



Pixout HDMI ArtNet Converter Manual

support@pixoutserver.com

Pixout, SIA
VAT: LV40103644210
Riga, Latvia

Data	Page	Description
11 Aug 2020	1	Initial document version
09 Jan 2021	13	Warning about using RGB color type together with calibration image
05 May 2025	12-14	How to switch from RGB to RGBW

CONTENTS

CONTENTS	3
1. OVERVIEW	3
What it is	3
What it does	4
How to do it	5
Tested software	5
Package includes	5
2. CONNECTION	5
3. HOW TO START	6
Default network setting	6
Connection setup	7
4. CONTROL PANELS DESCRIPTION	8
4.1 USER CONTROL PANEL	8
4.2 ADMIN CONTROL PANEL	9
Status bar	10
4.2.1 MAPPING	11
How to Grab a mapping	11
Grab a mapping from ArtNet source	12
Pixel mapping import	15
Activating	15
Pixel mapping view	16
4.2.2 NODES	17
4.2.4 NETWORK	19
Wireless connection	19
Ethernet static IP configuration	21
4.2.5 SYSTEM TOOLS	22
Time	22
System Log	23
Restore	23
4.2.6 PACKAGES	24
5. LICENSING	25
RENEW THE LICENSE	27
UPGRADE THE LICENSE	27
6. CONCLUSION	28

1. OVERVIEW

Our company vision - simple and user-friendly remote control interface adopted for both novice and tech savvy users, rackmount size and cost effective device for indoor usage with good performance resource. Based on this vision, we've created Pixout HDMI ArtNet Converter.

What it is

Pixout HDMI ArtNet Converter (hereinafter – the Converter) is *a standalone, rackmount device for digital video to ArtNet DMX convertrion. The Converter allows importing, grabbing a pixel mapping from any third party software, and will save your nerves since you won't need to manage complex media servers.*

What it does

It grabs pixel mapping from 3rd software/hardware source, saves it internally and uses it for conversion from HDMI to ArtNet as indicated.

You can remotely manage it and select which one pixel mapping will be in use from a web browser.

Key features:

- Rackmount 1U case with LCD screen
- HDMI-in: 1600×1200 60Hz
- Ethernet-out: 256 ArtNet DMX universes per device
- Wireless for setup
- Realtime 2 core ARM A9/Xilinx Zynq
- One video frame delay processing time
- RGB/RGBW modes and conversion
- Web software for setup, pixel mapping grabbing/importing
- Unicast/Broadcast transmission. ArtPoll/ArtPollReply support
- High reliability for architecture, museums, art spaces and other objects

How to do it

You might want to use any software for pixel mapping like Enttec Led Mapper (ELM) or MADRIX, whatever suits you best. You will create a pixel mapping, which is, namely, a virtual representation of your desired design. Each pixel

has a position in space and its DMX address and universe and then grab it inside the converter using a special pixel mapping grabbing approach.

Tested software

The Converter was tested using following software:

- Madrix3
- ENTTEC Led Mapper (ELM)

Package includes



- Pixout HDMI ArtNet Converter / Model VC128
- EU power plug
- User Guide
- Carton box

Warning! You need to use your own HDMI cable for the Converter connection.

Warranty is not applicable in case of using the Converter with non-supplied parts.

2. CONNECTION

Connect Power cable with the Converter and press the button in position ON on the back of the Converter.



1. EU Power plug cable for power connection
2. *HDMI cable (Not included in the package)*
3. *Ethernet cable (Not included in the package)*

The converter supports voltage from 110-240AV 50Hz/60Hz

Power ON! Let's go!

3. HOW TO START

Default network setting

Out of the box your device has following default network settings:

Ethernet connection:	
IP: 2.0.0.230	MASK: 255.0.0.0
Outgoing IP: 2.0.0.5	MASK: 255.0.0.0
Wireless connection:	
IP: DHCP	ZeroConfig: http://pixoutconverter.local/

Outgoing IP means that after video conversion ArtNet DMX data will be sent from this IP.

Connection setup

To connect to your Pixout HDMI ArtNet Converter:

1. Connect the Converter to PC with Ethernet cable
2. Power up the Converter
3. Setup static IP on your PC with the following values:
 - IP - 2.0.0.* (**except 230 and 5**)
 - Mask - 255.0.0.0
 - Gateway - 0.0.0.0
4. Type URL <http://2.0.0.230/px-admin/#/network> in browser address bar
5. Specify your wireless router connection data (SSID/PSK) in Admin Panel - <http://2.0.0.230/px-admin/#/network>
6. When device is successfully connected to the wireless network, you can access it by ZeroConfig URL name <http://pixoutconverter.local>
7. User Panel is available at <http://pixoutconverter.local>
8. Admin Panel is available at <http://pixoutconverter.local/px-admin>.

! USEFUL INFORMATION

If you use Microsoft Windows, you need to setup Bonjour drivers first to support URLs like <http://pixoutconverter.local/> in your browser. You can download Bonjour for Windows here:

http://pixout.lighting/product-pixout/pixout-the_Controller-downloads/

! USEFUL INFORMATION

You can use both connections: Ethernet or Wireless for remote Converter controlling. ZeroConfig name <http://pixoutconverter.local/> for Wireless setup.

4. CONTROL PANELS DESCRIPTION

There are two types of access:

- User Control Panel
- Admin Control Panel

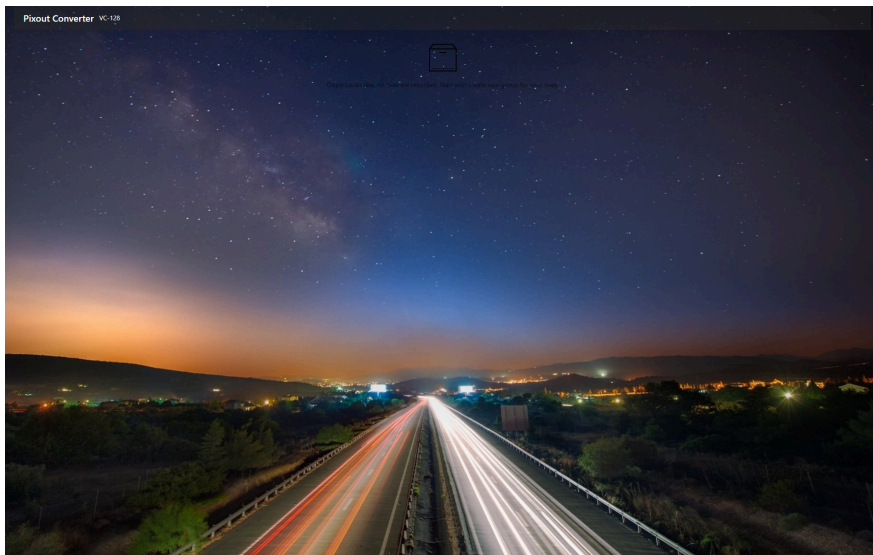
4.1 USER CONTROL PANEL

Use the User Control Panel to view which one pixel mapping currently activated.

