecutive fixtures.

Invert Pan/Tilt

When using moving lights like yokes then depending on the orientation of your fixture you might want to invert the pan and/or tilt movement. This way you can make sure that moving 'left' on your controller in reality also makes the lights to go 'left'. In case you attach your moving head to a vertical truss you might want to use the Swap Pan/Tilt option.

Virtual Dimmer

If the fixture has RGB(AW) colour mixing but no DMX channel for intensity you would need to lower all RGBAW faders identically to reduce the intensity but to keep the colour. This can be quite awkward. You can enable the Virtual Dimmer; this option will give the fixture intensity capability separate from the RGBAW control. The LPU will calculate the necessary DMX levels internally.

Sub-Fixtures

Cuety does not support sub-fixtures. We use sub-fixtures in our personality files when fixtures have multiple 'parts' like RGB-pixels or dimmer channels. Our other software, Cuelux(Pro), takes use of that. In Cuety all personality modes with sub-fixtures are ignored.

The way how to add a fixture with multiple dimmer channels in Cuety is to add several 'Generic - Dimmer 01x' fixtures. You can control multiple-pixel lights by adding several 'Generic – RGB 01x' fixtures.

Playback

The Playback view presents you with 64 playback buttons. Each Playback can contain one or more cues. Cues are explained in more detail later on.

You can directly access all the playback buttons to start and stop them. To start a playback just hit the playback button one time. To release a playback (that means to stop it) you can either press the playback button for longer than one second, or first enable the 'Release' button at the top and then choose a playback button. To release all playbacks in the system press the 'Release' button longer than one second.

To change the intensity and speed of a playback you first need to select the appropriate bank. The blue bar indicates the currently selected bank. You can move the bar around by using three fingers (on iOS) or by using the mouse wheel or PageUp/PageDown keys (on Windows, Mac OS & Ubuntu).

Swap

You can move the contents of a playback to another location by enabling the Swap button at the top, then click on the playback you would like to move and then click on the destination playback. The contents of those two playbacks will be swapped.

Properties

Each playback has a few properties. You can change them by enabling the Props button at the top and then choose a playback button.

Background – By enabling Background the playback will start automatically when the LPU is powered on. Also, the playback will ignore the Release All command (a long press on the 'Release' button). The Background feature is useful for controlling fixtures that should never turn off; e.g. some lights backstage that provide safety to artists coming on stage.

Exclusive – When you have multiple playbacks on the same bank that have Exclusive enabled, then only one of them will be active at the same time. Starting a new exclusive playback will automatically release the other exclusives. Please note that the scope of the Exclusive feature is limited within the bank, i.e. an exclusive playback in one bank will not influence an exclusive playback in another bank. By using Exclusive you can create LTP-like or palette-like behaviour, both features usually found in professional-grade lighting controllers.

Go Mode – This will change the behaviour of the playback button. By default it is set to Go; the button will send a Go Forward (Go+) command to the playback which then will start, or if it was running already it will progress to the next cue. Pressing the button for a long time will release the playback. The next option is Toggle; in this case pressing the button for the first time will start the playback and pressing it again will release it. The Flash mode will make the playback active while the button is depressed. The Solo mode does the same, however, it will also temporarily blackout all other playbacks.

Repeat – This property determines what the playback does when it finishes the last cue. When set to Loop it will just start over from the beginning. Bounce will make it traverse back to the beginning; it will keep going back and forth. In the Random mode the order of the cues will be random; the playback will continue indefinitely. When set to Off the playback will automatically release when reaching the end of the cues.

Edit

This page allows you to edit the contents of a playback.

Cues

A cue is a step in a lighting sequence. A cue is sometimes also called a scene, it means the same. We, however, prefer to use the word cue. Sometimes you just need a single cue e.g. to create a static lighting 'look'. Sometimes you need multiple cues; perhaps when you created a look for each scene in a theatre play. In this case you step through the cues as each scene starts.

You can also use multiple cues to create a 'chase' for example for a disco party. To build a chase you just make a cue for each step of the chase and tell Cuety to run through the cues automatically.

You can use the 'Add' and 'Remove' buttons change the number of cues inside this playback. Pressing the 'Remove' button for longer than one second will remove all cues. Once you select a cue (it will indicate in blue) you can alter its properties by using the 'Rename', 'Condition', 'Delay' and 'Fade' buttons.

Condition

The Condition property determines whether there is a pause between each cue. When set to 'Halt' the playback will pause after the fading of the cue is finished. It will wait until the user presses the playback button to give a Go command. When receiving the Go command it will start playing the next cue.

When set to 'Follow' the playback will automatically continue to the next cue. This condition is useful for creating automatic chases.

Delay

The delay time is only used when using the Follow condition. In this case once the a cue has finished cross-fading the playback will automatically progress to the next cue. It will then first wait for the time specified by 'Delay' before starting its cross-fading.

Fade

The cue will fade from the current levels to its programmed levels. The time it takes to cross-fade is specified by 'Fade'. When fade is set to 0 then there will be no cross-fade; the values will change instantly.

Fixtures

This grid enables you to select fixtures. The changes you make in the 'Programmer' area below are applied to the selected fixtures. The fixture cells will indicate in red when one of their attributes are set in this playback.

Programmer

The view at the bottom of the Edit page is called the Programmer. The Programmer contains a lighting 'look' i.e. it can contain levels for various attributes for various fixtures. Basically, you build up your lighting 'look' inside the Programmer and then save it to a cue by using the 'Record' button. This overwrites the contents of the cue by whatever is present in the Programmer. A single cue needs to be selected in order to use the 'Record' button.

To modify a cue, you first transfer the contents of the cue back to the Programmer by using the 'Load' button. After that the procedure is the same as making a new cue: change the values inside the Programmer and store it in the cue with the 'Record' button.

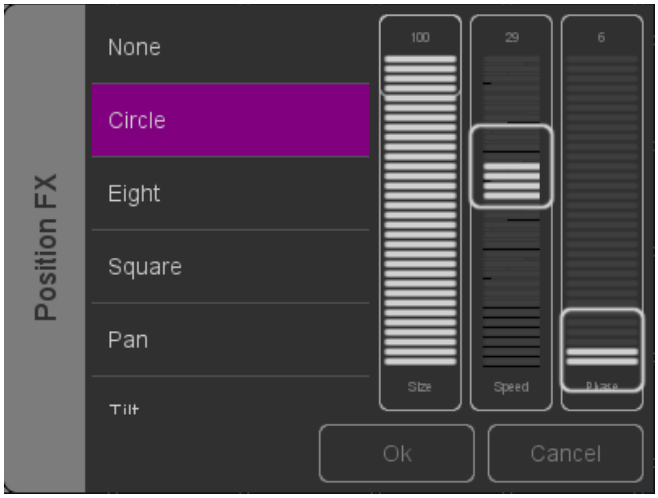
Use the 'Clear' button to remove values from the Programmer. When you have certain fixtures selected and hit 'Clear' then only the values of those fixtures are reset. When the fixtures have no values set any more or no fixtures are selected when you hit Clear then all values of all fixtures inside the Programmer are cleared. In practice, clicking twice on the Clear button will completely erase the Programmer.

The controls will indicate in red when a certain attribute is set in this playback.

FX

Your playback consists of cues and cues are static lighting 'looks'. To animate your lighting you usually create multiple cues and have the playback chase between them. However, you can use FX to quickly create a dynamic animation in your lighting. For example a smooth circular movement on your moving head or scan would require you to program many steps. With FX you simply select the 'Circle' effect for your position attribute, set a few parameter levels and it's done.

There are also FX for RGB colour mixing e.g. a rainbow effect. FX also exists for the intensity attribute. You can use intensity effects for quickly creating some chases by using the 'Phase' parameter.



Remote App

The Cuety Remote App is a small tool for remote controlling the LPU. The Remote App does not allow you to edit the settings inside the controller. It is assumed that you would have already programmed the contents of the LPU by using the Cuety App.