Access to User Control Panel: <http://pixoutconverter.local/>

User Control Panel allows to see:

- Pixel mapping list
- Or empty screen if no pixel mappings grabbed as the following



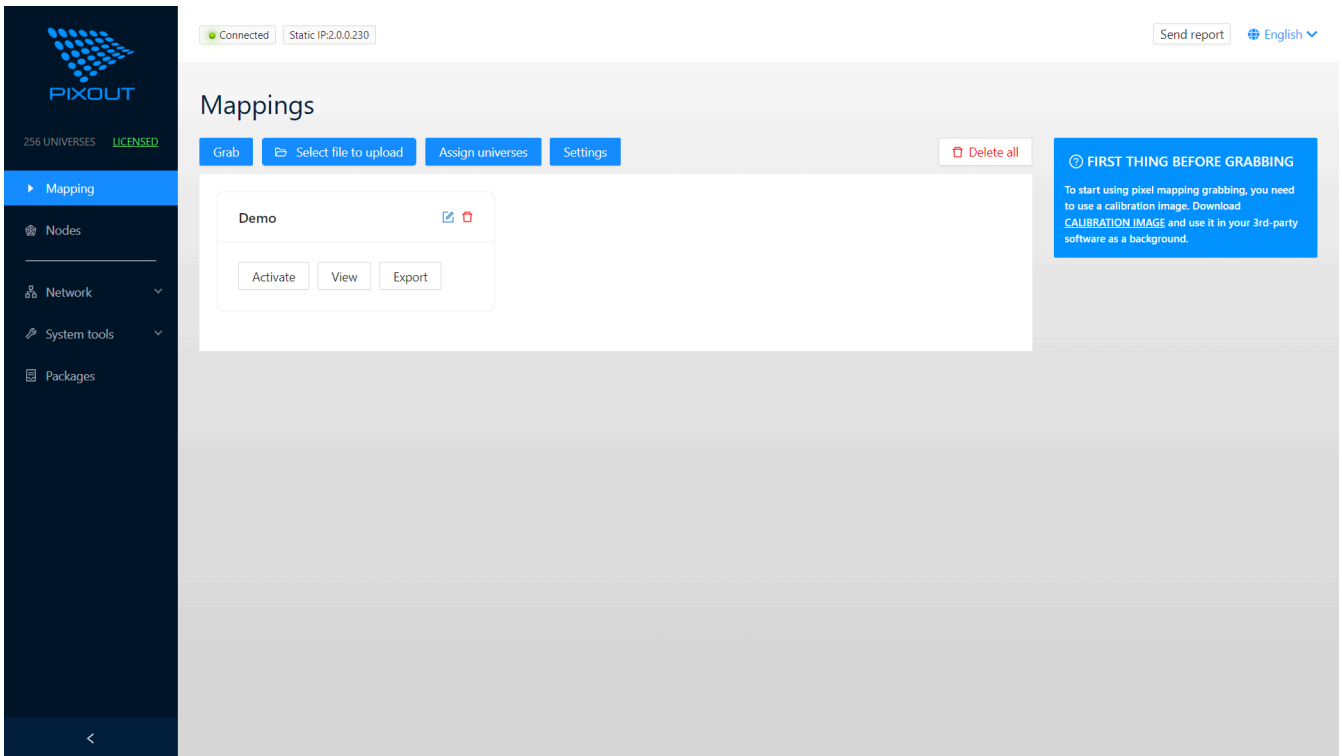
4.2 ADMIN CONTROL PANEL

Admin Control Panel is for experienced users only. It has some features that can affect performance and productivity of the Converter. You should have an understanding of all working processes and be able to handle errors.

Access to Admin Control Panel by IP or:

<http://pixoutconverter.local/px-admin>

Here you can set up the Converter, configure the network, grab pixel mapping, import/export mappings, check system logs and access other features.



Status bar

The main screen has a status bar on the top side of the screen.



Green icon indicates that there are no errors and the web browser connected with the Converter. IP indicates current Ethernet IP address.

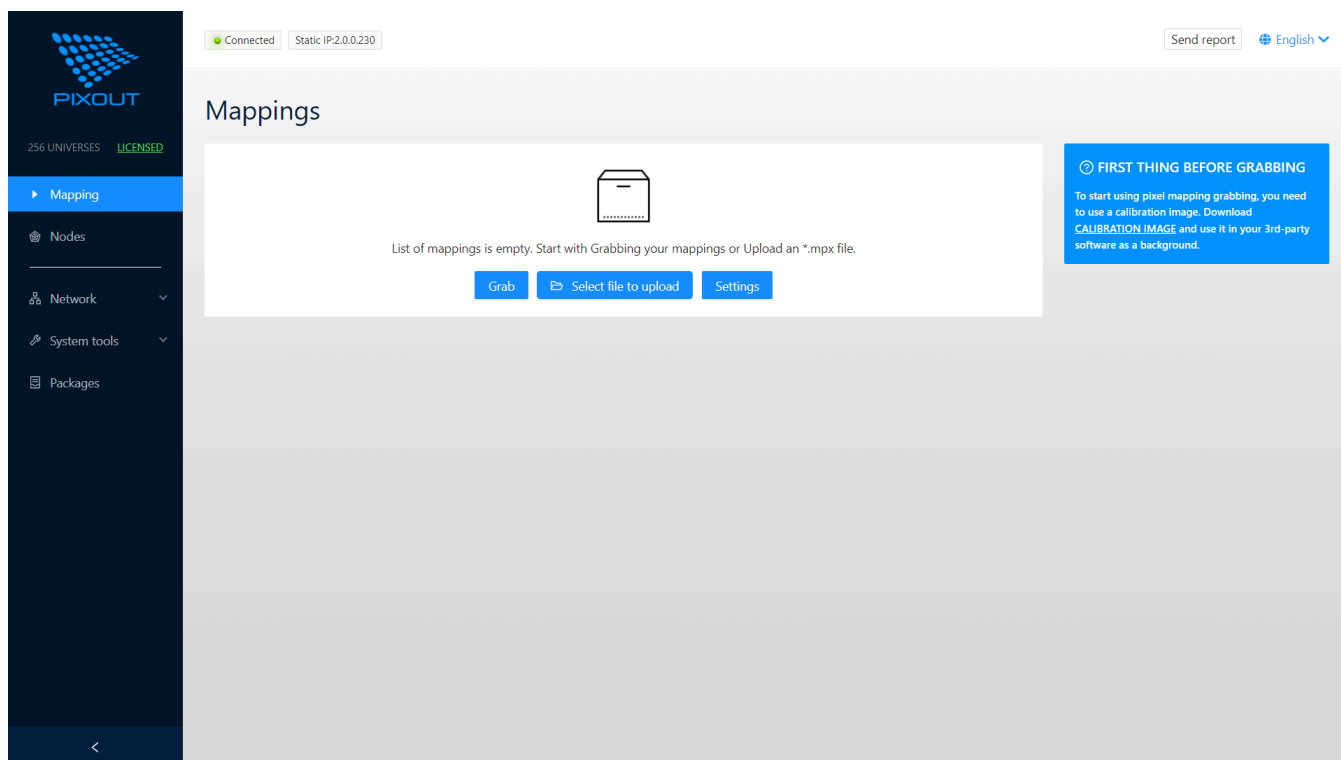
PAGE	DESCRIPTION
/MAPPING	Pixel mapping grabbing/import/export and activation
/NODES	Manual/Automatic detection of any Art-Net node
/NETWORK	Network configuration for access to the Converter
/SYSTEM TOOLS	System utilities: time, system restore, logging
/PACKAGES	List of installed packages

4.2.1 MAPPING

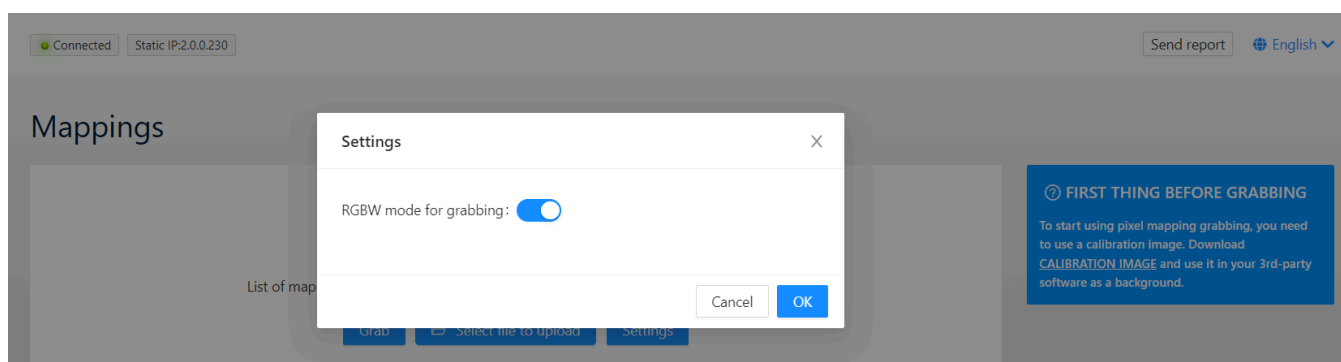
In this section you can make modifications, grab, activate, import or export pixel mappings.