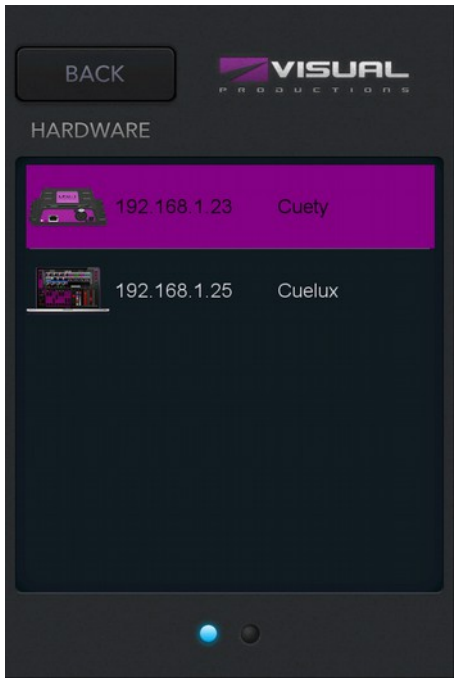
This App is available for iOS only (an Android version is pending) and available through the Apple App Store. It runs on both iPhones and iPads.

The Remote App allows you to trigger playback buttons.

To connect to a LPU open the settings page and choose your LPU from the list.

Cuelux

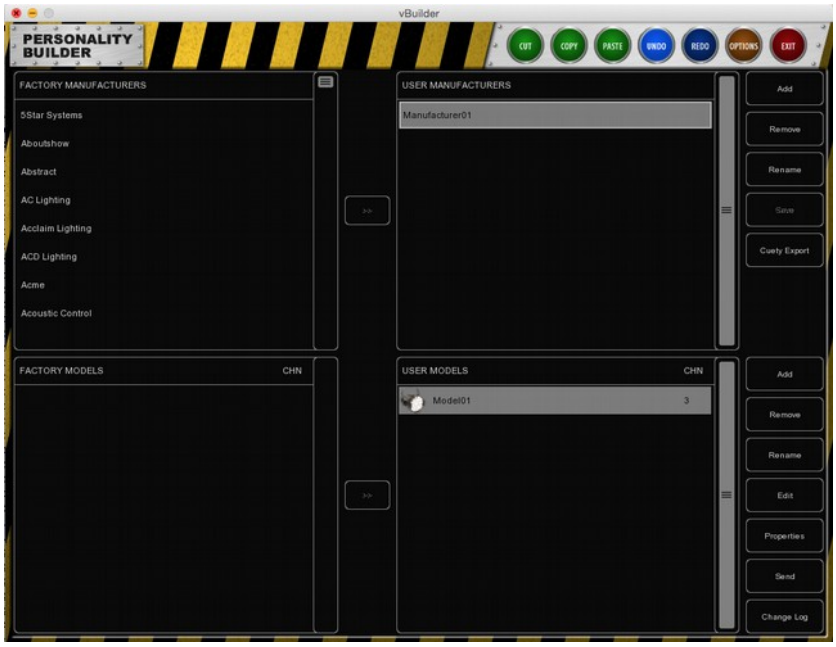
The Remote App can also be used to control the Cuelux lighting control system from Visual Productions. Cuelux is a DMX control system larger and more powerful than Cuety. More information about Cuelux can be found at www.cuelux.com.



Creating Personalities

Cuety has a large library of personality files built in. It is possible, however, that a lighting fixture you wish to control does not exist in our library. If you like to add a new personality file to Cuety then you can request via our forum at www.visualproductions.nl/forum. Please make sure you mention that the personality is required for Cuety and you would need to include a link to the fixture's manual.

Alternatively you can create your own personality file by using the vBuilder software. This tool can be downloaded from our website at www.visualproductions.nl/downloads. You will need vBuilder v1.3.88 or higher.