How to Grab a mapping

Before pressing the Grab button please specify color type RGB/RGBW in the Settings dialog. Then press the Grab button for grabbing or Upload pixel mapping with the “Select file to upload” button.



You only need to setup the RGB or RGBW color type before initiating the pixel grab. Once the pixel mapping has been grabbed using the correct color type, you can freely switch and activate mappings with different color types.



You can import pixel mapping in two possible ways:

- 1) [Record](#) data from any ArtNet source
- 2) [Import](#) from MPX file

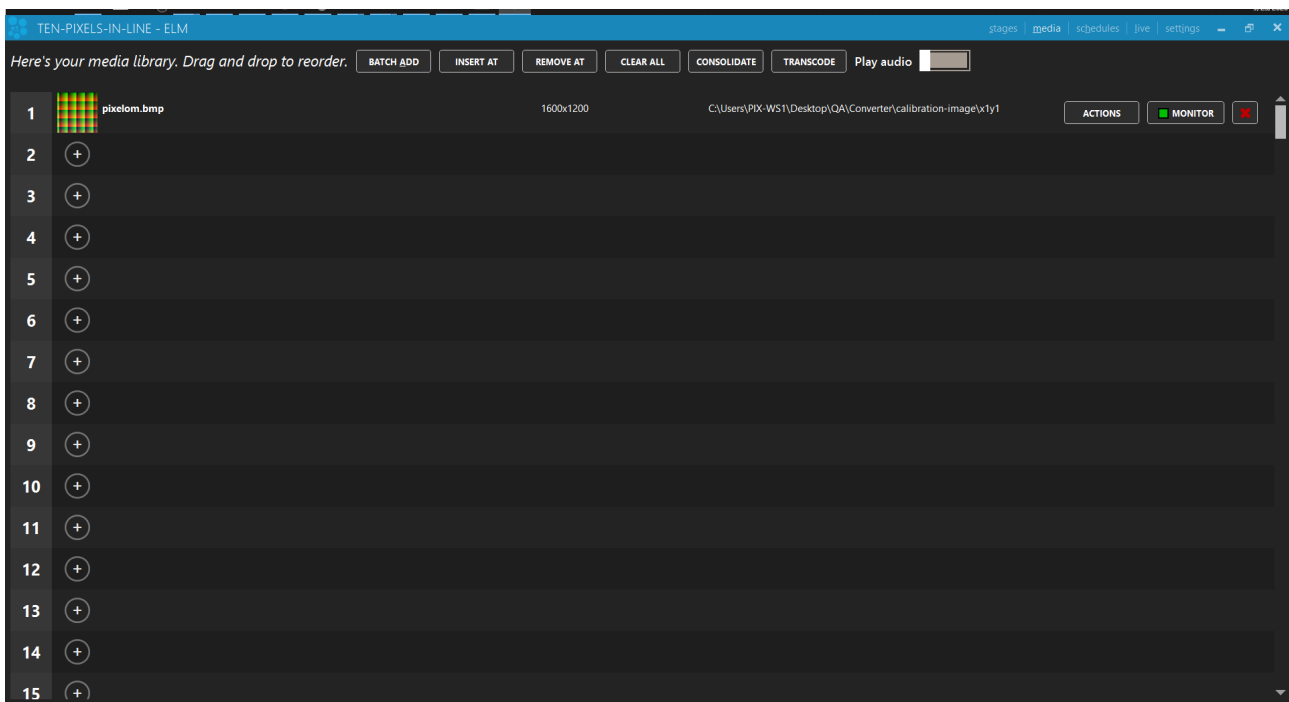
🔍 FIRST THING BEFORE GRABBING

To start using pixel mapping grabbing, you need to use a calibration image. Download [PIXOUT CALIBRATION IMAGE](#) and use it in your 3rd-party software as a background.

Please carefully read this note, because the calibration image you have to use for the grabbing process.

Grab a mapping from ArtNet source

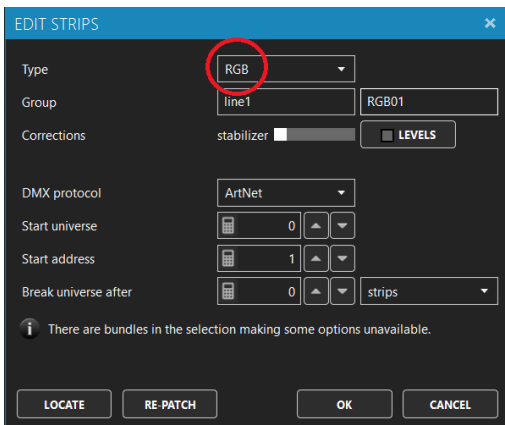
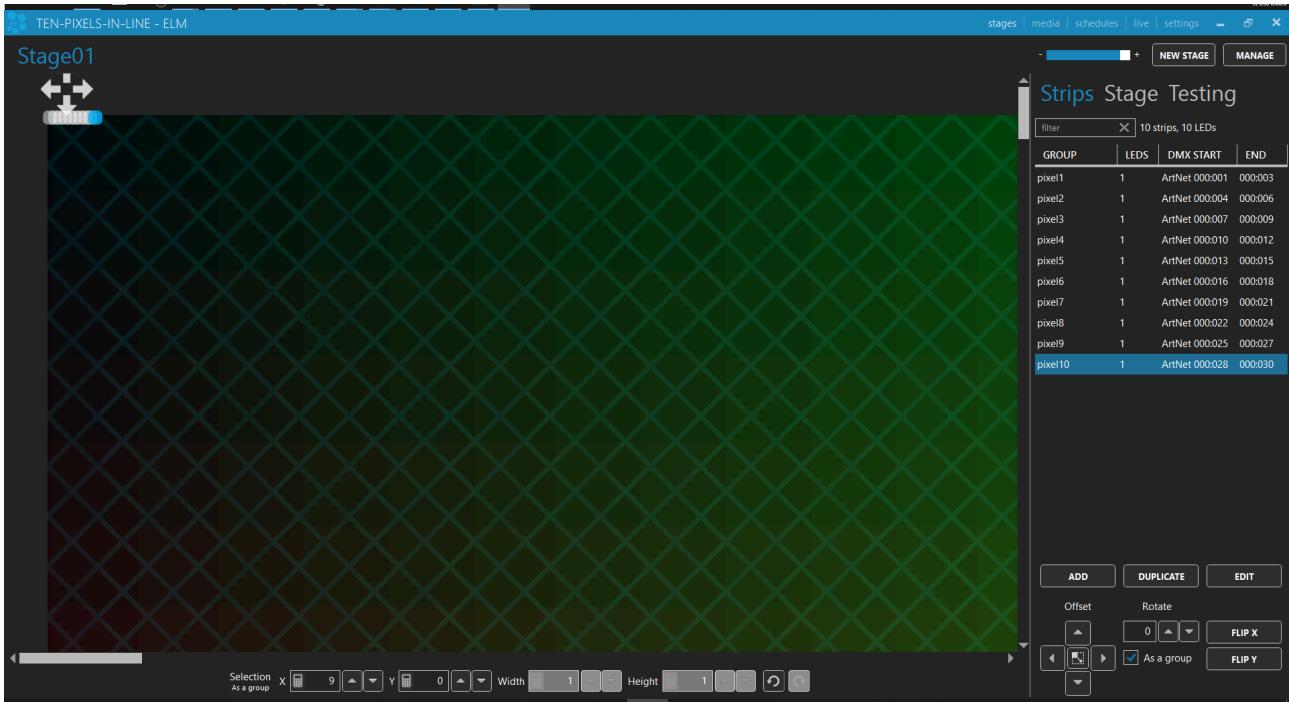
Let's use ENTTEC Led Mapper (trial version) to create Pixel mapping project with calibration image [pixelom.bmp](#) on the back.