In order to create the personality and use it in Cuety you have to make the following steps:

- Create the personality file (the vBuilder is explained in the last chapter of the Cuelux manual)
- Press the "Cuety Export" button
- Go to the folder User/Visual Productions/vBuilder
- Copy the file "user.personality" to your Cuety App by using iTunes

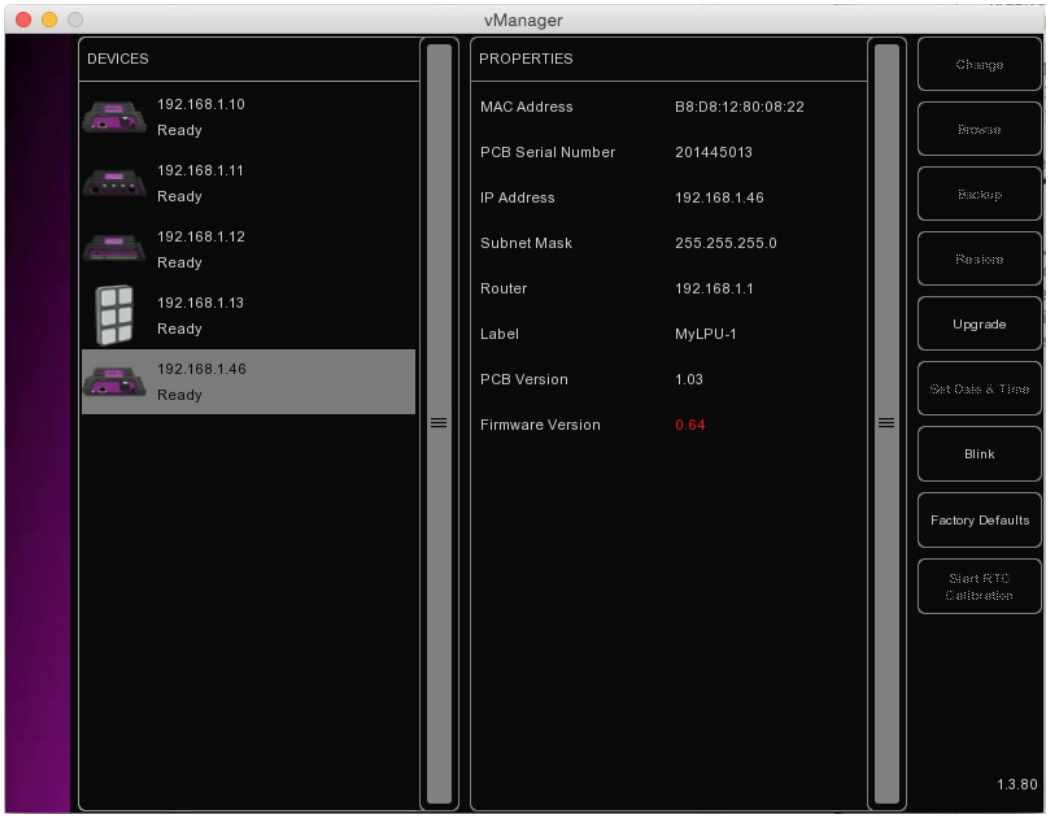
Now you can select the personality from the listing in Cuety's patch menu.

vManager

A special software tool called vManager has been developed to manage the various network-based lighting controllers made by Visual Productions. This tool is available on Microsoft Windows, Mac OS X and Ubuntu Linux and is available via our website, free of charge.

vManager allows you to perform a firmware upgrade on your LPU device. The firmwares are contained in the vManager software. Downloading a new vManager version might give you a new firmware for your LPU.

Please note that vManager has more features that are dedicated to other equipment from Visual Productions such as the CueCore and IoCore. Some buttons will be disabled while working with a LPU because they do not apply to this piece of hardware.



Blink

You can set the device's LED to blink fast for identifying a 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.

Upgrade Firmware

To upgrade the firmware, first select your device and press the 'Upgrade Firmware' button. The dialogue allows you to select from the firmware available.

Caution: Make sure the power to the device is uninterrupted during the upgrade process.

Factory Defaults

The memory containing all user data like cues, recordings and actions is completely erased and all settings are reverted to their defaults by pressing the 'Factory Defaults' button. This action does not affect the device's IP settings.