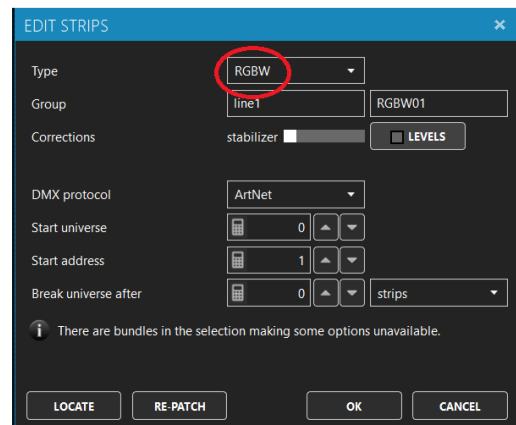
Next, Let's create a ten pixel line project with RGB color.

WARNING

Please recheck RGB/RGBW color type prior to use. Both options in Pixout Admin Panel and 3rd software must be the same.

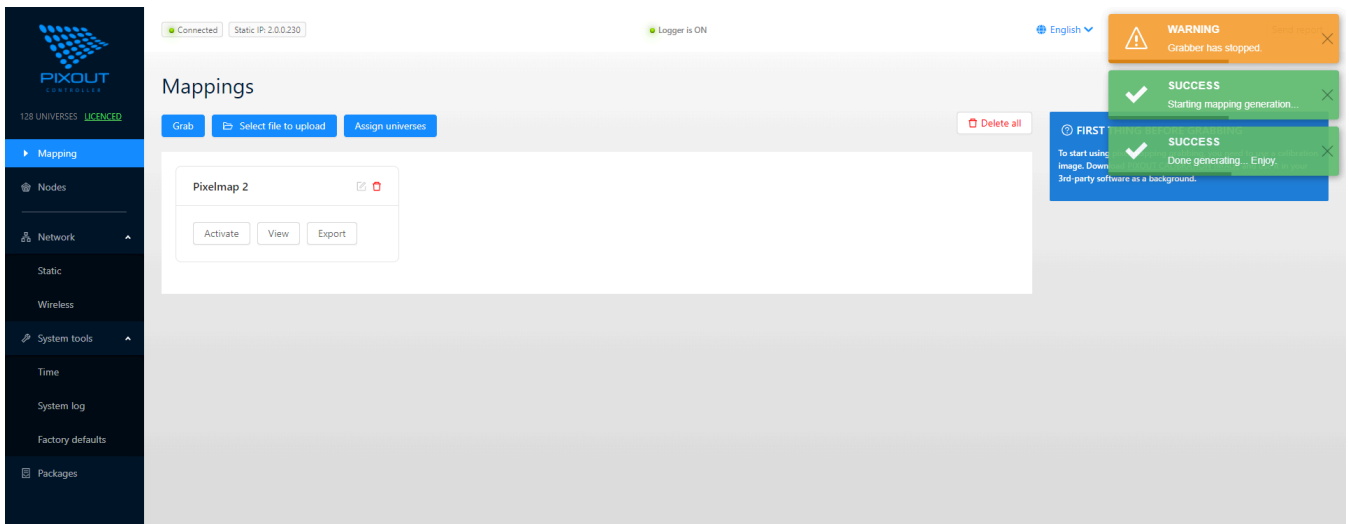


VS



Select the correct color type RGB/RGBW on the Admin panel -> mapping page -> Settings dialog.

Now, if ELM and the Converter are located in the same network you can press the 'Grab' button in the Mapping section and grab pixel mapping from ELM to Pixout as the following. In case if grabbing not started please check that ELM and the Converter located in one network and broadcast/unicast configured correctly.



After successful grabbing each pixel mapping has following options:

- Name
- Edit button - Change its name
- Delete button - Delete mapping
- Activate button - [Activate](#) the Converter with selected mapping
- View button - [Preview and Detail view](#) for grabbed mapping
- Export button - Export mapping to your PC

Total amount of pixel mapping limited only by SD flash size. The provided SD card has a capacity of 8 GB and may be increased in size on demand.

INFORMATION

Pixel mapping names may be edited afterwards by clicking on the pencil icon.

Pixel mapping import

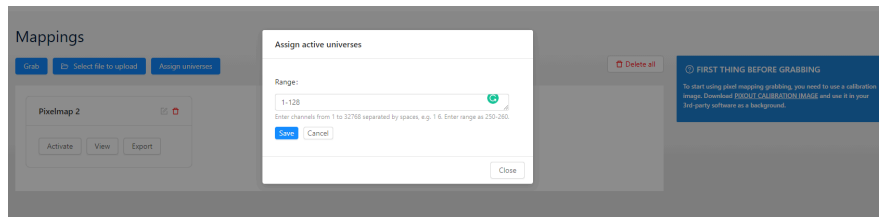
You can import two types of files:

- 1) Madrix3 MPX file (from Madrix->Patch section)
- 2) Pixout HDMI Converter exported MPX file

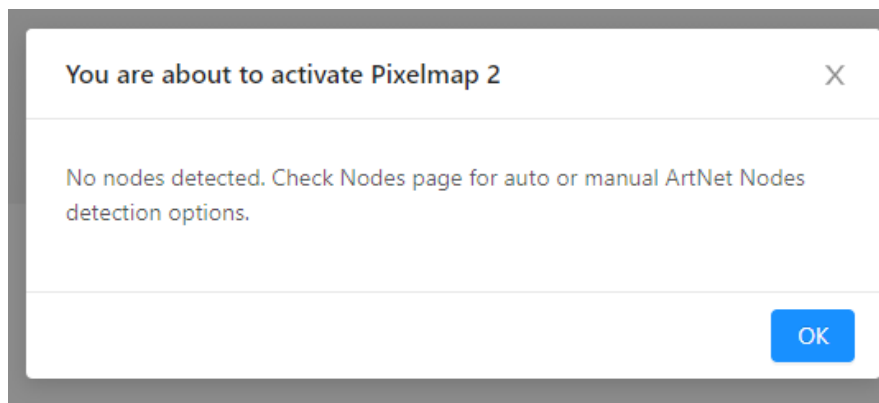
After importing pixel mapping will be available for activation and other actions.

Activating

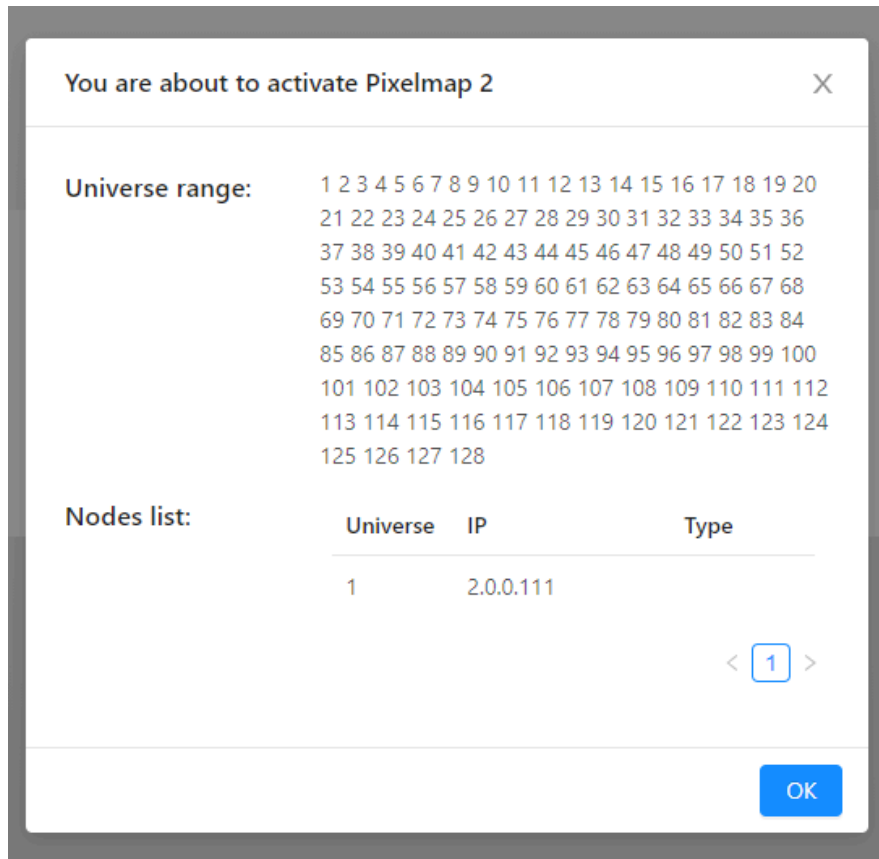
Before activating any of grabbed or imported pixel mappings you need to specify the maximum amount of universes in use. This action should be done only once. In case if you are using multiple converters you can specify different universes 1-128, 128-256 and so on



Press 'Activate' button to activate any of the pixel mappings. In case of the following image you need to configure your [Nodes](#). Because the converter automatically assigns grabbed universes with universes available for Nodes.



Let's assume you configured Nodes correctly and got the following message.



This means that you have available 1-128 universes but for this pixel mapping will be used only universe '1' because no other nodes are specified or detected.

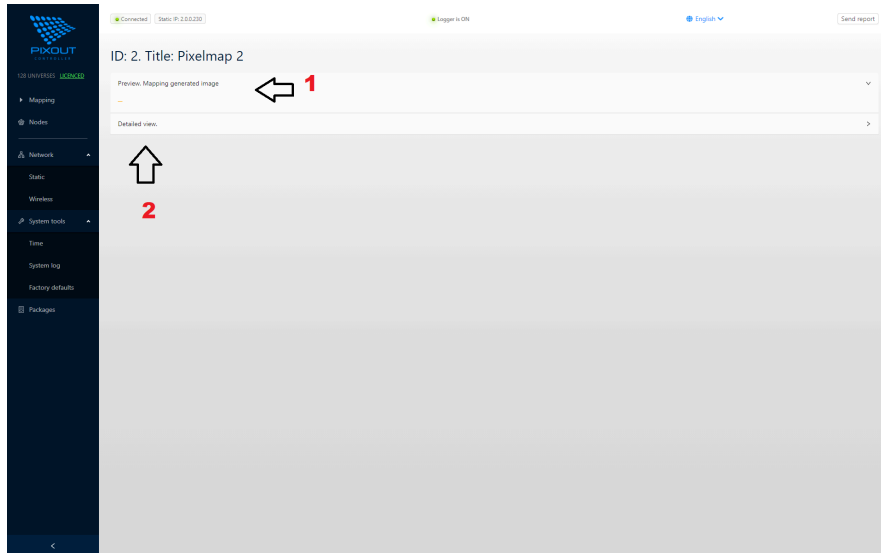
After pressing the 'OK' button pixel mapping will be activated and the converter will start making conversion based on provided information.

INFORMATION

After reboot the Converter will continue to play the latest activated pixel mapping.

Pixel mapping view

Press the 'View' button to get a preview and detail view for any of the pixel mappings.



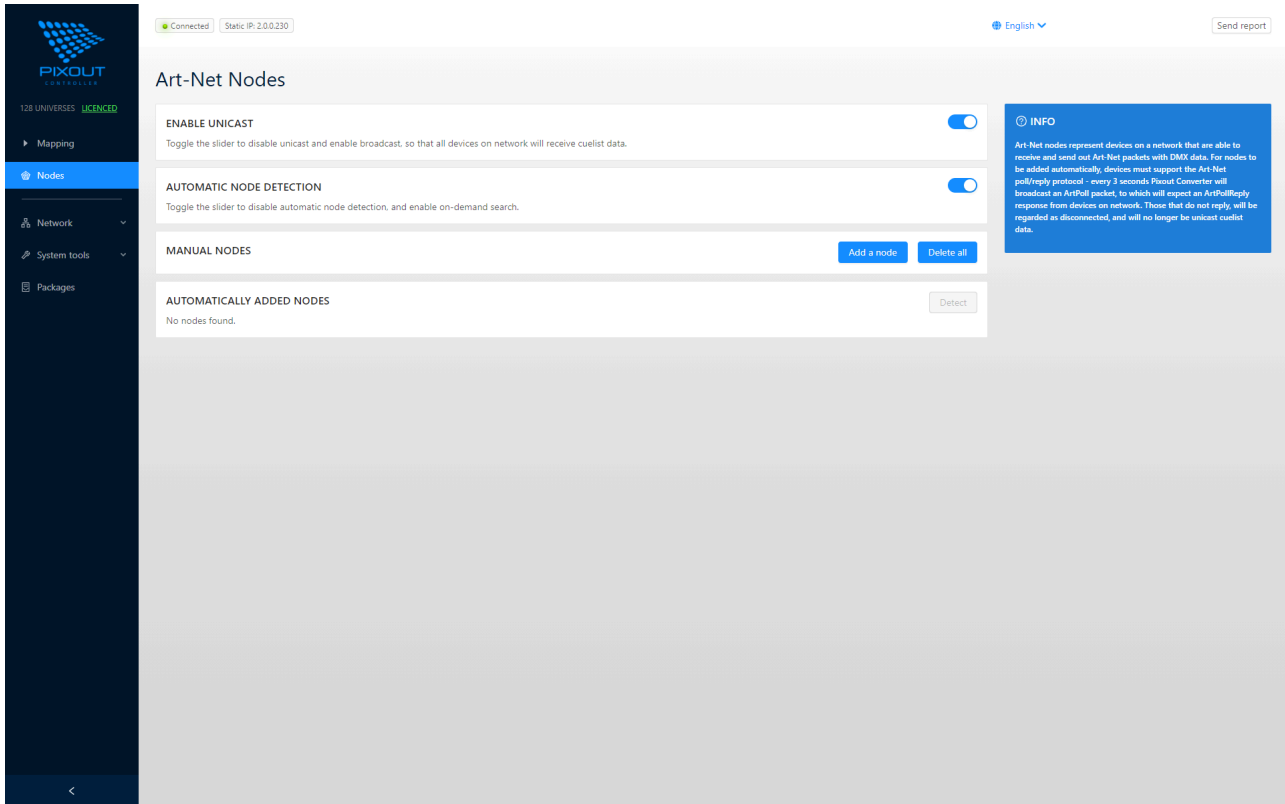
1. This is the preview image. We have only ten pixels so it looks a little bit small
2. Detail button

Detail view button opens a new panel where each pixel is displayed. Use mouse and hover on different pixels to get information about DMX channel, universe and X, Y position.