Appendix A: LPU-2 Connectivity

The following functionality is only supported by the LPU-2, not by the LPU-1.

OSC

OSC (Open Sound Control) is a protocol for communicating between computers, software and various multi-media type devices. OSC uses the network to send and receive messages, it can contain MIDI, time-code and custom information.

There are apps available for creating custom-made user interfaces on iOS (iPod, iPhone, iPad) and Android. These tools allow you to program fool-proof user-interfaces for controlling the device. E.g. TouchOSC from http://hexler.net/software/touchosc.

OSC is also integrated in nearly all control products from Visual Productions. It is the preferred way of connecting equipment like the B-Station to a LPU-2.

The functionality within the LPU-2 can controlled by using the following OSC messages:

Description	URI	Parameter Typ	Parameter Rang	Remarks
Release all playbacks	/release	-	-	
Set playback intensity	/pbXX/in	float	0-100%	Replace XX by playback number [01,64]
Set playback speed	/pbXX/sp	float	-100%-100%	" "
Control playback button	/pbXX/bu	bool	false / true	" "
Control playback flash	/pbXX/fl	bool	false / true	" "
Release playback	/pbXX/re	-	-	" "
Playback Go Forward	/pbXX/go	-	-	" "
Playback Jump	/pbXX/ju	unsigned	1-48	" "

The LPU-2 uses port 8000 for receiving the OSC messages.

TCP & UDP

TCP (Transmission Control Protocol) is a protocol for sending messages across an Ethernet network. TCP provides reliable, ordered and error-checked delivery of messages between programs running on computers connected to a local area network, intranet or the public Internet.

UDP (User Datagram Protocol) is a simple protocol for sending message across the network. It does not provide any error checking. Although UDP is a bit faster than TCP, it is less secure.

Typically either TCP or UDP is supported by various media devices like video projectors and show controllers.

The functionality within the LPU-2 can controlled by using the following ASCII strings (human readable text) messages:

Description	String	Parameter Rang	Remarks	Example
Release all playbacks	release	-		`release`
Set playback intensity	pbXX/in=[0,100]	0-100%	Replace XX by playback number [01,64]	`pb01/in=100`
Set playback speed	pbXX/sp=[-100,100]	-100%-100%	" "	`pb33/sp=-10`
Control playback button	pbXX/bu=[0/1]	up / down	" "	`pb59/bu=0`
Control playback flash	pbXX/fl=[0/1]	up / down	" "	`pb64/fl=1`
Release playback	pbXX/re	-	" "	`pb10/re`
Playback Go Forward	pbXX/go	-	" "	`pb21/go`
Playback Jump	pbXX/ju=[1,48]	1-48	" "	`pb45/ju=10`

The LPU-2 uses port 7000 for receiving the TCP and UDP messages.

HTTP

HTTP (Hyper Text Transfer Protocol) is the standard protocol to access web pages. It can also be used to control the LPU-2, using the URLs listed below.

You can send your HTTP GET requests to port 80.

Description	URL	Range	Example
Release all playbacks	/ajax/release	-	http://192.168.1.10/ajax/release
Set playback intensity	/ajax/pbXX/in=[0,100]	0-100%	http://192.168.1.10/ajax/pb01/in=100
Set playback speed	/ajax/pbXX/sp=[-100,100]	-100%-100%	http://192.168.1.10/ajax/pb33/sp=-10
Control playback button	/ajax/pbXX/bu=[0/1]	up / down	http://192.168.1.10/ajax/pb59/bu=0
Control playback flash	/ajax/pbXX/fl=[0/1]	up / down	http://192.168.1.10/ajax/pb64/fl=1
Release playback	/ajax/pbXX/re	-	http://192.168.1.10/ajax/pb10/re
Playback Go Forward	/ajax/pbXX/go	-	http://192.168.1.10/ajax/pb21/go
Playback Jump	/ajax/pbXX/ju=[1,48]	1-48	http://192.168.1.10/ajax/pb45/ju=10

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