4.2.2 NODES

Art-Net Nodes enumerates all available devices(pixel controllers or such) on local networks, which support Art-Net poll/reply protocol and are able to send/receive Art-Net packets with DMX data.



When the slider ENABLE UNICAST is in Off position, a unicast is disabled and broadcast is activated. In this case the Converter will broadcast an ArtPoll packet every three seconds and wait for ArtPollReply from any device on the network. In case of no response from the device, this device will be regarded as disconnected.

When the slider is in On position, a unicast is active and broadcast is disabled. In this case all data will be sent to unicast IPs by default.

! USEFUL INFORMATION

Even when slider On/Off, the Converter will reply with ArtPollReply by ArtPoll request from the 3rd party software.

Art-Net Nodes will show universe values as +1, which means that universe 0 will be shown as 1, universe 1 will be shown as 2, etc.

When the slider **AUTOMATIC NODE DETECTION** is in **On** position, all found/lost nodes will be appended/removed to the list automatically. In case you would like to refresh nodes manually, switch the slider to **Off** position and use the button **Detect** for manual nodes poll.

Together with automatic nodes detection, you can use **MANUAL NODES** options. It allows users to specify nodes without ArtPoll support.

Art-Net Nodes

ENABLE UNICAST

Toggle the slider to disable unicast and enable broadcast, so that all devices on network will receive cue list data.

AUTOMATIC NODE DETECTION

Toggle the slider to disable automatic node detection, and enable on-demand search.

MANUAL NODES Add a node Delete all

ID	Short name	Long name	Universe	IP	Port	
1	<input type="text" value="MyNode"/>	<input type="text" value="My simple node"/>	<input type="text" value="1"/>	<input type="text" value="2.0.0.100"/>	<input type="text" value="6454"/>	Save Cancel

Automatically added nodes (0) Detect

No nodes found.

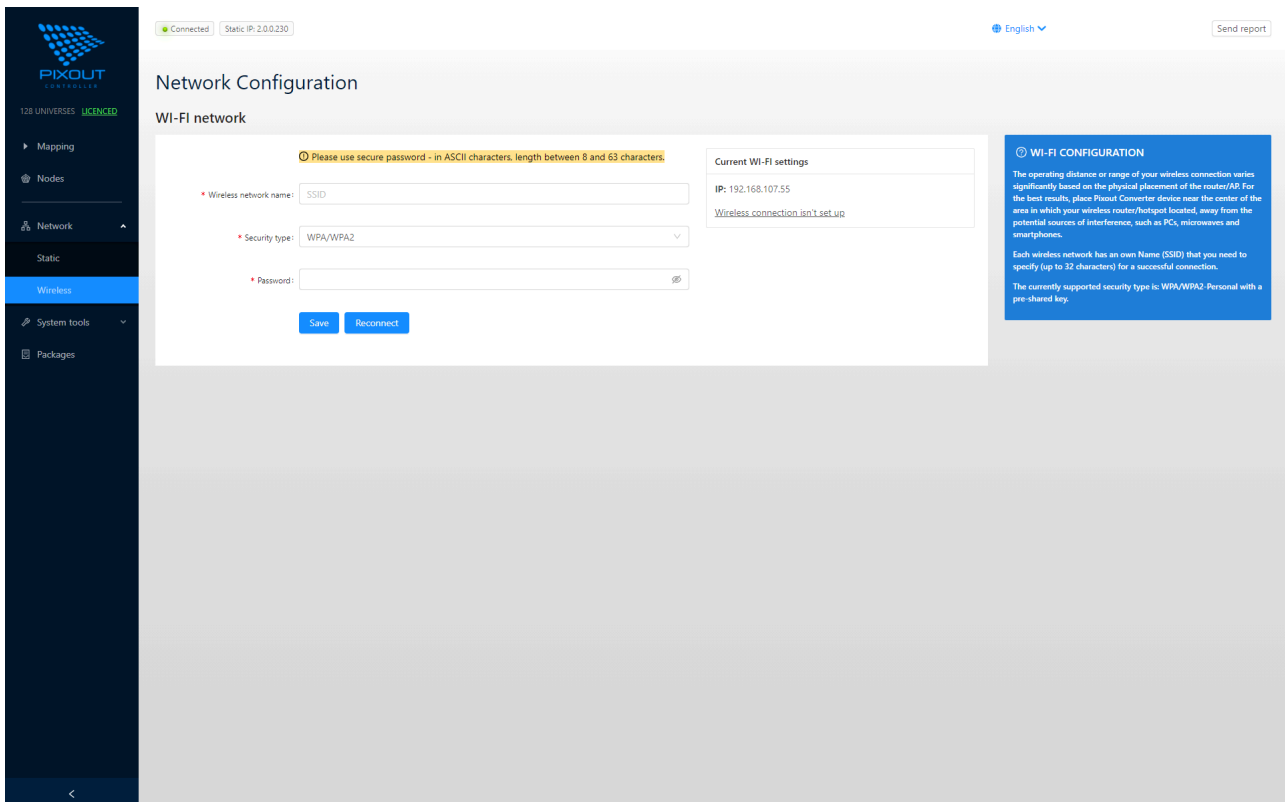
4.2.4 NETWORK

Configure your Converter to have access by wireless or direct connection.

Wireless connection

Wireless connection is used in the following cases:

1. **Sends log information to the Pixout company server** – in case of any errors our Support Team can find the root cause based on provided logs;
2. **Automatic updates** – every time the Converter is turned on, it will check for updates directly from our server, if the Internet network is accessible.
3. **Remote access to the web panels**



Please specify your router SSID name and password and the Converter connects as a client.

! USEFUL INFORMATION

If you are using Microsoft Windows, you need to setup Bonjour drivers first to support URL like <http://pixoutconverter.local/> in the browser. You can download Bonjour for Windows here:

<http://pixout.lighting/product-pixout/pixout-the-Controller-downloads/>

When the device is successfully connected to your WiFi network, you can get access to it by DNS-SD URL name <http://pixoutconverter.local/>.

Use <http://pixoutconverter.local/> for User Panel and <http://pixoutconverter.local/px-admin> for Admin Panel.

! USEFUL INFORMATION

Use AES security method in your router to protect your devices.

Ethernet static IP configuration

You can configure IP parameters of Ethernet port manually.

Enter a new **IP** address of the Converter in dotted-decimal notation.

1. **Static IP** - The Converter IP for configuring
2. **Subnet Mask** – an address code, which defines the size of the network.
3. **Broadcast address** – an address for data broadcasting for all devices in the network. This address should be specified accordingly to subnet mask (e.g. for 2.0.0.x / 255.0.0.0 it is 2.255.255.255).
4. **Outgoing IP** - The Converter ArtNet data outgoing static IP. Will be changed automatically with Static IP. Also, you can specify it manually.

Network Configuration

Static IP

! In order to change static IP, you must be connected to Wi-Fi. After you change the Ethernet settings, you should use new IP address to login to the controller user/admin panel.

Current static IP settings

IP: 2.0.0.230
Outgoing IP: 2.0.0.254
Mask: 255.0.0.0
Broadcast: 2.255.255.255

STATIC IP CONFIGURATION

You can configure IP parameters of Ethernet port manually.

- IP address of the controller in dotted-decimal notation.
- Outgoing IP is IP of the Converter for the devices to listen to.
- Subnet mask - an address code that determines the size of the network.
- Broadcast address - address for data broadcasting for all computers in network.

FACTORY DEFAULTS

- IP - 2.0.0.230
- Outgoing IP - 2.0.0.254
- Subnet Mask - 255.0.0.0
- Broadcast address - 2.255.255.255

Save and reboot

! WARNING

If you want to change static IP, make sure that you have configured wireless connection. In case of any errors, you will still have access to the Converter's Admin Control Panel using wireless connection. After you change the Ethernet port address, **you must use a new IP address to login to the Converter's User/Admin Control Panel.**

4.2.5 SYSTEM TOOLS

System tools are used to figure out what happens inside the system, restoring factory settings if needed, and also for synchronization.

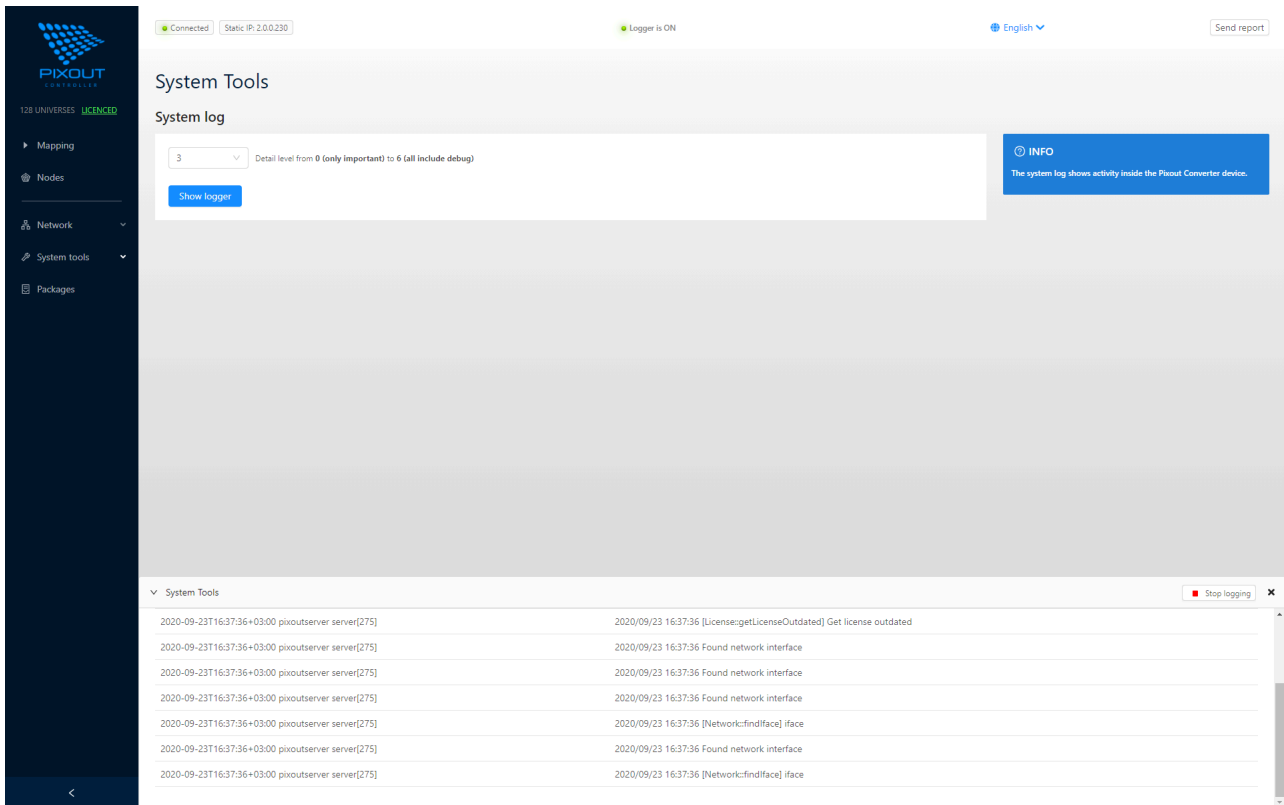
Time

This section is used to synchronize time on your Converter with time on your web browser. Click the "Synchronize" button and you'll have the same time on both. Synchronizing is very important for scheduling cues playback.

System Log

Click the "Show" button in the System Log tab to get detailed log information from the Converter. This information can be sent to the Pixout Support Team if needed.

Log window will be visible at all times while browsing pages. You can minimize it (it will keep logging), stop or restart logging by pressing corresponding buttons.



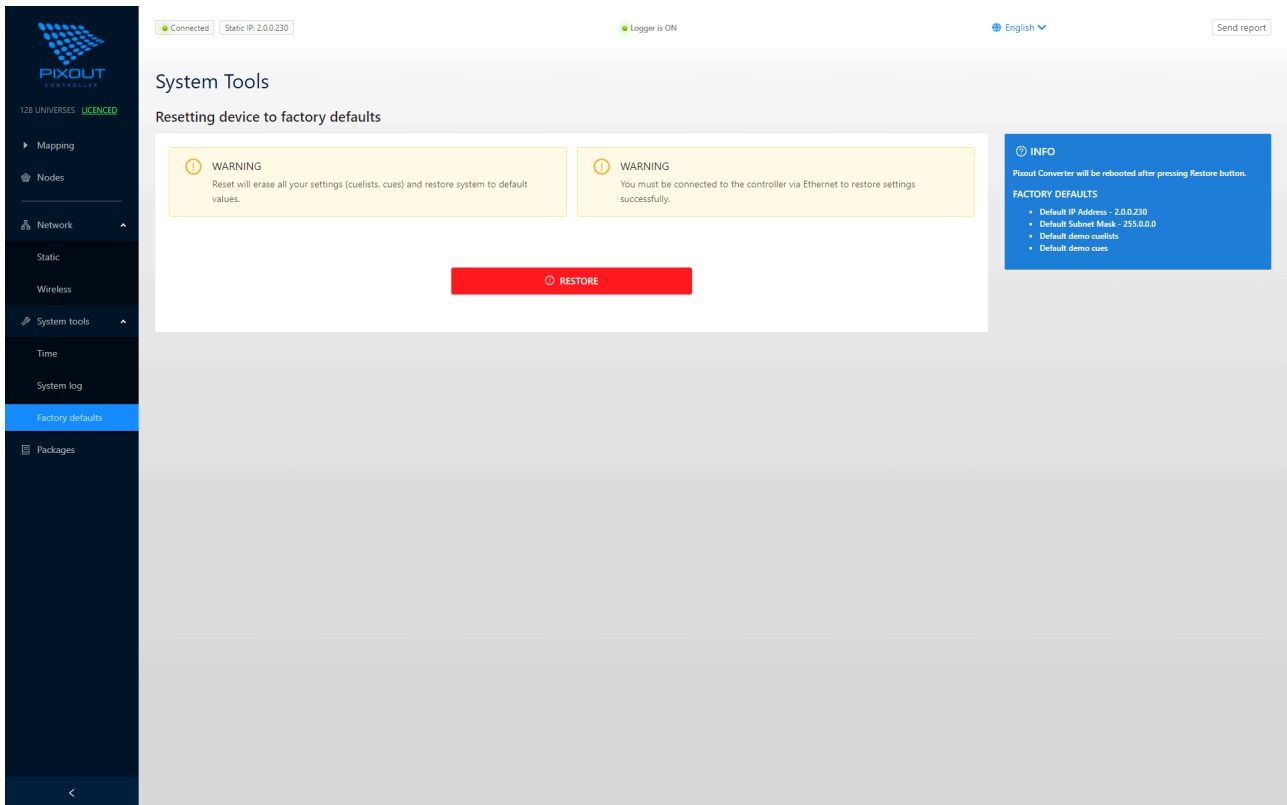
There are 2 ways to send SystemLog to manufacturers' support. Logs will be sent automatically, if there is an internet connection.

1. You can copy SystemLog information and send it via email to support@pixoutserver.com, if you are not connected to the Internet,.
2. Click on Send Report button in the header and send the last 1kB of system data to our Support Team.

Restore

This is a very dangerous operation. Please do not make it without a very strong reason especially if the Output IP was changed.

If the system has become unstable or the file system was damaged, you can do a full system restore. It will reset the Converter to the factory settings and restore the damaged file system. Please be patient, it could take 5 minutes or more.



! USEFUL INFORMATION

Do not reboot your system until it has finished restoring.

Also, You can reset the Converter with the physical reset button help located inside the enclosure. For detail information please contact with the Pixout support team by support@pixoutserver.com

4.2.6 PACKAGES

Due to the modular nature of the Converter software, all system components are located in packages. Packages can be upgraded automatically from our server on system startup or manually. Every package has its own version and name.

Connected | Static IP: 2.0.0.230 | Logger is ON | English | Send report

Packages

Auto update via Internet

Package update via Internet starts automatically on system startup. **Controller must be connected to the Internet.**

Update via USB flash drive

Package update via USB flash drive starts automatically on system startup. **The drive must have valid update data on it.**

Available packages

Version	Package name
1	1.7.23 artnet_player
2	0.0.9 firmware-update
3	1.0.0 info
4	1.1.2 lc
5	0.0.10 new-repo-update
6	1.0.13 pixel_mapper
7	1.3.14 pxgrabber
8	1.0.5a pxinput
9	2.0.25 pxserver
10	1.0.1 tftp
11	0.0.3 vc-fw
12	0.0.1 vc-pixout
13	2.0.12 vc-pixout_ui
14	0.0.3 vc-shared

[Refresh list](#)

INFO

Packages are distributions of software and data. Packages also contain metadata, such as the software's name, description of its purpose, version number, vendor, checksum, and a list of dependencies necessary for the software to run properly.

Pixout Converter device works with two different approaches:

1. Linux-based firmware without the possibility to modify it
2. Package management for an application and data with the possibility to modify them.

! USEFUL INFORMATION

All Converters are provided with turned off Auto Update via Internet. Please check this setting (it should have Off position) before supply to an end-user. Turned on Auto Update with Internet connected may start updating system packages and it can affect ArtNet data proceeding.

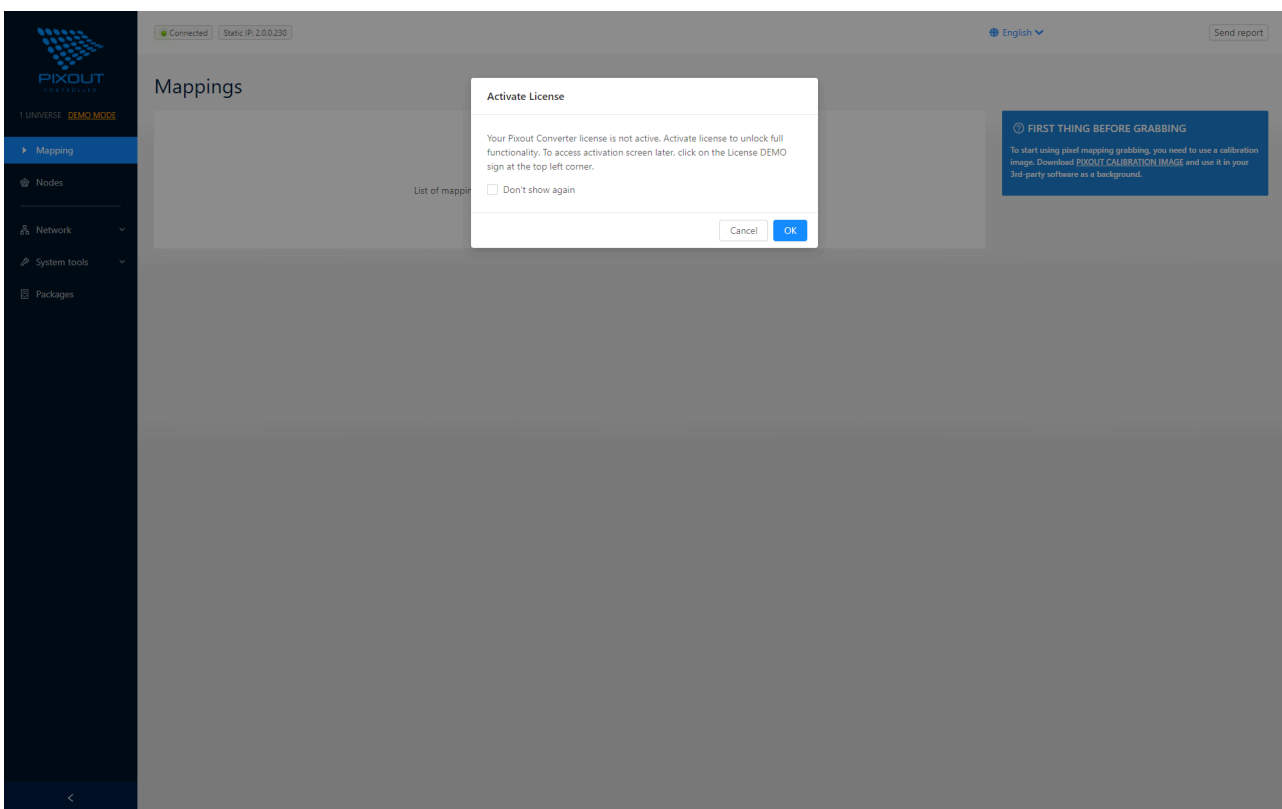
Currently update via USB flash is available for unboxed version only.

5. LICENSING

Without activating the license, you will have only 1 DMX universe for demo purposes in your pixel mapping. You should activate the license, after you get it.

There are two ways to activate the license: online and offline. Online activation is possible using wireless Internet connection. In case you don't have an Internet connection, please use the Offline activation option.

When connecting to the Converter for the first time, you will see the following screen:



Now it is possible to skip the activation step and continue to work in demo mode with limitation to one universe. Otherwise, please activate the license and get full functionality according to the purchased license.

To activate your license, please click the "OK" button and get to the License section.

If your PC is connected to the Internet, it is better to activate the license online. Just put the token which you received when purchasing your Converter and click the "Activate" button.

If you are not connected to the Internet, you can use Offline activation. You should send an activation request to our Support Team via support@pixoutserver.com with copied "Request Key". Then put a provided token to "Response Key" field and click the "Activate" button.

See the image below.

License

Device serial number

Device unique identifier

Online Activation ●

Ⓢ Please enter the token, that you received upon purchase, to activate the device

Offline Activation

Ⓢ Please contact support@pixoutserver.com to request offline activation.

In the email please quote the token, that you received upon the purchase and the request key.

We will generate the response key and email that back to you, please enter that in the correspondent input field.

Request key:

RENEW THE LICENSE

If your Converter has damaged and stopped working, please ask the Support Team to help you and in case if Converter hardware will not be changed but repaired you can reactivate license on the same hardware. Please contact our Support Team via support@pixoutserver.com

UPGRADE THE LICENSE

Currently we are supporting only 128 universes. But probably in future this amount of universes will be enhanced and you can purchase another license and use more universes without hardware upgrade. Activate your new license the same way as for the first time.

6. CONCLUSION

We are happy that you've chosen Pixout HDMI ArtNet Converter to manage your lightning!

This user guide describes basic operations with the Converter. Our team is working hard on developing new features and constantly seeks to expand the Converter's functionality. Check our web site <https://pixout.lighting> for all the updates and full information.

You will find documentation and download software on our website. Please check FAQ for customization and integration availability.

If you still have any technical questions about our product, please don't hesitate to contact our Support Team via support@pixoutserver.com.

If any financial queries, feel free to contact our Sales Team via sales@pixoutserver.com

ENJOY YOUR PIXOUT HDMI ARTNET CONVERTER!

Delightfully yours,

Pixout